

Division of Medicine
Sectional Library



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

VOL. XVIII.

CONTAINING MONOGRAPHS OF THE GENERA

PHILINE.	SCAPHANDER.	MULLERIA.	CLAVAGELLA.
BULLINA.	PHOLAS.	SOLENELLA.	LIMNÆA.
NUCULA.	YOLDIA.	NEILO.	LIMA.
UTRICULUS.	LÆDA.	*PHOLADOMYA.	DENTALIUM.
OSTRÆA.	PLACUNA.	SUCCINEA.	CORBIS.
LINTERIA.	ETHERIA.	MAGILUS.	

BY

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

CORRESPONDING MEMBER OF THE NATURAL HISTORY SOCIETY OF WÜRTEMBERG, OF THE LYCEUM OF NATURAL HISTORY OF
 NEW YORK, OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, AND OF THE
 ZOOLOGICO-BOTANICAL SOCIETY OF VIENNA.

CONTINUED BY

G. B. SOWERBY, F.L.S.

" Each shell, each crawling insect holds a rank
 Important in the plan of Him who formed
 This scale of beings; holds a rank, which lost,
 Would break the chain, and leave behind a gap
 Which Nature's self would rue."
Stillington.

LONDON:

L. REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.

1873.



MONOGRAPH

OF THE GENUS

PHILINE.

"Oh! what a happy life were mine
Under the hollow-hung ocean green."—*Lennyson*.



1



2 a



3 a



4



5 a



6 a



7 a



8 a

PHILINE.

PLATE I.

Genus PHILINE. *Ascanius*,

Teste spiralis, patelliformis, ovata, vel subquadrata, alba, tenuis, spirâ rotatâ, antrochilus parvis, junioribus parvis, majori, latè aperta.

Shell spiral, patelliform, ovate or subquadrate, white, thin, spire concealed, whorls few, the earlier ones small, the last large, widely open.

Besides the *Philine aperta* of our own coasts, we possess several small and very interesting species, such as *Ph. Cretica*, *Ph. prasinosa*, and others well known to British naturalists. It is difficult to distinguish by the shells alone the large Australian species from the Mediterranean and British *Ph. quadripartita* and *Ph. aperta*, for the variations in form are repeated in each species. Although the fourteen species now enumerated exhaust the list of those that are now known, there can be no doubt that the number of existing species must in reality be much greater than have not been brought to light, owing to the concealment of the shell by the animal integument.

Species 1. (Mus. Brit.)

PHILINE PLANCIANA. *Ph. testâ oblongâ, subquadratâ, levigatâ, lateribus rectiusculis, labio exteriori posticè subtruncato, spirâ medio subcontractâ.*

PLANCHE'S PHILINE. Shell oblong, subquadrate, smooth, sides rather straight, outer lip posteriorly subtruncated, slightly contracted above the centre.

PHILIPPI. ERDM. Moll. Sic. i. p. 94.

Philine quadripartita f. A. Adams, not Ascanius.

Hab. British Isles. Mediterranean. Philippines.

The figure in Chemnitz referred to as the *Philine quadripartita* of Ascanius certainly represents the prevailing form of the common British and Mediterranean shell.

Species 2. (Fig. a, b, c, Mus. Sowerby.)

PHILINE APERTA. *Ph. testâ ovato-rotundatâ, albâ, leviter undatâ; lateribus rotundatis, labio exteriori posticè*

elevato, subacuminato, subcontracto, antro latè sub-contracto, anfractu penultimo angustato.

THE OPEN PHILINE. Shell ovately rounded, white, lightly undulated; sides rounded, outer lip posteriorly elevated, subacuminated, rather contracted, anteriorly widely subemarginated, penultimate whorl narrow.

BULLA APERTA. *Linnaeus*. *Systema Naturæ*.

Bulla quadripartita. Ascanius.

Bulla Schæferi. Philippi.

Lobaria quadripartita. Muller.

Hab. Great Britain. Mediterranean. Cape of Good Hope? Philippines?

This being the prevailing form of British and Mediterranean Philine, the original name ought to be retained, rather than the new one adopted by Philippi.

Species 3. (Mus. Sowerby.)

PHILINE COREANICA. *Ph. testâ oblongâ, rectiusculâ, subcomplanatâ, pallidissimè fulvâ, posticè angustiusculâ, lateribus rectiusculis, apertura posticè subcontractâ, atrinque rotundatâ.*

THE KOREAN PHILINE. Shell oblong, rather straight, rather flattened, very pale fawn, rather narrow behind, sides rather straight, aperture contracted posteriorly, rounded at both ends.

A. ADAMS. Sowerby's Thesaurus; species 139. *Bulla*, fig. 166.

Hab. Korean Archipelago.

Species 4. (Fig. a, b, Mus. Sowerby; fig. c, Mus. Cum. in Brit.)

PHILINE ANGANI. *Ph. testâ magna, ovato-subquadratâ vel acuminatâ, albâ, spirâ levè substriatâ, concentricè leviter undulatâ, apertura latè, posticè subquadratâ, elevatâ; anfractu penultimo elongato.*

ANGAN'S PHILINE. Shell large, ovately subquadrate, or acuminated, white, spirally substriated, concentrically slightly undulated, aperture wide, poste-

riorly subquadrate, elevated; penultimate whorl elongated.

ADAMS. Pro. Zool. Soc.

Hab. Port Lincoln, &c., Australia.

It is difficult, if not impossible, to distinguish the variable forms of this Australian species from *Ph. aperta*, some of them taking the straighter character of Philippi's *Ph. Plancinae*. The specimens, however, attain a larger size than either of the above mentioned species, and it is probable, from the locality, that the animal is different.

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

PHILINE TRUNCATISSIMA. *Ph. testâ brevis, subquadrata, subcompressâ, tenui, diaphanâ, limis concentricis*

opacis distantibus, anticè angulatis notatâ; apertura anticè latissimâ, latè truncatâ; labio externo angulato.

THE VERY TRUNCATE PHILINE. Shell short, subquadrate, subcompressed, thin, diaphanous, marked with distant concentric opaque lines which are angular in front; aperture very wide in front, widely truncated; outer lip angular.

SOWERBY.

Hab. — ?

This transparent little species is remarkable for the truncated character of the widened anterior, producing an angle on the lower part of the outer lip; which is beautifully indicated by the opaque white lines delineating the edges of former outer lips.

70

71

72

73

74

75

76

77

78

P H I L I N E.

PLATE II.

Species 6. (Mus. Cum. in Brit.)

PHILINE SCUTIFORM. *Ph. testâ ovato-subquadratâ, antice vix truncatâ, albâ, subpellucidâ, fasciis binis subincrassatis, stria punctatis, obtusâ supra truncatâ, apice angustâ, emata, depressâ; labro posticâ parvâ productâ, choro leviter impresso, subrecto; margine columellari raddè arcuato, apertura raddè expansâ.*

THE SHIELD PHILINE. Shell ovately-subquadrate, anteriorly very slightly truncated, white, subpellucid, sculptured with two thick bands and punctured striae alternately, often thinner; apex narrow, bordered, depressed; outer lip a little produced posteriorly, then slightly pressed inwards, nearly straight; columellar margin arched, aperture much expanded.

LOYEN. *Ibid.* M.-H. Scandin., p. 9.

Hab. Greenland.

More quadrate in form than *Philina catenata*, and having the whorls bordered with two thickened bands.

Species 7. (Fig. a, b. Mus. Jeffreys.)

PHILINE NYDRA. *Ph. testâ ovatoâ, oblongo-subquadratâ, pellidâ, apertura posticâ subcontractâ, antice expansâ, subreticulatâ; labro externo posticâ depresso, vix angulato; spirâ basiâ celatâ.*

THE SHINING PHILINE. Shell minute oblong-subquadrate, smooth, aperture posteriorly subcontracted, anteriorly expanded, a little rounded; outer lip posteriorly depressed, very little angulated; spire not hidden.

JEFFREYS. *British Conchology.*

Hab. British Isles.

Species 8. (Mus. Cum. in Brit.)

PHILINE CATENA. *Ph. testâ parvâ, albâ ovato-subpyramidatâ, spirâ vix minuscâ truncatâ, apertura posticâ contractâ, antice subexpansâ, labro externo posticâ rotundâ, basiâ elevato; angustâ punctatâ subfusiformi.*

THE CHAIN PHILINE. Shell small, white, ovately-subpyramidal, spirally minutely chain-marked, aperture posteriorly contracted, anteriorly a little expanded, outer lip posteriorly rounded, not elevated; penultimate whorl rather fusiform.

MONTAGNE. (*Bullæa*) *Testacea Britannica*, pl. 7, f. 7.

Bullæa catenifera. Macgillivray.

Hab. British Islands.

This little shell must not be confounded with the *Scaphander scabra*, or *punctata*, which is ornamented by a similar chain-like sculpture, but which is much more Scaphander-like in form, and has protruding denticles on the outer edge of the lip.

Species 9. (Mus. Cum. in Brit.)

PHILINE PUNCTATA. *Ph. testâ ovato-oblongâ, tenuissimâ, albâ, pellucidâ, nitidâ, lineis punctatis spirâlibus sculptâ, posticâ contractâ, obtusâ, vix umbilicatâ, antice expansâ, rotundatâ.*

THE PUNCTURED PHILINE. Shell ovate-oblong, very thin, white, pellucid, smooth, sculptured with spiral lines, posteriorly contracted, obtuse, scarcely umbilicated, anteriorly expanded, rounded.

A. ADAMS. *Trans. Linn. Soc.*, pl. 1, f. 6-8.

Hab. Great Britain.

Species 10. (Mus. Cum. in Brit.)

PHILINE FUSINOSA. *Ph. parvâ, sublobosâ, bifasciatâ subretinens, minutissimâ reticulatâ, supra medium subcontractâ; margine columellari raddè arcuato subrecto.*

THE PLUM-COLOURED PHILINE. Shell small, subglobose, plum-coloured in two bands, a little constricted above the middle, very minutely reticulated, columellar margin much arched, subreflected.

CLARK. (*Bullæa*) *Zoological Journal*, 1827, p. 339.

Hab. Great Britain.

Species 11. (Mus. Cum. in Brit.)

PHILINE ORIENTALIS. *Ph. testâ magnâ, albâ, subcompressâ, ovato-rotundatâ, crassiusculâ, subpacâ, con-*

centricè sublivatâ; aperturâ latissimâ, labio externo posticè subproducto, anticè rotundato, margine columellari caldè excavato.

THE ORIENTAL PHILINE. Shell large, white, subcompressed, ovately rounded, rather thick, somewhat opaque, concentrically ridged; aperture very wide, outer lip posteriorly slightly produced, anteriorly rounded, columellar margin much excavated.

ADAMS. MS. Mus. Cam.

Hab. —?

Wider and of a more rounded oval form than *Ph. aperta*, *Anguillæ*, &c.

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

PHILINE ANGULATA. *Ph. testâ parvâ, subquadratâ, subcompressâ, diaphanâ, posticè fasciâ opacâ rimatâ; spirâ partim conspicuâ, truncatâ; labio externo posticè depresso, cuneato, anticè obliquè truncato.*

THE ANGULAR PHILINE. Shell small, subquadrate,

subcompressed, diaphanous, posteriorly bordered with an opaque band; spire partly visible, truncated; outer lip posteriorly rather depressed, cuneated, anteriorly obliquely truncated.

JEFFREYS. British Conchology.

Hab. Great Britain.

Species 13. (Mus. Jeffreys.)

PHILINE QUADRATA. *Ph. testâ parvâ, albâ, subquadratâ, posticè contractâ, truncatâ, anticè expansâ, latè truncatâ, subangulatâ; anfractu ultimo subcetricoso, margine columellari subortuo, excavato, tenuissimo.*

THE QUADRATE PHILINE. Shell small, white, subquadrate, posteriorly contracted, truncated, anteriorly expanded, widely truncated, rather angular; last whorl rather ventricose, columellar margin slightly tortuous, excavated, very thin.

JEFFREYS. British Conchology.

Hab. Great Britain.

MONOGRAPH

OF THE GENUS

BULLINA.

Like the long waves on a sea-beach,
Where the sand as silver shines,
With a soft monotonous cadence
Flows its unrhymed lyric lines."—*Longfellow.*



1



2 a



2 b



3



4 a



4 b



5

BULLINA.

Genus BULLINA. *Férussac.*

Testa Bullaformis, plerumq; ovali, ovata, spirāliter subovata, post columellam subamblicata; spirā exsertā; columellā plus minus; tortuā.

Shell Bulla-shaped, generally solid, ovate, spirally sulcated, slightly undulated behind the columella; spire produced; columella more or less tortuous.

Three species of this genus were published in Mr. A. Adams's Monograph from Japan, Ceylon, and Australia. The two species now added are from the Sandwich Islands. In the solidity of the grooved shell and the exertion of spire, the *Bullina* differ from the generality of the family. The animal does not appear to be yet known.

Species 1. (Mus. Cuming in Brit.)

BULLINA SCABRA. *Bul. testā ovati, scabri, spirāliter tenuissimè lirati, stria longitudinalibus decussati; alba, lineis lineis perlistriatibus spirāliter cinctā, lineis flammatis undatis roseis longitudinaliter ornati; spirā parvā elevatā, obtusā; columellā sinuosa reflectā.*

THE SCABROUS BULLINA. Shell ovate, scabrous, spirally very finely lirated, decussated with longitudinal stria; whitish, girt with two very distant spiral lines, longitudinally ornamented with red flame-like, undulated lines; spire a little elevated, obtuse; columella sinuous, reflected.

CHEMNITZ. Conchology, tab. 146, f. 1352, 1353.

Hab. Japan.

The scabrous *Bullina* differs from the lined one in the minute decussation of the ribs and in being more ovate in form. The longitudinal lines are also continuous, and more flame-like.

Species 2. (Fig. a, b. Mus. Sowerby.)

BULLINA LINEATA. *Bul. testā subovata, ventricosa, luteo-roseo-alba, lineis rubris ciciculis duabus spirāliter*

et altis longitudinalibus, subcaudatis, distantibus, disjunctis acutis, spirāliter costatis, costis brevibus, interstitiis punctatis; spirā obtusā, subelevatā, columellā uniplicatā, tortuā.

THE LINEATED BULLINA. Shell subovate, ventricose, yellowish or rosy white, ornamented with two bright red lines and others longitudinal, slightly waved distant, disjoined; spire obtuse, rather elevated; columella uniplicate, tortuous.

WOOD (Bulla). Ind. Test., suppl. pl. 3.

Bulla undata, Brugniere.

Hab. Australia.

Instead of the scabrous striae of the last species, we have here smooth ribs with punctured interstices.

Species 3. (Mus. Cuming in Brit.)

BULLINA BRUGNIEREI. *Bul. testā oblongo-ovata, pallidā, fuscis carmineis duabus latis spirāliter cinctā, inter fascias lineis arcuatis rubris distantibus notatā; spirāliter costatā, costis scabris, planulatis, interstitiis lineis elevatis decussatā; spirā prominulā; apicē obtuso, anfractibus tribus rotundis; apertura antice producti; labio acuto intus sulcato, columellā reflectā elongatā, tortuā.*

BRUGNIERE'S BULLINA. Shell oblong-ovate, pale, spirally girt with two broad bands of carmine, marked between the bands with distant arched red lines; spirally ribbed, ribs scabrous, flattened, interstices decussated with elevated lines; spire rather prominent; apex obtuse, with three rounded whorls; aperture anteriorly produced; outer lip acute, sulcated within, columella reflected elongated, tortuous.

A. ADAMS. Sowerby's Thesaurus Conchyliorum.

Bulla, No. 3.

Hab. Ceylon.

Instead of the distant spiral red lines of *Bullina lineata*, this species presents two broad bands.

BULLINA.

Species 4. (Mus. Brit.)

BULLINA VITREÆ. *Bul. testâ, ovatâ, tenui, pellucidâ, scabâ, spirâliter tenuiter costatâ, albâ, nonnunquam lineis duabus spirâlitibus distantibus griseis notatâ; columellâ truncatâ, spirâ breviusculâ.*

THE GLASSY BULLINA. Shell ovate, thin, pellucid, scabrous, spirally finely ribbed, whitish, sometimes marked with two spiral distant grey lines: columella truncated, spire rather short.

PEASE, — ?

Hab. Sandwich Islands.

There are two specimens of this very pellucid shell in the case at the British Museum, one only of which has the two spiral distant lines.

Species 5. (Mus. Brit.)

BULLINA LAUTA. *Bul. testâ ovatâ, obtusâ, spirâliter bilineatâ, longitudinaliter undato-lineatâ, spirâliter tenuiter costatâ; spirâ brevissimâ, obtusâ, columellâ tortuâ.*

THE NEAT BULLINA. Shell ovate, obtuse, spirally bilineated, longitudinally wavy lineated, spirally finely ribbed; spire very short, obtuse, columella tortuous.

PEASE, — ?

Hab. Sandwich Islands.

The peculiar shortness and obtuseness of the spire, and the comparative closeness of the sculpture, may be sufficient to distinguish this species from the preceding.

MONOGRAPH

OF THE GENUS

NUCULA.

" Within the shadow of the ship
I watch'd their rich attire—
Blue, glossy green, and velvet black," *Coleridge*



N U C U L A.

PLATE I.

GENUS NUCULA. LAMARCK.

Testa bivalvis, binusculari, plus minuscule ovato-triangulari, utrinque plurimque obtusa, epidermide imbricatâ; latere postico breviori, apicibus versus lateram posticam inclinatâ, latib. superperpendic., margine cartilagineo dentibus uniuscujusque acutis et statibus seriatis dispositis, utrinque aruata; ligamentum externum nullum. Cartilago elastica in fossam medianam disposita.

Shell bivalve, binuscular, more or less ovately triangular, generally closed at both ends, covered with an epidermis; posterior side shorter, with apices turned towards the posterior side; pearly within, the hinge margin armed with numerous sharp or standing teeth placed in a row on each side; no external pit. An elastic cartilage placed in a central pit.

The thirty-three species included in the genus restricted as above, form a very fairly circumscribed group. The shortness of the posterior side towards which the apex turns in all the species, and the closed, or nearly closed margins, together with the general appearance, make every *Nucula* distinguishable at a glance from *Leda*, *Yoldia*, &c. The geographical range of true *Nucula* is perhaps wider than that of other genera of the same family. Our own seas produce five, of which several are also tenants of the Mediterranean and Egean Seas. One or two reach the Arctic circle, while several others extend southwards to our antipodes. China and Japan in the east balance N. America in the west: each contributes its quota to the little group.

Species 1. (Mus. Cuming de Brit.)

NUCULA CONVEXA. Nuc. testa oblique ovata, solidâ, levigatâ, convexâ, fulca, cœculis pallide fuscis, concentricè obscurè lineatâ; latere postico subangulato, subproducto, rotundis; latere anticè obliquè producto, margine dorsali convexo, margine ventrali anticè convexo; apicibus rotundis, epidermide ignatâ.

THE CONVEX NUCULA. Shell obliquely ovate, solid, smooth, convex, fulvous, lightly banded with blue, concentrically obsolete ridged; posterior side subangular, a little produced, rounded; anterior side obliquely produced, dorsal margin convex, ventral margin anteriorly convex; apices rounded; epidermis unknown.

SOWERBY. Conc. Illust., f. 2, Thes. Conc. Hailey - ou Nucula, p. 28.

Hab. China (Straits of Malacca).

A smooth, full shell, only known by specimens from which the epidermis has been removed.

Species 2. (Mus. Sowerby.)

NUCULA NUCLEUS. Nuc. testâ triangulari, subelevatâ, sublevigatâ, obscure tenuissimè striatâ et ad margines laterales concentricè lineatâ, subventricosâ, solidâ; latere postico brevi, subperpendiculari, angulato; latere anticè acuminatum producto, margine dorsali declivè. Intus margine ventrali crenato.

THE NET NUCULA. Shell trigonal, subelevated, rather smooth, obscurely very finely striated and concentrically lined at the lateral margins, rather ventricose, solid; posterior side short, rather perpendicular, angulated; anterior side acuminately produced, dorsal margin sloped. Ventral margin crenulated within.

LINNEË'S (Araç), Systema Nature.

Glycymeria argentea, Da Costa.

Nucula Martiniæ, Lamarck.

Hab. British and European Seas.

Species 3. (Mus. Sowerby, &c.)

NUCULA DECUSSATA. Nuc. testâ solidâ, triangulari, elevatâ, subcompressâ, rugis concentricis et stris radiantibus decussatâ; margine ventrali crassè crenato. Intus marginâ, concentricè, medio levigatâ, margine crenato; apicibus elevatis, subacuminatis, lateribus declivèis.

THE DECCASSATED NUCULA. Shell solid, trigonal, elevated, rather compressed, deccassated with concentric ridges and radiating striae; ventral margin thickly crenated; lunule large, convex, smooth in the middle, corrugated at the margin; apices elevated, subacuminated, sides sloped.

SOWERBY. Conc. Illust., f. 18. Thes. Conc. Hanley, Sp. 1.

Nucula sulcata, Philippi.

Hab. British and Mediterranean Seas.

Species 4. (Mus. Cuming in Brit.)

NUCULA MIRABILIS. *Nuc. testā obliquē trigonā, subcompressā, solidā; divaricatim costellatā, costellis angulos acutos in medio teste formatibus; latere postico brevi, obscurē biangulatā; latere antico obliquē acuminatim producto.*

THE WONDERFUL NUCULA. Shell obliquely trigonal, subcompressed, solid; divergently ribbed; ribs forming acute angles in the middle of the shell; posterior side short, obscurely biangular; anterior side obliquely acuminately produced.

ADAMS AND REEVE. Zool. Samarang, 75, pl. 21, f. 8. *Hab.* Japan.

The sculpture of this shell is very beautiful. It is one of the largest species.

Species 5. (Mus. Cuming in Brit.)

NUCULA CUMINGI. *Nuc. testā ovatā, utrinque subacuminatā, subcompressā, levigatā; latere postico acuminatim producto, lunulā parvā lanceolatā, planulatā; apice acuminato; margine ventrali semicirculari; latere antico producto, ad terminum subacuminato, margine dorsali subcrenulatō, areā impressā ad marginem convexā.*

CUMING'S NUCULA. Shell ovate, subacuminated at each end, subcompressed, smooth; posterior side acuminately produced, lunule small, lanceolate, flattened; apex acuminated; ventral margin semicircular; anterior side produced, a little acuminated at the end; dorsal margin slightly crenulated; with an impressed margin convex at the margin.

HINDS. Proc. Zool. Soc., 1843, p. 97.

Hab. Indian Archipelago.

A very smooth shell, in which the posterior side is a little more produced than usual, and in which both ends are acuminated.

Species 6. (Mus. Cuming in Brit.)

NUCULA INFLATA. *Nuc. testā ovato-subrotundā, levigatā, inflatā, obtusā; latere postico brevissimo, lunulā indistinctā, planulatā, apice obtuso, margine ventrali convexo; latere postico obliquē tumido, vix angulato, margine dorsali rādīe convexo.*

THE INFLATED NUCULA. Shell ovately subrotund, smooth, inflated, obtuse; posterior side rather short, lunule indistinct, flattened, apex obtuse, ventral margin convex; posterior side obliquely tumid; scarcely angular; dorsal margin very convex.

HANDCOCK. Ann. of Nat. Hist., 1846, p. 333, pl. 5, f. 13, 14.

Nucula obliquata, Beck.

Hab. Arctic Seas.

More swollen, obtuse, and tumid than *Nucula tenuis*, which it otherwise resembles.

Species 7. (Mus. D'Orbigny in Brit.)

NUCULA PUELCHA. *Nuc. testā obliquē donaciformi, solidā, inflatā; levigatā, albidā, versūs marginem ventralem et ad latera concentricē rugatā; latere postico brevissimo, truncato; apice obtuso; latere antico obliquē producto; margine ventrali anticō obliquē convexo.*

THE PUELCHA NUCULA. Shell obliquely donaciform, solid, inflated; smooth, whitish, concentrically wrinkled towards the ventral margin and at the sides; posterior side very short, truncated; apex obtuse; anterior side obliquely produced; ventral margin anteriorly obliquely convex.

D'ORBIGNY. Amér. Mérid., 624, pl. 84, f. 24-6.

Hab. San Blas, Puelcha, &c., N. Patagonia, Central America

An oblique donaciform shell, much inflated towards the anterior side.



N. a.



9.



10.



11.



12.



13.



14.



15.



16.



N. b.

N U C U L A.

PLATE II.

Species 8. (Fig. *A, B*, Mus. Sowerby.)

NUCULA MITRATA. *Nuc. testâ obliquè domatiformi, ventricosi, nitidissimâ; latere postico elongato, margine dorsali denticulato, costâ costulâ, depressâ; termino truncato, margine ventrali curvato arcuati, umbonibus elevatis, terminalibus, lateri antico brevissimis, truncato.*

THE MITE NUCULA. Shell obliquely wedge-shaped, ventricose, very smooth; posterior side elongated, dorsal margin denticulated, convexly sloped, depressed; end acuminate, ventral margin sloped upwards, umbos elevated, terminal, anterior side very short, truncated.

HINDS. Proc. Zool. Soc., 1843.

Nucula gibba, A. Adams.

Hab. Straits of Malacca, *Hills*, Australia, *Strangé*.

Species 9. (Mus. Cuming in Brit.)

NUCULA STRIOLATA. *Nuc. testâ planiusculâ, subtriangulâ, pallidè olivaceâ, obliquâ, concentricè cordatim striatâ, latere postico producto, margine dorsali declivi, termino subacuminato, margine ventrali convexissimo; latere antico brevi, arââ humiliter prominulâ.*

THE STRIOLATED NUCULA. Shell rather flattened, sub-triangular pale olive, oblique, very minutely radiately striated; posterior side produced, dorsal margin sloped, end subacuminated; ventral margin rather convex; anterior side short, luminal area prominent.

A. ADAMS. Proc. Zool. Soc., 1856, p. 53.

Hab. New Zealand.

Species 10. (Mus. Cuming in Brit.)

NUCULA SELCATA. *Nuc. testâ obliquâ, suborotâ, crassâ, ventricosâ, sulcis fluctuosis umbatâ concentricè sculptâ; latere postico subtriangulo, margine dorsali declivi; latere antico brevissimo; lunulâ parvâ; umbonibus prominensibus, obliquis, amplis.*

THE SCLATED NUCULA. Shell oblique, subovate, thick, ventricose, sculptured concentrically with flexuous, unlated sulci; posterior side sub-triangular, dorsal margin sloped; anterior side rather short; lunule small; umbos prominent, oblique, full.

A. ADAMS. Proc. Zool. Soc., 1856, p. 53.

Hab. New Zealand.

Species 11. (Mus. Cuming in Brit.)

NUCULA BELOTTII. *Nuc. testâ inflatâ, tenui, brevi, elevatâ, nitidissimâ, olivaceo-virescenti, ad umbones levigatâ, medio et infra tenuiter concentricè rugatâ; latere postico lato, margine dorsali declivi, angulato, termino rotundato, obtuso; latere antico brevi, truncato; lunulâ elongatâ curvâ; margine ventrali postico valdè convexo, umbonibus elevatis, obliquis, subterminalibus.*

BELOTT'S NUCULA. Shell inflated, thin, short, elevated, very shining, olive-green, smooth at the umbos, finely concentrically wrinkled in and below the middle; posterior side wide, dorsal margin sloped, angular, end rounded, obtuse; anterior side short, truncated; lunule elongated, convex; ventral margin posteriorly very convex; umbos elevated, oblique, subterminal.

A. ADAMS. Proc. Zool. Soc., 1856.

Hab. Arctic Ocean.

Species 12. (Mus. Sowerby.)

NUCULA RADIATA. *Nuc. testâ obliquè domatiformi, solidâ, concentricè ad latera tenuissimè levatâ, radiatim rosso fasciatâ; latere postico obliquè producto, infââ medio ad terminum subacuminato, margine dorsali usque ad terminum convexo declivi, margine ventrali arcuati, medio convexo, umbonibus subterminalibus, elevatis, latere antico truncato, lunulâ rive convexâ.*

THE RAYED NUCULA. Shell obliquely wedge-shaped, solid, concentrically very finely ridged at the sides, rayed with pink; posterior side obliquely produced, subacuminated at the end lower than the

NUCULA.—PLATE II.

centre, dorsal margin convexly sloped as far as the termination, ventral margin sloped upwards, convex in the middle; umbones subterminal, elevated, anterior side truncated, lunule scarcely convex.

HANLEY, Sowerby's Thesaurus Conchyliorum, Nucula, sp. 4, f. 123, 124.

Area nucleus, Torton.

Nucula Magaribea, Sowerby.

Hab. Britain; S. Europe.

More compressed and more obliquely produced than *Nuculus*. Some specimens occur in which the cuticle is very dark, totally obscuring the rays.

Species 13. (Mus. Cuming in Brit.)

NUCULA GRAYI. *Nuc. testis ovato, valde transversa, utriusque subacuminati, tenui, subinflato, nitidissimi, olivacei, latere postico producto, area dorsali compressa, elevata, subuliformi, termino acuminato: latere antico subproducto, convexo, lunula brevi, circumscripta.*

GRAY'S NUCULUS. Shell ovate, very transverse, slightly acuminated at both ends, thin, rather inflated, very smooth, olive: posterior side produced, dorsal area compressed, elevated, subuliform, end acuminated; anterior side a little produced, cuneated; lunule short, defined.

D'ORBIGNY, *Amérique Meridionale*, p. 53.

Hab. New Zealand.

Species 14. (Mus. Cum. in Brit.)

NUCULA OBLIQUA. *Nuc. testis solidi, moynei, obliqui ovato, subcompressi, subuligata, lunula radiata, intus argentea: latere postico ovato; latere antico truncato, umbonibus terminalibus.*

THE OBLIQUE NUCULA. Shell solid, large, obliquely ovate, subcompressed, rather smooth, not rayed, silvery within: posterior side produced, ovate, anterior side truncated, umbones terminal.

LAMARCK, *Animaux sans vertebres*.

Hab. Australia.

A larger and more solid shell than *Nucula radiata*, and more ovate in general form. It is not at all rayed.

Species 15. (Mus. Sowerby.)

NUCULA STRANGEL. *Nuc. testis obliqui, tenui, oblongi, auro-subolivacei, nitidi, vie concentricè striati; latere postico producto, margine dorsali compressi, subulati, margine ventrali post medium convexi; latere antico angustissimo, brevi, cuneato, lunula parva.*

STRANGE'S NUCULA. Shell oblique, thin, oblong, golden-olivaceous, smooth, scarcely concentrically striated; posterior side produced, dorsal margin compressed, subulate, ventral margin convex just the middle, anterior side rather narrow, short, cuneated, lunule small.

A. ADAMS, *Proc. Zool. Soc.*, 1856, p. 52.

Hab. New Zealand.

Species 16. (Mus. Sowerby.)

NUCULA NITIDA. *Nuc. testis obliquè subtrigoni, subcompressi, lutei, griseo fasciati, obsolètissimè concentricè et radiatum striati, latere postico subacuminato, margine dorsali vie arcuato, declivi, margine ventrali leviter convexo; umbonibus elevatis; latere antico infra convexo, lunula indistincta.*

THE SHINING NUCULA. Shell obliquely subtrigonal, subcompressed, yellowish, banded with grey very obsoletely concentrically and radiately striated, posterior side subacuminated, dorsal margin scarcely arched, sloped, ventral margin slightly convex, lunule indistinct.

OWERBY, *Conchological Illustrations*, Nucula, No. 29.

Hab. Britain, &c.



NUCULA.

PLATE III.

Species 17. (Fig. *a, b*, Mus. Sowerby.)

NUCULA PROXIMA. *Nuc. testâ parviusculâ, convexâ, sub-
ligatâ, declivâ, ventricosâ, olivaceo-cinereâ, umbilicâ
concentricâ licatâ; latere postico obliquè subcon-
vinnato, angulato, post æcunâ subglabato, umbonibus
tenuis, elevatis, subterminalibus; latere antico
angusto, brevissimo, lunulâ prominenti, brevi, sulco
circumscriptâ.*

THE NEIGHBOURING NUCULA. Shell rather small, thick,
rather trigonal, elevated, ventricose, ashy-olive,
minutely concentrically ligated; posterior side
obliquely subemminated, angular, rather flattened
behind the angle; umbones small, elevated, sub-
terminal; anterior side narrow, very short, hume-
prominent, short, circumscribed by a groove.

See Journal of Natural History Society, Philadelphia,
vol. ii. p. 270.

Hab. N. America.

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

NUCULA DELPHINOIDES. *Nuc. testâ minutâ, subobliquâ,
subtrigoniâ, brevi, alidâ, ventricosa, ligatâ, concen-
tricâ minutâ striatâ; umbonibus prominentibus;
latere postico subconvinnato; latere antico brevissimo,
lunulâ angulâ, elongatâ.*

THE DOLPHIN-TOOTHED NUCULA. Shell minute, sub-
oblique, subtrigonal, short, elevated, ventricose,
smooth, concentrically minutely striated; umbones
prominent; posterior side somewhat rounded;
anterior side very short, hume full, elongated.

MIGHELS. Boston Journal of Natural History, iv. p. 49.
Hab. N. America.

Species 19. (Mus. Cuming in Brit.)

NUCULA CANTANEA. *Nuc. testâ perobliquâ, brevi, ele-
vatâ, compressâ, licigatâ, costatâ; latere postico
validè declivi, infra subconvinnatâ; umbonibus
parvis, terminalibus; latere antico ad marginem
ventralum acclivi, lunulâ parvâ.*

THE CHESTNUT NUCULA. Shell very oblique, short,
elevated, compressed, smooth, chestnut-coloured;
posterior side much sloped, subemminated below;
umbones small, terminal; anterior side sloped up-
wards at the ventral margin, hume small.

A. ADAMS. Proc. Zool. Soc., 1856, p. 53.

Hab. New Zealand.

Species 20. (Mus. Cuming in Brit.)

NUCULA TESCIS. *Nuc. testâ ovatâ, inflatâ, tenui, nili-
dissimâ; latere postico obliquè declivi, margine
dorsali subangulato, subconvinnato, termino subconvin-
nato; latere antico brevissimo, lunulâ humâ pro-
minenti, elongatâ.*

THE THIN NUCULA. Shell ovate, inflated, thin, very
sluving; posterior side obliquely sloped, dorsal
margin angular, slightly arched, end subconvin-
nated; anterior side very short, hume not pro-
minent, elongated.

MONTAGU. Testacea Britannica, sup. p. 56, pl. 29, f. 1.
Hab. Britain, Europe.

Species 21. (Mus. Cuming in Brit.)

NUCULA SIMPLEX. *Nuc. testâ ovatâ, licigatâ, pallidâ,
tenuissimâ, inflatâ; latere postico productâ; mar-
gine dorsali declivi, convexâ; latere antico brevissi-
mo, truncato, umbonibus parvis, terminalibus;
lunulâ parvâ, brevi.*

THE SIMPLE NUCULA. Shell ovate, smooth, pale, very
thin, inflated, posterior side produced, dorsal
margin sloped, convex, anterior side rather short,
truncated, umbones small, terminal, hume small,
short.

A. ADAMS. Proc. Zool. Soc., 1856, p. 52.

Hab. Sidney, Australia.

Species 22. (Fig. *a, b*, Mus. Sowerby.)

NUCULA FAULLEA. *Nuc. testâ minutâ, elevatâ, obliquè
subtrigoniâ, licigatâ, tenuissimâ, subconvinnâ; latere
postico validè declivi, prope marginem dorsalem un-*

gulate, ad terminum subacuminatum, latere antico subrecedente, umbonibus terminalibus, elevatis, lunulâ parvâ.

THE LITTLE NUCULA. Shell minute, elevated, obliquely subtriangular, smooth, very thin, of a rather ashy colour; posterior side much sloped, angular near the dorsal margin, subacuminated at the end; anterior side rather receding, umboes terminal, elevated, lunule small.

A. ADAMS. Proc. Zool. Soc., 1856, p. 52.

Hab. Japan.

This very minute *Nucula* is of a pale ashy colour, and semi-pellucid.

Species 23. (Mus. Cuming in Brit.)

NUCULA PAYTENSIS. *Nuc. testâ obliquè oblongâ, subtriangulâ, compressâ, solutâ, minutè liris concentricis*

crenulatis et striis radiantibus decussatâ; latere postico declivi, vix convexo, termino infrâ subacuminato, margine ventrali leviter convexo; umbonibus terminalibus elevatis; latere antico truncato.

THE PAYTI NUCULA. Shell obliquely oblong, subtriangular, compressed, solid, minutely decussated with concentric crenulated ridges and radiating striae; posterior side sloped, scarcely convex, the end subacuminated below, ventral margin slightly convex; umboes terminal, elevated; anterior side truncated.

A. ADAMS. Proc. Zool. Soc., 1856, p. 51.

Hab. Payti, Peru.

More oblong, compressed, and distinctly decussated than *Nucula crenulata*, with which M. Hanley at first associated it.



N U C U L A.

PLATE IV.

Species 24. (Mus. Cuming in Brit.)

NUCULA PISUM. *Nuc. testâ minutissimâ, ventricosâ, brevî, subobliquè ovatâ, pallidè olivaceâ rive nitidâ, rugis elevatis, concentricis et striis radiatibus decussatâ; latere antico subtruncato, laevitâ amplâ.*

THE PEA NUCULA. Shell very minute, ventricose, short, subobliquely ovate, pale olive, scarcely shining, decussated with elevated concentric, crenulated wrinkles and radiating striae; anterior side subtruncated, humile full.

SOWERBY. Proc. Zool. Soc., 1832.

Nucula semi-ovata, D'Orbigny.

Hab. Valparaiso, Chili.

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

NUCULA CRENULATA. *Nuc. testâ minutâ, obliquè subtrigoniâ, rugis elevatis concentricis concentricis et striis radiatibus decussatâ; latere postico calidè declivi, margine dorsali convexo, crenulato; latere antico brevissimâ, umbonibus amplis, elevatis, tumidis; laevitâ amplâ, crenulatâ.*

THE CRENULATED NUCULA. Shell minute, obliquely subtrigonal, decussated with numerous elevated concentric wrinkles and radiating striae; posterior side much sloped, dorsal margin convex, crenulated; anterior side very short, umbones full, elevated, tumid; humile full, crenulated.

A. ADAMS. Proc. Zool. Soc., 1860.

Hab. Guadalupe.

Species 26. (Mus. Cuming in Brit.)

NUCULA EMBA. *Nuc. testâ minutâ, brevî, altâ, subtrigoniâ, minutissimè decussatâ; latere postico injâ acuminatâ; latere antico truncato.*

THE NARROW NUCULA. Shell minute, short, elevated, subtrigonal, very minutely decussated; posterior side acuminated below; anterior side truncated.

SOWERBY. Proc. Zool. Soc., 1832, p. 148.

Hab. West Columbia.

Species 27. (Mus. Cuming in Brit.)

NUCULA NITIDULA. *Nuc. testâ parvâ, obliquè trigoniâ, altâ, brevî, levigatâ, olivaceo-cinereâ; latere postico raldè declivi, ad terminum inferiorum subacuminatâ; latere antico truncatâ, recedenti, laevitâ convexâ, angulatâ circumscriptâ, elongatâ.*

THE BRIGHT LITTLE NUCULA. Shell small, obliquely trigonal, elevated, short, smooth, olive-ash coloured; posterior side much sloped, subacuminated at the lower termination; anterior side truncated, receding; humile very little convex, elongated, angularly defined, circumscribed, elongated.

A. ADAMS. Proc. Zool. Soc., 1856, p. 51.

Hab. New Zealand.

Species 28. (Mus. Macandrew.)

NUCULA MACANDEWII. *Nuc. testâ ovatâ, levigatâ, tenui, utrinque subacuminatâ, omninò olivaceâ; latere postico producto latiusculo, margine dorsali subcuneato, areâ marginiâ depresso, subulatâ; latere antico acuminatum paulo producto, angusto; umbonibus acuminatis.*

MACANDEW'S NUCULA. Shell ovate, smooth, thin, subacuminated at both ends, olive in every part; posterior side produced rather wide, dorsal margin a little cuneate, marginal area depressed, subulate; anterior side acuminately a little produced, narrow; umbones acuminated.

HANLEY. Proc. Zool. Soc., 1856, p. 52.

Hab. Straits of Malacca. Australia.

A much less oblique shell than *Nucula tenuis*, with the anterior side a little produced.

Species 29. (Mus. Cuming in Brit.)

NUCULA DIVERGATA. *Nuc. testâ ellipticâ, compressâ, liris a medio divergentibus sculptâ; latere postico oblongo, areâ de-cali compressâ, termino rotundâ; latere antico acuminato, paulo producto, margine humilari convexitate depresso.*

October, 1870.

NUCULA.—PLATE IV.

THE DIVERGENT NUCULA. Shell elliptical, compressed, sculptured with ridges diverging from the centre; posterior side oblong, dorsal area compressed, end rounded; anterior side acuminated, a little produced, humular margin excavately depressed.

HINDS. Proc. Zool. Soc., 1843, p. 97.

Hab. Chinese Seas.

In sculpture resembling *Nucula mirabilis*, but more cuneate, with the anterior end more produced and acuminated.

Species 30. (Mus. Belcher.)

NUCULA MAEMOREA. *Nuc. testâ ellipticâ, solidâ, albâ, sulcatâ, marmoratâ; liris ad angulum planatis; latere postico brevi, subacuminato, margine ventrali minute crenulato.*

THE MARBLE NUCULA. Shell elliptical, rather solid, whitish, sulcated, marbled; ridges flattened at the angles; posterior side short, subacuminated, ventral margin minutely crenulated.

HINDS. Proc. Zool. Soc., 1843, p. 98.

Hab. Straits of Malacca.

The description of this species as given by the late Mr. Hinds is so short, that in the absence of the specimen the precise characters cannot be stated with certainty.

Species 31. (Mus. Belcher.)

NUCULA DELIVIS. *Nuc. testâ parvâ, obliquè subtriangulâ, solidâ, epidermide tenui indurâ; latere postico valdè declivi, ad terminum rotundo; latere antico brevi, obtuso; umbonibus elevatis, rotundis.*

THE SLOPING NUCULA. Shell small, obliquely subtriangular, solid, covered with a thin epidermis; posterior side much sloped, rounded at the end, anterior side short, obtuse, umbones elevated, rounded.

HINDS. Proc. Zool. Soc., 1843, p. 98.

Hab. — ?

Species 32. (Mus. Belcher.)

NUCULA CASTRENSIS. *Nuc. testâ parvâ, elevatâ, subtriangulâ, lineis elevatis a medio divergentibus sculptâ, pallidè stramineâ fusco subseriate fasciatâ; latere postico declivi, antico subconvexo.*

THE CAMP NUCULA. Shell small, elevated, subtriangular, sculptured with raised lines diverging from the centre, pale straw banded with reddish brown; posterior side sloped, anterior side rather convex.

HINDS. Proc. Zool. Soc., 1843, p. 98.

Hab. North-West America.

With the subtriangular form of many of the smaller species, this pretty little shell has the sculpture of *Nucula mirabilis* and *N. diversicata*.



NUCULA.

PLATE V.

Species 33. (Mus. Sowerby.)

NUCULA SANA. *Nuc. testa parvâ, nitenti, olivaceâ, obliquè trispinâ, et costâ, prope umbones tumidâ, medio subcomplanatâ, latere subconvexâ; latere postico brevissimâ, perpendicularitèr, apicè obtusâ; latere antico obliquè, obtusè angulatè, convexâ.*

THE DWARF NUCULA. Shell small, shining, olivaceous, obliquely trigonal, elevated, tumid near the umbones, rather flattened in the middle, slightly golden tinted within; posterior side very short, perpendicular, apex of this; anterior side oblique, obtusely angular, convex.

HABITS. Voyage of the *Sulphur*.

Nucula Dolphinaeolata, var. Hanley.

The little shell figured in *Thesaurus* certainly appears different from *N. Dolphinaeolata*, and much more like the specimens figured in this plate, although I cannot be quite certain as to the identity.

Species 34. (Mus. Brit.)

NUCULA MALABARICA. *Nuc. testâ parvâ, trispinâ, subæquilateralè, pallidâ, tenui, concentricè finè liratâ, elevatâ; latere postico brevissimâ, infirè rotundato-subangulatâ; apicè elevatâ, acuminatâ, margine centrali subproducto, infirè acuminatâ, lateribus declivibus; margine cardiæ dilatâ, dentibus parvis.*

THE MALABAR NUCULA. Shell small, trigonal, subequilateral, pale, thin, concentrically finely lirate, elevated; posterior side rather the shorter, roundly angular below; apex elevated, acuminated, ventral margin slightly produced, acuminated below, sides sloped; hinge margin broad, teeth few.

HANLEY. Proc. Zool. Soc. 1850.

Hab. Cochin, Malabar.

A very small elevated shell, more nearly equilateral than most of the species.

Species 35. (Mus. Hanley.)

NUCULA ÆGÆENSIS. *Nuc. testâ ovatâ, subcompressâ, lavi, tenui, pallidâ, politâ; latere postico subproducto, subrotundâ, lunulâ brevi, convexâ, distinctâ; apicè prominente, margine centrali æqualitèr convexâ; latere antico producto, acuminatè, margine dorsali recto.*

THE ÆGÆAN NUCULA. Shell ovate, subcompressed, smooth, thin, pale, polished; posterior side a little produced, a little rounded, humile short, convex, distinct; apex prominent, ventral margin equally convex; anterior side produced, acuminated, dorsal margin straight.

FORBES. Report to British Association, 1843, p. 1892.

Hab. Macri and Crete, Ægean. In deep sea.

The reverse of the preceding in its lateral and perpendicular proportions.

Species 36. (Mus. Brit.)

NUCULA LAYARDI. *Nuc. testâ ovatâ, subcompressâ, atrinque acuminatâ, tenui, epidermide politissimâ subviridè inclatâ; latere postico producto, acuminatò, lunulâ brevi, circumscriptâ, apicè acuminatò, margine centrali æqualitèr convexâ; latere antico elongatò, acuminatò, avatè dorsali convexâ, ad angulum depressò.*

LAYARD'S NUCULA. Shell ovate, subcompressed, acuminated at both ends, thin, covered with a very polished greenish epidermis; posterior side produced, acuminated, humile short, circumscribed; apex acuminated, ventral margin equally convex; anterior side elongated, acuminated, dorsal arc convex, depressed at the angle.

A. ADAMS. Proc. Zool. Soc. 1856, p. 54.

Hab. Ceylon.

It is scarcely with *Nucula convexa* that this shell need be compared, as is done by its describer. It is much more closely allied to the larger species named *Nucula Cuningh.*

February, 1871.

Species 37. (Fig. a, b, Mus. Brit.)

NUCULA CORTICATA. *Nuc. testâ breviter subovatâ, tumidâ, crassâ, fulvâ; latere postico brevi, subrotundato, lunula indistinctâ, apice obtuso, margine ventrali convexo; latere antico obliquè inflato, obtusissimè angulato, margine dorsali convexo, ad terminum vie acuminato.*

THE CORTICATED NUCULA. Shell shortly subovate, tumid, thick, fulvous; posterior side short, a little rounded, lunule indistinct, apex obtuse, ventral margin convex; anterior side obliquely inflated, very obtusely angulated, dorsal margin convex, very slightly acuminated at the end.

MOLLER. Fauna Grœnlandica. Møll., p. 17.

Hab. Greenland.

Species 38. (Mus. —? figure copied.)

NUCULA PULCHRA. *Nuc. testâ ovatâ, solidâ, eadè inequaliterali, concentricè liratâ, epidermidè fuscâ indatâ; latere postico brevissimo, subperpendiculari, lunulâ parvâ, convexâ, circumscriptâ; apice obtuso; margine ventrali obliquè convexo; latere antico obliquè inflato, producto, margine dorsali convexo declivi; areâ levigatâ.*

THE BEAUTIFUL NUCULA. Shell ovate, solid, very inequilateral, concentrically lirated, covered with a brown epidermis; posterior side very short,

nearly perpendicular, lunule small, convex, circumscribed; apex obtuse, ventral margin obliquely convex; anterior side obliquely inflated, produced, dorsal margin convexly sloped, area smooth.

HINDS. Proc. Zool. Soc., 1843, p. 97. Voy. *Sulphur*, p. 63, pl. 18, f. 7.

Hab. L'Agulhas Bank. Cape of Good Hope.

This pretty species was taken at a depth of 70 fathoms.

Species 39. (Mus. Hanley.)

NUCULA ANTIPODUM. *Nuc. testâ perobliquâ, elongato-subovatâ, tenui, politissimâ, subcompressâ; latere postico brevissimo, perpendiculariter truncato; latere antico attenuato, infra ad terminum acuminato, margine dorsali angulato, declivi.*

THE ANTIPODEAN NUCULA. Shell very oblique, elongated, subovate, thin, very shining, subcompressed; posterior side very short, perpendicularly truncated, anterior side attenuated, acuminated at the end below.

HANLEY. Proc. Zool. Soc., 1860.

Hab. Australia.

This species does not seem to differ materially from *Nucula mitralis*, also an Australian shell, excepting that it is more acuminated at the anterior end and more compressed throughout.

N U C U L A.

	Plate.	Species		Plate.	Species.
<i>Ægeensis, Forbes</i>	V.	35	<i>marmorea, Hinds</i>	IV.	30
<i>antipodum, Hant.</i>	V.	39	<i>mirabilis, A. and Reece</i>	I.	4
<i>argentea, Costa</i>	I.	2	<i>mitralis, Hinds</i>	II.	8
<i>Beletii, A. Ad.</i>	II.	11	<i>nana, Hinds</i>	V.	33
<i>castanea, A. Ad.</i>	III.	19	<i>nitida, Sowerby</i>	II.	16
<i>castronensis, Hinds</i>	IV.	32	<i>nitidula, A. Ad.</i>	IV.	27
<i>convexa, Sowerby</i>	I.	1	<i>obliqua, Linn.</i>	I.	2
<i>corticata, Muller</i>	V.	37	<i>obliqua, Lamk.</i>	II.	14
<i>crenulata, A. Ad.</i>	IV.	25	<i>obliquata, Beck</i>	I.	6
<i>Cumingii, Hinds</i>	I.	5	<i>paulula, A. Ad.</i>	III.	22
<i>declivis, Hinds</i>	IV.	31	<i>Paytensis, A. Ad.</i>	III.	25
<i>deussata, Sowerby</i>	I.	3	<i>pisum, Sowerby</i>	IV.	24
<i>delphinodonta, Michels.</i>	III.	18	<i>proxima, Say</i>	III.	17
<i>divaricata, Hinds</i>	IV.	29	<i>Puelcha, D'Orb.</i>	I.	7
<i>exigua, Sowerby</i>	IV.	26	<i>puleha, Hinds</i>	V.	38
<i>gibba, A. Ad.</i>	II.	8	<i>radiata, Hant.</i>	II.	12
<i>Grayi, D'Orb.</i>	II.	13	<i>radiata, D'Orb.</i>	IV.	24
<i>inflata, Hant.</i>	I.	6	<i>simplex, A. Ad.</i>	III.	21
<i>Layardi, A. Ad.</i>	V.	36	<i>Strangei, A. Ad.</i>	II.	15
<i>Macandrei, Hant.</i>	IV.	28	<i>striolata, A. Ad.</i>	II.	9
<i>Malabarica, Hant.</i>	V.	34	<i>striolata, Phil.</i>	I.	3
<i>masparitavea, Lamk.</i>	I.	2	<i>sulcata, A. Ad.</i>	II.	10
<i>masparitavea, Sowerby</i>	II.	12	<i>tennis, Mont.</i>	III.	20



MONOGRAPH
OF THE GENUS
UTRICULUS.

"Ever drifting, drifting, drifting
On the shifting
Currents of the restless main."—*Longfellow*.



UTRICULUS.

Genus *UTRICULUS*, Brown.

Testa Bulliformis, traxis, subcylindracea, spirâ conspicuâ, lreicissimâ, anfractibus prominentibus, apertura elongatâ, labio externo supra medium producto, columellâ tenui, subortuâ.

Shell Bull-shaped, thin, subcylindrical, spire conspicuous, short, whorls prominent, aperture elongated, outer lip produced above the centre, columella sub-ortuous.

The difference between this genus and *Trocholina* is to be sought, not in the shell but in the animal, or rather in the relation of one to the other. In the former case the animal is enclosed within the shell. Of the six species, three are British, one Mexican, one Bornean, and the last of the United States.

Species 1. (Mus. Brit.)

UTRICULUS PELLUCIDUS. Utr. testâ obliquè ovato-subglobosâ, minutâ, pellucidâ, ventricosâ, lreâ, post columellam subumbilicatâ, lateribus supra medium rectiusculis, spirâ subquadratâ, brevissimâ, anfractibus apice mammillato; apertura ampli, posticè coarctatâ, anticè dilatatâ.

THE PELLUCID *UTRICULUS*. Shell obliquely ovate-subglobose, minute, pellucid, ventricose, smooth, subumbilicated behind the columella, sides rather straight above the middle; spire subquadrate, very short, with three whorls; apex mammillated, aperture large, narrowed at the back, expanded in front.

BROWN.

Amphispira hyalina, Leven.

Bulla canala, Macgillivray.

Hab. British Islands.

Species 2. (Fig. a, b, Mus. Jeffreys.)

UTRICULUS GLOBOSUS. Utr. testâ parvâ, canalicâ, lreâ, globosâ, pellucidâ, obliquè ovatâ, ventricosâ, versâs spiram subattenuatâ, post columellam subumbilicatâ; spirâ umbilicatâ, anfractibus calatis;

apertura pyriformi, labio externo supra spiram elevato.

THE GLOBOSE *UTRICULUS*. Shell small, white, smooth, pellucid, obliquely ovate, ventricose, slightly attenuated towards the spire, subumbilicated behind the columella; spire umbilicated, whorls concave; aperture pyriform; outer lip raised above the spire.

LEVEN. Ind. Moll. Scandinaviae, p. 11.

Hab. North Britain, Scandinavia.

The only species of the genus which does not show the whorls of the spire.

Species 3. (Mus. Cuming in Brit.)

UTRICULUS CECILIE. Utr. testâ cylindricâ, lreâ, tenui, epidermide olivaceâ intutâ, longitudinaliter striatâ, spirâ distinctâ, parvâ elevatâ; anfractibus quinque, suturâ corrugatâ; apertura angustâ, anticè dilatatâ; columellâ arcuatâ.

CECILIA'S *UTRICULUS*. Shell cylindrical, smooth, thin, covered with an olive epidermis, longitudinally slightly striated, spire distinct, a little elevated; whorls five, suture corrugated; aperture narrow, dilated in front, columella arched.

PHILIPPI. Enum. Moll. Siciliae.

Hab. Mediterranean. Mexico.

The most narrowly cylindrical of all the species.

Species 4. (Mus. Cuming in Brit.)

UTRICULUS PEREUSIS. Utr. minutâ cylindraceâ, albidâ, tenuissimâ, hyalinâ, spirâ discoidâ, anfractibus quatuor rotundatis, suturâ distinctâ; libro ad terminum spiralem recto, infra rotundato; apertura posticè angustato; columellâ rectiusculâ.

THE VERY THIN *UTRICULUS*. Shell minute, cylindrical, whitish, very thin, hyaline; spire discoidal with four rounded whorls; suture distinct; outer lip quadrate at the spiral end,

UTRICULUS.

rounded in front; aperture posteriorly narrowed; columella rather straight.

MIGHELS. Boston Journal of Natural History, vol. ii. p. 346.

Hab. Casco Bay, United States.

A very minute glassy shell, of a cylindrical form, truncated at the spire.

Species 5. (Mus. Cuming in Brit.)

UTRICULUS OBTUSA. *Utr. minuta, cylindrica, latiusculâ, posticè subattenuatâ, longitudinaliter rugoso-striatâ, opacâ, albâ, spirâ elevatiusculâ, aperturâ angustâ, mediò coarctatâ, anticè dilatâ; columellâ subincrassatâ, arcuatâ.*

THE OBTUSE UTRICULUS. Shell minute, cylindrical, rather broad, posteriorly subattenuated, longitudinally rugosely striated, opaque white; spire a little elevated, aperture narrow, contracted in the middle, dilated anteriorly; columella a little thickened, arched

UTRICUS. Walker's Testacæ Minuta, f. 61.

Hab. British Islands.

Species 6. (Mus. Cuming.)

UTRICULUS BORNEENSIS. *Utr. testâ parvâ, rectâ, cylindricâ, albâ, pellucidâ, epidermide ferruginâ, testâ longitudinaliter striatâ; spirâ distinctâ, complanatâ, anfractibus quatuor, apice mammillato; aperturâ angustissimâ, anticè dilatâ, columellâ arcuatâ.*

THE BORNEAN UTRICULUS. Shell small, straight, cylindrical, white, pellucid, epidermis ferruginous, shell longitudinally striated; spire distinct, flattened, with four whorls, apex mammillated, aperture very narrow, dilated in front, columella arched.

A. ADAMS. Sowerby's Thesaurus Conchyliorum. Bull. f. 23.

Hab. Borneo.

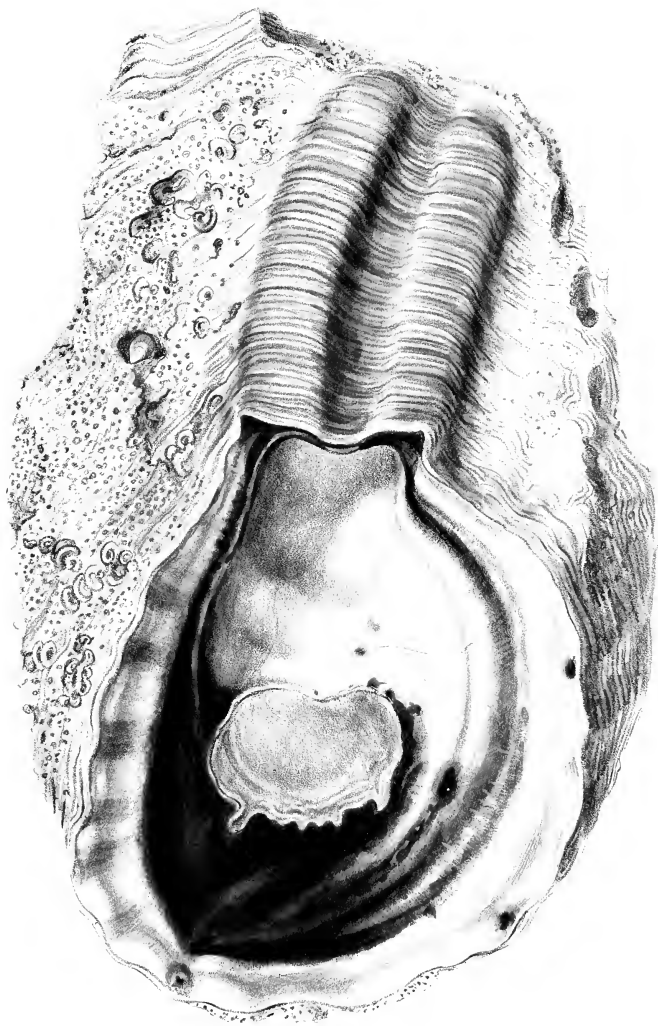
This shell is smaller than *Utriculus Ceilicæ*, truncated at the spire, and the straightest of the group.

MONOGRAPH
OF THE GENUS
OSTRÆA.

By J. S. GILBERT.

Published by the Author, 100 Nassau Street, N. Y. — 1864.

Price, 10 Cents.



O S T R Æ A.

PLATE I.

Genus OSTRÆA, *Linnæus*.

Festa bivalvis, unimusclosa, foliosa, et ad stræam, ovalis, radiisque per calicem inflexam adharrens, caldè arcuatis; cardine obliquo, marginibus ligamento subæterea superius; cæcis utriusque valvæ limatis.

Shell bivalve, unimuscular, foliaceous, adhering to stones, shells, and roots by the lower valve, very irregular; hinge toothless, with linear nacrein; ligament partly external, limited upon a triangular area in each valve.

East, west, in the tropical, temperate, arctic, and antarctic zones, wherever there are sea-coasts, and even in deep seas, oysters are to be found. And while the genus is widely diffused, individual species seem to be spread over very large areas. If some forms existing in Australia, America, China, &c., variously named, be not really varieties of our native *Ostræa edulis*, certainly many forms, distributed from the Adriatic to the Mediterranean sea, are clearly referable to that very variable species. As must be the case with attached bivalves, the difficulty of distinguishing species is very considerable, owing to the form of each individual depending so largely upon the object and mode of attachment. Our figures of *Ostræa edulis* present a striking example of this, and to the divergent forms given many others might be added, such as the ponderous *O. hippopus*, *O. cristata*, and very probably, *O. lamellosa*, which are forms of the same. Among the most interesting of new species are some described towards the latter part of the monograph, from the

collection of Sir David Barclay—shells taken principally in the Mauritius, and the islets Diego Garcia and Barclay—the latter of quite recent formation.

Species I. (Mss. Sowerby.)

OSTRÆA PRISMATICA. *Ost. testâ longitudinaliter elongato-ovata, crassa, squamifera, foveâ, squamis atate juniori diversotim striatis; intus iridescenti, foveâ marginibus fuscis-purpureiscenti angustata et acubata; cinctrice mucoso; cardine lato, nigrescenti, longitudinaliter attenuati, præbaldè sulcato, sulcis in calicem inflexorem aut centrali, in calicem superiorum duobus latereibus, caldè inferius concavi, foliosa.*

THE PRISMATIC OSTRÆA. Shell longitudinally elongato-ovate, thick, squamiferous, brown, scales in the young state divergently striated; iridescent within, near the margin single-banded or clouded with purple-brown; scar very large; hinge blackish, longitudinally attenuated, deeply grooved, grooves in the lower valve one central, and in the upper valve two lateral; lower valve concave, foliaceous.

GRAY. Annals of Philosophy, 1825.

Ostræa iridescens, Gray, Conch. Misc. Ost. t. 6, 7.
Hab. Central America.

A young specimen of this shell, in the collection of Mr. Taylor, is invested with dark-purplish scales which are divergently striated. The older specimens attain no traces of this, their surface being worn away as they attain any thickness.



O S T R Æ A.

PLATE II.

Species 2. (Fig. a, b. MUS. MAILLARD.)

OSTRÆA CIRCULINA. *Ost. testâ parvâ, irregulari, multiformi, gryphoidi, tenui, fragili, valve inequivalvi, pallidâ rufâ; costâ superiori plano-convexâ, tenuissimâ, subtriangulâ, costâ inferiori profundâ, ad apicem acervi, arcu cardinali angustâ, acutâ.*

THE HOODED OSTRÆA. Shell small, irregular, multiform, gryphoid, thin, fragile, very inequivalve, pale reddish; upper valve plano-convex, very thin, sub-lamellar, lower valve deep, arched at the apex; cardinal area narrow, acute.

DESHAYES. *Condylologie de l'Isle de la Réunion*, p. 2, 36, pl. XXX., f. 78.

Hab. Bourbon.

This peculiarly formed little oyster has a prima facie appearance of being young and unformed, and possibly belonging to some larger species. M. Maillard, its discoverer, however, declares that it never attains a larger size.

Species 3. (MUS. SOWERBY.)

OSTRÆA MYTHOIDEA. *Ost. testâ parasitici, solidâ, oblongâ, versus cardinem attenuatâ, ad latera plicato-crenatâ, postfasciâ rubicâ, obscure radiatâ, omnino undulato-squamosa, margine centrali subquadrato; valvâ superiori convexâ; arcu cardinali acuminatâ.*

THE MYTHOID OSTRÆA. Shell parasitic, solid, oblong, attenuated towards the hinge, plicato-crenated at the sides, deep violet, obscurely rayed, wavy

squamose; ventral margin subquadrate; upper valve convex; cardinal area acuminated.

LAMARCK. *Annuaire sans vertèbres.* Ostræa, No. 21. *Hab.* Australia.

Species 4. (MUS. SOWERBY.)

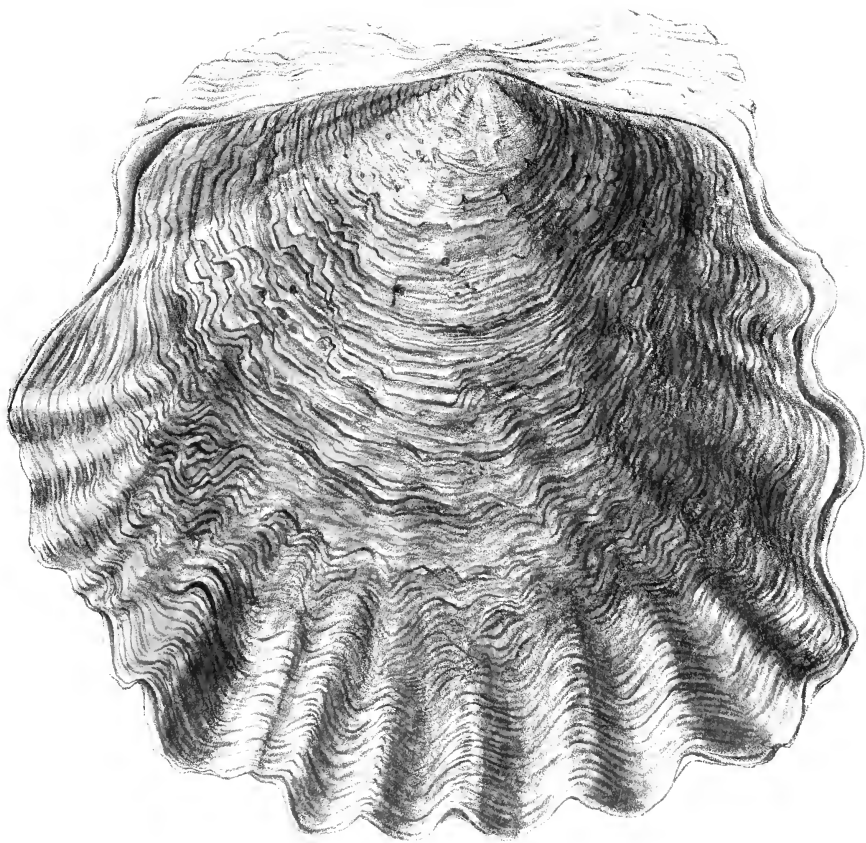
OSTRÆA PARASITICA. *Ost. testâ ovato-subrotundatâ, ad radices Rhizophorarum adherenti, pallidâ fulvâ, fusco-purpureo radiatim fasciatâ et variegatâ; valvâ inferiori profundâ, irregulariter squamosâ, obscure costatâ; valvâ superiori subemplanatâ, versus marginem undulato-squamiferâ; marginibus intus subpurpureis, hinc crenulatis.*

THE PARASITIC OYSTER. Shell somewhat rounded ovate, adhering to Mangrove roots, pale fulvous, radiately banded and variegated with brownish purple; lower valve deeper, irregularly squamose, obscurely ribbed; upper valve rather flattened, undulately squamose towards the margins; margins rather purple within, not crenulated.

GÆLIN. *Linnæus, Systema Naturæ*, p. 295. *Hab.* River Gambia in Africa.

The figure is taken from a portion of a forked root of Mangrove, both limbs of which are completely covered with specimens of various sizes and shapes. These agree in all particulars with those of a magnificent specimen in the British Museum, marked as from the above locality, and with the figure cited in Chemnitz. The South African *O. Rhizophoræ* of Guilding, if not identical with this species, differs from it in the prevailing form of the shells being more elongated, and of thinner substance.

October, 1870.



O S T R Æ A.

PLATE III.

Species 5. (Mus. Brit.)

OSTRÆA SINENSIS. *Ost. testis solidis, suborbiculari, fusco-subpurpureis, concentricis undulatum lamellatis, ad regionem umbonalem medianque convexo-subplanulatis, ad marginem lateralem et ventralis undulatum plicatis. valve inferiori ad marginem dorsalem utriusque auribus, lamelliferis, albidis, intus fusco latimarginato, medio fovea parvum undulato; impressione musculari vicinis costarum.*

THE CHINESE OSTRÆA. Shell solid, suborbicular and brownish purple, concentrically wavy lamellated, a little convexly flattened at the middle and umbonal regions, angularly plicated at the lateral and

ventral margins; lower valve aurited and laminated on both sides of the dorsal margin, within broadly bordered with brown, and partly clouded with light brown in the middle; muscular impression bright chestnut.

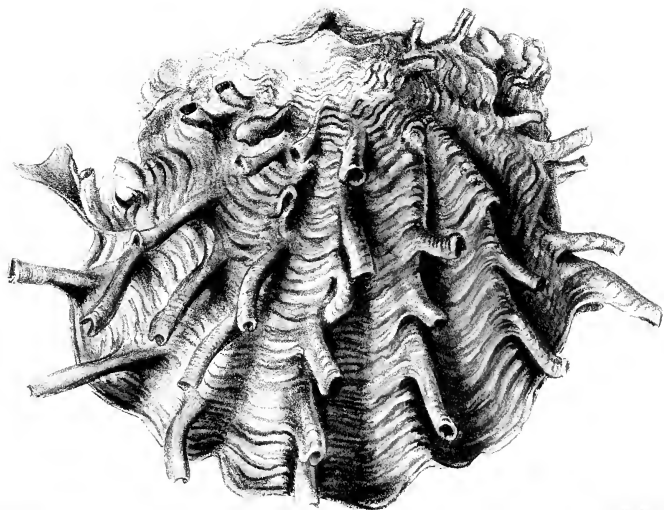
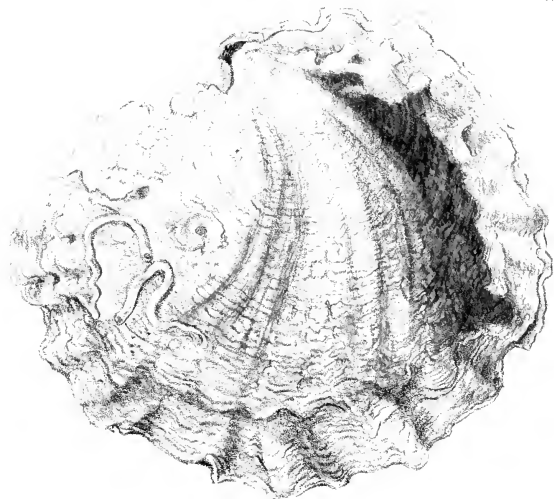
GMELIN. Systema Naturæ Linnaei. No. 3335. Chem. Conch. t. 668.

Ostræa preadamitica, Bolten.

Hab. Chinese Seas.

The magnificent specimen from which our illustration is taken is more widely flattened than is generally the case.

October, 1870.



O S T R Æ A.

PLATE IV.

Species 6. (Mus. Cuming in Brit.)

OSTREA CALLOCHEDIA. *Ost. testâ suborbiculari, compressâ, solidâ, valvis subæqualibus: calvâ superiori via convexâ, purpureo alboque-luteo radiatâ, concentricè depresso-lamellatâ; calvâ inferiori moderate convexâ, plus minuse purpureo tinctâ, costis obtusis radiantibus armatâ, intus albâ, marginè spiniferò subpurpureo: marginibus lateralibus prope umbonâ distinctè denticulatis.*

THE FINE-COLOURED OSTREA. Shell suborbicular compressed, solid, valves nearly equal, upper valve very little convex; rayed with purple and yellowish white, concentrically flatly laminated; lower valve moderately convex, more or less tinted with purple, armed with obtuse radiating ribs; white within, margin sealy purplish; lateral margins distinctly denticulated near the umbones.

HANLEY, Pto. Zool. Soc. 1845.

Hab. Chili.

Species 7. (Mus. Brit.)

OSTREA HYOTIS. *Ost. testâ irregulariter subquadratâ, solidâ, spinis tubiformibus, super angulos plicarum majorum septem circa etatibus armatâ, fusco-viridâ; auriculis subcompressis, foliaceis pliciferis. intus latè fusco marginatâ.*

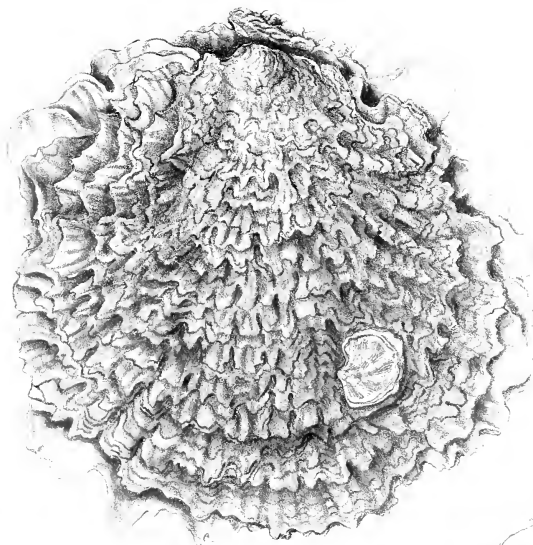
THE HYODID OSTREA. Shell irregularly subquadrate, solid, armed with tube-shaped spines standing out upon the angles of about seven large folds; greenish brown; auricles rather compressed, foliaceous plicated; widely bordered with brown inside.

LINNEUS. Systema Naturæ.

Hab. Indian Ocean.

The colouring of this shell is rather peculiar, being of a uniform greenish brown, and the deep angular plaits are surmounted generally with tubular spines.

October, 1870.



s. a.



s. b.



s. c.



s. d.



s. e.



s. f.

O S T R Æ A.

PLATE V.

Species 8. (Fig. *a, b, c, d, e, f*. Mus. Jeffreys.)

OSTRÆA EDULIS. *Ost. testis ovato-subtriangul. solidi, intus plerumque nuda, ad latera pæpè cardinem plus minuscè denticulatè, marginè ventrali subrotundo et expanso; marginè dorsali subauriculato; valvè inferiori plerumque concavè, obtusè radiatim costatè, lamellis undulatis plicatis, lacè imbricatè, purpureo irregulariter strigatè; valvè superiori minori, plerumque valdè complanatè fusco-rufescentè, purpureo obscurè radiatè, squamis compressis, lacis, subquadratis, multilobatis, radiatim dispositis laminatè.*

THE EDIBLE OSTRÆA. Shell ovately subtriangular, solid, generally snow-white within, near the hinge at the sides more or less denticulated, ventral margin rather rounded and expanded; dorsal margin subauriculated; lower valve generally concave, obtusely radiately ribbed, loosely imbricated with wavy plicated lamellæ, irregularly striped with purple; upper valve smaller, mostly very flat, greenish brown, obscurely rayed with purple, laminated with flattened, loose, many-lobed, radiately-disposed scales.

LINNEUS. *Systema Nature*, No. 1148.

Ostrea parvissima, Turton.

Ostrea hippopus, Lamarck.

Hab. Europe.

The common eatable European oyster may be considered as presenting a fair specimen of one characteristic

of its tribe, namely, extreme variability of form. The principal varieties are arranged as follows by Mr. Jeffreys, premising that the type is of a dull greenish-brown and a little inclined to a trigonal form.

Var. 1. *præditica* (fig. *f*), which altering by a large part of its undersurface to various shells and other substances, modifies its form by them. In the beautifully leafy and variegated specimen here figured may be seen the traces of the ribs of *Pecten opercularis* to which it is attached, showing through both valves.

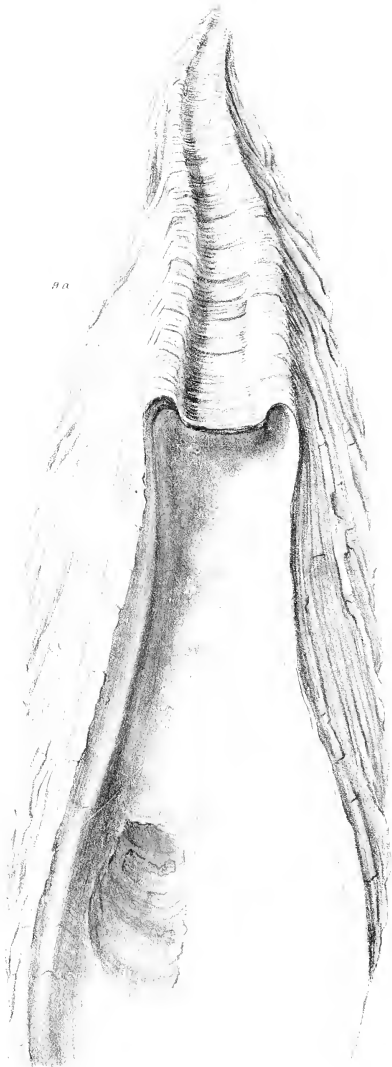
Var. 2. *Ostrea hippopus*, Lamarck, is not gregarious, like the ordinary forms, but solitary, and living in deep water; is very rough and ponderous, not at all flaky or scaly; very deep in the lower valve and thick in the upper.

Var. 3. *deformis*, Lam. (a term which might apply to irregularly growing shells of any of the species). Two examples are given (*f, c, d*), one elongated perpendicularly, and the other laterally, the latter being formed upon the operculum of a living whelk and confined in its growth to the slope of the aperture.

Var. 4. *rotapina*, Jeffr. A small, regularly formed, not very flaky variety, to which our "Natives" belong.

Var. 5. *tincta*, Jeffr. Like var. *rotapina*, rather regularly formed and flat, but having the inside coloured with purplish brown. (Fig. *e*.)





O S T R E A.

PLATE VI.

Species 3. (Fig. *a, b, c*. Mus. Brit.)

OSTREA ROSEATA. *Ost. testâ elongato-subtriangulâ, callâ fidiâciâ, plerumquâ apertâ, albâ; valvâ superiorâ breviusculâ, compressâ, inferiorâ crassâ, excavatâ; cardin. clavato, in valvâ inferiori medio profundi excavato, superiorâ medio tumido; impressione musculari utriusque valvulâ plerumquâ attenuatâ, costatâ.*

THE ROSEAID OSILEA. Shell elongate-subtriangular, very foliaceous, generally arched, whitish; upper valve rather short compressed, lower thick, excavated, hinge elongated, in the lower valve deeply excavated in the middle, in the upper tumid in the middle; muscular impression in each valve generally attenuated, chestnut.

CHLUMNITZ. *Conch.* 8, t. 73, f. 677. "*O. rostrata, parvâ et maximâ.*"

Ostrea Virginiana, Gmelin.

Ostrea Virginica, Lamarck.

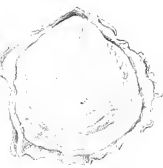
Ostrea Canadensis, Lamarck.

Ostrea borealis, Lamarck.

Hab. New York. Virginia. Canada.

The shell of early growth represented at fig. *c*, being attached by a small part of its surface to a smooth substance has a form very similar to our edible oyster. The elongated laterally compressed boat form, fig. *a, b*, represents *O. Virginica*, Lamarck. We have not thought it necessary to give a figure of the form *Canadensis*, Lamarck, which is shorter, more curved, and thicker, very foliaceous in the lower valve. In the *Virginica* form, the attenuated beak with central ridge, and groove and side ridges, presents a curious feature. The largest specimen in the British Museum is more than a foot long.

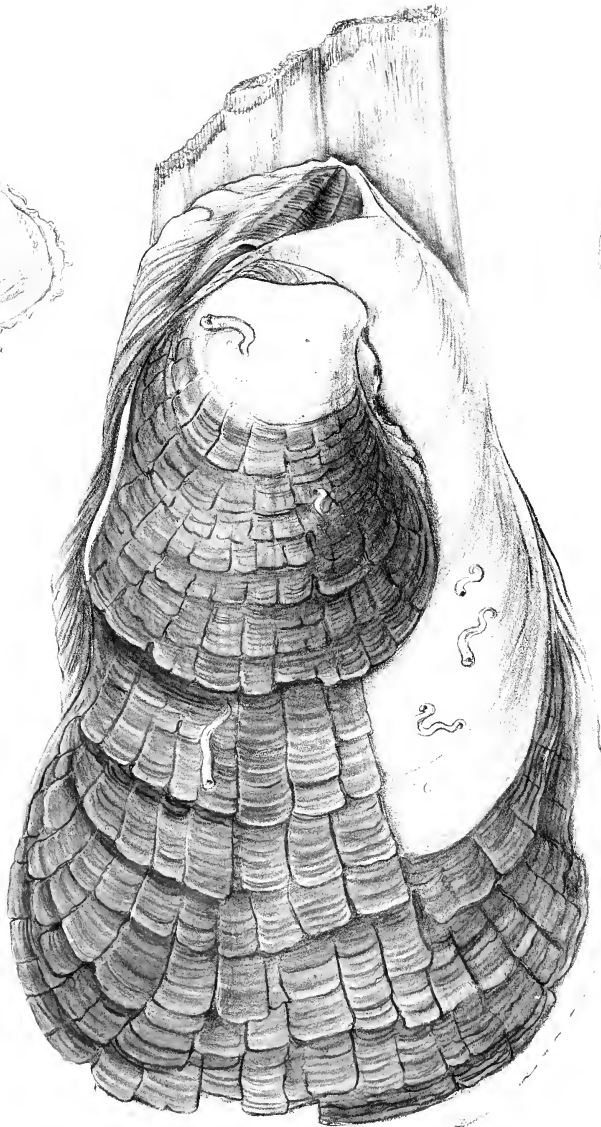
January, 1871.



u a



u b



u

O S T R Æ A.

PLATE VII.

Species 10. (Fig. a, b, Mus. Brit.)

OSTREA COLUMBENSIS. *Ost. testâ compressâ, levigatâ, irregulariter subovatâ, albâ, marginem radiis paucis duplicatis ornatâ, tenui; valvâ inferiori bilobâ; cardine parvo, apice acuto; intâs albâ, marginibus lat. radiibus basal. denticulatis.*

THE COLUMBIAN OSTRÆA. Shell compressed, smooth, irregularly subovate, whitish, sometimes ornamented with duplicate purple rays, thin; lower valve foliaceous, hinge small, apex acute; white within, with the lateral margins not denticulated.

HANLEY. *Proc. Zool. Soc.* 1845.

Hab. St. Helena, *Cuming*, Mazatlan, Lower California.

It is difficult to distinguish shells of this variable species from young specimens of *Ostrea vestida*. They are, however, believed to be different by those who have studied every series of both species in various stages, and when tolerably free in their growth their tendency seems to be rather towards an oval than a triangular form.

Species 11. (Mus. Hanley.)

OSTREA BELCHELI. *Ost. testâ maximâ, compressâ, spatulatâ, elongato-subtriangulâ, crassiusculâ, foliaceâ, squamis maximis, quadratis, purpureo-subviridibus ornatâ; valvâ inferiori planatâ, superiorâ convexâ; cardine lato; margine ventrali expanso.*

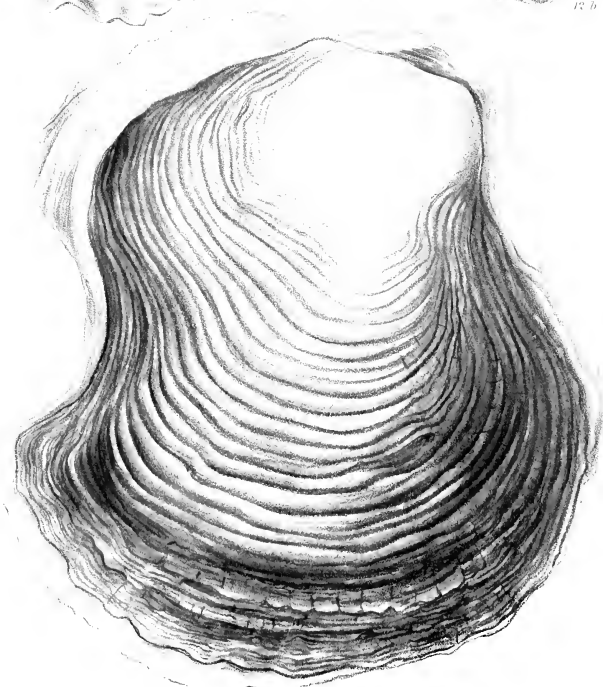
BELCHEL'S OSTRÆA. Shell very large, compressed, spatulate, elongate-subtriangular, rather thick, foliaceous, armed with very large, square, rather purplish green scales; lower valve flattened, upper convex; hinge broad; ventral margin expanded.

SOWBRY.

Hab. Eastern Seas?—Captain Belcher.

It is to be regretted that this magnificent shell, now in the collection of Mr. Hanley, has had no specific locality assigned to it by Captain Belcher, who brought it home among the fruits of his expedition. It is remarkable for its large flat scales. The specimen is attached to a broad flattened stem of mangrove.

January, 1871.



O S T R Æ A.

PLATE VIII.

Species 12. (Fig. *a, b*, Mus. Brit.)

OSTRÆA ANGULATA. *Ost. testâ tripodâ, brevi, tenuis-*
culâ, albâ, striâ purpurâ parvis, irregulâribus
radiatâ; apicibus incurvis, subspiralibus; valvâ
superiôrâ depressâ, parvâ, ad marginem ventralem
leviter plicatâ; inferiôrâ profundâ ad apicem arcum
productâ, ad marginem ventralem leviter plicatâ,
expandi, valvâ inferiôrâ longè superante; car-
dine tenui.

THE ANGULAR OSTRÆA. Shell trigonal, short, rather thin, whitish, rayed with few, irregular, purple streaks; apices incurved, subspiral; upper valve depressed, small, slightly plicated at the ventral margin; lower valve deep, produced in an arch at the apex, slightly plicated at the ventral margin, expanded, far exceeding the lower valve; hinge thin.

LAMARCK (*Gryphæa angulata*). Anim. s. vert. Gryphæa, sp. 1.

Hab. ———?

The great peculiarity of this shell is the depth of the lower valve under the hinge, above which the apex curves upwards and spirally.

Species 13. (Mus. Brit.)

OSTRÆA QUADRATA. *Ost. testâ unguâ, compressâ, sub-*
quadratâ, solidâ, valvâ inferiôrâ planulatâ, mar-

ginibus albis perfulvâ; margine dorsali lato;
calculâ superiôrâ aureo-fulvescenti, concentricâ lineis
rubescutibus pictâ, præpè margines latè expansâ,
latè, expansâ; cardine lato subplanulato; intâs
partem subrotundâ, marginibus denticulatis.

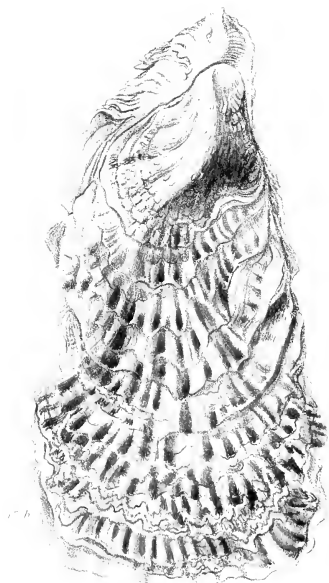
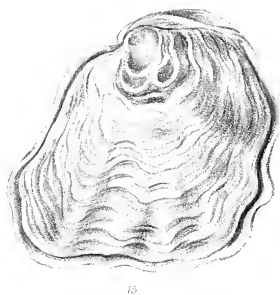
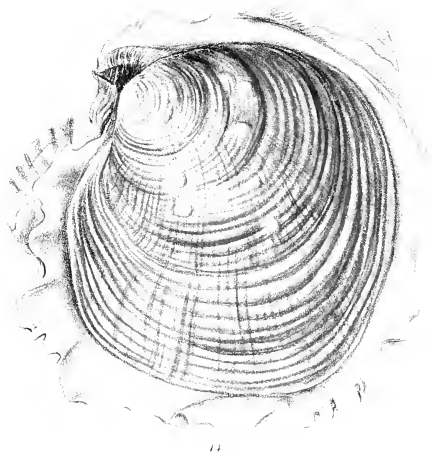
THE SPATHULATE OSTRÆA. Shell large, compressed, subquadrate, solid, lower valve flattened, with white very foliaceous borders; dorsal margin wide; upper valve golden-brown, painted margin concentrically with reddish lines, loosely scaly towards the margins; a little violet in parts within, with denticulate borders.

LAMARCK. Anim. s. vert. Ost., No. 16.

Hab. Guacomayo, Co. of America.

It is not possible to speak with certainty respecting this species, which may quite possibly be a very aberrant variety of *O. prismatica*. I am led to assign Lamarck's name and description, however vague, to the shell, because that author remarks that his species approaches the preceding one, the *O. denticulata* of *Born*, which our shell unquestionably does, differing, however, in the flat and spathulate form. It might, perhaps, be feasible to link together *O. denticulata*, *O. spathulata*, and *O. iridescens*, under the first of the three names; but the worn state of the poulterous and richly coloured specimens of the third which we have hitherto met with, prevents a decisive conclusion on the subject.

January, 1871.



O S T R Æ A.

PLATE IX.

Species 14. (Mus. Brit.)

OSTREA DENTICULATA. *Ost. testâ subrotundâ, crassâ, glabrâ, submargaritaceâ; intus partim fusco-purpureo subiridescenti; valvâ inferiori magnâ, pluvâ, marginibus albidis iridescentibus, late foliaceis; valvâ superiori convexâ, obscure tuberculatâ, avreâ-fulvâ juxta rubescite concentricè strigatâ; cardine planulato; margine interno valvâ denticulatâ.*

THE DENTICULATED *OSTREA*. Shell subrotund, thick, glabrous, a little margariticaceous; within, in parts brownish purple, rather iridescent; lower valve large, flattened, with greenish-white borders, widely foliaceous; upper valve convex, obscurely tuberculated, golden-brown, concentrically striped with reddish-brown; hinge flattened, internal margin strongly denticulated.

BOENX. Mus. tab. 6, f. 910.

Hab. America!

The figure of Chemnitz fairly enough represents the species in a very worn state; while that copied in the Encyclopædia might almost have been drawn from our shell.

Species 15. (Mus. Brit.)

OSTREA LUCIDA. *Ost. testâ tenuiusculâ, luridâ, glaucâ, subovigatâ, propè marginem ventralem leviter plicatâ; posticè plerumque productâ, valvâ inferiori profundâ, margine dorsali angustâ; valvâ superiori subquadrâ, leviter convexâ.*

THE LUCID *OSTREA*. Shell rather thin, darkly glaucous, rather smooth, lightly plicated near the ventral margin; mostly produced posteriorly; lower valve deep, dorsal margin narrow; upper valve nearly equal in extent to the under, slightly convex.

CARPENTIER. —? MS. Mus. Brit.

Hab. Mazatlan.

The chief characteristic of this species is the peculiarly lurid glaucous tint pervading the inner and outer surface of both valves.

Species 16. (Mus. Brit.)

OSTREA PYXIDATA. *Ost. testâ orbiculari, inequali,*

pallidè fulvâ; valvâ inferiori convexissimâ radiatim costatâ, costis nodulosis, sæpe duplicatis; valvâ superiori planâ, divaricatim costatâ, costis nodulosis; marginibus ventralibus crenulatis.

THE BOX-SHAPED *OSTREA*. Shell orbicular, inequivalve, pale fulvous; lower valve very convex, radiately ribbed, ribs nodulose frequently duplicate; upper valve flat, divergently ribbed, ribs nodulose; ventral margins crenulated.

ADAMS AND REEVE. Zool. Voy. Samarang. p. 72, PL XXI. f. 19.

Hab. Philippine Islands.

A very characteristic little species, sculptured with finely beaded diverging ribs, with very deep under, and flat opercular upper valve.

Species 17. (Fig. a, Mus. Brit. b, Sowerby.)

OSTREA RHIZOPHOEÆ. *Ost. testâ elongato-subtrigoniâ, tenuiusculâ, lævissimè foliaceâ; sordidè fulvâ, propè marginem ventralem squamulatâ, subplicatâ, compressâ, expansâ, strigis purpureis interruptis versus apicem medio divisâ pictâ; intus albidâ; valvâ inferiori profundâ cardine productâ; valvâ superiori planulatâ.*

THE MANGROVE *OSTREA*. Shell elongated-subtrigonal, rather thin, very loosely foliaceous; dull fulvous, squamose, slightly plicated, compressed, expanded near the ventral margin, painted with purple interrupted stripes divided in the middle towards the apices; whitish within; lower valve deep, hinge produced; upper valve flattened.

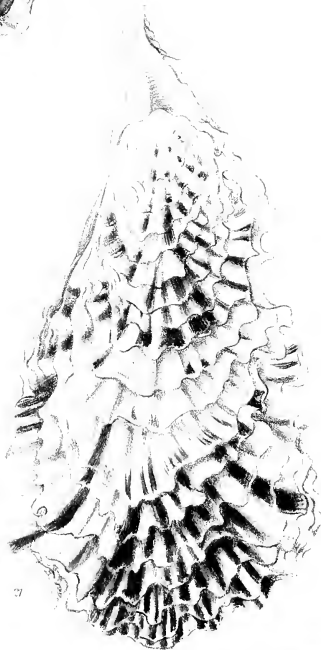
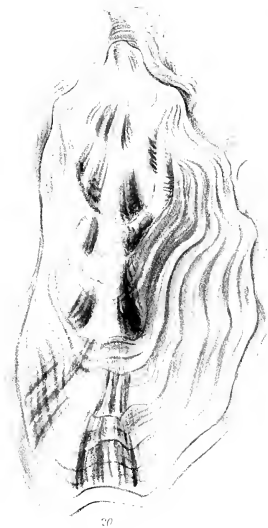
GUILDING. Zool. Journal, vol. 3, p. 512.

Hab. Caribbean Islands. West Indies.

The species is not found exclusively attached to the roots of mangrove, although that may possibly be regarded as its normal habit. From the South African species of the same general habit, *O. parasitica*, it may be distinguished by its less solid and less elongated form. The large specimen, fig. b, represents the appearance of the shell when attached by a small portion of its surface to rocks.

January, 1871.





O S T R E A.

PLATE X.

Species 18. (Mus. Sowerby.)

OSTREA FERMOLLIS. *Ost. testâ quadrato-subtriangulâ, compressâ, subaquivalve, intus subaureâ vel albicaerulescente, ad latera levigatâ, marginis subricidi, cardine producto, angusto, acuminato; valvâ inferiori purpureo suffusâ, levigatâ; valvâ superiori paulo concavâ epâthmide parvâ subaureo-fusco indatâ, prope marginem centralem leviter squamosâ.*

THE SOFT OSTREA. Shell quadrato-subtriangular, compressed, subaquivalve, slightly golden-tinted or bluish-white within, smooth at the sides, greenish at the borders, hinge produced, narrow, acuminate; lower valve suffused purple, smooth; upper valve a little convex, covered with a very soft slightly golden-tinted brown, a little squamose near the ventral margin.

SOWERBY.

Hab. — ?

There is a kind of velvety softness in the outer covering of the upper valve in this shell which seems to distinguish it.

Species 19. (Mus. Brit.)

OSTREA OCHRACEA. *Ost. irregulariter elongato-subtriangulâ, levigatâ, solidiusculâ levigatâ, ochraceâ, albo, purpureo, et fusco strigatâ intus variegatâ, intus ad marginem purpureo; valvâ inferiori profusâ, superiorem superantem, cardine acuminatim producto; valvâ superiori subplicatâ.*

THE OCHRACEOUS OSTREA. Shell irregularly elongate-subtriangular, inequivalve, rather solid, smooth, ochraceous, striped and variegated with white, purple, and brown; lower valve deep, overlapping the upper, hinge produced in a point; upper valve rather flattened.

SOWERBY.

Hab. Mazatlan.

Some specimens of this are in the Mazatlan collection of the British Museum, assigned by M. Carpenter to the American species *O. xiphioides*, included in this monograph among the varieties of *O. costata*. Chemn., with which, however, it is not easy to connect the present species.

Species 20. (Mus. Brit.)

OSTREA BOSTRALIS. *Ost. testâ elongatâ, irregulariter undatâ, lævâ foliaceâ, albâ, purpureo fuscoque strigatâ et variegatâ, inequivalve; cardine acuminato, angusto, producto; valvâ inferiori intus albâ, ad marginem superiores superantem.*

THE BEAKED OSTREA. Shell elongated, irregularly undated, loosely foliated, whitish, striped and variegated with brown and purple, inequivalve; hinge acuminate; narrow, produced; lower valve white within, overlapping the upper at the margin.

LAMARCK. Anim. s. vert. Ostrea, No. 13.

Hab. River Tagus near Lisbon. Sir C. Trevelyan.

In the label with this specimen at the British Museum, *O. longirostris*, Lam. (No. 17 in the *Espeirs fossilis*), is referred to by Sir C. Trevelyan; but as that species is described as having in the lower valve a beak larger than all the rest of the valve, the identification is contradicted.

Species 21. (Mus. Cum. in Brit.)

OSTREA TALIENWÄHNENSIS. *Ost. testâ elongatâ, triangulâ, albâ, purpureo fuscoque strigatâ et maculatâ; perfoliaceâ; valvâ inferiori concentricè laminatâ, leviter plicatâ, cardine producto attenuato, acuminato; valvâ superiori concentricè laminatâ, laminâis leucæ, cæcis marginem centrum valvâ plicatâ, expansâ.*

THE TALIENWAH OSTREA. Shell elongated, triangular, white, spotted and striped with purple and white, very foliaceous; lower valve rather convex, foliaceous, slightly plicated, hinge produced, attenuated, acuminate; upper valve concentrically laminated, the laminae thin, towards the ventral margin strongly plicated, expanded.

CROSSE. *Journal de Conchyliologie.*

Hab. Taliénwah.

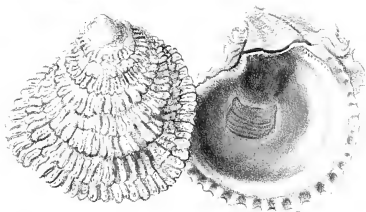
This beautiful oyster is remarkable for its concentric fluted frills, and for the richness of the purple stripes and spots set off by their white surface.



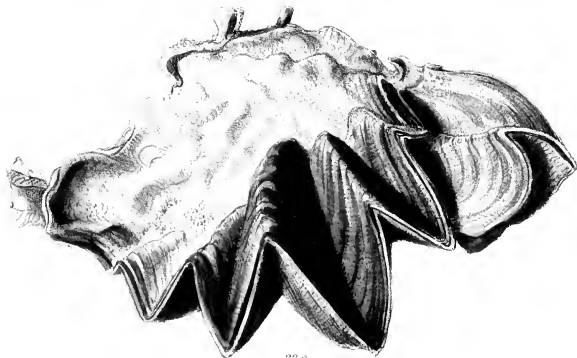
22 a



22 b



23



22 c

O S T R Æ A.

PLATE XI.

Species 22. (Fig. a, Mas. Brit. Fig. b, c, Sowerby.)

OSTREA CRISTA-GALLI. *Ost. testâ plerumque subquadrate, validissimè plicatâ, plicis angulatis profundis, divaricatim granoso-striatâ purpureo-fusâ vel fuscâ vel albâ, versùs marginem pallidè violacèâ; intùs pallidiori, ad marginem granulatâ; cardine lato, complanato; valvâ inferiori per lobis foliaceis productis ad madreporis rugose adhærenti.*

THE COCK'S-COMB *OSTREA.* Shell generally subquadrate, strongly plicated, folds angular and deep, divergently granularly striated, purple brown, or fulvous, or whitish, pale violet towards the margin; pæler within, granulated at the margin; hinge wide, flattened; lower valve adhering to madreporous and rocks by produced leafy lobes.

LINNÆUS (*Mytilus*) *Systema Naturæ.*

Hab. Indian Ocean.

Oysters of this species occur in fine groups, attached

to each other by a portion of their surface, and to madreporous by lobelike projections.

Species 23. (Mus. Cuming in Brit.)

OSTREA VIRESCENS. *Ost. testâ suborbiculari, solidâ, intùs viridâ; valvâ inferiori profundâ, margine lucente; valvâ superiori planulatâ, divaricatim costatâ, costis crebris, rotundis, crassis lineis rubescentibus notatis; cardine lato, medio excavato.*

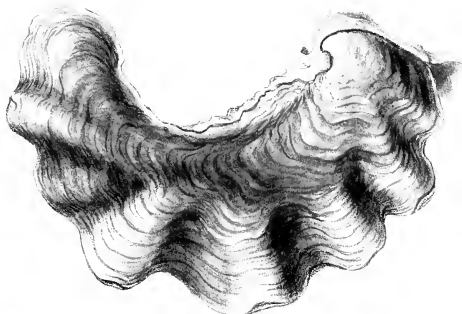
THE VIRESCENT *OSTREA.* Shell suborbicular, solid, green, within; lower valve deep with fluted margin; upper valve flattened, divergently ribbed, ribs close, rounded, thick, marked with reddish lines; hinge wide, excavated in the middle.

ANGAS. *Proc. Zool. Soc., 1868.*

Hab. Port Jackson, Australia.

In some respects resembling *Ostrea pyxidota*, but the ribs are thick and close together.

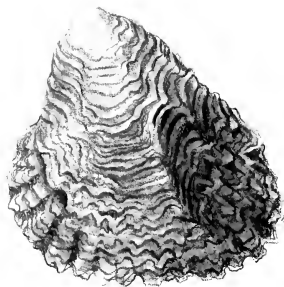
January, 1871.



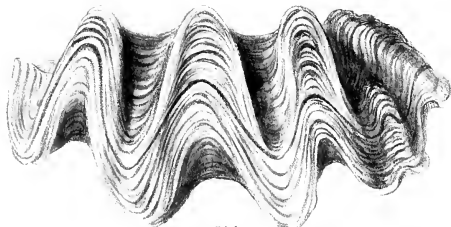
24 a



25 a



26 b



27 b

O S T R Æ A.

PLATE XII.

Species 24. (Mus. Brit.)

OSTRÆA MELGON. *Ost. testâ solidâ subquadrati, obscure purpurâ vel viridi fulvescanti, transversè elongatâ, arcuatâ, reniformi, margini centrali quinque ad septemlobâ, platis maximis, rotundis, ad marginem lateralem perfidiatis; intus albi, postea subviridi; impressione musulari magna, reniformi.*

THE LARGE-TOOTHED OSTRÆA. Shell solid, nearly equivalve, dull purple or greenish fulvous, transversely elongated, arched, reniform, ventral margin with five or six plaits, very large, rounded, foliated at the outer margin; white within, partly greenish; muscular impression large, reniform.

HANLEY. Proc. Zool. Soc., 1845.

Ostræa gallos, Valenciennes.

Hab. Peru.

Species 25. (Mus. Brit.)

OSTRÆA RUFÆ. *Ost. testâ trigonâ, solidâ, cuposo-squamosa, rufâ, aut fusco-purpurâ; intus medio fusco subpurpurâ, ad marginem albidâ; calicula inferiori profundâ, ad marginem lateralem superiorum superanti, calicula superiori subplanatâ, cœcis marginum squamis brevibus crassis armatâ.*

THE RUFOUS OSTRÆA. Shell trigonal, solid, roughly-squamose, rufous or brownish purple; within, brownish purple in the middle, whitish at the margin; lower valve deep, overlapping the upper at the margin; upper valve rather flattened, armed with short thick scales near the margin.

LAMARCK. Anim. sans vert. Ostræa, No. 25.

Ostræa tuberculata, Lamarck; *Ostræa Australis*, Lamarck.

Hab. America.

January, 1871.





O S T R E A.

PLATE XIII.

(Pl. 4, 6.) Mr. D. ORBIGNY.

Species 27.

In grouping the two shells it was somewhat perplexing to present as a distinct species the *Ostrea (L.) orbignyi* of DORVILLE, who has so named the specimens I must, however, on further consideration regard them in any other light than as interesting varieties of the South American *Ostrea peruviana*.

SPECIES 26. (MUS. BELG.)

OSTREA MUSCINA. *Ost. testa rotunda, compressa, leviter striata, albogriseo-ovata, pallid. por. parva callosi, subquadrati, cardine parvi, callosi infirmi, convexi, impressio musculari maxima, callosi superiori, callosi compressi.*

THE MUSCIN OYSTER. Shell rounded, flattened, finely striated, whitish brown, rayed with pale purple subequivalve; hinge small, lower valve convex, muscular impression very large, upper valve much compressed.

GOULD.

Hab. Fiji Islands and New Zealand.

A rounded species with a flat upper valve and very contracted hinge.

OSTREA ANSUTI. *Ost. testa magna, compressa, rotunda subquadrata, cinerea, ovata, margines exteriori parva, interiori, latius alba; callosa inferiori convexa, costati, margine expanso, laevitate hinc et inde, callosi superiori depressi, spinosis latius, levibus, levigatis, convexi margines levitatis armati; cardine lato, compresso; impressione musculari aequa, callosi margini.*

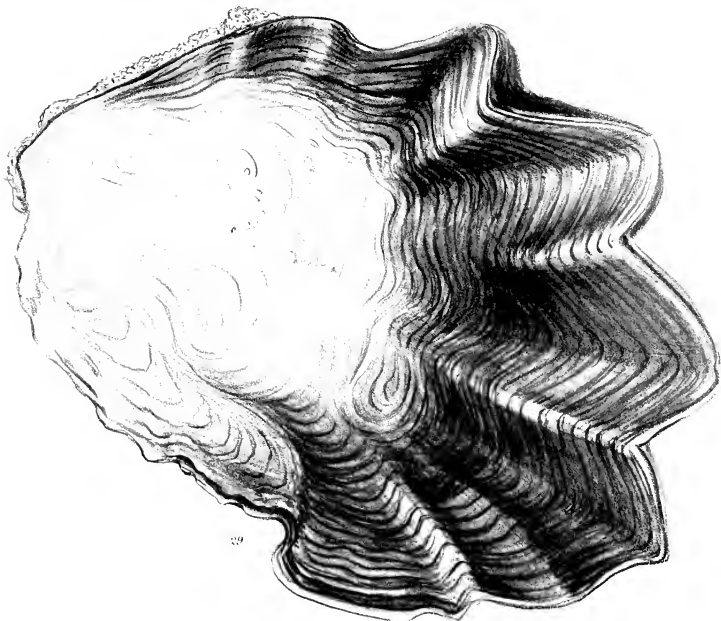
ANSUT'S OYSTER. Shell large, compressed, roundly subtriangular, emarginate, a little purple towards the margins, musquivalve, white within; lower valve thick, ribbed, its margin expanded, fluted, with bluish border; upper valve depressed, armed with broad, thin, smooth scales fluted towards the margin; muscular impression large in both valves.

SOULEY.

Hab. Port Jackson. *Mr. G. E. Angus.*

The sculpture of this large species is much less coarse than in equally large specimens of *O. callosa*, and the upper valve is more convex than in that species.

January, 1871.



O S T R E A.

PLATE XIV.

Species 28. (Mus. Brit.)

OSTREA SOLIDA. *Ost. testâ crassâ, oblongo-subovatâ, suprà subattenuatâ, cernis marginem ventralem expansâ, plicis numerosis, subântidis, radiatibus laqueatâ; valvulâ inferiori haud profunde, crassissimâ, intus medio fusca nigricanti subântâ tùm subaureo-fusca, marginem ventralem fusco-purpureâ, marginibus lat. r. tuberculatis; margine cardinali angusto, sublongato, com. lamato; valvulâ superiori irregularit. e tuberculatâ, albâ, pallidissimâ purpureo subulatâ.*

THE SOLID OSTRÆA. Shell thick, oblong-subovate, rather attenuated above, expanded towards the ventral margin, fluted with numerous rounded radiating ribs; lower valve not deep, very thick, clouded within by blackish brown in the centre, then golden brown, ventral margin purplish brown, lateral margins crenulated; hinge margin narrow, rather long, flattened; upper valve irregularly tuberculated, whitish, very lightly clouded with purple.

SOWERBY.

Hab. Gulf of Panama.

There is a second specimen in the British Museum collection, which is straighter, and less distinctly wrinkled than the one figured, with considerably less colour within.

Species 29. (Mus. Brit.)

OSTREA TUBBINATA. *Ost. testâ fuscâ, maximâ, crassâ medio complanatâ, versis marginem plicis paucis, marginis acut. angulatis, armatâ; valvulâ inferiori crassissimâ ad marginem alteram paulo superanti; intus medio albâ, limbo densè fusco, marginem cardinali elongatâ, angustâ; valvulâ superiori medio albâ, planulatâ, impressione musculari maximâ.*

THE TUBBINATED OSTRÆA. Shell brown, very large, thick, flattened in the middle, armed towards the border with few very large acutely angular plaits; lower valve very thick, a little exceeding the other at the margin; within whitish in the middle, deep brown at the border, hinge margin elongated, narrow; upper valve whitish in the middle, flattened; muscular impression very large.

LAMARCK. Animaux sans vertèbres. Ostræe, No. 44.

Hab. — ?

No locality is assigned to the specimen in the British Museum of this large oyster, which differs from *Ostræa Sinensis* chiefly in the magnitude and angularity of the plaits.

February, 1871.



31 a



30 a



31 b



32



30 b



33

OSTREÆ.

PLATE XV

Species 30. (Fig. a, b, Mus. Brit.)

OSTREÆ RAMA. *Ost. testâ subcompressâ, levissimâ, irregulari, oblongâ, radiatim plicatâ, plicis laevis, rotundatis, albida subpurpureâ, vel omnino fuscâ, purpureâ vel fusco lineâtim stripatâ; valvâ inferiori foliaceâ, foliis; estivatione adhaerentibus ornamentâ; valvâ superiori alveârim spinatâ.*

THE ROSE OSTEREA. Shell subcompressal, rather thin, irregular, oblong, radiately plicated, plaits loose, rounded; purplish white, or brown all over, linearly striped with purple or brown; lower valve foliaceous, armed with outstanding adhesion filations; upper valve equalling the other.

SOWREY.

Hab. — ?

I do not find that any author has yet named this species, which appears fairly to merit distinction. Fig. a, however, is not very characteristic, the plants being nearly obsolete.

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

OSTREÆ MORGAN. *Ost. testâ perpendiculariter oblongâ, compressâ, ad marginem profunde lobatâ, foliis inter lobos acutè denticulatâ; alveâ in cavâ crassâ, medio albida, limbo inter acutè alveâ dense fusco-purpureâ, margine cardinali recto, ad terminum quadrato; valvâ superiori subâlcâ acronidâ, purpureâ variegatâ, valvâ planulatâ.*

THE BIRD OSTEREA. Shell perpendicularly oblong, compressed, deeply lobed at the margin, acutely denticulated within between the lobes; lower valve thick, whitish within, the border between the denticles deep purple-brown; hinge margin straight, squared at the ends; upper valve slightly cinnamon-tinted, variegated with purple; very flat.

GOLD, Wilson's Expedition.

Hab. California?

Species 32. (Mus. D'Orbigny in Brit.)

OSTREÆ SPEREA. *Ost. testâ subquadratâ, anticè subproductâ, emicatâ; margine cardinali angustâ, apicibus acuminatis, valvâ inferiori subquadratâ, valvis variegatâ, valvâ superiori purpureâ stripatâ, rugosâ, cæcis marginem irregulariter plicatâ.*

THE SLOTTED OSTEREA. Shell subquadrate, rather produced and emicated anteriorly; hinge margin narrow, apices acuminated; lower valve rather deep, variegated within; upper valve purple striped, rough, irregularly plicated towards the margin.

D'ORBIGNY, Voy. Amér. Mérid.

Hab. Rio de Janeiro, Brazil.

A very gregarious species of irregular growth.

Species 33. (Mus. Brit.)

OSTREÆ CHILONENSIS. *Ost. testâ valvâ foliaceâ, elongatâ, subtrigonâ, albida, valvis partim viridescenti, marginibus hinc denticulatâ, valvâ inferiori alveârim ad marginem spinatâ, sic profundâ; valvâ superiori planulatâ, subvariegatâ, hinc spinatâ.*

THE CHILE OSTEREA. Shell very foliaceous, elongated, subtrigonal, whitish, partly greenish within, margins not denticulated; lower valve exceeding the other at the margin, not very deep; upper valve flattened, rather smooth, loosely sealed.

Hab. Chile.

There is truly very little to distinguish this species from the "Native" variety of our edible oyster. It is, however, of thinner growth and more tapering towards the hinge.

February, 1871



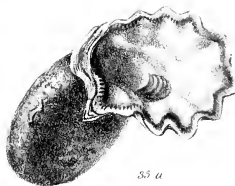
34 a



34 b



34 c



35 a



35 b



35 c

OSTREA.

PLATE XVI.

Species 34. (Mus. Brit.)

OSTREA CUCULLATA. *Ost. testâ subtriangulâ solidissimâ, plicatâ, plicis anguloribus, plerumque marginis prope apicem albâ, versùs marginem purpureâ fasciis densioribus strigatâ; valvâ inferiori crassâ, alteram ad marginem superanti, subtas marginem cardinalem cucullatâ cardine elongatâ, frequenter ad umbonem caldâ productâ, plicis elongatis, vixatantum rotundatis et imbricatis; valvâ superiori medio planulatâ versus marginem plicatâ.*

THE HOODED OSTREA. Shell subtriangular, very solid, plaited, plaits angular, generally large, whitish near the apex, purple towards the margin, striped with deeper bands; lower valve thick, overlapping the other at the margin, hooded under the hinge-margin, hinge elongated, frequently much produced at the apex; plaits elongated, sometimes rounded and imbricated; upper valve flat in the middle, plaited towards the margin.

BOES. Mus. Ind. Cas. Tab. 6, f. 11, 12.

Ostrea cornucopiae. Chemnitz, f. 679.

Ostrea Forskallii. Chemnitz, f. 671 bis 6.

Considering the great variation observable in this species, particularly in the elongation of the hinge, I think Mr. Hanley right in referring to it the *Ostrea cornucopiae* and the *Ostrea Forskallii* of Chemnitz. The latter is represented by our fig. *a*, from a specimen in the collection of the British Museum, which has the

hinge elongated to an enormous extent, the result of the specimen having been attached only by a small part of its surface.

Species 35. (Mus. Sowerby.)

OSTREA MEXICANA. *Ost. testâ ad lapides adhaerenti, ovatâ, tenui, subcompressâ, ad marginem laevè plicatâ, valvâ inferiori costatâ, haud profundâ, albâ, purpureo pictâ, alteram ad marginem superanti; valvâ superiori medio convexa, versùs marginem plicatâ, albâ, vel fulva, lineis strigisque fasciis vel purpureis, et versùs apicem fasciâ medianâ subpurpureâ, fasciis albis duabus marginatâ, costatâ; apicibus incurvis, cardine tenui, angusto.*

THE MEXICAN OSTREA. Shell adhering to pebbles, ovate, thin, subcompressed, loosely plaited at the margin; lower valve ribbed, not deep, whitish, painted with purple, overlapping the other; upper valve convex in the middle, plaited towards the margin, whitish, or fulvous, rayed with brown or purple lines and stripes, and towards the apex a central purplish band edged with two white bands; apices curved inwards; hinge thin, narrow.

SOWERBY.

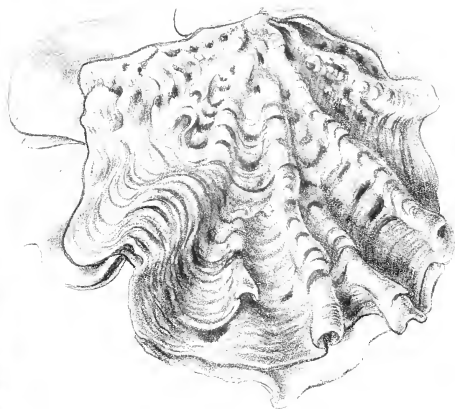
Hab. Tehuantepec, Mexico.

A rather variable shell, having some relations with the preceding. It is a much thinner shell, with no tendency to a trigonal form, to a prolongation of the hinge, or to any depth of hollow under the hinge.

February, 1871.



27



26 a



26 b

OSTREA.

PL. XVII.

Species 36. (Fig. a, Mus. Brit. & Mus. Taylor.)

OSTREA IMBRICATA. *Ost. testâ subquadrata, testæ int. radiatim pleatâ, resaca. et. musculis. resaca. irregularibus, caudâ, et. parte. valvæ. post. plicâ. subtransversâ, plicâ. radiatâ. et. lamellis. angulatis. revolutis, ad. apicem. testæ. imbricatis. valvâ. interiori. et. subquadrata.*

THE IMBRICATED OYSTER. Shell oblong-quadrate, loosely radiately pleated, pink, ornamented with large purple irregular spots, or patches, mixed with reddish brown; middle lobe large, flattened, angularly rounded, with one cavity, convex at the angles; lower valve often imbricated.

LAMARCK. *Anim. sans vert.* Ostrac. No. 46.
Hab. China.

Like *Ostrea Hypota*, but of lower and less solid structure, variegated in colour, and the deep central pleats less angular.

Species 37. (Mus. Hanley.)

OSTREA CYLINDRICA. *Ost. testâ. elliptico-subtriangulâ. plicâ. concentricâ. planulatâ. squamulatâ. puncturâ. valvâ. sinistrâ. crassissimâ, et. lamellâ. foliâ. et. cardinâ. elongatâ. lato, in. medio. profunde. impressio. musculari. maxima, subangulata.*

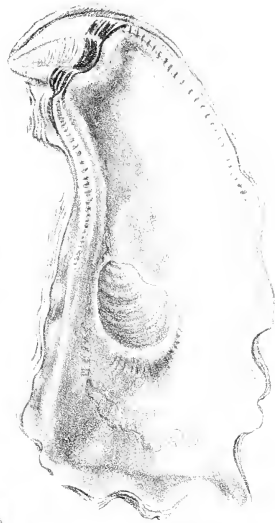
THE CORSICAN OYSTER. Shell oblong subtriangular, pale horny, flatly squamose, ponderous; left valve very thick, with leafy laminae outside; hinge elongated, wide, deep in the middle; muscular impression very large, somewhat reniform.

PAYSON. *Mollusques de l'île de Corse.*
Hab. Island of Corsica.

One of the numerous forms which may be ultimately resolved into the *Ostrea Edulis*, but which, on account of its very laminated structure and heavy substance, taken in conjunction with the development of the extraordinarily broad hinge, may usefully have a specific designation applied to it.



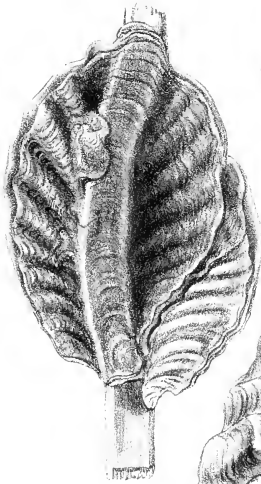
39



38 a



40 a



40



38



40 c

O S T R E A.

PLATE XVIII.

Species 38. (Fig. 10.) Mus. Taylor.

O S T R E A S U B I D O N G I. *Ost. testa subtriangulari, levigata, subquadrata, pedunculata, costis numerosis, submarginata, sinu medio emarginata, angulo subrotundo, radiis subparallelis, concentricis, foveis profundis, pallidis, impressis, sinu medio emarginato, subrotundo, angulo subrotundo, radiis subparallelis, concentricis, foveis profundis, pallidis, impressis.*

THE SUBIDONGI OSTRÆA. Shell of the valve 1/2 or 3/4 subquadrate, pedunculate, margin elevated toward the umbo, smooth at the vertex, slightly quadrate; margin strongly plicate, color of the deep greenish white, edged with purple; a line immediately plicated, concentrically marked with a fawn and purple; large, numerous, subrotund, laterals near the hinge.

SOWELLIA.

Hab. Australia.

The sculpture of this shell is different from that of the square character of the central margin is striking.

Species 39. (Mus. Hanley.)

O S T R E A T U L I P A. *Ost. testa tenui, elongato-subtriangulata, loricata, purpurea, costis numerosis, pallidibus, prope umbonam foveis albis, mediis subrotundis, valvula inferiori profundius, antepos. truncis; radius albis, purpureo tincto; impressione umbonariâ purpurea, purpurea.*

THE TULIPA OSTRÆA. Shell thin, elongately-subovate, smooth, purple, pale towards the margin, rayed near the umbon, with a white medial band; lower valve deep, with very thin margin; inside whitish tinted with purple; muscular impression small, purple.

LAMUREK. *Anim. sans vert.* Ostræa, No. 19. *Ostræa Epipactoides*. D'Orbigny.

Hab. Central America, on Mangroves.

Allied to *Ostræa Rhizophoræ* and *O. parasitica*, of which it may possibly be a variety.

Species 40. (Fig. a, Mus. Taylor; b, c, Mus. Hanley.)

O S T R E A T O L U M. *Ost. testâ tenuissimâ, fuscâ aut fusco-purpureâ, ad Rhizophorâs adherenti per lobis elongatis, valvula inferiori; valvula superiori in medio in costâ tubiformi elevatâ, ad latera decurvatim plicatâ; plicis rotundis, brevibus.*

THE LIUM OSTRÆA. Shell rather thin, brown or brownish purple, adhering to mangroves by elongated lobes of the lower valve; upper valve in the middle elevated into a tube-shaped rib, at the sides divergently ribbed; ribs rounded, smooth.

GMAILIN. *Syst. Nat. Linn.*

Ostræa sabilla, (test. jun.) Lamurek.

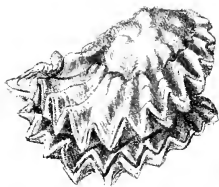
Hab. Central America, on roots of mangroves.

This oyster throws out lobes of its shell to reach points of attachment.

September, 1871.



11a



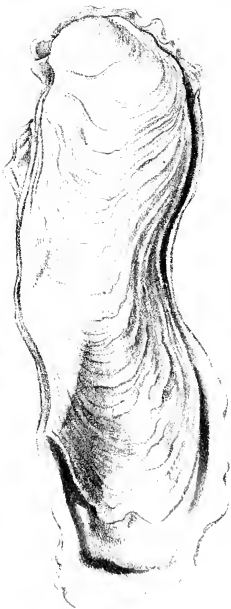
11b



11c



11d



11e



11f

O S T R E A.

PLATE XIX.

Species 41. (Fig. c. Mus. Harleij.) (Mus. Harleij.)

OSTREA FLORIS. *Ost. testa luteo-olivacea, Mytilus*
cap. lobis, per. lobis distinctis, concentricis, sub
subimpresso-fusca, distinctis, per. lobis
subimpresso-fusca, distinctis, per. lobis
subimpresso-fusca, distinctis, per. lobis

THE FLAT OSTRYA. Shell foliaceous, flattened,
mostly broad, adherent to the rock, or
purplish brown, diversely pleated, valves
large, sharply angular at the corners, pale
golden fawn; hinge of the lower valve set

LINÆUS, Syst. Nat.

Ostrea limosa H. Linnæus.

Ostrea tabella, Linnæus.

Ostrea limosa, Linnæus.

Hab. West Indies.

Differing from *Ostrea limosa* in its attachment
to the rock; and whereas it is the present species, the
O. foliosa to be attached to the rock, the
stems of seaweed, the present species is attached
attached crosswise.

Species 42. (Mus. Harleij.)

OSTREA BLUSA. *Ost. testa ovata, irregulariter*
impressa, et latissime pleatâ, compressâ, obscure
purpureâ; valvâ inferiori subconvexâ, superiori
convexâ, ciliis spicatis, margini albida,
striatâ, fimbriatâ, impressione musculari nigra,
et concentricâ striatâ.

THE OVAL OSTRYA. Shell elongated, tongue-
shaped, moderately flexed, solid, concentrically
laminate, externally covered with purple, white within,
sulced with reddish purple near the ventral
margin; lateral margins slightly crenulated;
muscular impression elongated; hinge wide,
produced in the middle; lower valve very foliaceous.

PLATE XIX.

Hab. Sandwich Islands.

This shell is found only in a half-fossil state.

Species 43. (Fig. d. Mus. Harleij.)

OSTREA QUINCES. *Ost. testa suborbiculari, irregulariter*
impressa, et latissime pleatâ, compressâ, obscure
purpureâ; valvâ inferiori subconvexâ, superiori
convexâ, ciliis spicatis, margini albida,
striatâ, fimbriatâ, impressione musculari nigra,
et concentricâ striatâ.

THE OVAL OSTRYA. Shell suborbicular, irregularly
pleated, plaited at the margin, compressed, dull
purple; lower valve rather flattened, upper rather
convex; within oak-coloured, margin whitish,
striped, fimbriated; muscular impression very
large, concentrically striped.

SOWERBY.

Hab. ———?

A remarkable shell in Mr. Harleij's collection, which
I can assign to no known species. The oak-wood
colouring of the interior and the large size of the
muscular impression, are the distinguishing charac-
teristics.

September, 1871



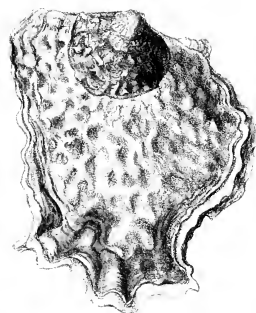
14 a.



15 a.



15 b.



17 a.



17 b.



16.



11 b.

O S T R E A.

PLATE XX.

Species 14. (Fig. c, d, Mus. Harbey.)

OSTREA COCHLEAR. *Ost. testa ovata, plicata et subchalarâ, fimbriatâ, marginibus irregularissimâ, albâ vel purpureâ striatâ, valvâ superi. prop. cordatâ et inferiori bispinâ, cardine trigono; valvâ superi compressâ, fimbriatâ, purpureâ, prop. inferi. subrotundâ et striatâ.*

THE SPOON OSTREA. Shell very thin, oval or suborbicular, fimbriated, with valves irregularly white or steeply purple striped; interior white within near the hinge; dorsal and ventral valves trigonal; upper valve compressed, with the margin reflexed, purple, and minutely striated; striated.

POLL. *Trinitsque* *Sulc.*, vol. i. tab. 28, f. 28.

Hab. Mediterranean.

Remarkable for its thinness and depth.

Species 15. (Fig. a, b, Mus. Harbey.)

OSTREA LIMA. *Ost. testâ plicatâ, plicis et septimulatis subvolutâ, subrotundâ, fimbriatâ, valvâ superi. prop. fimbriâ, cardine ovato, et inferiori subrotundâ, striatâ, tuberculis purpureâ sublimatâ, fimbriâ, cardine plicato.*

THE LIME OSTREA. Shell small, brown, longitudinally sub-ovate, sub-ovivalve, thin; lower valve deep, minutely striated; upper valve subcompressed, roughened with small sharp-edged trigonal tubercles; hinge small.

SOWERBY.

Hab. Sandwich Islands.

The peculiar rasp-like sculpture which roughens the upper valve in this interesting little species does not appear, as might at first be suspected, to be the result of any structure in the substances to which it is attached.

Species 16. (Mus. Harbey.)

OSTREA ROSACEA. *Ost. testâ irregulariter plicatâ, rugosâ, subtriangulâ, roseo-purpureâcenti, intus albâ, marginibus valvâ clausâ; valvâ inferiori pygmatâ, superiori compressâ; cardine plicato; impressione musculari subchalarâ, plicatâ.*

THE ROSE OSTREA. Shell irregularly plicated, rough, sub-trigonal, purplish-pink, interior white, with margin reddish-red; lower valve deep, upper compressed; hinge small, muscular impression rather round, small.

CHESLEY (*Parastrea* var.), *Conch.* f. 997

Ostrea plicatula var., Linnæus

Hab. Lord Howe's Island.

Species 17. (Fig. c, b, Mus. Harbey.)

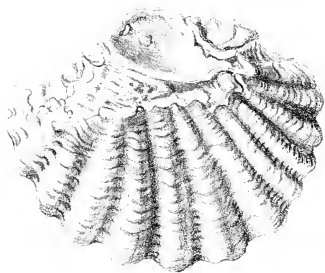
OSTREA CHEMNITZII. *Ost. testâ tenui, complanatâ, depressâ, plicatâ et undulatum rugosâ, plerumque sinistrâ, ad marginem lobatâ; valvâ superiori subrotundâ, prop. umbones obtusâ purpureâ; marginem dorsali post. umbones expansâ; umbones parvis, cardine linearâ.*

CHEMNITZ'S OSTREA. Shell thin, flattened, depressed, roughened with plats and undulations, generally sinistral, lobed at the margin; upper valve greenish, dull purple near the umbones; dorsal margin expanded behind the umbones; umbones small; hinge linear.

HANLEY. *Proc. Zool. Soc.*, 1843

Hab. China.

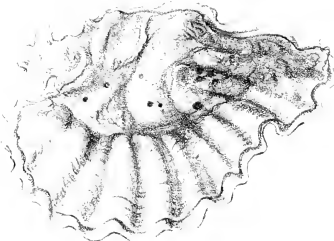
I understand by Mr. Hanley's expression "shell generally sinistral," that whereas in most species the apex is turned towards the posterior side as indicated by the position of the adductor muscle, in this species it is generally turned away from that side.



18 a



19 a



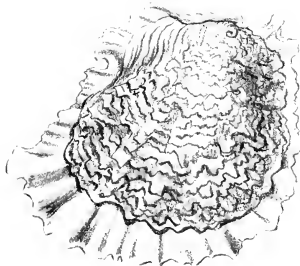
18 b



18 b



20 a



20 b

O S T R Æ A.

PLATE XXI.

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

OSTRÆA LACTEA. *Ost. testâ ad Rhizopora adharenti, radiatim plicatâ transversè subovata, solidâ, lacteocasco fulvesque tinctâ, subtus crevulatâ, intus castaneo auroque subviridi pictâ, marginibus carinatis, impressione muscolari utraque valvâ densè cinctâ; marginibus lateralibus cæcis umbonæ denticulatis; valvæ superioris costis rotundis depressis cæcis, valvæ inferioris subangulatis, profundis rugatis, ad marginem cæcum superiorem superantibus.*

THE MILK OSTRÆA. Shell adhering to mangroves, radiately plicate, transversely subovate, solid, milk-white, tinted with rose and fawn, bluish underneath, inside painted chestnut and greenish gold with blue margins; muscular impression in each valve deep chestnut; lateral margins denticulated towards the umbos; ribs of the upper valve rounded, rather depressed, of the lower valve slightly angular, deep wrinkled, overreaching the upper valve at the margin.

SOWERBY.

Hab. — ?

The blue tinted and rather regular ribs of the under valve, and the golden tinted chestnut painting of the interior, render this rather a pretty species.

Species 49. (Fig. a, b, Mus. Taylor.)

OSTRÆA ATTENUATA. *Ost. testâ longitudinâliter attenuatâ, angustissimâ solidâ, lateraliter arcuatâ, pallidâ superne fusco concentricè strigatâ, intus marginè crevulatâ, nigrescenti, impressionibus muscularibus nigris, cæcis; cardine lato, producto, quadrato, valvæ inferioris elongato.*

THE ATTENUATED OSTRÆA. Shell longitudinally attenuated, very narrow, solid, laterally arched, pale, concentrically striped with brown, margin within

crevulated, blackish, muscular impressions black, cæcite; hinge wide, produced, square, that of the lower valve elongated.

SOWERBY.

Hab. — ?

The long narrow form of this species, and the denticulations of its darkly coloured inner border, mark it as very distinct. The concentric stripes described would not probably appear if the outer surface of the upper valve were not worn.

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

OSTRÆA TUBERCULARIS. *Ost. testâ ovato-subtriangulâ, valvâ inæquivalvâ, foliaceâ, subobliquâ; valvâ superiori parvâ, complanatâ, rugoso-squamosâ, pallidè subvirido-fuscatâ, apice subspiratâ; valvâ inferiori profundè, utriusque auriculatâ, ad margines cæcis, intus cæcis marginibus costis robustis pictâ, cæcis fere omnino purpureis, levigatâ, plicis divergentibus, tuberculiformibus, distantibus armatâ, margine plicato, cardine parvo.*

THE TUBERCULAR OSTRÆA. Shell ovally subtriangular, very inequivalve, foliaceous, suboblique; upper valve small, flattened, roughly squamose, pale greenish brown, with subspiral apex; lower valve deep, auriculated on both sides, expanded at the margins, painted towards the margins inside with violet rays; outside nearly all over purple, smooth, armed with divergent tuberculiform distant plait; margin plaited; hinge small.

LAMARCK.

Hab. Island of Timor.

This shell is supposed by Mr. Hanley to be the *Ostrea plicatula* of Philippi, but not of the earlier authors. It appears to me very fairly to represent the *Lamarckian* species to which I have ventured to assign it.



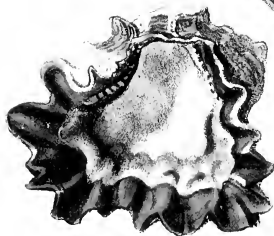
31.



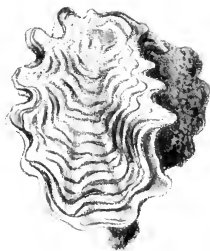
32 b



32 a



32 c



32 d

O S T R E A.

PLATE XXII.

Species 51. (Mus. Taylor.)

OSTREA LACTEANS. *Ost. testâ elongata-subtriangula, longitudinaliter attenuatâ, tenui, fulvâ, pallida, intus purpurea tinctâ, ad marginem ventralem lobatâ, cardine trigono, producto, valvâ superiori depressâ, subconcaâ; valvâ inferiori costis acutis, imbricatis, subspiniferis, distantibus sculptâ.*

THE TOIN OYSTER. Shell elongate subtriangular, longitudinally attenuated, thin, fohaceous, pale, tinted inside with purple, lobed at the ventral margin; hinge trigonal, produced; upper valve depressed, rather concave; under valve sculptured with sharp, imbricated, and rather spiniferous distant ribs.

HANLEY, Proc. Zool. Soc., 1815

Hab. Senegal.

Species 52. (Fig. a, b. Mus. Brit.)

OSTREA GLOMERATA. *Ost. testâ crassâ, irregulari, acuticostatâ, margine dentato vel lobato, valvâ impari-*

valvi, valvâ superiori operculari compressâ, laminais crassis concentricis rugatâ; valvâ inferiori cucullatâ, purpureâ, intus albâ, purpurea aut nigra marginatâ; aversibus lateralibus denticulatis, cardine plerumque attenuato, producto, acuminato.

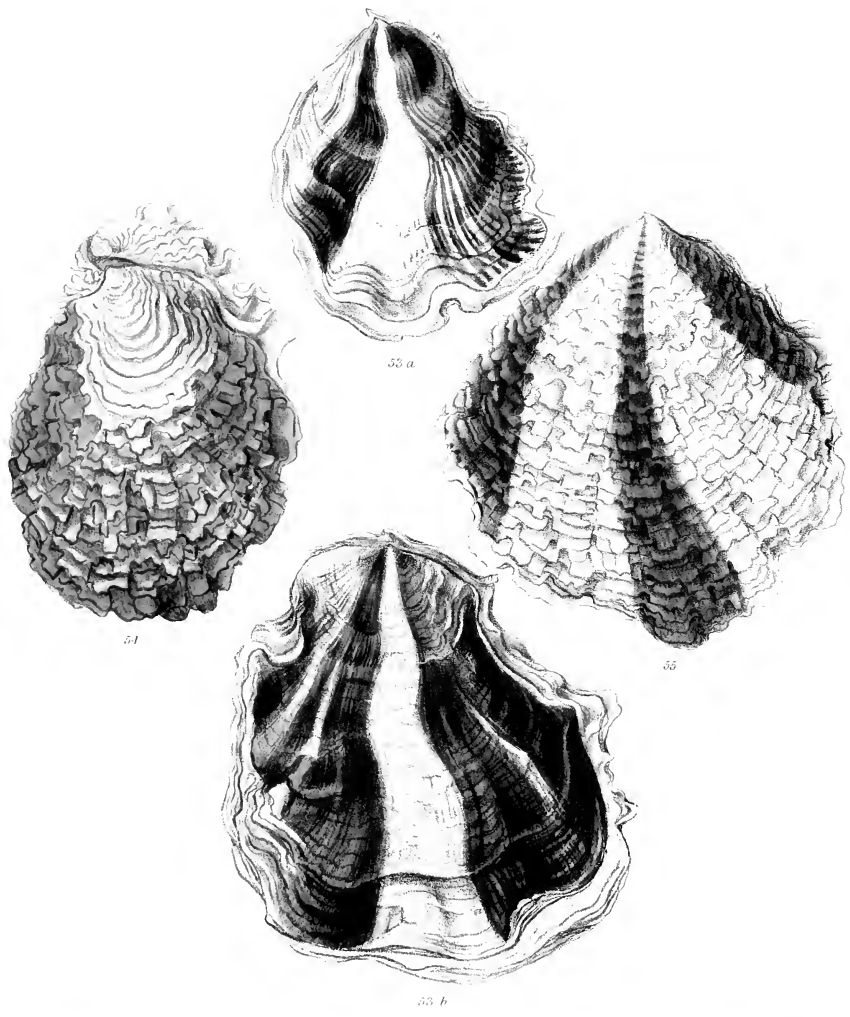
THE CONGLOMERATE OSTREA. Shell thick, irregular, sharp-ribbed, with the margin dented or lobed, very inequivalve; upper valve opercular, compressed, wrinkled with thick concentric laminae; lower valve cucullated, purple, while within edged with purple or black; latera margins denticulated; hinge generally attenuated, produced, pointed.

GOULD, Wilkes' Expedition.

Hab. —?

It is difficult to distinguish this species from *Ostrea cucullata*, if indeed they be not identical. The ribs of *O. glomerata* are more numerous and strong, not broadly angular as in Fig. 34, a, b. The young are often spinose as in Fig. 52, b. Never, perhaps, so much so as in the true *O. spinosa*.

September, 1871.



54

55 a

56

55 b

O S T R E A .

PLATE XXIII.

Species 53. (Fig. a, b, Mus. Taylor.)

OSTREA NICOLOR. *Ost. testâ ovato-subtriangulâ, solidâ, compressâ, albâ, purpureâ latissimâ biconvexâ, gis lamellosâ, margine simplici, nonnuncupatâ undulata; umbonibus acuminatis; calcalis latis albis, marginibus laterâlibus laevigatis.*

THE TWO-COLORED OSTREA. Shell ovate-subtriangular, solid, compressed, whitish, with two very broad purple rays, scarcely lamellar, margin simple, sometimes undulated, umbos acuminate; valves white within, the lateral margins smooth.

HANLEY, Conchological Miscellany. Ost. II., 2
Hab. Senegal (?).

The original specimen described by Mr. Hanley was attached by its entire surface to the bottom of a ship. One of Mr. Taylor's specimens has portions of wood adhering to it, which have been pierced by specimens of a Teredo.

Species 54. (Mus. Hanley.)

OSTREA LAMELLOSA. *Ost. testâ atrique calca radiâ foliaceâ et squamiferâ, albâ, purpureâ leviter variegatâ, ovatâ, crassâ, calci superiori subdepresso, versus umbonem laeviusculâ, concentricâ strigatâ squamis purpureis, extantibus laminatâ; calca inferiori pectinâ cœcavitâ, laminibus costatis lobatis ornatâ.*

THE LAMELLAR OSTREA. Shell very foliaceous and squamiferous in both valves, whitish, slightly variegated with purple, ovate, thick; upper valve subdepressed, rather smooth and concentrically striped towards the umbos, laminated with purple-outstanding scales; lower valve deeply excavated, ornamented with outstanding lobed laminae.

Buccinum, in Philippis. Moll. Sic.
Hab. Lake Fusaro, near Naples.

It may be considered an open question whether the form, like *Ostrea Cyrensis*, should be regarded as a distinct species, or merely a variety of *Ostrea edulis*. The specimen in Mr. Hanley's collection was identified by Philippi himself.

Species 55. (Mus. Hanley.)

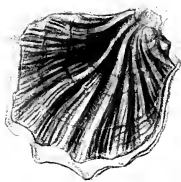
OSTREA DEPRESSA. *Ost. testâ suborbiculariter subtriangulâ, complanatâ, depressâ, albâ, radiis tribus purpureis latis pectinâ; calca superiori laminis concentricis squamosis latis; squamis levibus, laevibus, decumbentibus; umbonibus parvis, marginibus atrique dextrâ delictis.*

THE DEPRESSED OSTREA. Shell suborbicularly subtriangular, flattened, depressed, whitish, panted with three broad purple rays; upper valve covered with layers of scales; scales smooth, lacinated, decumbent; umbos small, dorsal margin sloped on each side.

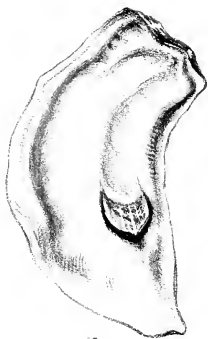
PHILIPPI, Mollusca Sicilia.
Hab. Adriatic.

This is usually regarded as a form of *Ostrea edulis*, assuming a flattened orbicular form on account of the flat surface to which the shell is attached. The appearance of this specimen is, however, remarkable for the broad purple rays, which are not seen in *Ostrea edulis*, except in very young specimens, such as represented in our Plate v, fig. 8 d. And in that case there are not, as here, three distinct rays with broad intervals, but the young shell is nearly covered with purple divided by a light ray in the centre. *Ostrea depressa* may possibly be a species hereditarily distinct.

September, 1871.



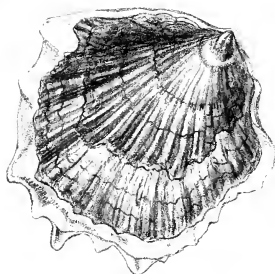
56 a



57 a



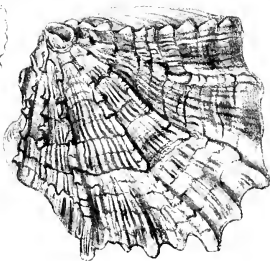
57 b



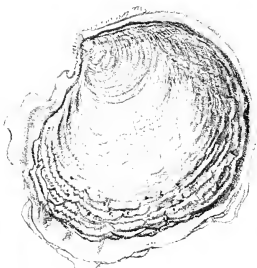
56 b



58 a



56 c



58 b

O S T R E A.

PLATE XXIV

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

OSTREA PALMIPES. *Ost. testis compressissima subquadrate, bina, calva inaequaliter, inaequilatere, luteo, purpureo vel nigro radiata; latera antero-lateralis declivi, margine dorsali recto, margine ventrali subrotundo, lobato, umbonibus parvis, acuminatis, calculi superiori brevitate, parvi, valvula interiori marginis expansi, calva radiatum striata et distanter costata, costis septem, tuberculatis, ad marginem productis, interstitiis complanatis.*

THE PALM-FOOTED OSTREA. Shell much compressed subquadrate, thin, very inequivalve, inequilateral, fulvous, rayed with purple or black; anterior side very short, sloped; dorsal margin straight, ventral margin rounded, lobed; umbones small, acuminated; upper valve smooth, small, lower valve more expanded, radiately striated and distantly ribbed without; ribs 7, tuberculated, produced at the margin, inter-stices flattened.

SOVEREY.

Hab. Philippines.

The peculiar characteristic of this rather pretty oyster is found in the outer surface of the lower valve, which from the radiating ribs ending in lobes and the flattened surfaces between, presents the appearance of the webbed feet of a bird.

Species 57. (Fig. *a, b*, Mus. Hailey.)

OSTREA RENIFORMIS. *Ost. testis crassi, elongata, angustata, lateraliter arcuata, albidis, inaequaliter, calculi superiori compressa, complanata, papilla marginis subfoliaceo, latus purpureo marginato; valvula inferiori profunde excavata; margine ventrali utraque calva acuminata, margine cardi-*

ali recto, impressionibus muscularibus purpureo-nigrescentibus.

THE KIDNEY-SHAPED OSTREA. Shell thick, elongated, narrow, laterally arched, whitish, inequivalve; upper valve compressed, flattened, a little leafy towards the margins, edged within with purple; lower valve deeply excavated, ventral margin in each valve acuminated, hinge margin straight, muscular impressions blackish purple.

SOVEREY.

Hab. — ?

The specimen is peculiarly arched inwards on the posterior, and outwards on the anterior side.

Species 58. (Fig. *a, b*, Mus. Hailey.)

OSTREA LENTIGINOSA. *Ost. testis oblique ovato-suborbiculari, subdentulaci; albidis, subrugosis, intus latera punctata, marginibus radiatum striatis, expansis, sublaevatis; impressionibus muscularibus rotundis; cardine elongato, angusto, recto; latere antice brevi, rotundo; latere postico producto, calva inferiori foliaceo.*

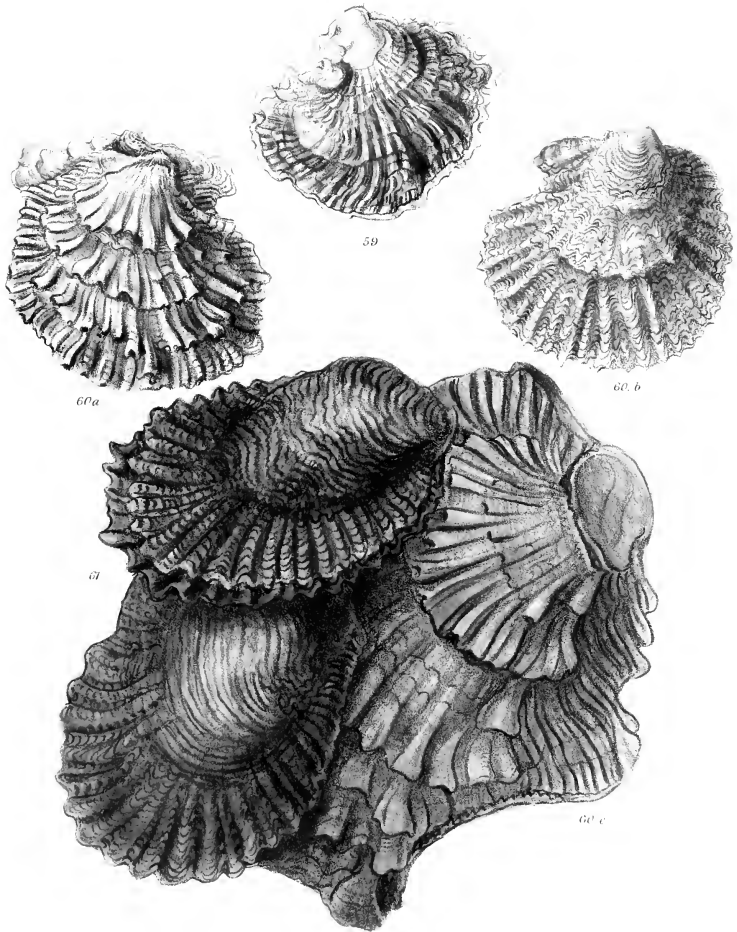
THE BECKLED OSTREA. Shell obliquely ovate-suborbicular, subdentular; whitish, rather rough, inside spotted with yellow, margins radiately striated, expanded, a little fluted; muscular impressions rounded; hinge elongated, narrow, straight; anterior side short, rounded; posterior side produced; lower valve leafy.

SOVEREY.

Hab. — ?

The interior surface of this species is distinguished by a sprinkle of yellowish or purplish spots. The shell is otherwise of a dull stone-coloured white.

September, 1871.



O S T R E A.

PLATE XXV.

Species 59. (Mus. Taylor.)

OSTREA MULTIRADIATA. *Ost. testâ rugosâ, compressâ, tenui, fulvâ, strigis numericis purpureis radiatâ; marginibus expansis, laevibus, filicatis; latere antico superius expanso, alato; latere postico infra expanso, scutellâ inferiori irregulariter costatâ et interstriatâ; cardine parvo, tenui.*

THE MANY-RAYED OSTREA. Shell rugose, compressed, thin, fulvous, rayed with numerous purple striae, margins expanded, flat, leafy; anterior side expanded and winged above; posterior side expanded below, lower valve irregularly ribbed and interstriated; hinge small, trigonal.

SOWERBY.

Hab. ———?

The outer surface of the lower valve is peculiarly sculptured, with short ribs and striae between and upon them.

Species 60. (Fig. a, b, c. Mus. Taylor.)

OSTREA AURECLATA. *Ost. testâ solidâ, squamiferâ, suborbiculâri, subfossâ, intus albidâ rictu variegatâ; marginibus lateralibus et ventralibus densè plicatis, margine dorsali utrinque auriculatâ; margine postico ad latera excavato, ad marginem ventralem antè producto; valvâ superiori complanatâ, densè squamosâ et costellatâ, valvâ inferiori calidè convexâ, infra auriculâ densè diarcuatâ costellatâ, medio et ad marginem ventrali costis majorebus, inaequalibus, nonnullis prominente tuberculato-spinosis ornatâ.*

THE AURECLATED OSTREA. Shell solid, squamiferous, suborbicular, brownish, whitish within variegated with green; lateral and ventral margins closely ribbed, dorsal margin auriculated on each side,

posterior margin excavated at the side, acutely produced at the ventral margin; upper valve flattened, closely scaly and ribbed; lower valve convex, closely divergently ribbed; in the middle and towards the ventral margin ornamented with larger, unequal ribs, some of them prominently tubercularly spinose.

SOWERBY.

Hab. Japan.

The specimens of the following species are seen growing upon a large under valve of this species, which does not show the auricles so clearly as in fig. 60, a, b, but in which the excavated margin and the diverging side ribs under the auricles are seen still more plainly.

Species 61. (Mus. Taylor.)

OSTREA MULTICOSTATA. *Ost. testâ ovato-oblongâ, fusco-purpureâ, medio concentricè strigatâ, versis marginibus densè squamosâ et costellatâ, intus albidâ, versis marginibus purpureo radiatâ; valvâ superiori tumidiusculâ; valvâ inferiori extus purpureâ, radiatum costellatâ, costellis rotundatis, ad latera diarcuatis.*

THE MANY-RIBBED OSTREA. Shell ovately oblong, purplish brown, concentrically striped in the middle, densely squamose towards the margins, purple rayed; upper valve rather tumid; lower valve purple without, radiately ribbed; ribs rounded, divergent at the sides; margins closely crenulated.

SOWERBY.

Hab. Japan.

The only specimens I have met with are attached to the lower valve of a specimen of the preceding species.



62. b



62. a



62. c



63.



64. a



65.



61. b

O S T R E A,

PLATE XXVI

Species 62. (Fig. *o, b, c*, Mus. Hanley.)

OSTREA GUINEENSIS. *Ost. testâ multiforâ, valvâ lateraliâ, plerumque oblongâ, subtriangulâ, scabellâ albâ, sublaevissimâ; intus circum, margine intus denticulato et indentato; impressione musculari reniformi; cardine parvo, triplo; apice acuminato.*

THE GUINEA OSTREA. Shell multiform, variously tortuous, generally oblong, rather solid, dull white, rather lamellose; green within, margin denticulated and indented within, muscular impression reniform; hinge small, trigonal, apex acuminate.

DEKLE, Pl. 43, f. 12-18.

Hab. Guinea.

This little species assumes various forms, exhibits no external paining, and is always tinted with green inside.

Species 63. (Mus. Hanley.)

OSTREA LUGUBRIS. *Ost. testâ tenui, obliquè subtriangulâ, leviter auriculatâ, griseo-purpureâ, obscurè radiatâ, subtrigulatâ, nitenti, intus albâ; latere antico ad marginem ventralem producta; valvâ superiori complanatâ, suboperculari, valvâ inferiori convexè obscurè costulatâ; ad marginem alteram valvam superantem, cardine angustâ elongatâ acuminatâ; impressione musculari reniformi nigrescenti.*

THE LUGUBROUS OSTREA. Shell thin, obliquely subtriangular, slightly auriculated, greyish purple, obscurely rayed, rather smooth, shining, whitish within; anterior side produced at the ventral margin; upper valve flattened, subopercular, lower valve convex, obscurely ribbed; at the margin extended beyond the upper valve; muscular impression reniform, nearly black.

SOWERBY.

Hab. North America?

The specimen is singularly produced on the anterior side.

Species 64. (Fig. *a, b*, Mus. Hanley.)

OSTREA CIRCUMSCISSA. *Ost. testâ ovato-oblongâ, plerumque angustâ, ad rhizoporus adhaerenti, ad marginem plicatâ, albâ vel purpureâ; intus albâ, purpureo aut viridi lividâ, margine valvulae superioris omnino denticulato, valvula inferioris indentato.*

THE STITCHED OSTREA. Shell ovately oblong, generally narrow, adhering to mangroves, plicated at the margin, whitish or purplish; within white-tinted with purple or green; margin of the upper valve denticulated in every part, and that of the lower valve indented.

GOULD, United States Expedition.

Hab. Massachusetts!

This species is named from the stitch-like appearance of the denticles and corresponding indentations in the inner margin of the valves.

Species 65. (Mus. Hanley.)

OSTREA ALGAEENSIS. *Ost. testâ suborbiculari, ventricosâ, subauriculatâ; valvâ superiori concavâ, superâ nitenti, costis marginem densè squamosi, valvâ inferiori costis subconvexâ, irregulariter tuberculatâ, albâ; valvâ intus albâ, impressionibus muscularibus maximis, reniformibus, concentricè circum stigmati.*

THE ALGAE OSTREA. Shell suborbicular, ventricose, subauriculated; upper valve convex, shining above, closely squamiferous towards the margin; lower valve rather concave outside, irregularly tuberculated, white; valves whitish within, muscular impressions very large, kidney-shaped, concentrically striped with green.

SOWERBY.

Hab. Algora Bay.



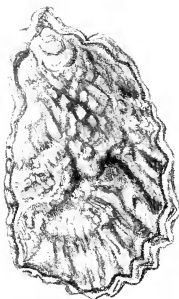
67 a



66 a



67 b



68 a



68 b



68 c



66 b

OSTREA.

PLATE XXVII.

Species 66. (Fig. a, c, Mus. Hanley.)

OSTREA SANDWICHENSIS. *Ost. testâ oblongo-irregulari, divergentim plicatâ, rugosâ, albâ, costâ productâ, purpureo-pictâ; plicis centralibus majoribus, lateralibus parvis; cardine parvo, acuminato, solidi inferioris producto.*

THE SANDWICH ISLANDS. **OSTREA.** Shell moderately subcompressed, generally oblong, narrow towards the apex, pointed with purple central plicæ, the lateral ones small; hinge small, triangular, that of the lower valve produced.

SŌWĒREY.

Hab. Sandwich Islands.

This pretty small species has exactly the external appearance of a *Plicatula*, and it is only by opening the specimen and examining the hinge, that its connection with the genus *Ostrea* becomes apparent.

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

OSTREA CIRCULIFERA. *Ost. testâ multiformi, subcompressâ, plicis majoribus oblongis, rugis plicis angustatis marginalibus plicatis; costis albâ, testâ subalbâ, cardine parvo, testâ costâ, inferioris plicis majoribus acuminatim productâ, majoribus in testâ muscularibus majoribus.*

THE CIRCULIFEROUS OSTREA. Shell multiform, small, subcompressed, generally oblong, narrow towards the apex, with plicated margins; whitish without, greenish within; hinge small, triangular, that of

the lower valve generally acuminate produced; muscular impressions large.

SŌWĒREY.

Hab. RŪSŪA.

The intermarginal plications are constant in all the varied forms of this interesting little species, which in other respects, particularly in the green tinted interior, resembles *Ostrea Gaimansis*.

Species 68. (Fig. a, b, c, Mus. Hanley.)

OSTREA LIGATA. *Ost. testâ compressâ, solidâ, plicis majoribus oblongis, purpureo strigatâ vel maculatâ, rugosâ, ad marginem plicatâ; margine intus purpureo-cardine utrinque leviter excavatâ; impressiōibus muscularibus majoribus; cardine lato, valvâ inferioris productâ, apicibus acuminatis.*

THE LIGATED OSTREA. Shell compressed, solid, generally oblong, striped or spotted with purple, rough, plicated at the margin, slightly excavated within near the hinge on both sides; muscular impressions large; hinge wide, that of the lower valve produced; apices acuminate.

CŌRŌMŪA. Conch. f. 232.

Ostrea plicatula, Gmelin.

Hab. Clann, East Indies.

The various forms which may be referred to this species are all plicated round the margin of both valves, but closely so, in the manner of the smaller *Ostrea circulifera*.



69^a



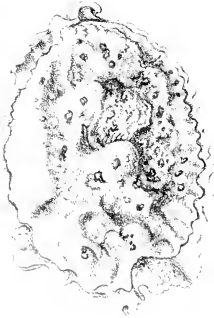
69^b



69^c



70



71^a



72



71^b

O S T R E A.

PLATE XXVIII

Species 69. (Fig. a.) (Mus. Brit., & Mus. Hanley.)

OSTREA CONCHAPHILA. *Ost. testâ parvâ, ad conchas adherenti, formâ variantî, depressâ, albidâ, purpureo strigatâ aut maculatâ, tuberculis parvis divergentibus leviter armatâ, intus albâ aut purpureâ, cœctricæ subarcuatâ, marginæ cœctricæ cardineam crenulatâ; cardine tenui, calculâ inferiori non quam profundâ.*

TYPE. **SHELL-LOVING OSTREA.** Shell small, adhering to shells, various in form, depressed, whitish, striped or spotted with purple, slightly armed with small diverging tubercles, white or purple within, cœctrix ash-grey, margin crenulated towards the hinge; hinge thin; lower valve never deep.

COLLECTOR. Mazatlan Shells in the British Museum, p. 161.

Hab. Mazatlan, Mexico, Panama.

Our figure *a* is a magnified view of a very small shell found adhering to an *Luconia*.

Species 70. (Mus. Hanley.)

OSTREA INLEMIS. *Ost. testâ irregulari subrotundâ, subcompressâ, rugosâ plicis inæquis, imbricatis, divergentibus, angulatâ, hamâ tuberculo-cis sculptâ, purpureâ, intus subviridescenti, vesis marginem fuscâ, cœctricæ angustâ, subarcuatâ, marginibus propè cardinem crenulatis, umbonibus atrois; calculâ inferiori tuberosâ.*

THE UNARMED OSTREA. Shell irregular, roundish, subcompressed, rugose, sculptured with large imbricated, diverging, angular, not tubiferous plates; purple, subviridescent within, brown towards the margin, cœctrix large, roundish; margin crenulated near the hinge; umbones turning backwards; lower valve tubiferous.

SOWERBY.

Hab. — ?

This shell has an affinity with *O. imbricata* on the one hand, and with *O. Clematizæ* on the other. Its strong plications, which are imbricated but without tube-shaped tubercles, distinguish it from the first by

their character, and from the second by their size and development.

Species 71. (Mus. Barclay.)

OSTREA CEREA. *Ost. testâ tenui, nigrâ, rugosâ, depressâ, oblongo-ovata, inequivalvi, margin crenulato, intus nigrâ, opacâ, cœctricæ utrinque valvâ cœctricæ costano, cardine rectiusculo, valvâ inferiori latitudine alteram superanti, marginæ ventrali foliaceâ.*

THE WAND OSTREA. Shell thin, snow-white, rough, depressed, inequivalve, margin crenulated, snow-white, within opaque, cœctrix in each valve bright chestnut; hinge rather straight, the lower valve exceeding the other in width, ventral margin foliaceous.

SOWERBY.

Hab. Diego Garcia, Mauritius.

One of the very beautiful oysters obtained by Sir David Barclay from the interesting neighbourhood of the Mauritius.

Species 72. (Mus. Hanley.)

OSTREA HANLEYANA. *Ost. testâ tenui, fuscâ, purpureo pallido submaculatâ, subarcuatâ, valvâ inferiori complanatâ, foliosâ, alterâ longitudine et ad latera superanti, propè cardinem subarcuatâ, marginæ superiôræ crenulatâ; cœctricæ inconspicue, elongatâ, cardine levî, valvâ superiori tuberosâ inæquis divaricatis rugatâ.*

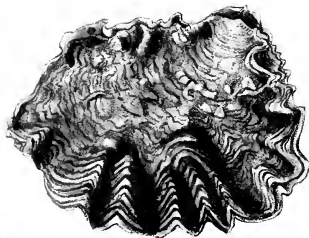
HANLEY'S OSTREA. Shell thin, brown, slightly spotted with pale purple, nearly reniform, lower valve flattened, foliaceous, exceeding the other in length and at the sides, subarcuated near the hinge, margin crenulated at the upper part, cœctrix inconspicuous, elongated, hinge short; upper valve roughened with inconspicuous diverging tubercles.

SOWERBY.

Hab. Sandwich Islands.

An interesting shell in the collection of Mr. Hanley which I can refer to no other species.

November, 1871.



OSTREA.

PLATE XXIX.

Fig. 64. Mus. Taylor.

The upper dentulations of this shell, not at first observed, prove it to be a variety of *Ostrea commutata*.

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

OSTREA CYMBIFORMIS. *Ost. testâ tenui, valvâ cuneata, hinc illic purpureo suffusâ, et c. angulatâ, cingulâ tuberculata, utrinque cinctâ, cinctura plicata, dissimili, equali; sinu, cicatrix, utrinque, ante aperturam, apice acuminatâ; valva superiorâ depressâ, emplanata, et c. excavatâ; cinctura costata, testâ, apice parva, acuta.*

THE CYMBIFORM OSTREA. Shell flat, thin, white here and there suffused with purple, very inequally lateral, longitudinally attenuated, lower valve very deep, boat-shaped, hinge attenuated, acutely cuneiform, apex acuminated; upper valve depressed, flattened or excavated, dorsal margin rather straight, apex small, acute.

SOWERBY.

Hab. Florida.

The form of this species is very peculiar and the texture remarkably light.

Species 74. (Mus. Handley.)

OSTREA MELISTRIBATA. *Ost. testâ compressâ, dissimili, irregulari utri subcuneatâ, valva superiorâ convexâ, paulo convexâ, sinu, valvâ, hinc et dissimiliter, densis sculptâ, prope umbones leviter tuberculatâ, marginâ dorsalâ excavatâ, cicatrix subcuneatâ; umbonibus nonnullis, parvis; testâ verrucosa alba, emplanatâ.*

THE MELISTRIBATED OSTREA. Shell compressed, dissimilar, irregularly rather rounded; upper valve brown, a little convex, sculptured with close radiating and diverging striae, slightly tubercular near the umbones, dorsal margin expanded, ventral slightly crenulated; umbones acuminated, small; lower valve white, flattened.

HASTLEY. *Proc. Zool. Soc.*, 1846.

Hab. —?

A highly characterising shell, different in sculpture from any other.

Species 75. (Mus. Barclay.)

OSTREA TESTIS. *Ost. testâ solidâ, rugosâ, purpureâ, transversè oblongâ, ad marginem plicis unguis, acute angulâ, c. undatâ; valvâ medio antice-subfussâ, marginè lato purpureo, cicatrix, plicæ laterali, convexâ, cicatrix, cardiacâ parva, tripartita, antice subterminali, nervium externum utriusque valvæ quadratâ.*

THE TESTIS OSTREA. Shell solid, rough, purple, transversely oblong, modulated at the margin with large acutely angular plicæ; within golden brownish, with the margin broadly purple, cicatrix posteriorly lateral, large, ash coloured, hinge small, tripartite, nearly terminal in front; internal margin granulated in each valve.

SOWERBY.

Hab. Diego Garcia, near the Mauritius.

Sent by M. Robillart to Sir David Barclay, Bart.

Species 76. (Mus. Taylor.)

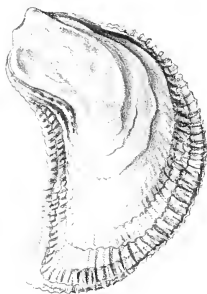
OSTREA FLORIDENSIS. *Ost. testâ subarenatâ, longitudinally subobovata, solida, valvâ incurvatâ, rufâ, cicatrix rufâ ad angulum plicatâ, purpureo suffusâ, productâ, ad rhizopodium albidâ, rufâ, albis ad marginem purpureo, cicatrix costatâ et albidâ; valvâ superiorâ paulo convexâ, operculiformi, subâ cuneatâ.*

THE FLORIDA OSTREA. Shell somewhat arched, longitudinally rather attenuated, solid, very inequally lateral, lower valve plicated at the margin, suffused with purple, produced, cicatrix chestnut or white; upper valve a little convex, operculiform, rather smooth.

SOWERBY.

Hab. Coast of Florida.

This is one of the Mangrove oysters, whose form so much depends upon the position in which they are attached. In both our specimens the lower valve rises considerably beyond the upper.



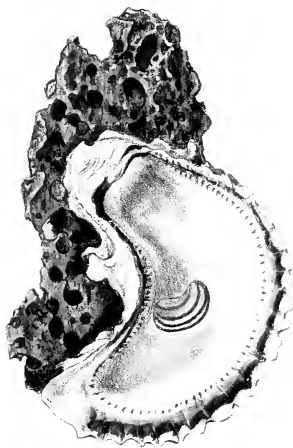
77''



78''



78^a



77^b



79



80

O S T R E A.

PLATE XXX.

Fig. 65, 6, Mus. Taylor.

A beautiful group of young specimens of *Ostrea Agassisi*, Sowerby, growing on a maritime root.

Species 77. (Fig. *a, b*, Mus. Barclay.)

OSTREA BARCLAYANA. *Ost. testâ ellipticâ, oviformi, compressâ, haud distinctè striatâ, subpallidâ, calceâ superiorè pallidâ, inferiorè et laterali castaneâ, postèrè nigro-olivaceâ, ad marginem costâ isoplicâ distinctè striatâ, valvâ superiorè, calceâ tuberculâ nigro-purpureâ, purpurâ, et marginem albidâ, postèrè et laterali albidâ, valvâ inferiorè nigro-olivaceâ, postèrè substriatâ, marginem intèr valvâ superiorè distinctè striatâ, plicâ isoplicâ distinctâ.*

BARCLAY'S OSTREA. Shell oval, arched, ventral, longitudinally produced, margin lateral, upper valve pale brownish, acuminate posteriorly at the ventral margin, near to and far the margin sculptured with little divergently dilated ribs; lower valve near the margin rounded at the margin, when closed, toothed, tooth produced far beyond the upper valve; cavity of each valve common, chestnut sublateral post-early, internal margin of upper valve denticulated, of the under unindented.

SOWERBY.

Hab. Point de Flaq, Mauritius.

The only specimen I have seen of this beautiful oyster is attached to a piece of scorched lava. The sculpture consisting of divergent ribs, near the outer margin of the upper valve, which may have been characteristic of the whole surface, if it had been preserved, is sufficient to distinguish the species, besides its semibivalve form and the beautifully fluted and toothed marginal margin. I have pleasure in dedicating this species to Sir David Barclay, Bart., to whom I am indebted for much valuable information, and whose indefatigable researches in the Mauritius and its neighbouring islets, have led to the accumulation of a magnificent collection.

Species 78. (Fig. *a, b*, Mus. Hanley.)

OSTREA FIS-TOURIS. *Ost. testâ tenui, compressâ, longè tuberculatè oblongâ, arcuatâ, superiâ subattenuatâ, versâ marginem ventralè obliquè expansâ, pallidè fulcâ, purpurâ costatâ et distinctè striatâ et laterali, costâ inferiori divergentim plicatâ, albidâ marginem superiâ, plicâ tuberculatè nigro-purpureâ armatâ, ad terminâs marginibus productis, angulatis calceâ intus albis, cavitate parva.*

FIS-TOURIS OSTREA. Shell thin, compressed, longitudinally oblong, arched, attenuated above, obliquely expanded towards the ventral margin, pale brown, divergently radiately striped and lined, lower valve divergently plicated, exceeding the other in size; plicæ armed with blackish purple tubercles which are produced and filon-like at the ends; valves white within; hinge small.

HANLEY. *Proc. Zool. Soc.* 1845.

Hab. ?

The specimen from which our figure is taken does not seem to have the slightest affinity with *O. fulvum* to which it has been ascribed.

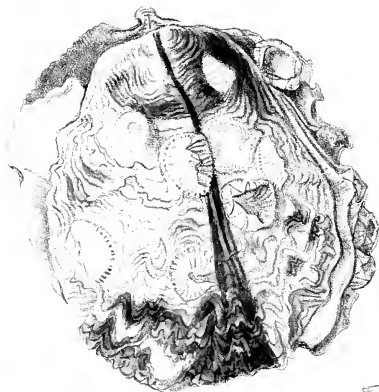
Species 79. (Mus. Hanley.)

OSTREA SETOSA. *Ost. testâ compressâ, tenui, versâ cavitationè attenuatâ, inferè subattenuatâ, cupatâ, calceâ superiâ spinis tuberculatè nigro-purpureâ costatibus armatâ.*

THE SETOSA OSTREA. Shell compressed, thin, acuminate towards the hinge, rounded beneath, rough; upper valve armed with tube-shaped blackish-purple out-standing spines.

QUOY. *Voy. Astralabe*, v. 3, pl. 76, f. 13, 14.

This may possibly be a young specimen of *Ostrea cucullata*, or *glaucoata*, but it has none of the usual characteristics of either of those species when fully developed. The only indication of a connexion is the fact that a few spines are occasionally developed on some very young specimens of *O. cucullata*. See plate xxvi. f. 52, b.



809



806



807



808



805

O S T R E A.

PLATE XXXI.

(Fig. 2, *c, d*, Mus. Borelay.)

Ostrea encellata, Deshayes. A small species, one of this interesting little species was found on the new island that has within the last few years appeared off the Mauritius, Borelay Island. See Plate II., *f. 2, a, b*, copied from Deshayes, Ile de la Réunion.

Species 80. (Fig. *a, b, c*, Mus. Borelay.)

OSTREA VERRUCATA. *Ost. testâ solidâ, subcompressâ, subconiformi vel suborbiculari, valvâ inferiori superiorum superanti, ad lapidâ latè adhaerenti; valvâ superiori fulvâ, purpureo striatâ, nitidissimâ; margine interno valvâ inferioris indurâ, superioris denticulato, cicatrice utraq; valvâ subcentrali, magis, purpureo striatâ.*

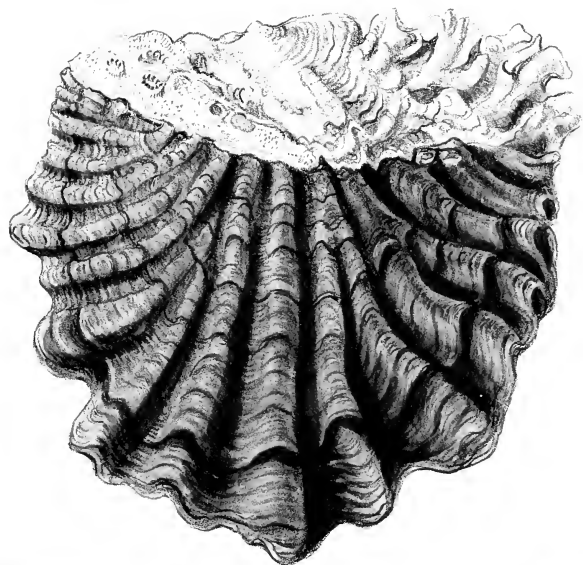
THE VERRUCHED OSTREA. Shell solid, subcompressed, rather reniform, or suborbicular; lower valve exceeding the upper, widely adhering to stones; upper valve fulvous, striped with purple, very shining, inner edge of the lower valve indented, of the upper denticulated, cicatrix in each valve subcentral, large, striped with purple.

LOCALITY.

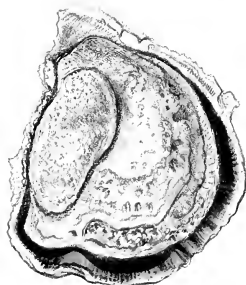
Hab. Rivière de la Rampart, Mauritius.

The species is commonly eaten in its locality. I have named it from the peculiar glassy appearance of the upper valve. The two specimens are in Sir David Borelay's collection.

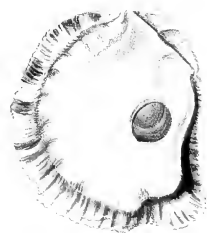
November, 1874.



81



82



83

O S T R E A.

PLATE XXXII

Species 81. (Mun. Borch.)

OSTREA SOWLEYI. *Ost. testâ* (superior part convex, inferior part concave, subequal laterally, subtriangular, suboblong, slightly expanded above, whitish, somewhat spotted with purple near the margin, lower valve extending beyond the upper, thin, expanded and standing beyond the upper, thickly expanded and standing beyond the upper, slightly ribbed; hinge triangular, purple, four lateral, blackish or chestnut; upper valve compressed, a little flattened, slightly striated.

THE NOBLE OSTREA. Shell convex, superior part compressed, discoidal, subtriangular, suboblong, slightly expanded above, whitish, somewhat spotted with purple to the margin, upper part of the lower valve diverging, somewhat convex, the lower valve extending beyond the upper, the margin foliaceous, margin (blackish or chestnut) waved; dorsal margin of each valve near the hinge at the apex straightly striated.

SOWLEY.

Hab. Barclay Island, Mauritius.

Another of the rare products of the alga, washed on a little islet.

Species 82. (Mun. Borch.)

OSTREA SOWLEYI (Mun. Borch.) *Ost. testâ* (superior and inferior parts convex, subequal laterally, subtriangular, suboblong, slightly expanded above, whitish, somewhat spotted with purple near the margin, lower valve extending beyond the upper, thin, expanded and standing beyond the upper, thickly expanded and standing beyond the upper, slightly ribbed; hinge triangular, purple, four lateral, blackish or chestnut; upper valve compressed, a little flattened, slightly striated.

THE NOBLE OSTREA. Shell irregular, rather white, rather very inequilateral, subtriangular, outwardly white, within spotted with purple near the margin, lower valve extending beyond the upper, thin, expanded and standing beyond the upper, thickly expanded and standing beyond the upper, slightly ribbed; hinge triangular, purple, four lateral, blackish or chestnut; upper valve compressed, a little flattened.

SOWLEY.

Hab. Madagascar, Mauritius.

The specimen with the lighter internal colour is from Madagascar. The darker one is from the Mauritius. In the two specimens the apex turns in opposite directions.

NOVEMBER, 1871



No. 9



No. 10



No. 11



No. 12



No. 13



No. 14



No. 15

OSTREA.

PLATE XXXIII.

SPECIES NEW TO ME.

OSTREA ANKAN. *Ostrea suborbicularis*, sp. n. Shell orbicular, moderately convex, surface minutely granular, with scattered larger granules, especially near the edge; hinge small, margin with crenulations on both sides near the umbos.

TYPE. ANKAN, OSMAN SHAH, ISLAND OF FORMOSA, ATTACHED TO A ROCK. (See Plate XXXIII, Figs. 1 & 2.)
Length, .69 mill.; breadth, .69 mill.; height, .69 mill. Upper valve dentate, edge of the rounded umbo with minute, white granules. Lower valve unknown.

SOWERBY.

Hab. Ankan.

The curious circular, crenate, tuberculation of the larger specimen of the upper valve is apparently the result of some peculiarity in the growth, somewhat peculiar, showing a striated structure, which ends within a point at the upper part of the hinge.

SPECIES NEW TO ME. (PART 2).

OSTREA OBUSA. *Ost. testis suborbicularis, convexa paulatim*, *ultra*, *fulvâ*, *nitida*, *superassata*, *lobis*, *tuberculatis*, *spinosâ*, *subquadrata*, *convexa*, *aristata*, *lunata*, *marginibus*, *platis*, *interius*, *inopertulis*, *suborbitali*, *externa*, *marginibus*, *suberata*, *lobis*, *caulibus*, *parvis*, *marginibus*, *interius*, *prope*, *umbones*, *attingens*, *orbiculata*.

TYPE. OBUSA, OSTREA. Shell suborbicular, flat, pediculous, widely beaded with purplish black, spinose, rugose, arched, tumid, plated at the edge; inequally greenish within; ear rather large, rather reniform; hinge small, margin with crenulations on both sides near the umbos.

SOWERBY.

Hab. ——— ?

The group in the collection of Mr. Hanley consists of two specimens attached to each other. The upper

specimen is *Ostrea suborbicularis* (Pl. XXXIII, Fig. 1) and the lower is *Ostrea orbicularis* (Pl. XXXIII, Fig. 2) on the margin.

SPECIES NEW TO ME. (PART 3).

OSTREA SUBORBICULARIS. *Ost. testis suborbicularis*, *convexa*, *fulvâ*, *nitida*, *superassata*, *lobis*, *tuberculatis*, *spinosâ*, *subquadrata*, *convexa*, *aristata*, *lunata*, *marginibus*, *platis*, *interius*, *inopertulis*, *suborbitali*, *externa*, *marginibus*, *suberata*, *lobis*, *caulibus*, *parvis*, *marginibus*, *interius*, *prope*, *umbones*, *attingens*, *orbiculata*.

TYPE. SUBORBICULARIS, OSTREA. Shell with a cup (convex) slightly elongated, quadrate, blackish, undatosequamous, white within, with a very wide black margin, small, rather rounded; lateral margins armed on each side near the hinge with rounded, rather distinct, striated, the lower valve unknown.

SOWERBY.

Hab. Ankan.

The large, strongly beaded is the only specimen known, and is probably none of the peculiarities of the species which I have named *Ost. Arakansis*, with which it is nearly associated, it appears worth a provisional designation.

SPECIES NEW TO ME. (PART 4).

OSTREA BURAI. *Ost. testis suborbicularis*, *tenax*, *subcompressa*, *juncis*, *purpureiscenti*, *et*, *cassidatâ*, *lucis*, *perispermatis*, *arcuatis*, *lobis*, *sparsis*, *radialibus*, *reticulis*, *umbones*, *truncatis*, *tuberculata*, *caulis*, *marginibus*, *undans*, *placatis*, *cavitate*, *parvis*, *valcus*, *inferioris*, *lobis*, *testaceis*, *aristatis*.

TYPE. BURAI, OSTREA. Shell suborbicular, thin, slightly compressed, purplish or chestnut brown, sparsely rayed with irregular blackish lines; hinge small, lower valve armed with testaceous lobes.

SOWERBY.

Hab. Island of Formosa?

The orbicular form, the tuberculated surface near the umbos, and the dark linear rays distinguish this species from *Ostrea juliana*, which it otherwise nearly resembles.

November, 1871.

Species 87. (Mus. Prevost.)

OSTRÆA PREVOSTII. *Ost. testâ solidâ, rugosâ, transversè oblongâ, arcuatâ, subcompressâ, intus versus marginem viridi; valvâ superiori versus marginem viridi, purpureo striptâ, margine ventrali concavo, plicis marginalibus angulatis, undulatis, ad terminum mucinis undato, margine dorsali concavo, crenato, valvâ inferiori albâ, medioangulatim tumida, plicis utriusque divaricatis acutè angulatis.*

PREVOST'S OSTRÆA. Shell solid, rough, transversely oblong, arched, slightly compressed, greenish within towards the margin; upper valve green

towards the margin striped with purple, ventral margin convex, undulated with rather large angular, imbricated plaits, very large at the end; lower valve whitish, angularly tumid in the middle, with divergent, acutely angular plaits on each side.

SOWLELY.

Hab. — ?

Interesting as a second example of the peculiar form represented by *Ostræa mygalea*, a form otherwise known only as a fossil. The specimen is in the collection of Dr. Prevost.

OSTREA.

	Page.	Species.		Page.	Species.
<i>aquatorialis</i> , D'Orb.	XVIII.	39	<i>hippopus</i> , Lamarck	V.	8
affinis, <i>Sowerby</i>	XXIX.	75	<i>hyotis</i> , <i>Linnæus</i>	IV.	7
Algonensis, <i>Sowerby</i>	XXVI.	65	imbriicata, <i>Lamk.</i>	XVII.	36
Angusii, <i>Sowerby</i>	XIII.	27	marginifidus, <i>Sowerby</i>	XXXII.	82
angulata, <i>Lamarck</i>	VIII.	12	inermis, <i>Sowerby</i>	XXVIII.	70
Aranakensis, <i>Sowerby</i>	XXXIII.	83	<i>iralescens</i> , Gray	I.	1
arharon, Chem. (parasitica)	II.	4	<i>littorea</i> , Desh. (cochlear)	XX.	41
atenuata, <i>Sowerby</i>	XXI.	49	<i>littorea</i> , <i>Lamk.</i>	XXVIII.	49
aureiculata, <i>Sowerby</i>	XXV.	60	livorans, <i>Hanley</i>	XXII.	51
<i>Australis</i> , Lamarck	XII.	25	lutea, <i>Sowerby</i>	XXI.	48
Baralayana, <i>Sowerby</i>	XXX.	77	luniflora, <i>Brochi</i>	XXIII.	51
Beleheri, <i>Sowerby</i>	VII.	14	lentiginosa, <i>Sowerby</i>	XXIV.	58
bicolor, <i>Hanley</i>	XXIII.	53	lima, <i>Sowerby</i>	XX.	45
<i>Borealis</i> , Gould	VI.	9	<i>littorea</i> , <i>Lamk.</i> (frons)	XIX.	44
caudifrons, <i>Hanley</i>	IV.	6	ligularis, <i>Sowerby</i>	XXVI.	63
<i>Canadensis</i> , Lamarck	VI.	9	lirata, <i>Carpenter</i>	IX.	15
cerata, <i>Sowerby</i>	XXVIII.	71	megodon, <i>Hanley</i>	XII.	21
circumsuta, <i>Gould</i>	XX.	61	Mexicana, <i>Sowerby</i>	XXI.	35
Chennitzii, <i>Hanley</i>	XX.	47	moriana, <i>Gould</i>	XX.	31
Chitonsis, M. B. M.	XV.	33	multiostrata, <i>Sowerby</i>	XXV.	61
cochlear, <i>Poll.</i>	XX.	41	multiradiata, <i>Sowerby</i>	XXV.	59
Columbiensis, <i>Hanley</i>	VII.	19	multistriata	XXIX.	74
cothaphila, <i>Carpenter</i>	XXVIII.	69	mytiloides, <i>Lamarck</i>	II.	3
cornucopia, Chem.	XVI.	34	nigromarginata, <i>Sowerby</i>	XXXIII.	85
crenulifera, <i>Sowerby</i>	XXVII.	67	nobilis, <i>Sowerby</i>	XXXII.	81
crassa, Chem. (rostralis)	X.	20	obesa, <i>Sowerby</i>	XXXIII.	84
crusta-galli, <i>Linnæus</i>	XI.	22	oculosa, <i>Sowerby</i>	X.	19
cucellina, <i>Deshayes</i>	II., XXXI.	2	palmipes, <i>Sowerby</i>	XXIV.	56
cuellata, <i>Born.</i>	XVI.	34	parviflora, <i>Turton</i>	V.	8
eymlaciformis, <i>Sowerby</i>	XXIX.	73	parasitica, <i>Gmelin</i>	II., XIII.	4
Cyrnusii, <i>Pagodon</i>	XVII.	37	postigris, <i>Hanley</i>	XXX.	78
denticulata, <i>Born.</i>	IX.	14	porcellis, <i>Sowerby</i>	X.	18
depressa, <i>Philippi</i>	XXIII.	55	placata, <i>Chemnitz</i>	XXVII.	68
disoides, <i>Gould</i>	XIII.	26	placata, <i>Gmelin</i>	XXVII.	68
<i>disoides</i> , Lamarck (frons)	XIX.	41	post-odontata, <i>Bolton</i>	III.	5
dubia, <i>Sowerby</i>	XXXIII.	86	Prevostii, <i>Sowerby</i>	XXXIII.	87
edulis, <i>Linnæus</i>	V.	8	prismatica, <i>Gray</i>	I.	1
<i>eracella</i> , Lamk. (frons)	XIX.	41	psichiana, D'Orb.	II., XIII.	4
<i>eracella</i> , Gmel. edulis, <i>Young &</i> ..	V.	8	pyxidata, <i>Ashmus</i>	IX.	16
Floridensis, <i>Sowerby</i>	XXIX.	76	pterinea, <i>Sowerby</i>	XIX.	43
folium, <i>Gmel.</i>	XVIII.	49	rufis, <i>Sowerby</i>	XV.	39
<i>Forskali</i> , Chem.	XVI.	34	reniformis, <i>Sowerby</i>	XXIV.	57
frons, <i>Linnæus</i>	XIX.	41	retusa, <i>Præst.</i>	XIX.	42
fusca, Lamk. (sinensis)	III.	5	rhizophora, <i>Gmelin</i>	IX.	17
gallina, Lamk. (Rhizophora)	IX.	17	Rossea, <i>Chem.</i>	XX.	46
gallus, <i>Valenciennes</i>	XII.	24	rostralis, <i>Lamarck</i>	X.	20
glomerata, <i>Gould</i>	XXII.	52	rostrata, <i>Chemnitz</i>	VI.	9
Guineensis, <i>Dunker</i>	XXVI.	62	rufa, <i>Lamarck</i>	XII.	25

OSTREA—INDEX.

	Plate	Species.		Plate.	Species.
<i>rubella</i> , Lam. (frons)	XIX.	41	<i>teniplicata</i> , <i>Sowerby</i>	XXVIII.	71
Sandwichensis, <i>Sowerby</i>	XXVII.	66	<i>tuberculata</i> , <i>Lamarck</i>	XXI.	50
Hanleyana, <i>Sowerby</i>	XXVIII.	72	<i>turbinata</i> , <i>Lamarck</i>	XII.	25
Sinetusis, <i>Gmelin</i>	III.	5	<i>tulipa</i> , <i>Lamarck</i>	XVIII.	39
solida, <i>Sowerby</i>	XIV.	28	<i>turbinata</i> , <i>Lamarck</i>	XIV.	29
spathulata, <i>Lamarck</i>	VIII.	13	<i>virescens</i> , <i>Angstr.</i>	XI.	23
spinosa, <i>Quoy</i>	XXX.	79	<i>Virginiana</i> , <i>Lamarck</i>	VI.	9
spretta, <i>D'Orb.</i>	XV.	32	<i>Virginiana</i> , <i>Gmelin</i>	VI.	9
subtrigona, <i>Sowerby</i>	XVIII.	38	<i>vitrolata</i> , <i>Sowerby</i>	XXXI.	80
Talienwahensis, <i>Crasse</i>	X.	21			

Species not identified.

Adriatica, lingua, Rusciriana, excavata, sinuata, trapezina, gibbosa, margaritacea, elliptica, radiata, Brasiliana, Australis, fucorum, liliotoidea, eumisma, rufa, scabra, glauca, *Lamarck*.—stellata, Senegalensis, *Gmelin*.—taurica, *Kryn.*—cristata, *Born.*—crocea, dentifera, *Duf.*—uncinata, rariocosta, *Deshayes*.—Webii, *Recluz*.—cognata, orientalis, *Chemnitz*.—laticordia, *Nuttall*.—semicylindrica, *Say*.—stentina, *Paysondeau*.

ERRATUM.

Ostrea lactea is not in the collection of Mr. Taylor, but of Mr. Harford.

MONOGRAPH

OF THE GENUS

L I N T E R I A.

“O all ye works of the Lord bless ye the Lord; praise Him and magnify Him for ever.”

Song of the Three Children.



1



2 a



2 b



3 a



4 a



5 b



3 b



6 a



7 b



8

LINTERIA.

Genus LINTERIA. Adams.

Testa ovata, depressa, latè emarginata; aperturâ contracta, anticè subangulata, marginè bilobato subangulato, intus spirata.

Shell ovate, depressed, loosely convolute; aperture very wide, partly emarginated in front, a margin of the inner lip with a calyciform, finely spiral appendage.

The most remarkable of all the generic forms of the family Bulliidae, *Linteria* is distinguished by the curious projecting cup conspicuous on the inner edge of the body whorl. Of the six species enumerated the localities are wide apart, although chiefly southern; New Ireland, the Philippines, the Sandwich Islands, Algiers, and Japan contributing.

Species 1. (Fig. *a, b*, Mus. Cum. in Brit.)

LINTERIA MINOR. *Lin. testâ parvâ, latè, pellucidâ, tenui, obliquè ovatâ, longitudinaliter tenuissimè striatâ, appendiculo unguiculatâ.*

THE SMALLEST LINTERIA. Shell small, yellow, pellucid, thin, obliquely ovate, longitudinally very finely striated, appendage unguiculate.

A. ADAMS. In Sowerby's *Thesaurus Conchyliorum*, Bulla, No. 127.

Hab. Island of Zebu.—H. Cuming.

This small transparent shell is more oblique in form than the other species.

Species 2. (Fig. *a, b*, Mus. Cum. in Brit.)

LINTERIA ACUMINATA. *Lin. testâ ovatâ, posticè contractâ, extus rivulâ, intus subfussâ, labiâ ceterâ supra aperturâ elevato, rotundatâ acuminatâ, divisi contractâ, anticè obliquè expansâ; angustâ altissimâ subtrigono; appendiculo subspinosâ.*

THE ACUMINATED LINTERIA. Shell ovate, posteriorly contracted, green without, brownish within, outer lip elevated above the spire, roundly acuminate, thence contracted, anteriorly obliquely expanded; last whorl subtrigonal; appendage somewhat expanded.

SOWERBY.

Hab. Guadaloupe. Sandwich Islands.

The specimens from which I name this species are one from Guadaloupe and the other from the Sandwich Islands. They differ from *Linteria rivulis* in the outer lip being acuminate, raised above the spire, and confluent with the reflected inner lip on the body whorl.

Species 3. (Fig. *a, b*, Mus. Cum. in Brit.)

LINTERIA VIBENS. *Lin. testâ subquadratè ovatâ, solidâ, concentricè, latè apertâ, concentricè spiruliter tenuissimè striatâ, rivulâ, labiâ ceterâ posticè subtruncatâ, medio semicirculari, columellâ râlè arcuatâ, angustâ altissimâ angustissimâ, appendiculo albo, unguiculatâ.*

THE GREEN LINTERIA. Shell rather equally ovate, solid, ventricose, widely open, concentrically spirally very finely striated, green, outer lip posteriorly subtruncated, semicircular in the middle; columella much arched, last whorl very narrow, appendage white, large, sloped.

RAYN. Quoy and Gaimard, *Voy. de l'ASTrolabe*, pl. xxvi. f. 13-16.

Hab. Bourbon, Guam, Japan, Pitcairn's Island. Taken on exposed rocks at half tide.

The cup-like appendage of the columella in this species is larger than in any other, and the form is more regularly oval.

Species 4. (Fig. *a, b*, Mus. Cum. in Brit.)

LINTERIA GLAUCA. *Lin. testâ ovato-subquadratâ, oblongâ, subpellucidâ, glaucâ, compressâ, concentricè striatâ; aperturâ rectiusculâ, anticè subtruncatâ, posticè marginè elevato et inflatâ; angustâ altissimâ, columellâ rectiusculâ; appendiculo elongatâ, acuminatâ.*

THE GLAUCOUS LINTERIA. Shell ovately-subquadrate, subpellucid, glaucous, compressed, concentrically striated; aperture rather straight, anteriorly subtruncated, posteriorly with the margin elevated and bent inwards; last whorl very narrow, colu-

LINTERIA.

mella rather straight; appendage elongated, acuminated.

Quoy. Voy. de l'Astrolabe, pl. xxi. f. 10-12.

Hab. New Ireland.

This species is more oblong-ovate and compressed than *Linteria viridis*.

Species 5. (Fig. a, b, Mus. Brit.)

LINTERIA FASCIATA. *Lin. testâ oblongâ, subovatâ, compressâ, semipellucidâ, fusco-aurâ, spiritaliter trifasciatâ, supra median subcontractâ; aperturâ magnâ, labio externo elevato, emato; anfractu ultimo angustissimo; appendiculo elongato, acuminato.*

THE BANNED LINTERIA. Shell oblong, subovate, compressed, semipellucid, golden brown, spirally three-banded, slightly contracted above the centre; aperture large, outer lip elevated, cuneate; last whorl very narrow; appendage long, acuminated.

SOWERBY.

Hab. —?

The locality of the specimen in the British Museum is not indicated.

Species 6. (Mus. Hanley.)

LINTERIA ALGERIE. *Lin. testâ subtriangulâ, albâ, tenui, concentricè leviter undatâ; aperturâ magnâ, triangulâ, labio externo supra spinam elevato, angulato, acuminato, medio contracto, antice producto; columellâ vixitè arcuatâ, anfractu ultimo parvo, trigono; appendiculo parvo, acuminato.*

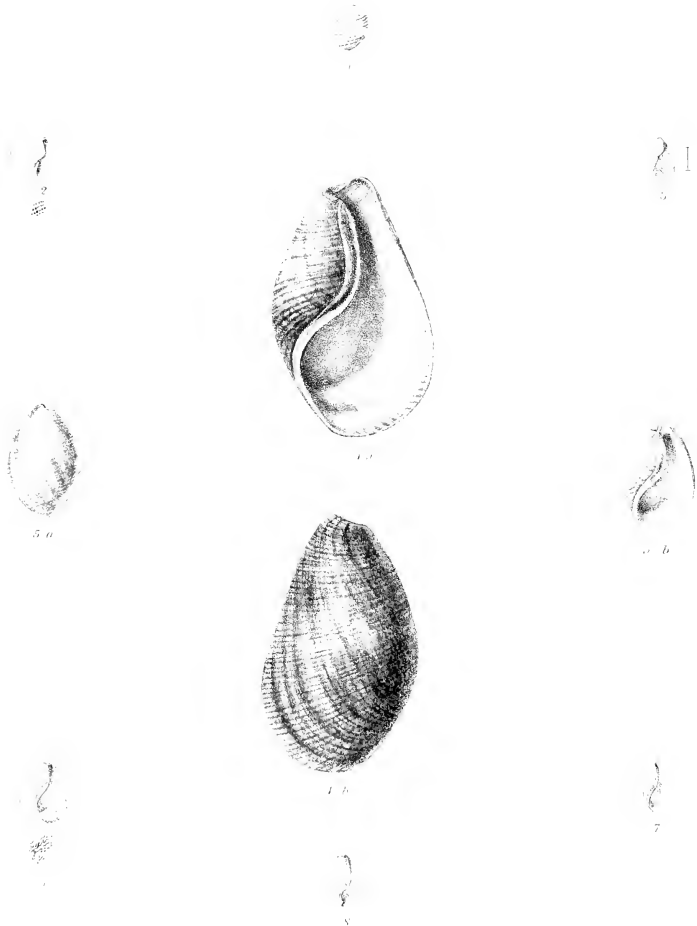
THE ALGERIAN LINTERIA. Shell subtriangular, white, thin, concentrically lightly undulated; aperture very large, triangular, outer lip elevated above the spine, angulated, acuminated, contracted in the middle, anteriorly produced; columella much arched, last whorl small, trigonal; appendage small, acuminated.

HANLEY. Sowerby's Thesaurus Conchyliorum, Bulla No. 128.

Hab. Algiers. Dredged by R. MacAndrew, Esq.

MONOGRAPH
OF THE GENUS
SCAPHANDER.

"All things that are forked, and horned, and soft,
Would lean out from the hollow sphere of the sea."—*Tennyson*



SCAPHANDER.

Genus SCAPHANDER, *Montfort*.

Testa spirāliter convoluta, ovato-subtrigona; spira ovata, sub-secunda; apertura ampla, angusta paulatim longius, antice valde expansa, postice contracta; labium exterum ovatum; marginis columellaris rugulosa, antice valde arcuata.

Shell spirally convolute, ovately subtrigonal; spire partly hidden; aperture wide, longer than the penultimate whorl, anteriorly much expanded, posteriorly narrowed; outer lip sharp; columellar margin reflected, strongly arched anteriorly.

The well known *Scaphander lignarius* is the type of this genus, which differs from other genera of *Bullidae* not so much in the form of the shell, although that is peculiar, as in the character of the animal, which is very distinct. Of the eight species here enumerated, two are American, one Mediterranean, and five British and Scandinavian.

Species 1. (Mus. Jeffrey's.)

SCAPHANDER ZONATUS. *Sea, testā solidā, pallidā striatā, ovato-subpyriformi, spirāliter lineis distinctibus excavatis punctatis sculptā; spira obtusā umbilicatā.*

THE BANDED SCAPHANDER. Shell solid, pale straw-coloured, ovate, subpyriform, spirally sculptured with distant excavated punctured lines; spire obtuse, umbilicated.

TURKOS (Bulla). British shells.

Hab. Zetland.

Shorter and more ovate than *Scaphander lignarius*, not so much so as *Sea, libanensis*. Sculptured with punctured lines and umbilicated at the apex.

Species 2. (Mus. Cuning in Brit.)

SCAPHANDER PUNCTO-STRIATUS. *Sea, testā albā, solidā, ovata, spirāliter punctostriatā; spira calatā; apertura magna, postice angustata, supra spiram elevata, marginis columellaris subarcuata.*

THE PUNCTO-STRIATED SCAPHANDER. Shell white, solid, ovate, spirally puncto-striated; spire concealed, aperture large, narrowed posteriorly, elevated above the spire, columellar margin a little arched.

MUSEUMS. Boston Journal of Natural History, vol. v p. 43, pl. f. 10.

Hab. Casco Bay, Massachusetts.

Species 3. (Mus. Cuning in Brit.)

SCAPHANDER LINEOLATUS. *Sea, testā parvā, angustā, ferruginā, spirāliter minutē et obliquē striatā; spira prominenti, angustā, obtusā; apertura magna, postice angustā, infra spiram depressā; marginis columellaris valde arcuata.*

THE LINE-LINED SCAPHANDER. Shell small, narrow, ferruginous, spirally minutely and obliquely striated; spire rather prominent, narrow, obtuse; aperture large, posteriorly narrow, depressed below the spire; columellar margin very slightly arched.

CURTIS. Boston Journal of Natural History, vol. ii p. 179.

Hab. Massachusetts Bay.

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

SCAPHANDER LIGNARIUS. *Sea, testā solidā, pyriformi, cerasis spiram attenuata, spirāliter striatā, ceras ferruginis fasciatā; spira depressā subumbilicatā; apertura magna, postice supra spiram elevata obliquē subquadrata; marginis columellaris valde arcuata.*

THE WOOD SCAPHANDER. Shell solid, pyriform, attenuated towards the spire, spirally striated, ferruginous, banded outside; spire depressed, subumbilicated, aperture large, posteriorly elevated above the spire, obliquely quadrate; columellar margin much arched.

LINNEUS. Systema Naturæ.

Hab. British Coasts. Mediterranean. Scandinavia.

SCAPHANDER.

Species 5. (Fig. a, b. Mus. Jeffreys.)

SCAPHANDER LIEBARTHUS. *Sea, testâ solidâ, ovatâ, ventricosâ, ferruginâ, striatâ; aperturâ subovatâ; labio externo subincrassato, supra spicam acuminatâ elevato; margine columellari subincrassato, reflexo, anticè arcuato; spirâ umbilicatâ.*

THE SCALE SCAPHANDER. Shell solid, ovate, ventricose, ferruginous, striated; aperture subovate; outer lip somewhat thickened, acuminately elevated above the spire; columellar margin rather thickened, reflected, anteriorly arched; spire umbilicated.

LOVELL. — ?

Hab. North Britain and Norway.

Species 6. (Mus. Cum. in Brit.)

SCAPHANDER SCABEA. *Sea, testâ oblongâ subpyriformi, posticè attenuatâ, albâ, lineis spirâlibus extensiformibus sculptâ; aperturâ posticè contractâ, anticè dilatâ; labio externo anticè pectinato.*

THE SCABROUS SCAPHANDER. Shell oblong, subpyriform, posteriorly attenuated, white, sculptured with spiral chain-like lines; aperture posteriorly contracted, anteriorly dilated; outer lip anteriorly pectinate.

MULLER. *Zoologica Danica*, vol. ii, p. 41.

Hab. Britain. Denmark.

Species 7. (Copied.)

SCAPHANDER VENTILIA. *Sea, testâ angustâ, oblongâ, posticè attenuatâ, fuscâ; striis spirâlibus nullis, reticulis albo oblectâ; spirâ angustâ, contractâ, umbilicatâ.*

THE INVESTED SCAPHANDER. Shell narrow, oblong, posteriorly attenuated, brown; without spiral striae, covered with a white reticulation; spire narrow, concealed, umbilicated.

PHILIPPI. *Enumeratio Molluscorum Siciliae.*

Hab. Sicily.

The white network with which this shell is described as being covered is probably an extraneous growth, but the form is peculiar, and there are not the usual spiral striae.

Species 8. (Mus. Jeffreys.)

SCAPHANDER GIBBUS. *Sea, testâ ovatâ-oblongâ, ventricosâ, utrinque acuminatâ, nitidissimâ, hyalina, supra et infra spicâlibus subulatâ; apice truncato, umbilicatâ; margine incrassato; aperturâ medio angustissimâ, posticè patulâ, angulatâ, anticè subcuniculatâ; columellâ arcuatâ, uniplicatâ.*

THE GIBBOUS SCAPHANDER. Shell ovate-oblong ventricose, acuminated at each end, very smooth, hyaline, spirally sulcated above and below; apex truncated, umbilicated; margin thickened; aperture very narrow in the middle, patulate, angular behind, subcuniculated in front; columella arched, uniplicate.

JEFFREYS. *Marine Testacea of Piedmontese Coast. An. and Mag. Nat. Hist.* 1856, p. 188.

Hab. Bay of Spezia.

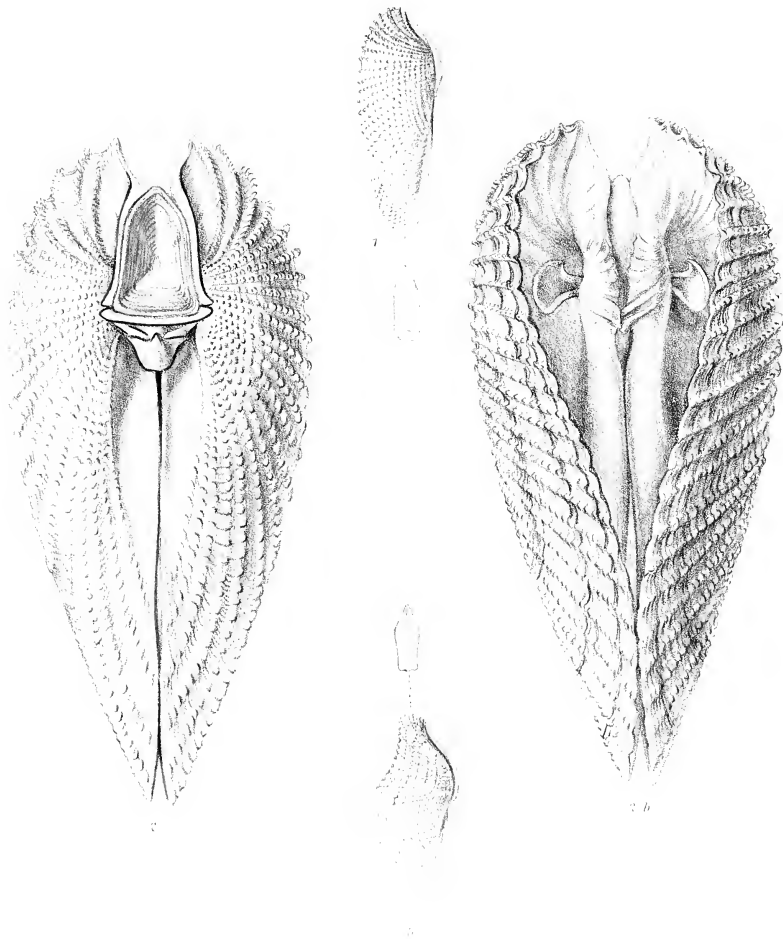
I am not fully acquainted with the grounds upon which it is judged right to place this species in the present genus, but I am assured that the animal is a true Scaphander.

MONOGRAPH

OF THE GENUS

P H O L A S.

BY
J. M. ALLEN,
M. A.,
OF THE UNIVERSITY OF CALIFORNIA,
BERKELEY, CALIF.



PHOLAS.

PLATE I.

Genus PHOLAS, Linnæus.

*Testâ multivalvi acropodi terribatâ; lamellis, cuneatis, sub-
 plicatâ; subglantrivosa; pedic. attenuatâ, ex his
 anticâ latitibus, et integram uti clavosâ, anguâ
 dorsalî lamellis testaceâ a cerosâbus unitâ et pluri-
 mis testis; latis latrâ suberosâ utriusque valvâ
 processu arcuato subnullo affixâ.*

Shell of an accladon being multivalve, bimuscular, generally subcylindrical, attenuated posteriorly; valves gaping in front or closed with an integument; dorsal margin covered by one or more accessory shelly plates; an arched process fixed to each valve within under the umbos.

The *Pholadæ* have been usually divided according to the number of accessory plates, or the shape and disposition of the terminal integuments. Whatever may be the merits of such division, in this monograph the various forms will be united under one generic term. It is curious, however, to observe how the species pass from the simplest forms as represented by such species as *Pholas parva*, in which the hiatus in the valves is left open with a single dorsal plate, through those which have a complicated arrangement of plates, to those which, like *Pholas calca*, are closed at one end by a shelly covering over the whole anterior, and at the other end by marginal integuments. Then come those which, like *Pholadida pygmaea*, have a cup or pair of flaps at the end of these integuments, followed by those which, like *Pholas tubificæ* and *trabeus*, have a shelly tube at the end of the cup. The prevailing opinion respecting the manner of boring among the *Pholadæ*, is that the sucker foot holding to the stone, wood, or wax to be bored, and forming a pivot on which the shells rotate, the substance is bored by the rasping power of the sharp points or prickles of the shell. I should ascribe only a part of the work to this process, as assisting other agencies. Other bivalve mollusca bore which have no

such rasping prickles on their shells. The *Pholadæ* are found in most parts of the world, and the species are very widely spread, especially those which, like *Pholas striata*, bore in wood, and being transported by ships and other floating timber become cosmopolitan.

Species 1. (Mus. Jeffreys, &c.)

PHOLAS CANADIA. *Pho. testâ subcirculari, tenui, anticâ reticulatâ, umbilicâ cuneatis, costis acutâ imbricatâ radiatâ, posticâ attenuatâ, acuminatâ, levigatâ; lamellis dorsalibus angustis, simplicibus.*

THE WHITE PHOLAS. Shell subcircular, thin, rounded in front, ventricose in the middle, rayed with sharply imbricated ribs, posteriorly attenuated acuminated, narrow, simple.

LINNÆUS. Systema Naturæ.

Hab. Great Britain. Borewing in chalk.

Differing from *Pholas parva* and others of the single-plate 1 group in the roundness of the anterior termination of the valves.

Species 2. (Mus. Brit.)

PHOLAS COSUEVA. *Pho. testâ oviglobâ, apertâ, elongatâ, ventricosâ, costis calidis subrotundatis imbricatis unanæ rotundâ; lamellis dorsalibus triangularibus, cornis.*

THE BILLED PHOLAS. Shell large, open, elongated, ventricose, rayed with strong, rather rounded imbricated ribs; dorsal lamina triangular, horny.

LINNÆUS. Systema Naturæ.

Hab. Mexico and United States.

This very handsome species has no shelly dorsal plate, but a thin horny triangular integument spread on a platform, formed by the reflected margins of the valves.

August, 1872.

PHOLAS.—PLATE I.

Species 3. (Fig. *a, b*, Mus. Jeffreys, &c.)

PHOLAS PAEVA. *Pho. testis breviusculā, subconv. atā, antice latā, acuminatā, lat. hiatus, costis numerosis creberrime imbricatis ciliatā: medio depressā, postice subattenuatā, leviusculā, lamina dorsali univā, angustā, nucleo postice terminatā.*

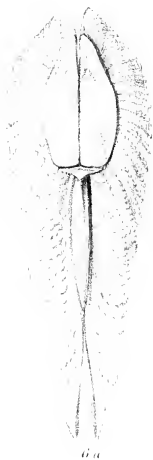
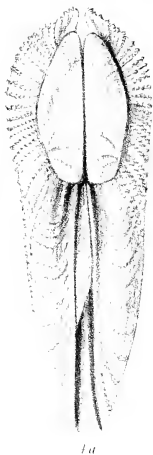
THE SMALL PHOLAS. Shell rather short, rather wedge-shaped, anteriorly wide, acuminate, widely gaping,

rayed with numerous closely imbricated ribs, depressed in the middle, posteriorly subattenuated, rather smooth, dorsal plate single, narrow, nucleus posteriorly terminal.

PENNANT. British Zoology.

Hab. Great Britain.

Found in the red rock in company with *Pholas papyracea*.



PHOLAS.

PLATE II

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

PHOLAS DACTYLUS. *Pho. testâ anticè apertâ, rostratâ, elongatâ, posticè subattenuatâ; costis angulatis, acutissimè spinis imbricatis, medio et versis extremitatem posticam evanidis; margine dorsali anticè reflecto, fulcro concamerato duplicato; valvulis dorsalibus anticis duabus, nucleis postico-lateralibus; unâ posticâ elongatâ angustâ.*

THE DATE PHOLAS. Shell anteriorly open, rostrated, elongated, posteriorly subattenuated; ribs angular, very acutely imbricated with spines, disappearing towards the middle and posterior extremity; dorsal margin reflected in front, doubled by a chambered fulcrum; dorsal valves two anterior, with postero-lateral nuclei; one posterior, elongated, narrow.

LINNEÆUS. Systema Naturæ.

Hab. Various parts of Great Britain, in sand-stone.

Species 5. (Fig. a, b, Mus. Brit.)

PHOLAS ORIENTALIS. *Pho. testâ anticè apertâ, rotundâ, costis subrotundis, imbricatis, crebris dimidiatim armatâ, posticè levigatâ attenuatâ, acuminatâ; valvulis dorsalibus unâ anticâ, latâ, nucleo sub-anticâ, unâ posticâ elongatâ angustissimâ.*

THE ORIENTAL PHOLAS. Shell anteriorly open, rounded, armed halfway with rather rounded, imbricated, numerous ribs, posteriorly smooth, attenuated,

acuminated; dorsal valves one anterior, broad, with subanterior nucleus, one posterior elongated, very narrow.

GMLIN. No. 3216.

Species 6. (Fig. a, b, Mus. Brit.)

PHOLAS CHILOENSIS. *Pho. testâ subcylindricâ, elongatâ, anticè apertâ, rotundatâ; omnino costis rotundis subtilissimilibus, obtusè imbricatis, posticè subsobolescit, radiatâ; valvulis dorsalibus duabus anticis, latis, nucleis ant-centralibus approximatis; unâ posticâ parvâ transversâ; alterâ posticâ elongatâ angustâ.*

THE CHILOEAN PHOLAS. Shell subcylindrical, elongated, anteriorly open, rounded; rayed all over with rounded, rather distant, obtusely imbricated, posteriorly subsobolete ribs; dorsal valves two anterior, wide, with ante-central approximated nuclei; one posterior, small, transverse; another posterior elongated, narrow.

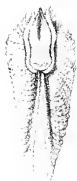
KING. Zoological Journal, vol. v. p. 334.

Hab. Chiloe. H. Cuming.

Pholas Canapechensis. Gmelin.

The two accessory valves covering the umbones have their nuclei elevated and close to each other, while in those of *Pholas dactylus* they are depressed, posterior, and on the outer edges.

March, 1872.



8a



7a



8b



9



10



11



7b

P H O L A S.

PLATE III.

Species 7. (Fig. a, b. Mus. Camb. in Brit.)

PHOLAS CONSTRICTA. *Pho. testâ breviter conchâ, antice rostratâ, utriusque latè aperta. in medio post sulcum foveolatum obliquè divisiâ et constrictâ; anticè ventricosâ, radiatim scabrosâ, posticè angustâ, minute concentricè striatâ; margine dorsali super umbones reflexo.*

THE CONSTRICTED PHOLAS. Shell rather short, anteriorly rostrated on both sides, widely open in the middle, behind a pitted groove obliquely divided and constricted; ventricose in front, radiately scabrous, narrow behind, minutely concentrically striated; dorsal margin reflected over the umbones.

SOWERBY. Proc. Zool. Soc., 1849.

Hab. Straits of Sunda.

Like *Pholas parca* in form, but more strongly tightened in the middle and destitute of a dorsal plate.

Species 8. (Fig. a, b. Mus. Camb. in Brit.)

PHOLAS FRAGILIS. *Pho. testâ elongatâ, angustâ, antice apertâ, acutè rostratâ, costellis acute imbricatis anticè posticèque radiatâ; humo medio constrictâ, margine dorsali reflexo, calculi dorsali unico super umbones locatâ.*

THE FRAGILE PHOLAS. Shell elongated, narrow, open in front, acutely beaked, rayed with acutely imbricated little ribs; not constricted in the middle; dorsal margin reflexed, a single dorsal valve placed upon the umbones.

SOWERBY. Proc. Zool. Soc., 1848, p. 40.

Hab. Bassy, Island of Samar, Philippines, in soft stone at low water. H. Cuming.

Very narrow and fragile, and not, like *Pholas parca*, narrow in the middle. The beaked part in front of the umbones is much smaller.

Species 9. (Mus. Brit.)

PHOLAS CRISPATA. *Pho. testâ latè, medio per sulcum foveolatum divisiâ, antice latè apertâ, rostratâ, trigonâ costis acutissimè imbricatis radiatâ, margine dorsali reflexo, anticè acute linguatâ, posticè linguatâ, brevè, subrotundatâ; calculi dorsali unico.*

THE CRISP PHOLAS. Shell wide, separated in the middle by a pitted groove, anteriorly widely open, beaked, trigonal, rayed with very acutely imbricated ribs; posteriorly smooth, short, rather rounded; no dorsal valve.

LINNEUS. Systema Naturæ.

Hab. Great Britain.

In this broad and short well-known species, the tubes of the mollusc are protected by an external epidermidous case.

Species 10. (Mus. Brit.)

PHOLAS SIMILIS. *Pho. testâ latiusculâ, fragilè, ventricosâ, antice latissimè apertâ, acutissimè rostratâ, costis acutissimè imbricatis subtilistatibus radiatâ, margine humi spinifero; medio et posticè concentricè cyathâ, vicè radiatâ; calculi dorsali unico, super umbones locatâ nucleo posticè terminali.*

THE SIMILAR PHOLAS. Shell rather broad, fragile, anteriorly widely open, very sharply beaked, rayed with very sharply imbricated rather distant ribs, gaping margin spiniferous; in the middle and posteriorly concentrically ridged, scarcely rayed; dorsal valve single, placed upon the umbones with terminal nucleus.

GRAY. MS.

Hab. New Zealand. Forde.

More ventricose than *Pholas parca*, and narrowed in the middle.

PHOLAS.—PLATE III.

Species II. (Mrs. Brit.)

PHOLAS AUSTRALIANE. *Pho. testâ elongatâ, subcylindricâ, anticâ beccî, rotundo-subacuminatâ, apertâ, acutè costatâ, posticè producta, medio posticèque costellis rix elevatis imbricatis radiatâ; margine dorsali reflexo; valvulis dorsalibus ignotis.*

THE AUSTRALIAN PHOLAS. Shell elongated, subcylindrical, anteriorly short, roundly-subacuminated, open, acutely ribbed, posteriorly produced in the

middle, and posteriorly rayed with scarcely raised imbricated ribs; dorsal margin reflected; dorsal valves unknown.

GRAY, MS.

Hab. Australia.

In the monograph by Sowerby in "Thesaurus Conchylum" the comparison is made with *Pholos Candida*. I now think it should have been with *Pholus Chloensis*, but I have not seen the dorsal valves.



P H O L A S.

PLATE IV.

Species 12. (Mus. —?)

PHOLAS DAEWINII. *Pho. testâ parvâ, foveâ, brevî, anticâ latissimâ apertâ, radiatim scabrâ, in medio per sulcum foveolatum divisâ, post sulcum concentricè rugatâ, margine latè recurvo; valvulâ dorsali nullâ.*

DAEWIN'S PHOLAS. Shell small, brown, short, anteriorly very widely opening, radiately scabrous, divided in the centre by a pitted sulcus; behind the sulcus concentrically ridged, with the margin widely recurved; no dorsal valve.

SOWERBY. Proc. Zool. Soc., 1849.

Hab. Chiloe. *Ch. Darwin.*

A curious little species, which might be likened to the young of *Pholas porphyreus*, with the margins broadly reflected and recurved.

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

PHOLAS LAQUEATA. *Pho. testâ tenui, subfusiformi, anticâ apertâ, angustâ, acuminatâ, spiniferâ, nucleo ventricosâ, medio postèroque costis vicè clavis et rugis concentricis lappatis decussatâ; posticè subattenuatâ, acuminatâ; valvulis dorsalibus duabus, super umboes locatis, nucleis anticis subapproximatis.*

THE FLUTED PHOLAS. Shell thin, rather fusiform, anteriorly open, narrow, acuminated, spinous, centrally ventricose, centrally and posteriorly decussated with scarcely elevated ribs and concentric ridges; posteriorly rather attenuated, acuminated; dorsal valves two, placed upon the umboes, with anterior, nearly approximate nuclei.

SOWERBY. Proc. Zool. Soc., 1849.

Hab. Isle of Plata. *H. Cuming.*

The pair of plates covering the umboes resemble

those of *Pholas Chilensis*, but the form of the shell resembles more nearly that of *Pholas candida*.

Species 14. (Mus. Brit.)

PHOLAS TRUNCATA. *Pho. testâ latâ, brevî, anticâ acuminatâ, subrostratâ, latè apertâ, radiatim acutè costatâ, margine dorsali reflexo, posticè oblongâ, quadratâ, truncatâ, concentricè liratâ; valvulâ dorsali unâ, nucleo posticè fere terminali.*

THE TRUNCATED PHOLAS. Shell wide, short, anteriorly acuminated, subrostrated, widely open, radiately acutely ribbed, dorsal margin reflected; posteriorly oblong, square, truncated, concentrically ridged, dorsal valve single, with the nucleus nearly terminal posteriorly.

SAY. American Jour. of Sci., vol. ii. p. 321.

Hab. North America.

Species 15. (Fig. a, b, c, Mus. Cum. in Brit.)

PHOLAS CRUCIFERA. *Pho. testâ subcylindricâ, anticâ obtusâ, haud latè apertâ; omnino costis creberrimis imbricatis radiatâ; margine dorsali in formâ crucis reflexo, laminâ coruâ tecto.*

THE CROSS-BEARING PHOLAS. Shell subcylindrical, anteriorly obtuse, not widely open; everywhere rayed with very close imbricated ribs; dorsal margin reflected in the form of a cross, covered by a horny plate.

SOWERBY. Proc. Zool. Soc., 1834.

Hab. Island of Puna in the Gulf of Guayaquil; found in soft sandstone at half-tide. Also in the Bay of Carmacas, West Columbia, in soft stone at low water, and in hard clay, 13 fathoms deep, in the Gulf of Noeoyo, Central America.

A most remarkable species on account of the cruciform reflexion of its dorsal margin.

March, 1872.



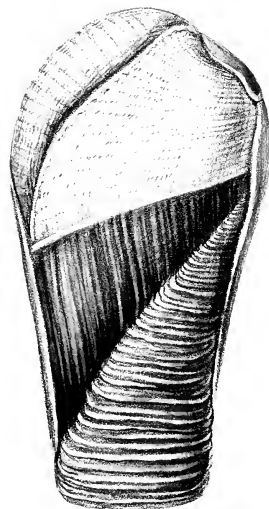
17a



16a



17b



18



19



16b



20

PHOLAS.

PLATE V.

Species 16. (Fig. *a, b*. Mus. Brit.)

PHOLAS CURTA. *Pho. testâ parvâ, fusco-viridescenti, pyriformi, clausâ, tenui, canali angusto medio constrictâ, anticâ tenuiter striatâ, vix echinatâ, margine ventrali globoso, calculâ dorsali oblongo-pedunculatâ, anticâ levigatâ, acuminatâ.*

THE SHORT PHOLAS. Shell small, greenish-brown, closed, thin, constricted in the middle by a narrow canal, finely striated anteriorly, scarcely echinated, with ventral margin globose, dorsal valve oblong, hexagonal; anteriorly smooth, acuminated.

SOWERBY, Proc. Zool. Soc., 1834.

Hab. West Columbia. In soft stone at low water. A small shell, with one cutaneous plate covering the umboes, and thoroughly enclosed when full grown.

Species 17. (Fig. *a, b*.)

PHOLAS LATISSIMA. *Pho. testâ subcompressâ, latâ, subquadratâ, latè utriusque apertâ, posticè latè truncatâ, anticè subacuminatâ, costellis concentricis, costisque noduliferis decussatâ; umbonibus subcentralibus, marginibus dorsalibus reflectis.*

THE VERY WIDE PHOLAS. Shell subcompressed, broad, subquadrate, widely open on both sides, widely truncated posteriorly; anteriorly subacuminated, decussated with concentric ridges and radiating nodulose ribs; umboes subcentral, dorsal margins reflected.

SOWERBY, Proc. Zool. Soc., 1849.

Hab. Manila Bay. Taken by Mr. Cuming. This species appears to have no necessary valves.

Species 18. (Mus. Cuming in Brit.)

PHOLAS CALIFORNICA. *Pho. testâ magnâ, ventricosâ, subcylindricâ, in partes tres obliquè divisâ; parte*

anticâ prope marginem ventralem sublevigatâ, dorso usque ad medianam imbricatâ costato; parte mediâ planâ, epidermide crassâ, iudatâ; parte posticâ obliquè triangulari, transversè epidermide laminatâ, ad terminum truncatâ; margine ventrali integumento diviso, elongato, corneo, calato; margine dorsali integumento triplicato, elongato, ad umbones angustato calato.

THE CALIFORNIAN PHOLAS. Shell large, ventricose, subcylindrical, obliquely divided into three parts; anterior part rather smooth near the ventral margin; from the back to the middle with imbricated ribs; middle part smooth covered with a thick epidermis; posterior part obliquely triangular, transversely laminated with an epidermis, truncated at the end; ventral margin hidden by a divided, elongated, horny integument; dorsal margin hidden by a triplicate, elongated integument, narrow at the umboes.

CONRAD, Ann. Nat. Sci. Phil., vol. 3, p. 236, t. 18, f. 4

Hab. Monte Rey, California, in sandstone under deep water. *M. Hartweg.* The largest and one of the most curious of the enclosed species.

Species 19. (Mus. Cuming in Brit.)

PHOLAS ACUMINATA. *Pho. testâ clausâ, subpyriformi, ventricosâ, in partes tres obliquè divisâ; parte anticâ rotundâ, cernis marginem dorsalem micatè radiatum scabro; parte mediâ latè planâ, epidermide crassâ iudatâ; parte posticâ acutè angulatâ, attenuatâ; marginibus dorsalibus ventralibusque integumentibus plicatis calatis; calculâ dorsali unciâ magnâ, subquadratâ.*

THE ACUMINATED PHOLAS. Shell closed, subpyriform, ventricose, obliquely divided into three parts; anterior part rounded, radiately scabrous towards the dorsal margin; middle part broadly flat, covered

with a thick epidermis; posterior part acutely angular, attenuated; dorsal and ventral margins covered with folded integuments; a single dorsal valve, large and rather square.

SOWERBY. Proc. Zool. Soc., 1834.

Hab. Panama. In limestone rocks at low water. Differing in form from *Pholas calva*, being narrower and more acuminate, with a smaller, rather square dorsal shield.

Species 20. (Mus. Cum. in Brit.)

PHOLAS CALVA. *Pho. testâ clausâ, latâ, subpyriformi, anticè rotundâ: medio pluvæ, epidermâ: crassi*

indatâ; anticè attenuatâ, laminatâ, ad terminum subacuminatâ, marginibus dorsalibus centralibusque integumentibus plicatis calatis; lamina dorsali latè expansâ, lobatâ.

THE SKULL PHOLAS. Shell closed, wide, subpyriform, anteriorly rounded; middle flat, covered with a thick epidermis; anteriorly attenuated, laminated, subacuminated at the end; dorsal and ventral margins covered with folded integuments; dorsal lamina broadly expanded lobed.

SOWERBY. Proc. Zool. Soc., 1834.

Hab. Panama Bay. In hard stone, at low water. A broad, somewhat irregularly-lobed dorsal shield is expanded over a large part of the dorsal margin and part of the rounded head.



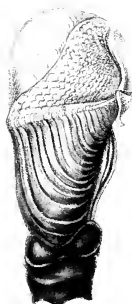
22 a



21



22 b



23 a



24 a



24 b



23 b

P H O L A S.

PLATE VI.

Species 21. (Mus. Boston.)

PHOLAS SEMICOSTATA. *Pho. testâ parvâ, h. r. c. ventricosa, cut. testaceo anticâ clausâ, posticâ in tubum prolongatâ; testâ in medio obliquè divisâ, anticâ subarati sinuatâ, distanter costatâ, posticâ leviter rugatâ, h. r. c.*

THE HALF-RIBBED PHOLAS. Shell small, short, ventricose, closed anteriorly and elongated posteriorly by a testaceous integument into a tube; shell obliquely divided in the middle; anteriorly rather acutely sinuated, distantly ribbed, posteriorly lightly wrinkled, short.

LEA. Proc. Bost. Soc. Nat. Hist., Nov. 1844, pl. xxiv. f. 1.

Hab. South Carolina.

The regular part of the shell, which has almost the form of a Terebrina, is supplemented and extended by less laminated structure, filling up the hiatus in front and forming a tapering tube towards the posterior extremity.

Species 22. (Mus. Brit.)

PHOLAS HYRCOLA. *Pho. testâ clausâ, canaliculâ, testaceo-verse canali divisiâ; parte anticâ obliquè dividiatâ, versus dorsum striatâ, versus marginem ventralen levigatâ, ventricosâ; parte posticâ elongatâ, lamellis fimbriatis externis angulobiter dispositis ornatâ; valvulis dorsalibus duabus, subquadrateis.*

THE RIVER PHOLAS. Shell closed, canaliciform, transversely divided by a canal; the anterior part obliquely divided in half, striated towards the back, smooth, ventricose towards the ventral margin; posterior part elongated, ornamented with fringed cutaneous layers angularly disposed. Dorsal valves two, subquadrate.

SOVERBY. Proc. Zool. Soc., 1840.

Hab. Gunny Taboor, River Pantai.

This species was first collected by Mr. Arthur Adams in a part of the river in Borneo twelve miles distant from the sea, where the water was perfectly fresh. The singular fringed laminae of epidermis distinguish this freshwater species from all others.

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

PHOLAS MELANETEA. *Pho. testâ clausâ, subarati, in medio canali serrato divisiâ; parte anticâ imbricatâ costatâ, margine ventrali levigatâ, inflato dorso confluatâ, margine dorsali valvâ reflexa et tumida, ad umbones scotis duabus subquadrateis super laminae latus dispositis divisiâ; parte posticâ concentricè lyratâ, epidermide nigricant. ad terminum tumulis cornicis, inflatis, subcanaliculatis duabus ad tubum testaceum affixis.*

THE BLACK-LIMBED PHOLAS. Shell closed, subovate, divided in the middle by a serrated canal; anterior part with imbricated ribs, ventral margin smooth inflated, confluent with the back, dorsal margin strongly reflected and tumid, divided at the umbones by two subquadrate shields placed upon wide laminae; posterior part concentrically ridged, with a blackish epidermis, and at the end two horny, inflated, subcanaliciform swellings fixed to the shelly tube.

SOVERBY, Proc. Zool. Soc., 1844.

Hab. Monte Christo.

A fine characteristic species found by the late Mr. Cuming in hard clay and loose stones.

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

PHOLAS BRANCHIATA. *Pho. testâ pyriformi, clausâ, anticâ ventricosâ, in partes tres obliquè divisiâ; parte anticâ prope marginem ventralen levigatâ, medio et ad dorsum micantè scabro-striatâ; parte mediâ*

August, 1872.

PHOLAS.—PLATE VI.

phasi, epidermide crassa striatâ indutâ; parte posteriori attenuatâ, epidermide lamina levigatâ; rotundatis dispositâ; scute dorsale amplo, expanso; integumentis dorsalibus et ventralibus elongatis.

THE BRANCHIATE PHOLAS. Shell pyriform, closed, anteriorly ventricose, obliquely divided into three parts; anterior part smooth near the ventral margin; minutely scabro-striated in the middle and at the back; middle part flat, covered with a

thick striated epidermis; posterior part attenuated, the epidermis placed in smooth, rounded laminae; dorsal shield ample expanded, dorsal and ventral integuments elongated.

GOULD, Proc. Bost. Soc. Nat. Hist., 1845, p. 290.

Hab. — :

With the exception of the marginal integuments and dorsal shield the characters of this species resemble those of *Pholas Calcei*.



26 a



25 a



26 b



27 a



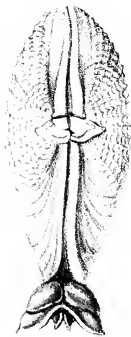
28



27 b



29 a



25 b



29 b

P H O L A S.

PLATE VII.

Species 25. (Mus. Camb. Brit.)

PHOLAS CLAVATA. *Pho. testa subovalis, clausa, in medio sub ritis radiatis et costis tribus, antrio concentrico ornata; vagina dorsali lata, angusta, antice rotata, expansa et inflata, ad medium transversè incisæ, super lambras tota solum trigona descendente; ad terminum posteriorem attenuatâ, epidermide nigrescente, lobis quatuor a dorso, integumento e piliferâ, expanso, ad latera contractis.*

THE ENCLOSED PHOLAS. Shell subovate, oblong, ornamented in every part with raised, triangular and moniform concentric ribs; dorsal margin swelled posteriorly, much expanded and swollen anteriorly, transversely incised at the umbones, and lying upon transverse trigonal plates; attenuated at the posterior end with a blackish epidermis, with four inflated lobes, then a cyathiform, expanded integument emarginate at the sides.

GRAY, in Brit. Mus.

Pholas cephalata, Sponzer.

Hab. River Gambiâ.

By a strange modification of the cup character, *Pholas clausa* has a sort of cup-shaped opening so divided as to appear like a pair of flaps.

Species 26. (Fig. a, b, Mus. Camb. Brit.)

PHOLAS QUADRA. *Pho. testa oblongo-subovata, clausâ, medio canali serrato divisa; parte antice costatâ et striatâ, margine v. trali inflato, ano vagina dorsali confluenti, margine dorsali tumido, diviso, ad umbones transversè incisâ; parte posteriâ concentricè striatâ, in tumulis inflatis quatuor, et tubi b. tumidi terminatâ.*

THE SQUARE PHOLAS. Shell oblong-subovate, closed, divided in the middle by a serrated canal; anterior part ribbed and striated; ventral margin inflated, confluent with the dorsal margin; dorsal margin tumid, divided; transversely incised at the

umbones, posterior part concentrically striated, terminating in four inflated swellings, and in a tumid extremity.

SOWERBY, Proc. Zool. Soc., 1831.

Hab. Monte Christo.

Not terminating in a half membranaceous cup as in *Pholas pygæa*, but in four horny swellings surmounting a shelly tube.

Species 27. (Fig. a, b, Mus. Brit.)

PHOLAS COLICARIA. *Pho. testa parvâ, clausâ, medio contractâ, antice angulatâ longitudinaliter costatâ, costæ serratis, vagina ventrali latigata, posteriâ propiâ collum emarginatè striatâ, costatâ plus minusve attenuatâ; scabulis tribus, quatuor aut elongata ad marginem ventralium, non elongata super marginem dorsalem piliferâ, ano subquâ deuta, super umbones dispositis.*

THE HALE-COLOURED PHOLAS. Shell small, closed, contracted in the middle, angularly longitudinally ribbed in front, ribs serrated, ventral margin smooth, posteriorly near the middle concentrically striated, extremity more or less attenuated; shields three, of which one is elongated and placed on the ventral margin, one elongated and placed on the posterior dorsal margin, and one subquadrate upon the umbones.

GRAY, MS. Mus. Brit.

Hab. — ?

The reddish colour of the shell is caused by the animal boring in floating malogeny.

Species 28. (Mus. — ?) copied.

PHOLAS BREVIS. *Pho. testa brevi, emissa, clausâ, epidermide subterribi indurâ, latera ad medio contractâ, antice ad marginem ventralium inflata, scabulis dorsali parvis, latera, margine dorsali parte antice subquâ passis.*

August, 1872.

PHOLAS.—PLATE VII.

THE OVAL PHOLAS. Shell short, emarginate, closed, covered with a greenish epidermis, constricted in the middle, anteriorly inflated at the ventral margin; dorsal shield small, broad; dorsal margin slightly expanded posteriorly and anteriorly.

SOWERBY, *Thesaurus Conchyliorum*. Pholas, fig. 105.

Hab. ———?

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

PHOLAS OVALA. *Pho. testâ pyriformâ, ventricosâ, clausâ, in medio transverse dividâ, antice lateri dorsali inflatâ, costatâ, oblique striatâ, latere ventrali inflatâ, laevigatâ; postice laevigatâ, callosis longitudinalibus inaequalibus; umbonibus lamina testaceâ copiosa celatis.*

THE OVAL PHOLAS. Shell pyriform, ventricose, closed, divided transversely in the middle, anteriorly radiately ribbed at the dorsal side, inflated and smooth on the ventral side; posteriorly smooth, with the valves unequal in length; umboes hidden by a shelly, expanded plate.

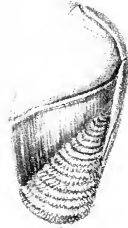
GEAY, MS. in Mus. Brit.

Hab. ———?

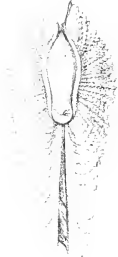
This species, unique as far as known, in the British Museum, has some relation to the several species united in Sowerby's *Thesaurus Conchyliorum* under the name "TRIOPHALLA," said to be identical with "*Jumantilla*," but it has not the false umbo and overlapping anterior margin in one valve which characterizes the genus in question, and its covering plate or shield is independent.



31 a



30 a



32 b



30 b



33 a



33 b



34

P H O L A S.

PLATE VIII

Species 30. (Fig. a, b, Mus. Cuming in Brit.)

PHOLAS ISOLE. *Pho. testâ subangulata, hinc, et terecostâ, partibus tribus dorsâ, parte antea propinqua centralia sublaevigata, ut inaequali ad medium mesâ, longâ laevigata, et antea costata; parte mediâ planâ, quâ costâ, et costâ, parte postâ obliquè triangulari, quâ medio, margini serratis productâ, marginis et serratâ, segmento quodque partibus, partibus rotatis latis, et sâ, partibus laevigatis elongatis.*

ISOLE'S PHOLAS. Shell sub-cylindrical, anteriorly divided into three parts; the anterior part obtuse near the ventral margin, from which it divides minutely longitudinally, and (obliquely) strongly; middle part flat, covered with the ribs, broad; posterior part obliquely triangularly, (obliquely) dermis produced in serrated anterior part, (obliquely) of the dorsal margin quadrilateral, the angle of parts wide, short; the posterior part very elongate.

SOWERBY, Pesc. Zool. Soc., 1849.

Hab. Raine's Island, Torres Strait.

This extremely curious species was first discovered by Captain Ince, R.N., in coral rock.

Species 31. (Fig. a, b, Mus. Cuming in Brit.)

PHOLAS MANILLE. *Pho. testâ apicâ, elongatâ, antea subangulata, costis subultrastibus acutescens, imbricatis margini radiatâ, umbonibus sublaterâ, acâ laterali antea, umbonibus ut marginem dorsalem planâ, scuto dorsali parvo, acuto.*

THE MANILLA PHOLAS. Shell open, elongated; anteriorly slightly angular, rayed all over with rather distant very acutely imbricated ribs, umbos rather

anteriorly, the area in front of the umbos at the dorsal margin flat.

SOWERBY, Proc. Zool. Soc., 1849. Thesaurus Conchyliorum, No. 49, pl. ciii. f. 17, 18.

Hab. Manilla Bay.

Collected by the late Mr. Cuming.

Species 32. (Fig. a, b, c, Mus. Brit.)

PHOLAS SERIATA. *Pho. testâ clausâ, mediâ obliquè dorsâ, antea, angulata longitudinaliter, costatâ, scuto serratis, margine antico-centrali laevigatâ, subrotatâ, parte postâ versus medium concentricè striatâ, extremâ, et plus minusve productâ, et attenuatâ, scuto centrali antea elongatâ; scuto dorsali suboblongo, antea lato subquadrato, super umbonibus dispositis, antea postico, elongatâ, angustâ.*

THE SERIATED PHOLAS. Shell closed, obliquely divided in the middle, anteriorly angularly longitudinally ribbed; ribs serrated; anterior ventral margin smooth, rounded; posterior part concentrically striated towards the margin, extremity more or less produced and attenuated; one elongated ventral shield, two dorsal shields, one wide, subquadrate, placed upon the umbos; one posterior, elongated, narrow.

LINNEUS, Systema Naturæ.

Pholas nana, Pulteney.

Pholas pusilla, Linnæus.

Pholas lignorum, Spengler.

Pholas conoides, Fleming.

Pholas clausa, Lamarck.

Hab. Coasts of Great Britain, and almost everywhere, floating.



33 a



34



35 b



35 a



36 a



36 b



35 b



37 a



37 b



38

PHOLAS.

PLATE IX.

Species 33. (Fig. a, b.)

PHOLAS CUSLIFORMIS. *Pho. testâ parâ, orbata, clausa, obliquè canali serrata divisa; canali centrali antico laevigato, rotundato, lateri oppositi costis longitudinalibus, arcuatis, serratis copiato; posticè concentricè striatâ, plus attenuatè att. venter; scolis marginalibus tribus, uno ad marginem ventralium elongato, uno ad marginem dorsalem angustissimo, uno super umbones disposito lato, antice obtusè angulato, posticè acuminato.*

THE WEDGE-SHAPED PHOLAS. Shell small, cuculate, closed, obliquely divided by a serrated canal; anterior ventral margin smooth, round, dorsal side roughened with longitudinal arches, serrated ribs; posteriorly concentrically striated, more or less attenuated; marginal shields three, one elongated, on the ventral margin; one very narrow, on the dorsal margin, one broad, placed upon the umbones, anteriorly obtusely angular, posteriorly acuminated.

SAY, Journ. Sci. Philad., vol. ii, p. 322.

Hab. N. America.

The umbonal shield, instead of being broad and large as in *Pholas striata*, is narrow and boat-shaped, more acute posteriorly than anteriorly.

Species 34. (Mus. Cuming in Brit.)

PHOLAS APERTA. *Pho. testâ globosa, aperta, in medio canali serrata divisa; antice ad marginem ventralium subangulata; costis linguatis concentricè arcuatis; posticè laevigata, subattenuata; laminae dorsales quatuor, parvis, super umbones dispositis.*

THE OPEN PHOLAS. Shell globose, open, divided in the middle by a serrated canal; anteriorly rather angular at the ventral margin; ornamented with concentric fluted ribs; smooth posteriorly, subattenuated; dorsal plates four, small, placed upon the umbones.

SOWERBY, Proc. Zool. Soc., 1849.

Hab. Straits of Suma and Banca.

Burrowing in floating zoogony, the shell of this species has a reddish tint. The dividing groove is nearer the anterior than the posterior end, while in *Pholas teredineformis* the contrary is the case. It has two pairs of dorsal plates, while the last mentioned species has but one.

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

PHOLAS OBTUSA. *Pho. testâ orbata, subpyriformi, clausa, canali medio divisa; parte antica latere dorsali minute striata, latere ventrali lavi, rotunda; parte postica lavi, marginalibus centralibus dorsalibusque laminae elongatis obtusis, ad terminum angustis, in laminae articulatis cyathiformis producta; scolis dorsali magna, ad umbones bilobata, antice versus marginem ventralium late expansa.*

THE SHIELD PHOLAS. Shell ovate, subpyriform, closed, divided in the middle by a canal, anterior part minutely striated at the dorsal side; posterior part smooth, rounded; dorsal and ventral margins covered with long plates, narrow at the end, produced into cyathiform articulated laminae; dorsal shield large, bilobed at the umbones, anteriorly widely expanded towards the ventral margin.

SOWERBY, Proc. Zool. Soc., 1849. Thesaurus Conchyliorum, Monog. Pholas, No. 10, pl. 108, f. 80, 81.

Hab. North Coast of Australia.

J. E. Doring, Esq., R.N., collected this interesting species at Turtle Island in coral rock at low water.

Species 36. (Fig. a, b, Mus. Cuming in Brit.)

PHOLAS TEREDINEFORMIS. *Pho. testâ globosa, aperta, in medio per canalum serratum divisa; antice ad marginem ventralium subangulata, costis linguatis concentricè arcuatis; posticè lavi, laevigata; laminae dorsali una, subquadrata, super marginem venter. com. calcarem disposita.*

FIG. TETRADIMORPH PHOLAS. Shell globose, open, divided in the middle by a serrated canal; anteriorly sub-angulated at the ventral margin, ornamented with fluted concentric ribs; posteriorly short, smooth; dorsal plate single, subquadrate, placed upon the reflected margin of the valves.

SOWERBY. Proc. Zool. Soc., 1849.

Hab. Cuba.

This species, which was found burrowed in floating wax, and the *Pholas aperta*, so nearly resembling it, are so short as to resemble *Teredina* or *Alydophaga* in general appearance. The valves of the former, however, have no dorsal plates, and those of the latter want the curved subumbonal processes, characteristics of the true *Pholades*, of which the present species is unquestionably one.

Species 37. (Fig. a, b, Mus. Brit.)

FIGAS MULTI-STRIATA. *Pho. testâ oblongâ, clausâ, transversè ante medium per canalum serratum divisâ, parte anteriâ propè marginem ventralem loricatâ, latè dorsali minutissimè striatâ; parte posticâ loricatâ, per lamina truncata elongatâ et acuminatâ; scuto dorsali ovali antio, semicirculari, posticè subacuminatâ.*

THE MANY-STRATED PHOLAS. Shell oblong, closed, transversely divided by a serrated canal in front of the middle, anterior part near the ventral margin smooth, at the dorsal side very minutely striated, posterior part smooth, elongated and acuminate by tumid laminae; dorsal shield oval anteriorly, rather pointed posteriorly.

SOWERBY. Proc. Zool. Soc., 1849. Theaurus Conchyliorum, No. 10, Pholas, pl. 104, fig. 55, 56.

Hab. Turtle Island, North Coast of America.

The striae on the umbonal part of this species are exceedingly fine. The posterior part of the shell appears lengthened out by laminae, which are partially distinct from the valves, yet form a part of them.

Species 38. (Mus. Cuming.)

PHOLAS QUADRIGONALIS. *Pho. testâ clausâ, subcylindricâ, ventricosâ, in partes tres obliquè transversales divisâ; parte anteriâ propè marginem ventralem loricatâ, in medio et ad dorsum minutè striatâ; parte mediana plana; parte posticâ epidermide lamina serratis intatâ; marginis dorsalis integumento substacæo, in partes quatuor, quarum duas anteriores breves, duas posteriores elongatas, trilobatas, divisa.*

THE QUADRIGONAL PHOLAS. Shell closed, subcylindrical, ventricose, divided into three obliquely transverse parts; anterior part smooth near the ventral margin, minutely striated in the middle and at the back; middle part flat; posterior part covered with an epidermis in serrated layers; integument of the dorsal margin substaccous, divided into four parts, of which the two anterior are short, and the two posterior elongated, trilobate.

SENGLE ———?

Hab. ———?

Very little is known of the natural history of this very interesting shell, which in some characters resembles *Pholis Incci*.



28a



28a



29b



30



31a



31b



32

PHOLAS.

PART X.

Species 79. (Fig. 101, Mus. Brit.)

PHOLA TUBIFERA. *Ph. tubifera* n. sp. Shell closed, divided by a serrated canal; anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated; subquadrate part of the shell with a serrated canal, anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

THE TUBE-BEARING PHOLA. Shell closed, divided by a serrated canal; anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated; subquadrate part of the shell with a serrated canal, anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

CLAY (Falcat). Brit. Mus. Cat.

Hab. Monte Cristo.

In some respects resembling *P. costaricensis*, but with a curious three-pronged subquadrate lobe.

Species 80. (Fig. 102, Mus. Brit.)

PHOLA TURBILLO. *Ph. turbillo* n. sp. Shell closed, divided by a serrated canal; anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated; subquadrate part of the shell with a serrated canal, anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

THE TUBE-BEARING PHOLA. Shell closed, divided by a serrated canal; anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated; subquadrate part of the shell with a serrated canal, anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

SWALEBY, Proc. Zool. Soc., 1834.

Hab. Bay of Caraccas, West Columbia.

Collected by the late Mr. Cuming in decayed wood.

Species 10. (Mus. J. Koenig.)

PHOLA TUBIFERA. *Ph. tubifera* subquadrately closed, divided by a serrated canal; anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated; subquadrate part of the shell with a serrated canal, anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

THE TUBE-BEARING PHOLA. Shell sub-cylindrical, closed, divided by a serrated canal; anterior part ribbed with a serrated canal, posterior part smooth, inflated; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

CLAY (Spartan Native).

Hab. Bay of Panama, Columbia.

Hab. Bay of Panama, Columbia.

Hab. Bay of Panama, Columbia.

A well known tube-bearing species.

Species 11. (Fig. 103, Mus. Brit.)

PHOLA COSTARICENSIS. *Ph. tubifera* ventrally closed, divided by a serrated canal; anterior part inflated, radiately striated; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated; subquadrate part of the shell with a serrated canal, anterior part inflated and lobed; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part undulate, subquadrately truncated.

THE SUBQUADRATE PHOLA. Shell ventricose, closed, oblong, divided, anterior part inflated, radiately striated; dorsal margin inflated, convex; anterior margin denticulate; lateral margin produced, subquadrately truncate; posterior part striated, subquadrate at the anterior end, produced into a horny cup divided at the anterior end into a large subquadrately, posteriorly acuminate subquadrately lobe; at the umbones, their two subquadrately lobes confluent with the terminal margin; the shell.

DRUCKER, ——.

Hab. Monte Rey, California.



12 a



12 b



11



13 a



13 b



12 c

PHOLAS.

PLATE XI.

Species 42. (Fig. 100, Mus. Brit.)

PHOLAS GLOBOSA. *Pho. testâ subovata, postea subattenuatâ, antice globosâ, costis subæcis, parte postica concentricè lirata, in medio costâ subæcâ ciliâ, parte anticâ ciliâ lincis lirata, costis subæcis acutis imbricatis ornata; valvâ dextra productâ subtrianguliformi, dentibus acutis serratis; nucleo lamina terminali calvâ triangulari striatâ, subampliata.*

THE GLOBOSE PHOLAS. Shell sub-ovate, posteriorly sub-attenuated, anteriorly globose, valves divided, posterior part concentrically ridged with a single imbricated rib in the middle; anterior part also ridged, ornamented with radiating imbricated ribs; right valve produced, rather tongue-shaped, serrated with acute recurved teeth; nucleus of the terminal lamina of the left valve triangular striated, flattened.

QUoy, Voy. Astrolabe,
Triumphalia globosa, Sowerley,
Jovanetta globosa, Nomml.

Hab. Isle of Leyte, Philippines.

Found in the soft stone at low water. I have not yet ascertained whether the group of Pholads of which this is typical is really entitled to the generic appellation of *Jovanetta*, but my impression is that the term "*Triumphalia*," which I applied to it in the Thesaurus, will have to be resumed.

Species 43. (Fig. a, b, Mus. Brit.)

PHOLAS CUMINGII. *Pho. testâ rotundata, convexâ; valvis posticè canali divisis, concentricè lincis clavatis liratis, antice costis minutis serratis radiatis; parte posticâ concentricè laminitâ; valvâ dextra posticè in linguâ triangulari marginè triplicatè productâ; calvâ sinistra posticè brevissimâ, marginè terminali circulari.*

CUMING'S PHOLAS. Shell rounded, thick; valves divided posteriorly by a canal, concentrically ridged with raised lines; posterior part concentrically laminated; right valve posteriorly produced into a triangular triple-bordered tongue; left valve posteriorly very short, terminal margin circular.

SOWERLEY, Proc. Zool. Soc., 1849.

Hab. Isle of Zelon, Philippines.

Found by the late Mr. Cuming in coral rock in low water.

Species 44. (Mus. Brit.)

PHOLAS TYPHERRIMA. *Pho. testâ subovata, ventricosâ, posticè globosâ, corrugatâ, antice subattenuatâ; valvis transversè divisis; parte posticâ costis distantibus concentricè lirata; parte anticâ lincis lirata, costis subæcis radiatis; valvâ dextra productâ, lingua foveâ, marginè dentibus acutis crispatis serratis, nucleo lamina terminali calvâ sinistra subtrianguliformi, rotunda, lincis clavatis lirata.*

THE VERY BEAUTIFUL PHOLAS. Shell subovate, ventricose, posteriorly globose, corrugated, anteriorly sub-attenuated, valves transversely divided; posterior part concentrically ridged with distant ribs; anterior part ridged with lines, rayed with imbricated ribs; left valve produced, tongue-shaped, margin serrated with sharp curved teeth; nucleus of the terminal lamina of the left valve rather triangular, rounded, ridged with elevated lines.

SOWERLEY, Proc. Zool. Soc., 1849.

Hab. West Columbia.

This magnificent species was taken by the late Mr. Cuming in soft stone at low water.

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

PHOLAS SPATHULATA. *Pho. testâ elongatâ, clavâ, obliquè divisa; parte anticâ radiatim costatâ, sub-*

PHOLAS.—PLATE XI.

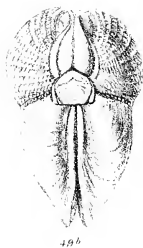
angulata; parte posteri concentricè leviter striatâ, subtruncatâ, ad margines integumento protectâ, ad terminum in equali corace, lateribus spatuliformibus productâ; ad umbones humis duabus æqualibus, posticè bilobatis, anticè oblongis.

THE SPATULATE PHOLAS. Shell elongated, closed, obliquely divided; anterior part radiately ribbed, subangulated; posterior part concentrically lightly

striated, subtruncated, protected at the margins by an integument, produced at the end into a horny cup with spatulate sides; two equal laminae, bilobed posteriorly elongated anteriorly at the umbones.

SOWERBY. Proc. Zool. Soc., 1849

Hab. New Zealand.



PHOLAS.

PLATE XII.

Species 46. (Mus. Brit.)

PHOLAS GRAYANA. *Pho. testâ subpyriformi, brevi, clausâ, anticâ rotundatâ, medio ventri serrato acuto; parte anticâ tenuiter striatâ, parte posticiâ laevigatâ, eunatâ, lamina dorsali univâ, subquadratâ.*

GRAY'S PHOLAS. Shell subpyriform, short, closed, rounded in front, divided in the middle by a serrated canal; anterior part finely striated, posterior part smooth, wedge-shaped, with a single dorsal, rather square plate.

LEACH, MS. Brit. Mus.
Hab. — ?

One of the shortest of the closed species.

Species 47. (Mus. Brit.)

PHOLAS BAKERI. *Pho. testâ subgloboseâ, aperta, antio-acuminatâ, margine dorsali reflexo, ant. medio latissimâ, costis distinctibus, lris induratis anticâ acutiusculis radiatâ; lamina dorsalis quadrata.*

BAKER'S PHOLAS. Shell subcylindrical, open, anteriorly acuminate, dorsal margin reflexed, before the middle very wide, rayed with distant ribs, imbricated by ridges rather sharper towards the front; dorsal plates unknown.

— ? **MS. Brit. Mus.**
Hab. — ?

Distinguished by the width of the upper part of the valves from other similar species.

Species 48. (Mus. Brit.)

PHOLAS EYTHREAE. *Pho. testâ elongatâ, aperta, subcylindricoâ, tenuiter imbricato-costatâ, latiore anticâ brevi, acuminatâ, latâ hinc, medio tenuiusculo, latiore postico laevigato, attenuatâ.*

THE GOLDEN-LIP'D PHOLAS. Shell elongated, open, subcylindrical, finely imbricately ribbed, anterior side short, acuminate, widely gaping, middle rather tumid; posterior side smooth, attenuated.

GRAY, MS. Mus. Brit.
Hab. — ?

Species 49. (Fig. a, b, Mus. Brit.)

PHOLAS OYONIA. *Pho. testâ magna, solidâ, clausâ, rotundissimâ, medio oblique per canalium fixatum divisâ, parte anticodorsali acutè radiatim costatâ, et concentricè creberrimè imbricatâ, margine dorsali duplicatim reflexo, ad umbones lamina obquadrata eunatâ testâ; parte posticiâ laevigatâ.*

THE EGG-SHAP'D PHOLAS. Shell large, solid, closed, very ventricose, divided in the middle by a ridged canal, antero-dorsal part acutely radiately ribbed, and concentrically very closely imbricated, dorsal margin doubly reflexed, covered at the umbones with a somewhat square thick lamina; posterior part smooth.

GOULD, — ?
Hab. **MONTREY.**

Species 50. (Mus. Brit.)

PHOLAS LIGONIEIDA. *Pho. testâ tenui, albâ, conoideo, subrecapulari, clausâ, ant. medio divisâ; postice attenuatâ; umbonibus lamina univâ subquadrata anticâ acuminatâ tervis.*

THE WOOD-BURROWING PHOLAS. Shell thin, white, wedge-shaped, rather irregular, closed, divided anterior to the middle; posteriorly attenuated; umbones covered by a single rather square, anteriorly acuminate plate.

PHOLAS.—PLATE XII.

DESSEVALS. — ?

Hab. Port Essington.

The specimens in the British Museum are imbedded in a very hard blackish wood, the boring having been made across the grain.

Species 51. (Mus. Brit.)

PHOLAS FALCATA. *Pho. testâ brevi, subcuneiformi, canali serrato diviso (clausâ ?) part. antica serrato-*

stratâ, parte postici prope eandem concentricè lirata, prope terminum lorigatâ, limbo dorsali emutato, orificio diviso.

THE HOOKED PHOLAS. Shell short, subcuneiform, divided by a serrated canal (closed?) anterior part serrato-striated, posterior part near the canal concentrically lirated; smooth near the end, dorsal plate emuted, divided in the middle.

GRAY, MS. Brit. Mus.

Hab. Hudson's Bay.

A rather dubious little species

INDEX TO PHOLAS.

	1846	SPECIES.		1850	SPECIES.
aeuminata, <i>Sarschky</i>	V	19	Gravata, <i>Leach</i>	XII	44
aperta, <i>Sarschky</i>	IX	34	hoca, <i>Sarschky</i>	VIII	30
Australasia, <i>Gray</i>	III	14	lapidea, <i>Sarschky</i>	IV	13
Bakeri, MS.	XII	47	littoralis, <i>Sarschky</i>	V	17
branchiata, <i>Goebel</i>	VI	24	longipetala, <i>Dechamps</i>	XII	50
brevis, <i>Sarschky</i>	VII	28	<i>Leptocera</i> , Spangler	VIII	32
californica, <i>Goebel</i>	V	18	Maillaga, <i>Sarschky</i>	VIII	34
calva, <i>Sarschky</i>	V	20	melanura, <i>Sarschky</i>	VI	25
<i>Campochensis</i> , Gmelin	II	6	multistriata, <i>Sarschky</i>	IX	37
candida, <i>Linnaeus</i>	I	1	<i>osca</i> , Pultoney	VIII	32
Chilensis, <i>King</i>	II	6	obsoleta, <i>Sarschky</i>	IX	35
clausa, <i>Gray</i>	VII	25	orientalis, <i>Goebel</i>	II	5
clavata, Lamarck	VIII	32	ovata, <i>Gray</i>	VII	23
concomerata, <i>Dechamps</i>	X	44	ovoides, <i>Goebel</i>	XII	49
convexa, Flein	VIII	32	pyriformis, <i>Linnaeus</i>	X	40
constricta, <i>Sarschky</i>	III	7	peruv, <i>Pearce</i>	I	3
coriaria, <i>Gray</i>	VII	27	pubescentis, <i>Sarschky</i>	XI	44
costata, <i>Linnaeus</i>	I	2	<i>pubescens</i> , Linnaeus	VIII	32
crispata, <i>Linnaeus</i>	III	9	purpurea, <i>Sarschky</i>	VII	26
crucifera, <i>Sarschky</i>	IV	15	quadrifurcata, <i>Spangler</i>	IX	38
Cumingii, <i>Sarschky</i>	XI	43	reticulata, <i>Sarschky</i>	VI	22
cuneiformis, <i>Say</i>	IX	33	semiostrata, <i>Leach</i>	VI	24
curta, <i>Sarschky</i>	V	15	smilis, <i>Gray</i>	III	10
daetylus, <i>Linnaeus</i>	II	4	sphaerulata, <i>Sarschky</i>	XI	45
Darwinii, <i>Sarschky</i>	IV	12	strigata, <i>Linnaeus</i>	VIII	32
erythraea, <i>Gray</i>	XII	48	tetradactyliformis, <i>Sarschky</i>	IX	36
falcata, <i>Gray</i>	XII	51	tridentis, <i>Gray</i>	X	38*
fragilis, <i>Sarschky</i>	III	8	truncata, <i>Say</i>	IV	14
globosa, <i>Gray</i>	XI	42	ululae, <i>Sarschky</i>	X	39

ERRATUM.

Plate IX : species 48, text — for quadrifurcata read quadrizonata.

MONOGRAPH

OF THE GENUS

Y O L D I A.

"All over the world, in the coral reef"
On The "Dependability" of the "Seasonal" — *G. J. S. S. S.*



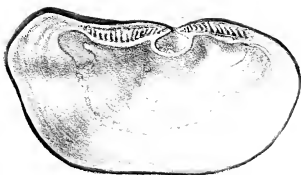
1 a



2 a



2 b



7 b



3 a



3 b



1 c

YOLDIA.

PLATE I.

Genus YOLDIA, Muller.

Testa biconvexa, aequivalvis, oblonga, compressa, frequenter utrinque hians, intus nuda; lateri postico hinc attenuato; margine cardiali angulato, dentibus utrinque acuminatis. Innervato laterali.

Shell biconvexular, equivalve, oblong, compressed, frequently gaping at both ends, pearly within; posterior side not attenuated; hinge margin angular, the teeth on each side numerous; ligament internal.

The *Yoldiæ* have not the peculiar eunete form of *Nucula*, nor is the posterior side rostrated and produced as in the *Lada*. In many of the species the valves are slightly parted at each end. A large proportion are inhabitants of the northern seas both of Europe and America.

Species 1. (Fig. a, b, c, Mus. Brit.)

YOLDIA THIRALEFORMIS. *Yol. testâ oblongo-subquadrateâ, ventricosissimâ, laevigatâ; epidermide olivacea calida nudatâ; intus pallidissimâ rufâ, fossâ cartilagineâ supra angulatâ; latere postico angulato, lat. supra et infra obtuse truncato; margine dorsali depresso, subconvexo, arcu impressâ, latâ, definitâ; latere antico breviusculo, subconvexo.*

THE THIRALEFORM YOLDIA. Shell oblong-subquadrate, very ventricose, smooth, covered with a strong olive epidermis; very pale rose within, cartilaginous pit large; posterior side angular, obtusely truncated above and below; dorsal margin depressed, subconvex, impressed area wide, defined; anterior side rather short, rather convex.

STORKE. Boston Journal, vol. ii, p. 122

Yoldia angularis, Muller (young.)

Nucula lateraria, Valenciennes.

Nucula nivalaris, Coullay.

Yoldia Mulleri, Gray.

Species 2. (Fig. a, b, Mus. Brit.)

YOLDIA WOODWARDI. *Yol. testâ ovato-subacuminatâ, oblongâ, compressâ, laevigatâ, inaequilaterali; latere postico brevi, acuminato, ad terminum truncato, margine dorsali depresso, margine centrali ante rostrum paulo convexo, latere antico producto, elliptico, margine dorsali convexo.*

WOODWARD'S YOLDIA. Shell ovate-subacuminate, oblong, compressed, smooth, inequilateral; posterior side short, acuminated, truncated at the end, dorsal margin depressed, ventral margin a little convex in front of the beak; anterior side produced, elliptic, dorsal margin convex.

HANLEY, Proc. Zool. Soc., 1860.

Hab. Falkland Islands.

Species 3. (Fig. 3, a, b, Mus. Brit.)

YOLDIA AMYGDALA. *Yol. testâ compressâ, ovato-lanceolatâ, subaequilaterali, epidermide fusca vel olivacea nudata, intus, intus, ad terminum truncato, margine dorsali depresso, arcu planulatâ, definitâ; latere antico propè terminum radiatim impresso, margine centrali paulo convexo.*

THE ALMOND YOLDIA. Shell compressed, ovately lanceolate, nearly equilateral, covered with a brown or olive rayed, shining epidermis; posterior side slightly acuminated, truncated at the end, dorsal margin depressed, area flattened, defined; anterior side radiately impressed near the end, with ventral margin a little convex.

VALENSIENNES. Zool. Nîmes Moll. pl. 23, t. 6

Hab. Kamtschatka.

5

5



5 a



5 b



6



7



8



9 a



9 a



10 a



10 b

YOLDIA.

PLATE II.

Species 4. (Mus. Brit.)

YOLDIA TENELLA. *Yol. testâ parvâ, tenui, inflatâ, subpellucidâ, levigatâ, subtrapeziformi, minutissimè striatâ; latere postico subattenuato, subobscureto, lunulâ valdè depressâ, complanata, medio contracto apice subcentrali; latere antico inflato, lato, subtâs hiante, subrotundo.*

THE THIN LITTLE YOLDIA. Shell small, thin, inflated, subpellucid, smooth, slightly trapeziform. Very minutely striated; posterior side rather attenuated, slightly rostrated, lunule much depressed, flattened, middle contracted, apex subcentral; anterior side inflated, wide, gaping beneath, rather rounded.

HINDS. Proc. Zool. Soc., 1843, p. 99.

Hab. Singapore.

This is one of the four species enumerated by Mr. Hanley as intermediate between *Lea* proper and *Yoldia*. From its anterior ventral hiatus, and general form, it appears most closely related to the latter, although placed by the above-named author in the former.

Species 5. (Fig. a, b, Mus. Brit.)

YOLDIA SEGETINA. *Yol. testâ ovato-subrhomboidâ, tenui, subcompressâ, levigatâ, albâ; latere postico paulo longiore, subattenuato, compresso, laevi sulcato, superâe cuneata, obscure uncostato, lunulâ elongatâ, distinctâ, compressâ; medio subplanulato, apice acuto, margine centrali cirs contracto; latere antico breviusculo, distanter à termino subconcentricè sulcato, supra medianâ terminari rotundè subacuminato.*

THE EVENING YOLDIA. Shell ovate-subrhomboidal, thin, subcompressed, smooth, whitish, posterior side a little the longer, a little attenuated, compressed, not sulcated, cuneate above with an obscure rib, lunule elongated, distinct, compressed, a little flattened in the middle, apex acute, ventral margin a very little contracted; anterior side rather short, distantly and finely concentrically sulcated; roundly acuminate at the end above the middle.

A. ADAMS. Proc. Zool. Soc., 1856, p. 60.

Hab. Borneo.

The posterior side forms an oblique triangle, whose surface is free from the fine sulci which traverse the middle and anterior.

Species 6. (Mus. Brit.)

YOLDIA NICOBARICA. *Yol. testâ ovato-subrhomboidâ, ovatâ, solidâ, subaequilaterâ, latere postico subattenuato, superâe acuminato, levigato, depresso, lunulâ distinctâ, cariniformi; latere antico subinflato, paulo longiusculo, lato, ad terminum rotundo, striâs minimis obliquè concentricè sculptis.*

THE NICOBAR YOLDIA. Shell rather orange-pink, ovate solid, subaequilateral; posterior side a little attenuated, acuminate above, smooth, keel-shaped; anterior side rather inflated, a little longer, wide, rounded at the end, sculptured with very small obliquely concentric striae.

CHEVENSIZ. Conch., vii., Pl. 191, f. 541. "*Arca levigata pellucidâ Nicobarica.*"

Hab. Nicobar Island.

The anterior side is a very little longer than the posterior, which latter is a little pointed, and is destitute of the close striae by which the anterior is sculptured.

Species 7. (Mus. Brit.)

YOLDIA LEPIDULA. *Yol. testâ ovato-subrhomboidâ, partim striatâ albo-lutescenti; latere postico paulo longiore, superâ subacuminato, infra obliquè subtruncato, levigato, lunulâ compressâ, distinctâ, elongatâ; latere antico breviorè, striato, ad terminum cirs acuminato.*

THE SMART LITTLE YOLDIA. Shell ovate, subrhomboidal, partly striated, yellowish white; posterior side a little longer, slightly acuminate above, obliquely subtruncated beneath, smooth, lunule compressed, distinct, elongated; anterior side shorter, striated, very little acuminate at the end.

A. ADAMS. (*Yoldia*.) Proc. Zool. Soc., 1856, p. 50.

Hab. Borneo.

February, 1871.

Species 8. (Mus. Cim. in Brit.)

YOLDIA JAPONICA. *Yol. testā suborata, subequilaterali, pallidā; latere postico longiusculo, subarcuato, subacuminato, margine dorsali depresso. lunulā angustā acutā definitā, margine ventrali medio rectiusculo, utrinque valde sursum acclivi; latere antico breviusculo, subacuminatum producto.*

THE JAPAN YOLDIA. Shell subovate, subequilateral, pale; posterior side a little longer, a little arched, subacuminate: dorsal margin depressed, lunule narrow, sharply defined; ventral margin nearly straight in the middle, much sloped upwards at both ends; anterior side rather shorter, subacuminately produced.

ADAMS AND REEVE (*Nucula*). Zool. Samarang, Mol-lusca, 75, Pl. 24, f. 9.

Hab. Japan.

This species is peculiarly curved upwards at the ends.

Species 9. (Fig. a, b, Mus. Brit.)

YOLDIA MYALIS. *Yol. testā ovata, valde inequilaterali, latā, convexā, epidermide fusco, nitida, olivaceo, zonis saturatioribus indutā. latere postico brevi, acuminato, arcū dorsali impressā, hanc circumscriptā, margine dorsali declivi, depresso, ad terminum breviter truncato, margine ventrali arcuato, sursum acclivi; latere antico producto, versus terminum emittenuato.*

MYAL'S YOLDIA. Shell ovate, very inequilateral, broad, convex, covered with a brown, shining, olivaceous epidermis with deeper bands, posterior side short, acuminated, dorsal area impressed not defined; margin sloped, with a short truncation at the end; ventral margin sloped upwards in a curve; anterior side produced, a little attenuate towards the end.

COUTHBY (*Nucula*). Bost. Journ. Nat. Hist., ii. p. 62. Pl. 3, f. 219.

Hab. Singapore. Philippine Islands.

Species 10. (Fig. a, b, Mus. Sowerby.)

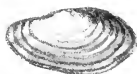
YOLDIA OBTUSA. *Yol. testā oblongā, compressā, valde inequilaterali; epidermide nitenti olivaceo-lutescenti indutā; latere postico brevi, retuso, termino elevato, subacuminato, margine ventrali propi terminum acclivi, vice contracto; latere antico elongato.*

THE OBTUSE YOLDIA. Shell oblong, compressed, very inequilateral, covered with a shining yellowish-olive epidermis; posterior side short, retuse, with the end elevated, subacuminated, ventral margin sloped upward, scarcely contracted, anterior side elongated.

SOWERBY.

Hab. —?

More narrow in proportion to its length than *Yoldia Myalis*: the posterior side still shorter and narrower than in that species, with the end less truncated.



YOLIDA.

PLATE III.

Species II. (Mus. Brit.)

YOLIDA LANCEOLATA. *Yol. testis crassa, subventricosa, oblongo-sublanceolata, subcompressa, sublaevigata, obliqua, subintransiens antice et medio sculpta, epidermide radiata induta, latere postico laevigato, margine dorsali declivi, termino lateri truncato, arca rotundi levigati, testis rotunda angulata, latere antico ad terminum rotundo.*

THE LANCEOLATE YOLIDA. Shell thick, subventricose, oblong-sublanceolate, subcompressed, sculptured with curved, oblique, rather distant striae in front and in the middle, covered with a strong epidermis; posterior side rather short, dorsal margin sloped, end widely truncated, rostral area smooth, slightly radiately angular; anterior side rounded at the end.

SOWERBY, Mineral Conchology, Plate 180, f. 1, (fossil).

Xucula arctica, Brodrip and Sowerby.

Xucula arctica, Valenciennes.

Hab. Kamtschatka.

The *Xucula lanceolata* of the Conchological Illustrations, new *Lada Sauechiana* of D'Orbigny, is quite a distinct shell from this, which was first figured and described from a fossil specimen.

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

YOLIDA GLACIALIS. *Yol. testis oblongo-subquadrata, tenui, ventricosa, epidermide olivacea aut fuscogrigiata induta; latere postico lato angulato, superne acuminato, margine ventrali ad terminum oblique truncato; margine dorsali subconvexo, depresso; umbonibus rotundis, levatis, margine ventrali medio rectiusculo; latere antico brevi, subrotundo.*

THE GLACIAL YOLIDA. Shell oblong-subquadrate, thin, ventricose, covered with an olive or blackish-brown epidermis; posterior side widely angular,

acuminated above, ventral margin obliquely truncated at the end, dorsal margin slightly convex, depressed; umbones rounded, elevated, ventral margin rather straight in the middle; anterior side short, rather rounded.

Occur. Annals of Philosophy, 1825.

Xucula truncata, Brown.

Xucula Postlanatica, Hillebrand.

Xucula Siquoi, Reeve.

Hab. Arctic Ocean.

Species 13. (Mus. Brit.)

YOLIDA LIMBATA. *Yol. testis oblongo-lanceolata, compressa, epidermide levigata, olivacea induta; latere postico subconvexo, substrato, margine dorsali depresso, arca declivi, termino truncato, margine ventrali sorsum declivi; umbonibus laevi prominulis, margine ventrali aequaliter convexo, latere antico subrotundo.*

THE POINTED YOLIDA. Shell oblong-lanceolate, compressed, covered with a smooth olive-green epidermis; posterior side a little arched, substrated, dorsal margin depressed, with defined area, end truncated; ventral margin sloped upwards; umbones not prominent, ventral margin equally convex; anterior side rather rounded.

SAY (Nucula) Amer. Conch., pl. 12.

Hab. Maine and Massachusetts.

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

YOLIDA ARCTICA. *Yol. testis compressa, oblongo-lanceolata, tenui, olivacea, fusco convolvulis stipata, latere postico subtruncato, margine dorsali depresso, arca convexiuscula, declivi, margine ventrali subto declivi, termino truncato; latere antico ad marginem ventralium convexo laevi convexo rite declivi.*

November, 1871

YOLDIA.—PLATE III.

THE AEBTE YOLDIA. Shell compressed, oblong-lanceolate, shining, olivaceous, concentrically striped with brown; posterior side a little attenuated, dorsal margin depressed, area a little convex, defined, ventral margin suddenly sloped upwards, end truncated; anterior side sinuated at the ventral margin; lunule convex, scarcely defined.

GRAY. (*Nucula*) Parry's Voyage, Appendix, p. 241.

Nucula cascoensis, Michxels.

Nucula Myalis, Hanley.

Yoldia Hyperborea, Torell.

Hab. Spitzbergen.

Species 15. (Mus.—? copied.)

YOLDIA OBESA. *Yol. testâ ventricosâ, latâ, subovata, larrigatâ; latere postico majusculo, latè truncato; margine ventrali leviter convexo, latere antico breviusculo, rotundo.*

THE OBESA YOLDIA. Shell ventricose, broad, subovate, smooth; posterior side rather the larger, widely truncated; ventral margin slightly convex; anterior side rather short, rounded.

STIMPSON. Shells of New England.

Hab. North America.

I do not observe any specimen of this in the British Museum.



16



17 a



17 b



18.



19 a



20 b



20 a



21 a



21 b



22 b

YOLIDIA.

PLATE IV.

Species 16. (Mus. Brit.)

YOLIDIA FERRUG. *Yol. testâ breviter orbato-ovata, minuta, tenui, stramineâ, âtrâ, concentricè striatâ; latere postico angulato, post angulâ lat. truncato, margine dorsali brevissimè, convexè subarcuato; umbonibus elevatis, margine centrali semilunari, latere antico subrotundo, margine dorsali declivi.*

THE FERRUG YOLIDIA. Shell shortly rather rounded ovate, minute, thin, straw-coloured, slimy, very concentrically striated; posterior side angular, widely truncate behind the angle, dorsal margin very short, cuneate, convexly slightly arched; umbones elevated, ventral margin semilunar; anterior side somewhat rounded, dorsal margin sloped.

TORLE. Spitzbergen Mollusca, p. 118, pl. t. f. 3.
Hab. Spitzbergen.

This little shell is the most orbicular in form of all the species.

Species 17. (Mus. Brit.)

YOLIDIA LUCIDA. *Yol. testâ parvâ, ovata, tenui, laevi gati, subventricosi, subequilaterali, semipallidula, pallidè stramineâ, strigis concentricis exarabes fasciatâ; latere postico subacuminato, arcu dorsali depressâ, arcu defixâ; latere antico subrotundo, margine dorsali declivi.*

THE LUCID YOLIDIA. Shell small, ovate, thin, smooth, subventricose, sub-equilateral, semipallid, pale straw, banded with concentric bluish stripes; posterior side slightly acuminated, dorsal arc depressed, very little defined; anterior side somewhat rounded, dorsal margin sloped.

LOVEN. Index Moll. Scandinav., p. 34.
Hab. North Europe.

Species 18. (Mus. Brit.)

YOLIDIA SAPHIRULA. *Yol. testâ ovatâ, latâ, compressâ, ântenti, olivaceâ, margine centrali semilunari.*

latâ; posticè brevissimè, sursum subarcuato, acuminato, margine dorsali depressâ, arcu defixâ.

THE SAPY YOLIDIA. Shell ovate, broad, compressed-slimy, olive; ventral margin semilunar; posterior side rather short, slightly arched upwards, acuminated, dorsal margin depressed, arc defined.

GOLLE. Invertebrata of Massachusetts, p. 100, f. 61.
Hab. Massachusetts.

The nearest ally of this species is *Yoldia arctica*, than which it is deeper, and has the ventral margin more regularly semilunar.

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

YOLIDIA JAPONICA. *Yol. testâ parvâ, tenui, concentricè striatâ, olivacea fasciâ, laevigatâ; latere postico subattenuato, ad terminum rotundato umbonibus rotundatis, elevatis, margine centrali convexo, latere antico brevissimè, margine dorsali declivi.*

THE JAPANESE YOLIDIA. Shell small, thin, very ventricose, olive-brown, smooth; posterior side somewhat attenuated, rounded at the end; umbones rounded, elevated, ventral margin convex; anterior side rather short, dorsal margin sloped.

MUSSTH. (Nuxella) Philippi Moll. Sic. (fossil).
Yolâ haticulus, Muller.
Yolâ tenuis, Jeffreys.
Hab. Britain. N. Europe.

This minute shell is more ventricose, and has larger umbones than *Yoldia lucida*.

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

YOLIDIA JAPONICA. *Yol. testâ oblongâ, subarcuatâ, pallidâ, laevigatâ, latere postico angustiori, sursum obtusè-acuminato, margine centrali subito sursum ântenti, margine dorsali depresso, arcu impresso defixâ; latere antico subrotundo, margine dorsali declivi.*

THE JAPAN YOLDIA. Shell oblong, a little arched, pale, smooth; posterior side narrower, obtusely acuminate above; ventral margin suddenly sloped upwards; dorsal margin depressed, impressed area defined; anterior side roundish, dorsal margin sloped.

ADAMS AND REEVE. Zool. Samarang Mol., pl. 24, f. 2.

Hab. Japan.

Species 21. (Fig. *a, b*, Mus. — ? copied.)

YOLDIA RETUSA. *Yol. testâ parvi, albi, subventricosi,*

aequilaterali, latere postico sursum arcuato, margine terminali sub-truncato, margine dorsali depresso, concavo, margine ventrali valde convexo.

THE BLUZE YOLDIA. Shell small, white, subventricose, equilateral; posterior side curved upwards, terminal margin subtruncated, dorsal margin depressed, concave, ventral margin very convex.

HISDS. (Nucula) Proc. Zool. Soc., 1843, p. 99.

Hab. Straits of Malacca. Philippines.

A very small white shell with a slight upward curve.



22

23

23 a



23 b



24



25



26



27

28



28



29

YOLBIA.

PLATE V.

Figs. 10, 6, a small (1000) figure of *Yolbia* OPISSON, *Novb.*, see Plate II.

Species 22. (Mus. Brit.)

YOLBIA ALASSIOLOA. *Yol. testis ovata, parvula, area triangulari; latera postica subaemulata, area postangularem depressa, area antea subaemulata, area dorsalis declivi; umbonibus acuminatis elevatis, margine ventrali subaemulati, latera postica breviter subaemulata, intanda.*

THE ALASSIOLOA YOLBIA. Shell broadish, small, ovate-subtriangular; posterior side subaemulata, area angular, postangular area depressed, and truncated; dorsal margin sloped; umbones acuminately elevated; ventral margin subaemulata, anterior side rather short, rounded.

TABLE. Spitzbergen Moll., p. 149, pl. I, 6, 4.

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

YOLBIA SPLENDIDOLA. *Yol. testis minutata, subaemulata, latera parvula, alitrata, fissura concava costis apta; latera postica declivi, truncata, producta; area antea breviter subaemulata, margine dorsali declivi.*

THE SPLENDID YOLBIA. Shell minute, subovate, small, small, shining, striped with concentric bands; posterior side sloped, truncated, produced; anterior side rather short, dorsal margin sloped.

A. ADAMS. MS. in Cun. Coll.

Hab. — ?

A pretty little species, more trigonal and less curved upwards than *Yolbia brevia*.

Species 24. (Mus. Brit.)

YOLBIA ABERGVEYMAIA. *Yol. testis ovato-alata subtriangulari, compressa, latera brevia, latera parvula; latera postica brevia, subaemulata, margine dorsali valde declivi, area definita; truncata truncata, area antea obliqua subaemulata, margine dorsali declivi, umbonibus elevatis.*

THE ABERGVEYMAIA YOLBIA. Shell inequilateral, subtriangular, compressed, broad, short, smooth; posterior side short, subaemulata, dorsal margin much sloped, area defined; end truncated; anterior side

obliquely subaemulata, truncata sloped, umbones elevated.

SOEWLEY.

Hab. Falkland Islands.

This shell seems to me to be wrongly referred to *Yolbia Hulsarsvadi*.

Species 25. (Fig. c, 6, Mus. Taylor.)

YOLBIA KAMAYIA. *Yol. testis subaemulata, truncata, convexa, alata, compressa, umbones radiata, margine latera; latera postica subaemulata, margine latera; area antea declivi, truncata, margine dorsali compressa, convexa, latera antea subaemulata, margine dorsali subcompressa, convexa.*

THE KAMAYIA YOLBIA. Shell a little lanceolate, thin, straw-coloured, shining, compressed, with a radiating sulcus in the middle; posterior side subaemulata, ventral margin sloped upwards, and truncated, dorsal margin compressed, convexly lipped; anterior side a little rounded, dorsal margin subcompressal, convex.

SOEWLEY.

Hab. — ?

This species is distinguished by the somewhat convex prominence of the dorsal margin, and I think also that the radiating groove in the centre of each valve is so exactly alike in the only two specimens I have seen as to discredit the idea of its being accidental.

Species 26. (Mus. Brit.)

YOLBIA ELDHISI. *Yol. testis ovata, latera crassa, epidermide olivaceo-nigrescenti latera indurata, interquadrata; latera postica brevia, obtuse truncata, margine dorsali convexo-depresso, area definita; umbonibus subaemulatis, margine ventrali subaemulati; latera antea producta, margine dorsali convexo-declivi.*

ELDHIS' YOLBIA. Shell ovate, broad, thick, covered with a blackish olive smooth epidermis, inequilateral, posterior side short, obtusely truncated, dorsal margin convexo-depressed, area defined; umbones turned slightly backwards; ventral margin

November, 1871.

YOLDIA.—PLATE V.

semihumar; anterior side produced, dorsal margin convexly sloped.

Common, Jay's Catalogue of Shells.

Hab. Shetland Islands.

Species 27. (Mus. — ? copied.)

YOLDIA SULCATA. *Yol. testâ parvâ, stramineâ, sub-ovata, costellis parvis rotundis concentricis levatâ; lateri postico acuminato, margine dorsali depresso, areâ levigatâ, lateri antico rotundo.*

THE GROOVED YOLDIA. Shell small, straw-coloured, subovate, ridged with few rounded concentric ribs; posterior side acuminate, dorsal margin depressed, area smooth; anterior side rounded.

RIEU Belcher's last Arctic Voyage, p. 397.

Hab. ———.

This little shell has the largest concentric ridges of any species.

Species 28. (Mus. DeKay's)

YOLDIA GOULDII. *Yol. testâ ovato-subtriangulâ, stramineâ, latâ, brevi, subequilaterali, triante concentricè rugatâ; lateri postico angulato, emutato, areâ post-angulari angustâ, declivi, lateri antico brevi, sub-rotundo, margine dorsali subconvexo.*

GOULD'S YOLDIA. Shell ovate-subtriangular, straw-coloured, broad, short, sub-equilateral, finely concentrically wrinkled; posterior side angular, cuneate, postangular area narrow, sloped, rather rounded, dorsal margin rather concave.

DEKAY (Nuella) New York Mollusca, p. 180, t. 221.

Hab. North America.

Of a subtriangular, mactra-like form, unlike the other species.

YOLDAIA.

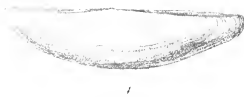
Plant	Species	Date	Species		
<i>obovata</i> , Steud.	V.	24	<i>lucida</i> , Ledeb.	IV	17
<i>glyssota</i> , Turcz.	V.	22	<i>Ullrichii</i> , Gray	I	1
<i>fabosa</i> , Valerius	III.	11	<i>Myalis</i> , Cuthby	II.	9
<i>amygdala</i> , Volkow	I.	3	<i>Myalis</i> , Hooker	III.	14
<i>capitata</i> , Moll.	I.	1	<i>Naushanica</i> , Chrenitz.	II.	6
<i>velutina</i> , Broderik.	III.	14	<i>obesa</i> , Stempson	III.	15
<i>arctica</i> , Gray	III.	14	<i>obtusata</i> , Sowerby	I.	10
<i>Cassowaria</i> , Mighels	III.	14	<i>Polystachya</i> , Hutchcock.	III.	12
<i>Eightii</i> , Cuthby	V.	26	<i>pyramis</i> , Hausskn.	IV.	19
<i>fragula</i> , Turcz.	IV.	16	<i>retusa</i> , Hausskn.	IV.	21
<i>obovata</i> , Gray	III.	12	<i>sapotilla</i> , Goubl.	IV.	18
<i>Gouldii</i> , DeGray	V.	28	<i>serotina</i> , A. Adams	II.	5
<i>happachensis</i> , Turcz.	III.	14	<i>virgata</i> , Reiche	III.	12
<i>Japonica</i> , Ad. and Reiche.	II.	5	<i>splendens</i> , A. Adams	V.	23
<i>Japonica</i> , Ad. and Reiche.	IV.	29	<i>sibirica</i> , Cuthby	V.	24
<i>lobata</i> , Sowerby	V.	25	<i>sibirica</i> , Reiche	V.	27
<i>lanesolata</i> , Sowerby, J.	III.	14	<i>tenella</i> , Hausskn.	II.	4
<i>latifolia</i> , Valenciennes	I.	1	<i>tricus</i> , Jeffrey	IV.	19
<i>leucocarpa</i> , Mull.	IV.	19	<i>tricusiformis</i> , Steud.	I.	1
<i>lepidula</i> , A. Adams	II.	7	<i>transcaucasica</i> , Brown	III.	12
<i>limatula</i> , Sieg.	III.	13	<i>Woodwardii</i> , Hooker	I.	2

MONOGRAPH

OF THE GENUS

LEDA.

"The ample sea, in whose relations"
Pinnacled south of Greenland; *Geological Studies*



L. E. D. A.

PLATE I.

Genus L.EDA, *Nov. Lamarch.*

Testa biconvexa, arcuata, oblonga, postice producta et attenuata, inflexa, nuda; margine cardinali angulato, dentibus utriusque immixtis, acutis; ligamento interno.

Shell biconvex, equivalve, oblong, more or less conical form, closed, produced and attenuated posteriorly, pearly within; hinge margin angular, teeth numerous and acute on both sides; ligaments internal.

Genus *Lambulus*, Risso.

The shells of this genus are fairly enough distinguishable from those of the genus *Nucula* on one hand and from the *Yoldia* on the other; from the former by the angular production of the hinder side of the shell, and from the latter in having the shell closed all round, and the hinder part being attenuated and beak-like, which *Yoldia* is not.

The very elongate and lanceolate forms such as *elongata* and *tellinoides* have been separated under the name *ADRIANO* as presenting an appearance not much akin to such shells as *Leda perobata* and *Leda pulchra*, but in such species as *Leda decora* and *Leda pulchra* we observe a manifest gradation between the two groups.

LEDA, like its generically, may be reckoned among the most widely distributed genera, considering the comparatively small number of its species, which are found not only in northern seas such as those coasting Siberia and Great Britain, but in Australia in the south, and from the Cape of Good Hope upwards. Some are found in Japan and others in the West Indies.

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

LEDA SOWERBYANA. Leda, testâ elongata, elegantè lanceolata, compressâ, subequilaterali, albâ, semipellucidâ, obliquè striatâ, utriusque acutè rostrata, medio depressâ, margine dorsali utriusque recto, arcu compressâ marginato, margine ventrali utriusque versus terminos concentricè, medio convexo; termino antice subtruncato, postice subannulato.

SOWERBY'S LEDA. Shell elongated, elegantly lanceolate, compressed, subequilateral, whitish, semi-pellucid, obliquely striated, acutely rostrated at both ends, depressed in the middle; dorsal margin straight, on both sides bordered with a compressed area; ventral margin concave on each side towards the ends, convex in the middle; anterior termination subtruncated, posterior subannulated.

DORRISY, as per Huxley, *Nuculide in Sowerby's Thestris*, Leda, No. 33.

Nucula lanceolata, Sowerby in Con. Ill., not *J.* Sowerby nor Lamarch.

Nucula elongata, Valenciennes.

Hab. Xipixipâ.

Of a more elegantly lanceolate and attenuated form than *Leda elongata*.

Species 2. (Fig. a, b, Mus. Brit.)

LEDA TELICA. Leda, testâ solidiusculâ, elongata-lanceolata, subequilateralis, compressâ, albâ, obliquè striatâ, utriusque rostratâ, rostro postice angulato, obliquè truncato, margine arcuato, arcu dorsali depressâ, leviter arcuatâ.

THE CROSSIN LEDA. Shell rather solid, elongate-lanceolate, subequilateral, compressed, whitish, obliquely striated, rostrated at each end, posterior rostrum angular, obliquely truncated, margin eroded, dorsal area depressed, slightly arched.

A. ADAMS. Proc. Zool. Soc., 1846, p. 18.

Hab. Santos, Brazil.

Species 3. (Fig. a, b, Mus. Brit.)

LEDA GORDONIA. Leda, testâ oblongo-lanceolata, albâ, solidiusculâ, inequilateralis; laterè postice attenuato, elongata, compressa, rostrato, ad terminum subannulato, laterè antice concentricè, latiusculâ, ad marginem dorsalem concentricè rugatâ.

LÆDA.—PLATE I.

THE GLORIOUS LÆDA. Shell oblong-lanceolate, whitish, rather solid, inequilateral; posterior side attenuated, elongated, compressed, rostrated, rather rounded at the end, concentrically wrinkled at dorsal margin.

A. ADAMS. (Yoldia) Proc. Zool. Soc., 1855, p. 226.
Hab. Singapore.

With the general form of the lanceolate group this species combines a certain inequality of sides, the posterior being elongated and tapering, and the anterior swelled and broad.

Species 4. (Mus. Brit.)

LÆDA ELONGATA. *Læd. testâ lanceolata, compressâ, sub-
aquilobâ colâ, obliquè striatâ, epidermide valido in-*

*dentâ, utrinque subrostrata, rostris obtusis, margine
centrali prope terminos vix concavo; margine cher-
solâ utrinque recto, arcibus dorsalibus levipatis sub-
depressis.*

THE ELONGATED LÆDA. Shell lanceolate, compressed, subequilateral, obliquely striated, covered with a strong epidermis, subrostrated at each end; beaks obtuse, ventral margin scarcely concave near the ends; dorsal margin straight on both sides; dorsal areas smooth, subdepressed.

SOWERBY. Proc. Zool. Soc., 1852, p. 197.

Hab. Salango, West Columbia.

The concavity in the ventral margin is not nearly so conspicuous in this species as in the more gracefully-formed *Læda Sowerbiana*.



5 a



6 a



6 b



8 b



7 a



7 b



8 a



8 a



8 b



9

LÆDA.

PLATE II.

Species 5. (Fig. a, b, c, Mus. Sowerby.)

LÆDA PERULA. *Læda testâ oblongâ, rostratâ, crassâ, olivaceâ, striâ elevatis concentricis numerosis, medio dorsiobtusâ, anticâ radiatâ interruptis sculptâ; latere postico subarcuatum rostrato, obscure biconvato, ad terminum breviter truncato, margine dorsali depresso, arcâ circumscriptâ; medio inflato, apice obtuso; latere postico breviusculo, obscure uncinato, subacuminatim rotundato.*

THE LITTLE PERNA LÆDA. Shell oblong, rostrate, thick, olivaceous, sculptured with numerous raised concentric striae, more dense in the middle and slightly interrupted anteriorly; posterior side rostrated with a slight curve, with two obscure ribs, shortly truncated at the end, dorsal margin depressed, area circumscripted, inflated in the middle, apex obtuse; posterior side rather short, with an obscure ray, subacuminately rounded.

MÜLLER (ARCA). Beschalt. Naturf. Berlin, iv. 55, 57.

Arca fluctuâlis. Schröter.

Arca Martini. Chemnitz

Nucula elongata. Dandin

Larva macilenta. Steenstrup.

Hab. Boreal Seas.

The shorter variety is also generally smoother

Species 6. (Fig. a, b, Mus. Cam. in Brit.)

LÆDA CELATA. *Læda testâ ovato-acuminatâ, olivaceâ, obliquè subconcentricè sulcatâ, latere postico breviusculo, rostrato, acuminato, uncinato, ad terminum brevissimè truncato, margine dorsali depresso, declivi, arcâ planulatâ, latâ; latere antico protracto, ad terminum rotundo.*

THE ENGRAVED LÆDA. Shell ovately acuminated, olive, obliquely subconcentrically sulcated; posterior side shorter, rostrated, acuminated, with a single rib, very shortly truncated at the end, dorsal margin depressed, sloped downwards, area flattened, broad; anterior side produced, rounded at the end

HINDS. (Nucula). Proc. Zool. Soc., 1843, p. 99.

Hab. California.

The striae are not absolutely concentric, but slope a little downwards towards the hinder end.

Species 7. (Fig. a, b, Mus. Brit.)

LÆDA BUCCATA. *Læda testâ crassâ, latâ, oblongâ, subarcuato, subconcentricè, sulcatâ, impuritate radiâ; latere postico subattenuato, rostrato, obscurissimè biconvato, costis brevibus, ad terminum obliquè truncato; latere antico breviusculo, inflato, subrotundo.*

THE BLOWN-OUT LÆDA. Shell thick, broad, oblong, somewhat arched, nearly concentrically sulcated, inequilateral; posterior side rather attenuated, beaked, with two very obscure smooth ribs, obliquely truncated at the end; anterior side rather short, inflated, rather rounded.

STEENSTRUP, in Møller Fauna Greenlandica.

Hab. Greenland.

Strongly resembling *Læda perula*, but a stouter, more inflated, and deeper shell.

Species 8. (Fig. a, b, Mus. Sowerby.)

LÆDA BICUSPIDATA. *Læda testâ subrhomboidâ, oblongâ, inflatâ, solidâ, albâ, impuritate radiâ, latere postico oblongo, subattenuato, angulato, ad angulum subexcavato et spinoso, post angulum arcâ excavatâ, ad terminum emarginatâ, supra arcum ad marginem dorsalem biconvato, carinis spinosis; medio obliquè sulcato; latere postico biconvato, inter costas et ad marginem tenuandem eccentricè sulcato.*

THE TWO-POINTED LÆDA. Shell subrhomboidal, oblong, inflated, solid, white, inequilateral, posterior side oblong, a little attenuated, angulated, subexcavated and spinose at the angle, with an excavated area behind the angle, emarginated at the end; above the area at the dorsal margin two-keeled, keels spinose; middle obliquely sulcated, posterior side two-ribbed, between the ribs and at the terminal margin eccentrically sulcated

GOULD (Nucula), Boston Journal of Natural History.

Leda longillerti, Philippi.

Leda peicijera, A. Adams.

The sculpture of this little *Leda* is exquisite.

Species 9. (Mus. Sowerby.)

L.EDA DISSIMILIS. *Led. testâ albidâ, ovatâ, tenuiter sub-concentricè sulcatâ, subaquilaterali, subareuatâ, æqualiter inflatâ; latere postico acuminato, eis costato, margine dorsali depresso, arcâ circumscriptâ; margine ventrali semilunari; latere antico sub-rotundo.*

THE DISSIMILAR L.EDA. Shell whitish, ovate, finely sub-concentrically sulcated, sub-aquilateral, a little arched, equally inflated; posterior side acuminated, scarcely costated, dorsal margin depressed, with circumscribed area; ventral margin semilunar; anterior side rather rounded.

SOWERBY.

Hab. —?

The comparison for this species is in *Leda calata*, but our shell is more ovate, more evenly ventricose, more pointed, less beaked, and not ribbed.



10



11 a



11 b



12



13 a



13 b



14



15 a



15 b



16

L E D A.

PLATE III.

Species 10. (Mus. Brit.)

LIEDA DISYDNIATA. *Leid. testa ovali, brem. ob. angli, rostrata, angustata, latere ant. obliq. s. margine dorsali levigato, medio costata, margine ventrali breviter arcuato; latere postico elongato, angustato, area dorsali depressa, levigata, tenuiter rostrata, truncato.*

THE FINI-BIBBED LEDA. Shell conchiform, oblong, rostrated, narrowed, anterior side short, with smooth dorsal margin; middle costulated ventral margin slightly arched; posterior side elongated, narrow, with depressed smooth dorsal margin, end rostrated, truncate.

CODDING. *Bod. Journ. Nat. Hist.* vol. ii. 64, pl. 48, f. 16.

Nucula minuta, Gould (not Fabricius).

Hab. N. America.

Resembling *Leid. Punctata* in form, but finely ribbed in the central area.

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

LIEDA MINUTA. *Leid. testâ brevi, crassa, ventrosâ, epidermide crassa obscure olivacea indutâ, breviter hinc; latere antico breviusculo, liris magis conspicuis; latere postico subrostrato, truncato, area dorsali latè, planè, circumscriptâ.*

THE MINUTE LEDA. Shell short, thick, ventriose, covered with a thick dull olive epidermis, finely ridged; anterior side rather short with the ridges more prominent; posterior side somewhat beaked, truncated, dorsal area wide, flat, circumscribed.

MULLER. *Zool. Danic.* 2985.

Mya Greenlandica, Chemn.

Nucula parva, Sows.

Nucula complanata, Moller.

Hab. Greenland.

Species 12. (Mus. Brit.)

LIEDA PATAGONICA. *Leid. testâ elongato-angustata, eos trati, arcuata, valè compressâ, pallide subolivaceo-rosâ, longitudinaliter striatâ, subquadrata, latere antico rotundè acuminato, margine dorsali elevato; latere postico rostrato, ad terminum oblique truncato, margine dorsali arcuatum depressa margine ventrali aequaliter arcuato.*

THE PATAGONIAN LEDA. Shell elongately-narrowed, beak'd, arched, much compressed, pale yellowish; s. longitudinally striated, nearly equilateral; anterior side roundly acuminate, with dorsal margin elevated, posterior side beaked, with dorsal margin depressed in a curve, ventral margin equally arched.

D'ORBIGNY. *Amer. Mèrid.* p. 541, pl. 82.

Hab. West Indies.

I cannot concur with Mr. Hanley in treating the very different looking shells figured in *Thesaurus Conchyliorum* under this name, as the same species. I have therefore separated his Fig. 51-2, under the title of *L. planulata*.

Species 13. (Mus. Brit.)

LIEDA DECORA. *Leid. testâ solidâ, subcompressâ, subangustè oblongo-rostratâ, albâ, liris tenuibus concentricis sculptâ; latere antico breviusculo, liris magis elevatis; latere antico rostrato, biangulato, ad terminum acuminatum truncato, margine dorsali elevato, area depressâ planulatâ margine ventrali medio rectiusculo.*

THE DECOROUS LEDA. Shell solid, subcompressed, rather narrowly oblong-rostrated; rather white, sculptured with fine concentric ridges; anterior side beaked, biangulated, acuminately truncated

at the end, dorsal margin crenated, bordered with a flat depressed area; ventral margin rather straight in the middle.

A. ADAMS. Proc. Zool. Soc., 1856, p. 50.

Hab. West Indies.

A much more tumid and solid shell than *L. crujifera*, which it slightly resembles.

Species 14. (Mus. Brit.)

LÆDA TELLINOIDES. *Læd. testâ latè haevolutâ, albâ, valdè compressâ, subæquilaterâ, anticè et medio obliquè et undulatim striatâ, utrinque subostratâ, terminibus rotundatim acuminatis, marginè ventrali, valdè convexo, versus terminus crenato, marginè dorsali rectiusculo, latere postico angustiusculo.*

THE TELLINA-SHAPED LÆDA. Shell widely lanceolate, white, much compressed, subequilateral, anteriorly and in the centre obliquely and undulately striated, sub-ostriated at each end, the ends roundly acuminated, ventral margin very convex, excavated towards the ends; dorsal margin rather straight, posterior side rather narrow.

SOWERBY. Genera of Shells, Tellina, fig. 2.

Hab. Cumana.

Remarkable for the very arched form of the ventral margin in the centre.

Species 15. (Fig. a, b. Mus. Chin. in Brit.)

LÆDA CONCINNA. *Læd. testâ lanceolato-cuneiformi, compressâ, concentricè liratâ, epidermide cornea indatâ;*

latere antico breviusculo, marginè dorsali rectiusculo, cuneato; latere postico anguste rostrato, producto, ad terminum angustè truncato, rostro costellis unanifurcibus duabus obliquis marginato.

THE NEAT LÆDA. Shell lanceolately cuneiform, compressed, concentrically ridged, covered with a horny epidermis; anterior side rather short, dorsal margin rather straight, cuneated; posterior side narrowly beaked, produced, narrowly truncated at the end, beak bordered with two bead-like oblique little ribs.

A. ADAMS. Proc. Zool. Soc., 1856, p. 48.

Hab. New Zealand.

Species 16. (Mus. Cum. in Brit.)

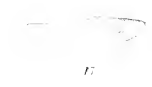
LÆDA POLITA. *Læd. oblongo-pyriformi, levigatâ, perobliquè undulatim striatâ, epidermide polito viridi indatâ; latere antico valdè inflato, rotundo; latere postico cuneato, acuminato, anguste, rostrato, ad rostrum laevè striato, marginè ventrali sursum auctivi; marginè dorsali depresso, marginibus subcrectis.*

THE POLISHED LÆDA. Shell oblong-pyriform, smooth, very obliquely, undulately striated; covered with polished green epidermis, anterior side much inflated, rounded; posterior side cuneate, acuminated, narrow, beaked, not striated at the beak, ventral margin sloped upwards, dorsal margin depressed, with the margins rather erect.

SOWERBY (*Nacodæ*). Proc. Zool. Soc., 1832, p. 198.

Hab. Panama.

A very beautiful inflated pear-shaped species.



17



18



19



20



21 a



21 b



22 a



23



24



25 b

L. E. D. A.

PLATE IV

Species 17. (Mus. Comp. Brit.)

LEIDA TAYLORI. *Lord, testa alba, lanceolata, compressa, tenui, per unum obliqui striata; latera convexa postica, angusta, acuminata, prope marginem dorsalem conspicua levata, marginem dorsalem rotundata, marginem ventrali versus truncata crenata, sub palli convexa; latera postica breviter arcuata, sub palli dorsali leviter arcuata, subdorsali versus crenata, ad terminum acuminata, marginem ventrali versus arcuata.*

TAYLOR'S LEIDA. Shell white, lanceolate, compressed, thin, nearly all over obliquely striated, the striae beaked, narrow, acuminate, less conspicuous near the dorsal margin, a sub-narrow border rather straight; ventral margin convex toward the end, very convex in the middle; posterior side rather longer, with dorsal part of shell gradually rather depressed, scarcely perceptible, not ending at the end, ventral margin slope upwards.

HANLEY. Proc. Zool. Soc., 1860.

Xanoba lanceolata, Hanley (not J. Sowerby).

Hab. Guatemala.

One of the thin lanceolate species, with the ventral margin excavated at the anterior side.

Species 18. (Mus. Comp. Brit.)

LEIDA METCALLE. *Lord, testa alba, tenui, compressa, obliqui striata; latera aut convexa aut haeriscentia, prope marginem conspicua angusta, obliqui elongata, marginem ventrali versus, latera postica elongata, angusta, ad terminum arcuata, ad angulum marginis dorsalis crenolata.*

METCALLE'S LEIDA. Shell white, thin, lanceolate, compressed, obliquely striated; anterior side a little inflated, rather short, near the margin conspicuously wrinkled, obliquely depressed, with ventral margin convex; posterior side elongated, narrow, acuminate at the end, crenulated at the angle of the dorsal margin.

HANLEY. Proc. Zool. Soc., 1870.

Xanoba erigifera, Hanley (not Sowerby).

Hab. Philippines. *Cavite*.

Species 19. (Mus. Brit.)

LEIDA METCALLE. *Lord, testa breviter conica, crassi, arcuata versus anteriori levata, epidermide subradiata fusca imbuta, latera antica brevia, rotunda, inflata, latera postica levata, biangulata, postice, subcompressa, ad terminum truncata; subdorsalis elevata.*

THE GREAT LEIDA. Shell shortly conical, thick, equally concentrically wrinkled, covered with a greenish-brown epidermis; anterior side short, rounded, inflated; posterior side rotated, biangular, produced, rather compressed, truncated at the sides, angles elevated.

DORR. *Ann. Brit. Mus. Nat. Hist.*, pl. 78.

Leida arcuata, Montagu.

Xanoba arcuata, Sowerby.

Schelus solutus, Leach.

Leida arcuata, Oersted.

Hab. Great Britain. North Europe.

Species 20. (Mus. Taylor.)

LEIDA METCALLE. *Lord, testa alba, tenui, compressa, cuneato-lanceolata, subdorsali tenuissimè striata, latera antica haeriscentia, marginem versus declivi, rotundata, marginem et unum crenolata, latera postica angulo-lanceola acuminata, marginem dorsali depresso, acuminata crenolata, ad terminum levata, marginem ventrali unum et postice aequaliter arcuata.*

THE SMALL LEIDA. Shell white, thin, compressed, elongated, lanceolate, a little obliquely finely striated; anterior side rather short, with the margin sensibly sloped, rather straight, minutely and acutely crenulated, elevated at the end; ventral margin anteriorly and posteriorly equally arched.

HOWERY.

Hab. —?

In *Leida Taylori*, which resembles this species, there is a peculiar narrowness and almost a constriction in the ventral margin at the anterior end, not observable in *Leida arcuata*.

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

L.EDA CRENIFERA. *Led. testâ solidâ, albâ, compressâ, lanceolato-elongatâ, antice posticeque tenuiter livatâ, medio levigatâ, marginibus dorsalibus costatis, excavatis; latere antico breviusculo, arcâ marginali latiusculâ, excavatâ, costâ marginali elevatâ; latere postico longiusculo, marginè ventrali medio rectiusculo, atrinque valde sarsum acclivi.*

THE CRENIFEROUS L.EDA. Shell solid, whitish, compressed, lanceolately-elongated, anteriorly and posteriorly finely wrinkled, smooth in the middle, dorsal margins ribbed, crenulated; anterior side rather shorter, with marginal area rather broader, excavated; marginal rib raised; posterior side rather longer, ventral margin rather straight in the middle, much sloped upwards at both ends.

SOWERBY (*Nucula*). Proc. Zool. Soc., 1832, p. 197.

Hab. Xipixapi.

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

L.EDA PLANULATA. *Led. testâ levè lanceolatâ, sub-aurantiâ, levigatâ, compressâ, planulatâ, subquadrilaterâ; latere antico subacuminatum rotundò; marginè ventrali post terminum subexcavatò, medio convexo, versus terminum posteriorem gradatim sarsum acclivi; latere postico angustiusculo, acuminato.*

THE PLANULATE L.EDA. Shell broadly lanceolate, rather orange, smooth, compressed, flattened, sub-equilateral; anterior side rather acuminately rounded; ventral margin behind the end a little excavated, convex in the middle and gradually sloped upwards in reaching the posterior end; posterior side rather narrow, acuminated.

SOWERBY.

Hab. Patagonia.

I find it impossible to assimilate this differently coloured and differently shaped shell to the elegant form of *Leda Patagonica*.

Species 23. (Mus. Metcalfé.)

L.EDA BELCHERI. *Led. testâ oblongâ, pallidè fulvâ, subconcentricè striatâ, compressâ, latâ; latere antico breviusculo, marginè dorsali declivi; latere antico obliquè quadrangulatò, ad terminum emarginato, ad angulos leviter crenulatum costato; arcâ dorsali depressâ, complanatâ.*

BELCHER'S L.EDA. Shell oblong, pale fawn, nearly concentrically striated, compressed, broad; anterior side rather short, dorsal margin sloped; anterior side obliquely quadrangular, emarginated at the end, slightly crenulately ribbed at the angles; dorsal area depressed, flattened.

HINDS. Proc. Zool. Soc., 1843, p. 98.

Hab. Argulhas Bank, Cape of Good Hope. In deep water.

Species 24. (Mus. Cuming in Brit.)

L.EDA COSTELLATA. *Led. testâ elongato-lanceolatâ, subcuneiformi, distanter concentricè livatâ, epidermide pallidò corvco indatâ; latere antico breviusculo, subacuminatum rotundato; latere postico conspicuè rostrato, biangulatò, ad terminum truncato, angulis crenulatis.*

THE COSTELLATED L.EDA. Shell elongately-lanceolate, somewhat cuneiform, distantly concentrically ridged, covered with a pale horny epidermis; anterior side narrow, rather short, subacuminately rounded, posterior side conspicuously rostrated, biangular, truncated at the end, with the angles crenulated.

SOWERBY (*Nucula*). Proc. Zool. Soc., 1832.

Hab. Panama.

Very distinct from *Leda pernata* by reason of the distant concentric ridges and distinctly rib-margined beak.



L E D A.

PLATE V.

Species 24 bis. (Mus. Brit.)

L.EDA CONFUSA. *Led. testâ ovato, compressâ, sub-pil-lateralî, latâ, tenuiter lineatâ, epidermide striatâ, striatione inflatâ; latere antico subquadrate, area dorsali parvâ definitâ; latere postico breviusculo, acuminatâ, margine dorsali declivi, arcâ latiusculâ, costâ rostrali parvâ, acutâ, margine centrali ad terminum valdè sursum auctâ.*

THE CONFUSED L.EDA. Shell ovate, compressed, sub-equilateral, broad, finely lined, covered with a thin, straw-coloured epidermis; anterior side subquadrate, dorsal area small, defined; posterior side rather short, acuminated, dorsal margin sloped, with rather wide area, rostral rib small, acute, ventral margin much sloped upwards at the end.

HANLEY, *Thes. Conch. Nucleolæ*, Laeda, 26.
Hab. Japan, China seas.

Species 25. (Mus. Brit.)

L.EDA BELLUCLA. *Led. testâ oblongâ, acuminatâ, sub-pyriformi, pallidâ, concentricè lineatâ, latere antico rotundè subacuminatâ; latere postico costato, angustâ, longiusculo, acuminatâ, ante rostrum radiatim depressâ, margine dorsali impresso, umbonibus acuminatis.*

THE LITTLE BEAUTIFUL L.EDA. Shell oblong, acuminated, sub-pyriform, pale, concentrically ridged; anterior side roundly subacuminated, posterior side beak-like, narrow, rather long, acuminated, radiately depressed in front of the beak; dorsal margin depressed, umbones acuminated.

A. ADAMS, *Proc. Zool. Soc.*, 1856, p. 49.
Hab. Australia.

A pretty little pyriform species.

Species 26. (Mus. Brit.)

L.EDA FULGIDA. *Led. testâ oblongo-pyriformi, brevigatâ, epidermide pallidâ inflatâ; latere antico*

ventricosâ, latere postico angustâ, acuminatâ, costâ, costâ rostrali angustâ, brevigatâ, arcâ ante rostrum subconcretâ, arcâ dorsali depressâ.

THE SHINING L.EDA. Shell oblong-pyriform, smooth, covered with a pale epidermis; anterior side ventricose, posterior side narrow, acuminated, beak-like, rostral rib narrow, smooth, area in front of the beak rather contracted, dorsal area depressed.

A. ADAMS, *Proc. Zool. Soc.*, 1852, p. 198.
Hab. Port Essington.

Species 27. (Mus. Brit.)

L.EDA CRASSA. *Led. testâ solidâ, crassâ, ventricosâ, ovatâ, latâ, acuatâ, concentricè lineis crassis rotundis sculptâ, epib. enib. fusco-nigrescenti inflatâ; latere antico rotundâ, margine dorsali declivi; latere postico rostrato arcuatim sursum auctâ, arcâ ante rostrum impressâ, ad marginem ventralis emarginatâ; arcâ dorsali magis lanceolatâ, longitudinaliter lineatâ.*

THE THICK L.EDA. Shell solid, thick, ventricose, oval, wide, curved, sculptured with concentric thick rounded ridges, covered with a blackish-brown epidermis; anterior side rounded, dorsal margin sloped; posterior side curved upwards, area in front of the beak impressed, emarginated at the ventral margin, dorsal area large, lanceolate, longitudinally ridged.

HINDS, *Proc. Zool. Soc.*, 1843.
Hab. Australia.

This species has a depressed area under the rostrum, which is marked by a notch in the ventral margin.

Species 28. (Mus. Brit.)

L.EDA NASUTA. *Led. testâ pyriformi, ventricosâ, albâ rostratâ, brevigatâ; latere antico inflatâ, longiusculo, margine dorsali declivi, ventrali convexo latere postico angustâ, rostrato, acuminatâ, costâ*

umbonali latâ, ad terminum obliquè truncato, margine dorsali arcuato, depresso, arcâ latâ, planolatâ; umbonibus rotundis.

- THE NASAL LÆDA. Shell pyriform, ventricose, white, rostrated, smooth; anterior side inflated, rather lengthened, dorsal margin arched, sloped, ventral convex; posterior side narrow, rostrated, acuminate, umbonal rib wide, obliquely truncated at the end, dorsal margin arched, depressed, area wide, flattened, umbones rounded.

SHOWERY. Con. Illustr.

Hab. East Indies.

Species 29. (Mus. Brit.)

LÆDA LEUENA. *Læd. testâ subattenuatâ, pyriformi; epidermide pallidâ indatâ, liris concentricis creberrimis sculptâ; latere antico subobliquè producto, inflato; latere postico acuminato, breviusculo, leviter bicostato, margine dorsali depresso, arcâ brevitatâ; umbonibus rotundis.*

- THE IVORY LÆDA. Shell slightly attenuated, pyriform, covered with a pale epidermis, sculptured with very close concentric ridges; anterior side rather obliquely produced, inflated; posterior side acuminate, rather short, slightly bicostated, dorsal margin depressed, area smooth; umbones rounded.

SHOWERY. Proc. Zool. Soc., 1832, p. 138.

Nacula lyrata, Hanley.

Hab. Bay of Panama.

Species 30. (Fig. a, b, Mus. Brit.)

LÆDA VENTRICOSA. *Læd. testâ solidâ, fulvâ, ventricosâ, ovatâ, liris nonnerosis concentricis aequalibus sculptâ; latere antico lato, tumido; latere postico breviusculo, subrostrato; arcis dorsalibus complanatis, vie defixis; umbonibus subacuminatis.*

- THE VENTRICOSE LÆDA. Shell solid, fulvous, ventricose, ovate, sculptured with numerous equal concentric ridges; anterior side wide, tumid; posterior side rather short, subrostrated, dorsal area flattened, scarcely defined; umbones subacuminated.

HINDS. Proc. Zool. Soc., 1813, p. 100.

One of the most solid and ventricose shells of the pyriform group.

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

LÆDA FASTIDIOSA. *Læd. testâ parvâ, pyriformi, stramineâ, levigatâ, nitentî; latere antico breviusculo, rotundato. latere postico attenuato, acuminato, arcâ dorsali depresso, complanatâ, latiusculâ.*

- THE FASTIDIOUS LÆDA. Shell small, pyriform, straw-coloured, smooth, shining; anterior side rather shorter, rounded; posterior side attenuated, acuminate, dorsal area depressed, flattened, rather wide.

A. ADAMS. Proc. Zool. Soc., 1856, p. 43.

Hab. New Zealand.

A bright little species, smooth like *Læda fulgida*, but more attenuated and sharply pointed posteriorly.



32 a



33



34



35 b



a



b



a



b



37



38 a



38 b



39

LÆDA.

PLATE VI.

Species 32. (Fig. 10, Mus. Brit.)

LÆDA ELIENSIS. *Lab.* testâ *truncata*, *suboculâtriâ* *orbâ* *lineatâ*; *labâ* *rotundâ*, *suboculâtriâ* *rotundatâ*, *marginâ* *dentatâ*; *lateralibus* *angustis*, *marginibus* *dentatis*; *rostrâ* *latere* *postico* *ventris* *suboculâtriâ* *marginatâ*, *rostro* *latigato*, *ambobus* *dentatis*, *labis* *dentatis*.

THE SAINT ELENA LÆDA. Shell white, smooth, elevated, subovate, subovoid, slightly flattened, with the dorsal side submarginately rounded, and the ventral side rounded, ventral margin slightly angulated, lateral sides convex in the middle, and the dorsal area with an umbonal curved ridge, produced, defined, dorsal areas wide, defined.

SOWERBY, Proc. Zool. Soc., 1832, p. 138.

Hab. St. Elena, Bourbonn.

Species 33. (Mus. Brit.)

LÆDA MAURITIANA. *Lab.* *testâ* *truncata*, *suboculâtriâ* *orbâ* *lineatâ*; *labâ* *rotundâ*, *suboculâtriâ* *rotundatâ*, *marginâ* *dentatâ*; *lateralibus* *angustis*, *marginibus* *dentatis*; *rostrâ* *latere* *postico* *ventris* *suboculâtriâ* *marginatâ*, *rostro* *latigato*, *ambobus* *dentatis*, *labis* *dentatis*, *arâ* *dorsali* *depressa*, *labis* *marginatis*, *ambobus* *dentatis*.

THE MAURITIUS LÆDA. Shell white, smooth, broadly broad, ventriose, finely striated, with the dorsal anterior side inflated; posterior side with the ventral beak arched, elevated, ventral side depressed, dorsal area depressed, broad, defined, defined, dorsal areas wide, defined.

SOWERBY, Conch. Hist., Numb. 2, p. 17.

Hab. Ceylon, China, Mauritius.

Species 34. (Mus. Brit.)

LÆDA PTELLATA. *Lab.* *testâ* *truncata*, *suboculâtriâ* *orbâ* *lineatâ*; *labâ* *rotundâ*, *suboculâtriâ* *rotundatâ*, *marginâ* *dentatâ*; *lateralibus* *angustis*, *marginibus* *dentatis*; *rostrâ* *latere* *postico* *ventris* *suboculâtriâ* *marginatâ*, *rostro* *latigato*, *ambobus* *dentatis*, *labis* *dentatis*.

THE WHITE LÆDA. Shell white, smooth, elevated, broadly broad, ventriose, finely striated, with the dorsal anterior side inflated; posterior side with the ventral beak arched, elevated, ventral side depressed, dorsal area depressed, broad, defined, defined, dorsal areas wide, defined.

HILL, Proc. Zool. Soc., 1832, p. 140.

Hab. Mauritius.

Species 35. (Fig. 11, Mus. Brit.)

LÆDA CANTONENSIS. *Lab.* *testâ* *truncata*, *suboculâtriâ* *orbâ* *lineatâ*; *labâ* *rotundâ*, *suboculâtriâ* *rotundatâ*, *marginâ* *dentatâ*; *lateralibus* *angustis*, *marginibus* *dentatis*; *rostrâ* *latere* *postico* *ventris* *suboculâtriâ* *marginatâ*, *rostro* *latigato*, *ambobus* *dentatis*, *labis* *dentatis*, *arâ* *dorsali* *depressa*, *labis* *marginatis*, *ambobus* *dentatis*.

THE CANTON LÆDA. Shell white, smooth, elevated, covered with a fine wash-green epidermis, concentric, finely striated, with the dorsal anterior side rounded submarginately; posterior side with the ventral beak arched, produced with a curve, dorsal side depressed, wide, flattened, defined; ventral side with a pediform beak elevated, angulated.

SOWERBY, Proc. Zool. Soc., 1832, p. 198.

Lab. *testâ* *truncata*, *suboculâtriâ* *orbâ* *lineatâ*.

Hab. Canton, New Guinea.

The posterior side forms a broad angle like that of *Hippopus uncinatus*.

Species 36. (Fig. a, b, Mus. Brit.)

LÆDA GRÆVATA. *Lab.* *testâ* *truncata*, *suboculâtriâ* *orbâ* *lineatâ*; *labâ* *rotundâ*, *suboculâtriâ* *rotundatâ*, *marginâ* *dentatâ*; *lateralibus* *angustis*, *marginibus* *dentatis*; *rostrâ* *latere* *postico* *ventris* *suboculâtriâ* *marginatâ*, *rostro* *latigato*, *ambobus* *dentatis*, *labis* *dentatis*, *arâ* *dorsali* *depressa*, *labis* *marginatis*, *ambobus* *dentatis*.

September, 1871.

THE OGNATE LEDA. Shell acute, subovate, whitish, concentrically striated; anterior side ventricose, rayed with a narrow ridge and approximate furrow; posterior side narrow, acuminate, produced, acutely rostrated, dorsal margin much depressed, arched, area flattened; umbos elevated, acute.

D'ORBIIGNY, *Ann. Mus. N. H. Paris*, p. 346, pl. 82, f. 4-6.

Hab. PAYTA, Peru.

Species 37. (Mus. Brit.)

LEDA FROSTATA. *Led. testâ arcuatâ, seminuatâ, compressâ, epidermide pallidâ iulâ, lîcis fere concentricis, undulatis posticis super costas monilificis sculptis; latere antico rotundè subacuminato, margine ventrali rotundè convexo; latere postico parvis duabus crenulatis arcuatis radiatis, margine dorsali depresso, concavo, ad terminum acuto; umbonibus rotundis, elevatis.*

THE TWO-RIBBED LEDA. Shell arched, semiovate, compressed, covered with a pale epidermis, sculptured with nearly concentric ridges undulated at the back and beaded on the ribs; anterior side roundly subacuminated with ventral margin roundly convex; posterior side rayed with two crenulated arched ribs, dorsal margin depressed, concave, acute at the end; umbos rounded, elevated.

SOWERBY.

Hab. PANAMA.

The arched form and distinct elevated and curved posterior ribs seem to distinguish this shell from the varieties of *Leda Eleencsis*.

Species 38. (Fig. a, b, Mus. Brit.)

LEDA ENCAVATA. *Led. testâ parva, brevi, altâ, eccentricâ, lîcis concentricis radiâlis sculptis, pallidissimè fulcâ; latere antico brevi, inflato, costella propè marginem radiatâ; latere postico acuminato, costâ arcuatâ, crenatâ, prominentè radiatâ, ante costam contracto, areâ dorsali ibi pressâ, excavatâ, late, planâ.*

THE ENCAVATED LEDA. Shell small, short, elevated, ventricose, sculptured with strong concentric ridges, pale fawn; anterior side short, inflated, rayed with a small rib near the margin; posterior side acuminate, rayed with an arched crenulated prominent rib, contracted in front of the rib, dorsal area depressed, excavated, wide, flat.

HINDS, *Proc. Zool. Soc.*, 1843, p. 100.

Hab. PANAMA.

Species 39. (Fig. a, b, Mus. Brit.)

LEDA MIFANS. *Led. testâ acuminatim ovatâ, pallidè fulcâ, sulcis tenuibus obliquis posticè bibradiatim interruptis sculptis; latere antico longiusculo; latere postico breviusculo, acuminato radiatim, angulatâ, areâ dorsali depressâ, angustâ.*

THE SHINING LEDA. Shell acuminate ovate, pale fulvous, sculptured with fine, oblique sulci interrupted posteriorly in two rays; anterior side rather long, posterior side rather short, acuminate, radiately angulated, dorsal area depressed, narrow.

A. ADAMS, *Proc. Hanley in Thesaurus Conchyliorum*.

Hab. NEW ZEALAND.



11. 1



11. 2



11. 3



11. 4



11. 5



11. 6

11. 7



11. 8



11. 9



11. 10

L E D A.

PLATE VII.

Species 40. (Fig. 11. Mus. Brit.)

LEDA LINGUIS. *Leda, testis parvâ, postangulâ, sub-
lateralâ, ventricosâ, compressâ, papillâ, acuminatâ,
inulâ, cœcâ, antice leviter, basi rotundâ, sub-
marginâ dorsali utriusque cœcâ, striâ postangulâ
rostratâ, antice rotundâ; area dorsalis latiuscula,
lata, definitâ.*

THE LINGUIFORM LEDA. Shell oblong-trigonal, inequa-
lateral, ventricose, thick, covered with a dark
epidermis, concentrically ridged, ridges thick,
remote; dorsal margin sloped on both sides;
posterior side subrostrated, anterior side rounded,
dorsal areas smooth, broad, defined.

A. ADAMS. Proc. Zool. Soc., 1856.

Hab. —?

Species 41. (Mus. Brit.)

LEDA INCONSPICUA. *Leda, testis parvâ, postangulâ,
minimâ, latè papillâ, cœcâ, antice leviter, basi
acutâ; latera postice subacuminatâ, postangulâ,
postangulâri depresso, obliquè truncatâ, acuminatâ,
marginâ dorsali depresso, striâ postangulâ
laterâ antice subrotundâ.*

THE INCONSPICUOUS LEDA. Shell small, pale straw,
smooth, concentrically finely scabed, subulate;
posterior side subacuminated, angular, postangular
area depressed, obliquely truncated, acuminated
at the end, dorsal margin depressed, rather
straight; anterior side rounded.

A. ADAMS. Proc. Zool. Soc., 1856.

Hab. Australia.

A neat little species with an angular posterior ridge,
leaving a depressed area with a pointed extremity.

Species 42. (Mus. Brit.)

LEDA COMMUTATA. *Leda, testis parvâ, subacutâ, papillâ
laterâ postice leviter, angustâ, rostratâ acuminatâ,
marginâ dorsali valde depresso, area marginâ, planata,
latâ, definitâ; latera antice leviter uniloculata;
lirâ densâ, fricâ concentricâ.*

THE COMMUTATED LEDA. Shell small, subulate, pale;
posterior side slight, narrow, beaked, acuminated,
dorsal margin much depressed, area large, flat,
traced, defined; anterior side with a slight ribs,
ridges close, nearly concentric.

HUTTON. Trans. Geol. Soc. Newbl., sp. 45.

Leda palli. Brug.

Hab. Mediterranean.

Species 43. (Fig. a, b. Mus. Brit.)

LEDA LATA. *Leda, testis albâ, compressâ, ventricosâ, sub-
acutâ, laterâ leviter subulatum et oblique striatâ; latera
postice area angulatâ, arcuâ postangulâri in medio
cœcâ, striâ, area dorsali recto angulo, depresso, costâ
cœcâ, striâ, antice, antice, antice, antice, antice,
cœcâ, striâ, antice, antice, antice, antice, antice,
cœcâ, striâ, antice, antice, antice, antice, antice.*

THE MEDIAN LEDA. Shell white, thick, ventricose,
subulate, broadly umbilically and obliquely
striated; posterior side neatly angular, post-
angular area with a single rib in the centre, dorsal
margin rather straight, depressed, forming a
conspicuous ridge, acuminated at the end; dorsal
area large, flattened, rib-margined.

LINNEUS. Systema Naturæ.

Area lata capta. Poly.

Vesicula gibbata. Swed.

Area lata in phanta. Philipp.

Hab. Mediterranean.

Species 44. (Fig. a, b. Mus. Brit.)

LEDA LATA. *Leda, testis albâ, compressâ, laterâ rotatâ,
acuminatâ, laterâ obliquè striatâ; latera postice
planata, angustâ, acuminatâ, subrostratâ, arcuâ
marginatâ lata, depresso; latera antice breviuscula,
superius subacuminatâ; arcuâ latâ, marginâ costalis
superius inclinatâ, striâ antice majoribus, posticâ
obscuris.*

September, 1871.

THE BROAD LEDA. Shell white, compressed, widely ovate, acuminate, finely obliquely striated; posterior side produced, narrow, acuminate, subrostrated, marginal area wide, depressed; anterior side rather short, rather acuminate above; area wide, ventral margin sloped upwards, anterior stria larger, posterior stria obsolete.

HINDS, Proc. Zool. Soc., 1843.

Leda semisulcata, A. Adams.

Hab. New Guinea, Borneo.

SPECIES 15. (Mus. Brit.)

LEDA ROSTRATA. *Leda, testâ latè ovatâ, solidâ, albâ, lineis impressis numerosis obliquis posticè undulatis super rostrum posticum fortioribus sculptâ, anticè inflatâ, latâ, posticè rostratâ, truncatâ, margine dorsali posticè depresso; margine ventrali eadè convexo.*

THE BEAKED LEDA. Shell widely ovate, solid, white, sculptured with numerous impressed oblique lines undulated at the back and stronger upon the posterior beak, inflated in front, wide, rostrated and truncated at the back; dorsal margin posteriorly depressed; ventral margin very convex.

MONTAGUE, Test. Brit. Mus., 55, pl. 27., f. 7.

Nucula Montaguî, Gray.

Nucula curcivestrum, Humphreys.

Nucula curra, Conrad.

Hab. Guinea, Liberia.

SPECIES 16. (Mus. Brit.)

LEDA CHUYA. *Leda, testâ latâ, albâ, subcompressâ, arcuatâ, concentricè liratâ; latere antico subinflato, lato, margine dorsali elevato; latere postico valè arcuato, acuminato, margine dorsali depresso, ad terminum elevato, margine ventrali sursum arcuati, costâ rostrali arcuatâ, lirati, areâ dorsali complanatâ, definitâ.*

THE CHUYA LEDA. Shell wide, white, subcompressed, arched, concentrically ridged, anterior side a little inflated, wide, dorsal margin elevated; posterior side much arched, acuminate, dorsal margin depressed, elevated at the end, ventral margin sloped upwards, rostral rib arched ridged, dorsal area flattened, defined.

GRAY, Voyage of the *Fly*, Marine Shells, pl. 2, c. 6.

Hab. Moreton Bay, Australia.



47



48 a



48 b



49



50



51



52



53 a



53 b



54

L E D A.

PLATE VIII.

Fig. 43. c.

A more elongated variety of *Leda paba*.

Species 47. (Mus. Taylor.)

LEDA CONRADI. *Led. testā parvā, subtriangulā, acuta, longiusculā, tumidā, epidermidē obscure olivaceo indatā, proddiphi costellatā; latere postico acuminato, margine dorsali depresso, area levigatā; umbrae nubes acuminatis, elevatis, margine centrali convexo; latere antero rotundo, prope umbraes excavato.*

CONRAD'S LEDA. Shell small, subtriangular, acute, rather long, tumid, covered with an obscure olive epidermis, very obliquely ribbed, posterior side acuminated, dorsal margin angularly depressed; umbraes acuminated, elevated, ventral margin convex; anterior side round, excavated near the umbraes.

HANLEY, Proc. Zool. Soc., 1870.

Hab. — ?

The sculptured lines forming riblets are extremely oblique, forming scarcely obtuse angles with the concentric ones.

Species 48. (Mus. Brit.)

LEDA EUTRUCATA. *Led. testā ovata-acuminatā, concentricā, pallidā, obliquē costellatā, inter costas radiatim striatā; latere postico rostrato, levissimulo, acuminato; umbraibus elevatis, rotundis, margine centrali convexissimo; latere antico ventricoso, costā nubi prope marginem acuto, area postica profundē impressi, subduplicitā; lunulā angustā.*

THE EUTRUCATED LEDA. Shell ovate-acuminated, ventricose, pale, obliquely costellated, radiately striated between the ribs; posterior side rostrated, rather short, acuminated, umbraes elevated, rounded, ventral margin very convex; anterior side ventricose, ornamented near the margin with a radiate rib; posterior area deeply impressed, somewhat duplicate; lunule narrow.

HINDS, (Xenula) Proc. Zool. Soc., 1843.

Hab. Philippines.

Species 49. (Mus. — ? copied.)

LEDA JAMAICENSIS. *Led. testā minutā, oblongo-ovata, acuminatā, pallidā, concentricē costatā; latere postico protracto, acuminato, rostrato, costā centrali excavatā, margine dorsali depresso, area levigatā; latere antico leviter uniuscostatā; lunulā indistinctā.*

THE JAMAICA LEDA. Shell minute, oblong-ovate, non-nubated, pale, concentrically ribbed; posterior side produced, acuminated, beaked, rostral rib cancellated, dorsal margin depressed, area smooth; anterior side with a single slight radiating rib; lunule indistinct.

DOUGLASS, Mollusca of Cuba, p. 263, pl. 24, f. 30-2.
Hab. West Indies.

Species 50. (Mus. Taylor.)

LEDA ACUMINATA. *Led. testā parvā, abā, pyriformi, concentricē tenuiter costatā, costis convexis terminis crassiusculis, latere postico subtruncato, acuminato, area dorsali levī, circumscriptā, rectā; latere antico ventricoso, rotundo, leviter radiatim uniuscostato.*

THE ACUMINATED LEDA. Shell small, white, pyriform, concentrically finely ribbed, ribs towards the ends rather thicker; posterior side rather attenuated, acuminated, dorsal area smooth, circumscripted, straight; anterior side ventricose, rounded, with a single slight radiating rib.

SOBERIA.

Hab. — ?

I cannot identify this pretty little shell with any of the numerous species described in Mr. Hanley's monograph.

Species 51. (Mus. Brit.)

LEDA AETHIOSA. *Led. testā subula, ventricosā, oblongo-ovata, concentricē costatā, epidermidē olivaceo indatā; latere postico acuminato, subrostrato,*

margine dorsali planulata depresso, umbonibus rotundis, elevatis, margine ventrali medio vie contracto, latere antico inflato, rotundo.

THE GREYOUS LEDA. Shell solid, ventricose, oblong-ovate, concentrically ribbed, covered with an olive epidermis; posterior side acuminate, subrostrated, dorsal margin flatly depressed; umbones rounded, elevated, ventral margin very slightly contracted in the middle; anterior side inflated, rounded.

SOWLEBY. (Nucula) Proc. Zool. Soc., 1832.

Hab. Peru.

One of the largest and most solid shells in the genus.

Species 52 (Mus. Brit.)

LEDA STRIATA. *Lad. testâ minutâ, inflatâ, tenui, concentricè striatâ; latere postico acuminato, latere antico inflato; margine dorsali utriusque crenato, arcis depressis circumscriptis.*

THE STRIATED LEDA. Shell minute, inflated, thin, concentrically striated; posterior side acuminate; anterior side inflated; dorsal margin crenated on both sides, with depressed circumscribed areas.

KING. (Nucula) Zool. Journal, vol. v, p. 337.

Hab. Patagonia.

Species 53. (Mus. Brit.)

LEDA FRAGILIS. *Lad. testâ minutâ, inflatâ, brevi, alta, semipellucidâ, dense costellis concentricis cunctis, latere postico brevissimo, acutè rostrato, latere antico rotundo, inflato.*

THE FRAGILE LEDA. Shell minute, inflated, short, deep, semipellucid, closely girt with concentric riblets; posterior side very short, acutely ribbed; anterior side round, inflated.

CHEMINITZ (Africa) Conch., vol. vii, p. 165, f. 546.
Nucula striata. Sowerby.



54.



55 a



55 b.



56.



57.



58



59



60.



61



62.

L E D A.

PLATE IX.

Species 54. (Mus. Comp. Brit.)

LEDA DUBINI. *Leda testis subovata, angustata, albida, substriata, concentricis, laevibus subulata, latere postico longiusculo, rostrato, angulo inter angulum et costam depresso emarginato, latere antico inflato, costis subaequalibus, areis dorsali angustis, planulatis, circumscriptis.*

DUBIN'S LEDA. Shell subovate, rounded, finely striated, subovate, concentrically ribbed, finely striated, white, posterior side inflated behind, rostrated, dorsal margin slightly convex, anteriorly depressed, circumscripted, ribs converging in front of the marginal ribber, sub-angulately strongly ribbed.

A. ADAMS. —?

Hab. —?

I find this little shell named as *Leda* in the Cunningham cabinet.

Species 55. (Mus. Comp. Brit.)

LEDA CRISTA. *Leda testis pyriformi-subulata, albida, substriata, concentricis, laevibus subulata, latere postico substriato angustato, angustis, costis concentricis, emarginato, inter angulum et costam depresso emarginato, ant. termino angustato, angulo inter angulum et costam, latere antico inflato, costis subaequalibus, areis dorsali angustis, planulatis, circumscriptis.*

THE CRIST LEDA. Shell small, subovate, solid, ventricose, whitish, concentrically finely striated; posterior side arched upwards, narrow, rayed with a rib and an angle, depressed and emarginated between the rib and the angle; anterior side inflated, rayed with a rib and groove; dorsal area narrow, flat, circumscripted.

Hinds. (Nuclea) Proc. Zool. Soc., 1843, p. 100.

Hab. Gulf of Newsgo.

A pretty little species, with a kind of curl upwards.

Species 56. (Mus. Brit.)

LEDA BREVIS. *Leda testis compressa, albida, substriata, concentricis, laevibus, subulata, latere postico attenuato, angustissimo, subulato, angulo depresso angustato, costis subaequalibus, areis dorsali angustis, subulatis, concentricis.*

T. BREVIS LEDA. Shell compressed, arched, limbo-ovate, concentrically ribbed, covered with a thickish epidermis; posterior side attenuated, elongated, arched, backed, dorsal margin convex, rostral area truncated at the end; angles elevated, neither; ventral margin very convex; anterior side very short.

C. G. O. S. L. —?

Hab. Catthina Islands.

Species 57. (Mus. Brit.)

LEDA CIRCULATA. *Leda testis pyriformi, posticiorum, albida, laevibus et angustis striata, latere postico longiusculo, rostrato, angustis, ante rostrum subcontracto, latere antico rotundo, angulo dorsali declivo.*

THE SPHERICAL LEDA. Shell small, pyriform, whitish, very finely equally striated; posterior side a little the longer, rostrated, narrow, a little contracted behind the rostrum; anterior side round, with dorsal margin sloped.

GOULD. —?

Hab. North America.

One of the simplest of the little pyriform species.

Species 58. (Mus. Brit.)

LEDA BROOKII. *Leda testis minutis, subuliculis, laevibus, concentricis, distincte concentricis, laevibus, postico brevi, angustato; latere antico concentricis, striato.*

November, 1874.

BROOKES' LÆDA. Shell minute, suborbicular, short, ventricose, distantly concentrically ridged; posterior side short, acuminate, anterior side very ventricose.

HANLEY. Proc. Zool. Soc., 1860.

Hab. Borneo.

So short and ventricose as to be almost orbicular, although somewhat pointed at the posterior side.

Species 59. (Mus. Brit.)

LÆDA FIDREEA. *Læd. testâ solidâ, albidâ, elongato-pyriformi; latere postico protracto, attenuato, acuminato ad terminum obtuso, marginæ dorsali depresso, aræ circumscriptâ; latere antico ventricoso, costâ obscurâ propè marginem radiatâ.*

THE FIDREAN LÆDA. Shell solid, whitish, elongate pyriform; posterior side produced, attenuated, acuminate; obtuse at the end; dorsal margin depressed; area scarcely defined; umbones small, acute; anterior side rather short, ventricose, with dorsal margin sloped.

COSNAR. (Nucula) Proc. Philadelph. Soc., vol. III. 24, pl. I. f. 4.

Hab. Florida.

Species 60. (Mus. Brit.)

LÆDA HINDSII. *Læd. testâ parva, subpyriformi, pallidâ, tenuiter concentricè striatâ; latere postico acuminato, acutè rostrato, costâ rostrali sursum acuatâ, levigatâ, aræa dorsalem circumscribenti; latere antico ventricoso, costâ unica propè marginem radiatâ.*

HINDS' LÆDA. Shell small, subpyriform, pale, finely concentrically striated; posterior side acuminate, acutely beaked, rostral rib curved upwards, smooth, circumscribing the dorsal area; anterior

side ventricose, rayed with a single rib near the margin.

HANLEY. In Sowerby's Thesaurus Conchyliorum—Nuculidae, Læda, sp. 51. f. 102.

Hab. Gulf of Nicoya?

Differing from *Læda crispâ*, Hinds, in being more elongated and more finely sculptured.

Species 61. (Mus. Brit.)

LÆDA VITREÆ. *Læd. testâ parvâ, tenuissimâ, vitreâ, ventricosâ, tenuissimè concentricè striatâ; latere postico acuminato, marginæ dorsali depresso, aræ circumscriptâ; latere antico ventricoso, costâ obscurâ propè marginem radiatâ.*

THE GLASSY LÆDA. Shell small, very thin, glassy, ventricose, very finely concentrically striated; posterior side acuminate, with dorsal margin depressed, area circumscribed, anterior side ventricose, rayed with an obscure rib near the margin.

D'ORRIGNY. Moll. Isl. Cuba, 363, pl. 24, f. 30-2.

Hab. West Indies.

Species 62. (Mus. —?)

LÆDA RECTA. *Læd. testâ oblongâ, stramineâ, rectiusculâ, cucuriformi, anticè et medio obliquè striatâ; latere postico longiusculâ, marginæ dorsali declivi, aræa convexâ, levigatâ, circumscriptâ; latere antico rotundo.*

THE STRAIGHT LÆDA. Shell oblong, stramineous, rather straight, cucuriform, obliquely striated in the front and middle; posterior side rather longer, dorsal margin sloped, area convex, smooth, circumscribed, anterior side rounded.

HINDS. (Nucula) Proc. Zool. Soc., 1843, p. 100.

Hab. —?

L. E. D. A.

	Date.	Species.		Date.	Species.
annulata, <i>Sowerby</i>	VIII.	59	Hindsii, <i>Hanley</i>	IX.	50
arcuata, <i>Sowerby</i>	IV.	20	inconspicua, <i>A. Adams</i>	VII.	41
Belcheri, <i>Hinds</i>	IV.	23	intermedia, Oersted	IV.	19
bellula, <i>A. Adams</i>	V.	25	interrupta, Pali	VII.	43
bicostata, <i>Sowerby</i>	VI.	37	Jamaicensis, <i>D'Orbigny</i>	VIII.	49
bicuspidata, <i>Gould</i>	II.	8	lanceolata, Lamarck	IV.	17
Brookii, <i>Hanley</i>	IX.	58	lanceolata, Sowerby	I.	1
buccata, <i>Streets</i>	II.	7	Lacyniella, Philippii	II.	8
caleta, <i>Hinds</i>	II.	6	lata, <i>Hinds</i>	VII.	44
caudata, <i>Donovan</i>	IV.	19	lugubris, <i>A. Adams</i>	VII.	40
cauxa, <i>Gray</i>	VII.	46	maculata, Streets	II.	5
commutata, <i>Hanley</i>	VII.	42	Mauritii, Chemnitz	II.	5
compuncta, Møller.....	III.	11	Mauritiana, <i>Sowerby</i>	VI.	33
concinna, <i>A. Adams</i>	III.	15	Metalli, <i>Hanley</i>	IV.	18
confusa, <i>Hanley</i>	V.	24 bis.	micans, <i>A. Adams</i>	VI.	39
Conradi, <i>Hanley</i>	VIII.	47	micata, Gould	III.	10
costellata, <i>Sowerby</i>	IV.	21	minuta, Montagu	IV.	19
crassa, <i>Hinds</i>	V.	27	minuta, Møller	III.	11
crenifera, <i>Hanley</i>	IV.	18	Montagu, Gray	VII.	45
crenifera, <i>Sowerby</i>	IV.	21	nasuta, <i>Sowerby</i>	V.	28
crispata, <i>Hinds</i>	IX.	55	ornata, <i>D'Orbigny</i>	VI.	36
cuneata, <i>Sowerby</i>	VI.	35	parva, Sowerby	III.	11
curvirostrata, Humphrys	VII.	45	Patagonica, <i>D'Orbigny</i>	III.	12
cuspidata, <i>Gould</i>	IX.	57	pella, Brugsiève	VII.	42
deceba, <i>A. Adams</i>	III.	13	pella, <i>Linnaeus</i>	VII.	43
dissimilis, <i>Sowerby</i>	II.	9	perula, Møller	II.	5
Dorlandi, <i>A. Adams</i>	IX.	54	plumbeata, <i>Sowerby</i>	IV.	22
Elmorei, <i>Conrad</i>	IX.	59	pluviosa, <i>A. Adams</i>	II.	8
elumbosa, <i>Sowerby</i>	V.	29	polina, <i>Sowerby</i>	III.	16
electa, <i>A. Adams</i>	I.	2	puellata, <i>Hinds</i>	VI.	34
Elleuensis, <i>Sowerby</i>	VI.	32	recta, <i>Hinds</i>	IX.	62
elongata, Dandini	II.	5	recessa, Conrad	VII.	45
elongata, <i>Sowerby</i>	I.	1	reticulata, <i>Hinds</i>	VIII.	48
elongata, Valenciennes	I.	1	rostrata, Montagu	VII.	45
emarginata, Philippii	VII.	43	rostrata, Sowerby	IV.	19
excavata, <i>Hinds</i>	VI.	38	scutichata, <i>A. Adams</i>	VII.	44
fabalis, Sowerby	VII.	43	Sowerbyana, <i>D'Orbigny</i>	I.	1
fastidiosa, <i>A. Adams</i>	V.	31	stricta, King	VIII.	52
flavocinctis, Selraeter	II.	5	subvittata, Leach	IV.	19
fragilis, Chemnitz	VIII.	53	Taylori, <i>Hanley</i>	IV.	17
fulgida, <i>A. Adams</i>	V.	26	fuliginoides, <i>Sowerby</i>	III.	11
fulviflora, <i>Sowerby</i>	VIII.	51	tenuescostata, <i>Coast</i>	III.	10
gloriosa, <i>A. Adams</i>	I.	3	ventricosa, <i>Hinds</i>	V.	30
Graculoides, Chemnitz	III.	11	virgata, <i>D'Orbigny</i>	IX.	64
hamata, <i>Carpenter</i>	IX.	56			

MONOGRAPH

OF THE GENUS

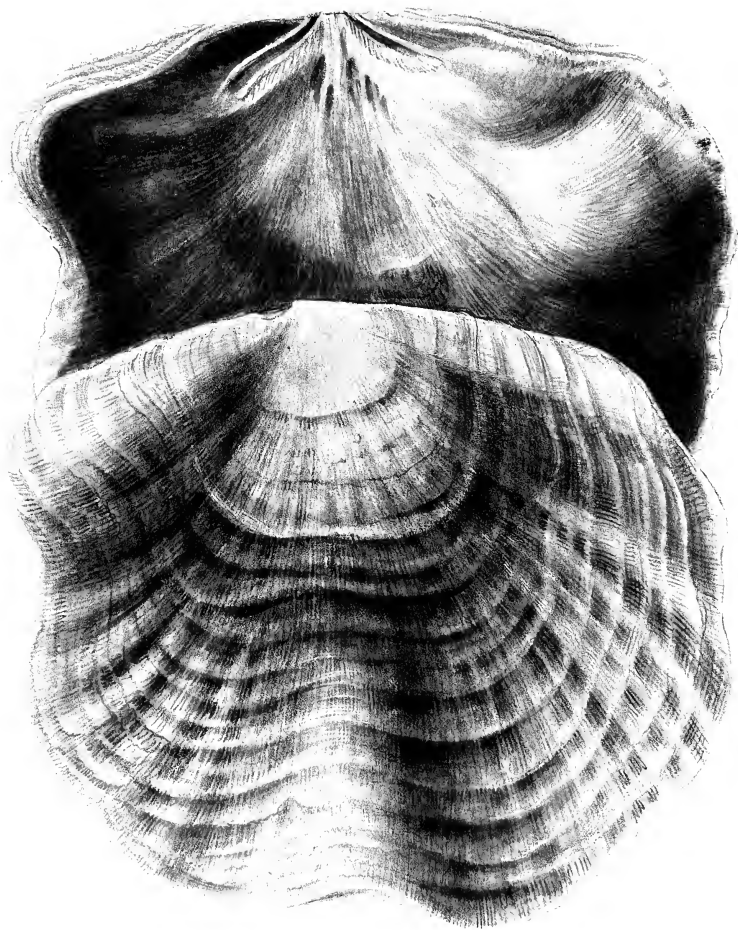
PLACUNA.

By JOHN EDWARD MEEUS, Esq.

Author of "The Fishes of the British Islands."

Printed by Messrs. G. and C. Whittaker,

11, St. John's Street, Strand, London, W.C.



PLACUNA.

PLATE I.

Genus *PLACUNA*. *B. grayi*.

Testa bivalvis, discoidal, compressa, foliacea, valvatum striata. Impressio muscularis subcentralis, circularis. Margis cardinalibus callosa sinistra, torvalis dextera, divergentibus orbiculis divergentibus, valvula dextra dentibus duobus lamellis divergentibus armata.

Shell bivalve, discoidal, compressed, foliaceous, radiately striated. Muscular impression subcentral, circular. Hinge margin provided with two diverging cartilaginous grooves in the left valve, and two laminated diverging teeth in the right valve. *Placuna*. Retzius.

The simple characters of the genus as above described are sufficient to define it, excluding all other shells and including the five species which are described in this monograph. They are all flat bivalves of a foliaceous and striated structure, with the two diverging teeth in one valve, and correspondingly divergent ligament pits in the other. The degrees of divergence in these teeth and pits, although usefully observed as distinguishing species, cannot surely, with any advantage, be made the basis of generic distinction. Yet this is done by some modern systematists, who actually have the genus *Placuna* for the common white species, and the genus *Placuna* for the remaining species, without any other reason. The shores of China and India furnish the two best known and widely distinguished species, namely the "Chinese Window" and the "Saddle Oyster." The third (*Placuna papuana*) is a somewhat doubtful species, partaking the characters of the two first, and is probably common to India and North Australia, while the remaining two, namely *P. Lincoln* and *P. lobata*, the latter here described for the first time, are exclusively Australian.

SPECIES I. (Mus. Brit.)

PLACUNA SELLA. *Pla. testâ pleuamque equâ, intensè purpurâ, crassiusculâ, compressâ, subquadratâ, orbiculatâ, auriculis utriusque recurvis, medio pleuralium depresso, margine centrali recurvo, armato; marginalibus lateralibus divergens, flexuosis, marginem dorsali lato; valvula dextra radiatim costis striata; valvula sinistra ad apicem concentricisculis, leviter striata. dentibus laminiiformibus subequalibus, latè divergentibus.*

THE SADDLE *PLACUNA*. Shell for the most part intensely purple, opaque, rather thick, compressed, sub-quadrate, auriculated; auricles on both sides recurved; centrally depressed; ventral margin recurved, arched; lateral margins bent downwards, flexuous; dorsal margin wide; right valve radiately sharply striated; left valve a little convex at the apex, lightly striated; laminiiform teeth nearly equal, widely divergent.

LAMBECK. ANIMAUX SANS VERTÈBRES. Placuna No. 1.

"*Ephippium anglicanum noronhai*," Chemnitz.

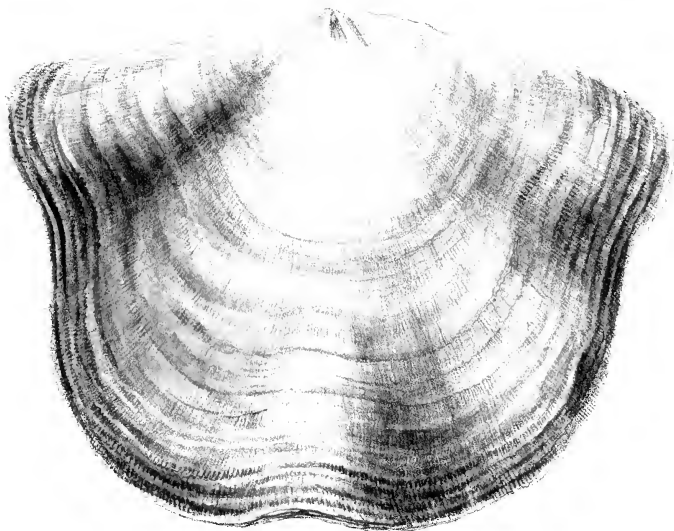
Linnaeus s. llo, Gmelin.

Placuna Ephippium, Retzius.

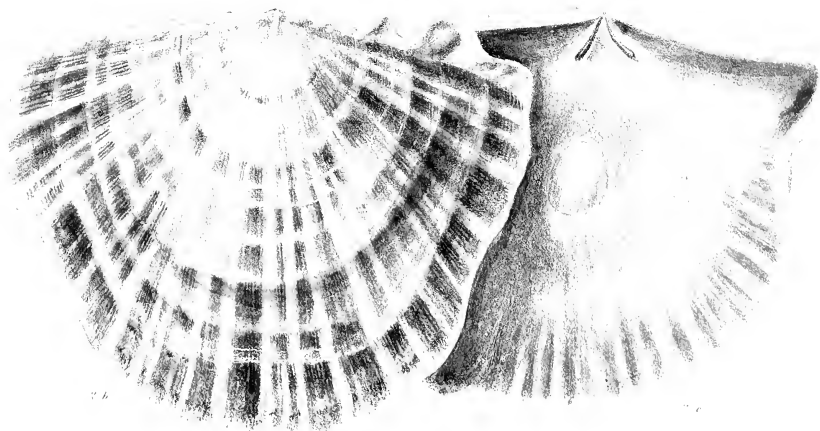
Hab. Indian and Chinese Coasts.

The peculiar saddle-like form into which this species is bent by the curvature of its margins when full-grown, does not begin to appear in the earlier stages. The young shells are flat, and more or less transparent, and are often of so light a colour as to be hardly distinguishable from the young of *P. placenta* or *P. papuana*. There are specimens of a beautifully mottled, half-grown variety in the Cambridge Collection.

November, 1874.



20



PLACUNA.

PLATE II.

Species 2. (Fig. 36, 37). Müs. Brit.)

PLACUNA PAPYRACEA. *Plat. testâ sesquialterâ, compressâ, purpureo radiatâ, subauriculatâ, auriculâ vix recurvis, margine ventrali leviter recurvo. valvula sinistra complanatâ; dentibus lamellosis, aënes subæqualibus, subarcuatis; margine dorsali cuticula lobato.*

THE PAPERY LOUS PLACUNA. Shell semipellucid, compressed, rayed with purple, subauriculated, auricles scarcely recurved; ventral margin slightly recurved, left valve flattened; laminitiform teeth nearly equal, a little arched; dorsal margin sometimes lobed.

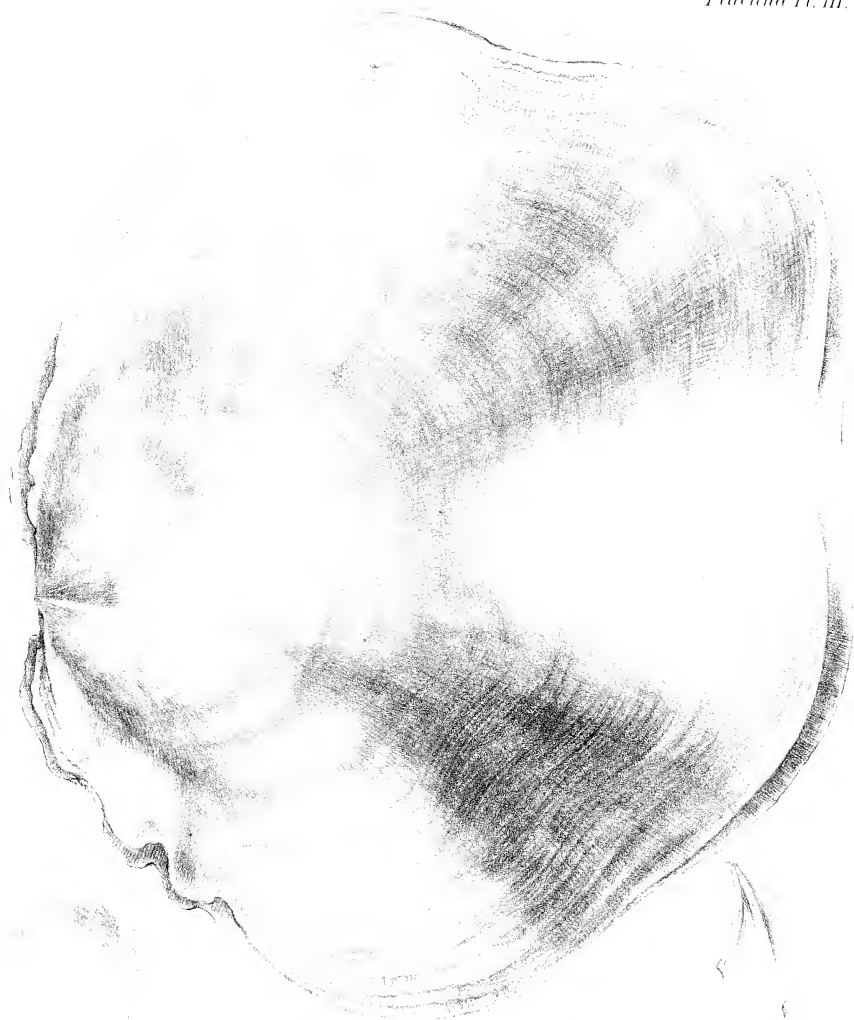
LAMARCK. Animaux sans Vertèbres, No. 2.

Ephippium papyraceum, Chemnitz.

Hab. India, Philippines, Australia.

It is probable that this species was first described from the Indian form, and quite possible that the figures in Chemnitz may have been taken from the young of *Placuna sella*. Still it does appear that there is a species resembling in the young state, but never developing into the adult form of that shell. In the Australian examples we have given, two characters are observable which may help to distinguish this species, namely the curved character and smaller divergence of the teeth, and absence of that degree of convexity which distinguishes the lower or left valve of *Placuna sella*. Some of the specimens are beautifully rayed, and some are much notched or lobed at the dorsal margin.

November, 1871.



3. b

3. a

3. c

PLACUNA.

PLATE III.

Species 3. (Fig. *a, b, c*, and Plate IV. fig. *d*, Mus. Brit.)

PLACUNA PLACENTA. *Plu. testâ albâ, orbiculari, pellucidâ, compressâ, planulatâ, marginibus raris subflexuosis; dentibus lamini formibus longitudinalibus valde inæqualibus, angustè divergentibus, valvâ sinistra præ præambonem purpureo radiatâ.*

THE PLACENTA PLACUNA. Shell white, orbicular, pellucid, compressed, flattened, margins rarely subflexuous; lamini form teeth very unequal in length, narrowly divergent; left valve rayed with purple near the umbo.

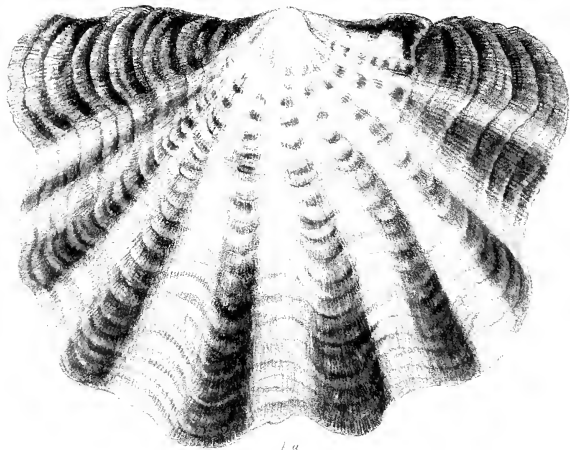
LINNÆUS (*Asomia*) Systema Naturæ.

Placenta orbicularis. Retzius.

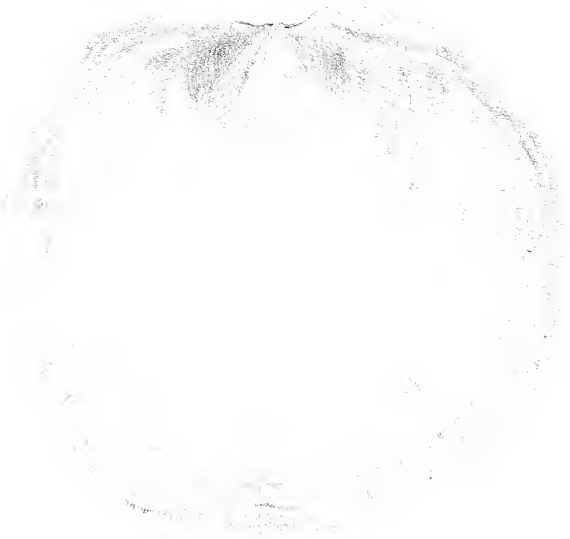
Hab. China, North-west Australia, Philippines.

The prevailing form of this shell, commonly called the "Chinese Window," is orbicular as in fig. *d*, Plate IV., but the very large specimen given in the present plate exhibits not only a deviation from that form, but also a tendency to curve upwards at the ventral margin a little after the fashion of the "Saddle Oyster." The young, being purple-rayed, are not always easily distinguishable from the young of *P. sella* and *P. papyracea* by the form of the shell. But the great distinguishing mark of the species is the unequal length and narrow divergence of the teeth.

November, 1871.



1 a



2 a

PLACUNA.

PLCX. IV.

Species 4. (Fig. 1 and Pl. V. 4, 5), MUS. BRIT.

PLACUNA TORATA. *Plac. torata* et *quadrata*, *compressa*, *etc.* *versus* *indians* *conspicua*, *thick*, *lucida*, *per-
parca*, *rotunda*, *costis*, *patens*, *etc.* *latus*, *rotundus*,
callosus, *cutis* *purpureo*, *etc.* *plac. indubita*,
marginibus *lateribus* *etc.* *plac. latus*, *dentis*,
latus *salvaqualibus*, *salvaqualibus*.

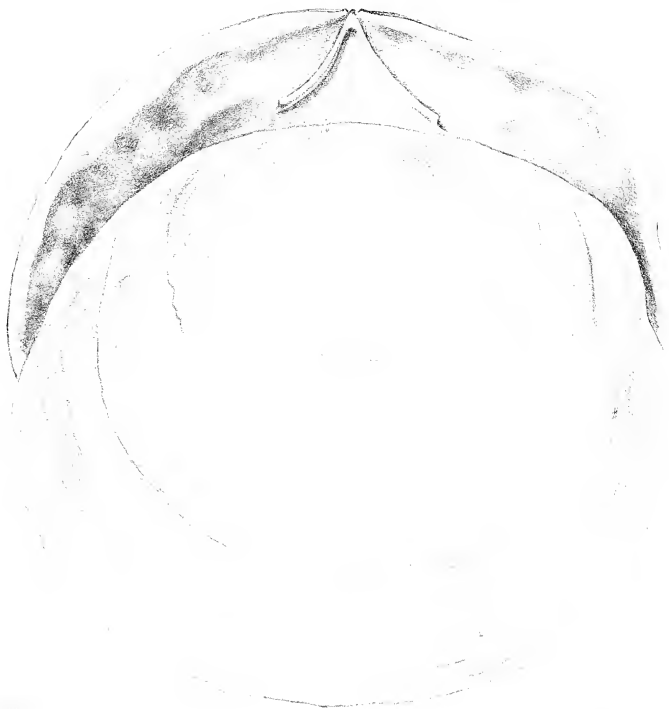
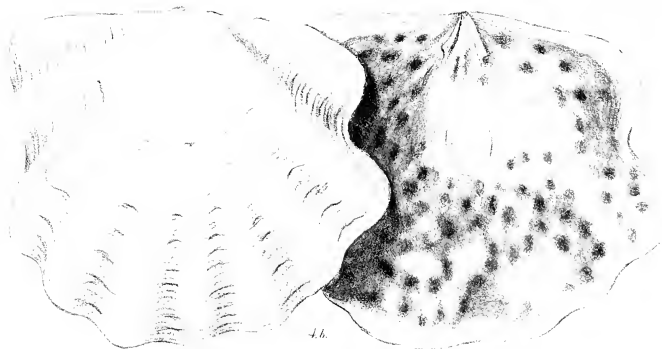
THE FORM PLACUNA. Shell subquadrate, compressed, slightly convex towards the umbones, whitish or brownish purple rayed, rayed with slightly elevated

oval cords; base white, purple below; lateral and ventral umbrines black; teeth minute and numberless divergent.

SMITH.

Hab. Port Essington.

The peculiarity of the shell consists in its being rayed with slightly raised ribs, accompanied with great flexuosity in the lines of growth and lobes on the lateral and ventral umbrines of the valves. The teeth are similar to those of *Placuna papuana*.



PLACUNA.

PLATE V.

Species 5. (Misc. Brit.)

PLACUNA LINCOLNI. *Pla. testa crassiuscula, ovata, suborbiculata, albida, umbrinata, rubis purpuraceo-angusta, scabata, sed scuta, dentibus subaequalibus, compactis, rotis, obtusum, dices, parvibus.*

LINCOLN'S PLACUNA. Shell rather thick, opaque, sub-orbicular, whitish, flattened, mottled with purple and gold and iridescent within, teeth nearly equal, elongated, straight, widely divergent.

GRAY. Proc. Zool. Soc., 1848.

Hab. Australia.

This shell has the same form, normally as *Placuna placenta*. It is of a more solid and opaque texture, and the laminae teeth diverge as widely as they do in the *Placuna s. Pa.*

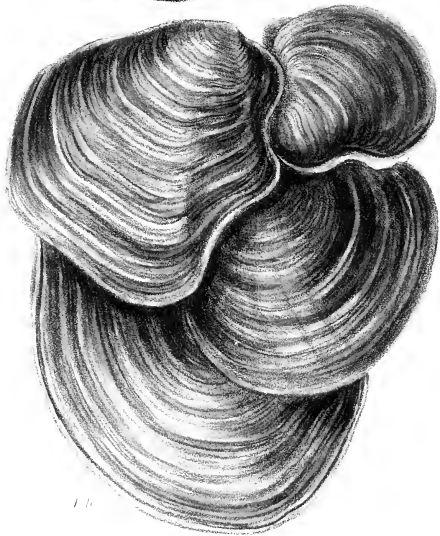
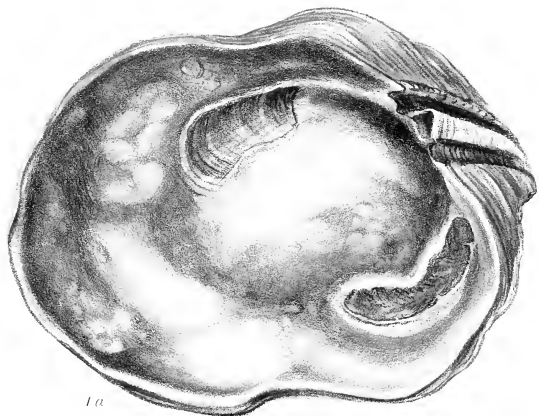
Fig. 4. *b.*

Represents a variety of *Placuna lobata nobis*, beautifully mottled inside with tortoise-shell colouring.

November, 1871

MONOGRAPH
OF THE GENUS
ETHERIA.

"That which may profit and amuse is gathered from the volume of creation,
For every chapter therein teemeth with the playfulness of wisdom.--*M. F. Tupper*."



ETHERIA.

PLATE I.

Genus *ETHERIA*. *Lamarck*.

Testa inaequivalvis, binusculari, irregulari, per valvam inferiorem alutacea, foliacea, frequenter vesiculari, epidermide crassa, olivaceo-lubata; intus margaritacea. Marg. cardinalis arcuato, ciliolato, foliaceo, valvæ inferioris plus minusve producto. Ligamentum externum partim in sulco medio positum, partim super arcum cardinalem ceptusum.

Shell inequivalve, binuscular, irregular, adhering by the lower valve, foliaceous, often vesicular, covered with a thick olive epidermis; pearly within. Hinged margin arched, toothless, foliaceous, that of the lower valve more or less produced. Ligament external, part placed in a groove, part spread over the cardinal area.

It does not appear necessary to divide the numerous forms of this genus into more than two species, namely the *Etheria elliptica* and *Etheria Cailloni*. They occupy the large rivers of Africa: the former the Nile and the Senegal, and the latter the Nile only, above the Cataracts. *ETHERIA Stephanensis*, from the great South American River Amazon, has been with great propriety separated under the generic name *BARILETTIA*. The *Etherie* may be simply designated "Fresh-water Oysters," and some of the specimens are not without beauty, arising from the pearly structure of the interior, and (when unworn) the striped wavings of the green epidermis.

Species I. — *Mus. Brit.*

ETHERIA ELLIPTICA. Eth. testâ solidiuscula, irregulari, levigatâ, inarmatâ; epid. crassa concentricè strigatâ, arcu cardinali trigonâ, valvæ inferioris modicè producto; apicibus substituentibus; impressionibus muscularibus magnis, anticâ semi-lunari.

THE ELLIPTICAL ETHERIA. Shell rather solid, irregular, smooth, unarmed; epidermis concentrically striped, cardinal area trigonal, that of the lower valve moderately produced; apices somewhat distant; muscular impressions large, the anterior one semi-lunar.

LAMARCK. Anim. s. vert. tome 6. Etheria, No. 1.

Etheria similantia, Lamarck.

Etheria trigonata, Lamarck.

Etheria Cailloni, Michelin.

Etheria Lamarckii, Ferrussac.

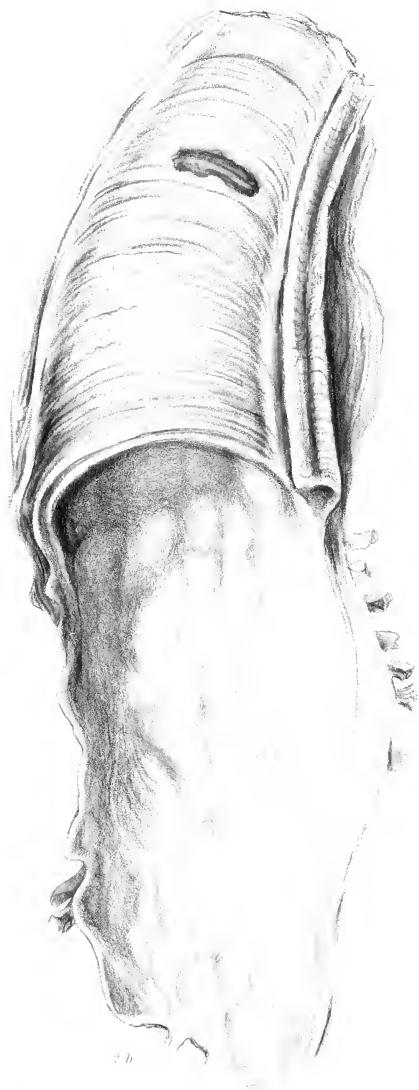
Etheria plumbea, Ferrussac.

Etheria transversa, Lamarck.

Hab. The River Senegal and the River Nile.

The above specific synonyms result from those endless variations to which all attached shells of foliaceous structure, whether marine or freshwater, are liable. From the Lamarckian names we select the first in numerical order.

March, 1872.



2 b



2 a

ETHERIA.

PLATE II.

Species 2. (Mus. Cim. in Brit.)

ETHERIA CAILLIAUD. *Eth. testâ foliaceâ, irregulari, levigatâ, tuberculis spiniformibus tubiferis, aliis extantibus, aliis decumbentibus armatâ; intus irregulariter vesicularis; valvâ inferiori nonnuncupata profundâ, concamerata, arcuâ cardinali valvâ attenuatâ.*

CAILLIAUD'S ETHERIA. Shell foliaceous, irregular, smooth, armed with spiniform tubiferous tubercles, some outstanding, others decumbent; often vesicular within; lower valve sometimes deep concamerated, with cardinal area very much attenuated.

FERRUSSAC. Mem. Soc. H. Nat., t. i. p. 150.

Etheria tubifera, Sowerby.

Hab. The River Nile, chiefly above the Cataracts.

This species is of a lighter structure than the preceding; there is a tendency to form blister-like vesicles on the inner surface, and the substance of the lower valve is chambered and deepened at the hinge, which is sometimes, as seen in the specimen figured, much prolonged. A specimen in the British Museum is about eighteen inches in length, one third of the length being occupied by the upper valve.

March, 1872.

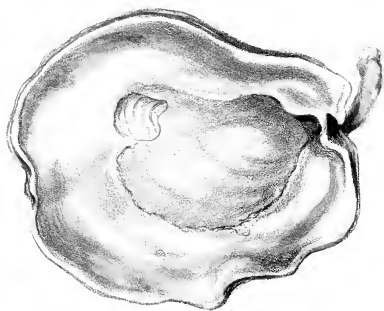
MONOGRAPH

OF THE GENUS

MULLERIA. BARTELETTIA.

"It is an admirable lore to learn the cause in the change,
To study the chemistry of nature, her grand but simple secrets,
To search out all her wonders."—*M. F. Tupper.*

.....



1a



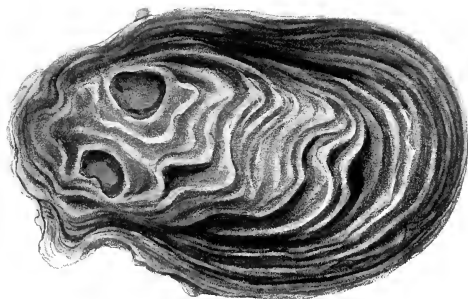
2a



2b



1c



1b

BARTELETTIA

AND MULLERIA.

Genus BARTELETTIA, Adams.

Testa binusculosa, subequivalvis, libera, ovato-subtrigona, irregularis, valvè laterali, latè marginatovata. Area cardinalis brevis. Leptocentum in sulcum dispositum. Apices approximati. Impressio muscularis distincta, antica parva.

Shell binuscular, subequivalve, free, ovately subtrigonal, irregular, very inequilateral, pearly within. Cardinal area short. Ligament placed in a sulcus. Apices approximate. Muscular impressions distant, the anterior one very small.

The very curious species forming this genus was first described by *Moricand* as an *Etheria*. But the fact of its being a free and nearly equivalve shell, and otherwise very singular in its structure, is sufficient to justify its generic separation. It is an inhabitant of the River Amazon. Although distinctly binuscular, it may be considered, from the very small size of the anterior cicatrix, and from the great development of the posterior side of the shell, as helping to bridge over the passage from the Binuscular as represented by *Etheria*, and the Uninuscular as represented by our next genus, *Mulleria*.

Species 1. (Fig. 2, *a, b*, Mus. Brit.)

BARTELETTIA STEPHANENSIS. *Var. testè trigono-subreniformi, subirregulari, anticè attenuatà, conc-*

avè, diffusi, costis tuberculiferis irregularibus, rugatà; medio ad marginem ventrolem sinuè contracto; posticè tumido, angulatum expanso, concentricè subrugato, tuberculis subobsoletis; cutis epidermidè olivaceo-purpureo indurà; marginibus anticis hypostitis; umbonibus regularibus, subquadratis, anticè cir productis.

STEPHAN'S BARTELETTIA. Shell trigonal-subreniform, rather irregular, anteriorly attenuated, contracted, deformed, wrinkled with irregular tuberculate ribs, in the middle sinuously contracted at the ventral margin; posteriorly tumid, angularly expanded, concentrically somewhat wrinkled, with subobsolete tubercles; externally covered with an olive-brown epidermis; anterior margin fluted; umbones regular, subquadrate, anteriorly scarcely produced.

MORICAND (*Etheria*). *Journal of Conchology*, 1856, p. 178.

Hab. River Amazon, South America.

The umbonal region or nucleus of the shell presents the appearance of a young *cardita*, with the anterior side very small. Afterwards the shell becomes irregular, slightly so at the posterior side, and very much so at the anterior side, where it is much contracted, and although produced only partially developed. The anterior muscular impression is very small, and half hidden under the thickened edge of the shell.

March, 1872.

Genus MULLERIA, Ferrussac.

Testa irregularis, foliacea: valvè inequivalvis, atate juniore libera, bimusculosa, modioliformis; atate seniore adhaerens, unimusclosa, unilateralis; intus margaritacea. Margjo cardinalis angustus, ligamentum partim internum. Impressio muscularis subrotundus, posticus. Impressio pallii usque ad marginem cardinalem continuus.

Shell irregular, foliaceous: very inequivalve, in the young stage free, bimuscular, modioliform: in the adult stage attached, unimuscular, one-sided: pearly within. Hinge margin narrow, ligament partly internal. Muscular impression somewhat rounded, posterior. Impression of the mantle continued as far as the hinge margin.

In a very early stage this shell appears to be a regularly formed bimuscular bivalve, resembling a Union or Modiola, with very small anterior development, soon ceasing entirely. The posterior then lengthens without expanding, and by the union of the two valves a short tube is formed, at the end of which the further development and the expansion of this posterior part forms a large irregular bivalve externally resembling an Etheria. The absence of the anterior muscle-mark is accounted for by the fact that the anterior part of the shell has never been developed after the first nucleus. There seems little reason to suppose with

some, that the muscular impressions have been united, for the mantle-mark, which in bimuscular shells passes from one muscle-mark to the other, would, in the case supposed, form a loop and rectum to the posterior muscle-mark, whereas it can be traced even into the cavity beneath the hinge, and would probably, if not obliterated, be found to reach the little anterior muscle-mark in the original nucleus.

Thus, in Etheria we have, beyond the first nucleus, simply an expansion of the posterior, to the almost entire extinction of the anterior side of the shell. The anterior muscle becomes extinct from disuse. In the preceding genus, BARTLETTIA, we have a very disproportionate development of the hinder side with a very minute anterior muscle-mark.

Species 1. (Fig. 1. a, b, c. Mus. Brit.)

MULLERIA LOBATA. *Mul. testâ transversè ovatâ, olivaceo-cirâtâ, foliaccâ: valvè inferiori pèrcumque complatâ, tuberculis tubiformibus armatâ; nucleo modioliformi, minuto, margaritaceo.*

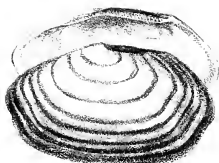
THE LOBED MULLERIA. Shell transversely ovate, olive-green foliaceous: lower valve generally flattened, armed with tube-formed tubercles. Nucleus modioliform, minute, pearly.

FERRUSSAC. Mem. Mus. Hist. Nat.

Hab. River Magdala, near Bogota

MONOGRAPH
OF THE GENUS
SOLENELLA AND NEILO.

“ In depths beneath the dark red ocean’s waves ”—*Campbell.*



SOLENELLA AND NEILO.

Genus SOLENELLA. *Solenella*.

Testa bivalvis, binusculari, transversi, oblonga, utrinque hians. Ligamentum externum conspicuum. Impressio pallii sinuata. Margis cardinalis acut. Dorsalis parvis, postice attenuatis, acutis, ceteris ornatis.

Shell bivalve, binuscular, gaping at both ends. Ligament external, conspicuous. Pallial impression sinuated. Hinge margin armed with sharp, erect teeth, few anteriorly, numerous posteriorly.

The two first published species of this genus are South American, one from Valparaiso and the other from the Falkland Islands. The new species now presented is Australian; although possessed of the sharp row of teeth so characteristic of the *Naculata*, the *Solenella* have no place in the family, because they have a prominent external ligament and no cartilaginous pit.

Species I. (Mus. Lockenby.)

SOLENELLA SUB-EQUALIS. *Sol. testâ brevi, sub-aequilâ laterali, utrinque subacuminatâ, ovali-obovata; latere postico parum latiusculo, margine dorsali rectangulo, margine laterali declivi, ad terminum acuminato, margine ventrali sorsium acclivi; medio recto; latere antico subtriang.*

THE SUB-EQUAL SOLENELLA. Shell short, subquilateral, rather acuminated at both ends, olive-green; posterior side a little wider, dorsal margin nearly straight, lateral margin sloped downwards, acuminated at the end; ventral margin sloped upwards, straight in the middle; anterior side subtriangular.

SOWEBY.

Hab. Australia.

In *Solenella Norrisii*, the posterior side is the shorter; in *Sol. Cumingii* it is the longer, but in the present species the sides are nearly equal in length, the umboes being central.

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

SOLENELLA NORRISII. *Sol. testâ subovata, ovali compressâ, ovali-obovata, fusca fasciâti, umbrae quæque umbonæ fascio-acuminatâ; latere postico declivi, sub-aequilâ laterali, ad terminum obtusâ acuminatâ, margine dorsali recto, latere antico breviter rotundato, ad terminum subacuminatâ, margine ventrali rotundato.*

NORRIS'S SOLENELLA. Shell subovate, much compressed, olive-green, brown-banded, within and near the umboes orange-brown; posterior side straight, set quadrate, wide, obtusely angulated; ventral margin straight; anterior side shorter, narrow, also angulated at the end, slightly truncated near the ventral margin.

SOWEBY, Proc. Zool. Soc., 1832.

Mollusca Chilensis, Desmarest.

Cerrosanchus Naculoides, Blainville.

Hab. Valparaiso.

In this species the umboes are much nearer the anterior than the posterior end.

Species 3. (Mus. Cuming in Brit.)

SOLENELLA CUMINGII. *Sol. testâ ovata, convexâ, fusca pallidâ binateâ, latere postico breviusculo, lato, inflexâ obliquè subtruncato, ad terminum obtusissimè angulatâ; margine ventrali parum convexo, latere postico longiusculo, rotundatim acuminato.*

CUMING'S SOLENELLA. Shell ovate, rather convex, rayed with two pale bands; posterior side rather short, wide, obliquely subtruncated beneath, very obtusely angular at the end; ventral margin a little convex, posterior side rather lengthened, roundly acuminated.

HANLEY, Proceedings of the Zoological Society, 1860.

Hab. Falkland Islands.

The position of the umboes in this species is exactly the reverse of that in the preceding, being nearer the posterior end.

NEILO.

Genus NEILO, Adams.

Testa bivalvis, bimusculosa, transversè oblonga, concentricè lirata, utrinque clausa. Margis cardinalis denticibus numerosis erectis utrinque armatus. Ligamentum externum, conspicuum.

Shell bivalve, bimuscular, transversely oblong, concentrically ridged, closed at both ends. Hinge margin armed with numerous erect teeth on both sides. Ligament external, conspicuous.

Species. (Fig. 4, Mus. Cuming in Brit.)

NEILO AUSTRALIS. *Testa subrhombèa, ventricosà, concentricè tenuiter lirata, inequilaterali; latere postico oblongo, recto, obliquè angulato, inter angulum umbonalem et marginem dorsalem depresso: margini dorsali producto, margine terminali suprà*

rostrato, infrà subtruncato; umbonibus prominentibus, margine ventrali rectiusculo; latere antico brevi, superiù angulato.

THE AUSTRALIAN NEILO. Shell subrhomboidal, ventricose, concentrically finely lirated, inequilateral; posterior side oblong, straight, obliquely angular, dorsal margin; dorsal margin produced, terminal margin rostrated above, subtruncated beneath; umbones prominent, ventral margin rather straight; anterior side short, angular above.

QUOY ET GAIMARD (Nucula), Voyage de l'Astrolabe.

Neilo Cumingii, A. Adams.

Ctenoconcha naticula, Valenciennes.

Hab. New Zealand.

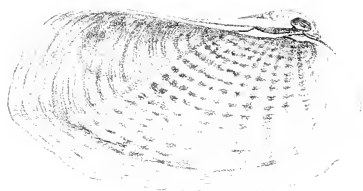
This shell has very much the form of the *Arctic goldia*, but like *Solenella*, it presents the character of an external ligament and no cartilage pit.

MONOGRAPH

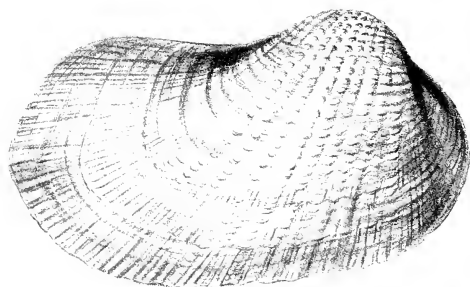
OF THE GENUS

PHOLADOMYA.

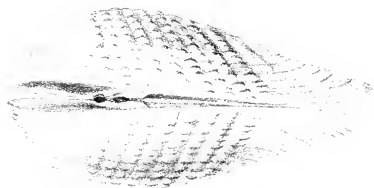
"From hut of hope to withstand,
Year upon year the shock
Of cataract seas that surge
The three-decker's onken spine"—*Unregon*.



10



11



12

PHILODOMYA.

PLATE I.

Genus PHILODOMYA, Sawley.

Toto bicoloris, aequalis, transverso-oblongo, tenui, utrinque hians, costis cartilagineis, et creberrimis, productis, subtruncatis. Cardo, corollâ elongatâ, subtriangulâ et lamina marginali in utroque valvâ. Ligamentum externum, hirsute datum. Impressio muscularum duâ, indistincta; postica impressio late sinuata.

Shell bivalve, equivalve, transversely oblong, thin, gaping on both sides, rayed with ribs, short in front, produced and submargined posteriorly.

Hinge with an elongated, subtriangular pit and a marginal lamina in each valve. Ligament external, rather short. Muscular impressions two, indistinct; impression of the mantle widely sinuated.

The one recent species known of this singularly isolated genus is from the island of Tortola, on the shores of which it is sometimes, but very rarely, thrown up by violent ocean storms. It is a revival of a very ancient fossil form, of which there are numerous well-known species. The worn hole in the umbos observed in all the specimens, results from their close approximation, causing them to rub against each other with the action of the valves.

SPECIES (Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.)

PHILODOMYA CANADICA. *Pho. testâ papyracea, albâ, epidermate tenui, limbatâ, indatâ, subaristoculâ, ventricosa, unguis, transverso-oblongo, lateri antico hinc, subrotunda, latè hiansi, rugatâ, medio costis obliquis aculeatis, utâs porodatus valvati; latere postico producto, latè hiansi, sublaevigato, subobliquè truncato, margine dorsali rectiusculo, centrali posticè subangulato; umbonibus prominentibus, approximatis, perforatis.*

THE WHITE PHILODOMYA. Shell papyraceous, white, covered with a thin striped epidermis, subiridescent, ventricose, rugose, transversely oblong; anterior side short, a little rounded, broadly gaping, wrinkled, rayed in the middle with oblique non-luiferous ribs; posterior side produced, widely gaping, rather smooth, rather obliquely truncated, dorsal margin rather straight, ventral posteriorly a little inflated; umbos prominent, approximate, perforated.

Sawley. Genera of Recent and Fossil Shells.

Hab. Island of Tortola.

November, 1872.

MONOGRAPH
OF THE GENUS
S U C C I N E A.

"I come from haunts of eot and hern."—*Youngblood*



1a



2a



2b



1b



3



4



3



3a



6



5



5a

SUCCINEA.—PLATE I.

*filus, angusta ultimo ovato; apertura longitudine
mediæ, anticæ expansæ, labio intra-ora reflexo.*

THE THICKER SUCCINEA. Shell rounded-ovate; pale
horn, smooth, rather thick; spire produced, whorls
rounded, sometimes rather red, last whorl ovate;
aperture of medium length, anteriorly expanded,
inner lip reflected.

BENSON. MS.

Hab. Bundelkhand, Punjab.

The texture of this shell is a little thicker than most
of the species.

Species 5. (Fig. a, b, Mus. Benson.)

SUCCINEA GRENARICA. *Sac. testâ nigra, ovato-sub-
pyramidatâ, fusco-rubescenti, laevigatâ, semiopeâ;
spirâ cæsertâ, pyramidatâ, angustibus rotundatis,
distinctis; angusta ultimo angustâ, cæsus suturam
attenuatâ, infra subangulatâ, apertura nigra,
anticæ productâ, expansâ; labio columellari arcuato.*

THE GREYER SUCCINEA. Shell large, ovate-subpyra-
midal, reddish brown, smooth, semi-opaque; spire
exserted, pyramidal, whorls rounded, distinct;
last whorl large, attenuated towards the suture,
subangular below; aperture large, anteriorly
produced, expanded; columellar lip arched.

THEOBALD. Jour. Asiat. Soc., Bengal.

Hab. Girnar Hills, Gujrat.

One of the finest and largest of all the species,
presenting in some varieties a beautiful claret purple
or pink colour.

Species 6. (Mus. Benson.)

SUCCINEA BACONI. *Sac. testâ subrotundâ, pallidâ
stramineâ, citreâ, tenuissimâ, translucidâ; spirâ
parvâ, angusta secundo inflata; angusta ultimo
maximâ, globosâ; apertura maximâ, expansâ.*

BACON'S SUCCINEA. Shell subrotund, pale straw, glassy,
very thin, transparent; spire small, second whorl
inflated; last whorl very large, globose; aperture
very large, expanded.

PRESTLER. Proc. Zool. Soc., 1854, p. 298.

Hab. Calcutta.

A very light, bubble-like species.

Species 7. (Mus. Benson.)

SUCCINEA BENSONI. *Sac. testâ parvâ, subâltissimâ,
subciliatâ, ovatâ, obliquâ, laevigatâ; spirâ elevatâ,
angustibus subovatis, inflatis; angusta ultimo
ovato; apertura oblongâ, posticâ propè suturam
convexâ, anticâ subexpansâ.*

BENSON'S SUCCINEA. Shell small, rather solid, greenish,
ovate, oblique, smooth; spire elevated, whorls
rather oval, inflated; last whorl oblong, posteriorly
convex near the suture, anteriorly slightly ex-
panded.

PRESTLER. Proc. Zool. Soc., 1849, p. 173.

Hab. Moradabad.



10



11



12



13



14



15



16



17



18



19

S U C C I N E A.

PLATE II.

Species 8. (Mus. Sowerby.)

SUCCINEA CAMPESTRIS. *Suc. testâ brevi, ventricosa, albida, opaca, fasciâ longitudinalibus subdiaphanis distanter participatâ; spirâ parvâ, acuminatâ, angustius 4, ultima lata, prope suturam tumulifera.*

THE FIELD SUCCINEA. Shell short ventricose, white, opaque, varied at distant intervals with longitudinal subdiaphanous bands; spire small, acuminated, whorls 4; the last wide, rather tumid near the suture.

SAY. Pfr. Symb. Helicorum Pl. 4. f. 12.
Hab. New York.

THE RIVER-DRAIN SUCCINEA. Shell obliquely ovate elongated, ventricose, subdiaphanous, amber coloured, smooth, shining; spire pyramidal, last whorl produced; aperture large, oblique; inner lip rather arched; elongated.

LINNÆUS (Helix), Systema Naturæ,

Succinea amphibia, Aml.
Succinea Pfeifferi, Rossmäler.
Suc. rari harratiæ, Stutz.
Succinea ballina, Zenzler.
Succinea calycina, Menke.
Succinea intermediæ, Beau.

Hab. Europe, by the side of ditches and river-drains.

This is the monoval form of the species if *S. gemilis* is to be considered as one with it.

Species 9. (Mus. Benson.)

SUCCINEA SEMISERATA. *Suc. testâ brevi, obliquâ, ventricosa, sublucida, opaca, tenenter longitudinaliter striatâ; spirâ productâ, antea paulatim obliquâ subpyramidalata, ultima obliquâ ventricosa, aperturâ anticè expansâ.*

THE HALF-SILKY SUCCINEA. Shell short, oblique, ventricose, yellowish opaque, finely longitudinally striated; spire produced, penultimate whorls obliquely subpyramidal, the last obliquely ventricose, aperture anteriorly expanded.

GOULD, Proc. Bost. Soc. Nat. Hist. 1846, vol. ii. p. 100.
Hab. Tavoy, Birmanh.

The striae give a sort of texture like that of corded silk to this shell.

Species 11. (Mus. Benson.)

SUCCINEA PLEURATA. *Suc. testâ obliquâ oblongâ, crassiusculâ, plisâ valdè longitudinaliter rugatâ, pallidâ; spirâ cœcâ, angustâ paulatim prebapto; aperturâ trapeziformi, obliquâ, labio externo crassiusculo.*

THE FLICATED SUCCINEA. Shell obliquely oblong, rather thick, longitudinally wrinkled with strong plats, pale; spire inserted, last whorl much elongated; aperture trapeziform, oblique, outer lip rather thick.

BLANFORD. Asiatic Society of Bengal. 1865, pl. 2, vol. XXXIV. p. 89.
Hab. Tongsoop, Aracan.

Species 10. (Fig. a, b, Mus. J. Freys, &c.)

SUCCINEA PUTRIS. *Suc. testâ obliquâ ovato-oblongatâ, ventricosâ, subdiaphanâ, succinâ, lævigatâ, nitidâ; spirâ pyramidalâ, antea paulatim productâ; aperturâ magnâ, obliquâ, labio interno subrecurvato, elongatâ.*

Species 12. (Mus. Brit.)

SUCCINEA PICTA. *Suc. testâ latâ, obliquâ expansâ, diaphanâ, irregulariter longitudinaliter rugatâ, subcicillâ, intus subcancellatâ, subopacâ, subiridescenti; spirâ parvâ, rotundâ, rubescenti; aperturâ maximâ, ovatâ.*

August, 1872.

SUCCINEA.—PLATE II.

THE FAINTLY-SUCCINEA. Shell broad, obliquely expanded, diaphanous, irregularly longitudinally wrinkled, subviridous, within bluish white, subopaque, subiridescent, spire small, rounded, reddish; aperture very large, ovate.

H. ADAMS. Proc. Zool. Soc., 1849, p. 199.

Hab. Dixon's Peak, St. Elena.

The inside of the mouth has a silvery metallic appearance.

Species 13. (MUS. BENSON.)

SUCCINEA ACUMINATA. *Suc. testâ pyramidalâ, acuminatâ, succineâ, tenui; spirâ pyramidalâ, anfractibus duobus, parvis, lateribus rectis; aperturâ pyramidalâ, antice obliquè expansâ, labio columellari rectiusculo.*

THE ACUMINATED SUCCINEA. Shell pyramidal, acuminate, amber-coloured, thin; spire pyramidal, whorls two, small, sides straight; aperture pyramidal, obliquely expanded in front, columellar lip rather straight.

BLANDFORD. Proc. Zool. Soc., 1869, p. 119.

Hab. Momein in Unau, India.

Resembling the European *Succinea patris*, but more straight-sided and pyramidal.

Species 14. (MUS. BENSON.)

SUCCINEA EUTHANS. *Suc. testâ saboti-succineâ, sub-*

diaphanâ, tenui, rectiusculâ, ovato-ventricosâ, spirâ obtusâ, anfractibus circiter tribus, penultimo ventricoso; aperturâ subovata, labio interno crassiusculo, arcuato.

THE RED SUCCINEA. Shell reddish amber, subdiaphanous, thin, rather straight, ovate ventricose, spire obtuse, whorls scarcely three, the last ventricose; aperture subovate, inner lip rather thick, arched.

BLANDFORD. Journ. Asiatic Society of Bengal, 1870, p. 298; Monograph of Helices, vol. iv, p. 804.

Hab. Calcutta.

Species 15. (MUS. SOWERBY.)

SUCCINEA STRIGATA. *Suc. tenuiter lirata, pallidè fuscâ, tenui, breviusculâ, pyramidalâ, spirâ protractâ, anfractibus prominentibus, subovatis, penultimo et ultimo ventricosis, aperturâ obliquâ, subovata, longitudine mediocri, labio externo superne obliquo, labio columellari rix reflexo.*

THE STRIPED SUCCINEA. Shell finely lirate, pale-brown, thin, rather short, pyramidal, spire produced, whorls prominent, subovate, the penultimate and last ventricose, aperture oblique of middling length, the outer lip oblique above; columellar lip scarcely reflected.

PACIFIC. Proc. Zool. Soc., 1854, p. 132

Hab. Australia.



16



17



18



19



20



21



22



23



24



25



26

S U C C I N E A.

PLATE III.

Species 16. (MUS. JEFFREYS, &c.)

SUCCINEA GRACILIS. *Sac. testâ obliquè elongata, in-costâ, diaphanâ, succinâ, levigatâ, nitidâ, spirâ elongatâ productâ, anfractibus paucissimis attenuatâ, apertura posticâ attenuatâ, obliquâ; labio laterali subovato, acuto, elongato.*

THE SLINDER SUCCINEA. Shell obliquely elongated, narrow, diaphanous, amber-colored, smooth, shining; spire elegantly produced, last whorl attenuated; aperture posteriorly tapering, oblique; inner lip somewhat arched, elongated.

ALDER. Magazine of Zoology and Botany, vol. II, p. 106.
Hab. England and Europe generally.

It is doubtful whether there is a real and permanent distinction between this species and *S. chinâ patens*.

Species 17. (MUS. SOWERBY.)

SUCCINEA TOTTELIANA. *Sac. testâ obliquè rotundâ sâ, diaphanâ, subviridi succinâ; spirâ brevi, paucispiratâ, anfractibus subovatis, prominentibus, ultimò obliquè, inflato, anticâ obliquè expansâ; labio laterali arcuato.*

TOTTEN'S SUCCINEA. Shell obliquely ventricose, diaphanous, greenish amber; spire short, with few volutions, whorls subovate, prominent, the last oblique, inflated, obliquely expanded in front; inner lip arched.

LEA. Phil. Symb. Heliceorum, p. 132.
Hab. Cape Elizabeth.

Species 18. (MUS. SOWERBY.)

SUCCINEA OVALIS. *Sac. testâ attenuatâ, subpyramidalâ, translucidâ, subovato-succinâ, tenuissimâ, spirâ acuminatâ, subretorsâ, anfractibus paucissimis attenuatâ, ultimò obliquè subpyramidalâ; apertura anticâ obliquè subexpansâ.*

THE OVAL SUCCINEA. Shell attenuated, subpyramidal, translucent, rather orange-amber, very thin; spire acuminate, a little turned backward, the penultimate whorl attenuated, the last obliquely subpyramidal; aperture somewhat expanded obliquely in front.

SW. In Gould's Invertebrata of Massachusetts, p. 191, f. 125.
Hab. New York.

Much like the European *Succinea gracilis*, but with the slope of the sides more gradual.

Species 19. (MUS. BENSON.)

SUCCINEA DAVICINA. *Sac. testâ rectiuscula, subovata, subovato-fusâ, tenui, levigatâ, spirâ elevatâ, anfractibus attenuatis; apertura longitudinè medianâ, anticâ latiuscula, labio exteriori prope suturam tumido, et medianâ rectiuscula, labio interno subreflexo.*

THE TITTEL CALBOT SUCCINEA. Shell rather straight, subovate, rather orange-brown, thin, smooth; spire elevated, whorls attenuated; aperture of medium length, rather wide anteriorly, outer lip tumid near the suture, rather straight at the middle, inner lip subreflected.

PURCELL. Proc. Zool. Soc., 1854, p. 298.
Hab. Calcutta.

Species 20. (Fig. a, b, MUS. BENSON.)

SUCCINEA VITILEA. *Sac. testâ pueriliensibâ, albâ, translucidâ, tenuissimâ, ventricoso-rotatâ, spirâ acuminatâ, anfractibus rotundatis; apertura anticâ, longitudinè medianâ, labio interno subinversato, subrotato.*

August, 1872.

THE GLASSY SUCCINEA. Shell rather small, white, transparent, very thin, ventricose, oval; spire acuminate, whorls rounded; aperture ovate, of medium length, inner lip rather thickened, a little tortuous.

PEIFFER. Proc. Zool. Soc., 1834, p. 298.
Hab. Calcutta.

Species 21. (Mus. Brit.)

SUCCINEA PATULA. *Suc. testâ latâ, subquadratâ, crassiusculâ, posticè purpurascenti, anticè subciliâ; spirâ brevi, subretrosâ, anfractu ultimo superuè angulatâ; aperturâ magna, patulâ, quadratâ; labiâ externo posticè angulatâ, latere recto; labiâ interno subrefl. et tortuo.*

THE PATULOUS SUCCINEA. Shell broad, subquadrate, rather thick, posteriorly purplish, anteriorly rather green; spire short, slightly recurved, last whorl angular above; aperture large, patulous, quadrate; outer lip posteriorly angular, straight at the side; inner lip a little reflected, tortuous.

BRUGCIER. Encyclopædia Méthodica.
Amphihalima cucullata, Lamarek.

Hab. — ?

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

SUCCINEA VERMILIA. *Suc. testâ subovatâ, retiusculâ,*

pyramidatâ, cornuâ, subdiaphanâ; spirâ productâ, anfractibus contrivosis, ovato-rotundis, ultimo ovato; aperturâ breviusculâ; labiâ interno tortuo.

THE WORM-LIKE SUCCINEA. Shell subovate, rather straight, pyramidal, horny, subdiaphanous; spire produced, whorls ventricose, ovately rounded, the last oval; aperture rather short; inner lip tortuous.

SAY. New Harmony Disseminator.

Succinea avara, Pfeiffer.

Hab. New Harmony, United States.

Species 23. (Fig. a, b, Mus. Jeffreys, &c.)

SUCCINEA OBLONGA. *Suc. testâ parvâ, solidiusculâ, brevi, ovatâ, cornuâ, ad spiram subrubescenti; spirâ prominenti, anfractibus subrotundis, ultimo ovato; aperturâ breviusculâ, subovatâ, labiâ externo anticè subexpansâ, labiâ interno terti, subarcuato.*

THE OBLONG SUCCINEA. Shell small, rather solid, smooth, ovate, horny, reddening towards the spire; spire rather prominent, whorls rather rounded, the last ovate; aperture rather short, subovate, outer lip rather expanded in front, inner lip thin, a little arched.

DEKAENAUD. Moll. Forest. et Fluv.

Hab. England and France.



21



22



23



24



25



26



27



28

S U C C I N E A.

PLATE IV.

Species 24. (Mts. Brit.)

Succinea subgranosa. *Nov. testâ parvâ, ovata, apertâ, subgranoso-angulâ, pellucida carinâ; spirâ elevata, acuminatâ, antrostibus tribus, rotundatis; aperturâ flavidâ, antice obliquè productâ, labio columellari subconvexius tortuo.*

THE SUBGRANOSE SUCCINEA. Shell small, ovate, opaque, rather granularly roughened, pale horny; spire elevated, acuminated, whorls three, rounded; aperture yellowish, anteriorly obliquely produced, columellar lip rather conspicuously tortuous.

PRETZLER, Proc. Zool. Soc., 1819, p. 132.

Hab. India.

A little species with rounded whorls resembling the British *Succinea oblonga*.

Species 25. (Fig. a, b, Mts. Brit.)

Succinea rubeslens. *Nov. testâ obliquè ovata, ventricosa, leviter haugitâ, antice striatâ, apertâ, subpurpureo-rosâ, propè marginem ad spiram marginatâ, aperturâ albidâ-rosâ, iridescenti; spirâ erectâ, obtusiusculâ, angustibus duobus; aperturâ obliquâ, ovatâ, arcuata marginatâ, labio interno subrotato, anfractu ultimo magno.*

THE REDDISH SUCCINEA. Shell obliquely ovate, ventricose, lightly longitudinally striated, opaque, purplish-rose, orange near the margin and at the spire; aperture whitish-rose, iridescent; spire exerted, rather obtuse, whorls two; aperture oblique, ovate, margined with orange, inner lip rather arched, last whorl large.

DESHAYES, Guérin, Magasin de Conchyliologie, 1830, pl. 4.

Hab. Guadeloupe.

Species 26. (Mts. Brit.)

Succinea calycina. *Nov. testâ gracillimâ, elongatâ, brownâ, pallidâ, ovato, pellucidâ, nitidâ; spirâ productâ, acuminatâ, antrostibus apicibus parvis, parvis, paulatim attenuatâ; aperturâ elongatâ, arcuata, antice subexpansâ.*

THE CALYX SUCCINEA. Shell very slender, elongated, very thin, pale horny, pellucid, shining; spire produced, acuminated, apical whorls small, brown, the last attenuated, aperture elongated, narrow, anteriorly slightly expanded.

MUSKÉ, Synopsis, ed. 2, p. 14.

Hab. Germany.

This species is so long and narrow, that it can scarcely be a new variety of *Succinea Pfeifferi*, as some supposed.

Species 27. (Fig. a, b, Mts. Brit.)

Succinea approximata. *Nov. testâ elongatâ, subpyramidâ, ovato, succinâ, pellucidâ, cœrens apicem rubescenti, apicè acuminatâ, angustibus rotundatis, aperturâ obliquâ subpyramidatâ, labio columellari tenui, arcuato.*

THE APPROXIMATE SUCCINEA. Shell elongated, subpyramidal, bright amber, pellucid, reddish towards the apex, whorls rounded; aperture oblique subpyramidal, columellar lip thin, arched.

SMUTTLER, ———.

Hab. Sandwich Islands.

Less oblique and with more rounded whorls than our British *Succinea gracilis*, which in other respects it resembles.

(Species 28. Mus. Brit.)

SUCCINEA LAUTA. *Suc. testâ subovatâ, magis, tenui subtranslucenti, pallidâ coraci, tenuiter lirata; spirâ elevatâ, fulvâ, anfractibus apicalibus parvis, rotundatis, ultimo magno, ventricoso; apertura magis, latâ, ovatâ, subobliquâ.*

THE HANDSOME SUCCINEA. Shell subovate, large, thin, rather transparent, pale horny, finely ridged; spire elevated, yellowish-brown, apex whorls small, rounded, the last large, ventricose; aperture large, wide, ovate, rather oblique.

GOULD — ?

Hab. Hakodade.

A rather fine species, more ventricose and less oblique than *Succinea patris*, which it resembles in general appearance.

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

SUCCINEA PUNCTATA. *Suc. testâ subpatulâ, latâ, arcu-fusâ et flavâ, punctis albâs seriatim dispositis ornatâ, leviter lirata, lineis costâncis notatâ; spirâ brevissimâ, obtusâ, anfractu penultimo expanso; apertura magis, anticè expansâ.*

THE SPOTTED SUCCINEA. Shell rather patulous, broad, orange-brown and yellow, ornamented with whitish spots disposed in rows, lightly wrinkled, marked with chestnut lines; spire very short, obtuse, last whorl expanded; aperture large, expanded in front.

PFEIFFER. Proc. Zool. Soc., 1854, p. 297.

Hab. Sandwich Islands.

Species 30. (Mus. Brit.)

SUCCINEA DONETTI. *Suc. testâ ovato-acuminatâ, sub-ventricosâ, subopacâ, rosâ-subpurpurâ et coracâ; spirâ brevissimâ, anfractu ultimo ventricoso, anticè subexpanso, apertura superi subangulatâ, anticè subexpansâ, intus rosâ.*

DONETTI'S SUCCINEA. Shell ovately acuminate, rather ventricose, subopaque, purplish-rose and horny; spire rather short, last whorl ventricose, anteriorly subexpanded, aperture rather angular above, anteriorly subexpanded, rose-coloured within.

PFEIFFER: — ?

Hab. Coquimbo.



SUCCINEA.

PLATE V.

Species 31. (Mus. Cuming in Brit.)

SUCCINEA SOLIDULA. *Succ. testis ventricosa, subovata, leviter lirata, castaneo-ovata; spiris erectis, anfractibus fuscis, ventricosis, ultimo subplatato; apertura pallida, longitudine multoeri, labio columellari uniplacato, callo acutato, labio externo prope suturam subangulato, antice oblique expanso.*

THE SOLID SUCCINEA. Shell ventricose, subovate, lightly ridged, chestnut-horny; spire exerted, whorls brown, ventricose, the last rather inflated; aperture pale, of medium length, columnar lip single plaited, strongly curved; outer lip slightly angular near the suture, anteriorly obliquely subexpanded.

PLEHLE, Proc. Zool. Soc., 1819, p. 134
Hab. — ?

The locality of this species does not appear to be known. It was named from specimens in the late Mr. Cuming's collection.

Species 32. (Fig. a, b, Mus. Brit.)

SUCCINEA EQUINOCTIALIS. *Succ. testis subovato-acuminata, tenuissimâ, transluenti, pallidi cornu, leviter lirata; spiri subsericeo-fusci, acuminati; anfractibus duobus, ultimo subventricoso, prope suturam tumidulo-âculo; apertura lata, antice expansa, labio columellari tenui, arcuato.*

THE EQUINOCTIAL SUCCINEA. Shell subovate-acuminate, very thin, transparent, pale horny, lightly ridged, spire pinkish-brown, acuminated; whorls two, the last subventricose, rather swelled near the suture; aperture wide expanded in front, columnar lip thin, arched.

D'ORBIGNY, L'Amérique Méridionale.
Hab. South America.

A very transparent shell, showing a beautifully ridged surface.

Species 33. (Mus. Brit.)

SUCCINEA LATOR. *Succ. testis pyramidalis, ovata, tenui, subpellucida, spiri attenuati, anfractibus protractis, subpyramidalis, prope suturam tumidulo, apertura elongata, antice expansa; labio interno uniplacato, acutato.*

THE WIDER SUCCINEA. Shell pyramidal, amber-colored, thin, subpellucid; spire attenuated, whorls produced, subpyramidal, tumid near the suture; aperture elongated, expanded anteriorly; inner lip with one plait, arched.

C. B. ADAMS, Conchological Contributions, p. 38.
Hab. Jamaica.

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

SUCCINEA MAMMILLATA. *Succ. testis oblique ventricosa, ovata, lirata, cornu, epidermide flavida fusca insata, sic rugata; spiri obtusi, anfractibus operculato-mammillatis, rubescentibus; apertura palea, arcuato-oblonga, labio externo ad suturam deflexo; labio interno uniplacato, leviter arcuato.*

THE MAMMILLATED SUCCINEA. Shell obliquely ventricose, opaque, smooth, horny, covered with a yellowish-brown epidermis, scarcely wrinkled; spire obtuse, apex whorls mammillated, reddish; aperture fulvous, ovate-oblong, outer lip bent downwards at the suture; inner lip single-plaited, slightly arched.

BENSON — ?
Hab. Chili.

Species 35. (Mus. Brit.)

SUCCINEA PUSILLA. *Succ. testis parvi, sordidi cornu, lirigato, subpellucida; spiri fere apertura longitudinaline aequanti, anfractibus paucis, rotundatis, ultimo magno, ventricoso; apertura subplatata, labio externo prope suturam deflexo, labio columellari breviusculo, ventricoso.*

THE DWARF SUCCINEA. Shell small, dingy horn colored, smooth, rather pellucid; spire nearly equalling the aperture in length, whorls few, rounded, the last large, ventricose; aperture subquadrate, outer lip bent downwards near the suture, columellar lip rather short, rather straight.

PEREGRINE. Proc. Zool. Soc., 1849, p. 134.
Hab. S. America.

Species 36. (Fig. *a, b*, Mus. Cuming in Brit.)

SUCCINEA CUMINGII. *Suc. testâ avatâ, patulâ, obliquâ, opacâ, larrigatâ, rosâ, epidermâ aurantio-fusco indatâ, vel olivaceâ, lineis castaneis flexuosis notatâ; spirâ brevissimâ, anfracta unico subcolumella; aperturâ maximâ rosaceâ, obliquâ expositâ, labio columellari tenui, reflexo, arcuato.*

CUMING'S SUCCINEA. Shell ovate, patulous, oblique, opaque, smooth, rosy, covered with an orange-brown epidermis, marked with flexuous chestnut lines; spire very short, with a partly concealed

single whorl, aperture large, rosy, obliquely expanded, columellar lip thin, reflected, arched.

PEREGRINE. MS. in Cum. Coll.
Hab. Juan Fernandez.

Of a very remarkable patulous form.

Species 37. (Mus. Brit.)

SUCCINEA FERNANDEI. *Suc. testâ parvâ, subrugosâ, opacâ, albâ, ad latera subglaciâ, punctis albidis inconspicuis notatâ; spirâ rubro-castaneâ, anfractibus rotundatis, ultimo ventricoso; aperturâ longitudo molliciori, intus pallidâ.*

THE FERNANDEZ SUCCINEA. Shell small, subrugose, opaque, white, yellowish at the sides, marked with white inconspicuous spots; spire reddish-chestnut, whorls rounded, the last ventricose; aperture of medium length, pale within.

MS. Brit. Mus.
Hab. Juan Fernandez



S U C C I N E A.

PLATE VI.

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

SUCCINEA MAGELLANICA. *Spec. testâ subglobulata, subopacâ, inflatâ, convexâ, rubico-fusca tinctâ, laevitatâ; spirâ hexiseriali, antiaxialibus duobus, rotundatis, ultimo inflato, apertura obliquâ, orâ subciliatâ et vixilâ arcuata et reflexâ, antio. lato.*

THE MAGELLAN SUCCINEA. Shell rather rounded, subopaque, inflated, horny, tinged with reddish brown, smooth; spire rather short, whorls two, rounded, the last inflated; aperture oblique, ovate, inner lip much arched and reflected, broad anteriorly.

Gen. Lib. Mus.
Hab. Magellan.

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

SUCCINEA MARGARITA. *Spec. testâ parvâ, spirâ, con-pyramidalitâ, obscure succinâ, laevitatâ; spirâ elevatâ, angustâ apicali rotundatâ, parvâ, penultima attenuatâ, apertura obliquâ, antio. productâ, labio columellari multiplicato.*

THE PEARL SUCCINEA. Shell small, slender, subpyramidal, dull amber-colored, smooth; spire elevated, apex whorl reddish, small, the last attenuated; aperture oblique, anteriorly produced, columellar lip with a single plait.

PELLEU. Proc. Zool. Soc., 1853, p. 60.
Hab. St. Domingo.

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

SUCCINEA SALLEANA. *Spec. testâ elongatâ, eglobulifera, elongâ, subinflatâ, subrosâ et prillib succinâ, fusco-rubescens tinctâ; spirâ minutâ, antiaxialibus duobus rubescens, angustâ ultimo elongatâ, amplâ; apertura elongatâ obliquâ, antio. subexpansâ.*

SHELL SUCCINEA. Shell elongated, bean-shaped.

Inflated, nearly diaphanous, rather pink or pale amber, tinted with reddish brown; spire very small, with two reddish whorls, last whorl elongated, full; aperture elongated, oblique, anteriorly subexpanded.

PELLEU. Proc. Zool. Soc., 1849, p. 133
Hab. New Orleans.

The peculiar form of this graceful shell will prevent its being confounded with any other.

Species 41. (Mus. Brit.)

SUCCINEA SANGLE HELLENE. *Spec. testâ obliquâ sub-globosâ, superâ roseo-purpurâ, infâ olivaceo-fuscâ, laevitatâ, subopacâ; spirâ hexiseriali, antiaxialibus minutis, angustâ ultimo ventricosa; apertura magna, antio. obliquâ productâ; labio columellari tincto, edibi multiplicato.*

THE SANGLE HELLEN SUCCINEA. Shell oblique, subglobose, pinky purple above, olive brown beneath, smooth, rather opaque; spire very short, whorls minute; last whorl ventricose; aperture large, anteriorly obliquely produced; columellar lip tortuous, strongly single-plaited.

LESSON. Voyage de la Coquille, pl. 15, f. 1
Hab. St. Helena

Species 42. (Fig. *a, b*, Mus. Brit.)

SUCCINEA CROCATA. *Spec. testâ subglobosâ, lividâ, subopacâ, subrosâ, epidermid. aurantiâ et aduste-succinâ indatâ; antiaxialibus ventricosis, inflatis, penultima elevatâ, oblongâ, apicali minutâ; apertura magna, rosâ et succinâ-diaphanâ, antio. ex-*

SUCCINEA.—PLATE VI.

paucis, subquadrate, labio externo postice ad suturam deflexo, labio interno reflexo, arcuato.

THE SALTION SUCCINEA. Shell globose, ridged, subopaque pink, covered with an orange or burnt amber epidermis; whorls ventricose, inflated, the last elevated, oblong, apex whorl extremely small; aperture large, easy or transparent amber, anteriorly expanded, squareish, outer lip posteriorly bent downwards at the suture, inner lip reflected, arched.

GOULD. —? MS.

Hab. Navigator's Island

Species 43. (Mus. Brit.)

SUCCINEA PUBORINA. *Sae testâ ovata, tenui, levatâ, rosco-aurantiâ spirâ brevissimâ, angustataâ, ambus, parvis, rotundatis, angustâ ultima magne, ovata, aperturâ magna, subovata, pallidâ roseo-aurantiâ, labiâ interno arcuato, pallidâ reflexo.*

THE BLUSH SUCCINEA. Shell ovate, thin, ridged, orange-rose; spire very short, whorls two, small, rounded, last whorl large, ovoid; aperture large, subovate, pale orange-pink, inner lip arched, strongly reflected.

GOULD. —? MS. in Brit. Mus.

Hab. Sandwich Islands.



11



12



13



14



15



16



17



18



19



20

SUCCINEA.

PLATE VII.

Species 14. (Mus. Brit.)

SUCCINEA CINGULATA. *Suc. testâ subpyramidalis, truncata, levigatâ, pallidâ saccinâ, ad latera fulvâ, et translucidâ; spirâ pyramidalis, angustibus duobus, angustis apicali fusco, aperturâ pyramidalis brevissimâ, lobis columellari tenui, hinc ampliatâ.*

THE BELTED SUCCINEA. Shell subpyramidal, thin, smooth, pale amber, brownish at the sides, scarcely translucent; spire pyramidal, whorls two, apical whorl brown; aperture pyramidal, rather short, columellar lip thin, slightly single-plated.

FORBES — ?

Hab. Mazatlan.

More straight and pyramidal than most of the species.

Species 45. (Mus. Brit.)

SUCCINEA DOMINICENSIS. *Suc. testâ ovato-subtriangulâ, ventricosâ, opacâ, albido-fulvâ, ad apicem aurantiorâ; spirâ pyramidalis, aperturâ longitradia nodosâ, intus flavâ; lobis columellari reflexo, rectâ-culo.*

THE DOMINICA SUCCINEA. Shell ovate-subtriangular, ventricose, opaque, whitish fawn, orange at the apex; spire pyramidal, aperture of medium length, yellowish within; columellar lip reflected, rather straight.

PREDILL. Proc. Zool. Soc.

Hab. Haiti.

Species 46. (Mus. Brit.)

SUCCINEA BARRADENSIS. *Suc. testâ subpyramidalis, levigatâ saccinâ, translucidâ, levigatâ, nitenti, sub-obliquâ; spirâ conicâ, angustibus duobus; aperturâ latissimâ, lobis columellari tenui, rectâ, subreflexâ.*

THE BARRADIS SUCCINEA. Shell subpyramidal, bright amber, transparent, smooth, shining, sub-oblique; spire conical, whorls two; aperture rather broad, columellar lip thin, straight, a little reflected.

GILPIN. Zoological Journal, v. 4, n. pl. 27, t. 1-6

Hab. St. Vincent. — St. Thomas.

This shell resembles the smaller and brighter specimens of *Succinea patris*; but is less oblique and more straight-sided.

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

SUCCINEA HAYDENI. *Suc. testâ ovato-suboblongâ, posticâ attenuatâ, saccinâ, fusco-flavâ, tenui, laevi costâ, intus albidâ, tunicâ levigatâ; spirâ elevatâ, angustibus attenuatis, ultimo obliquâ; aperturâ magna, intus obliquâ expansâ.*

HAYDEN'S SUCCINEA. Shell ovate, rather oblong, posteriorly attenuated, rather pinky, tinted with brown, thin, marked with chestnut lines, finely ridged; spire elevated, whorls attenuated, the last oblique; aperture large, anteriorly obliquely expanded.

BINNEY. Land Shells.

Hab. Nebraska.

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

SUCCINEA TROPISOMA. *Suc. testâ subglobosâ, ventricosâ, ventricosâ, obliquâ, subopacâ, purpureo-fusâ et rosâ, obliquâ leviter levigatâ; spirâ brevâ, angustibus prominentibus, ultimo et penultimo magnis, apicali aurantiorâ; aperturâ magna, obliquâ, intus flavâ, tunicâ levigatâ, lobis columellari reflexo, obliquo.*

THE WAX-MOCHLED SUCCINEA. Shell subglobose, acuminate, ventricose, oblique, rather opaque, purple-brown and pink, obliquely slightly ridged; spire short, whorls prominent, the last and last but one large, the apical one orange; aperture large, oblique, yellowish within, banded with orange, columellar lip reflected, oblique.

MS. Cuming's collection.

Hab. — ?

This beautiful shell resembles *Succinea patris* in some degree, but is of a different form.

August, 1872.

Species 49. (Mus. Brit.)

SUCCINEA NORFOLKI. *Suc. testâ ovatâ, rectiusculâ, ventricosâ, fusco-rubescenti, tenuiter lividâ; spirâ productâ, anfractibus duobus, rotundatis; apertura longitudinè inclinata, substansulâ, labio columellari leviter uniplaito.*

NORFOLK'S SUCCINEA. Shell ovate, rather straight, ventricose, reddish-brown, finely ridged; spire produced, whorls two, rounded; aperture of medium length, rather rounded, columellar lip slightly single-plaited.

Cox. Proc. Zool. Soc., 1874

Hab. New South Wales.

Species 50. (Mus. Brit.)

SUCCINEA SAGGA. *Suc. testâ ovatâ, rectiusculâ, supernè fusco-rubescenti, infra albido-flavidâ, subangulatâ; spirâ productâ, ventricosâ, anfractibus paucis semioratis; apertura oblongâ, labio columellari medio subangulati, rectiusculo, leviter uniplaito.*

THE SHAGLEEN SUCCINEA. Shell ovate, rather straight, reddish-brown above, whitish-yellow below, a little rough; spire produced, ventricose, whorls few, semi-ovate; aperture oblong, columellar lip rather angular in the middle, rather straight, slightly single-plaited.

D'ORBIGNY. Mollusca of Cuba, p. 58, pl. 8, f. 1-3.

Hab. Island of Cuba

Species 51. (Mus. Brit.)

SUCCINEA PALLIDA. *Suc. testâ subovatâ, coracâ, pallidâ, subcentricosâ; spirâ elevatâ, anfractibus rufofuscis, penultimo elongato, apicali acuminato; apertura longitudinè spiram æquantî, labio columellari rectiusculo, labio externo arcuato.*

THE PALE SUCCINEA. Shell subovate, horny, pale, sub-ventricose; spire elevated, whorls reddish-brown, the last elongated, apex acuminate; aperture equalling the spire in length, columellar lip rather straight, outer lip arched.

PEREYER. Proc. Zool. Soc., 1846, p. 109.

Hab. Tahiti.



S U C C I N E A.

PLATE VIII.

Fig. 12, *o*. MUS. OUM. in Brit.

Succinea picta. A very globose variety of this species, from St. Helena.

Species 52. (Mus. Brit.)

Succinea Delalandei. *Suc. testis pyramidati, pallidi succinei, pellucidi, laevigati, spiris arcuatis, elevatis, acuminatis, anfractibus elongatis, labio ultimo rectiusculis; aperturae postice attenuati, antice subexpansis, pupae integritate aequalibus.*

DELALANDE'S Succinea. Shell pyramidal, pale inside, pellucid, smooth; spire orange, elevated, acuminated, whorls elongated, sides rather straight, aperture posteriorly attenuated, anteriorly a little expanded, orange near the margin.

PFEIFFER. MS.

Hab. Cape of Good Hope.

A transparent shell of a peculiarly pyramidal form.

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

Succinea scalaris. *Suc. testis elongati, pyramidati, opaci, albido-fulvi et rosei; spiris elevatis, anfractibus scalariformibus, fusco-roseis utribus; ultimo breviusculo ovato; aperturae breviusculi, labio rotundati; labio columellari leviter arcuato.*

THE LADDER Succinea. Shell elongated, pyramidal, opaque, whitish-brown and pinky; spire elevated, whorls scalariform, reddish-brown; the last rather short, ovate; aperture rather short, rounded anteriorly, columellar lip slightly arched.

PFEIFFER. MS. in Brit. Mus.

Hab. St. George's Sound.

Species 54. (Mus. Brit.)

Succinea rugosa. *Suc. testis ovati, oblongi, postice subexpansis, pallidissimis, dactylofusca limbo, costis striatis; spiris brevibus, anfractibus claudis, rotundatis, posticis, ultimis nunquam aperturam aequantibus.*

THE RUGOSE Succinea. Shell ovate, oblong, posteriorly rather attenuated, very pale, tinted with yellowish-brown; spire short, whorls somewhat rounded, prominent, the last large, ovate; aperture expanded in front.

PFEIFFER. Symbol. Helicozoum, p. 131.

Hab. ———

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

Succinea pino. *Suc. testis oblongi, ventricose, pallidissimi, subrosi, epidermide laevigata, unicolori-fusca rotati, infuscosi, costis integris, spiris brevibus, anfractibus obliquis, parvis, rotundatis, ultimo prop. subrotundo; aperturae magna, antice obliqui, expansi, labio costoso superius, dextro alio int. ros. rotati, epider. multiplicata.*

THE PIN Succinea. Shell oblong, ventricose, very oblique, pink, covered with a smooth, orange-brown epidermis, pink within, bordered with chestnut. Spire short, whorls oblique, few rounded, the last tumid near the suture; aperture large, obliquely expanded in front, outer lip bent downwards above, inner lip strongly reflected, with one plait.

PFEIFFER. — MS. Brit. Mus.

Hab. "Island Massa-formu."

Species 56. (Mus. Brit.)

Succinea olivacea. *Suc. testis ovato-pyramidati, pallidi rosei, fusco tincti et fasciatis concentricis.*

subterebi, semitranslucenti; spirâ elevatâ, pyramidatâ anfractibus declivibus, penultimo oblongo; apertura posticâ angustatâ, anticâ expansâ, lobio columellari leviter plicato, arcuato.

THE OBLIQUE SUCCINEA. Shell ovate-pyramidal, pale horny, tinted and banded with brown, concentrically striated, semitransparent; spire elevated, pyramidal, whorls sloped, the penultimate oblong; aperture narrow posteriorly, expanded anteriorly; columellar lip slightly plaited, arched.

SAY Jay's Catalogue of Shells, p. 58.

Hab. New Jersey, United States.

Species 57. (Mus. Cum. in Brit.)

SUCCINEA PAPILLATA. *Spic. ovato-oblongâ, attenuatâ, lorigatâ, liratâ, rubro-fuscâ vel stramineâ; spirâ elevatâ, apice papillariformi, anfractu penultimo attenuato; apertura obliquâ, angustâ, labio interno reflexo, uniplicato, arcuato, labio externo deflexo.*

THE PAPILLATED SUCCINEA. Shell ovate-oblong, attenuated, smooth, lirated, red-brown or straw-

coloured; spire elevated, apex tent-shaped, penultimate whorl attenuated; aperture oblique, large, inner lip reflected with a plait, arched, outer lip deflected.

PEIFFER. MS. Cuming's collection.

Hab. Tahiti.

Species 58. (Mus. Brit.)

SUCCINEA INFLATA. *Spic. testâ ovato-acuminatâ, ventricosi, striatâ, pallidâ fuscâ, subopacâ; spirâ elevatâ, acuminatâ; apertura ovatâ, intus flavidâ; labio columellari reflexo, crassiusculo, rectiusculo.*

THE INFLATED SUCCINEA. Shell ovate-acuminated, ventricose, striated, pale brown, subopaque; spire elevated, acuminated; aperture ovate, yellow within; columellar lip reflected, rather thick, rather straight.

L.L. Proceedings of the American Philosophical Society, vol. ii, p. 32

Hab. Georgia.



S U C C I N E A.

PLATE IX.

Species 59. (Mus. Brit.)

SUCCEINA AUSTRALIS. *Succ. testa subquadrata, striatissima, tenui, basi truncata, aperturâ spiræ pyramidalâ, angustibus, distinctis, aperturâ antice lata, postice annuata.*

THE AUSTRALIAN SUCCEINA. Shell quadrangular, straw-coloured, thin, not translucent; spiræ pyramidal, whorls two, rather rounded; aperture broad in front, annular in the posteriorly.

Quoy, Voyage de l'Astrolabe, vol. 4, p. 109, pl. 14, f. 18—23.

Hab. Van Diemen's Land.

Species 60. (Fig. 91, Mus. Brit.)

SUCCEINA EQUATORIALIS. *Succ. testa parva, subquadrata, levigatâ, ovato-fusca; spiræ brevissimæ, distinctæ, subultrâ, angustâ, distinctâ, aperturâ antice ovata, postice angustâ, ad marginem albâ.*

THE EQUATORIAL SUCCEINA. Shell small, smooth, being brown; spiræ short, whorls very small, rounded; aperture large, ovate, within, whitish at the margin.

Coq. —! MS. Mus. Brit.

Hab. New South Wales.

Found on what appears to be the bark of a tree in a marsh-growing tree.

Species 61. (Mus. Brit.)

SUCCEINA NEWCOMBI. *Succ. testa parvâ, subquadrata, subultrâ, ovata, levigatâ, ovato-fusca; spiræ brevissimæ, distinctæ, subultrâ, angustâ, distinctâ, aperturâ antice ovata, postice angustâ, ad marginem albâ.*

NEWCOMBI'S SUCCEINA. Shell quadrangular, rounded, rather thin, not translucent; spiræ very small, rounded, whorls two, rather rounded; aperture broad in front, annular in the posteriorly.

Proc. Zool. Soc. N. S. W. 1854, p. 297.

Hab. Sandwich Islands.

Species 62. (Fig. 92, Mus. Brit.)

SUCCEINA AUSTRALIS. *Succ. testa parva, subquadrata, levigatâ, ovato-fusca; spiræ brevissimæ, distinctæ, subultrâ, angustâ, distinctâ, aperturâ antice ovata, postice angustâ, ad marginem albâ.*

THE AUSTRALIAN SUCCEINA. Shell small, smooth, being brown; spiræ short, whorls very small, rounded; aperture large, ovate, within, whitish at the margin.

Coq. —! MS. Mus. Brit.

H. P. (P. 1854.)

This species is thin and transparent shell, and the spiræ very large in proportion to the shell, which makes it very small whorls.

Species 63. (Mus. Brit.)

SUCCEINA GORDONI. *Succ. testa ovato-oblongata, pallidâ, levigatâ, striâs irregularibus, subultrâ, angustâ, distinctâ, aperturâ antice ovata, postice angustâ, ad marginem albâ.*

GORDON'S SUCCEINA. Shell ovately-oblongated, pale straw, ornamented with irregular sub-ovate stripes, somewhat papery; spiræ elevated, whorls rounded; prominent; aperture short, ovate, yellowish, umbilical part thin, rather straight.

SUCCINEA.—PLATE IX.

PEFFERTI. — ? MS. in Cuv. coll.

Hab. Cuba.

The roundness of the whorls gives this shell something of a scalariform appearance.

fold strong; outer lip anteriorly somewhat expanded.

SAY, Contributions to Conchology (?).

Hab. Mexico.

Species 64. (Fig. *a, b*, Mus. Brit.)

SUCCINEA UNDULATA. *Shc. testâ ovata-subaeuminatâ, rugis subregularibus undulatâ, tenui, pallidè succinâ, anticâ rubescente; spirâ subpyramidalâ, anteaëtiâ parvis, aperturâ magna, ovatâ, plicâ columellari rotulâ; labio externo antice subzpresso.*
 THE UNDULATED SUCCINEA. Shell ovate-subaeuminated, undulated with rather regular wrinkles, thin, pale amber, reddish in front; spire subpyramidal, whorls few; aperture large, ovate, columellar

Species 65. (Mus. Brit.)

SUCCINEA LUTEOLA. *Shc. testâ pyramidalâ, pallidè stramineâ, striis longitudinalibus subcaeruleis ornatâ; spirâ productâ, subscalatâ, aperturâ subtrigoni, brevicaulâ, cicob lata.*

THE YELLOW SUCCINEA. Shell pyramidal, pale straw-coloured, ornamented with longitudinal bluish stripes; spire produced, somewhat ladder like; aperture subtriangular, rather short, bright yellow.

GOULD, MS. Brit. Mus.

Hab. — ?



66



67^a



67^b



68^a



68^b



68^c



69^a



70^a



70^b



71

S U C C I N E A.

PLATE X.

Species 66. (Mus. Brit.)

SUCCINEA CAXELLA. *Suc. testâ hirsutissimâ, rotundissimâ, semiglobosâ, tenui, hyalinâ, transactâ, albâ; spirâ brevi, anfractibus duobus, prominentibus, rotundis, ultimo magno; apertura lata, subovata.*

THE PINKISH SUCCINEA. Shell rather short, ventricose, semiglobose, thin, hyaline, translucent, white; spire short, whorls two, prominent, rounded, the last large; aperture broad, sub-ovate.

GOULD —? MS. Mus. Camb. in Brit.

Hab. —?

This glassy little shell is more bubble-shaped than most of the species.

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

SUCCINEA LUTESCENS. *Suc. testâ gracili, orbosacuminatâ, levigatâ, translucentâ, fasciis longitudinalibus apicis ornatâ, pallidè floridâ; spirâ subattenuatâ, anfractibus tribus, subcentricis; apertura longitudinali medioâ, anticè subexpansâ, pluri columellari rotundiusculâ.*

THE YELLOWISH SUCCINEA. Shell slender, ovate-acuminated, smooth translucent, ornamented with opaque longitudinal bands, pale yellowish; spire rather attenuated, whorls three, rather ventricose; aperture of medium length, rather expanded in front, columellar plait rather strong.

GOULD —? MS. Mus. Camb. in Brit.

Hab. Texas.

This shell is opaque and translucent in alternating bands.

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

SUCCINEA GEAMENSIS. *Suc. testâ pallidè aurantâ, leviter rugatâ, ovatâ, subacuminatâ; spirâ breviusculâ, anfractibus duobus, parvis, rotundis subrotundis; apertura ovatâ, intus subhirsutescenti, pluri columellari validâ, leviter arcuatâ. Foriat testâ rubro-jusci.*

THE GRAY SUCCINEA. Shell pale-orange, tightly wrinkled, ovate, subacuminated; spire rather short, whorls two, small, red, rather rounded; aperture ovate, rather iridescent within, columellar plait strong, slightly arched. The shell varies to red-brown.

PULFIELD. Proc. Zool. Soc., 1851, p. 110.

Hab. Guam.

Species 69. (Fig. a, b, Mus. Brit.)

SUCCINEA FRAGILIS. *Suc. testâ tenui, subovata, transactâ, epidermide corneo-suberenti indurâ, irregulariter longitudinaliter rugosâ; spirâ brevissimâ, anfractibus apicibus parvis, ultimo antice magno; apertura lata, obliquè expansâ.*

THE FRAGILE SUCCINEA. Shell thin, rather pinky, translucent, covered with a greenish horny epidermis, irregularly longitudinally rugose; spire very short, apical whorls small; last whorl large; aperture broad, obliquely expanded.

KING. Zool. Journ., vol. v. t. 343.

Hab. Sandwich Islands.

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

SUCCINEA SPURCA. *Suc. testâ parvâ, tenuissimâ, hyalinâ, ovatâ, oblongâ, albâ; epidermide tenui, sordidâ, irregulariter luteo in curvis spirales tres colligenti indurâ; spirâ brevi, anfractibus parvis, prominentibus; apertura subovata, longitudinali medioâ.*

THE SOILED SUCCINEA. Shell small, very thin, hyaline, ovate, oblong, whitish; covered with a thin, dirty-colored epidermis which frequently collects the mud into three spiral keels; spire short, whorls few, small, prominent; aperture subovate, of medium length.

GOULD. Boston Proc. Nat. Hist. Soc., vol. iii, p. 193.

Hab. Siberia.

November, 1872.

SUCCINEA.—PLATE X.

When the shell is cleared of its epidermis, and the mud that sticks to it, no trace can be seen of lines or indentations which would account for the three carinae or ridges into which the mud has been formed.

Species 71. (Mus. Brit.)

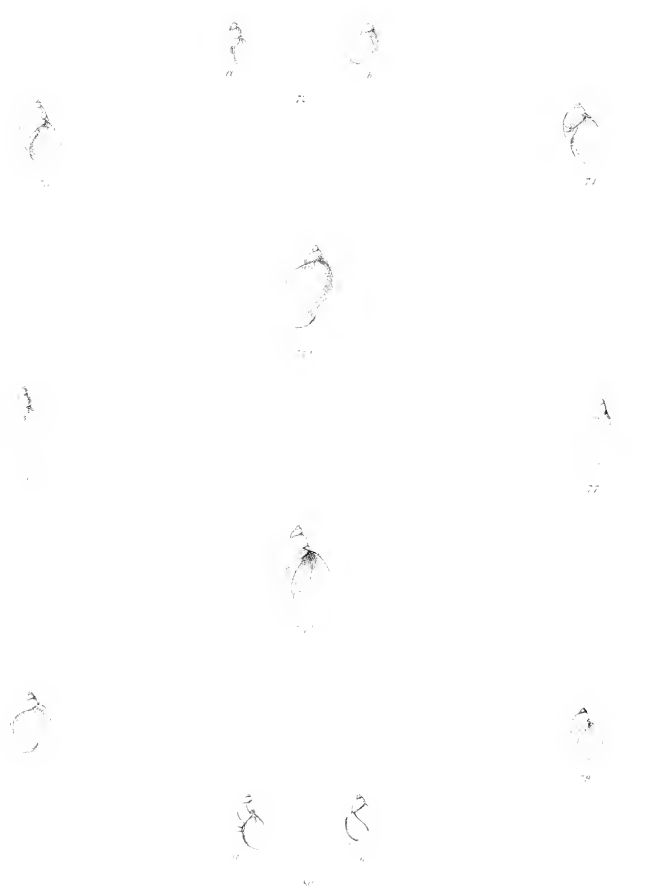
SUCCINEA CAMOCCA. *Succ. testis ovata, apicis, fusca-cornuta, longata, spiris laevi, acuminatis, anfractibus api-*

culibus duobus minutis, apertura ovata, iatus iridescenti; plicis columellari tenui, rectiusculis.

THE BRITTLE SUCCINEA. Shell ovate, opaque, horny-brown, with the two apical whorls minute; aperture ovate, iridescent within; columellar plate thin, rather straight.

MICHELS ———?

Hab. Sandwich Islands.



S U C C I N E A.

PLATE XI.

Species 72. (Fig. *a, b*, Mus. Brit.)

SUCCINEA MARGARITA. *Succ. testis parva, pil. d. brevioribus, subpallida, lacerata, subpallida, obtusis; spiris pyriformibus, acuminatis; apertura subtrigona; labio columellari ciliato.*

THE PEARL SUCCINEA. Shell small, pale reddish fawn-colour, reddish, sub-pallid, smooth, sub-pyramidal; spire pyramidal, acuminated; aperture sub-triangular; columellar lip rather straight.

PREFFER. Proc. Zool. Soc., 1854, p. 60.

Hab. —?

Species 73. (Mus. Cuming in Brit.)

SUCCINEA BEANIA. *Succ. testis sub-ovata, subpallida, fumoso-rosea, obliqua, tenui, spiris acuminatis, pyramidalibus; utero contracto, ant. erecto ventricoso; apertura magna, obliqua, postice acuminata, antice expansa.*

THE SPREAD SUCCINEA. Shell sub-pyramidal, semipallid, smoky-horn coloured, oblique, thin; spire acuminated, pyramidal; last whorl moderately ventricose; aperture large, oblique, posteriorly acuminated, anteriorly expanded.

PREFFER. Proc. Zool. Soc., 1854, p. 123.

Hab. Brazil.

Species 74. (Mus. Brit.)

SUCCINEA CHINENSIS. *Succ. testis pallida, obliqua, tenui, rugata, pilis brevibus, spiris minutis; apertura magna, obliqua, subventricosa; apertura magna, obliqua, acuta.*

THE CHINESE SUCCINEA. Shell pallid, obliquely ovate, slightly wrinkled, pale amber; apex minute; last whorl obliquely subventricose; aperture large, obliquely ovate.

PREFFER. Proc. Zool. Soc., 1857, p. 110.

Hab. Hong Kong.

Species 75. (Fig. *a, b*, Mus. Brit.)

SUCCINEA BELLEROSA. *Succ. testis obliqua, ovata, acuminata, lacerata, succinea-rubescens; spiris acuminatis, uterbo brevibus, distinctis, rotundis; utero contracto ventricoso, antice expansa; apertura magna, antice expansa; labio columellari distincto ciliato, arcuato.*

THE BELLEROSA SUCCINEA. Shell obliquely ovate, acuminated, smooth, reddish amber; spire acuminated, whorls few, distinct, rounded; last whorl ventricose, expanded below; aperture large, anteriorly expanded, columellar lip distinctly unipliicate, curved.

GOULD. —? MS.

Hab. Sandwich Islands.

Species 76. (Mus. Brit.)

SUCCINEA TAHITIENSIS. *Succ. testis rubescens, pyriformi fulva imbuta, gracili subovata, obliqua, leviter rugata; spiris elevatis, acuminatis; apertura obliqua subovata, pallida, rosea; labio columellari pilis elongatis arcuatis armato.*

THE TAHITI SUCCINEA. Shell reddish, covered with a yellowish epidermis, narrowly subovate, oblique, slightly wrinkled; spire elevated, acuminated; aperture obliquely sub-ovate, pale rose; columellar lip strengthened by an elongated arched plait.

PREFFER. Proc. Zool. Soc., 1846, p. 109.

Hab. Tahiti and Sandwich Islands.

Species 77. (Mus. Cuming in Brit.)

SUCCINEA GOULDIANA. *Succ. testis succinea, semipallida, pyriformi, gracili, postice attenuata; spiris elevatis, acuminatis; apertura pyramidalis, antice obliqua, arcuata.*

November, 1872.

GOULD'S SUCCINEA. Shell amber, semipellucid, pyramidal, slender, posteriorly attenuated; spire elevated, acuminated; aperture pyramidal, anteriorly obliquely expanded.

PEFFELER. —?

Hab. Tahiti.

This shell is of a rich golden amber colour, and resembles some varieties of our *Succinea patris*, but is much more slender and pyramidal.

Species 78. (Mus. Cuming in Brit.)

SUCCINEA ROTUNDATA. *Suc. testâ subglobosâ, subâlineatâ, rosâ, fusco longitudinaliter striptâ, brevitatâ; spirâ productâ, anfractibus tribus, rotundis, distinctis; anfractu ultimo ventricoso; apertura subrotundâ, plâcâ columellari parvâ.*

THE BOUNDED SUCCINEA. Shell subglobose, rather solid, pink, longitudinally striped with brown, smooth; spire produced, whorls three, round, distinct; last whorl ventricose; aperture a little rounded; columellar plait small.

SOWERBY.

Hab. Port Clarence.

This rather globose shell is named *Succinea strigata* in the Cumingian collection, but differs from that species in form.

Species 79. (Mus. Brit.)

SUCCINEA RUBICUNDA. *Suc. testâ ovatâ, obliquâ, tenui, levigatâ, fusco-rubescenti; spirâ cærtâ; anfractu apicali minuto; anfractu ultimo obliquè ventricoso; apertura magnâ, anticè expansâ; labio columellari tenui, rive plicato.*

THE RUBICUND SUCCINEA. Shell ovate, oblique, thin, smooth, reddish brown; spire produced; apical whorl minute; last whorl obliquely ventricose; aperture large, anteriorly expanded; columellar lip thin, with a scarcely developed plait.

PEFFELER. Proc. Zool. Soc., 1849, p. 134.

Hab. —?

A pretty little oval species, coloured claret brown.

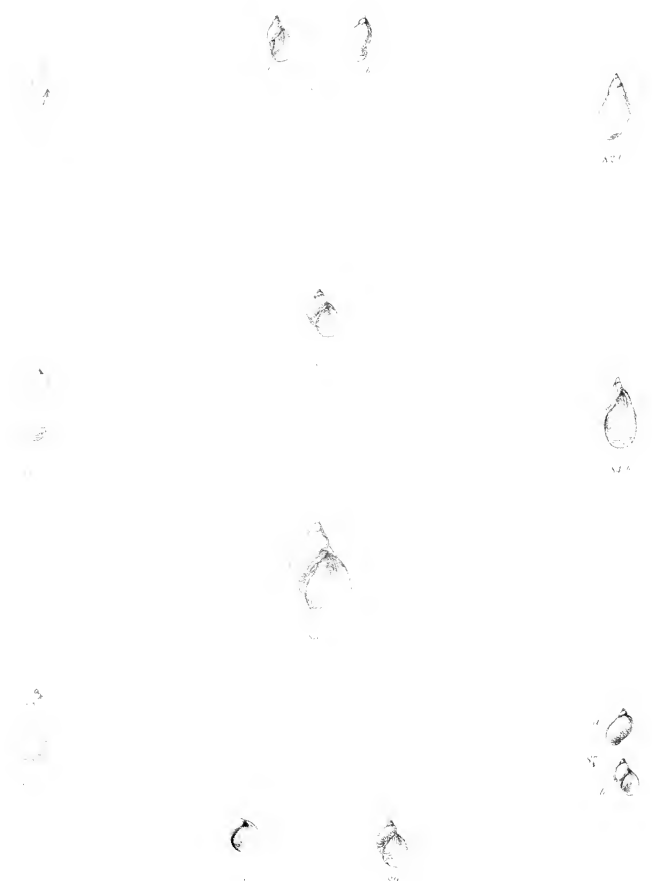
Species 80. (Fig. a, b, Mus. Brit.)

SUCCINEA GREENLANDICA. *Suc. testâ parvâ, obliquè pyramidatâ, stramineâ, lineis distantibus subcircularis strigatâ; spirâ elevatâ, acuminatâ, anfractibus duobus, subovatis, distinctis; apertura anticè obliquè productâ, labio columellari simplici, leviter arcuato.*

THE GREENLAND SUCCINEA. Shell small, obliquely pyramidal, straw-coloured, striped with distant greenish lines; spire elevated, acuminated, whorls two, rather oval, distinct; aperture anteriorly obliquely produced, columellar lip simple, slightly curved.

BEEK. —? MS.

Hab. Greenland.



S U C C I N E A.

PLATE XII.

Species 81. (Mus. Brit.)

SUCCINEA DOMINOSA. *See, testâ parvâ, limbo ciliato, sed, semipallidâ, elongato-ovato, spirâ brevissimâ, seminudâ; anfractu ultimo magno, antea aperturâ obliquâ, declivâ, antea productâ, rotundâ.*

THE ELD SUCCINEA. Shell small, snaky-forn, colored, semipallid, elongato-ovate, slender, spire non-nudated; last whorl large, ovate, aperture oblique, sloped downwards, anteriorly produced, rounded.

PELLEU. Proc. Zool. Soc., 1854, p. 297.

Hab. New Zealand, on rocks.

rose, limbo nigro, spirâ brevi ovatâ; plura columellâ ciliatâ, sed non nudâ.

THE ELD SUCCINEA. Shell ovately-roundish, pale horn-colored, thin, slender, spire subacuminated, wholly ventricose; last whorl ovately ventricose, slightly wrinkled; aperture ovate; columellar fold indistinct, slightly arched.

ADAMS AND ANGUS. Proc. Zool. Soc.

Hab. South Australia, on trees.

Species 82. (Fig. a, b, Mus. Brit.)

Species 82. (Fig. a, b, Mus. Brit.)

SUCCINEA INUNDICULIFORMIS. *See, testâ parvâ, lobâ, acuminatâ, extenso-ovato, nudâ, ciliatâ, posticâ attenuatâ; spirâ brevâ, nudâ, aperturâ obliquâ, declivâ, parvâ, anfractu ultimo magno, sub-ventricoso; aperturâ parvâ, labio columellâ multiplicato, ad medium projecto.*

THE FUNNEL-SHAPED SUCCINEA. Shell pyramidal, acuminated, arched backwards, rather colored, smooth, anteriorly attenuated; spire exerted, apex whorls two, small; last whorl rather ventricose anteriorly; aperture pyramidal, conical, arched with one plait, projected at the middle.

GOLDB. — ? MS.

Hab. Tahiti.

Very curiously depressed in the middle of the dorsal side, and correspondingly pressed forward in the front.

Species 83. (Mus. Brit.)

SUCCINEA AEROLIA. *See, testâ ovato-subacuminatâ, pallidâ, ciliatâ, translucida; spirâ subacuminatâ, nudâ, filibus ventricosis; ultimo anfractu ovato-centri-*

SUCCINEA PATENSISMA. *See, testâ oblongâ, compressâ, limbo ciliatâ, subcylindrico-ovato; spirâ minutâ, lobâ; anfractu ultimo magno, expanso, aperturâ oblongâ, labio columellâ, pallidâ, roseâ.*

THE WIDE OPEN SUCCINEA. Shell oblong, compressed, thin, horny, rather regularly wrinkled; spire minute, red; last whorl large, expanded, aperture oblong, widely expanded, pale rose.

MEXEL. Synopsis.

Hab. Capé Natal.

Species 85. (Mus. Brit.)

SUCCINEA VASCALIS. *See, testâ magis, subpyramidatâ, pallidâ, lobâ, limbo et irregulariter rugatâ; spirâ pyramidatâ, productâ, acuminatâ; ultimo anfractu magno, ventricoso; aperturâ pyramidatâ, ciliatâ, rotundâ.*

THE RUBBL SUCCINEA. Shell large, subpyramidal, pale fawn, finely and irregularly wrinkled; spire pyramidal, produced, acuminated; last whorl large, ventricose; aperture pyramidal, anteriorly large, rounded.

GOLDB. — ? MS.

Hab. Sandwich Islands.

November, 1872.

Species 86. (Mus. Brit.)

SUCCINEA HUMEROSA. *Suc. testâ oblongo-subcompressâ, fulvo-rubescenti; spirâ parvâ, subrosâ; anfractu ultimo magno, oblongo, prope suturam paulo humeroso apertura magis, antice expansâ.*

THE SHOULDERED SUCCINEA. Shell oblong-subcompressed, reddish-fawn; spire small, a little rosy; last whorl large, oblong, a little shouldered near the suture; aperture large, expanded.

GOULD. — ? MS.

Hab. — ?

Species 87. (Fig. a, b, Mus. Brit.)

SUCCINEA PLANT. *Suc. testâ parvâ, subovatâ, subpellucidâ, fumoso-cornuâ; spirâ minutâ, unispirali; anfractu ultimo magno, obliquo; apertura obliquâ, subovatâ, labio columellari tenui, arcuato, rive plicato.*

PLANT'S SUCCINEA. Shell small, subovate, subpellucid, smoky-horn coloured; spire minute, unispiral; last whorl large, oblique; aperture oblique, subovate; columellar lip thin, scarcely arched, scarcely plicated.

PILIBEE. Proc. Zool. Soc., 1856, p. 326.

Hab. Natal.

Species 88. (Mus. Cuming in Brit.)

SUCCINEA SEMIGLOBOSA. *Suc. testâ parvâ, translucidâ, pallidâ subviridi, subglobosâ, levigatâ, apertâ, spirâ minutissimâ; apertura magis, rotundâ.*

THE SEMIGLOBOSE SUCCINEA. Shell small, translucent, pale greenish, subglobose, smooth, open, spire very small; aperture large, rounded.

PELLEE. Proc. Zool. Soc., 1846, p. 109.

Hab. Chili.

Species 89. (Mus. Brit.)

SUCCINEA CUVILLE. *Suc. testâ parvâ, ovati, tenuiter rugatâ, succinâ, translucidâ; spirâ productâ; anfractu ultimo ovato; apertura subdeclivi, ovatâ, labio columellari tenui, arcuato, indistincti unipli-cato.*

CUVILLE'S SUCCINEA. Shell small, ovate, finely wrinkled, amber, translucent; spire produced; last whorl ovate; aperture somewhat sloped, ovate; columellar lip thin, arched, with an indistinct plate.

GUILDING. Zool. Journ., vol. ii, pl. 17

Hab. Isl. St. Vincent.

S U C C I N E A.

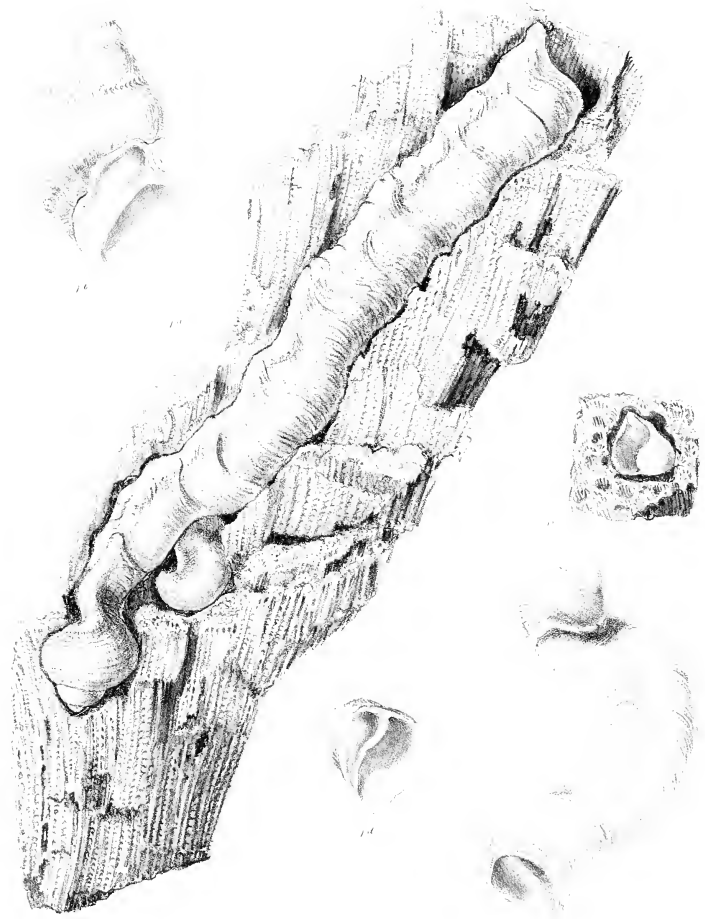
	PLATE.	FIGURE.		PLATE.	SPECIES.
acuminata, <i>Blaugford</i>	II.	13	Haydeni, <i>Binney</i>	VII.	17
amphibia, <i>Nilson</i>	II.	19	limbosa, <i>Gould</i>	XII.	86
approximata, <i>Shuttleworth</i>	IV.	27	lyalina, <i>Shuttleworth</i>	IX.	62
arborosa, <i>Adams & Angus</i>	XII.	83	ludica, <i>Pfeiffer</i>	I.	2
Australis, <i>Quoy</i>	IX.	59	imlata, <i>Lea</i>	VIII.	58
avara, <i>Pfeiffer</i>	III.	22	irregulariformis, <i>Gould</i>	XII.	82
Baconi, <i>Pfeiffer</i>	I.	6	californica, <i>Bennet</i>	II.	10
Barbadensis, <i>Goulding</i>	VII.	45	lanta, <i>Gould</i>	IV.	28
Bensoni, <i>Pfeiffer</i>	I.	7	Putrii, <i>C. B. Adams</i>	V.	33
Breanore, <i>Stentz</i>	II.	19	lycoida, <i>Gould</i>	IX.	65
bulvina, <i>Zeigler</i>	II.	10	rossicus, <i>Gould</i>	X.	67
caenea, <i>Mighels</i>	X.	71	Margarita, <i>Pfeiffer</i>	VI.	39
calycina, <i>Menke</i>	IV.	26	Repeated by error	XI.	72
calycina, <i>Menke</i>	II.	10	Magnifica, <i>Gould</i>	VI.	38
campestris, <i>Say</i>	II.	8	minutillata, <i>Benson</i>	V.	34
canella, <i>Gould</i>	X.	65	Novaesubi, <i>Pfeiffer</i>	IX.	61
Chionensis, <i>Pfeiffer</i>	XI.	74	Northoni, <i>Cox</i>	VII.	49
cingulata, <i>Forbes</i>	VII.	44	obliqua, <i>Say</i>	VIII.	56
collina, <i>Blanford</i>	I.	1	oblonga, <i>Desponsand</i>	III.	23
crassiuscula, <i>Benson</i>	I.	4	ovalis, <i>Say</i>	III.	18
crocata, <i>Gould</i>	VI.	42	patula, <i>Pfeiffer</i>	VII.	51
Cuningii, <i>Pfeiffer</i>	V.	36	parvillata, <i>Pfeiffer</i>	VIII.	57
Curvieri, <i>Goulding</i>	XII.	89	patentissima, <i>Menke</i>	XII.	81
dauca, <i>Pfeiffer</i>	III.	19	patula, <i>Bonpietre</i>	III.	21
Delalandii, <i>Pfeiffer</i>	VIII.	52	<i>Pfeifferi</i> , <i>Rossmeler</i>	II.	19
Dominicensis, <i>Pfeiffer</i>	VII.	45	pieta, <i>A. Adams</i>	II.	12
Donati, <i>Pfeiffer</i>	IV.	30	pinguis, <i>Pfeiffer</i>	VIII.	55
elegans, <i>Risso</i>	I.	3	Planai, <i>Pfeiffer</i>	XII.	87
Eucalypti, <i>Cox</i>	IX.	69	pleurostoma, <i>MS.</i>	VII.	48
epimaculata, <i>F. Oshigen</i>	V.	32	pluvata, <i>Blanford</i>	II.	11
Fernandi, <i>MS.</i>	V.	37	pudorina, <i>Gould</i>	XI.	75
fragilis, <i>King</i>	X.	69	pudorina,	VI.	43
Germarici, <i>Thobald</i>	I.	5	punctata, <i>Pfeiffer</i>	IV.	29
Goulliana, <i>Pfeiffer</i>	XI.	77	pusilla, <i>Pfeiffer</i>	V.	35
gracilis, <i>Abder</i>	III.	16	patris, <i>Linnaeus</i>	II.	19
Gruenlanthen, <i>Beck</i>	XI.	89	repanda, <i>Pfeiffer</i>	XI.	73
Gruenenis, <i>Pfeiffer</i>	X.	68	rotundata, <i>Saunders</i>	XI.	78
Gundlachii, <i>Pfeiffer</i>	IX.	63	rubicens, <i>DeSoyes</i>	IV.	25

SUCCINEA.

	Plate	Species.		Plate.	Species
rubicunda, <i>Pfeiffer</i>	XI.	79	sparsa, <i>Gould</i>	X.	70
rugosa, <i>Pfeiffer</i>	VIII.	54	strigata, <i>Pfeiffer</i>	II.	15
rutilans, <i>Blanford</i>	II.	14	subgranosa, <i>Pfeiffer</i>	IV.	24
Salsmana, <i>Pfeiffer</i>	VI.	40	Talietensis, <i>Pfeiffer</i>	XI.	76
Sanctæ Helene, <i>Lesson</i>	VI.	41	tomentosa, <i>Pfeiffer</i>	XII.	81
Sagra, <i>D'Orbigny</i>	VII	50	Totteniana, <i>Lea</i>	III.	17
scalarina, <i>Pfeiffer</i>	VIII.	53	undulata, <i>Say</i>	IX.	64
semiglobosa, <i>Pfeiffer</i>	XII.	88	veneta, <i>Say</i>	III.	22
semiserica, <i>Gould</i>	II.	9	vesicalis, <i>Gould</i>	XII.	85
solidula, <i>Pfeiffer</i>	V.	31	vitrea, <i>Pfeiffer</i>	III.	20

MONOGRAPH
OF THE GENUS
MAGILUS.

By
H. B. SWIFT.



MAGILUS.

PLATE I.

Genus MAGILUS, *Moutford*.

Mollusca gastro-podata maritima, nucleoporicidum.
Testa atate juniori heliciformis, tenuis, paucispinata,
pleraque certis stris nodulosis squamosis rugata,
alba; spira obtusa, apertura ovata seu pyriformi,
canali antico distincto; atate seniori in spiraibus
plurimis margini aperturae in tubum elongatum,
irregularem, lacerosam, ectuso.

Operculum cornuum chaptalia, nucleo latente.

Mollusc gastro-podous, marine, inhabiting madrepores. Shell, in a young state, thin, few-whorled, generally roughened externally with wavy, squamous striae, white; spire obtuse, aperture ovate or pyriform, anterior canal distinct; in an adult state, in several species, the margin of the aperture extended into an elongated, irregular, thickened tube.

Synonyma, CAMPILATUS, Guettard; pars LEPTOCCHILUS, Rappell.

The habits of this genus of mollusca are very curious. The young fry, after a short period of free locomotion, seems to find its way into some hole in a growing madre-pore, and then to become stationary; but as the substance grows round it, it would soon become enclosed unless the growth of the shell kept pace with that of the madre-pore. In order, therefore, to keep its aperture close to the surface, the two lips are extended in the same direction in the form of an irregular tube. The magilus leaves its shell in the original cavity, and filling it up so that it becomes solid, occupies only that portion of the tube which is nearest to the opening. The walls of the tube are thickened, and the portion which represents the canal is consolidated into a thick keel.

The species which have not been found as yet in an advanced state, and which appear generically to resemble the young shells of *Magilus antiquus*, have been separated by authors under the generic term *Leptocochilus*; and it is asserted that while the *magilus* possesses an operculum, the *Leptocochili* do not. It is also said that the young shell of the *Magilus* begins to

form a thickened and entire edge to its aperture, as if preparing for the future erratic course of its shell. It appears to me, however, that it depends upon the accidental conditions of habitat and growth whether and at what period of life the shell of a *Magilus* shall become tubular; and as for the operculum, it is certain that some, if not all, the species enumerated as *Leptocochili* by authors have been found with opercula;—notably, we have figured the genuine operculum of *Leptocochilus*, LAMARCKI, *Deshays*.

The Isle of Bourbon, the Mauritius, and the Sandwich Islands, perhaps most islands with reefs—afford homes to the *Magil*.

SPECIES 1. (Fig. a, b, c, d, e, Mus. Brit.)

MAGILUS ANTIQUS. *Mag. testis, atate juniori tenui,*
globosa, spirally striata, antice subconvexo-cus-
ata; longitudinaliter squamoso-striata, spira
pleraque brevissimè, canali brevi, lobio interno
laevigato, columella arcuata; lobio externo prope
canalem subconvexo; atate seniori solida, rugosa,
tubo latere externo squamoso-rufo, latere interno
laminis irregularibus laceroso.

THE ANTIQUE MAGILUS. Shell, in a young state, thin, globose, spirally striated, anteriorly with subseroid ribs, longitudinally squamosely striated, spire generally very short, canal short, inner lip smooth, columella arched; outer lip slightly contracted towards the canal; in the older state solid, rugose; tube squamosely-rugose on the outer side, thickened with laminae on the inner side.

LAMARCK. *Anim. sans vert.* vol. v.

Campylodus, Guettard.

Hab. Isle of Bourbon.

Our figure, *a*, represents an unusually lengthened specimen of *Magilus* in madre-pore. *b* is a specimen

MAGILUS.—PLATE I.

which maintained the spiral form for several wide whorls, probably in consequence of inhabiting a cavity in a coral that had ceased to grow. *c*, a very thin young shell *in situ*; *d*, a more advanced specimen, showing the commencement of the thickened and entire peritreme, which would probably have resulted in a tube. *e*, a second full-grown specimen, showing the aperture in front.



MAGILUS.

PLATE II.

Species 2. (Fig. *a, b, c*. Mus. Sowerby.)

MAGILUS CUMINGI. *Mag. testâ (atata juniore?) elongato-subglobosâ, minutissimè et regularitèr lamellosâ, spirâ breviusculâ, conicâ, obtusâ; anfractibus quatuorâs, ultimò maximò, anticè obtusò; aperturâ magnâ, perobliquâ; columellâ latâ, contortâ, costis latè reflectis, labiò ceterò tenui, obliquè producto, arcuato posticè.*

CUMING'S MAGILUS. Shell elongately-subglobose, very minutely and regularly laminated; spire rather short, conical, obtuse; whorls four, the last very large, obtuse in front, aperture large, very oblique; columella broad, twisted, externally broadly reflected, outer lip thin, obliquely produced and arched posteriorly.

DESHAYES. *Conchyliologie de l'île de la Réunion*, p. 125, pl. xii, fig. 26-27.

Hab. Isle of Bourbon (Réunion).

Although the spire of this species is somewhat conical, the body-whorl is very globose and the outer lip obliquely overlaps its surface to a great extent.

Species 3. (Mus. Lencop.)

MAGILUS MICROCEPHALUS. *Mag. testâ nucleo globuloso, minuto, solido, aperturâ diâniè subitè crescentè, in tubum irregularem rugosum tortuosum, ad canalè carinatum producto; latè ceterò rugoso-striato; latè interno laminatim calloso; aperturâ intèrâ, pyriformi.*

THE SMALL-HEADED MAGILUS. Shell with a globose, minute, solid nucleus; aperture thence suddenly enlarging, produced into an irregular, rugose, tortuous tube, keeled at the canal; the outer side rugosely striated; inner side laminately callous, aperture entire, pyriform.

SOWERBY.

Hab. ———?

The specimen figured in our plate is the second that has fallen into the hands of its present possessor. It is not named here as a new species without some hesitation, but the minute size of the spiral nucleus and the sudden enlargement of the tubular portion gives the shell so distinct an appearance that the character deserves registering, be it worth what it may.

Species 4. (Fig. *a, b*, Mus. Deshayes? Copied.)

MAGILUS CUVIERI. *Mag. testâ subglobosâ, brevi, in medio inflatâ, tenui, albâ, pellucidâ, ad apicem flaccante, anticè, obductè, striatâ, spirâ brevi, aperturâ, anfractibus quatuorâs, angustis, concavè-culis, lentè crescentibus, ultimò maximò, turbinato, anticè attenuato et acuminato, aperturâ amplâ, semi-ovatâ, anticè latè emarginatâ, columellâ angustâ, contortâ.*

CUVIER'S MAGILUS. Shell subglobose, short, inflated in the middle, thin, white, pellucid, yellowish at the apex, smooth, obsolete striated, spire short, with sharp apex; whorls four, narrow, rather convex, slowly increased, last very large, turbinate, anteriorly attenuated and acuminated, aperture wide, semi-ovate, anteriorly widely emarginated, columella narrow, twisted.

DESHAYES. *Comh. de la Réunion*, p. 128, pl. xiii, f. 6-7.

Hab. Isle of Bourbon (Réunion).

It is just possible this little glossy shell is but the young of *Magilus antipyrus*.

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

MAGILUS COSTATUS. *Mag. testâ nucleo globuloso spirâ-licè distantè costato, solido, diâniè in tubum subtri-gonum irregularem producto, latè ceterò costis*

MAGLUS.—PLATE II.

sipem ad octo validis, distantibus, laevato, lateri interno lamina latiss, callosis rugato. apice brevissimo; tubo infra obtuse carinato.

THE RIBBED MAGLUS. Shell with a subglobose, spirally distantly ribbed solid nucleus, then produced into a subtrigonal irregular tube, outer side fluted with seven to eight strong, distant ribs;

inner side roughened with broad callous layers; apex very short; tube obtusely carinated below.

SOVERBY.

Hab ———!

The strongly ribbed shell in the collection of the British Museum appears to be unique.



60



61



62



63



64



65



66



67

MAGILUS.

PLATE III.

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

MAGILUS STRIATUS. *Mag. testâ bulliformi, suborbimata, tenui, undulatum striatâ, intrâ subcontractâ, spirâ brevi; anfractibus duobus, obtusis, sutura obsolete; apertura magis, subpyriformi, labio interno rix reflexo, columella obliquâ, tortuosa, antice productâ; labio externo in medio amplius, antice propinquè emulsa subcontracto.*

THE STRIATED MAGILUS. Shell bull-shaped, suborbimate, thin, undulately striated, slightly contracted below, spire short; whorls two, obtuse, suture obsolete; aperture large, somewhat pyriform, inner lip scarcely reflected, columella oblique, tortuous, anteriorly produced; outer lip wide in the middle, anteriorly contracted near the canal.

RUFFELL (Leptæconchus). Trans. Zool. Soc. vol. i. p. 259, pl. 35, figs. 9, 10.

MAGILUS PERONII? LAMARCK.
Hab. Mauritius.

This shell is supposed to differ from the similarly shaped young of *Magilus antiquus* in the absence of a reflected inner lip. This may, however, result from the thickening of the lip being later in commencing. There is so much uncertainty respecting Lamarck's *Magilus Peronii*, that it is better to adopt the specific name given by the describer of the genus, *Leptæconchus*.

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

MAGILUS ELLIPTICUS. *Mag. testâ tenui, ovali, angustâ, squamose-striatâ; infra medium spirâter subcostatâ, spirâ calvâ; apertura magis arcuâ, medio latâ, antice obliquè acuminatâ; columella phœnoscâ, valvâ arenatâ; labio interno supra spiram declivè, propinquè emulsa leviter excavatâ, ad canalium acuminatâ.*

THE ELLIPTICAL MAGILUS. Shell thin, ovate, orbiform squamously striated; spirally slightly ribbed below the middle; spire concealed; aperture large, ovate, middle wide, anteriorly obliquely acuminated; columella rather flat, much arched; outer lip raised above the spire, slightly excavated near the canal, acuminated at the canal.

SOWERBY, Genera of Shells, No. 24.
Hab. Mauritius.

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

MAGILUS SUBRIVUS. *Mag. testâ ovato-subglobosa, tenui, spirâter costis leviter elevatis, rumpo-striatis ductâ; spira luvissimâ, obtusa, anfractus em.; apertura magis, antice serratâ; columella arcuatâ.*

THE SUBRIVATED MAGILUS. Shell ovately subglobose, thin, spirally circled by slightly elevated, rugosely striated ribs; spire very short, obtuse, with a single whorl; aperture large, with serrated margin; columella arched.

DISHAYES? MS. in Mus. Brit.
Hab. —?

The spiral rounded and serrated ribs of this species are represented in *Magilus striatus* by only very slight spiral impressed lines, with the striation slightly raised. In the present species the ribs are marked by ornamentations at the edge of the outer lip. Some specimens, however, of *Magilus antiquus* in a young state, show this character with equal force.

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

MAGILUS FIMBRIATUS. *Mag. testâ fimbriatè subovata, patulâ, depressâ, costis radiatis, et irregularibus costulis lamellis concentricis latè decussatâ; labiâ spirâ depressâ, ovata, anfractibus duobus.*

*mutatis: apertura subovata, labiis longè superi
spiram breviter, latè expansis, tenuiter fimbriatis;
canali angusto, obliquo.*

THE FIMBRIATE MAGILUS. Shell irregularly subovate, patulous, depressed, widely cancellated at the back with radiating ribs and raised, laminated, concentric edges; spire depressed, acute, whorls two, minute; aperture subovate, lips elevated far above the spire, widely expanded, finely fimbriated; canal narrow, oblique.

V. ADAMS. (Coralliobia.) Proc. Zool. Soc., 1852, p. 93.
Hab. Cagayan, Province of Misamis, Isl. Mindanao, Philippines.

This species was first described as a *Concholepas* in the Proceedings of the Zoological Society. In the Genera of Messrs. Adams, however, it is placed as a subgenus of *Leptconchus* under the name of *Coralliobia*. The appearance of the shell is that of a delicately sculptured *Concholepas*.

Species 10. (Fig. 10.)

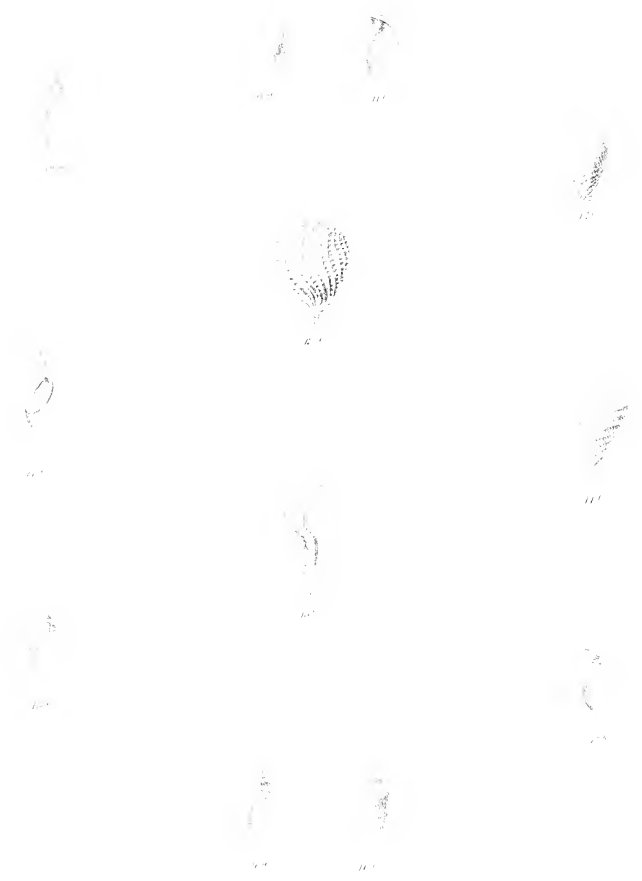
MAGILUS GLOBULOSUS. *Mag. testis, ovato-subglobosus, longitudinaliter striatus, tenui: spirâ conici, subacuminatus, anfractibus duobus, ultimo inflato, apertura subobliquâ, labio exteriori vel suturam obliquè super anfractum ultimum extenso, columellâ brevi, tortuâ.*

THE GLOBULAR MAGILUS. Shell ovately subglobose, longitudinally striated, thin; spire conical, subacuminated; whorls two, the last inflated; aperture suboblique; outer lip obliquely extended at the suture over the last whorl; columella short, tortuous.

DESHAYES. —? MS. Brit. Mus.

Hab. —?

In this species, as in *Magilus Cumingii*, the body whorl is large in proportion to the aperture, but *M. globulosus* is not at all attenuated at the base.



MAGILLUS.

PLATE IV.

Species 11. (Fig. *a, b*, Mus. Deshayes.)

MAGILLUS RUTELLI. *Mag. testa obtusè subpyriformi, tenui, fragili, spirâ brevi, callis vitreo indurâ; antea tribus tribus aut quatuor, angularis, ultima maxima antici attenuata, lamellis numerosis brevibus irregularibus tenuissimis asperata; apertura paulo obliquâ, elongatâ, quadrangulâri, basi effusâ; columella callusâ, attenuatâ.*

RUTELL'S MAGILLUS. Shell obtusely subpyriform, thin, fragile, spire short, covered with a vitreous callus; whorls three or four, angular, the last large, anteriorly attenuated, roughened with numerous short, irregular, very thin laminae; aperture a little oblique, elongated, quadrangular, effuse at the base; columella callous, attenuated.

DESHAYES. *Con. Isl. de la Réunion*, p. 126, pl. 11, f. 4-5.

Hab. Isl. Bourbon (Réunion).

Differing from the other species in its obtusely pyriform shape.

Species 12. (Fig. *a, b*, Mus. Brit.)

MAGILLUS SOLIMUSCULA. *Mag. testâ parvâ, angustâ, pyriformi, antici subattenuatâ, larvâ sculâ, solidâ, infra medium spirâculæ costatâ; spirâ brevi, obtusâ, subconicâ; apertura angustâ, antici obliquè subrostratâ, labio interno latè reflexo, columellâ planiusculâ, subrotundâ, attenuatâ; labio externo cressus canalicula subsinuato.*

THE SOLID MAGILLUS. Shell small, narrow, pyriform, anteriorly sub-attenuated, rather smooth, solid, spirally ribbed below the centre, spire short, obtuse, rather conical; aperture narrow, anteriorly obliquely subrostrated, inner lip widely reflected, columella rather flat, slightly twisted, attenuated; outer lip rather sinuous towards the canal.

PRASE —? MS. in Brit. Mus.

Hab. Sandwich Islands.

The narrow form, smooth surface, and comparative solidity of this species distinguish it from others.

Species 13. (Fig. *a, b*, Mus. Taylor.)

MAGILLUS ROHLIARDI. *Mag. testa solidâ, pyriformi, lamina concavâ concentricâ et costâ spirâculâ subsubstantibus cancellatâ; spirâ brevissimâ, lamina callusâ, reflexâ elatâ, apertura patulâ, angustâ, columellâ angustâ, subcomplanatâ, canali plus minusve in medium productâ; labio interno in-cusato, callusâ; labio externo supra spiram elatâ, antici prope canalicula contracto, inflexo.*

ROHLIARD'S MAGILLUS. Shell solid, pyriform, cancellated with elevated concentric laminae, and spiral rather distant ribs; spire very short, hidden by callous reflected laminae; aperture patulous, large, columella narrow, rather flattened, canal more or less produced into a beak; inner lip thickened, callous; outer lip raised above the spire, anteriorly contracted near the canal, inflected.

LEONARD. *Journ. de Conch.* xv, p. 305, pl. 1, f. 1.

Hab. Mauritius.

This species, although cancellated at the back, is quite distinct from *Magillus finchianus*.

Species 14. (Fig. *a, b*, Mus. Taylor.)

MAGILLUS LAMBUKIL. *Mag. testâ subelongatâ, pyriformi, tenuissculâ, longitudinaliter striatâ, spirâ conicâ, obtusâ, angustilobis tribus, suturâ elatâ; apertura brevissculâ, antici obliquè acuminatâ et productâ; columellâ arcuatâ, attenuatâ; operculo angustâ, subrostratâ.*

MAGILLUS.—PLATE IV.

LAMARCK'S MAGILLUS. Shell rather elongated, fusiform, rather thin, longitudinally striated; spire conical, obtuse, whorls three, suture concealed; aperture rather short, anteriorly obliquely acuminate and produced, columella arched, attenuated; operculum narrow, slightly arched.

DESHAYES (LEPTOCONCHUS). Conch. Isl. de la Réunion, p. 127, pl. xii. f. 1-3.

Hab. Isl. Bourbon (Réunion).

SPECIES 15. (Fig. a, b, Mus. Brit.)

MAGILLUS ROSTRATUS. *Mag. testâ parvâ, globosâ, solidiusculâ, longitudinaliter striatâ, spirâ brevissimâ, rotundâ, apertura antice breviter rostratâ; columellâ raris arcuatâ, tortuosâ, attenuatâ.*

THE BEAKED MAGILLUS. Shell small, globose, rather solid, longitudinally striated, spire very short, rounded, aperture shortly rostrated in front; columella strongly arched, tortuous, attenuated.

A. ADAMS (LEPTOCONCHUS). Ann. and Mag. Nat. Hist., 1864, vol. 13, 3rd series, p. 310.

Hab. — ?

A small bulb-shaped species, with a distinct small beak.

SPECIES 16. (Fig. a, b, Mus. Deshayes? Copied.)

MAGILLUS MAILLARDI. *Mag. testâ subcylindricoâ, spirâliter costatâ, longitudinaliter tenuiter striatâ, spirâ brevi, obtusâ, contabulatâ; anfractibus quaternis, brevibus, latè crescentibus, ultimo maximo, superne obtusè angulato, apertura valde obliquâ, subquadratâ; columellâ incrassatâ, valde contortâ, antice planâ.*

MAILLARD'S MAGILLUS. Shell subcylindrical, spirally ribbed, longitudinally finely striated, spire short, obtuse, contabulated; whorls four, short, slowly increasing; the last very large, obtusely angular above, aperture very oblique, subquadrate; columella thickened, much twisted, anteriorly flat.

DESHAYES (LEPTOCONCHUS). Conch. Isl. de la Réunion, p. 124.

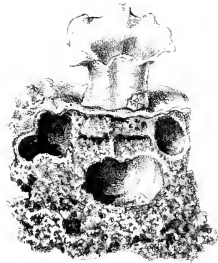
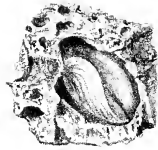
Hab. Isl. Bourbon (Réunion).

MAGILLUS.

	Vol.	Page		Plate	Species
nitidus, <i>De Montferri</i>	I.	1	microcephalus, <i>Sowerby</i>	II.	3
costatus, <i>A. Adams</i>	II.	5	Robillardi, <i>Loewel</i>	IV.	13
Cuningii, <i>Deshayes</i>	II.	2	rostratus, <i>A. Adams</i>	IV.	15
Cuvieri, <i>Deshayes</i>	II.	4	Rupellii, <i>Deshayes</i>	IV.	11
ellipticus, <i>Sowerby</i>	III.	7	seriatus, <i>Deshayes</i> (?)	III.	8
fimbriatus, <i>A. Adams</i>	III.	9	soliduscula, <i>Pearse</i>	IV.	12
globulosus, <i>Deshayes</i> (?)	III.	10	stratus, <i>Rupell</i>	III.	6
Lamarckii, <i>Deshayes</i>	IV.	14	<i>Percellii</i> , <i>Lamarck</i>	I.	1
Maillardi, <i>Deshayes</i>	IV.	16			

MONOGRAPH
OF THE GENUS
CLAVAGELLA.

By
SILVIA S. HAYES, Ph.D., of the Smithsonian Institution. *Revised.*



CLAVAGELLA.

PLATE I.

Genus CLAVAGELLA, *Lamarck*

Testa bivalvis, sacro madreporasque perforans, ostiū bulbiformis, posticū in tubum attenuatū. Tubus autē valvas in spinis tubuliformibus terminans. Valva edentata, intus marginatā, ad marginem edentulum hians; sinistra libera, dextra in tubum affixa.

Shell bivalve, perforating rocks and madre-pores, anteriorly bulb-shaped, posteriorly attenuated into a tube. Tube terminating in front of the valves in tube-formed spines. Valves edentulous, pearly within, gaping at the ventral margin; left free; right fixed in the tube.

In the fossil form, when the tube and valves are detached from the stone in which the mollusk burrowed when living, the Clavagella appears not unlike a rather bulb-shaped *aspergillum*: the small spinous tubes, with which the large tube terminates, not, however, forming as in that genus the margin of a perforated disk. But when the shell is seen *in situ*, in a recent state, it is observed that the valves are not rudimentary points forming part of the tube, as in *aspergillum*, but are much more advanced and expanded, one only being fixed to the tube and forming part of it, while the other is free and moves on its hinge. Thus our present genus is exactly intermediate between *FISTULA*, having both valves quite free within the tube, and *ASPERGILLUM*, having both valves soldered into the tube.

Mr. G. B. Sowerby appears to have been the first to discover the existence of the genus in a recent state. Having obtained permission to scrape away the matrix from what was supposed to be a burrowing *ASPERGILLUM*, in the British Museum, he ascertained its true nature, and published a figure and description of the first known recent species under the name of *CLAVAGELLA APERTA*.

The eight or nine species now known are found in the Mediterranean, Australia, and the Pacific.

Species 1. (Fig. a, b, c, Mus. Brit.)

CLAVAGELLA BALANORUM. Cl. testā parvā, cavāri ovatā, valvā sinistra irregulariter rugatā, subtriangulā, apicē angulatā, acuminatā; tubo breviusculo, compresso, lreū.

THE BALANUS *CLAVAGELLA*. Shell small, chamber ovate, left valve rather trigonal, irregularly wrinkled, with unangulated acuminate apex; tube rather short, compressed, smooth.

SACCHI, Philippi Enum. Moll. Sic., tom. ii. p. 1, tab. xiii. p. 2, a, b, c.

Hab. Mount Pausilypus. Mediterranean. In groups of Balani.

The specimen in the British Museum which we have figured, has been named as above by the authority of *Deshayes*.

Species 2. (Fig. a, b, c, Mus. Brit.)

CLAVAGELLA APERTA. Cl. testā in cavāci latē decumbentē; valvā sinistra triangulā, irregulariter rugatā, apicē vix acuminatā; tubo lato, margine latē reflexo et expanso, irregulariter lat. lmpato, tubulum duplato.

THE OPEN *CLAVAGELLA*. Shell lying in a broad chamber; left valve trigonal, irregularly wrinkled, apex scarcely acuminate; tube broad, margin widely reflected and expanded; irregularly broadly fluted; sometimes double.

SOWERBY, G. B., Genera of Recent and Fossil Shells, No. 13.

Hab. Mediterranean.

The margin of the tube is broadly expanded and rather trumpet-shaped.

Species 3. (Mus. Brit.)

CLAVAGELLA PHILIPPANA. Cl. testā elongatā; valvā sinistra triangulā, arcuatā, costis rugatā; tubo elongato, ad latera subconstructo, ad terminum vix

CLAVAGELLA—PLATE I.

reflexo, ant. terminum interdum lamina subreflexi marginati.

PHILIPPI'S CLAVAGELLA. Shell elongated, left valve trigonal, curved, wrinkled outside, tube elongated, slightly contracted, very little reflected at the margin, sometimes before the end bordered with a reflected lamina.

DESCHAYES? MS. in Brit. Mus.

Clavagella Mditensis, var. *rotunda*, Philippi, non Brod.
Hab. Mediterranean.

The tube is very little reflected at the margin, and it is compressed at the sides, so as to form an oblong and somewhat clavate section.



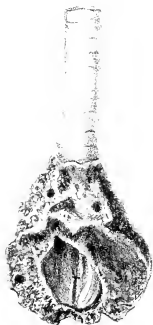
17



18



19



20



21



22



23



24

CLAVAGELLA.

PLATE II.

Species I. (Fig. *a, b, c, d*, Mus. Brit., no. 1.)

CLAVAGELLA AUSTRALIS. *Clav. clavata, valvæ sinistrae tenui, rugosæ, oblongæ, undulatâ margi, tubo elongato, rotundo, lrispato, margini recto, lat. d. expanso.*

THE AUSTRALIAN CLAVAGELLA. Shell clavate, left valve thin, rough, oblong, modica-shaped; tube elongated, rounded, smooth, margin straight, not expanded.

SOWERBY (G. B. 1). Catalogue of Stutchburg's shells. *Hab.*, Australia and other parts of the Pacific.

The tube is rounded, with a straight edge, and the valves are oblong.

Species 2. (Fig. *a, c, d* (copied), fig. *b*, Mus. Brit.)

CLAVAGELLA MALTENSIS. *Clav. testâ antice concentricâ; valvâ sinistra subquadrata, concentricè rugis subangulatis regularibus undulatâ; tubo longitudinaliter costato, ad terminum imbricato.*

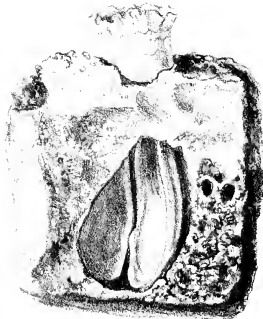
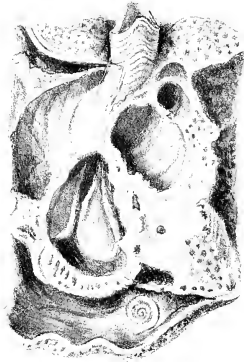
THE MALTISE CLAVAGELLA. Shell anteriorly ventricose; left valve subquadrate, concentrically undulated with somewhat angulated wrinkles; tube longitudinally ribbed, indented at the end.

BRODIEP. Trans. Linn. Soc., vol. i.

Hab., Malta.

In our figure may be seen the position of the small tubes which perforate the rock between the valves at the anterior end of the bulb-shaped tube. Their purpose seems to be to admit the free entrance of the water to the mollusk.

December, 1872.



CLAVAGELLA.

PLATE III.

Species 6. (Mus. Brit.)

CLAVAGELLA LATA. *Clav. test. rotundissimae, valvâ sinistra latissima, subtriangul., et hinc ut in *Clav. concentricis rugosis, intus nitenti; tubo erecto.**

THE BROAD CLAVAGELLA. Shell very ventricose, left valve very broad, subtriangular, rather convex, externally concentrically rugose, shining within, tube not known?

BRODERIP, Trans. Zool. Soc., vol. 1.
Hab. Pacific.

Species 7. (Fig. a, b, c, Mus. olim Scott. Capul.)

CLAVAGELLA ELONGATA. *Clav. testâ ovato, subpyriformi; valvâ sinistra elongatâ, subtriangul., et hinc concentricè rugosâ, intus nitenti, apice unguiculatâ, productâ, acuminatâ; tubo elongatâ, concentricè sinuâtim rugosâ.*

THE ELONGATED CLAVAGELLA. Shell anteriorly subpyriform; left valve elongated, subtriangular, concentrically very much wrinkled outside, shining inside, apex unguiculated, produced, acuminate; tube elongated, concentrically sinuously wrinkled.

BRODERIP, Trans. Zool. Soc., vol. 1.
Hab. Pacific?

Species 8. (Fig. a, b, c, Mus. Sowerby.)

CLAVAGELLA LAEVIGATA. *Clav. testâ rotundissimâ, valvâ sinistra latissima, subtriangul., subconvexâ, concentricè rugosâ; tubo lato, subobtusâ, prope terminatâ, sinuâtim laevi; tubo elongatâ, et concentricè sublaevi.*

THE FLATTED CLAVAGELLA. Shell ventricose; left valve very wide, subtriangular, rather convex, concentrically wrinkled; tube broad, rounded, near the end longitudinally slightly wrinkled, at the end rather reflected, closely furled.

SOWERBY.
Hab. Mediterranean?

The free valve of this species is so broad and convex, basates being so regularly wrinkled, that it was at first supposed to belong to Mr. Broderip's *Clavagella lata*, but as that shell is imbedded in a different kind of rock, and its tube is undescribed, it will be better to treat the present as new. It differs from *Clavagella aperta* in the much less open and reflected and more closely furled character of its tube, as well as in the totally different character of its free valve.

MONOGRAPH

OF THE GENUS

LIMNÆA.

Monograph of the genus *Limnæa*,
with a description of the new species.



1



2



3



4



5



6



7



8



9



10

LIMNÆA.

PLATE I.

Genus LIMNÆA, *Linnaeus*.

Testa dextrorsum spiralis, testacea-cornua, ovata, vel pyriformata, epidermide tenui involuta; spiræ acuminatæ; anfractus plerumque turriti, labio externo aperturæ super anfractum ultimam angustæ, et perisplerumque multiplicati. Operculum nullum.

Shell dextrally spiral, horny-testaceous, ovate or pyriform, covered with a thin epidermis; spire acuminate, whorls generally turrited, inner lip of the aperture narrowly spread on the body-whorl, generally with a single plait. No operculum.

The *Limnææ* are to be found in every part of the world where there are small streams of running water, or stagnant pools, or inland lakes. Not only the genus but the species have a very wide range, our British species being mostly found in all parts of the Continent. The characters of some American species so nearly resemble the European forms as to be almost indistinguishable. Australian forms have an inflated character almost peculiar to them; and among the Indian species are some conical and some boat-shaped forms, also strikingly differing from our plain horny species in presenting some varieties in colouring. The species separated under the name of *ARCHIPELAGÆA*, *Nelson*, are characterized by a greater degree of polish on the shell, caused by a lobe of the mantle covering part of it. Our British *L. glutinosa* presents an example of this, and the shell itself is nearly involute, having scarcely any spire.

Species 1. (Mus. Brit., and fig. *b*, pl. II.)

LIMNÆA AURICULARIA. *Lim. testâ brevi, patuli, pallidi, covaci; spirâ brevissimâ, anfractus tribus, parvis; ultimo anfractu inflato, brevissimulo; aperturâ marginâ, labio externo latè expanso; placi columellari validi, elevati, tortivi.*

THE AURICULAR LIMNÆA. Shell broad patulate, pale horn; spire very short, whorls three, small; last

whorl collated, rather short; aperture very large; outer lip broadly expanded; columellar fold strong, elevated, tortuous.

DEMPSEYALD, Mollusques de France, pl. 2, f. 28.

Limnæa auricularia, *Linnaeus*.

Hab. Britain and other parts of Europe.

Species 2. (Mus. Brit.)

LIMNÆA GLAUCÆ. *Lim. testâ subcylindricâ, angustâ, elongatâ, pallidi fulvi; spirâ elevatâ, aperturam longitudo multo superanti; anfractus quinque, covaci, duobus medianis latissimis, duobus apicalibus minutis; ultimo anfractu ovali, super aperturam elevatâ; aperturâ oblongâ, anticâ latissimâ, placi columellari crassâ, retractâ.*

THE SHING. LIMNÆA. Shell subcylindrical, narrow, elongated, pale fulvous; spire elevated, much exceeding the aperture in length; whorls five, convex, the middle two rather broad, the apical two minute; last whorl oval, elevated above the aperture; aperture oblong, rather broad in front, columellar fold thick, rather straight.

MULLER, Schrot. Hüss., pl. 7, f. 15.

Hab. Great Britain.

The British *Limnæa otanopasta* and the American *L. elongata* may possibly be varieties of this.

Species 3. (Mus. Brit.)

LIMNÆA TRUNCATULA. *Lim. testâ brevi, solidissimâ, pallidi fusci, spirâ brevâ, aperturam longitudinem pauli superanti, anfractus quatuor, brevissimis, rotundis; ultimo anfractu breviter subcylindrico, aperturâ oblongo-subquadratâ, anticâ truncatâ, labio interno crassissimo, anticâ retractâ, placi columellari bond prominenti.*

THE TRUNCATED LIMNÆA. Shell short, rather solid, pale brown, spire conical, a little exceeding the aper-

ture in length; whorls four, rather short, rounded; last whorl shortly subcylindrical; aperture oblong-subquadrate, anteriorly subtruncated; inner lip rather thick, anteriorly rather straight, columellar fold not prominent.

MÜLLER. *Pfiffer*, Syst. Anon., pl. 4, f. 27.

Limnæa fossaria, Turton?

Limnæa minuta, Draparnaud?

Limnæa turrida, Sowerby?

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

LIMNÆA STAGNALIS. *Lim. testâ eleganter pyramidalâ, corneo-fibrâ; spirâ elevatâ, acuminatâ, attenuatâ, aperturam longitudine paulo superanti; anfractibus attenuatis, obliquis, posticè declivibus, medio leviter angulatis; ultimo anfractu inflato; aperturâ magnâ subquadratâ, labio externo ad medium sinuatim producto; labio interno subexpanso, plââ columellari prominenti, spirâliter tortuâ, recurvâ.*

THE STAGNANT LIMNÆA. Shell elegantly pyramidal, horny-fibrous; spire elevated, acuminated, attenuated, a little longer than the aperture; whorls attenuated, oblique, sloped posteriorly, slightly angular in the middle; last whorl inflated; aperture large, subquadrate, outer lip sinuously produced in the middle; inner lip somewhat expanded, columellar fold prominent, spirally tortuous, recurved.

LINNÆUS. *Systema Nature*.

Limnæa strigata, Parreys.

Limnæa bicolor? Mulhfields.

Hab. Great Britain, and Europe generally.

Species 5. (Mus. Brit.)

LIMNÆA PALUSTRIS. *Lim. testâ fumoso-cornâ, crassiusculâ, pyramidalâ; spirâ elevatâ, aperturam longitudine superanti; anfractibus aequaliter crescentibus, paulo convexis; ultimo anfractu spirâliter rugatis; aperturâ breviusculâ, anticè latiusculâ; plââ columellari conspicuâ, tortuâ, anticè subrecurvâ.*

THE MARSH LIMNÆA. Shell smoky-horn, rather thick, pyramidal; spire elevated, exceeding the aperture in length; whorls equally increasing, a little convex; last whorl spirally wrinkled; aperture rather short, anteriorly rather broad; columellar plait conspicuous, tortuous, anteriorly curved a little backwards.

DRAPARNAUD. *Mollusques de France*, pl. 2, f. 40-42.

Limnæa cornâ, Valenciennes?

Limnæa fragilis, Linn.?

Limnæa speciosa. —?

It is not known to which of several species the *L. fragilis* of Linneus belonged.

Species 6. (Mus. Brit.)

LIMNÆA UMBROSA. *Lim. testâ fumoso-cornâ, solidiusculâ, cylindrico-subpyramidalâ, spirâ elevatâ, nullâ aperturam longitudine superanti; anfractibus quinque, quarum tribus apicalibus parvis, acuminatis, penultimâ ultimâque elongatis, subcylindricis, ultimâ spirâliter rugatâ, suprâ aperturam elevatâ; aperturâ latâ, plââ columellari elevatâ, conspicuâ, tortuâ, retrorsim arcuatâ.*

THE SHADY LIMNÆA. Shell smoky-horn, rather solid, cylindrically subpyramidal, spire elevated, much longer than the aperture; whorls five, of which the three apical ones are small, acuminated, the penultimate and last long, subcylindrical, the last spirally wrinkled, raised above the aperture; aperture broad, columellar fold elevated, conspicuous, tortuous, arched backwards.

SAY. *American Conchology*, *Limnæa*, fig. 3.

Limnæa obscura, Ziegler.

Hab. N. America.

In this species, the two last whorls are elongated and full, giving a cylindrical appearance to the figure. *L. reflecta*, Say, is comparatively long and narrow, but with the whorls more equally increasing. *L. clodes* is more like our *L. palustris*, but more oblique, with the mouth and last whorl more oval.

Species 7. (Fig. a, b, c, Mus. Brit.)

LIMNÆA PERLEGA? *Lim. testâ subovatâ, cornâ, spirâ breviusculâ, acuminatâ, anfractibus tribus, plerumque castoreis; ultimo anfractu ovato; aperturâ magnâ, latâ, spiram longitudine superanti; plââ columellari elevatâ, rectiusculâ.*

THE WANDERING LIMNÆA. Shell subovate, horny, spire rather short, acuminated, whorls three, generally chestnut; last whorl ovate; aperture large, broad, exceeding the spire in length; columellar fold elevated, rather straight.

FERRUSSAC.

Limnæa lineata. —?

Limnæa glaciatis. —?

8
i
8 a



9 a



9 b



10



11 a



11 b



12



13 a



13 b

8.

LIMNÆA.

PLATE II.

Fig. b. A peculiar variety of *L. ovata concavata*;
v. b. Plate I.

Species 8. (Fig. a, b, Mus. Brit.)

LIMNÆA INVOLUTA. *Lim. testâ ovato-subcylindrica, involuta, conuco-rubescens, apertura oblonga, antice amplissima, labio externo postice supero spiræ elevato, columellâ uniplatâ; spirâ convexâ, angustibus subulatis.*

THE INVOLUTE LIMNÆA. Shell ovately-subcylindrical, involute reddish horn, aperture oblong, very full in front, outer lip elevated posteriorly above the spire, columella single-plated; spire convex, with the whorls nearly hidden.

HARVEY (*Amphipylea*) ?

Hab. Killarney, Ireland, &c.

This species is the type of a group of *Limnæa* which has been separated under the generic appellation *Amphipylea*, having hollow or partly hidden spires. The gradation through *L. glutinosa*, *L. Caucasica*, &c., to others with slightly raised spires is gradual.

Species 9. (Fig. a, b, Mus. Brit.)

LIMNÆA GLUTINOSA. *Lim. testâ subglobosa, b. sessimâ, post columellam subumbilicatâ; apertura maxime, columellâ uniplatâ, labiâ, acuta, labio interno tenuissimi septem; ultimo inflexa parca, spirâ subinvoluta, apice eie producta.*

THE GLUTINOUS LIMNÆA. Shell sub-globosa, very thin, subumbilicated behind the columella; aperture very large, columella single-plated, tortuous, arched, inner lip very thinly spread, last whorl small, spire nearly involute, with scarcely produced apex.

DRAPEASAND. *Mich. Compl. Drape.*, p. 38, Pl. 16, f. 13, 14.

Hab. Germany, Great Britain.

In the second species of *Amphipylea* the apex is a little raised.

Species 10. (Mus. Brit.)

LIMNÆA PYRAMIDA. *Lim. testâ elongata, limbo pallidi, acuta, postice attenuata, antice utrinque alba, dilata, angustâ, conca acutâ, triloculâ, uniplatâ, labio externo tenuissimi septem; apertura maxime; labio interno postice subinvoluto, medio paulo sinistram producta spirâ elongatâ, utrinque, angustibus tribus pyrâ umbilicâ.*

THE PYRAMIDAL LIMNÆA. Shell elongated, thin, pale, ovate, posteriorly attenuated, with the last whorl oblong narrow; columella thinly uniplated, inner lip very thinly expanded; aperture large; outer lip rather rounded posteriorly, a little sinusously produced in the middle; spire elongated, attenuated, with three pyramidal whorls.

THECILLI, — ?

Hab. River Gironde.

Not unlike *Limnæa ethiops*, Gray, but less pyramidal, having the upper part of the last whorl much more full and rounded.

Species 11. (Mus. Brit.)

LIMNÆA MEGASTOMA. *Lim. testâ subovata, solidiuscula, longitudinaliter rugis brevibus hand profundis ligata, spirâ acutâ, subulata glabra indurâ, intus porcupora; labio interno antice uniplatâ, postice alba; subulata; antroca ultimo ventricosa; spirâ brevissimâ, angustibus porpâ saturata subumbilicâ.*

THE LARGE-MOUTHED LIMNÆA. Shell subovate, rather solid, ridged longitudinally with smooth, not deep wrinkles, covered with a rather yellow glabrous epidermis, purple within; inner lip with one anterior fold, posteriorly white, rather solid; last whorl ventricose; spire rather short, whorls rather angular near the suture.

SAY. *Haldemai's Journal*, Pl. 3, f. 1.

Limnæa columella. Say.

Hab. New York.

March, 1872.

Species 12. (Fig. *a, b*, Mus. Brit.)

LIMNÆA ANGASII. *Lim. testâ subglobosâ, fuscâ, tenuissimâ, strigis opacis albidis interruptis ornatâ; aperturâ amplissimâ, anticâ expansâ, labio externo superne producto; plicâ columellari tenui, spirali, arcuatâ; spirâ brevissimâ, acutâ.*

THE ANGAS LIMNÆA. Shell subglobose, brown, very thin, ornamented with opaque white interrupted stripes; aperture very wide, expanded in front, outer lip produced above; columellar fold thin, spiral, arched; spire very short, acute.

SOWERBY.

Hab. Port Darwin, Northern Australia.

This interesting species belongs to the *Amphipeplea* group. The surface presents a positive reddish-brown colour, variegated by opaque white interrupted stripes. In this respect the species differs from all the other known species.

Species 13. (Mus. Sowerby.)

LIMNÆA ACUTA. *Lim. testâ subpyriformi acuminatâ; subopacâ; anfractibus quatuor, quarum tribus spiralibus subventricosis, distinctis, lateralem rotundatis, ultimo expanso, obliquo; aperturâ ovatâ; labio interno angusto, plicâ columellari subobsoletâ, elevatâ, vic arcuatâ; opice acuminato.*

THE ACUTE LIMNÆA. Shell rather pyriform, acuminate rather opaque; whorls four, of which the three spiral are rather ventricose, distinct, laterally rounded; the last expanded, oblique; aperture ovate; inner lip narrow, columellar fold rather obsolete, raised, scarcely arched; apex acuminate.

JEFFREYS. British Mollusca.

Hab. Great Britain, and Europe generally.

Although having a larger and more produced spire than the normal form of *Limnæa pereyer*, it is possibly, as now thought by Mr. Jeffreys, only a variety of that species; yet sufficiently marked for notice.



15



14 a



16



17



11 b



18



19 a



11 c



19 b



17

L I M N Æ A.

PLATE III.

Species 14. (Fig. a, b, c. Mus. Brit.)

LIMNÆA RUFESCENS. *Lim. testâ elongato-pyramidalâ, tenui, pallidâ cornâ, vel rufescenti vel purpureascenti; spirâ attenuatâ, acuminatâ, anfractibus elongatis, pyramidalibus, ultimo oblongo, antice subexpanso; columellâ multiplicatâ, arcuatâ, labiis interioribus tenui, angustis.*

THE REDDISH LIMNÆA. Shell elongate-pyramidal, thin, pale horny or reddish or purplish; spire attenuated, acuminated, whorls elongated, pyramidal, the last oblong, anteriorly subexpanded; columella unipliicated, arched, inner lip thin, narrow.

GRAY. Recouv. Conch. Syst., pl. 194, f. 2.
Hab. India.

anfractu penultimo inflato, ultimo oblique expanso, post columellam convexo, aperturâ oblique subcavatâ, latâ, plievâ columellari elevatâ, solidâ, subrotundâ.

THE INDETERMINATE LIMNÆA. Shell subovate, ventricose, oblique, horny subopaque; spire rather short, penultimate whorl inflated, last whorl obliquely expanded, concave behind the columella, aperture obliquely subovate, broad, columellar fold elevated, solid, a little tortuous.

PERLESSIE. Mich. Compl. Descrip., pl. 16, pp. 17, 18.
Hab. France.

If this be a distinct species, it may be considered intermediate in form between *Limnæa pegeri* and *L. avicularia*.

Species 15. (Mus. Brit.)

LIMNÆA OVATA. *Lim. testâ ovatâ, ventricosâ, opacâ, cornâ, rectiusculâ; spirâ brevi, acutâ; anfractibus penultimo rotundo, ultimo minuto, post columellam convexo, aperturâ ovatâ, latâ, labiis interioribus solidis, angustis, plievâ, columellari crassiusculâ rectiusculâ.*

THE OVATE LIMNÆA. Shell ovate, ventricose, opaque, horny, rather straight; spire short, acute; penultimate whorl rounded, last whorl large, concave behind the columella, aperture ovate, broad, inner lip rather solid, narrow, columellar fold rather thick, rather straight.

DESCARNAIS. Moll., pl. 2, f. 30, 31.
Hab. Europe.

It must still be an open question whether such species as *Limnæa ovata*, *ovata*, *intermedia*, and *pegeri* should or should not be united under the latter name. The writer does not decide this question, but only attempts to show the characteristics of each.

Species 16. (Mus. Brit.)

LIMNÆA INTERMEDIATA. *Lim. testâ subovatâ, ventricosâ, obliquâ, cornâ, subopacâ; spirâ breviusculâ,*

Species 17. (Mus. Brit.)

Lim. testâ pyramidalâ, angustâ, opacâ, pallidâ lacteo-subopacâ; spirâ elongatâ pyramidalâ, anfractibus quatuor compressis, fuscis, rectiusculis; apice acuminato; aperturâ parvâ, latâ, rotundâ; plievâ columellari brevi, rectiusculâ.

THE BROWN LIMNÆA. Shell pyramidal, narrow, opaque, pale milky-purplish; spire elongate-pyramidal, with four compressed reddish-brown whorls, apex acuminated; aperture small, chestnut within; columellar fold short, rather straight.

PITHE. Land and Freslow., vol. ii, pl. 4, fig. 25.
Hab. Dalmatia.

Not unlike the British *L. pulstris*, but with straight-sided whorls, and dark chestnut colour in the mouth.

Species 18. (Mus. Brit.)

LIMNÆA PINGUIS. *Lim. testâ angustâ ovatâ, rectiusculâ, subalmonâ; spirâ breviusculâ, obtusiusculâ, anfractibus parvis, fuscis-subopacis; ultimo magno; aperturâ mestocâ, ovatâ, plievâ columellari subrotundâ.*

THE FAT LIMNÆA. Shell narrowly ovate, rather straight, of a slightly salmon colour; spire rather

short, rather obtuse, whorls small, reddish-brown, the last large, ovate; aperture middle-sized, ovate, columellar fold rather tortuous.

SAY. Journ. Acad. Sci. Phil., vol. ii. p. 123.

Limnæa desidirosa, Say?

Hab. N.W. Territory, United States.

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

LIMNÆA GRACILIS. *Lim. testâ angustissimâ, attenuatâ, pallidè corneo, spirâ elongatâ, aculeatâ, anfractibus quatuor, attenuatis, subpyramidalis, ultimo paulò expanso; aperturâ brevi, angustâ, labio externo suprâ deflecto, columellâ rectiusculâ.*

THE SLENDER LIMNÆA. Shell very narrow, attenuated, pale horn, spire long, aculeated, whorls four, attenuated, subpyramidal, the last a little expanded; aperture short, narrow, outer lip bent downwards above, columella rather straight.

SAY (Acella). Haldeman, Mon., pl. 13, f. 21.

Hab. Vermont.

This species is so singular in form that it has been

thought worth while to separate it generically under the name of ACCELLA.

Species 20. (Mus. Brit.)

LIMNÆA APRESSA. *Lim. testâ subpyriformi, opacâ, corneâ, gracili, spirâ elongatâ, pyramidalâ, attenuatâ, anfractibus lateraliter appressis, ultimo expanso, anticè subacuminato; aperturâ breviusculâ.*

THE APPRESSED LIMNÆA. Shell subpyriform, opaque, horny, slender, spire elongated, pyramidal, attenuated, whorls compressed at the sides, the last expanded, subacuminated anteriorly; aperture rather short.

SAY. Journ. Am. Nat. Sci. Phil., vol. ii. p. 168.

Hab. Vermont.

More slender than the European *L. stagnalis*, and having the whorls pressed together at the sides, without the angular form of that well-known species.



21a



24a



24b



27b

L I M N Æ A.

PLATE IV.

Species 21. (Fig. a, b, Mus. Cum. in Brit.)

LIMNÆA ACICULA. *Lim. testâ parvâ, cornuâ, lutescenti, longitudinaliter leviter livatâ, angustâ, acuminatâ, subpyramidalatâ; spirâ attenuatâ, anfractibus lateraliter appressis, ultimo antice subexpanso; apertura breviusculâ; labio interno angusto, plicâ columellari rectiusculâ.*

THE ACICULATE LIMNÆA. Shell small, horny, yellowish, longitudinally lightly ridged, narrow, acuminated, subpyramidal, spire attenuated, whorls pressed up at the sides, the last a little expanded in front; aperture rather short; inner lip narrow, columellar fold rather straight.

KOBIEL.

Hab. Styria.

A curiously attenuated little shell.

Species 22. (Mus. Brit.)

LIMNÆA HOBBOLLI. *Lim. testâ ovato-subacuminatâ, corneo-rubescenti; spirâ productâ, anfractibus quatuor, rotundis, ultimo ventricoso, post columellam convexo; apertura breviusculâ, intus succincedâ, plicâ columellari calidâ.*

HOBBOLLI'S LIMNÆA. Shell ovately subacuminated, reddish-horn; spire produced, whorls four, rounded, the last ventricose, concave behind the columellar fold. Aperture rather short, within amber coloured; columella fold solid.

BECK.

Hab. Greenland.

The mouth and spire are about equal in length.

Species 23. (Mus. Brit.)

LIMNÆA VAHLLI. *Lim. testâ oblongo-ovata, semipellucidâ, corneo-rubescenti, spirâ subacuminatâ, anfractibus quatuor, quarum tribus porris leviter rotundis, ultimo elongato, ovato; apertura subpyriformi, plicâ columellari tortâ, breviusculâ, subspirali.*

VAHL'S LIMNÆA. Shell oblong-ovate, semipellucid, reddish-horny; spire subacuminated, whorls four, of which three are small, slightly rounded, the last elongated, ovate; aperture subpyriform, columellar fold tortuous, rather short, subspirial.

BECK. Moll.

Hab. Greenland.

Resembling *Limnæa Hobbolli*, but more ovate, having the body-whorl longer in proportion to the spire.

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

LIMNÆA JUGULARIS. *Lim. testâ magna, pyriformi, pallidâ corneo, lineis albidis longitudinalibus interruptis irregularibus strigatâ; spirâ elevata, subattenuatâ, acuminatâ, anfractibus tribus elongatis, vicâ medio inflatis, ultimo maximo, subovato, antice expanso, subtruncato; apertura subpyriformi, antice valde expansâ; labio interno subexpanso, plicâ columellari subspirali, elongatâ.*

THE JUGULAR LIMNÆA. Shell large, pyriform, pale horn striped with longitudinal interrupted irregular whitish lines. Spire elevated, subattenuated, acuminated, with three elongated whorls very little swollen in the middle; the last very large, subovate, expanded and subtruncated in front; aperture much expanded in front; inner lip a little expanded, columellar fold subspirial, elongated.

SAY. Haldeman's Mon., pl. 4.

Hab. New York.

This species resembles our *Limnæa stagnalis*, but differs in proportions, and the whorls are neither so suddenly expanded nor so angular as in that species.

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

LIMNÆA SWINHOLEI. *Lim. testâ ovata, fragili, irregulariter striatâ, pallidâ cornuâ; spirâ acuminatâ, anfractibus quatuor, convexiusculâ; apertura ovato-oblongâ; labio interno longitudinalibus aequante; columellâ valde sinuati; labro glaucoso, in medio subsinuato.*

March, 1872.

SWINDEE'S LIMNÆA. Shell ovate, fragile, irregularly striated, pale horn; spire acuminated, whorls four, rather convex; aperture ovate-oblong, equalling two-thirds of the entire length; columella much twisted; outer lip flexuous, slightly sinuated in the middle.

H. ADAMS. Proc. Zool. Soc., 1866, pl. xxxiii., f. 13.

Hab. Takou, Isl. Formosa.

Species 26. (Mus. Brit.)

LIMNÆA SUCCINEA. *Lim. testâ ovato-acuminatâ, tenuisimâ, pallidè cornèâ, translucidâ, spirâ breviusculâ, anfractibus concavissculis duobus apicalibus parvis, penultimo sublongato, ultimo ovato; aperturâ subovatâ, labio externo ad marginem fuscato, plicâ columellari tenui, leviter tortuosâ.*

THE AMBER LIMNÆA. Shell ovately acuminated, very thin, pale horn, translucent, spire rather short; whorls rather convex, the two apical ones small, the penultimate rather elongated, the last large. ovate; aperture subovate, outer lip brown at the margin, columellar fold thin, slightly tortuous.

DESHAYES. Voy. Belanger, Pl. ii., f. 13, 14.

Hab. Malabar.

It is of an oval form a little sharpened at the apex, and very light and transparent.

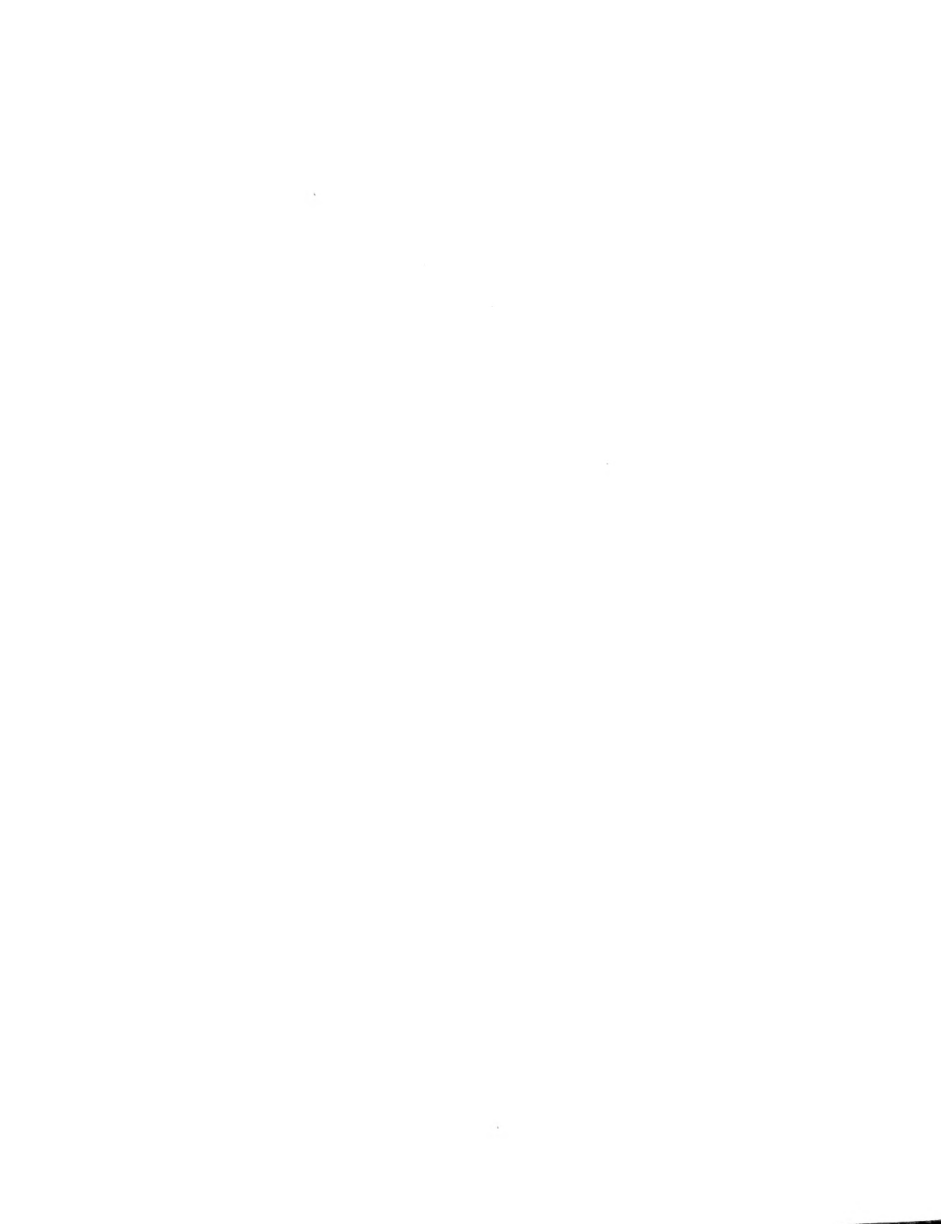
Species 27. (Mus. Brit.)

LIMNÆA GEISERICOLA. *Lim. testâ parvâ, obliquè subovatâ, ferruginâ, opacâ, spirâ brevi, anfractibus duobus apicalibus parvis, rotundis, penultimo majusculo, ultimo inflato, anticè tumidusculo; post columellam concavo, aperturâ obliquâ pyriformi, anticè obliquè expanso.*

THE HOT-SPRING LIMNÆA. Shell small, obliquely subovate, ferruginous, opaque, spire short, with two apical whorls, small, rounded, the penultimate rather large, the last inflated, rather tumid in front, concave behind the columella; aperture oblique, pyriform, obliquely expanded in front.

BECK.

Hab. The Geysers or hot-springs of Iceland.





29



28a



30



32



32a



33



32b



31a



38b



31b

L I M N Æ A.

PLATE V.

Species 28. (Fig. a, b, Mus. Brit.)

LIMNÆA SANDWICHENSIS. *Lim. testâ parvâ, pyramidatâ, ferruginâ, aperturâ anticâ subsuspensâ; anfractu penultimo majusculo, apicâ obtusiusculâ, labio interno valido, suprâ medium uniplicato.*

THE SANDWICH ISLAND LIMNÆA. Shell small, pyramidal, ferruginous; aperture a little expanded anteriorly; inner lip strong, single-plaited above the middle.

PHILLIPS. —?

Hab. Sandwich Islands.

Species 29. (Mus. Brit.)

LIMNÆA ELOPES. *Lim. testâ attenuatâ oblongâ, fusco-cornuâ; spirâ elongatâ, anfractibus quinque, penultimo elongato; aperturâ breviusculâ, margine subincrassato, intus fuscâ costarâ pictâ, labio int. rariâ ad medium uniplicato.*

THE OILY LIMNÆA. Shell attenuately-oblong, brown-horny; spire elongated, whorls five, the last elongated; aperture rather short, with margin a little thickened, painted within with a chestnut band; inner lip single-plaited in the middle.

SAY. Haldeman's Monog., pl. 6, f. 15.

Hab. New York.

Species 30. (Mus. Brit.)

LIMNÆA DIAPHANA. *Lim. testâ attenuatâ, oblongâ, tenui, fusco-cornuâ; spirâ pyramidatâ, anfractibus fuscis, rotundatis, subdijunctis; aperturâ brevi, columellâ viz. tortâ.*

THE DIAPHANOUS LIMNÆA. Shell attenuated, oblong, thin, brown-horn; spire pyramidal, with brown, rounded, somewhat d'-jointed whorls; aperture short, columella scarcely twisted.

KING. Zool. Journ., vol. v. p. 344.

Hab. Straits of Magellan. *Captain King.*

Species 31. (Mus. Brit.)

LIMNÆA AFFINIS. *Lim. testâ ovatâ, cornâ; spirâ brevi, acuminatâ, anfractibus parvis, last prominens, aperturâ pyriformi, columellâ crassiusculâ, arcuatâ.*

THE ALLED LIMNÆA. Shell ovate, horny; spire short, acuminated, whorls few, not prominent; aperture pyriform, columella rather thick, arched.

BECK. —?

Hab. Northern Europe?

This little shell is more ovate in form than the generality of the species.

Species 32. (Fig. a, b, Mus. Brit.)

LIMNÆA REFLEXA. *Lim. testâ attenuatâ, tenui, fuscâ, auro-striatâ; spirâ productâ, anfractibus paucis, elongatissimis, lateraliter subcomplanatis; aperturâ breviusculâ.*

THE REFLEX LIMNÆA. Shell attenuated, thin, brown, striped with yellowish; spire produced, with whorls few, very long, rather compressed at the sides, aperture short.

SAY. Haldeman's Monog., pl. 8, f. 26.

Hab. North America.

This species is subject to great variations in form, as may be seen in the two varieties figured.

Species 33. (Mus. Brit.)

LIMNÆA CATASCOPIUM. *Lim. testâ subovatâ, subaurantio-cornuâ; spirâ brevi, anfractibus apicalibus parvis, acuminatis, penultimo inflato, ultimo magno; aperturâ ovatâ, columellâ rectiusculâ.*

THE CRUCIER LIMNÆA. Shell subovate, rather orange-tinted-horny; spire short, with apical whorls small, acuminated, penultimate inflated, last large; aperture ovate, columella rather straight.

SAY. Haldeman's Monog., pl. 1, f. 1.

Hab. New York.

LIMNÆA.—PLATE V

Species 34. (Mus. Brit.)

LIMNÆA SUMASII. *Lim. testâ eleganter pyramidatâ, cornuâ, gracili; spirâ productâ, anfractibus convexiusculis, ultimo ovato; aperturâ breviusculâ, obliquè subovatâ.*

THE SUMASS LIMNÆA. Shell elegantly pyramidal, horny, narrow; spire produced, whorls rather

convex, the last ovate; aperture rather short, obliquely subovate.

BAIRD, Proc. Zool. Soc.

Hab. Sumass Prairie, Vancouver's Island.

With the more elegantly curved lines of our British *Limnæa stagnalis*, this species has the narrow form and shortened aperture of our *L. palustris*.





L I M N E A.

PLATE VI.

Species 35. (Mus. Brit.)

LIMNÆA EMARGINATA. *Lim. testâ pyramidalâ, fusâ; spirâ elongatâ, attenuatâ, anfractibus lateraliter compressis; ultimo convexiusculo; aperturâ brevî, intus subulmouci, labio externo subexpanso, labio interno angustâ, columellâ rectâsculâ, subelongatâ.*

THE EMARGINATED LIMNÆA. Shell pyramidal, brown; spire elongated attenuated, whorls laterally compressed, the last rather convex; aperture short, inside a little salmon-tinted; outer lip subexpanded, inner lip narrow, columella rather straight and long.

SAY. Haldeman's Monog., p. 10, pl. 2.

Hab. Maine, U.S.

Species 36. (Mus. Brit.)

LIMNÆA COLUMELLA. *Lim. testâ tenui, auriculatâ pallidâ cornâ; spirâ breviusculâ, angustâ, acuminatâ, anfractibus paucis, ultimo fusiformi; aperturâ valde expansâ, subovatâ, columellâ supra medium uniplicatâ, infâ arcuatâ.*

THE COLUMELLAR LIMNÆA. Shell thin, auriculated, pale horny; spire rather short, narrow, acuminated, whorls few, the last fusiform; aperture much expanded, subovate, columella single-plaited above the middle, arched below.

SAY. Haldeman's Monog., pl. 12.

Hab. Massachusetts.

Resembling our British *Limnæa auricularia*, but much more graceful in form.

Species 37. (Mus. Brit.)

LIMNÆA VINOSEA. *Lim. testâ inflatâ, pellucidâ, fusovinosâ, stripis sparsis albidis irregularibus subvariegatâ, spirâ brevissimâ, anfractibus ultimo centrico, lato, prope suturam subangulato; aperturâ latâ, expansâ.*

THE VINOSE LIMNÆA. Shell inflated, pellucid, brown-vinous, slightly variegated with a few whitish irregular stripes; spire very short, last whorl ventricose, broad, slightly angular near the suture; aperture wide, expanded.

ADAMS AND ANGLAS. Proc. Zool. Soc.

Hab. Adelaide River. G. F. Angus.

Species 38. (Mus. Brit.)

LIMNÆA CUMINGI. *Lim. testâ tenuissimâ, pallidâ, pellucidâ, inflatâ, ovato-subglobosâ; spirâ brevissimâ, anfractibus ultimo expanso, subovato.*

CUMING'S LIMNÆA. Shell very thin, pale pellucid, inflated ovately subglobose; spire very short, last whorl expanded, subovate.

ADAMS. Proc. Zool. Soc.

Hab. Australia.

The largest of the group forming the genus named *Aophijoplea* of some authors.

Species 39. (Fig. a, b. Mus. Brit.)

LIMNÆA MELBOURNEENSIS. *Lim. testâ amplessimâ, ovato-subglobosâ, pellucidâ, pallidâ, spirâ brevissimâ; aperturâ latâ, labio interno tenui, subpurpureo, plicâ columellari tenui, arcuatâ.*

THE MELBOURNE LIMNÆA. Shell very ample, ovately subglobose, pellucid, pale, spire very short; aperture broad, inner lip thin, purplish, columellar plait thin, arched.

PEREYFFÈ. — ?

Hab. Melbourne, Australia.

Species 40. (Mus. Brit.)

LIMNÆA STRANGI. *Lim. testâ pallidâ, tenui, pellucidâ, ovato-subglobosâ; spirâ brevissimâ, anfractibus apicalibus minutis, penultimo lateraliter inflato, ultimo magno, ventricoso, obliquè declivi.*

March, 1872.

LIMNÆA.—PLATE VI.

STEWART'S LIMNÆA. Shell pale, thin, pellucid, ovately subglobose; spire very short, apical whorls minute; penultimate laterally inflated, the last large, ventricose, obliquely sloped.

ADAMS AND ANGAS, Proc. Zool. Soc.

Hab. Moreton Bay.

The penultimate whorl is swelled in one direction, and the last whorl in the other, which with the oblique slope of the latter, produces a somewhat distorted appearance.

Species 41. (Fig. a, b.)

LIMNÆA PHILLIPS. *Lim. testâ tenui, ovato-subpyramidalâ, fusco-rubescenti; spirâ pyramidalâ, breviusculâ, anfractu ultimo magno, antice subexpanso; columellâ subtortuosâ.*

PHILLIPS' LIMNÆA. Shell thin, ovate, subpyramidal, reddish brown; spire pyramidal, rather short.

last whorl large; anteriorly slightly expanded, columella a little tortuous.

ADAMS AND ANGAS, Stewart's Expedition.

Hab. Arnheim Land, North Australia.

Species 42. (Mus. Brit.)

LIMNÆA DECOLLATA. *Lim. testâ parvâ, solidiusculâ, fusâ, ventricosâ; spirâ brevi, anfractu ultimo magno, brevi, antice cavâ inflato, medio subangulato; aperturâ subovata, intus castaneo, concentricè uniuscinto.*

THE DECOLLATED LIMNÆA. Shell small, rather solid, brown, ventricose; spire short, last whorl large, short, anteriorly much inflated, slightly angular in the middle; aperture subovate, with a single concentric band of chestnut within.

MIGHELS, Haldeman's Monograph, pl. 10.

Hab. Maine, United States.





L I M N Æ A.

PLATE VII.

Fig. 35, *b, c*.

These two shells, together with the white variety copied at Plate XV., may now be taken to represent the true species, *LIM. EMARGINATA*, of Say, to the exclusion of the pyramidal species wrongly figured under their name in Pl. VI. f. 35. This is *LIM. EMARGINATA*, Plate IX. Sp. 58.

Fig. 13.

This shell proves to be only a lightly-coloured variety of *LIM. EMARGINATA*, *Kömp.* Species 50.

For Species 13,

See Plate X., *LIM. MACROSTOMA*.

Species 14. (Mus. Cuming.)

LIM. PROXIMA. *Lim. testâ conopsea, pyramidalâ, acuminatâ, caracâ, substriatâ, spirâ attenuatâ, anfractibus septem, ad latera rectis, apertura angustâ, brevi, costarum præ marginem unifasciatâ, columellâ bifasciatâ.*

THE APPROXIMATE *LIM. EM.* Shell narrow, pyramidal, acuminated, horny, slightly striated, spire attenuated, whorls seven, straight at the sides, aperture narrow, short, with a chestnut band near the edge; columella rather broad.

LEM. — ? MS. in Brit. Mus.

Hab. San Antonio.

Differing from *Limnaea reflexa* (Say), in the straightness of the sides of the whorls.

Species 15. (Fig. a, b, Mus. Brit.)

LIM. CANADENSIS. *Lim. testâ pyramidalâ, anticâ inflatâ, tenuissimâ, politâ, caracâ; spirâ attenuatâ, anfractibus quateris, subconicis; ultimo inflato, anticâ subacuminatâ, post columellam subexcavato; apertura arciformi, labio interno lato, columellâ crassâ, valvâ plicatâ; labio externo expanso, reflexo, latius incrassato.*

THE CANADIAN *LIM. EM.* Shell pyramidal, anteriorly inflated, rather thin, polished, horny; spire attenu-

ated, whorls four, rather rounded, the last inflated; anteriorly slightly acuminated, a little excavated behind the columella; aperture auriform, inner lip broad, columella thick, strongly plicated; outer lip expanded, reflected, thickened within.

SOWLEY.

Hab. Canada.

Finding this shell in the British Museum without a name, and thinking it sufficiently distinct from *L. stagnalis*, the writer has given it a local name.

Species 16. (Mus. Brit.)

LIM. NAVALIS. *Lim. testâ ovato-oblongâ, substriatâ, foveâ plicâ-fasciâ, inflatâ; spirâ brevi, anfractibus tribus, ultimo ovato; apertura elongatâ, pallidâ cosâ-fasciâ; columellâ valvâ plicatâ, tortuâ, labio externo tenui.*

THE NAVAL *LIM. EM.* Shell ovate-oblong, rather trigonal, rusty-brown, inflated; spire short, whorls three, the last ovate; aperture elongated, pale rose-fawn; columella with a strong plait, tortuous, outer lip thin.

KRAUSS. Südafrikan. Mollusken.

Hab. Cape Natal, South Africa.

In form and appearance resembling *Limnaea pinguis*, but different in texture.

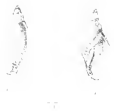
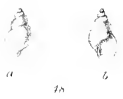
Species 17. (Fig. c, Mus. Brit.)

LIM. ANGLIÆ. *Lim. testâ solidâ, subroseo-fuscâ, subquadratâ, spirâ brevi, anfractibus latis, angulatis, ultimo majore; ad latera recto, post columellam excavato; apertura subtriangulâ, anticâ subacuminatâ; columellâ crassâ, rectâ, labio externo costarum, intus unifasciatâ.*

THE ENGLISH *LIM. EM.* Shell solid, pinky-brown, rather square, spire short, whorls broad, angular, the last large; straight at the sides, excavated behind the columella; aperture subtriangular, anteriorly a little acuminated; columella thick, straight, outer lip with a single chestnut band within.

SOWLEY.

Hab. North America.



LIMNÆA.

PLATE VIII.

Species 48. (Mus. Brit.)

LIMNÆA CURENSIS. *Lim. testâ parvâ, acuminatâ ovatâ, tenui, curvâ; spirâ longitudinali mediovi, subpyramidatâ, anfractibus parvis, rotundatis; aperturâ longitudinali mediovi, columellâ rectâ, labio externo tenui.*

THE CURAN LIMNÆA. Shell small, acuminately ovate, thin, horny; spire of middle length, subpyramidal, whorls few, rounded; aperture of middle length, columella straight, outer lip thin.

PFEIFFER — ?

Hab. Isl. of Cuba.

Species 49. (Mus. Cuming in Brit.)

LIMNÆA NAVICULA. *Lim. testâ ovatâ, tenui, succinâ; spirâ brevi, anfractibus duobus parvis, ultimo magno, inflato; aperturâ subovata, angulâ, columellâ tenui, tortâ, labio externo tenui aqualiter arcuatâ.*

THE BOAT LIMNÆA. Shell ovate, thin, amber-coloured; spire short, whorls two, small, the last large, inflated; aperture semioval, large, columella thin, tortuous, outer lip thin, equally arched.

VALENCIENNES. Humboldt et Bonpland, vol. ii. p. 251. *Limnaea novæboracensis*. Trist., MS. Mus. Cuming.

Hab. New York.

Species 50. (Mus. Cuming in Brit.)

LIMNÆA JAVANICA. *Lim. testâ ovato-acuminatâ, pallidâ cinisâ, politâ; spirâ breviusculâ attenuatâ, acuminatâ, ultimâ subconico; aperturâ angustâ, labio interno tenui, columellâ brevi, tortâ.*

THE JAVA LIMNÆA. Shell ovately acuminated, pale vinous, polished; spire rather short, attenuated, acuminated, the last rather conical; aperture narrow, inner lip thin, columella short, tortuous.

MICHAUD — ? MS. in Cuming. Col.

Hab. — ?

This shell seems so distinct from other forms that it is here published, although the search for authority has been unsuccessful.

Species 51. (Mus. Joffreys.)

LIMNÆA BURNETTII. *Lim. testâ globosâ, solidâ, epidermidâ stramineâ inclatâ; spirâ brevissimâ, depressâ, ferè exatâ, ultimo subrecta maximo, inflato, post columellam subrectatâ; aperturâ obliquâ, auriculâ, anticâ obliquâ expansâ, columellâ rectiusculâ, subarcuatâ.*

BURNETT'S LIMNÆA. Shell globose, solid, covered with a straw-coloured epidermis; spire very short, depressed, almost hidden, the last whorl very large, inflated, a little excavated behind the columella; aperture oblique, very large, anteriorly oblique, expanded, columella rather straight, a little arched.

ALPHE — ?

Hab. Great Britain.

Species 52. (Mus. Brit.)

LIMNÆA CHALYBEATE. *Lim. testâ parvâ, tenui, subpyramidatâ, subconico; spirâ pyramidatâ, acuminatâ, anfractibus tribus, subinflatis, ultimo magno; aperturâ triangulâ, anticâ subexpansâ, columellâ crassiusculâ, subarcuatâ, labio externo posticâ propi suturam tumido.*

THE CHALYBEATE LIMNÆA. Shell small, thin, subpyramidal, bluish; spire pyramidal, acuminated, whorls three, subinflated, the last large; aperture trigonal, anteriorly a little expanded, columella rather thick, a little arched, outer lip posteriorly near the suture tumid.

GOULD. Invertebrata of Massachusetts, p. 216, f. 145.

Hab. Massachusetts, United States.

Species 53. (Mus. Brit.)

LIMNÆA CAPEATA. *Lim. testâ subpyramidalâ, opacâ, fusco-cornâ, leviter rugatâ; spirâ elevatâ, acuminatâ, anfractibus quaternis, subrotundis; apertura pallidè rosâ, brevi, columellâ leviter arcuatâ.*

THE WRINKLED LIMNÆA. Shell subpyramidal, opaque, brown-horn coloured, slightly wrinkled; spire elevated, acuminated, whorls four, rather rounded; aperture pale rosy, short, columella slightly arched.

SAY. Haldeman's Monograph, pl. I. f. 1.

Limnæa apirina, Say.

Hab. Ohio.

Species 54. (Mus. Brit.)

LIMNÆA RIBERIENSIS. *Lim. testâ breviter ovatâ, pellucidâ, succinâ; spirâ brevissimâ, anfractibus duobus, parvis, ultimo anfractu magno, obliquè ovato; apertura magis, ovatâ, columellâ vix pliatâ.*

THE RIBERIAN LIMNÆA. Shell shortly ovate, pellucid, amber-coloured; spire very short, whorls two, small, last whorl large, obliquely ovate; aperture large, ovate, columella very slightly plaited.

REIBSCH. —? MS. in Mus. Brit.

Hab. San Antonio.

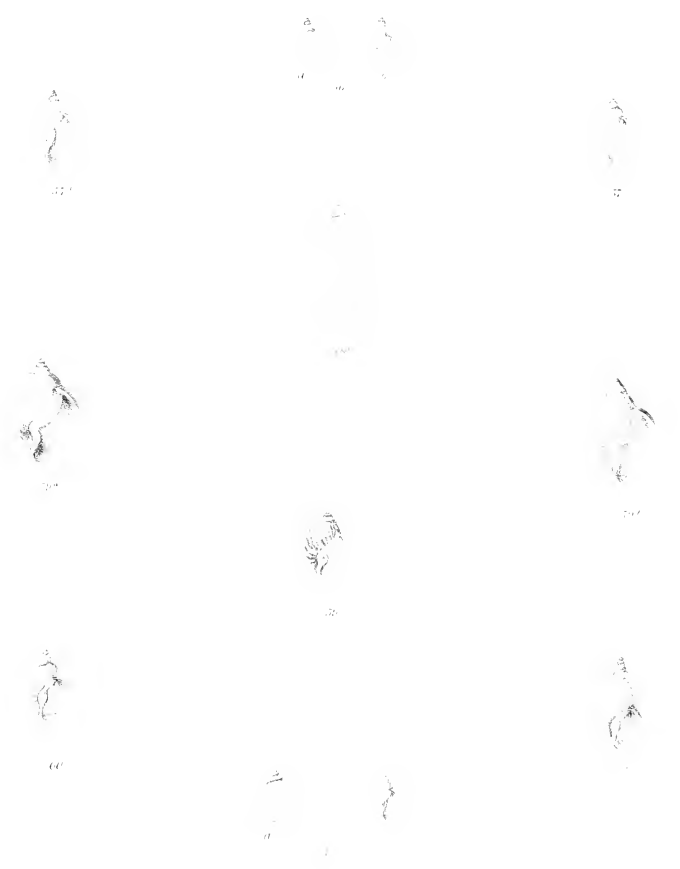
Species 55. (Mus. Brit.)

LIMNÆA SUCCINEÆFORMIS. *Lim. testâ tenuissimâ, angustâ, pyramidalâ, pallidè succinâ; spirâ productâ, anfractibus duobus, ultimo anfractu elongato, spirâ apertura devoto; apertura pyriformi, anticè subtruncatâ, columellâ uniplicatâ, tenui.*

THE SUCCINEA-SHAPED LIMNÆA. Shell very thin, narrow, pyramidal, pale amber; spire produced, whorls two, last whorl long, raised above the aperture; aperture pyriform, anteriorly rather truncated, columella single-plaited, thin.

SHUTTLEWORTH —? MS.

Hab. Switzerland.



L I M N E A.

PLATE IX.

Fig. 18, b.

A variety of *Limnaea pinguis*, which has been named *L. striolata* on account of the streaks on the surface. This arises in some specimens from partial disintegration.

Fig. 29, b.

A variety of *Limnaea elohg*, copied from the original figure in Say's American Conchology.

Species 56. (Figs. a, b.)

LIMNEA VIATOR. *Lim. testâ parca, coccosabulata, laevigatâ, semipellucidâ, recta, subarata; spirâ breviusculâ, angustibus propè suturam angulatis, lateribus rectis; ultimo angustâ ovato subangulata, anticâ subtruncatâ, post columellam subcavata; columellâ rix plicatâ, costisculâ.*

THE TRAVELLER LIMNEA. Shell small, greenish, horny, smooth, semipellucid, straight, subovate; spire rather short, whorls angular near the suture, with straight sides; last whorl ovately subangular, anteriorly subtruncate, a little excavated behind the columella; columella hardly plicated, rather straight.

D'ORIGNY. Voyage dans l'Amérique Méridionale. *Limnaea umbilicata*, Adams!

Hab. Patagonia.

Very hollow, almost nubilicated behind the columella.

Species 57. (Fig. a, Mus. Brit.)

(Fig. b, *L. succinea*, var. Pl. IV.)

LIMNEA HIAS. *Lim. testâ tenui, semipellucidâ, politâ, ovato-oblongâ, subfusiformi; pallidissimâ cornâ; spirâ annulatâ, chevâ, angustibus rixis, angustâ; angustâ ultimo ovato; aperturâ*

angustâ; plura columellâ tortuâ, labio cœcra plus minusve expansa.

THE GAPING LIMNEA. Shell thin, semipellucid, polished, ovate-oblong, subfusiform, pale horny; spire acuminate, elevated, whorls three, narrow; last whorl ovate; aperture auriform, columellar fold tortuous, outer lip more or less expanded.

SOWERBY.

Hab. Malabar.

Species 58. (Mus. Brit.)

LIMNEA PYRAMIDATA. Sowerby. Wrongly figured and described as *L. emarginata* of Say, pl. vi. f. 55.

Species 59. (Figs. a, b, c.)

LIMNEA OVALIS. *Lim. testâ breviter ovata, inflata, costisculâ, politissimâ, fusco-cornâ vel rinosâ, nonnunquam striatâ, aperturâ pallide cornâ vel castanâ; spirâ brevi, conicâ, acuminatâ; angustâ ultimo subcylindricâ, post columellam excavata; aperturâ magnâ, anticâ subtruncatâ, columellâ edidit multiplicatâ, brevi, breviter arcuatâ.*

THE OVAL LIMNEA. Shell shortly ovate, inflated, rather straight, very polished, horny-brown or vinous, sometimes striped within, aperture pale horn or chestnut; spire short, conical, acuminate; last whorl subcylindrical, excavated behind the columella; aperture large, rather truncated in front, columella strongly plicated, short, slightly arched.

SOWERBY. Genera of Shells.

Limnaea Bulbi, Benson.

Limnaea variabilis, Benson.

Limnaea subcavata, Troschel.

Limnaea Lessouii, Deshayes.

Limnaea cœcra, Troschel.

Hab. India.

Species 60. (Mus. Brit.)

LIMN.EA SCALARIS. *Lim. testâ eleganter fusiformi, fusco-rubescenti, obliquâ, lavigatâ; spirâ elevatâ, attenuatâ, anfractibus tribus, obliquis, distinctis, rotundis, apice acuminatâ; ultimo anfractu inflato, obliquè ovato; apertura magna, antice productâ, latâ, columellâ rectiusculâ, plicâ elevatâ, calidi: labio externo expanso.*

THE LARGER LIMN.EA. Shell elegantly fusiform, reddish brown, oblique, smooth; spire elevated, attenuated, whorls three, oblique, distinct, rounded, apex acuminate; last whorl inflated obliquely ovate, aperture large, anteriorly produced, broad, columella rather straight, plait elevated, strong; outer lip expanded.

BROWN? MS. in Brit. Mus.

Hab. Carlstrusche.

The body-whorl is small in proportion to the some-

what expanded mouth, and the upper whorls are rounded and distinct.

Species 61. (Mus. Cum. in Brit.)

LIMN.EA ELLIPTICA. *Lim. testâ parvâ, ovatâ, obscurè succinâ, semipellucidâ, lavigatâ, obliquâ; spirâ brevi, anfractibus tribus, ultimo superi aperturem elevato, tumido, apertura obliquè ovatâ, columellâ tenui, arcuatâ, plicâ angustâ.*

THE ELLIPTIC LIMN.EA. Shell small, ovate, dull amber-coloured, semi-pellucid, smooth, oblique; spire short, whorls three, the last elevated above the aperture; aperture obliquely ovate, columella thin, arched, plait narrow.

LEA. Ann. Acad. Nat. Sci.?

Hab. Madison Lake, Michigan.

A pretty little obliquely ovate amber-coloured species.



62



63



64



65



66

66^a



67



68



69



70



71

LIMNÆA.

PLATE X.

(Fig. 36, b.)

LIMNÆA COLUMELLA. *Syn.* *L. costata*, Lea.
Species 35. (Pl. VI.)

Species 43.

LIMNÆA MACROSTOMA. Lea. *Hab.* United States.
Figured erroneously as *Limnæa columella*, pl. VI.
fig. 36.

Species 62. (Mus. Brit.)

LIMNÆA INTERSERIATA. *Lim. testâ pyramidalâ, acuminatâ, solidâ, flavâ; costâ, distanter, leviter, longitudinaliter levitâ, inter lineas longitudinaliter tenuiter striatâ; spirâ elevatâ, anticeolibus quatuor, attenuatâ, convergentibus, aperturâ subtriangulâ, subovata; columellâ alidâ, plisâ columellarâ crassâ, latâ.*

THE INTERSERIATED LIMNÆA. Shell pyramidal, acuminate, solid, yellowish chestnut; distantly slightly longitudinally ridged, finely striated, longitudinally striated; spire elevated, whorls four, attenuated, rather convex; aperture subtriangular, slightly orange; columella white, columella fold thick, broad.

SOWERBY.

Hab. California

This species appears very distinct from any hitherto known.

Species 63. (Mus. Cum. in Brit.)

LIMNÆA SAMMERS. *Lim. testâ ovatâ, dusa, levigatâ, tenuiter rubro-lineatâ; spirâ baccisculâ, conicâ, acuminatâ, anticeolibus tribus, parvis, paulo convergentibus; aperturâ pyriformi, anticeolâ, plisâ columellarâ rotundâ, ad medium elevatâ, arcuatâ.*

THE SIAM LIMNÆA. Shell ovate, obese, smooth, finely red-lined; spire rather short, conical, acuminate, whorls three, small, a little convex; aperture pyriform, rounded anteriorly, columellar fold strong, raised to the middle, arched.

SOWERBY.

Hab. Siam.

Resembling *Limnæa pinguis*, but marked with reddish lines.

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

LIMNÆA AMYGDALUS. *Lim. testâ oblongo-ovatâ, tenui, magis, pallidâ; costâ, in aperturâ pallidissimâ arcuatâ; spirâ brevi, angustâ, acuminatâ; anfractu ultimo arcuatâ; aperturâ amplâ, elongatâ; plisâ columellarâ elevatâ, exteriorem truncatâ, labio externo supra medium sinuosa producta.*

THE ALMOND LIMNÆA. Shell oblong-ovate, thin, pale-horn-coloured, very pale orange in the mouth; spire short, narrow, acuminate; last whorl boat-shaped; aperture wide, long; columellar fold raised, twisted backward, outer lip sinuously produced above the middle.

TROSCHEL. *Weizmann's Archiv.*, 1837, vol. iii. p. 168.

Hab. Bengal, the Ganges, &c.

The last whorl not so much sloped as in *Limnæa rufescens*.

Species 65. (Mus. Brit.)

LIMNÆA CHLAWYS. *Lim. testâ magis, ventricosâ, subfusiformi, pallidâ fulvâ, subangosâ; spirâ baccisculâ, angustâ, acuminatâ, anfractibus paulo convergentibus; anfractu ultimo inflato; aperturâ magna, auriformâ; labio interno ventricosâ, plisâ columellarâ, tortuosâ, ad medium elevatâ, labio externo apud medium arcuatâ.*

THE CLAW LIMNÆA. Shell large, ventricose, subfusiform, pale fawn, rather rugose; spire rather short,

narrow, acuminate; whorls a little convex, last whorl inflated; aperture large, auriform; inner lip ventricose, columellar fold tortuous, raised to the middle, outer lip equally arched.

BENSON, Journ. Asi. Soc. Bengal, 1836, vol. v. p. 744.

Hab. Moradabad, Benares, &c.

Much stouter and more ventricose than *Limnæa rufescens*, with the last whorl broader in proportion to spire.

Species 66. (Mus. Benson.)

LIMNÆA ACUMINATA. *Lim. testâ oblongâ, ventricosâ, purpureo-rubescenti, tenui, semipellucidâ, levigatâ, spirâ brevi, angustâ, anfractibus attenuatis; anfractu ultimo superne subangulato, infra molium inflato; apertura magna, anticè rotundâ, labio columellari tortuâ.*

THE ACUMINATED LIMNÆA. Shell oblong, ventricose, reddish purple, thin, semipellucid, smooth, spire short, narrow, whorls attenuated; last whorl slightly angular above, inflated below the middle; aperture large, rounded anteriorly, columellar lip tortuous.

LAMARCK, Anim. sans Vert., vol. vi.

Hab. Near Hingola.

Species 67. (Mus. Brit.)

LIMNÆA CALIFORNICA. *Lim. testâ elongatâ, pyramidatâ, tenui, semipellucidâ, pallidè cornuâ; spirâ acotâ, anfractibus quinque oblongis, moderatè con-*

reis; apertura auriformi, brevi; labio interno ad medium uniplicato; plicâ columellari anticè retro-sin tortuosâ.

THE CALIFORNIAN LIMNÆA. Shell elongated, pyramidal, thin, semipellucid, pale horn-coloured; spire elevated, whorls five, oblong, moderately convex; aperture ear-shaped, short; inner lip single-plaited in the middle; columellar fold twisted backward.

SOWERBY.

Hab. California.

The form and calibre of this shell seem to differ considerably from any known species.

Species 67*. (Mus. Brit.)

LIMNÆA NUCLEUS. *Lim. testâ, solidiusculâ, ventricosâ, rectâ, fumoso-cornuâ; spirâ productâ, anfractibus quatuor, subangulatis; ultimo anfractu subcylindrico, lato; apertura spiram longitudinac æquantî, propè marginem costarum fusciatâ; labio interno crassiusculo, subroso; plicâ columellari validâ, tortuâ.*

THE NUCLEUS LIMNÆA. Shell rather solid, ventricose, straight, smoky-horn-coloured; spire produced, whorls four, rather angular; last whorl partly cylindrical, broad; aperture equalling the spire in length, chestnut banded near the margin; inner lip rather thick, pinkish; columellar lip strong, tortuous.

TROSCHEL. —? MS. in Mus. Brit.

Hab. River Ganges.



65^a



66



65^b



70^a



71



72



70^b



73



74

L I M N E A.

PLATE XI.

Species 68. (Mus. Brit.)

LIMNÆA ELONGATA. *Lim. testâ attenuatâ, ovato, spirâ elongatâ, anfractibus octo circâ, subrotundis, subventris, ultimo ovato, brevissimis, aperturâ brevissimâ, columellâ calidè plicatâ.*

THE ELONGATED LIMNÆA. Shell attenuated, horn-coloured, spire elongated, whorls about eight, rather rounded, slightly turreted, the last ovate, rather short, aperture very short, columella strongly plicated.

DEAFARNAUD. Mollusques, pl. 3, f. 3-5, non Say.

Limnæa leucostoma, Lamarck.

Limnæa octanfracta — ?

Limnæa glaber, var. Jeffreys, &c.

Hab. Europe.

The numerous whorls and long turreted form of this species may be considered sufficient to justify its distinction from *L. glaber*.

Species 69. (Mus. Brit.)

LIMNÆA JAPONICA. *Lim. testâ ovato-ventricosâ, tenui, subrotundâ, fuscâ, spirâ brevissimâ, anfractibus parvis rotundis, apice obtuso, ultimo anfractu inflato; aperturâ anfracti, expansâ, pallidissimâ aurantiâ, columellâ medio calidè plicatâ, plicâ tortuosâ, reflectâ; labio exterioro expanso, reflecto.*

THE JAPANESE LIMNÆA. Shell ovate-ventricose, thin, a little rough, fulvous, spire very short, whorls few, rounded, apex obtuse, last whorls inflated; aperture ear-shaped, expanded, very pale orange; columella strongly plicated in the middle, fold tortuous, reflected; outer lip expanded, reflected.

SOWLEBY.

Hab. Japan.

More ovate and with the body whorl proportionally larger than the British *Limnæa auriculata*. The

surface is also a little rougher and the texture less horny.

Species 70. (Mus. Hanley.)

LIMNÆA NUTALLIANA. *Lim. testâ acuminatâ, pyramidalatâ, ovato, tenuiter striatâ; hinc illic costæ longitudinaliter striatâ; spirâ productâ, attenuatâ, anfractibus quinque, declivis, supremo attenuatis; aperturâ brevi, intus flavidâ, costæo prope integram intusque strigatâ; labio exterioro posticè subangulatâ.*

NUTTALL'S LIMNÆA. Shell acuminate, pyramidal, horny, finely striated; here and there longitudinally striped; spire produced, attenuated, whorls five, sloped, attenuated above; aperture short, yellowish within, striped near the margin and within with chestnut; outer lip posteriorly slightly angular.

L. A. Transactions of the Philosophical Society, vol. ix. p. 9.

Hab. Oregon.

Species 71. (Mus. Hanley.)

LIMNÆA BLAUSSEI. *Lim. testâ subrotundâ, fusco-coriaci, semipellucidâ, levigatâ, subpyramidalatâ; spirâ obtusâ, brevissimâ, anfractu penultimo oblongo, supremo subangulatâ, ultimo posticè subattenuato; aperturâ subquadratâ, labio columellari revoersim obliquo, plicâ crassâ, labi.*

BLAUSSE'S LIMNÆA. Shell subovate, horn-brown, semipellucid, smooth, subpyramidal; spire obtuse, rather short, penultimate whorl oblong, slightly angular above the last posteriorly subattenuated; aperture rather square, columellar lip sloped backwards obliquely, fold thick, broad.

SHUTLEWORTH. Kuster's Martini et Chemnitz Conch. Cab.

Hab. Switzerland.

December, 1872.

Species 72. (Mus. Hanley.)

LIMNÆA ENILIS. *Lim. subfusiformi, angustâ, elongatâ, funoso-corneâ, substratâ; spirâ elongatâ, acuminatâ; anfractibus quatuor attenuatis; anfractu ultimo angustè orato, suprâ aperturam elevato; aperturâ brevi, angustâ, labio interno ad medianam uniplicato; labio externo propè marginem castaneo fuscato.*

THE NARROW LIMNÆA. Shell rather fusiform, narrow, elongated, smoky horn-coloured, slightly striated; spire elongated, acuminated; whorls four, attenuated; last whorl narrowly ovate, raised above the aperture; aperture short, narrow, inner lip with a single plait in the middle; outer lip banded with chestnut near the margin.

LÆA. Transactions of the Philosophical Society.

Limnæa umbrosa, var., Haldeman.

Hab. Ohio.

This appears much too narrow and straight-sided for *L. umbrosa*.

Species 73. (Mus. Hanley.)

LIMNÆA VENTRICULARIS. *Lim. testâ eleganter fusiformi, semipellucidâ, corneo-rubescenti; spirâ productâ, attenuatâ, anfractibus quatuor, attenuatis, concavissculis, ultimo angustiusculo; aperturâ elongatâ, subauriformi; columellâ tortuosâ, recurvâ, labio externo posticè tumido, rotundo.*

THE VENTRICOSE LIMNÆA. Shell elegantly fusiform, semi-pellucid, reddish-horn coloured; spire produced, attenuated, whorls four, attenuated, rather convex, the last rather narrow; aperture elongated, subauriform; columella tortuous, recurved; outer lip tumid posteriorly.

KÜSTER. Conchylien Cabinet, Martyn and Chemnitz.

Hab. Isl. of Formosa.

A very distinct and elegant form.

Species 74. (Mus. Hanley.)

LIMNÆA HOOKER. *Lim. testâ subovatâ, fuscâ, rubescenti, subopacâ; spirâ longitudine mediocrî, anfractibus angulatis, scalatis; anfractu ultimo subcylindraceo, brevi, post columellam excavato; aperturâ oblongâ, anticè subtruncatâ; labio interno reflexo, columellâ validâ, reflexâ; labio externo posticè rotundatim angulato, medio rectiusculo.*

HOOKEE'S LIMNÆA. Shell subovate, brown, reddish, rather opaque; spire of middle length, whorls angular, in steps; last whorl rather cylindrical, short, excavated behind the columella; aperture oblong, anteriorly slightly truncated; inner lip reflected, columella strong, reflected; outer lip posteriorly roundly angular, rather straight in the middle.

REEVE. Proc. Zool. Soc., 1850, p. 49.

Hab. Thibetian Himalaya.

Species 75. (Mus. Hanley.)

LIMNÆA CANALIS. *Lim. testâ semi-globosâ, patulâ, fuscâ, pallidè rubescenti, spirâly et sublicaricatum striatâ; spirâ brevissimâ, anfractibus tribus, parvis; anfractu ultimo magno, lato; aperturâ marimâ, labio externo posticè ad suturam elevato, latè expanso.*

THE CANAL LIMNÆA. Shell semiglobose, patulous, brown, pale reddish, spirally and rather divergently striated; spire very short, whorls three, small; last whorl large, broad; aperture very large, outer lip raised posteriorly at the suture, broadly expanded.

DUPUY. Mollusques de la France.

Hab. France.

This species differs from our *Limnæa auricularia* in the elevation of the expanded outer lip at the suture.



LIMNEA.

PLATE XII.

Species 76. (Mus. — ? Copied.)

LIMNEA BILICATA. *Lim. testâ subfusiformi, subpellucida, cornuâ, pallidâ roseo-lactea, spirâliter subfusata; spirâ elata, subscabata; angustibus quatuor, convexis, subangulatis, anfractu ultimo brevissimo, post columnam excavato, apertura subquadrata, postâ subangulata, columellâ tortâ, subrecurâ.*

THE DELICATE LIMNEA. Shell subfusiform, subglobose, horny, pale rose-milky, spirally slightly banded, spire elevated, slightly ladder-like; whorls four, convex, rather angular, last whorl rather short, excavated behind the columella; aperture subquadrate, posteriorly slightly angular; columella tortuous, somewhat curved backwards.

SAY. Acad. Nat. Sci.

Limnea filiginea, Menke?

Hab. N. America.

There is a deliency about this shell, and a tendency to cross-banding in the colouring, that impresses the eye with an appearance of distinctness from the nearest species.

Species 77. (Fig. a, b, Mus. Brit.)

LIMNEA BULIMOIDES. *Lim. testâ parvâ, ovato-subpyramidalâ, pallidâ cornuâ, semipellucidâ; spirâ aperturam longitudine æquanti, angustibus tribus, penultimo subinflato; apertura pyriformi; columellâ tenui, rectâsubâ.*

THE BULIMUS-LIKE LIMNEA. Shell small, overtly subpyramidal, pale horn, semipellucid; spire equaling the aperture in length, whorls three, the last but one rather inflated; aperture pyriform; columella thin, rather straight.

LEA. Kuster's Conchylien Cabinet.

Hab. N. America.

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

LIMNEA HUMILIS. *Lim. testâ parvâ, pyriformi, pallidissimâ cornuâ, posticâ fulvescenti; spirâ aperturam*

longitudinè æquanti, subscabata, angustibus tribus rotundis; anfractu ultimo post columellam umbilicato; apertura parvâ, ovata; columellâ rectâsubâ, labio externo aqualiter arcuato.

THE LOWLY LIMNEA. Shell small, pyriform, very pale-horn, posteriorly brownish; spire equaling the aperture in length, acuminate, whorls three, rounded; last whorl umbilicated behind the columella; aperture small, ovate; columella rather straight, outer lip equally arched.

SAY. Haldeman's Monograph, pl. 1.

Limnea parva, Lea

Hab. New York.

The body whorl is shorter and more ventricose in proportion to the spire than in *Limnea umbilicata*, and the whorl is more acuminate.

Species 79. (Mus. — ? Copied.)

LIMNEA EXPANSA. *Lim. testâ subfusiformi, pallidâ cornuâ, subinflata; spirâ elatâ, angustibus quinque, oblongo-inflatis, penultimo ventricosâ; anfractu ultimo ovato, supra aperturam elevato, tumidissimo; apertura anfriformi, labi, infra anfractum ultimum antice productâ, columellâ tortâ, recurâ; labio externo tenui, valde expanso; plicâ columellari crassâ, validâ.*

THE EXPANDED LIMNEA. Shell subfusiform, pale-horn, subinflated; spire elevated, whorls five, oblong-inflated, the penultimate ventricose; last whorl ovate, raised above the aperture, rather tumid; aperture anfriform, wide, produced in front below the last whorl, columella tortuous, recurved; outer lip thin, much expanded; columellar fold thick, strong.

HALDEMAN. Monograph of Freshwater Shells of North America.

Hab. North America.

The two specimens figured in Haldeman's Monograph differ somewhat in proportions, but agree in the expanded aperture and the backward curve of the anterior part.

Species 80. (Mus. —? Copied.)

LIMNEA FERRUGINEA. *Lim. testâ parvâ, striâque acuminatâ, carneo-ferruginâ; spirâ elongatâ, pyramidatâ, acuminatâ, anfractibus tribus, convexisculis; anfractu ultimo angustâculo; aperturâ parvâ, semi-ovâtâ, anticâ acuminatâ; plievâ columellari in medio labii interni positâ, prominenti, tortâ, subrecurvâ.*

THE FERRUGINOUS LIMNEA. Shell small, acuminate at both ends, horny-ferruginous; spire elongated, pyramidal, acuminated, whorls three, rather convex, last whorl rather narrow; aperture small, anteriorly acuminate; columellar fold placed in the middle of the inner lip, prominent, tortuous, rather recurved.

HALDEMAN. Monograph of the Freshwater Shells of North America.

Hab. N. America.

A very small shell, somewhat pointed at both ends.

Species 81. (Mus. —? Copied.)

LIMNEA FALLIDA. *Lim. testâ pyramidatâ, pallidâ fulvâ, tenui; spirâ aperturam longitudine paulo superanti, pyramidatâ, anfractibus tribus, lateribus rectisculis; anfractu ultimo anticâ rotundatim angulato; aperturâ subtrigonâ, anticâ latiusculâ, plievâ columellari rotundâ, elevatâ, subtortuosâ.*

THE PALE LIMNEA. Shell pyramidal, pale fulvous, thin; spire slightly exceeding aperture in length, pyramidal, whorls three, with rather straight sides; last whorl anteriorly roundly angular; aperture somewhat trigonal, anteriorly rather wide, columellar fold strong, elevated, rather tortuous.

ADAMS. Boston Journal of Natural History, vol. iii. p. 321.

Hab. Lake Champlain.

Species 82. (Mus. Brit.)

LIMNEA PHILADELPHICA. *Lim. testâ subfusiformi, anticâ latè expansâ; spirâ productâ, acuminatâ, anfractibus tribus, convexisculis; anfractu ultimo brevissculo, carneo, filis albis tenuibus striâta, aperturâ subovâ, aliformi, latè expansâ; columellâ crassâ, plievâ columellari elevatâ, latè, subcomplanatâ.*

THE PHILADELPHIA LIMNEA. Shell subfusiform, anteriorly widely expanded; spire produced, acuminate, whorls three, rather convex; last whorl rather short, horny, striped with fine white threads; aperture a little pinky, wing-shaped, widely expanded; columella thick, columellar plait raised, broad, rather flat.

LEA. Proceedings of the American Philosophical Society, p. 32.

Limnæa glabrata? Haldeman.

Hab. New York.

Species 83. (Mus. Brit.)

LIMNEA MODICELLA. *Lim. testâ subfusiformi, acuminatâ, rectisculi, fusco-cornâ, spirâ aperturam longitudine æquantî, anfractibus quatuor, convexis, suturâ distinctâ; anfractu ultimo brevissculo, rotundato; aperturâ suborâtâ, plievâ columellari prominenti, crassâ, brevî, subtortuosâ.*

THE MEAN LIMNEA. Shell rather fusiform, acuminate, rather straight, horny-brown, spire equalling the aperture in length; whorls four, convex, suture distinct, last whorl rather short, rounded; aperture nearly oval, columellar fold prominent, thick, short, rather tortuous.

SAY. Journ. Acad. Nat. Sci., vol. v. p. 122.

Hab. Maine, United States.

Species 84. (Mus. Brit.)

LIMNEA GLOBOSA. *Lim. testâ inflatâ, subglobosâ, brevîgati, semipellucidâ, carneo-rubescenti; spirâ parvâ, anfractibus duobus aut tribus minutis, apice acuminato; ultimo anfractu magno, rotundo; aperturâ auriformi, magnâ, anticâ latissimâ, plievâ columellari validâ, subspirali, elevatâ, tortuosâ, recurvâ.*

THE GLOBOSE LIMNEA. Shell subglobose, inflated, smooth, semipellucid, reddish horny; spire small, whorls two or three, minute, apex acuminate; last whorl large, rounded; aperture auriform, large; very wide anteriorly; columellar plait strong, subspiral, elevated, tortuous, recurved.

SOWERBY.

Hab. Australia.



L I M N Æ A.

PLATE XIII.

Fig. 32, c.

LIMNEA ATTENUATA, *Sapp.* In Haldeman's Monograph.
(Figures 32, a, b, are erroneously named LIMNEA
REFLEXA in our Pl. V., and belong to this species.)

Species 85. (Fig. a, b, Mus. Hanley.)

LIMNEA GINGIVALIA. *Lim. testa parvâ, utroque in-*
minatâ, subfusiformi, pallidè carnea; spirâ conicâ,
acuminatâ, apice rubro, anfractibus quotitur, testis-
bus rectiusculis; anfractu ultimo subcylindrico;
aperturâ angustâ, marginibus albis, columellâ
brevis multiplicatâ, rectiusculâ.

THE GUM LIMNEA. Shell small, acuminated at both
ends, rather fusiform, pale horn; spire conical,
acuminated, apex red, whorls four, with rather
straight sides; last whorl somewhat cylindrical;
aperture narrow, with white margins, columella
with a single slight fold, rather straight.

GOETTL. Mollusques de la Sarthe.

Lanera globosa, var., Dupuy.

Hab. France.

Species 86. (Fig. a, b, Mus. Hanley.)

LIMNEA GUEBELMANCUS. *Lim. testâ subconicâ, solid-*
iusculâ, cupâ fulvâ, loto pallidè fuscâ; spirâ
brevi, conicâ, anfractibus tribus, lateribus rectius-
culis; anfractu ultimo magno, subconico, antè
latiusculo; aperturâ pyriformi, subrossâ, columellâ
solida, pluri columellari supra medianâ decedâ,
brevis helmsâ.

THE GUEBELMAN LIMNEA. Shell rather conical, rather
solid, reddish brown, banded with pale yellow;
spire short, conical, whorls three, with rather
straight sides; last whorl large, rather conical, a
little widened in front; aperture pyriform, a little

rosy; columella solid, columellar fold raised above
the middle, slightly tortuous.

CASIA. In BABOT.

Hab. Sicily.

Species 87. (Mus. Hanley.)

LIMNEA LEAYA. *Lim. testâ conicâ, acuminatâ, fulvâ*
spirâ breviusculâ, anfractibus quinque, globatis,
lateribus rectis, apice acutissimo; anfractu ultimo
rectiusculo, antè latiori; aperturâ flavâ, sub-
trigoniâ.

THE YELLOW LIMNEA. Shell conical, acuminated,
brown; spire rather short, whorls five, step-like,
with straight sides, apex very sharp; last whorl
rather straight, wider in front; aperture yellowish,
subtriangular.

MOELLER. — ?

Hab. — ?

Species 88. (Fig. a, b, Mus. Hanley.)

LIMNEA SOLIDA. *Lim. testâ brevi, robustâ, subovata,*
fulvâ; spirâ breviusculâ, anfractibus brevibus sub-
rotundis; ultimo anfractu brevi, ventricosâ, post
columellam subexcavata; aperturâ subovata, mar-
ginâ carnea, columellâ rectiusculâ, solidâ.

THE SOLID LIMNEA. Shell short, robust, subovate, fulvous;
spire rather short, whorls short, rather rounded;
last whorl short, ventricose, a little excavated
behind the columella; aperture rather ovate,
margin pinky, columella rather straight, solid.

HALDEMAN. Monograph of Freshwater Shells of United
States.

Hab. N. America.

One of the original figures in Haldeman's plate is of
a delicate lilac colour, as shown in our back figure.

Species 89. (Mus. — ? Copied.)

LIMNÆA VIEBMS. *Lim. testā subulophorā, subviridi, covatā, fusiformi; spirā productā, attenuatā, acuminatā; anfractibus angustis, obliquis; ultimo anfractu breviusculo, ovato; apertura semiovatā, columellā crassā, rectiusculā.*

THE GREEN LIMNÆA. Shell partly diaphanous, greenish, horny, fusiform, spire produced, attenuated, acuminated, whorls narrow, oblique; last whorl rather short, ovate; aperture semiolate, rather acuminated in front, columella thick, rather straight.

Quoy. Voyage de l'Astrolabe, vol. ii. p. 204, pl. 58, f. 16-18.

Hab. Isl. of Guam.

I have not been able to identify this with any specimens in the collections.

Species 90. (Mus. Hanley.)

LIMNÆA OCAHENSIS. *Lim. testā parvā, obliquē subpyramidalā, fusā, rubescenti, translucidā; spirā aperturam longitudinē fere æquanti, anfractibus tribus, penultimo et ultimo oblongis, ultimo ovato, supra aperturam elevato; apertura parvā, subtriangulā; plicā columellari brevi, cœ tortuā.*

THE OCAH LIMNÆA. Shell small, obliquely subpyramidal, reddish brown, translucent; spire nearly equal to aperture in length, whorls three, the penultimate and ultimate oblong, the last ovate, raised above the aperture; aperture small, sub-trigonal, columellar plait short, scarcely tortuous.

SocLETT. Voyage de la Bonite.

Hab. Sandwich Islands?

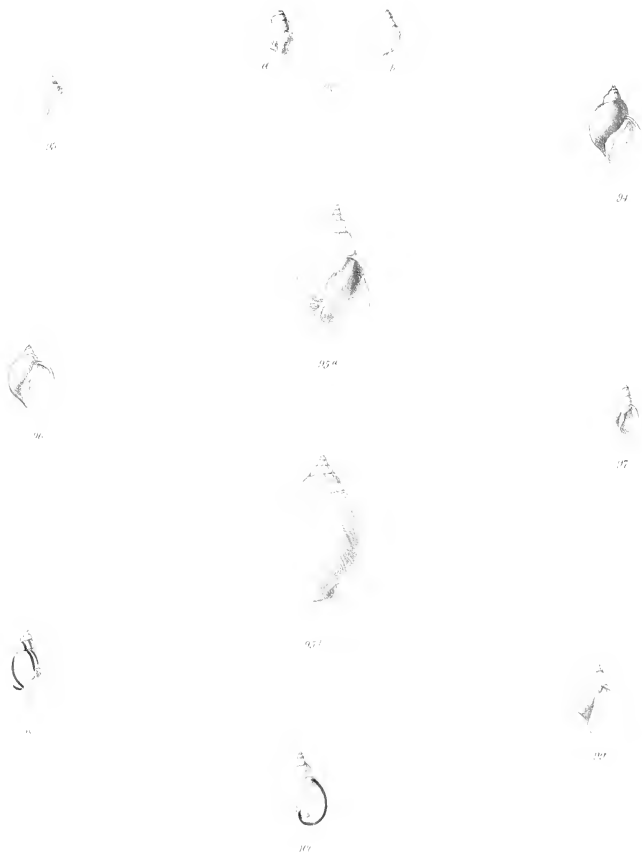
Species 91. (Mus. Hanley.)

LIMNÆA TUBICULA. *Lim. testā subviridi, oblongo-pyramidalā, striatā, rectiusculā, spirā aperturam longitudinē superanti, anfractibus quatuor, elevatis, apicalibus castaneis; apertura parvā, semiovatā, præ marginem castaneo unifasciatā; plicā columellari brevi.*

THE LITTLE-TOWLE LIMNÆA. Shell greenish, oblong-pyramidal, striated, rather straight spire exceeding aperture in length, whorls four, elevated, the apical ones chestnut; aperture small, semiolate, with a single chestnut band near the margin; columellar fold short.

KÜSTLE. In Martini et Chemnitz Conchylien Cabinet.

Hab. — ?



L I M N E A.

PLATE XIV.

Species 92. (Fig. *a, b*, Mus. Brit.)

LIMNÆA PERSICA. *Lim. testâ parvâ, rectiusculâ, solâ, conicâ; spirâ productâ, angustibus tribus, prominentibus, gradatis; ultimo angustâ brevi, antice truncato, post columellam unilobatâ, lateribus rectiusculis; aperturâ parvâ, angustâ, columellâ rectiusculâ, lat. v. p. co.*

THE PERSIAN LIMNÆA. Shell small, rather straight, solid, horny, spire produced, whorls three, prominent, in steps; last whorl short, anteriorly truncated, unilobated behind the columella, sides rather short; aperture small, narrow, columella rather straight, broadly expanded.

PARREYS. —

Hab. Schiraz, Persia.

Species 93. (Mus. Hanley.)

LIMNÆA AITICA. *Lim. testâ ovatâ, ventricosâ, sub-rivâli; pellucidâ; spirâ conicâ, brevi, angustibus tribus, parvis; ultimo angustâ inflatâ, ovato, moderate obliquo; aperturâ obliquâ, antice latâ, columellâ prominente unilobatâ, plâiâ tortuâ.*

THE AITIC LIMNÆA. Shell ovate, ventricose, greenish, pellucid; spire chestnut, short, whorls three, small; last whorl inflated, ovate, moderately oblique; aperture oblique, wide in front, columella prominently single-plaited, plait tortuous.

KÜSTER. Martini et Chemnitz Conchylicen Cabinet.

Hab. Greece.

Species 94. (Mus. Hanley.)

LIMNÆA VITREA. *Lim. testâ subfusiformi, subquadrilobâ, pallidâ conicâ, ventricosâ; spirâ productâ, angustibus prominentibus, subangulatis; ultimo angustâ breviusculâ, angulata; aperturâ oblongâ, spiram longitudine superantem, antice latâ; columellâ latâ, cuneatusculâ.*

THE GLASSY LIMNÆA. Shell subfusiform, semipellucid, pale horny, ventricose; spire produced, whorls prominent, rather angular; last whorl rather short, angular; aperture oblong, exceeding the spire in length, broad anteriorly; columella broad, rather thick.

HALDUMAN. Monograph of Freshwater Shells of United States.

Hab. Wisconsin.

Species 95. (Fig. *a, b*, Mus. Cuming in Brit.)

LIMNÆA PESHAVARSI. *Lim. testâ conico-subquadrâ, cuneatis conicâ, tenui; spirâ productâ, acuminatâ, angustibus quatuor, attenuatis; ultimo angustâ cuneatâ, conicâ, antice lato, postice propè suturam tumido, et pallidâ purpureâ, labio interno purpureo-castaneo; aperturâ pyriformâ, postice subangulatâ, antice latâ, subtruncatâ, columellâ colliâ arcuata.*

DESMAYES'S LIMNÆA. Shell horny-purple, very ventricose, thin, broad anteriorly, tumid posteriorly near the suture and pale purple; inner lip purple chestnut; aperture pyriform, posteriorly rather angular, broad anteriorly, subtruncated, columella strongly arched.

ADAMS. Proc. Zool. Soc.?

Hab. Australia.

Species 96. (Mus. Hanley.)

LIMNÆA TUNER. *Lim. testâ eleganter subfusiformi, pallidâ conicâ, transversâ; spirâ productâ, acuminatâ, angustibus tribus, apiculâ brevi, conicâ; ultimo angustâ inflatâ, brevi; aperturâ latâ, fissâ, postice prominente antice latissimâ, plâiâ columellariâ cuneatâ, solâ, rectiusculâ.*

THE THIN LIMNÆA. Shell elegantly subfusiform, pale horny, transversal; spire produced, acuminated, whorls three, the apical ones small, convex; last

whorl inflated, short; aperture broad, brown, posteriorly prominent, anteriorly very broad, columellar fold elevated, solid, rather straight.

PARREYS. —?

Hab. Hungary.

Species 97. (Mus. Brit.)

LIMN.EA SOTERIA. *Lim. testis obliquè subovatà, pallidè cornuè, angustè, semipillicubi; spirà subpyramidatà, aperturam longitudinè fere æquanti; anfracta ultimo lateralitèr subcompressa; aperturà subpyriformi, anticè subtruncatà; pliocolumellari elevatè, latè, crassè.*

THE VOTIVE LIMN.EA. Shell obliquely subovate, pale horny, narrow, semipillicubid; spire subpyramidal, almost equalling the aperture in length; last whorl laterally rather compressed; aperture subpyriform, anteriorly subtruncated; columellar fold elevated, broad, thick.

PARREYS. Nilla Cat., 1811, p. 32.

Hab. Bannat.

Species 98. (Mus. Harley.)

LIMN.EA PINGELLI. *Lim. testis elongatè, pallidè cornuè, hinc illic castaneo lineatim fasciatè, spirà elevatè, aperturam longitudinè superanti; anfractibus quinque convexis; ultimo anfracta ovato; aperturà breviorib; semioratè; pliocolumellari rectiusculè.*

PINGEL'S LIMN.EA. Shell elongated, pale horny, here and there linearly banded with chestnut, spire elevated, exceeding the aperture in length; whorls five, convex; last whorl ovate; aperture rather short, semiovate; columellar plait rather short.

BECK. MS.

Hab. Scandinavia.

This shell may possibly be a variety of *L. Vallii*, Beck.

Species 99. (Mus. Brit.)

LIMN.EA PELLIGRE. *Lim. testis ovato-subconicè, solidè, apicè, pallidè castaneè; spirà breviusculè, obtusè, anfractibus paucis; anfracta ultimo superi aperturam elevato, ad suturam tumido, anticè lato, post columellam convexo; aperturà auriculatèscenti, pyriformi, anticè latè.*

THE GOATLE LIMN.EA. Shell ovately-subconical, solid, opaque, pale chestnut; spire rather short, obtuse, whorls few; last whorl raised above the aperture, tumid at the suture, broad in front, excavated behind the columella; aperture yellowish golden, pyriform, broad in front.

SHUTTLWORTH. —? MS.

Hab. Switzerland.

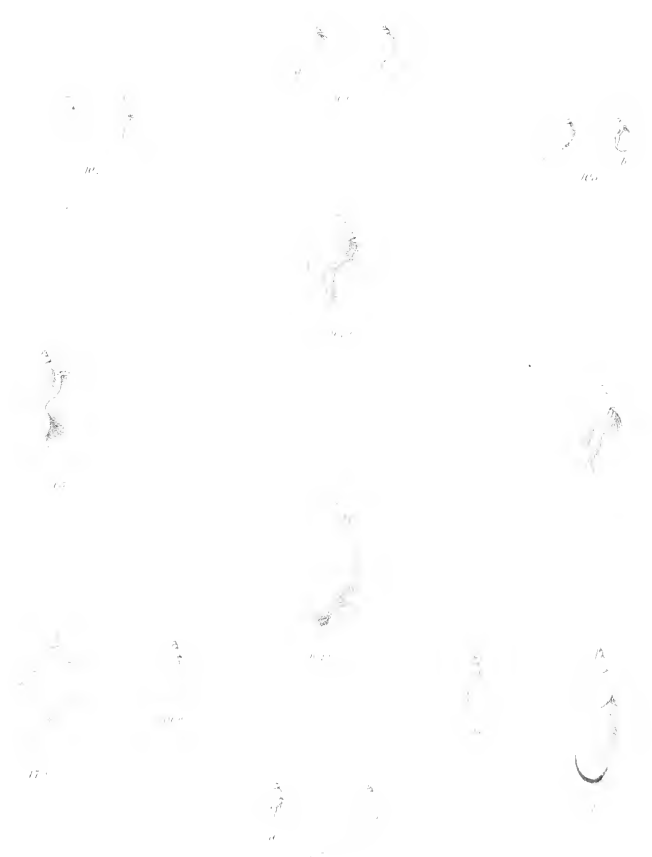
Species 100. (Mus. Brit.)

LIMN.EA BARBADENSIS. *Lim. testis subpyriformi, obliquè, convexo-rubescenti, apicè; spirà breviusculè, anfractibus tribus rotundis, ultimo anfracta ovato, convexo, aperturà obliquè expansè, præ marginem castaneo fasciatè, margine albo; pliocolumellari albè, tortuè.*

THE BARBADOES LIMN.EA. Shell pyriform, oblique, reddish horny, opaque; spire very short, whorls three, round; last whorl ovate, ventricose, aperture obliquely expanded, banded with chestnut near the margin; margin white; columellar fold white, tortuous.

BECK. —? MS. in Brit. Mus.

Hab. Barbadoes.



L I M N Æ A.

PLATE XV.

Fig. 18, c.

LIMNÆA PINGUIS, var. Wide Plates III. and IX.

Fig. 32, d, e.

LIMNÆA BIFLEXA, Say. The two previous figures in Plate V. must be referred to LIMNÆA ATTENUATA, Say, Plate XIII.

Fig. 35, d.

LIMNÆA EMARGINATA, Say. Original figure copied. See Plate VII.

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

LIMNÆA DALMATICA. *Lim. testâ parvâ, pallidâ coruscâ, subrotundâ, latâ, spirâ brevissimâ, anfractibus duobus, parvis, anfractu ultimo subgloboso, brevi, apertura magna, labio columellari rectiusculo, labio externo expanso.*

THE DALMATIA LIMNÆA. Shell small, pale horny, rather rounded, broad, spire very short, whorls two, small, last whorl rather globose, short, aperture large, columellar lip expanded.

PARREYS. — ?
Hab. Dalmatia.

Species 102. (Fig. a, b, Mus. Brit.)

LIMNÆA SANDLERI. *Lim. testâ conicâ, pallidâ fulvâ, laevigatâ, opacâ; spirâ aperturam longitudine æquantem, anfractibus tribus, convergentibus; ultimo anfractu inflato, brevi; apertura semirotundâ, intus pallidâ aurâ; columella rix arcuatâ.*

SANDERS' LIMNÆA. Shell conical, pale fulvous, smooth, opaque; spire equalling aperture in length; whorls three, rather convex; last whorl inflated, short; aperture semi-ovate, pale golden within; columella very little arched.

PARREYS. — ? MS.
Hab. Dalmatia.

Species 103. (Fig. a, b.)

LIMNÆA BALTICA. *Lim. testâ parvâ, ovato-subglobosâ, subrotundâ-cornâ, semipellucidâ; spirâ brevissimâ, anfractibus duobus aut tribus subrotundis; ultimo anfractu breviter arcuato; apertura semirotundâ, intus latiusculâ.*

THE BALTIC LIMNÆA. Shell small, ovately subglobose, greenish horn, semipellucid; spire very short, whorls two or three, rather rounded; last whorl briefly ovate; aperture semi-ovate, anteriorly rather wide.

NILLSON. — ?
Hab. The Baltic Sea

Species 104. (Fig. a, b, Mus. Hanley.)

LIMNÆA LUTEOLA. *Lim. testâ ventricosâ, rectâ, pallidâ coruscâ, tenui; spirâ conicâ, breviusculâ, anfractibus parvis, declivis; anfractu ultimo inflato, magna, intus latiusculâ; columella valde amplicatâ, plicâ albâ, rectiusculâ.*

THE YELLOWISH LIMNÆA. Shell ventricose, straight, pale horn, thin; spire conical, rather short, whorls few, sloped; last whorl inflated, large, rather broad anteriorly; columella with a strong fold; fold white, rather straight.

LAMARCK. ANIMÉRIUS sans Vertébrés, vol. vi. p. 160.
Hab. Bengal.

Species 105. (Mus. Brit.)

LIMNÆA BREVICAUDA. *Lim. testā obliquē tortuā, pallidē cornuā, ventricosā; spirā brevī, acuminatā; anfractibus tribus, parvis; ultimo anfractu raldē inflato, breviusculo, post columellam excavato; apertura expansā, anticō subacuminatā; plicā columellari prominenti, spirālīter tortuosā.*

THE SHORT-TAILED LIMNÆA. Shell obliquely tortuous, pale horn, ventricose; spire short, acuminated; whorls three, small; last whorl much inflated, rather short, excavated behind the columella, aperture expanded, anteriorly subacuminated; columellar fold prominent, spirally tortuous.

SOWLEY. (Adopted from MSS.)

Hab. Australia.

Species 106. (Fig. a, b, Mus. Hanley.)

LIMNÆA SPIRULATA. *Lim. testā subfusiformi, transversi, pallidissimi; spirā productā, anfractibus parvis, distinctis, convexiusculis; ultimo anfractu oblongo-orato; apertura oblongā. plicā columellari rectiusculi laevi prominenti.*

THE COILED LIMNÆA. Shell subfusiform, translucent, very smooth; spire produced, whorls few, distinct, rather convex; last whorl oblong-ovate; aperture oblong, columellar fold rather straight, not prominent.

MÜLLER. Journal de Conchyliologie.

Hab. Australia.

Species 107. (Fig. a, b, Mus. Hanley.)

LIMNÆA GALIANA. *Lim. testā parvā, pallidē cornuā, rectiusculi, brevī, spirā aperturam longitudine equantē, anfractibus tribus, gradatis; ultimo anfractu brevī, subcylindrico, anticō subtruncato; apertura parvā; plicā columellari tenui, inconspicuā.*

THE BRIGHT LIMNÆA. Shell small, pale horny, rather straight, short; spire equalling aperture in length, whorls three, in steps; last whorl short, subcylindrical, anteriorly truncated; aperture small, columellar fold thin, inconspicuous.

SAY. Haldeman's Monograph of Freshwater Shells of the United States.

Hab. New Jersey.

L I M N E A.

	Plate.	Species.		Plate.	Species.
aeicula, <i>Koehler</i>	IV.	21	expansa, <i>Habblanua</i>	XII.	79
acuminata, <i>Lamarck</i>	X	66	elliptica, <i>Lea</i>	IX.	61
acuta, <i>Jeffreys</i>	II.	13	elodes, <i>Sag.</i>	V, IX.	29
affinis, <i>B.ck</i>	V.	31	elongata, <i>Draparnaud</i>	XI.	68
Angasi, <i>Sowerby</i>	II	12	exilis, <i>Lea</i>	XI.	72
amygdalus, <i>Troschel</i>	X.	64	ferruginea, <i>Habblanua</i>	XII	80
angulata, <i>Sowerby</i>	VII.	17	flava, <i>Morrell</i>	XIII	87
appressa, <i>Sag.</i>	III.	20	foveolata, <i>Turtan</i>	I.	3
attenuata, <i>Sag.</i>	XIII.	32	fragilis, <i>Linnæus</i>	I.	5
(as emarginata erroneously)	V.	1	frons, <i>Pfiffer</i>	III.	17
attica, <i>Kuster</i>	XIV.	93	Gallina, <i>Sag.</i>	XV.	107
auricularia, <i>Linnæus</i>	I.	1	gossypiosa, <i>Bock</i>	IV.	27
auricularia, <i>Draparnaud</i>	I, II.	1	Gillmannensis, <i>Cosca</i>	XIII.	86
Balthica, <i>Mills</i>	XV.	103	gibbivata, <i>Goupin</i>	XIII.	85
Burnetti, <i>Abder</i>	VIII.	31	globosa, <i>Sowerby</i>	XII.	84
Barladenses, <i>Bock</i>	XIV.	100	glabræ, <i>Müller</i>	I.	2
Blauerei, <i>Shuttleworth</i>	XI.	71	gibbifrons, <i>Draparnaud</i>	II.	9
Brevicauda, <i>Sowerby</i>	XV.	105	gracilis, <i>Sag.</i>	III.	19
bulimoides, <i>Kuster</i>	XII.	77	heavis, <i>Sowerby</i>	IX.	57
bullo, <i>Benson</i>	IX.	59	Hedolli, <i>Bock</i>	IV.	22
Canadensis, <i>Sowerby</i>	VII.	15	Hedley's, <i>Bock</i>	XI.	74
canalis, <i>Papuy</i>	XI.	75	humilis, <i>Sag.</i>	XII.	78
Californica, <i>Sowerby</i>	X.	67	intermedia, <i>Ferussac</i>	III.	16
capitata, <i>Sag.</i>	VIII.	33	interstriata, <i>Sowerby</i>	X.	62
catascopium, <i>Sag.</i>	V.	33	involuta, <i>Harey</i>	II.	8
cerasus, <i>Troschel</i>	IX.	59	Japonica, <i>Sowerby</i>	XI.	69
chalvæa, <i>Gould</i>	VIII.	52	Javanica, <i>Mitchell</i>	VIII.	50
chlamys, <i>Benson</i>	X.	65	jugularis, <i>Sag.</i>	IV.	24
coarctata, <i>Lea</i>	X.	36	lacostoma, <i>Lamarck</i>	XI.	68
columella, <i>Sag.</i>	X.	36	Lyonsi, <i>Deshayes</i>	IX.	59
cornua, <i>Falcavionis</i>	I.	5	luteola, <i>Lamarck</i>	XV.	104
Cubensis, <i>Pfiffer</i>	VIII.	48	macrostoma, <i>Sag.</i>	VI.	36
Cumingii, <i>Adams</i>	VI.	38	(erroneously as <i>columella</i>)		
Dalmatica, <i>Parry</i>	XV.	104	megastoma, <i>Sag.</i>	II.	11
decollata, <i>Mighals</i>	VI.	12	Mellournensis, <i>Pfiffer</i>	VI.	39
delicata, <i>Sag.</i>	XII.	76	Miota, <i>Draparnaud</i>	I.	3
Deshayesi, <i>Adams</i>	XIV.	95	modicella, <i>Sag.</i>	XII.	83
diaphana, <i>Kütz</i>	V.	30	Natalensis, <i>Keemp</i>	VII.	16
emarginata, <i>Sag.</i> (not Pl. VI.)	VIII, XV.	35	Naxivæda, <i>Falcavionis</i>	VIII.	49

LIMN. EA.

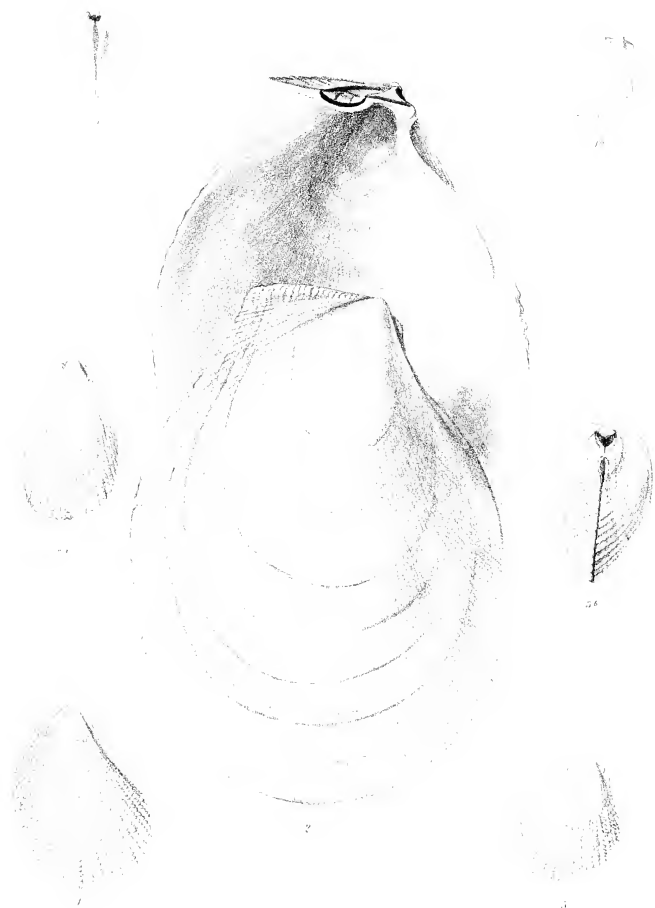
	Plate.	Species.		Plate.	Species.
nucleus, <i>Troschel</i>	X.	67	Siamensis, <i>Sowerby</i>	X.	63
Nutritionala, <i>Lea</i>	XI.	70	solida, <i>Haldeman</i>	XIII.	88
obscura, <i>Zeigler</i>	I.	6	sotaria, <i>Parry's</i>	XIV.	97
oculifracta——?.....	XI.	68	speciosa, ——?.....	I.	5
Ouahensis, <i>Sauvaget</i>	XIII.	90	spirulata, <i>Mousson</i>	XV.	106
ovalis, <i>Sowerby</i>	IX.	59	stagnalis, <i>Linnaeus</i>	I.	4
ovata, <i>Draparnaud</i>	III.	15	Strangei, <i>Adams and Argus</i>	VI.	40
pellida, <i>Adams</i>	XII.	81	strigata, <i>Parry's</i>	I.	4
pellustris, <i>Draparnaud</i>	I.	5	succineaformis, <i>Shuttleworth</i>	VIII.	55
patula, <i>Troschel</i>	II.	10	succinea, <i>Deshayes</i>	IV.	26
pelliger, <i>Shuttleworth</i>	XIV.	99	succinea, <i>Deshayes</i>	IX.	57
peregra, <i>Draparnaud</i>	I.	7	sulcatula, <i>Troschel</i>	IX.	59
Persea, <i>Parry's?</i>	XIV.	92	Sumasii, <i>Baird</i>	V.	34
Philadelphica, <i>Lea</i>	XII.	82	Swinhoei, <i>H. Adams</i>	IV.	25
Philippii, <i>Adams and Argus</i>	VI.	41	tener, <i>Parry's?</i>	XIV.	96
Pingelii, <i>Beck</i>	XIV.	98	truncatula.....	I.	3
pinguis, <i>Say</i>	XV., III., IX.	18	turricula, <i>Kuster</i>	XIII.	91
proxima, <i>Lea</i>	VII.	41	twinita, <i>Sowerby</i>	I.	3
psammulata, <i>Sowerby</i>	IX. (Sp.)	58	umbrosa, <i>Say</i>	I.	6
ceremoniously as <i>convexata</i>	VI. (fig.)	35	VahlII, <i>Beck</i>	IV.	23
reflexa, <i>Say</i> . (not Pl. V.).....	XIII., XV.	32	variabilis, <i>Benson</i>	IX.	59
Riboricensis, <i>Rehersch</i>	VIII.	54	ventricularis, <i>Kuster</i>	XI.	73
rulescens, <i>Gray</i>	III.	14	viator, <i>D'Obolny</i>	IX.	56
Sandleri, <i>Parry's</i>	XV.	102	vinosa, <i>Adams and Argus</i>	VI.	37
Sandwichensis, <i>Phillips</i>	V.	28	viridis, <i>Quoy</i>	XIII.	89
scalaris, <i>Beauvois</i>	IX.	60	vitrea, <i>Haldeman</i>	XIV.	94

MONOGRAPH

OF THE GENUS

L I M A.

By Dr. A. S. REID, of the University of Toronto.
Published by the University of Toronto Press, 1915.



L I M A.

PLATE I.

Genus LIMA, Bourc.

Testa bivalvis, uniusvalvis, liberatim hinc a thasso, & epivalvis, biancocalata, pharyngæ bilobæ, costæ aut subtriangulæ, costis frequentibus, et costis striatis radiatis; cardine ovato, bivalvis, fissura triangulari in medio apæ subtriangulæ cartilagineæ, epiphoræ; mulothargano triangulari separato. Epidermis fusca, tenuis.

Shell oval, with one muscle, free or adhering by a byssus, epivalve bauriculated, generally obliquely ovate or subtriangular, rayed with frequently numerous ribs or striae; hinge straight, toothless, with a triangular pit in the middle of a triangular area receiving the cartilage; umbos separated by a triangular area. Epidermis brown, thin.

Of the twenty-five species enumerated in the following monograph, seven or eight, including *S. signata*, are inhabitants of the Red Sea and Mediterranean. Our own seas contribute five species, and the largest shell, *L. caevata*, is found in Norway. There are also many Australian, Philippine, West Indian, and South Sea species, with a few whose localities are scattered over the Indian and other Seas. A triangular disc containing a smaller triangular cartilaginous pit, at the top separating the umbos, distinguishes this genus from the *Potamæ*.

Most of the species have an hiatus between the anterior margins of their valves, for the passage of a byssus of attachment. Some gape on both sides, and others are closed nearly all round. The group of epivalval shells such as *Lima hollata*, have been separated under the name of *Leontida*. A "Lima's nest" is a collection of *Nallipores*, which the animal strings together by means of the byssus, in the midst of which it finds shelter.

Species I. (Mus. Joffroy.)

LIMA LOSOGONI, *Lima, testa tenui, ventricosa, minus fissurâ striatâ, fissi clausæ, obliquè subacutâ, unius-*

valvis, in thasso, & mulothargano triangulari, costæ cardinali separata, mulothargano triangulari obtuso.

LOSOGONI'S LIMA. Shell thin, ventricose, very minutely striated, nearly closed, obliquely subacute, anteriorly subtriangular, the central margin, hinge area and umbos, generally oval, obtuse.

Lima, Savoy, Joffroy.

L. caevata, F. Gmel.

Hab. British Seas.

Species 2. (Mus. Bourc.)

LIMA LUSOGONI, *Lima, testa ovata, tenui, uniusvalvis, ventricosa, costis tenuibus, utriusque partium hinc, hinc, costis costis, anteriorum centralium obliquæ, uniusvalvis, fissurâ striatâ, fissi clausæ, in medio angulâ triangulari, mulothargano triangulari obtuso.*

THE LUSOGONI LIMA. Shell oval, thin, large, ventricose, rarely striated, a little gaping on both sides, a triangular cartilage, generally found beneath the anterior central margin, beneath the umbos, an ovate or subtriangular area posteriorly separating the umbos.

CHEMNI, *Conch. 7*, p. 355, t. 68, f. 654.

Hab. Norway.

Species 3. (Fig. *a, b*, Mus. Bourc.)

LIMA HOLLATA, *Lima, testa crassa, ventricosa, clausa, uniusvalvis, unius, tuberculatis radiatis, margini cardiali bivalvi, angulâ uniusvalvis subtriangulæ, uniusvalvis, a pallidus.*

THE HOLLATION LIMA. Shell thick, rather straight, obliquely ovate, very ventricose, nearly closed, on both sides, rayed with numerous minutely tuberculated ribs; hinge margin broad, with a single fold beneath the umbos; umbos large, equal.

Bourc., Mus. Cas. Vind.

Hab. Savoyan.

Species 4. (Mus. Brit.)

LIMA MULTICOSTATA. *Lim. testis crassâ, compressâ, obliquè subtriangulâ, auricâ ad marginem ventradem obliquè productâ, costis cicherrimis tantibus squamoso-nodulosis ciliatâ; auriculâ antica parvâ.*

THE MANY-RIBBED LIMA. Shell thick, compressed, obliquely subtriangular, anteriorly obliquely produced at the ventral margin, rayed with very numerous thin, scaly-nodose ribs; anterior auricle small.

SOURCE. The saurus Conchyliorum, Lima, Sp. 6, f. 38, *Hab.* Red Sea. Mediterranean.

It has about twenty-four ribs in *L. squamosa*, there are about thirty-six in this species.

Species 5. (Mus. Brit.)

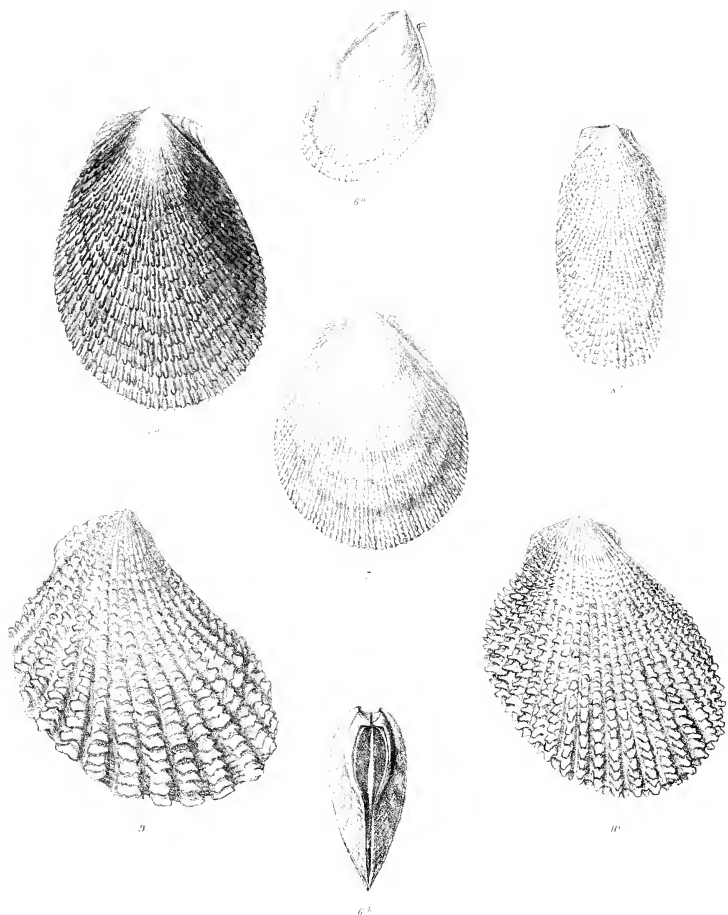
LIMA BIFUNDATA. *Lim. testis ventricosissimâ, latâ, obliquè rotundo-subtriangulâ, latè utrinquè hiatâ, posticè ad marginem ventralem subproductâ, costis rugosis nudificis, sublistantibus radiatâ; auriculâ declivibus, antica parvisculâ.*

THE ROUNDED LIMA. Shell very ventricose, broad, obliquely rounded-subtriangular, widely gaping on both sides, posteriorly produced at the ventral margin, rayed with rugose beaded, rather distant ribs; auricles sloped, the anterior one rather small.

SOURCE. The saurus Conchyliorum, Lima, Sp. 11, f. 19.

Hab. Mediterranean.

Resembling *Lima ventricosa*, but much shorter, broader, and less oblique.



L I M A.

PLATE II.

SPECIES 6. (Fig. 9, 6. Mus. Brit.)

LIMA HANS. *Lim. testâ tenui, subcompressa, obliquè ovata, ad latera lateri, medio minus striata, posticâ paulatim, antice latè hinc, hinc autè a costâ tuberculâ valida marginata; auriculis antice acutis, basi carinata plicata.*

THE GAPING LIMA. Shell thin, subcompressed, obliquely ovate, smooth at the sides, striated minutely in the centre, gaping a little posteriorly, widely anteriorly; anterior hiatus bordered with a strong internal rib; anterior auricles sharp; carinal area small.

GMELIN. (Ostrea) No. 3333

Limnaea campis, Montagu.

Limnaea trizoni, Turton.

Limnaea aperta, Sowerby.

Hab. Britain, &c.

More ovate and broad than *Limnaea hians*.

SPECIES 7. (Mus. Brit.)

LIMA LUXURIA. *Lim. testâ subovata, subcompressa, costâ subcaudâ, tenui, lata, epibulmâ, fusca tubata, costellis minutis granosa-anthesis, divaricatis interruptis subangulâ; anthesis antice latè hinc hinc, exasis; cardine crasso, absolute plicata.*

THE SLENDER LIMA. Shell subovate, subcompressed, rather straight, thin, broad, covered with a brown epidermis, rather roughened with minute, granose nodules diversely interrupted ribs; anterior auricles broadly gaping, thick; hinge thick, absolutely plicated.

CHUMATZ. Conch., tom. vii., p. 352, tab. 68, f. 652.

Ostrea chumatis, Gmelin.

Hab. Philippines, Singapore, &c.

Much more finely sculptured, and altogether a thinner shell than *Limnaea scabra*.

SPECIES 8. (Fig. 10. Mus. Brit.)

LIMA SALLA. *Lim. testâ crassa, compressa, costâ subcaudâ, posticâ paulatim, antice minus hinc, costâ anthesis divaricata interruptis, subanthesis rapata, operculis antice crassis, plicatis.*

THE STURDY LIMA. Shell thick, compressed, rather straight, posteriorly a little, anteriorly more gaping, roughened with numerous diversely interrupted subnodules; anterior auricles thick, rounded.

BORN. Mus. Cas., p. 110.

Pecten aspera, Chemnitz.

Ostrea chumatis, Gmelin.

Hab. West India.

SPECIES 9. (Mus. Macandrew.)

LIMA MACANDREWII. *Lim. testâ subobliquè, subtriangulâ, antice ad angulum costalem obliquè productâ, costâ exasis, parvis, subtriangulis squatis plicatis costâ subcaudâ laevibus, imbricatis minuto, latè carinâ excavata; cardine angulo, trigono.*

THE 3-WALLED LIMA. Shell solid, oblique, subtriangular, anteriorly obliquely produced at the margin, armed with few, thick rounded ribs imbricated with vaulted external, short scales; anterior side excavated; hinge large, trigonal.

SOWLEY. The genus *Conchylorhynchus*, *Limnaea*, sp. 7, figs. 14, 17.

Hab. Suez. R. Macandrew, Esq.

The specimens brought by Mr. Macandrew from the Red Sea, agree well with those formerly described from Mr. Cuming's collection.

SPECIES 10. (Mus. Brit., &c.)

LIMA SQUAMOSA. *Lim. testâ crassa, obliquè, compressâ,*

LIMA.—PLATE II.

<i>oblique subovata, antice ad marginem ventralem oblique producta, costis numerosis imbricatis squamosis radiantibus ornata; area antica laterali infra auriculas depressa.</i>	at the ventral margin; armed with numerous imbricately squamose radiating ribs; lateral anterior area beneath the auricles depressed.
THE SQUAMOSE LIMA. Shell thick, oblique, compressed, obliquely sub-ovate, anteriorly obliquely produced	LAMARCK, Anim. sans Vert. <i>Ostrea Lima</i> , LINNÆUS. <i>Hab.</i> Red Sea and Mediterranean.



III



I



IV



II



V



VI



VII

L I M A.

PLATE III.

Species 11. (Fig. 197, Mus. Brit.)

LIMA VENTROSA. *Lima testis (Lima) ventrosa* (Poli).
ventrosissima, albâ, in antiquâ (Poli).
testis subovatus, crassus, rotundus, sub
laevius, distantibus, subâ, sub
laevius, levatus.

THE VENTROSE LIMA. Shell obliquely elongated, very ventrosous; white, somewhat uneven, with concentric slightly raised striae, and with rough, rather irregularly, but moderately gapping.

SOLELY. Thesaurus Conchyliorum, Lima, Sp. 19, t. 6, 7.

Lima glaciellus, Poli.

Hab. Melitaniæm.

The name *L. glaciellus*, applied by Poli to this species, had been previously applied by Gmelin to the shell of P. Lilliers from *L. testis*, in being rather more ventrosous and less oblique, and in the presence of a more distant

Species 12. (Mus. — ? (Fig. 198, Mus. Brit.)

LIMA ANGSTATA. *Lima testis (Lima) angusta* (Sowerby).
obliqua, compressa, albâ, testis (Lima) angusta (Sowerby).
ventrosâ, rotundâ, sub

THE NARROW LIMA. Shell very thin, very obliquely compressed, white, with a wide lacerated striae, finely very closely radially striated.

SOLELY.

Lima aperta (Lilliers) var. Sowerby in (Thes.)

Hab. — ?

I cannot now remember when it was obtained; the specimen of this shell figured in the Thesaurus, but it is very much narrower and more compressed than

L. glaciellus, Gmelin, in Conchyliorum, t. 6, p. 20, 21, 22.

Species 13. (Mus. Brit.)

LIMA ANGSTATA. *Lima testis (Lima) angusta* (Sowerby).
obliqua, compressa, albâ, testis (Lima) angusta (Sowerby).
ventrosâ, rotundâ, sub

THE NARROW LIMA. Shell obliquely, white, obliquely compressed, anteriorly angular at the ventral angle, very finely radially striated; posteriorly rounded, and flattened.

SOLELY. Thesaurus Conchyliorum, Lima, Sp. 12, t. 6, 7, 8, 9, and 10, p. 22.

L. testis, Sowerby, MS. Brit. Mus.

L. testis, Adams and Reeve.

Hab. Paganâ, Cœmæ, New Caledonia (van Scooterck).

Species 14. (Fig. 199, Mus. Brit.)

LIMA ANGSTATA. *Lima testis (Lima) angusta* (Sowerby).
obliqua, compressa, albâ, testis (Lima) angusta (Sowerby).
ventrosâ, rotundâ, sub

THE NARROW LIMA. Shell obliquely elongated, thin, subcompressed, gaping a little anteriorly, widely posteriorly; rayed with distant scabrous ribbed at the margin; anterior auricles small, lanceolate wide.

SOLELY. Thesaurus Conchyliorum, Lima, Sp. 17, t. 30, 31.

Hab. — ?

A rather remarkable species for its sculpture, the ribs being distant and sharp, projecting at the ventral margin.

LIMA.—PLATE III.

Species 15. (MUS. BRIT.)

LIMA SIEANGALL. *Lima*. *testâ tenuissimâ rectiusculâ,*
oblongatâ, subaquilati colâ, costâ costâ, albâ, angustâ,
costis distantibus acutis medio radiatâ; auriculâ
subaquilatis, acutis angulatis, ad lobum lacinatâ.

STRANGE'S LIMA. Shell rather thin, nearly straight,
 elongated, subaquilateral, ventricose, white, narrow,

rayed with distant sharp ribs in the middle, auricles
 nearly equal, sharply angular, smooth at the sides.
 A. ADAMS, Proc. Zool. Soc.

Hab. Moreton Bay.

Rather more oblique, thinner, and less ventricose
 than *Lima ballata*, and with distant, sharp teeth.



16a



16b



16c



17a



18a



18b



18c

L I M A.

PLATE IV.

Species 16. (Fig. *a*, Mus. Taylor, *b, c*, Mus. Brit.)

LIMA ARCUATA. *Lim. testâ obliquè subtriangulâ, convexâ marginem dorsalem attenuatâ, ad marginem ventralium latè expansâ, subcompressâ, utrinque latèssimè hiatâ; auricula ventrali posticè obliquè productâ; costis radiantibus inaequalibus.*

THE ARCHED LIMA. Shell obliquely subtriangular, attenuated towards the dorsal margin, expanded at the ventral margin, rather compressed, very widely gaping on both sides; ventral margin posteriorly obliquely produced; radiating ribs unequal.

SOWLEY. *Thesaurus Conchyliorum.* Lima, Sp. 15, f. 11, 42.

Hab. Lord Hood's Island, under coral rocks. Panama, Guayaquil Bay, Guacamayo.

The small specimen, *f. a*, is from Panama, evidently a young shell, but exhibiting the characters in which the species differs from *Lima fragilis*, namely the convexity of the shell giving a wide hiatus, and the broad expansion of the ventral margin.

Species 17. (Fig. *a, b*, Mus. Brit.)

LIMA FASCIATA. *Lim. testâ tenui, concentricè, per obliquè ovatâ, latè, albâ, concentricè pallidâ, fuscâ intus, anticè inter marginem lateralem et ventralis inaequalitè; utrinque hiatâ; costis acutis asperatis, inaequalibus radiatâ; auricula ventrali lata, auricularis acutis; marginè ventrali posticè producto, anticè oclivi.*

THE BANDED LIMA. Shell thin, ventricose, very obliquely ovate, broad, white, concentrically

banded with small rows, anteriorly angular between the lateral and ventral margins; gaping on each side; rayed with sharp, rough, unequal ribs; hinge margin broad, with sharp auricles; ventral margin produced, sloped upwards in front.

LINNEUS. *Systema Naturæ.*

Lima fasciata, Lamarek.

Lighter, more oblique and less ventricose than *Lima patrescens*, and the ribs sharper and more numerous.

Species 18. (Fig. *a, b*, Mus. Brit.)

LIMA FRAGILIS. *Lim. testâ tenui, compressâ, latè obliquè, angustè anticè, albâ, albâ epidermidè pallidâ, fuscâ intus, costis distinctibus acutis, ad marginem ventralis dentatis radiatâ, utrinque medio anticè hiatâ; utrinque anticè anticè convexo-angulatâ; marginem ventralis posticè obliquè producto.*

THE FRAGILE LIMA. Shell thin, compressed, very oblique, rather narrow, white unless covered by a pale brown epidermis, rayed with distant sharp ribs, dentated at the ventral margin, gaping moderately on both sides, lateral margin convexly arched in front, ventral margin posteriorly obliquely produced.

CHENUY. *Conch.* T. 1, 61, f. 650.

Lima delicatula, Conrad.

Lima fragulatula, Lamarek.

Hab. Talin, Philippines.

The South Sea variety, *fig. a*, may be a little less oblique and more ventricose than the Philippine one, *fig. b*, but there seems to be no essential difference between them.



L I M A.

PLATE V.

Species 19. (Mus. Comp. Brit.)

LIMA CUMINGI. *Lima testis parva, obliqua, ventrosâ, compressâ, medio-lateraliâ ante, angulatiâ, et laterali, costis duabus in medianis dictis subaequalibus; marginis ventrali antice medice, postice obliquâ subexpansâ.*

CUMING'S LIMA. Shell small, oblique, narrow, compressed, angular in the middle of the anterior side, scarcely gaping; rayed with twelve central distant ribs; ventral margin anteriorly sloped upwards, posteriorly obliquely slightly expanded.

SWINLEY, Proc. Zool. Soc.

Hab. Isl. Luzon, Philippines.

The valves of this pretty little shell are closed nearly all round.

Species 20. (Mus. Joffroy.)

LIMA SAUSI. *Lima testis parva, foveâ, testis sub-auriculati, costâ, helice costâ, subaequalibus, costis numerosis squamosis, auriculis rotatis; marginis cardinali lato, minutissime denticulato; auriculis a paulibus.*

SALIS'S LIMA. Shell small, brown, slightly orange within, straight, shortly oval, sub-equilateral, rayed with numerous squamose rounded ribs; hinge margin broad, very minutely denticulated; auricle equal.

LOEVS, Mollusca of Scandinavia.

Hab. Scandinavian Seas.

Species 21. (Mus. Brit.)

LIMA JAPONICA. *Lima testis ovata, ventrosâ, laterali, rectis costâ, subaequalitatis, costis radiis, subaequalibus, numerosis radiatis, marginis ventrali sic obliquâ producta; marginis cardinali lato; auriculis subaequalibus; umbonibus productis.*

THE JAPANESE LIMA. Shell ovate, ventrosous, broad, rather straight, nearly equilateral, rayed with numerous strong, rather sharp ribs; ventral margin scarcely obliquely produced; hinge margin broad; auricles nearly equal; umbos produced.

A. ADAMS, Proc. Zool. Soc.

Hab. Japan.

Species 22. (Mus. Brit.)

LIMA SUCUBOCLAYA. *Lima testis parva, costâ, angustâ, et rectâ, clausi, ventrosissimi, tenui, albi, striâ tenuis, medio-laterali, subaequali notatâ; laterales laevigatae; auriculis parvis, aequalibus; umbonibus elevatis, acutè productis.*

THE SUB-EQUILATED LIMA. Shell small, straight, narrow, sub-equilateral, closed, very ventrosous, thin, white, rayed in the middle with thin striae, marked with a central sulcus; sides smooth; auricles small, equal; umbos elevated, acutely produced.

MORTON, British Shells.

Lima subota, Møller.

Hab. Great Britain, Scandinavia.

Species 23. (Mus. Brit.)

LIMA ILLIPTICA. *Lima testis rectiusculâ, angustâ, oblongo-ovata, tenui, subaequalitatis, albi, clausi, ventrosissimi, striâ tenuibus centralibus, ad latera evanidis, radiatis, subâ postcardinali subobliquâ notatâ; marginis ventrali postice paulo obliquè producto.*

THE ILLIPTIC LIMA. Shell rather straight, narrow, oblong, ovate, thin, sub-equilateral, white, closed, very ventrosous, rayed with thin striae disappearing at the sides, marked with a post-central

rather oblique sulcus; ventral margin posteriorly a little produced.

JEFFREYS. British Shells.

Hab. North Britain. Scandinavia.

This species is described as differing from *Lima subauriculata* in being less narrow and a little more oblique; Mr. Jeffreys has observed that the longitudinal sulcus, which in that species is central, in the present inclines towards the posterior side.

Species 24. (Mus. Brit.)

LIMA FALKLANDICA. *Lima testis breviter ovata, clausa, alba, sedata, lata, ventricosa, subequilateralis; costis laevi numerosis ventralibus radiatis; lateribus truncatis.*

THE FALKLAND LIMA. Shell shortly oval, closed, white, solid, broad, ventricose, subequilateral; rayed with central, not numerous ribs; smooth at the sides.

A. ADAMS. Proc. Zool. Soc.

Hab. Falkland Isles.

Shorter and broader in proportion than any of the subequilateral species excepting *L. Sarsii*.

Species 25. (Mus. Brit.)

LIMA PECTINATA. *Lima testis parva, subrotunda, obliqua, subfusa, costis paucis rotundis oblique radiatis; postice ad marginem ventralium oblique producta; intere antice rectiuscula, auricula minutissima; margine cordium minutissimi denticulato; umbonibus edule productis.*

THE PECTINATED LIMA. Shell small, rather rounded, oblique, brownish, obliquely rayed with few rounded ribs; anteriorly obliquely produced at the ventral margin; anterior side rather straight, with very small auricle; hinge margin very minutely denticulated; umbones much produced.

A. ADAMS. (LIMEA). Proc. Zool. Soc.

Hab. Gulf of Suez.

Species 26. (Mus. Brit.)

LIMA CEYLONICA. *Lima testis parva, subobliqua, subequilateralis, oblongo-ovata, pallide fusca, costis acutiusculis numerosis prope latera subventralibus radiatis; margine ventrali postice paulo producto.*

THE CEYLON LIMA. Shell small, a little oblique, subequilateral, oblong-ovate, pale brown, rayed with rather acute numerous ribs almost disappearing near the sides; ventral margin a little produced posteriorly.

A. ADAMS. Proc. Zool. Soc.

Hab. Ceylon.

Species 27. (Mus. Brit.)

LIMA BUBBLE-BAKING. *Lima testis parva, compressa, oblique subtrigona, ad laterem anticum excavata, ad marginem ventralium anticum producta, costis numerosis tuberculis bulliformibus fere omnibus radiatis.*

THE BUBBLE-BAKING LIMA. Shell small, compressed, obliquely subtriangular, excavated at the anterior side, produced anteriorly at the ventral margin, rayed with numerous ribs bearing bubble-shaped tubercles.

DESHAYES. Conchyliologie de l'Isle de la Reunion.

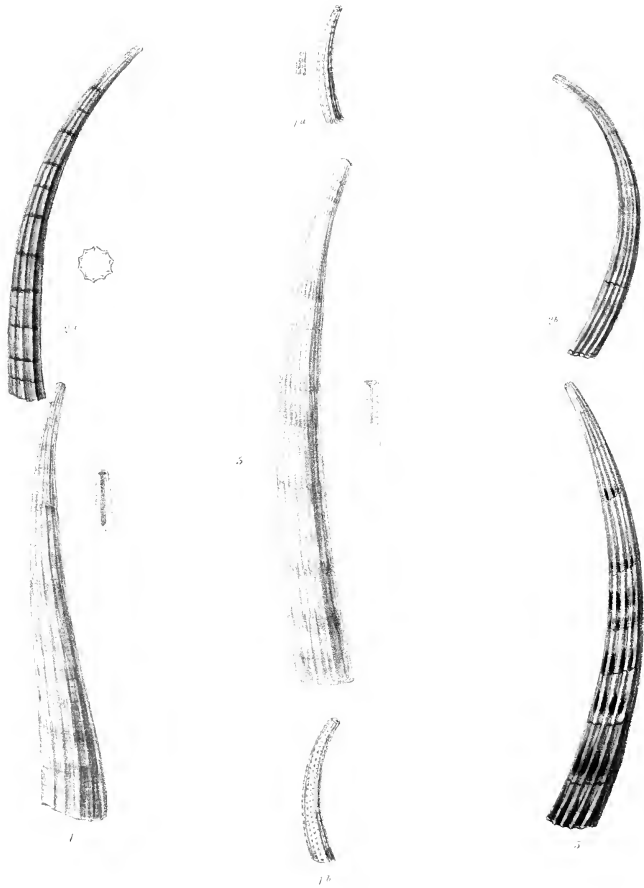
Hab. Isl. Bourbon.

I. I. M. A.

	Dist.	Specimens		Dist.	Specimens
angulata, <i>Sowerby</i>	III.	13	.....	III.	14
angustata, <i>Sowerby</i>	III.	12	.....	II.	6
<i>aperta</i> , Sowerby.....	II.	6	.....	V.	21
areolata, <i>Sowerby</i>	IV.	16	.....	I.	4
<i>aspera</i> , Chemnitz.....	II.	8	.....	I.	4
<i>Beazhama</i> , MS.....	III.	13	.....	III.	13
<i>bullata</i> , Montagu.....	I.	4	.....	II.	9
<i>bullata</i> , <i>Bonn</i>	I.	3	.....	V.	25
<i>bullifera</i> , <i>Deshayes</i>	V.	27	.....	I.	5
Ceylonica, <i>A. Adams</i>	V.	26	.....	V.	20
Cumingii, <i>Sowerby</i>	V.	19	.....	II.	8
dentata, <i>Sowerby</i>	III.	11	.....	II.	10
elliptica, <i>Jeffreys</i>	V.	23	.....	III.	15
excavata, <i>Chemnitz</i>	I.	2	.....	V.	22
fasciata, <i>Leonaus</i>	IV.	17	.....	V.	24
fragilis, <i>Chemnitz</i>	IV.	18	.....	II.	7
<i>longata</i> , Montagu.....	II.	6	.....	II.	6
<i>quadrata</i> , Gmelin.....	II.	8	.....	III.	11

MONOGRAPH
OF THE GENUS
D E N T A L I U M.

"Did he push, when he is mangled
A golden foot or a fairy horn
Through his dim water world?" *The Song*



DENTALIUM.

PLATE I.

Genus DENTALIUM, Linnæus.

Testa elongata, tubiformis, arcuata, basi spiralis, apice perforata; apertura simplicis, rotundæ.

Shell elongated, tube-shaped, arched, not spirally open peritostally; aperture simple, rounded.

In an analogical point of view *Dentalium* should be regarded as a *Trochus* with the apex very strongly raised and extended, with a simple perforation at the end. And as in that genus there is not only the round perforation, but generally a slit on each side of the apex as to form the "key-hole," as it is called, so in many instances there is a little fissure or the "key-cut" on the ventral side of the apical portion of *D. tubana*. The presence or absence of such a fissure cannot be sufficient to found a generic distinction, since it varies in length and position, and sometimes is absent in individuals of the same species. The genus EXACTUS, therefore, of some authors is not in the following monograph.

The zoographical distribution of the genus is commonly wide. We have specimens from India, and several Australian and American species. Many fine sorts were collected by Mr. Cuvier in the Philippines. Since Mr. Sowerby's monograph, however, the genus, as few interesting species have been described by Mr. Gould, raising the present number to fifty-five.

Species I. (MUS. CUV. in BRIT.)

DENTALIUM BICOLOR. *Testa bival. planis, sub-convexis, lateribus, valvæ arcuata, costis arcuatis, spiralibus, & Apice, emissa, quæ in apertura rotunda, & in fissura, lata, &c.*

BONELLI'S DENTALIUM. Shell white, or of a pale greenish short, strongly curved, slightly convex, rigid, with close, regular spiral striae and a few apical transverse, entire.

SOWERBY. The genus *Cochylidium*. *Dentalium*, Sp. 27, t. 28, 29.

Hab. East Indian Archipelago.

Species 2. (FIG. 66, MUS. BRIT.)

DENTALIUM AFRICUM. *Testa testæ clavata, angustè, valvæ arcuata, lateribus costis, valvæ lateralis, partibus costis, costis decussatis, & valvæ spiralis, apice, rotunda, & in apertura rotunda.*

THE BONY'S TEST. DENTALIUM. Shell elongated, narrowly strongly convex, slowly increasing, pointed, in bands with green striae, few & weak on the ribs, peritostally flat, or very shallow.

LINNÆUS. *Systema Naturæ.*

Hab. St. Nicholas Island, Zool. Philippines.

Species 3. (MUS. MUSEI ANDRÆÆ.)

DENTALIUM VIRENDE. *Testa testæ angustè, pallide, nitidè, insensibilis, costis arcuatis, & lateribus, bivalvæ, rotunda, & in apertura, longè, & lata.*

ALCOCK'S DENTALIUM. Shell large, pale fulvous, beak'd with a reddish-brown, finely striated, rather striated, slowly increasing, apical fissure (FIG. 67, 68).

HANCOCK. Sowb. 27. The genus *Cochylidium*. *Dentalium*, Sp. 27, t. 28, 29.

Hab. Japan.

Species 4. (MUS. BRIT.)

DENTALIUM ALBUM. *Testa testæ crassè, nitidè, extrinseca subarcuata, pallida, pyriformi, sub-convexa, ad marginem apertura lata, costis, insensibilis, rotundis, angustè, fissura, apertis, clausis.*

THE STRONG DENTALIUM. Shell thick, large, curved a little backwards, pale pyriform, sub-convex, broad at the margin of the aperture, ribs numerous, unequal, roughly apical fissure beak'd.

GARTER. *Instr. Linn. Syst. Nat.*

Dentalium elephantinum, De-lays, not Linn.

Dentalium stratum, Martini

Hab. Atlantic Sea.

November 1872.

DENTALIUM.—PLATE I.

The specimens hitherto procured appear to be in a semi-fossilized state.



Species 5. (Mus. Brit.)

DENTALIUM ELEPHANTINUM. *Dev. testâ solidâ, unguâ, validâ, arcuatâ, rapidâ, crescenti, ricidi fasciatâ, costis decem circa liquoratâ, apicè intusq.*

THE ELEPHANT'S-TUSK DENTALIUM. Shell solid, large,

strongly arched, rapidly increasing, green-banded, fluted with about ten ribs; apex entire.

LINNÆUS. Systema Naturæ.

Dentalium arcuatum, Gmelin.

How. Philippines, &c.

Deshayes having erroneously, as we think, applied the name of *Dentalium chylodactylum* to the shell which Gmelin named *D. rectum*, adopted Gmelin's name *D. arcuatum* to this well-known species, which there is little doubt is the true species of Linnaeus.



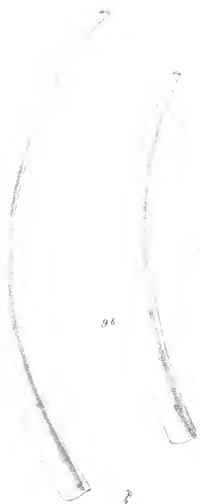
7



6



8



9^a

9^b



10



12



11

DENTALIUM.

PLATE II.

Species 6. (MUS. BRIT.)

DENTALIUM HEXAGONUM. *Den. testâ albâ, angustâ, subobliquâ, modice arcenti, lateribus costis angulatis lardibus saepe annulis testâ, aperturâ tibius; apice integro.*

THE HEXAGONAL DENTALIUM. Shell white, rather narrow, rather solid, with a medium curve smooth, with six angular smooth ribs forming the angles of the shell; apex entire.

GUILD. Invert, Massachusetts.

Hab. North America, China, and Singapore.

Species 7. (MUS. BELGIC. OLIV.)

DENTALIUM FORMOSUM. *Den. testâ rubrâ acuminatâ, rapidly crescenti, acuminatâ, lobâ, vividi, rubro, variegatâ, cinctâ alternatim fuscâ, costis quadratis, rotundis, aperturâ, longitudinalibus laevissimâ; apice fuscâ, aperturâ marginâ.*

THE BEAUTIFUL DENTALIUM. Shell strongly arched, rapidly increasing, acuminated, white, banded alternately with vivid green, red, and blue; fluted with fifteen longitudinal, strong, rounded, equal ribs; apex fissured; aperture large.

ADAMS AND REUV. Voy. Sambreling, p. 71.

Hab. Sooloo Archipelago.

This beautiful species increases more rapidly in size from apex to aperture than any other.

Species 8. (MUS. CUMING IN BRIT.)

DENTALIUM ZELANDICUM. *Den. testâ oviformi, angustâ, pallidâ, fusca, fuscâque punctatâ, costis mucronatis cuspidatis; arcu acuminatâ; apice fissurâ; aperturâ angustâ, arcuâ.*

THE NEW ZEALAND DENTALIUM. Shell rather straight, narrow, banded with pale ferruginous brown, armed with numerous rough ribs, very little arched; apex fissured; aperture rather narrow.

SOEWERY. Thes. Conch. Dentulorum, Sp. 13, f. 31.
Hab. New Zealand.

This shell is much narrower and even straighter than *Dentalium rectum*, to which it bears some resemblance.

Species 9. (F. Z. O. B. MUS. CUM. IN BRIT.)

DENTALIUM LONGIPESUM. *Den. testâ elongatâ, angustâ, cinctâ sinuata, pulcherrimâ, succinea, subpellucida, apice, costis fuscâ; aperturâ angustâ.*

THE LONG TACED DENTALIUM. Shell elongated, narrow, strongly arched, very much polished, amber-colored, rather pellucid; apex shortly fissured; aperture narrow.

REUV. Conch. Syst.

Dentalium punctum Deshayes, not Linnaeus.

Dentalium Linnæi, Chemn.

Hab. Philippines.

The difference in curve between the two specimens figured tends to point out that that character is not by any means to be relied on as indicating difference of species among the *Dentalia*.

Species 10. (MUS. CUM. IN BRIT.)

DENTALIUM INTERSTRIATUM. *Den. testâ elongatâ, modice arcenti, angustâ, costis rotundis, rotundis circa decem laevissimâ; interstitiis longitudinaliter striatis.*

THE INTERSTRIATED DENTALIUM. Shell elongated, moderately arched, narrow, fluted with about ten strong rounded ribs; interstices longitudinally striated.

SOEWERY. Thesaurus Conchylorum, Dentalium, Sp. 28.
Hab. Island Bohol, Philippines.

Nearly resembling *Dentalium apertum* in form and colour, but striated between the ribs.

DENTALIUM.—PLATE II.

Species 11. (Mus. Taylor.)

DENTALIUM SEMICOSTATUM. *Den. testā albā, elongatā, angustā, radiā arcuatā; costis calidīs, sex longitudinalibus rotundis, crassis, laevigatīs; interstitiis profundis, striatis; apice integro.*

THE SIX-RIBBED DENTALIUM. Shell white, elongated, narrow, strongly curved; fluted with six longitudinal, strong, rounded, thick ribs; interstices deep, rounded; apex entire.

SOWLEBY. *Thesaurus Conchyliorum*, Sp. 44.

Hab. — ?

Differing from *Dentalium leucoporum* in the thickness and roundness of the ribs, and the depth and striation of the interstices.

Species 12. (Mus. Brit.)

DENTALIUM OCTOGONUM. *Den. testā albā, crassā, laevigatā, costis validis rotundis octo laevigatis, angustis, leviter arcuatis; interstitiis latīs, longitudinaliter striatis.*

THE EIGHT-SIDED DENTALIUM. Shell white, thick, smooth, fluted with eight strong rounded ribs, narrow, slightly arched; interstices wide, longitudinally striated.

LAMARCK. *Anim. s. vert.*

Hab. China.



D E N T A L I U M.

PLATE III.

Species 13. (Fig. *a, b, c, d*, MUS. BRIT.)

DENTALIUM NOVIEMOSTATIUM. *Dent. testa subrotunda, rampa rubra fasciatis; gradatione crescenti, costis erigitis apicatis, costis marium, solidis, rotundis, curvatis, medio et verso marginis crassis; ligamentis interstitiis striatis; apice integro.*

THE NINE-RIBBED DENTALIUM. Shell solid, generally rod-banded; gradually increased, moderately curved, fluted with nine solid, round ribs, the appearing below the middle, and towards the margin; interstices striated; apex entire.

LAMARCK. *Deshayes*, monograph of Dentalium, p. 10, f. 11, 12.

Dentalium fasciatum, Lamarck (var.).

Hab. Mediterranean.

Towards the apex the ribs are strong, and the interstices deep, but become fainter from the middle; at the margin there is hardly a trace of them.

Species 14. (MUS. BRIT.)

DENTALIUM JAVANUM. *Dent. testa pallida, pallidissima, sulcis arenatis, gradatione crescenti, costis alto angulatis, equidistantibus, ligamentis, lateribus, latis, planatis; fissuris apicali parvis.*

THE JAVA DENTALIUM. Shell polished, pale ochraceous, strongly arched, gradually increasing, fluted with eight angular, equidistant ribs; interstices wide, flat; apical fissure small.

SWEDENB. *The Surinam Conchyliophora*, Dentalium, Sp. 39, f. 12.

Hab. Java.

Species 15. (MUS. TAYLOR.)

DENTALIUM MSAANGALAYUM. *Dent. testis allabata, pallidissima, roseata, solida, rotunda, arcuata, gradatione crescenti, costis undecim et duabus, solidis, rotundis, ligamentis ligamentis; apice lacinate, fissurata.*

THE MSAANGALAY DENTALIUM. Shell whitish, very pale roseate, solid, strongly arched, gradually increasing, fluted with eleven or twelve solid, rounded ribs, apex with a few fissures.

SWEDENB. *The Surinam Conchyliophora*, Dentalium, Sp. 35, f. 8.

Hab. Java.

Some specimens have a very elevated ridge of the twelve ribs, and a very distinct longitudinal groove.

Species 16. (MUS. BRIT.)

DENTALIUM INDICUM. *Dent. testa obscuri, angusta, subrotunda, subarcuata, gradatione crescenti, costis rotundis, angulatis, medio et verso marginis crassis; ligamentis, lateribus, latis, planatis; fissuris apicali parvis.*

THE INDIA DENTALIUM. Shell elongated, narrow, moderately arched, slender, obscure, not very strongly rod-banded, with numerous elevated ribs, the strong, well separated, apical fissure very small.

LINDLEY. *System of Nature*.

Dentalium indicum, Sowb. f.

Dentalium indicum, Chemn.

Hab. Indian Seas.

Species 17. (Fig. *a, b*, MUS. BRIT.)

DENTALIUM TABINUMUM. *Dent. testis solida, lata, rotunda, arcuata, costis crescenti, allabata, immixta, gradatione crescenti, costis undecim et duabus, solidis, rotundis, medio et verso marginis crassis; ligamentis, lateribus, latis, planatis; fissuris apicali parvis.*

THE TABINUM DENTALIUM. Shell solid, broad, strongly arched, rapidly enlarged, whitish, sometimes tinged with rose-colour to or the apex; minutely striated with rose-colour to or the apex; minutely striated towards the apex; apex generally entire.

DENTALIUM.—PLATE III.

LAMARCK. Animaux sans vertèbres.

Hab. Gulf of Tarentum.

The normal distinctions between this species and *Dentalium catali* are that the latter is fissured at the apex and not striated, while this species is striated and not fissured.

Species 18. (MUS, Cuming in Brit.)

DENTALIUM PHILIPPINARUM. *Den. testâ elongatâ, angustissimâ, reticulatâ, scapillucibâ, politissimâ, subopae-fuscâ, annulis concentricis elevatis nunc-*

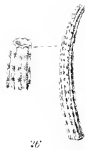
rosis cinctâ; apice attenuatâ, fissurâ apicali brevissimâ.

THE PHILIPPINE DENTALIUM. Shell elongated, very narrow, rather straight, semipellucid, highly polished, somewhat golden brown, banded with numerous elevated concentric rings; apex attenuated; apical fissure very short.

SOWERBY. Thesaurus Conchyforum, Dentalium, Sp. 12, t. 54.

Hab. Isl. Samar, Philippines.

Generally of a darker golden-brown colour, much narrower and straighter than *Dentalium catali*.



DENTALIUM.

PLATE IV.

Species 19. (Mus. Brit.)

DENTALIUM SEMI-POLITUM. *Den. testâ brevissimâ, quatuor costis, alba, angustâ, cœcis apicis, raris plicis et striâ, striâ et striâ, denticulâ marginem plicatus, apicis callosâ.*

THE HALF-POLISHED DENTALIUM. Shell thin, conical, hyaline, white, thin, narrow, rose-tinted and finely striated near the apex, thence to the margin broadly polished; apex entire.

SOWERBY, *Thesaurus Conchyliorum, Dentalium*, Sp. 24, t. 23.

Hab. South Seas.

Species 20. (Fig. a, b, Mus. Cum. in Brit.)

DENTALIUM TETRAGONUM. *Den. testâ alba, quatuor costis, acuta, angustâ, rectis albi, apicis et marginis callosâ, marginis quadrilaterâ, acutâ angulata, cœcis et marginis marginem rotundata.*

THE FOUR-SIDED DENTALIUM. Shell white, four-sided, narrow, rather straight, at the apex not as far as the middle four-sided, acutely angular, at the middle and as far as the margin rounded.

SOWERBY, *Thesaurus Conchyliorum*, Sp. 19, t. 24, 22.

Hab. West Columbia.

Species 21. (Mus. Brit.)

DENTALIUM DENTALE. *Den. testâ conopsea, acuta, cœcis, rugosa, rubra et aurantia fossata, costis, sinuatum et striâ minutissimâ rectis, denticulis sculptâ, apicis callosâ.*

THE TOOTH-LIKE DENTALIUM. Shell elongated, snail-like, rugose, banded with red and orange, sculptured with twelve small ribs and very minute interstitial striâ; apex entire.

LESSON'S SYSTEMA NATURÆ.

Hab. Mediterranean.

In *Den. testâ Lessoni*, the surfaces are smooth, and the whole conical, rose-tinted, smooth and polished towards the margin; only in this species the ribs are cylindrical and the interstices striated.

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

DENTALIUM LESSONI. *Den. testâ elongatâ, angustâ, acutâ, acuta, elongatâ, rubra vel aurantia, callosâ fulvâ, costis, costis, denticulis, cœcis marginem cœcis elongatâ, denticulis politis; apicis callosâ.*

LESSON'S DENTALIUM. Shell elongated, narrow, acuminate, smooth, red or orange banded with light brown, blunt with twelve ribs; the margin becomes nearly obsolete towards the margin; interstices polished, apex entire.

DUPUY'S, *Monograph of Dentalium*.

Hab. Mediterranean, Azores, &c.

Species 23. (Mus. Cuming in Brit.)

DENTALIUM PSEUDOSAXIFORME. *Den. testâ tenui, angustâ, laciniatâ, albi, moderate acutâ, cœcis apicis acutâ, hexagonâ, medio et cœcis marginem rotundâ et striatâ; apicis callosâ.*

THE PSEUDO-SAXIFORM DENTALIUM. Shell thin, narrow, smooth, white, moderately arched, acutely six-sided towards the apex, rounded and striated towards the margin; apex entire.

DUPUY'S, *Monograph of Dentalium*.

Hab. West Columbia and El. Masbate, Philippines.

DENTALIUM.—PLATE IV.

Species 24. (Mus. Brit.)

DENTALIUM RUBESCENS. *Den. testâ solidâ, levigatâ, angustâ, rubescatâ, fuscâ rubris transversalibus annulatâ, gradatim crassatâ, rectiusculâ; apice integro.*

THE REDDISH DENTALIUM. Shell solid, smooth, narrow, reddish, ringed with transverse red bands; gradually increasing, rather straight; apex entire.

DESJAYES. Monograph of Dentalium.

Hab. Mediterranean.

Species 25. (Mus. Cumm. in Brit.)

DENTALIUM DISPAE. *Den. testâ albâ, semipellucidâ politâ, gradatim crassatâ, moderatè arcuatâ, ad apicem quadrangulatâ, versûs medium angulis costiformibus interstriatâ, divid. supra ad marginem rotundâ, politâ laevi striatâ; apice integro.*

THE DISSIMILAR DENTALIUM. Shell white, semipellucid, polished, gradually increasing, moderately curved, quadrangular at the apex, the angles interstriated towards the middle, thence to the margin rounded, polished, and without striae; apex entire.

SOWERBY. Thesaurus Conchyliorum, Dentalium, Sp. 47, p. 37.

Hab. Isl. Samar, Philippines.

This shell has three distinct characters in its length.

At the apex it is four-sided, each angle forming a rib; then there appears a small stria between the angles; and then from the centre to the margin ribs and striae disappear, leaving a smooth rounded circumference.

Species 26. (Mus. Cumm. in Brit.)

DENTALIUM VARIABLE. *Den. testâ subcylindraceâ, crassâ, angustâ, albâ, levè crassatâ, rectiusculâ, costis subrotundis, maculatis quasi-articulatis, versûs apicem paucis, mediâ et infri magis numerosis sculptâ.*

THE VARIABLE DENTALIUM. Shell subcylindrical, thick, narrow, whitish, slowly increasing, rather straight, sculptured with rounded ribs, few towards the apex, more numerous in the centre and towards the apex.

DESJAYES. Monograph of Dentalium.

Dentalium characum, Turton (var.).

Dentalium album, Turton (var.).

Hab. Philippines.

The variabilities of this species depend upon the number of ribs into which the few at the apex multiply towards the middle and base.



28



27



29



32



30



27



31



27

DENTALIUM.

PLATE V.

Species 27. (Mus. Brit.)

DENTALIUM QUADRANGULARE. *Don. testâ parvâ, albidâ, cylindricâ, longitudinaliter striatâ, ad apicem quadrilaterâ, deinde ad marginem rotundatâ et striatâ; apicis obtuso, integro.*

THE QUADRANGULAR DENTALIUM. Shell small, white, cylindrical, longitudinally striated, four-sided at the apex, thence to the margin rounded and striated; apex obtuse, entire.

SOWERBY, Proc. Zool. Soc., 1832. Thes. Conch. Dent. Sp. 48.

Hab. Xipixapi, West Columbia.

Species 28. (Mus. Brit.)

DENTALIUM SUCTUM. *Don. testâ lacteâ, angustissimâ, subcylindricâ, rive arcuatâ, politâ, versus apicem tenuissimè leviter striatâ; apicem dorsum obliquè secto.*

THE CUT DENTALIUM. Shell white, very narrow, sub-cylindrical, scarcely curved, polished, very finely highly striated near the apex; apex very obliquely cut on the dorsal side.

DUSIEMUS. Monograph of Dentalium.

Hab. — ?

The fissure is formed by an oblique cut, as it were, across the apex.

Species 29. (Mus. Brit.)

DENTALIUM CANCELLATUM. *Don. testâ albidâ, tenui, versus apicem valdè arcuatâ et acuminatâ, costis sex ad octo acutis laevigatâ; interstitiis transversè foveolatis, medio et usque ad marginem rotundatâ, striatâ, reticulatâ; apicis integro.*

THE CANCELLED DENTALIUM. Shell white, thin, strongly curved, and acuminated towards the apex, fluted with six to eight sharp ribs, with

transversely pitted interstices, rounded, striated, rather straight in the middle and towards the margin; apex entire.

SOWERBY, Thesaurus Conchyliorum, Dentalium, Sp. 28. f. 26.

Hab. China.

A shell of very singular sculpture towards the apex.

Species 30. (Mus. Chin. in Brit.)

DENTALIUM SPLENDIDUM. *Don. testâ elongatâ, angustâ, politâ, medio rive arcuatâ, levè crescenti, medio et versus marginem lacteâ, versus apicem rubrâ, apicem utroque fissuratâ, fissuris incisâ, dorsali subquadratâ.*

THE SPLENDID DENTALIUM. Shell elongated, narrow, polished, with a medium curve, slowly increasing, milk-white in the middle and towards the margin; red towards the apex; apex fissured on each side; apex incurved, the dorsal one a little produced.

SOWERBY, Proc. Zool. Soc., 1832.

Hab. Xipixapi, West Columbia.

The dorsal and ventral sites are not to be found in every specimen of this interesting shell.

Species 31. (Mus. Brit.)

DENTALIUM ATTENUATUM. *Don. testâ angustissimâ, tenui, levè curvâ, medio rive arcuatâ, versus apicem rufo-fusâ; medio et versus marginem lacteâ; apicem attenuato, acuminato, integro.*

THE ATTENUATED DENTALIUM. Shell very narrow, thin, smooth, with a medium curve, reddish-brown towards the apex; milk-white in the middle and towards the apex; apex attenuated, acuminated, entire.

SOWERBY, Thesaurus Conchyliorum, Dentalium, Sp. 15. f. 40.

Hab. — ?

DENTALIUM.—PLATE V.

Species 32. (Mus. MacAndrew.)

DENTALIUM FILUM. *Don. testâ lineari, tenuissimâ, sub-pellucidâ, succinâ, levigatâ, rectâ, sensu, latitudinè lentissimè crescenti; apicè acuminatâ, integro.*

THE THREAD DENTALIUM. Shell linear, very thin, subpellucid, amber-colored, smooth, rather straight, very slowly increasing in width; apex acuminated, entire.

SOWERBY. Thesaurus Conchyliorum, Dentalium, Sp. 17, f. 45.

Hab. Gibraltar, MacAndrew. Philippines, Comins.

Species 33. (Mus. Brit.)

DENTALIUM FISSURA. *Don. testâ flavido-rubescenti, politâ, tenui, subpellucidâ, angustâ, moderate arcuatâ; apicè obliquè sectâ, vel marginem dorsalem incisione elongatâ, utrumque marginal marginem ventralum incisione brevi fissuratâ.*

THE FISSURED DENTALIUM. Shell yellowish-red, polished, thin, rather pellucid, narrow, moderately curved; open, obliquely cut, fissured with an elongated slit on the dorsal margin, sometimes with a short slit on the ventral margin.

LAMACK. ANIMALES SANS VERTÈBRES.

Hab. Indian Seas.

Species 34. (Mus. Brit.)

DENTALIUM LIBATUM. *Don. testâ albâ, parvâ, rectâ, angustâ, cylindricâ, costis longitudinalibus rotundatis æqualibus circa duodecim levatâ.*

THE LATH-SHINGLED DENTALIUM. Shell white, small, straight, narrow, cylindrical, ridged with about twelve longitudinal, rounded, equal ribs.

CARRIÈRE. Shells of Mazatlan.

Hab. Mazatlan, United States.

Species 35. (Mus. Brit.)

DENTALIUM QUINQUEANGULATUM. *Don. testâ albâ, parvâ, acuminatâ, præpè apicem calidè arcuatâ, rapidè crescenti, costis angulatis quinque sculptâ, margine apertura perobliquâ, latere ventrali producto; apicè acuto, integro.*

THE FIVE-ANGLED DENTALIUM. Shell white, small, acuminated, strongly arched near the apex, rapidly increasing, sculptured with five angular ribs, margin of the aperture very oblique, produced on the ventral side; apex acute, entire.

FORBES. Report on the Egean Sea.

Hab. Egean Sea.

Remarkable for the strong curve near the apex, and for the peculiarly oblique elongated margin of the aperture.

Species 36. (Mus. Brit.)

DENTALIUM LIBATUM. *Don. testâ brevi, validè arcuatâ, curvâ, latâ, lævi, albâ, vel partim coloribus pallidâ variegatâ; apicè obtuso, truncato, in lobis quatuor diviso.*

THE LOBE DENTALIUM. Shell short, strongly arched, short, broad, smooth, white or partly variegated with pale colours; apex obtuse, truncated, divided into four lobes.

SOWERBY. Thesaurus Conchyliorum, Dentalium, Sp. 20, f. 14.

Hab. — ?

The habitat of this curious species is not known. Of the four lobes, into which the apical margin is divided, the ventral and dorsal ones are slightly fissured.



DENTALIUM.

PLATE VI.

Species 37. (Mus. Brit.)

DENTALIUM LACIUM. *Den. testâ subâ ovata, laevi, pallidâ, laevâ, lenti crescenti, rotundâ, striatâ, apicâ integro.*

THE MILK-WHITE DENTALIUM. Shell rather hyaline, smooth, polished, milk-white, slowly increasing, rather curved, narrow; apex entire.

DISSEY'S. Monograph of *Dentalium*.

Hab. East Indian Seas.

A very plain shell, narrower than *Dentalium rotundum*, and without any fissure at the apex.

Species 38. (Mus. Harb'y.)

DENTALIUM POLIUM. *Den. testâ pallidâ fulvâ, ovata, gradatim crescenti, laevi arcuata, pallidâ, striâ nervis obliquis inaequaliter concentricis, apicâ fissurâ elongatâ.*

THE POLISHED DENTALIUM. Shell pale fulvous, narrow, gradually increasing, slightly arched, polished, beaded with numerous oblique-angled concentric striae; apical fissure elongated.

LINNAEUS. Systema Naturae.

Dentalium chinensis, Desh. non LINNAEUS.

Hab. —? Fossil in Paris-Basin.

Very rare in a recent state. Habitat unknown.

Species 39. (Mus. Brit.)

DENTALIUM BRANSLIUM. *Den. testâ pallidâ, ovata, subulnata, tenui, angustiuscula, laevi arcuata, pallidâ succinâ, apicâ subannulata, inaequaliter dorsali, caevâ, elongatissima.*

THE BRANSLIEN DENTALIUM. Shell polished, semi-pellucid, thin, rather narrow, slightly curved, pale amber; apex subannulated; apical fissure dorsal, beised, very long.

DISSEY'S. Monograph of *Dentalium*.

Dentalium branslii, Gmel.?

Hab. West Indies.

Species 40. (Mus. Harb'y.)

DENTALIUM ENCAE. *Den. testâ laevigatâ, subâ, laevi, caevâ, apicâ inaequaliter pale crescenti et valde arcuata, striâ concentricâ, nervis obliquâ, apicâ inaequaliter latiusculâ, fissurâ dorsali ad apicâ brevem.*

THE ENCAE DENTALIUM. Shell smooth, solid, white, rapidly increased and strongly arched towards the apex; margin rather straighter and more cylindrical in the middle, and towards the margin rather beaded, dorsal fissure at the apex short.

LINNAEUS. Systema Naturae.

Hab. Mediterranean. Sydney, near the ancient town of Bathurst, Newfoundland, Great Britain.

Species 41. (Mus. Brit.)

DENTALIUM ERGHEM. *Den. testâ ovata, pallidissima, ovata ovata, tenui, subulnata, laevi crescenti, caevâ, apicâ inaequaliter pubescenti, nervis marginem ultra, apicâ attingente fissurata, fissurâ dorsali brevem.*

THE ERGHE DENTALIUM. Shell narrow, very polished, scarcely arched, thin, subpellucid, slowly increasing, reddish amber towards the apex, white towards the margin; apex fissured on both sides; dorsal fissure the longer.

SOWERBY. Thesaurus Conchyliorum, *Dentalium*, Sp. 13, f. 55.

Hab. Sydney.

This almost straight shell was collected in Sydney by the late Mr. Strange.

November, 1872.

DENTALIUM.—PLATE VI.

Species 12. (Mus. Brit.)

DENTALIUM CURVUM. *Den. testis brevis, pallide fulvi, tenuiter striata, callosi arcuati, rapidi crescenti; apice attenuato et acuminato; fissura apicali parva.*

THE SHORT DENTALIUM. Shell short, pale brown, finely striated, strongly arched, rapidly increasing; apex attenuated and acuminated; apical fissure small.

SOWERBY. *Thesaurus Conchyliorum, Dentalium, Sp. 23, f. 64.*

Species 13. (Mus. Brit.)

DENTALIUM ACCLAVUM. *Den. testis albi, callosissimi arcuati, rapidi crescenti, inaequaliter striati, crests apicem attenuati, acuminati, crests marginem lateri apicem integro.*

THE ACCLAVATED DENTALIUM. Shell white, very strongly curved, rapidly increasing, unequally striated, attenuated and acuminated towards the apex, broad towards the margin; apex entire.

SOWERBY. *Thesaurus Conchyliorum, Dentalium, Sp. 22, f. 65.*

Hab. — ?

Too much curved and *unequally* striated to be the young of *Dentalium Torentinum*.

Species 14. (Mus. Hanley.)

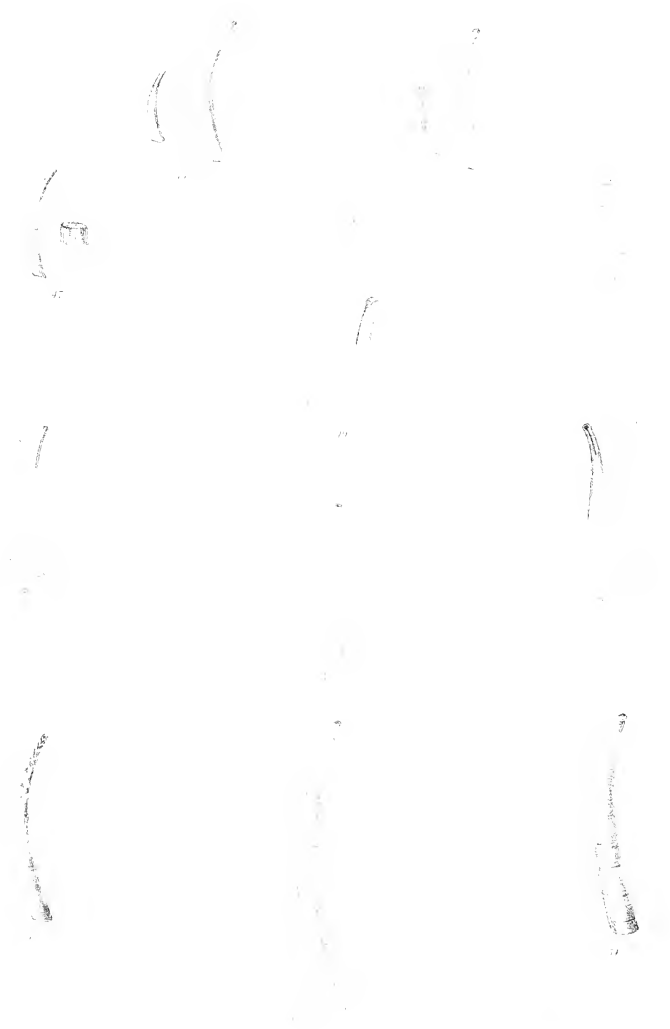
DENTALIUM FUSCUM. *Den. testis recti, angustissimi, cylindrici, albi, politissimi; apice integro.*

THE PIPE DENTALIUM. Shell straight, very narrow, cylindrical, white, very polished; apex entire.

SOWERBY. *Thesaurus Conchyliorum, Dentalium, Sp. 15, f. 62.*

Hab. — ?

The fossil named *Dentalium Duplex* by Deshayes, resembles this, but there are no specific characters by which to identify it. The double termination or separation of the outer from the inner wall of the tube at the apex, from which the species of Deshayes derives its name, is not infrequent in many species.



DENTALIUM.

PLATE VII.

Species 45. (Mus. Brit.)

DENTALIUM INTERCALATUM. *Dea, testâ albidâ, solidâ, propè apicem costis paucis, cæcis, mediâ et infra aliis intercalatis liquorâ; calli arcuatâ, rapidè crescenti, ad aperturam latiuscibâ.*

THE INTERCALATED DENTALIUM. Shell whitish, solid, fluted with few ribs near the apex and with others intervening towards the middle and below; much arched, rapidly increasing, rather broad at the aperture.

GOULD. — ? MS. in Brit. Mus.

Hab. Hong Kong.

The ribs are few and angular at the apex, as in *D. pseudosaxeanum*, and a little way down become more numerous by the intercalation of intermediates.

Species 46. (Mus. Hanley.)

DENTALIUM QUADRIFIDALE. *Dea, testâ albâ, solidâ, rapidè crescenti, propè apicem costis quatuor angulatâ, media usque ad marginem costâlis unius-costis striatâ, aperturâ obliquè ovatâ.*

THE SQUARE-TOPPED DENTALIUM. Shell white, solid, rapidly increasing, angulated near the apex with four ribs, striated from the middle to the aperture with numerous riblets; aperture obliquely ovate.

HANLEY. Sowerby's Thesaurus Conchyliorum, Dentalium, Sp. 46, f. 64.

Hab. Cochin, Malabar.

Species 47. (Mus. Brit.)

DENTALIUM FORATUM. *Dea, testâ pallidâ fulvâ, magis, calli arcuatâ, solidâ, leuè crescenti, inæqualiter costis ad latera magis distantibus levitè, interstitiisque profundis, aperturâ parvâ.*

THE CULLED DENTALIUM. Shell pale fulvous, narrow, strongly arched, solid, slowly increasing, unequally ribbed with ribs, more distant at the sides, and deep furrows; aperture small.

GOULD. — ? MS. in Brit. Mus.

Hab. Hong Kong.

The ribs are closer on the dorsal and ventral areas than at the sides.

Species 48. (Mus. MacAndrew.)

DENTALIUM MINIMUM. *Dea, testâ minutâ, tenui, albâ, semipellucidâ, levitè, calli arcuatâ, leuè crescenti, apicè truncatâ, bilobatâ.*

THE MINUTE DENTALIUM. Shell very small, thin, white, semipellucid, smooth, strongly curved, slowly increasing; apex truncated, bilobed.

H. ANDREWS. — ? MS. Brit. Mus.

Hab. Gulf of Suez. Collected by R. Andrews, Esq.

Much resembling *Dentalium lobatum*, Sowb., but with the apex divided into two instead of four lobes.

Species 49. (Mus. Brit.)

DENTALIUM HYALINUM. *Dea, testâ angustâ, pallidâ, albâ, pellucidâ, modicè arcuatâ, gradatim crescenti; apicè ad marginem dorsalem fissurâ sublongatâ inciso, ad marginem ventralem breviter fissurato, laterum marginibus lobatis rotundis.*

THE HYALINE DENTALIUM. Shell narrow, polished, white, pellucid, modestly arched, gradually increasing; apex incised at the dorsal margin with a rather elongated fissure, shortly fissured at the ventral margin, margins of the sides lobed, rounded.

LEACH. — ? MS. Brit. Mus.

Hab. — ?

November, 1872.

Like *Dentalium translucentum*, but hyaline white. The dorsal fissure, although rather long, is not nearly so long as in that species. *Dentalium lacteum*, which would otherwise pass for the present species, is not fissured. In *Dentalium lubricatum* also the apex is entire.

Species 50. (Mus. Brit.)

DENTALIUM BUCCINULUM. *Don. testâ albidâ, gracillimâ, retiusculâ, lentè crescenti, subæqualiter longitudinalliter striatâ: apice integro.*

THE LITTLE TRUMPET DENTALIUM. Shell white, very narrow, rather straight, slowly increasing, rather equally longitudinally striated: apex entire.

GOULD — ? MS. in Brit. Mus.

Hab. Hong Kong.

Species 51. (Mus. Cuming in Brit.)

DENTALIUM INVERSEM. *Don. testâ tenui, gracili, levigatâ, moderatè arcuatâ, gradatim crescenti, propè apicem rubri, versus marginem aperturæ albi: apice attenuato, acuminato, ad laterem ventralem fissurâ longitudinalli lacisâ.*

THE INVERSE DENTALIUM. Shell thin, slender, smooth, moderately arched, gradually increased, red near the apex, white towards the margin of the aperture: apex attenuated, acuminated, incised with a rather long fissure on the ventral side.

DESHAYES. Sowerby's Thesaurus Conchyliorum, Dentalium, Sp. 14, f. 42.

Hab. — ?

This species is singular in possessing a slit on the ventral or inner side of the curve.

Species 52. (Mus. Brit.)

DENTALIUM ACUTUM. *Don. testâ albâ, subcylindricâ, tenuiter annulatâ, politâ, gradatim crescenti, levitè arcuatâ, tenui: apice subtruncato, integro.*

THE WHEAT-BAR DENTALIUM. Shell white, subcylindrical, finely annulated, polished, gradually increasing, slightly arched, thin; apex truncated, entire.

GOULD — ? MS. Brit. Mus.

Hab. Hong Kong.

The slight sort of annulated structure observable in this shell gives it a very pretty appearance.

Species 53. (Mus. Brit.)

DENTALIUM NEBULOSUM. *Don. testâ politâ, angustâ, tenui, albâ, validè arcuatâ, fissuris acutè angulatis pellucidis versus apicem curvatis: fissurâ apicali laterali.*

THE CLOUDED DENTALIUM. Shell polished, narrow, thin, white, strongly arched, variegated near the apex with acutely angular pellucid bands; apical fissure lateral.

DESHAYES. Monograph of Dentalium.

Hab. Indian Seas.

The incision of the apex in this species is lateral instead of dorsal as usual, or ventral as in *Dentalium incersum*.

Species 54. (Mus. Brit.)

DENTALIUM PRETIOSUM. *Don. testâ albâ, solidâ, levigatâ, levitè arcuatâ, gradatim crescenti, propè apicem rubri, angustâ sensu: fissurâ apicali parvâ.*

THE PRECIOUS DENTALIUM. Shell white, solid, smooth, slightly arched, gradually increased, red near the apex, rather narrow, apical fissure small.

NUTTALL. MS.

Dentalium striolatum, Stimpson.

Hab. Massachusetts; California, &c.

It is of slower increase in circumference, less curved and more cylindrical than *Dentalium cutale*.

Species 55. (Mus. Brit.)

DENTALIUM LUBRICATUM. *Don. testâ elongatâ, albâ, retiusculâ, angustâ, tenuisculâ, levigatâ, lentè crescenti: apice integro.*

THE LUBRICATED DENTALIUM. Shell elongated, white, rather straight, narrow, rather thin, smooth, slowly increasing: apex entire.

SOWERBY. Thesaurus Conchyliorum, Dentalium, Sp. 3, f. 56.

Hab. Australia.

A larger shell than *Dentalium pretiosum* or *D. cutale*, narrower, more cylindrical than either of them.

DENTALIUM.

	Plac.	Species.		Plac.	Species.
aculeatum, <i>Gould</i>	VII.	52	laetum, <i>Deshayes</i>	VI.	37
aculeatum, <i>Sowerby</i>	VI.	43	Lessoni, <i>Deshayes</i>	IV.	22
album, <i>Turton</i>	IV.	26	liratum, <i>Carpenter</i>	V.	31
aviculatum, <i>Sowerby</i>	III.	16	lobatum, <i>Sowerby</i>	V.	36
aprinum, <i>Linnaeus</i>	I.	2	longirostrum, <i>Reeve</i>	II.	9
arcuatum, <i>Goëbel</i>	I.	5	inbrevatum, <i>Sowerby</i>	VII.	55
attenuatum, <i>Sowerby</i>	V.	34	minutum, <i>H. Adams</i>	VII.	48
Befeheri, <i>Sowerby</i>	I.	1	nebulosum, <i>Deshayes</i>	VII.	53
bi-sexangulatum, <i>Sowerby</i>	III.	15	novemcostatum, <i>Letourneh.</i>	III.	13
biocinulum, <i>Gould</i>	VII.	50	octogonum, <i>Letourneh.</i>	II.	12
cancelatum, <i>Sowerby</i>	V.	29	Philippinum, <i>Sowerby</i>	III.	48
curtum, <i>Sowerby</i>	VI.	42	<i>politum</i> , (<i>Deshayes</i> non <i>Linnaeus</i>)	II.	9
dentale, <i>Linnaeus</i>	III.	21	positum, <i>Linnaeus</i>	VI.	38
dispar, <i>Sowerby</i>	IV.	25	portatum, <i>Gould</i>	VII.	47
durenum, <i>Linnaeus</i>	III.	16	praetiosum, <i>Nuttall</i>	VII.	51
durenum, <i>Deshayes</i>	VI.	38	psuedohexagonum, <i>Deshayes</i>	IV.	23
eburneum, <i>Turton</i>	IV.	24	quadrifidum, <i>Harvey</i>	VII.	46
elephantinum, <i>Linnaeus</i>	I.	5	quadrangulare, <i>Sowerby</i>	V.	27
entalis, <i>Linnaeus</i>	VI.	40	quinquangulatum, <i>Foëbe</i>	V.	35
erectum, <i>Sowerby</i>	VI.	41	retum, <i>Gould</i>	I.	4
filum, <i>Sowerby</i>	V.	32	rubescens, <i>Deshayes</i>	IV.	24
fissura, <i>Letourneh.</i>	V.	33	sectum, <i>Deshayes</i>	V.	28
fistula, <i>Sowerby</i>	VI.	44	sempellatum, <i>Sowerby</i>	III.	19
formosum, <i>Adams & Reeve</i>	II.	7	sex-costatum, <i>Sowerby</i>	II.	11
hexagonum, <i>Gould</i>	II.	6	splendidum, <i>Sowerby</i>	V.	30
hyalinum, <i>Loach</i>	VII.	49	Tarentinum, <i>Letourneh.</i>	III.	17
<i>Laibum</i> , <i>Chemnitz</i>	III.	16	trigonum, <i>Sowerby</i>	IV.	20
intercalatum, <i>Gould</i>	VII.	45	translucidum, <i>Deshayes</i>	VI.	39
interstriatum, <i>Sowerby</i>	II.	10	variabile, <i>Deshayes</i>	IV.	26
inversum, <i>Deshayes</i>	VII.	54	Vermoli, <i>Harvey</i>	I.	3
Javanum, <i>Sowerby</i>	III.	14	Zelandicum, <i>Sowerby</i>	II.	8

MONOGRAPH

OF THE GENUS

C O R B I S.

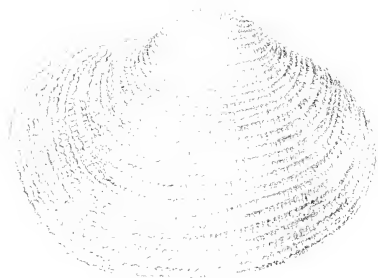
" Infinite strength and equal skill
Shine through Thy works abroad,
Our souls with vast amazement fill,
And speak the builder God."—*W. G.*



25



26



27

CORBIS.

PLATE I.

Genus CORBIS, *Corb.*

Testa transversè ovata, equivalvis, crassa; cancellatim sculpta. Cardo utriusque valvæ dentibus duobus medianis, et duobus lateralibus, antice suboppositis, postice distinctis. Cartilago ligamentifera subæterna. Impressiones musculares duæ; impressio pallii simplex.

Shell transversely ovate, equivalve, thick, with a cancellated sculpture. Hinge in each valve with two central teeth and two lateral, the anterior near, the posterior remote. Muscular impressions two; impressions of the mantle simple.

This genus, of which we know only two species, is allied by the character of the hinge to the "*Tellinida*," but by general form and structure to the "*Unerida*." Both species are products of eastern seas.

Species 1. (Mus. Brit.)

CORBIS FIMBRIATA. Cor. testâ albâ, nunquam ad latera palliâ subrogâ, crassâ, rugosâ; costis inæqualibus imbricatis et striis interstitialibus radiantibus, et rugis transversis subconcentricis, undulatis, cancellatâ; intus albâ, cardine sæpe aurantio rubropallidè tinctâ; margine denticulatè; umbonibus subcentralibus.

THE FIMBRIATED CORBIS. Shell white, sometimes pale rose at the sides, thick, rugose; cancellated with unequal imbricated ribs and interstitial radiating striae, and transverse subconcentric, undulated wrinkles; white within; hinge often slightly tinged with orange and red; margin denticulated, umbos subcentral.

LINNÆUS. Systema Naturæ.

Corbis elegans, Deshayes (var.).

Hab. Indian seas.

The sculpture is coarser in the earlier portion of the shell's growth than it becomes after the shell attains a more mature development, when towards the ventral margin the radiating ribs almost die out, and the transverse wrinkles become finer and closer. In some specimens the coarser sculpture is continued over a larger portion of the surface than in others. When this is the case, the name of *Corbis elegans* would be applied to the variety so caused. It is, however, so entirely a question of degree that it is impossible to divide any extensive series of specimens into the two species.

Species 2. (Fig. *a, b*, Mus. Cuning in Brit.)

CORBIS SOWERBYI. Cor. testâ concentricâ, albâ, liris laminatis striatibus concentricis, subæqualibus autè linguatis, et striis inter liris radiantibus ornata, intus subroseo; ætate juniore compressâ, roseo radiatim fasciatâ.

SOWERBY'S CORBIS. Shell ventricose, whitish, ornamented with laminated, standing out concentric ridges fluted in front and striae radiating between the ridges; within a little orange; in the young state compressed, banded with rose colour in rays.

REVELL. Proc. Zool. Soc., 1841.

Hab. Indian seas.

In its young state, compressed and ribbed, this shell bears a very strong resemblance to a fossil *Corbis* in the Paris basin.

November, 1872.



