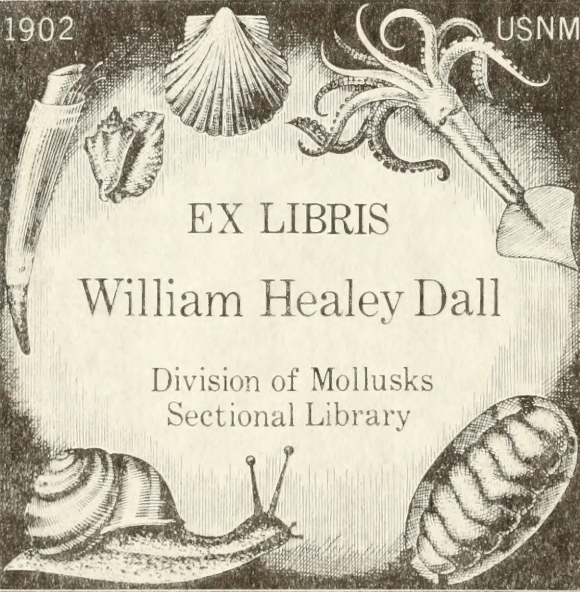




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OR

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA.

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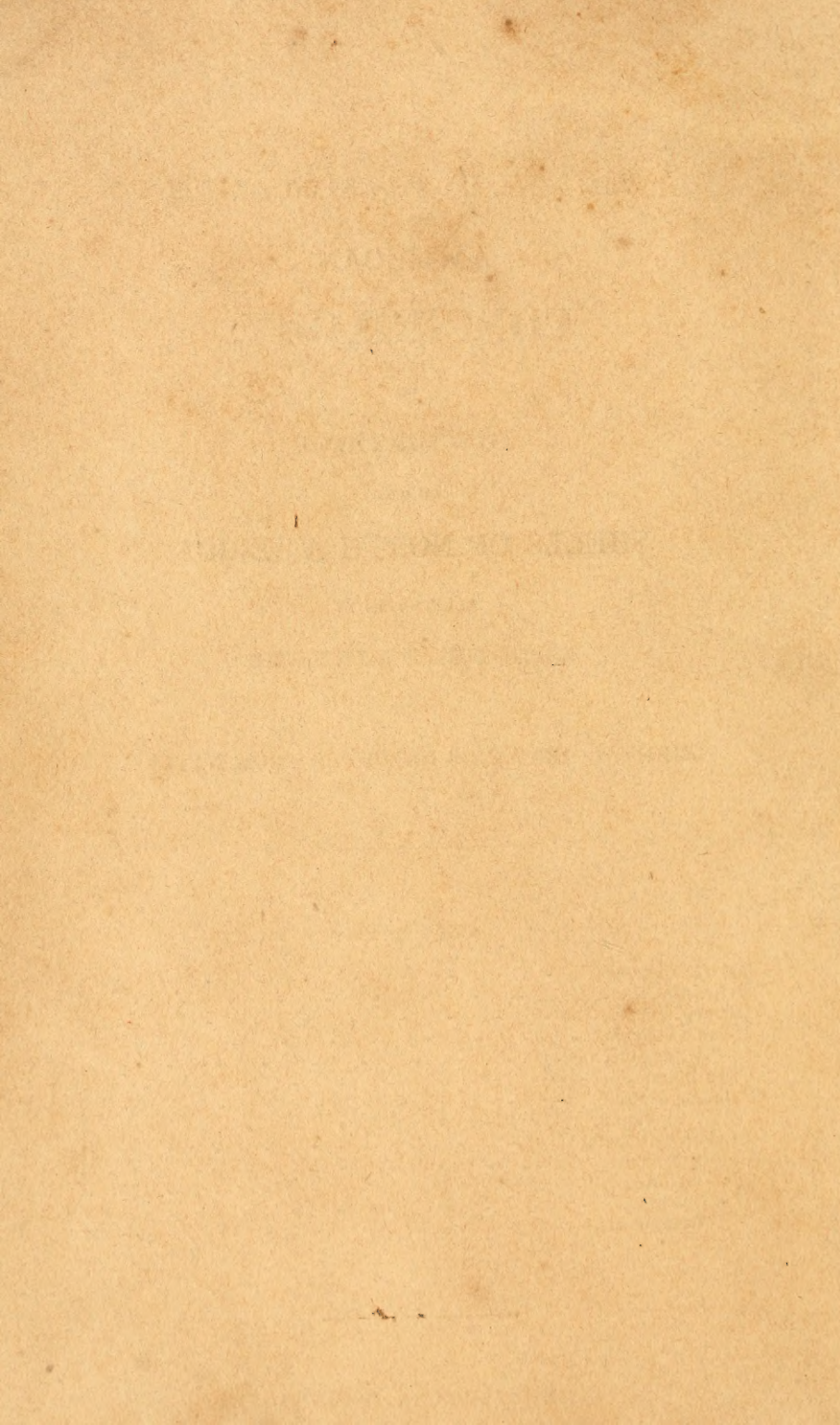
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NEW-HARMONY, INDIANA.

Printed at the School Press.



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BY
THOMAS SAY, F. M. L. S.
Member of many learned Societies in Europe and America

‘ Read Nature ; Nature is a friend to truth.’

YOUNG

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TO

WILLIAM MACLURE,

PRESIDENT OF THE ACADEMY OF NATURAL SCIENCES OF
PHILADELPHIA, AND OF THE AMERICAN GEOLO-
GICAL SOCIETY;

MEMBER OF THE AMERICAN PHILOSOPHICAL SOCIETY,
&c. &c.

this book is dedicated as a small, but sincere tribute of
respect and friendship,

by his much obliged friend

THE AUTHOR.

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ASTARTE.

GENERIC CHARACTER.

Shell suborbicular, generally transverse, equivalve, inequilateral, closed entirely : hinge with two strong, distinct, diverging teeth on one valve, and on the other two very unequal teeth and a lateral obsolete one : ligament exterior : muscular impressions two and a minute one above the posterior impression, almost confluent with it : impression of the mantle simply arquated, distinct.

OBSERVATIONS.

A genus, containing but a small number of species, instituted by Sowerby under the name we have adopted. Lamarek appears not to have been aware of the previous existence of this genus, when he published it under the name of *CRASSINA* in his *Anim. sans Vertèbr.* He referred it to his *Nymphacées Tellinaires* ; but we agree with Sowerby, in the opinion, that its proper place is with his *Conques Marine* ; from all of which, it is distinguished by its cardinal teeth and interior impressions.

Blainville in his "*Manuel de Malacologie et de Conchyliologie*" places it as a division of his genus *VENUS*, under the following characters :

"Solides, épaisses, suborbiculaires, subéquilatérales ; deux très-grosses dents divergentes sur une valve, et deux très-inégaies sur l'autre ; les impressions musculaires réunies par une ligule sans sinuosité postérieure." He informs us that DeFrance has announced the existance of eighteen fossil species, and we described two in the *Journ. Acad. Nat. Sc.*

ASTARTE CASTANEA.

SPECIFIC CHARACTER.

Beaks nearly central ; epidermis chesnut-brown.

SYNONYM.

VENUS CASTANEA. *Nobis. Jour. Acad. Nat. Sc.* vol.
iv. p. 273.

DESCRIPTION.

Shell thick and ponderous, suborbicular, or subtriangular, with prominent and nearly central beaks : *lumule* excavated, lanceolate : *cartilage slope* rectilinear, indented : *disk* with minute, concentric wrinkles and larger undulations : *epidermis* chesnut-brown, with somewhat darker or paler zones : within bluish-white ; the margin very regularly crenulated.

OBSERVATIONS.

Not very unfrequent on the coast of Newjersey. Its surface is often sculptured with very slightly elevated, obtuse lines, or undulations, which are sometimes rather more elevated and acute. It is longer in proportion to its breadth than the *dammoniensis* of Montagu, and is destitute of the fine and regular striæ, with which the *obliquata* is marked.

REFERENCE TO THE PLATE.

The upper figure exhibits the exterior view.

The middle figures—inside of the two valves.

The lower figure—back of the shell.

PLATE I.

DSI



PANDORA.

GENERIC CHARACTER.

Shell transversely oblong, inequilateral, inequivalve, unattached, regular, somewhat rostrated; left valve flattened, with from one to three teeth extended upon the inner surface of the shell, with a fosset for the ligament; hinge margin inflected; right valve convex, teeth one less than in the left valve, with the corresponding fosset; ligament internal, attached to an elongated fosset or cicatrice, which inclines towards the anterior margin; muscular impressions two, distant, lateral.

“Animal very much compressed, elongated, in the form of a sheath, by the union of the edges of the mantle and its continuation with the tubes, which are united and very short; foot small, thicker before, exerted by a large slit in the mantle; branchiæ pointed backwards and continued into the tube.”—(Blainville.)

OBSERVATIONS.

The hinge teeth extend on the inner surface of the shell in some degree like those of *PLACUNA*, to which genus, this seems to be allied, both by the position of the teeth and the perlaceous consistence of the shell; but it is eminently distinguished by having two muscular impressions. Lamarek, who first characterized the genus, placed it next to *CORBULA*, chiefly, perhaps, in consequence of the inequality of its valves.

Two species only are described by Lamarek, the *inaequivalvis*, Linn., and the *obtusa*, a newly described species. Sowerby has added another, under the name of *flexuosa*.

According to Blainville, two fossil species have been discovered by DeFrance. The animal is so similar to that of SOLEN, that Poli has referred it to the same genus, which he calls HYPOGEA.

PANDORA TRILINEATA.

SPECIFIC CHARACTER.

Hinge margin bilineate from the beak to the tip; valves not very inæqual.

SYNONYM.

PANDORA TRILINEATA. *Nobis. Jour. Acad. Nat. Sc.*
vol. iv. p. 261.

DESCRIPTION.

Shell perlaceous whitish, translucent, concentrically wrinkled: *hinge* placed at the posterior slope, which is very abrupt, and forming a considerable obtuse angle with the hinge margin: *teeth* three in the left valve, the middle one shortest, the anterior one longest, parallel and near to the hinge margin and having the fosset on its inner basal side: *hinge margin* concavely much arquated, its surface flattened and bounded on its outer edge by two elevated, approximate, obtuse lines, originating at the beak, and continued to the rostrated tip: *rostrum* ascending: a longitudinal, slightly impressed line, originates at the beak and passes to the middle of the basal margin.

OBSERVATIONS.

I first discovered a single valve of this shell, several years since at Great Egg Harbour on the coast of Newjersey;

since which, on a journey with Mr. Maclure, we obtained two or three others on the coasts of Georgia and Florida; so that it may be said to inhabit all our southern and middle coast.

The inner edge of the hinge margin of one valve, closes over that of the other.

This species differs from those previously made known, more particularly by its teeth, by having the hinge placed much further back and consisting of a mere angle, not at all prominent, the rostrum also has a direction more upward, and the difference in the convexity of the valves is not very considerable.

REFERENCE TO THE PLATE.

The upper figures exhibit the inside view.

The lower figures the exterior view.

PLATE II.

B





OLIVA.

GENERIC CHARACTER.

Shell subcylindric, oblong, smooth, more or less polished; epidermis none; spire short; suture canaliculated, the edge of each volution extending a little upward, canal bounded above by a revolving, carinate callus: *body* whorl near its base with a slightly elevated band, beginning below the middle of the aperture and revolving to the base of the labrum: aperture elongated; labrum and columella with calcareous deposite, much striated, striae on the latter more elongated; base deeply emarginate; operculum none.

OBSERVATIONS.

The smoothness and polish of these beautiful shells, are no doubt owing to the extension, of the smooth surface of the mantle of the inhabitant, over their whole exterior. The animal is not yet well known, but Lamarek supposes it to be carnivorus. It is marine.

Of all the species figured in the books, and existing in the collections, Linné formed but about two species, which he referred to his genus *Voluta* under the names of *oliva* and *porphyria*. Bruguière applied to them the present generic name, which was adopted by Lamarek, who, with his usual acute perception of natural differences, described more than sixty species, among which are a few that exist only in the fossil state, and according to Blainville,

thirty-two new species have been added by M. Duclos, from the coast of New-Guinea.

This genus is closely allied to *ANCILLA*, which, however, is destitute of striæ on the labium and the spiral canal is completely filled up. From *TEREBELLUM*, to which it is also allied, it may be distinguished by the striated labium and columella, and the elevated band at the base of the body whorl, and from *MITRA* and *VOLUTA* by the canalculated suture.

OLIVA LITERATA.

SPECIFIC CHARACTER.

Shell with numerous angulated brownish lines and two bands of chesnut-brown ones.

SYNONYMS.

OLIVA LITERATA. *Lam. Ann. du Mus.* vol. xvi. p. 315;
and *Anim. sans Vertebr.* vol. vii. p. 425.

OLIVA. *Encycl. Meth.* pl. 362, fig. 1, *a, b*.

DESCRIPTION.

Shell with a pale yellowish-white ground colour, thickly covered over with cinereous-rufous angulated lines, leaving distinct triangles of the ground colour; on each side of the middle is a broad band, occasioned by the angulated lines being there of a deeper, or chesnut-brown colour;

the angulated lines at the upper edge of the volutions are fasciculated and of the same colour of the bands.

OBSERVATIONS.

We are far from being certain that this is absolutely the *literata* of Lamarek, although it agrees perfectly, except in being smaller, with the figures above quoted, to which he refers. He supposed his specimens to be natives of the East Indies. However this may be, and although we formerly described it under another name, we think it more prudent to consider it as indicated by Lamarek's description and the figures of the *Encyc. Methodique*.

It is rather common on our southern coast.

REFERENCE TO THE PLATE.

The figures represent the shell in two positions.

PLATE III.





UNIO.

GENERIC CHARACTER.

Shell unattached, generally transverse, equivalved, inequilateral; cardinal teeth one in each valve, irregular, generally striated, simple or biparted; an elongated lamelliform tooth on the anterior hinge margin of the left valve, and two similar teeth on the corresponding margin of the right valve; muscular impressions two principal ones; ligament exterior.

OBSERVATIONS.

In North America the shells of this genus excel those of any other country in magnitude, beauty and diversity of species. They are altogether inhabitants of fresh water, and we have hardly a rivulet in the Union, in which they are not to be found. Many of them are of a beautiful perlaceous colour and consistence, and we are informed that some of the very thick ones of the Ohio, have been, at Pittsburgh, successfully turned into buttons and ornaments.

This genus is closely allied to *DIPSAS*, *Lauch.* *HYRIA* and *IRIDINA*, *Lam.*, *ALASMODONTA*, *Nob.*, and *ANODONTA*, *Brug.* But the former has lamelliform teeth only; *HYRIA* has lamelliform teeth on both sides; *IRIDINA* and *ANODONTA* are destitute of teeth and *ALASMODONTA* is destitute of lamelliform teeth. To this exposition we may add, as more remotely allied, the *MEGADESMA* of Bowd., which has two cardinal teeth on one valve and three in

the other, with a remote indistinct tooth on each side ; characters that indicate an approach to *CYRENA*. Some of these genera are intimately linked together by intermediate species, particularly the *Unio* and *Anodonta*, there being one or more in our streams, that it is somewhat difficult to determine which of the two genera it ought to be placed in. Consequently those naturalists, who advocate the union of such genera as are connected by intermediate species, will be compelled to unite these, and on the same principle, they must reject great numbers of genera long since firmly established.

UNIO TRIANGULARIS.

SPECIFIC CHARACTER.

Shell triangular, very convex ; anterior margin forming a right angle with the disk.

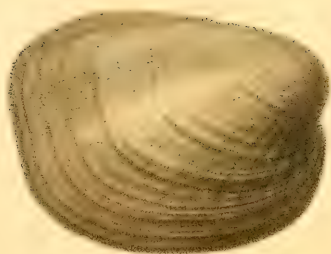
SYNONYMS.

UNIO TRIANGULARIS. *Barnes. Silliman's Journal*, vol. vi. p. 272, pl. 13, fig. 17.

UNIO CUNEATUS. *Swainson. Tilloch's Magazine*, December, 1823.

DESCRIPTION.

Shell triangular, very convex, gaping at the extremities ; *anterior* margin very much flattened, forming a right angle with the disks ; having longitudinal slightly elevated



lines crossing the transverse wrinkles: *ligament* very short; *anterior tip* angulated: *posterior margin* rounded, destitute of distinct lunule: *epidermis* pale yellowish-olivaceous, radiated with green, interrupted into short lines and spots, which are sometimes sagittate, and disappear on the margins of the old shell.

OBSERVATIONS.

It is highly probable that the present species is the *cuneatus* of Swainson, it certainly agrees with his description. But this is of little consequence, as Mr. Barnes' name has the priority, and he has also preoccupied the name which Mr. Swainson has chosen.

Mr. Barnes correctly remarks that this shell, in shape resembles *ALASMODONTA marginata*, Nob. The extraordinary depressions of the anterior margin is very characteristic and readily distinguishes it from other species. As the shell increases in age this margin becomes a little elevated at tip, as is exhibited in our figures, and the position of the beaks varies a little. The umbonial slope is often elevated into a rib, and the striæ occupy a considerable part of the shell and become so profound as almost to denticulate the edge of the shell.

REFERENCE TO THE PLATE.

Interior and exterior views of the right valve—the two upper figures.

Anterior truncated margin—lower figure.

PLATE IV.

C

UNIO SULCATUS.

SPECIFIC CHARACTER.

Transversely subquadrate ; posterior margin not extended beyond the umbones.

SYNONYM.

U. SULCATUS. *Lea. Trans. Amer. Philos. Soc.,* vol. iii. N. S.

DESCRIPTION.

Shell very obliquely transverse subquadrate ; with an indented groove extending from the umbo to the anterior and anterior basal margins, between which the edge is somewhat retuse ; *epidermis* yellowish-olivaceous, with radiating, deep green, more or less undulated lines ; *summit* near the posterior extremity, prominent : *anterior margin* with two obtusely rounded angles, a little gaping : *cavity of the hinge membranes* behind the summits, deeply excavated, nearly as long as wide, distinctly angulated behind : *posterior margin* regularly rounded, remarkably short, hardly extending beyond the line of the posterior tip of the umbo : *within* perlaceous-white, more particularly iridescent before : *teeth* regular, anterior cardinal tooth parallel with the lamelliform tooth, which is very slight arquated : posterior muscular impression deep : *sinus* of the cartilage very slight, regular : *cavity* of the umbo not deep,

its muscular impressions obvious: *palleal* impression somewhat truncate before, and not extending anteriorly beyond the line of the muscular impression.

Var. a. Within, except on the anterior margin, purple or livid.

OBSERVATIONS.

It occurs in the Wabash and Ohio rivers. In order to avoid confusion I may mention that the present species is in many of the European collections, sent by me within the last five years, under the name of *Flagellatus*.

REFERENCE TO THE PLATE.

The lower figures, are the outer and inner views of the shell.

UNIO RIDIBUNDUS.

SPECIFIC CHARACTER.

Subquadrate; emarginate before and denticulated on the anterior basal angle.

DESCRIPTION.

Shell transverse, subquadrate oval, olivaceous, radiate with capillary deep green lines; *summits* somewhat prominent, nearly terminal: *cavity of the hinge membranes* oval, rather larger behind the beaks than broad: *posterior*

side very short: *anterior side* with a groove, obsolete on the umbo, but becoming deeper to the anterior edge, which is consequently emarginate a little below its middle; a little gaping; the inferior angle somewhat more prominent, rounded and denticulated: *anterior muscular impression* very deep: *palleal impression* emarginate opposite to the denticulated angle: above this angle also, the concavity is abruptly more concave, so as to form a definite dilated groove.

Var. a. Within deep reddish purple.

OBSERVATIONS.

The remarkable character of the anterior basal angle or lobe of this species, renders an extended and more particular description unnecessary. In the figure of the annexed plate we have brought this character particularly into view, by a delineation of the front of the shell, and two or three series of the teeth are visible in some specimens, like varices in the univalves, on the surface of the shell, fringing the deeper undulations or wrinkles. [We may remark that in our figure these teeth have too much of a serrated appearance; they are in reality more tooth-shaped, though slender.] It has considerable resemblance to the *flagellatus*, Nob., in general form, brevity of the posterior side, summits, cavity of the hinge membranes and radiated surface, but the denticulated anterior edge, the more acute anterior groove and other subordinate characters, amply distinguish it. It is a small species, even smaller than the *flagellatus*.

A remarkable and gigantic variety occurs in Cumberland river; a specimen is rather more than two inches



wide and the radii are interrupted into spots. It may prove to be a distinct species when more specimens are obtained for comparison, and it may in that case be distinguished by the name of *perplexus*. For a specimen of it I am indebted to Mr. Lesueur.

REFERENCE TO THE PLATE.

The upper figure exhibits a front view of the full grown shell.

UNIO MONODONTA.

SPECIFIC CHARACTER.

Transversely elongated; inner margin whitish or livid; lateral teeth obscure.

DESCRIPTION.

Shell transversely much elongated, slightly arquated, blackish-brown; *umbonial slope* (Swainson) widely rounded, not abruptly elevated: *umbo* placed far back, not prominent above the general curvature; *hinge* and *basal margins* a little arquated, parallel: *anterior* and *posterior margins* regularly rounded: *within* perlaceous, with an opaque whitish or livid margin: *primary teeth* simple, small: *lateral teeth* very imperfect; that of the right valve with only an impressed, short line, instead of the usual deep recipient fissure.

OBSERVATIONS.

I obtained numerous specimens at the Falls of the Ohio, on the rocky flats which are exposed in a low state of the water. Its elongated form is somewhat similar to that of the *rectus*, Lam. ; but it is much thinner, more widely rounded before, and more compressed, particularly anteriorly. Its teeth distinguish it from any other species hitherto described. Old shells are very much decorticated and eroded ; and in some individuals, the impressed line on the lateral tooth is hardly perceptible : still it cannot for one moment be mistaken for an *Alasmodonta*, as the habit is quite different. Mr. Lesueur has presented me with a specimen found in the Wabash.

REFERENCE TO THE PLATE.

The two views present the inner and exterior pages of the shell.

PLATE VI.



DELPHINULA.

GENERIC CHARACTER.

Shell spiral, subdiscoidal or conic, umbilicated; whorls rough, foliaceous or angulated on the surface; aperture orbicular, entire; labia united, often fringed or furnished with a peristome.

OBSERVATIONS.

Linné referred the *laciniata* and *distorta*, the only species known to him, to the genus **TURBO**, in consequence of the rotundity of the aperture; but Lamarek separated them, and with a number of new species, chiefly fossil, formed the present group. Lamarek observes that they "evidently approach the **SCALARIE**," and among them, we also see species, of which the spire is loose, and the volutions separate. In addition to the above mentioned species, Lamarek gives one or two others and about ten fossil ones. DeFrance enumerates about thirty species.

PLATE VII.

DELPHINULA? LAXA.

SPECIFIC CHARACTER.

Whorls all separate and distinct.

SYNONYM.

DELPHINULA LAXA. *Nobis. Journ. Acad. Nat. Sc.* vol. v. p. 207.

DESCRIPTION.

Shell regularly spiral, subovate, nearly glabrous, whitish, slightly tinged with dull yellowish: *whorls* rounded, perfectly disjoined throughout, rapidly attenuated to the apex; a dilated, rugous, shallow groove on the line of the umbilicus: *aperture* oval-orbicular, with an acute edge.

OBSERVATIONS.

This very remarkable shell was sent to me for examination by the late Mr. Stephen Elliot of Charleston, who found but a single specimen on Sullivan's island; it must therefore be considered very rare.

On a first view I was inclined to refer it to the genus VERMETUS, in consequence of the separated nature of the volutions, and the broken apex of the spire, but a more careful examination exhibited the broad rugous groove,

analogous to that in the umbilicus of many shells, and seemed to shew its more close alliance with the present genus.

Can it be a monstrosity of a **NATICA**, as the **Cornu of Born** is said to be a malformation of **HELIX aspersa**. Mull.? Or is it in reality a **DELPHINULA** or **CIRRUS**? However this may be I take the earliest opportunity to present a figure for the determination of Naturalists.

REFERENCE TO THE PLATE.

The plate presents a back and front view of the shell.

PLATE VII.

. D





MELANIA.

GENERIC CHARACTER.

Shell turrited, rather thick, covered by an epidermis; spire generally elongated; aperture ovate or oblong, longer than broad, acute above; labrum simple, acute, prominent near the base and rather abruptly retracted at its junction with the base of the columella, and not united above to the labium; columella destitute of a fold, arquated towards the base; operculum corneous; umbilicus none.

OBSERVATIONS.

Before Lamarek perceived the necessity of establishing this group, some of the species were variously arranged. Linné, Lister, Schroeter, and others, considered them as belonging to *Helix*; Muller to *Nerita* and *Buccinum*; Bruguière to *Bulimus*, and Chemnitz referred one species to *Strombus*. The genus differs from *Helix*, *Lymneus*, &c., by having an operculum as in *Paludina*, *Ampularia*, and *Valvata*, and from these, in addition to other differential traits it may be distinguished by the disunion above of the labiæ. It strongly resembles *Melanopsis*, *Pirena* and *Potamides*, but these are distinctly and unequivocally emarginated at base.

The animal respire water; it has a short, conic-cylindric, obtuse rostrum; two acute tentacula having the eyes at their exterior base; foot short and obtuse.

They are inhabitants of fresh water, chiefly in the tropical regions; but many species are very abundant in the rivers, lakes and small streams of the United States. No recent ones have been found in Europe, but several have occurred fossil in comparatively recent formations. No fossil species have yet been found in this country. Lamarck described sixteen recent and twelve fossil species; but DeFrance enumerates thirty-six species.

MELANIA NUPERA.

SPECIFIC CHARACTER.

From one to four or more revolving series of tubercles.

DESCRIPTION.

Shell oblong suboval: *volutions* five, slightly rounded: *body whorl* with about three revolving series of subequal, equidistant, granules or tubercles, not higher than wide, occupying the superior portion of the surface; *second volution* with but two series; remaining volutions with slightly elevated, longitudinal lines instead of tubercles, often obsolete: *spire* decorticated towards the tip: *suture* not deeply impressed: *aperture* longer or as long as the spire; sinus of the superior angle profound: *labium* concave, with a callus near the superior angle: *columella* with a slight, obtuse, hardly prominent angle above the incipient sinus, which is obvious: *labrum* not abbreviated above, nor much produced near the base.

OBSERVATIONS.

This species is common in the Wabash river. The spire is almost invariably so much decorticated, that no trace of the longitudinal lines remains; in the young only are the lines distinct, and even in these they are sometimes obsolete or altogether wanting.

It varies in the number of its series of tubercles, some specimens having but one, and others, though these are rare, as many as five or six.

REFERENCE TO THE PLATE.

The upper figures represent the shell in two positions
The middle figure exhibits the young shell.

MELANIA DEPYGIS.

SPECIFIC CHARACTER.

Body whorl yellowish, with two equidistant, revolving, rufous lines.

DESCRIPTION.

Shell oblong, conic-ovate, not remarkably thickened: *spire* as long as the aperture, or rather longer, often much eroded, with a broad, revolving, rufous line near the suture, occupying a considerable portion of the surface: *whorls* about five, hardly rounded: *suture* moderately im-

pressed : *body whorl* yellowish, with two rufous, revolving lines equidistant from the suture, base and each other, the superior one broader, and its locality a little flatter than the general curvature : *aperture* ovate, acute above, moderately dilated : *labium* with calcareous deposite, particularly above : *labrum* not projecting near the base, nor arquated near its junction with the second volution : *base* regularly rounded.

DESCRIPTION.

I found this species, in great abundance, on the Rocky flats at the Falls of the Ohio, where they were left by the subsiding of the river, in company with numerous other shells. In old specimens the spire is very much eroded, exhibiting a white, irregular surface. It varies a little in colour, and a few occurred, of which the colour is fuscous, the bands being obsolete.

REFERENCE TO THE PLATE.

The two lowest figures present different views of the shell.

PLATE VIII.



LUTRARIA.

GENERIC CHARACTER.

Shell equivalve, inæquilateral, transversely oblong or subovate, gaping at the extremities, particularly at the posterior extremity; cardinal teeth two, of which one is doubled in the shape of a V, the other simple, with a large deltoid cavity situated obliquely near the teeth; lateral teeth none; ligament internal, inserted in the cardinal cavities, not visible when the shell is closed; muscular impressions two, lateral, remote, simple; impression of the mantle extending to the muscular impressions and having a large and profound sinus extending nearly half its length.

OBSERVATIONS.

Lamarck separated this group from the Linnæan *Macræ*, from which it is essentially distinct by the absence of lateral teeth as well as by other less striking characters. The animal has a large fleshy cylinder, containing two tubes, one for respiration and the other evacuation, situated at the posterior extremity. The foot is small and compressed, placed at the opposite extremity or near it.

It is a littoral genus, inhabiting estuaries and near the mouths of rivers.

Blainville unites this genus with *LIGULA* *Leach*, under the generic name *LUTRICOLA*. Lamarck describes eleven recent and one fossil species.

LUTRARIA LINEATA.

SPECIFIC CHARACTER.

Posterior margin with a reflected edge and submarginal carinated line.

SYNONYM.

LUTRARIA LINEATA. *Nobis. Jour. Acad. Nat. Sc.* vol. iv. p. 310.

LUTRARIA PAPYRACEA? *Lam. Anim. sans Vertebr.* vol. v. p. 470.

DESCRIPTION.

Shell transversely suboval, thin, whitish tinged with ferruginous: *posterior hiatus* patulous; *anterior hiatus* linear and commencing below the hinge slope: *hinge slope* with a rectilinear profile, and flattened, oblong, subcordate surface: *valves* unequally wrinkled: *posterior margin* rounded, shorter than the opposite margin, with a reflected edge, and submarginal carinated line; behind the middle of the disk and some distance before the elevated line is a broad vitta of hardly perceptible longitudinal lines: *within* a little undulated, posterior margin glabrous, with an obtusely indented, submarginal line, corresponding with the exterior carinated one.

OBSERVATIONS.

The elevated line of the posterior submargin and the reflected posterior edge are very characteristic, distinguishing this species from all others, excepting the figure 2 of the plate on *Lutraria* in the second volume of Mr. Sowerby's excellent work on the "Genera of Recent and Fossil Shells." Our shell is much shorter on the posterior end than his figure, which he refers with doubt to the *papyracea* of Lamarek; a difference which, however, may be attributable to an inequality of age, as it becomes more elongated anteriorly in the older shell. Whether or not the present species is the same as that of Lamarek we cannot at present determine, but it is without doubt closely allied to it. Still, however, it does not agree with the figure in the *Encycl. Meth.* 257, fig. 2, a. b., quoted by Lamarek.

The *lineata* is not uncommon on the southern coasts, particularly on those of Georgia and East Florida, but we have not yet found it so far north as Newjersey.

REFERENCE TO THE PLATE.

An outer and inner view are represented.

PLATE IX.

E





PALUDINA.

GENERIC CHARACTER.

Shell fluviatile, conical, subovate or suboval, covered by an epidermis; spire moderate; whorls convex; aperture longer than broad, angulated above, simply rounded at base; labrum simple, acute, united above to the extremity of the labium; labium simply arquated; operculum corneus or coriaceous, suborbicular, slightly angulated above.

OBSERVATIONS.

The species of this genus were widely separated from each other by former authors, and referred to the Genera *Helix*, *Turbo*, *Bulimus*, *Nerita*, and *Cyclostoma*; but Lamarck selected and embodied them under the present designation, and they now constitute a natural group.

They may be distinguished from *Cyclostoma* by the simple labrum, as well as by other characters of the shell, as also of the animal, from *Melania* by the simple curvature of the labrum at base, and from *Valvata* by the form of the aperture which is not angulated above in that genus.

The animal has two linear-acute tentacula, with the eyes at their exterior base; anterior part of the body with a small membranaceous wing on each side, the right one is "recurved in a small canal, which introduces the water into the respiratory cavity;" "the branchiæ are composed of parcels of filaments, which are attached to the sides of

the branchial cavity," and are altogether internal, a character which distinguishes them from the animal of *Valvata*.

They inhabit fresh waters and are very common in almost all our lakes and streams. As they respire water, they do not so uniformly reside near the water's edge as the *Lymnææ*, which respire air only. Like them, many of the species, if not all, have the power to swim at the surface in a reversed posture, the foot being applied to the surface, and the shell being downward.

Lamarck describes seven recent species, and DeFrance enumerates five fossil ones.

PALUDINA DECISA.

SPECIFIC CHARACTER.

Aperture more than half the length of the shell, within bluish-white.

SYNONYMS.

COCHLEA VIRGINIANA È FLAVA VIRIDESCENS, NON FASCATA. *Lister Conch.* tab. 127, fig. 27.

PETIVER GAZOPHYL. tab. 106, fig. 18.

PALUDINA DECISA. *Nobis. Nicholson's Encycl. (Amer. edition) article Conchology*, pl. 2, fig. 6.

PLATE X.

DESCRIPTION.

Shell subconic-oval, olivaceous, generally truncated at the apex: *whorls* five, wrinkled across, and banded with minute, distant striæ: *suture* deeply impressed and conspicuous: *aperture* subovate, more than half the length of the shell; within bluish-white: *operculum* elevated on the disk, concentrically striated, coriaceous.

Animal with the foot large, suddenly a little dilated each side before, and widely truncate in front: *foot* livid, thickly maculated with irregular orange spots, which are much smaller beneath: *head* and *tentacula* spotted with orange: *eyes* on a prominent angle at the exterior base of the tentacula.

OBSERVATIONS.

The young shell resembles the *subearinata*, Nob., Nichols. Enc., but the whorls are destitute of an elevated line, the suture is not so deeply impressed, and the aperture is narrow above.

I found the animal viviparous in October; the young shell had then three complete whorls, which were spirally striated.

The species is very common in various parts of the Union. Dillwin informs us that Muller and others have incorrectly quoted Lister's figure for their *Helix angularis*.

REFERENCE TO THE PLATE.

The upper and lower figures represent the shell of the natural size.

PLATE X.

PALUDINA VIVIPARA.

SPECIFIC CHARACTER.

With about three reddish-brown revolving lines.

SYNONYMS.

COCHLEA VIVIPARA FASCIATA. FLUVIATILIS. *Lister Conch.*, tab. 126, fig. 26.

HELIX VIVIPARA. *Linn., Gmel. and others.*

NERITA VIVIPARA. *Muller Verm.*, p. 182.

CYCLOSTOMA VIVIPARA. *Draparn.*, pl. 1, fig. 16.

LA VIVIPARE à BANDES. *Geoff. Cuvier.*

PALUDINA VIVIPARA. *Lam. Anim. sans Vertebr.*, vol. vi., 2nd part, p. 173. *Nobis. Nicholson's Enc.*

DESCRIPTION.

Shell subconic, with about five, rounded whorls: *suture* impressed: *colour* olivaceous, more or less pale, with three reddish-brown bands, of which the middle one is generally smallest; *spire* with but two bands: *aperture* suborbicular.

OBSERVATIONS.

This appears to be one of the many species, that are common to North America and Europe. And though the specimens from the two continents differ a little, yet this

difference is so slight as not to be specific. Cuvier remarks that "the female produces living young, which are found in its oviducts, in the spring, in every state of development. Spallanzani assures us, that the young, taken at the moment of their birth and nourished separately, reproduce without fecundation, like those of the *Aphis*. The males are nearly as common as the females, their generative organ is exerted and retracted, as in *Helix*, by a hole pierced in the right tentaculum, which causes this tentaculum to appear larger than the other. By this character the male is easily known."

The *vivipara* is far less common than the *decisa*, and seems to be more usually found in the southern part of the Union. Mr. Elliott of Charleston sent me two specimens from the banks of St. John's river, Florida, and Capt. Leconte presented me with one, which he obtained at Lake George on the same river.

REFERENCE TO THE PLATE.

The two middle figures exhibit the shell in two positions.

PLATE X.

ERRATUM.

In the Observations on *Unio Ridibundus*, for "flagellatus, Nob." read *sulcatus*, Lea.

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AMERICAN
CONCHOLOGY,

OR

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA.

ILLUSTRATED BY

COLOURED FIGURES

FROM

ORIGINAL DRAWINGS EXECUTED FROM NATURE

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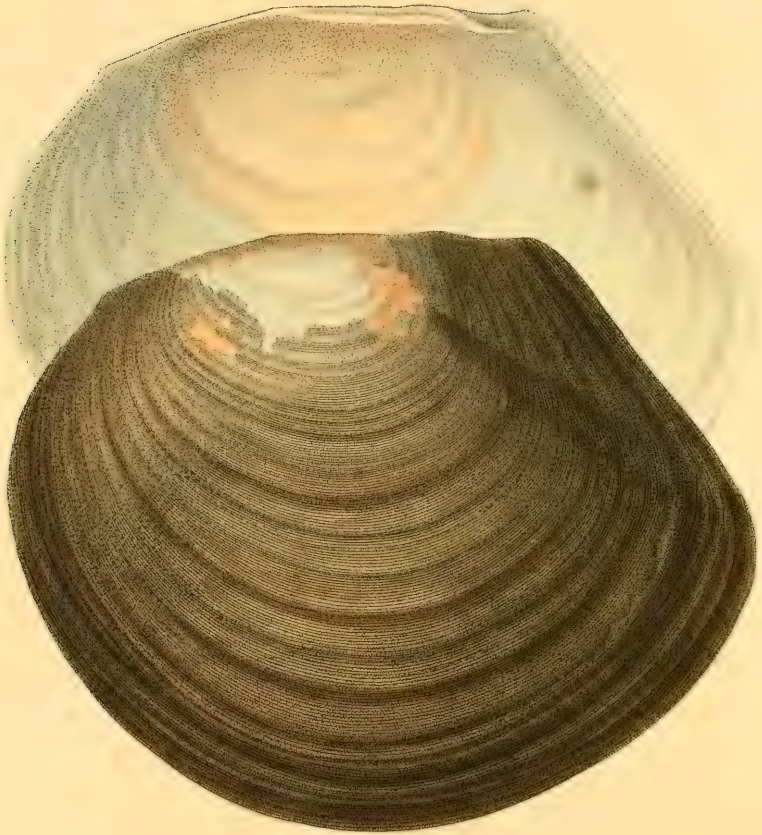
Anodonta suborbiculata,	-	-	-	-	-	pl. xi
Fulgur pyruloides,	-	-	-	-	-	xix
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ANODONTA.

GENERIC CHARACTER.

Shell equivalve, inequilateral, transverse, regular ; hinge margin linear, without teeth having a sinus before ; ligament external, elongated, terminating in the anterior sinus ; muscular impressions two, remote, posterior one compound.

OBSERVATIONS.

These are shells of rather large size, residing in fresh water streams and lakes. They are generally perlaceous within and greenish on the exterior. Although the genera *Anodonta* and *Unio* are closely allied, yet the species were widely separated by Linné who referred those of the present genus to *Mytilus*, whilst those of *Unio* he associated with the *Myæ* ; but an arrangement so artificial could not escape Bruguières. He perceived their affinities, and grouped them under the above mentioned denominations. Several other allied genera have been formed by subsequent naturalists, distinguished from the present by the existence of either cardinal or lamellar teeth, with the exception however of *Iridina* of Lamarek, which has an elongated, linear, crenulated hinge and was placed by Bruguières in *Anodonta*, to which indeed it is intimately linked by the *I. nilotica*. Ferussac, in his *Tableaux Syst.*, included all the genera of this family in four, viz. *Anodonta*, *Hyria*, *Unio*, and *Castalia*. Sowerby has since proposed to retain

Unio only, and, as Ferussac had already done, to consider the other genera as subgenera.

Blainville describes the animal nearly thus : Body large, thick, more or less oval ; mantle thickened on the margin, simple or fringed, and excepting on the back, open all around ; anus oval, distinct ; a kind of small incomplete tube, furnished with two ranges of cirri, for the respiratory cavity ; foot very large, compressed, lamelliform.

The principal naturalists and anatomists have been decidedly of opinion that the animals of this family are hermaphrodites ; but Mr. Prevost of Geneva affirms that he observed, in some individuals of the *Unio pictorum*, the existence of spermatic animalculæ, which he could not perceive in those which contained eggs. He therefore inferred that the sexes were distinct. This led Blainville to a reexamination of the subject : he dissected about forty individuals of the genera *Unio* and *Anodonta*, without discovering any indications that could lead him to suppose the existence of the male sex ; still however he is in doubt, and we are very much inclined to believe, with Ferussac, that Prevost may be right, but that more observations and observers are required fully to establish this disputed point, although Baer has gone far towards even this object.—Treviranus also made some interesting observations on this subject, an account of which he published in the *Zeitsch. für Physiol.* in 1824. He was of the opinion that the same organ produced both the ova and the fecundating fluid. He however remarks that he found, at the season of excluding their eggs, many that were entirely destitute of them.

Some naturalists have changed the designation of this genus to *Anodon*, as being more rigidly correct.

ANODONTA SUBORBICULATA.

SPECIFIC CHARACTER.

Suborbicular, a little winged.

DESCRIPTION.

Ovate-orbicular, rather compressed; pale olivaceous tinted with flesh colour; with very slender, almost capillary, and very numerous, obsolete greenish radii; sometimes with more or less obvious, transverse, yellowish bands towards the base; *beaks* not elevated above the general surface, with two or three rows of very small tubercles: *hinge margin* nearly rectilinear, compressed behind, and anteriorly compressed almost into a wing: *ligament*, particularly in the young specimen, concealed: *posterior margin* rounded: *anterior margin* a little prominent, obtusely angulated; *basal margin* much arcuated: *within* undulated almost as obviously as on the exterior; pale bluish, varied with pale flesh colour, and somewhat iridescent before and behind: *cicatrices* slightly impressed.

Length about four inches.

Breadth five and three-tenths.

Convexity nearly one inch and three quarters.

A large and fine species. Some time since, Mr. O. Evans obtained an individual, which I hesitated to publish as new, thinking it might possibly be a young remote variety of the *A. grandis*, Nob. but subsequently, having received adult and perfect specimens from Mr. Evans, I found that it is uniformly longer, more rounded, much more

compressed, and having a different aspect. It is found in ponds, near the Wabash river, but rarely if ever, in the river itself, as it prefers still water and a muddy bottom. In form it approaches nearer to orbicular, than any other species that we have seen described.

An American conchologist was of the opinion that all our *Anodontas* are referrible to one species ; but we conceive that the present species, cannot with more propriety be united with the *cataracta* and *marginata*, Nob., not to mention the more elongated species, than the various species of *Unio* can be considered as no other than *U. picta*, L.

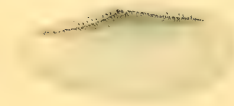
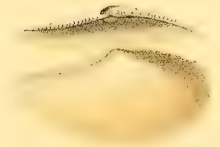
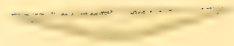
REFERENCE TO THE PLATE.

Upper figure is the inner view.

Middle figure—exterior view.

Lower figure—dorsal view.

PLATE XI.



NUCULA.

GENERIC CHARACTER.

Shell transverse, equivalved, inequilateral; summits contiguous; hinge with a primary, more or less triangular fosset for the reception of the ligament, with an anterior and posterior series of small, inserted, numerous, pectinate teeth, interrupted at the summit by the fosset; ligament internal, very short, inserted into the fosset; muscular impressions two, simple.

OBSERVATIONS.

A genus connected with *Area*, *Pectunculus*, *Cucullæa*, and *Trigonia*, but eminently distinguished by the ligament being interior; which, as has been remarked by Sowerby, proves their relation to the *Mastraceæ*. Many species are known. Lamarek described six recent and the same number of fossil species; Sowerby four fossil and one recent; De-france enumerates twelve fossil, and we have published two recent and two fossil species. Of all these the tellinoides, Sowerby and lanceolata, Lam. appear to be the largest.

The inhabitants are thus described by Blainville: Body subtriquetrous; mantle open on its inferior half only, the margins entire, denticulated on the whole length of the back, without posterior elongations; foot very large, thin at its origin, dilated in a large oval disk, the margins of which are furnished with tentacular digitations; anterior

buccal appendices very long, pointed, rigid, and applied against each other like a kind of jaws; the posteriors equally rigid, and vertical.

NUCULA LIMATULA.

SPECIFIC CHARACTER.

Oblong-ovate, rostrated, pellucid; beaks subcentral. not elevated; margin entire.

DESCRIPTION.

Shell transversely elongated subovate, green olive, nearly pellucid, smooth, polished, with slight indulations of increment: *beaks* not prominent above the curve of the hinge margin; *hinge margin* anteriorly abruptly compressed; the compression not reaching the tip; rectilinear nearly to the tip which is a little recurved; posteriorly almost regularly, but obtusely arquated: *posterior margin* regularly rounded: *anterior margin* somewhat rostrated. not truncated: *within* a little perlaceous: *margin* entire: *line of the teeth* slightly interrupted and a little angulated at the fosset, extending more than two thirds of the length of the shell, rectilinear before and behind: *teeth* prominent, numerous, acute, much angulated at their bases and longer than the breadth of their bases: *fosset* triangular. short, rather small, and but little oblique.

OSERVATIONS.

This pretty species was presented to me by Nuttall as having been taken from the stomach of a fish at Nahant, Massachusetts.

It resembles the *N. fluviatilis*, Schröter, and the *N. rostrata*, Montague, but the rostrum is not truncated and the summit is more central than in those species. It is still more closely related to *N. lævis*, Nob., but it is proportionably a little longer, and in that species the posterior series of teeth is a little arquated and the compressed anterior hinge margin extends quite to the tip. I must say however that I have seen but a single specimen, and but a single valve of the present shell. The *N. arctica*, Gray, which this might be supposed to resemble, is said to be "posticé brevi, obliquè truncato."

REFERENCE TO THE PLATE.

Upper figure—exterior of a valve.

Middle figure—back of a valve.

Lower figure—inside of a valve.

PLATE XII.

For comparison I add, from the Journal of the Academy of Natural Sciences, the following description and figure of *N. lævis*, and also those of a smaller and quite distinct fossil species.

NUCULA LÆVIS.

SPECIFIC CHARACTER.

Transversely elongate-subovate, rostrated, nearly smooth.

SYNONYM.

NUCULA LÆVIS. *Nobis. Jour. Acad. Nat. Sc.* vol. iv.
p. 141.

DESCRIPTION.

Shell compressed, thin, fragile, polished, smooth, slightly wrinkled towards the base: *beaks* nearly central, a little prominent beyond the hinge margin, rounded, approximate: *series of teeth* subrectilinear, a little arquated behind; *teeth* prominent: *hinge margin* exteriorly both before and behind the beaks rather abruptly compressed, the anterior compression extending from the beaks to the tip: *posterior margin* rounded: *anterior margin* somewhat rostrated, the anterior hinge margin rectilinear, very little reflected at tip: *inner margin* simple.

Length nearly half an inch, breadth nearly one inch.

This shell may be compared with the *N. pellucida*, Gmel. but it is shorter in proportion to its width, and the beaks are nearer the centre. The beaks are more prominent than in *limatula*, and the base is more arquated. It is a fossil species and was found by Mr. John Finch in Maryland.

REFERENCE TO THE PLATE.

The right figures represent the outer and inner view of the shell.

NUCULA CONCENTRICA.

SPECIFIC CHARACTER.

Transversely elongate-subovate, rostrated, concentrically striated.

SYNONYM.

NUCULA CONCENTRICA. *Nobis.* *Journ. Acad. Nat. Sc.*
vol. iv, p. 141, pl. 10, fig. 6.

DESCRIPTION.

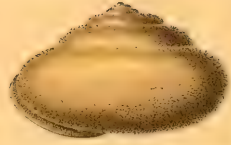
Shell convex: rostrum considerably narrowed towards the tip: *surface* concentrically striated with numerous, regular, equidistant, rounded lines: *beaks* rather behind the middle: *ligament margin* a little concave: *series of teeth* angulated at the beaks.

OBSERVATIONS.

The regularly striated surface gives this shell a very pretty appearance. In outline it has some resemblance to the *rostrata*.

REFERENCE TO THE PLATE.

The left hand figures exhibit the exterior and interior views.



HELIX.

GENERIC CHARACTER.

Shell univalve, free, subglobular, convex or somewhat conic. Aperture entire, wider than long, more or less oblique, a little contracted by receiving a part of the convexity of the preceding volution, which also widely separates the lips.

Animal hermaphrodite with four retractile tentacula, which are filiform or cylindrical; anterior pair short; posterior pair much longer, oculiferous at tip: spiracle on the right side of the neck, near the anus, and another pore which contains the organs of reproduction: they respire air only.

OBSERVATIONS.

This is a universal, and if I may use the expression, a cosmopolite genus. The species are exceedingly numerous; in favourable situations some of them are multiplied almost to infinity, and become very destructive to cultivated plants. So formidable are they in this respect in some parts of Europe, that many devices are practised to destroy them. In North America they do not multiply to an injurious extent and I have never known a garden or an orchard, in which their depredations attracted the preventive attention of the cultivator.

They attain to their greatest magnitude and beauty in

tropical climates and seemed to be repelled only by the inhospitable rigor of the polar regions.

Notwithstanding this wide range over the globe, they may be recalled to mind, wherever the English language is spoken, by the name of *Snail shells*, and from their beauty and diversity of forms, many persons who at first collected them for ornament, have been led by that circumstance to devote their attention to this interesting science.

The genus *Helix*, as originally instituted by Linné, consisted of an unnatural assemblage of species of various characters, habits and conformation. Those that reside on the land and respire air only by means of a spiracle leading to a cavity for respiration, lined with a plexus of pulmonary vessels, were associated with such as reside wholly in the water, and with others that are amphibious, as unlike in their external character as in their anatomical structure. It was in reality a great reservoir for Molluscous animals that correspond in some general appearances, all of which his generic definition, however comprehensive, could not include. The present more natural condition of this group is owing to the successive improvements of Bruguière, Draparnaud, Lamarck and Montfort, who removed from it various species, of which they formed the genera *Vitrina*, *Bulimus*, *Carocolla*, *Pupa*, *Scarabus*, *Succinea*, *Planorbis*, *Lymneus*, *Paludina*, *Ampularia*, *Melania*, *Janthina*, *Sigaretus*, &c. Many of these Ferussac has again restored to the genus *Helix*, forming various subgenera under new names which he has applied to them.—Lamarck, as he has limited the genus, describes one hundred and seven species of his own collection, but Ferussac, whose boundaries are more comprehensive, being founded on the

characters of the animal, enumerates five hundred and forty-four.

To a species of this genus, common to Europe and a part of North America, the *H. aspersa*, Muller, sanative qualities were formerly attributed in diseases of the lungs, and Sir Kenelm Digby introduced them into England for the benefit of the afflicted. Many species are served upon the tables of the luxurious, and amongst the Romans, the breeding and fattening them for food, was a particular occupation. Montfort informs us that the *H. pomatia*, Linn. "is an object of commerce; at Paris, Vienna, Rochelle, in Switzerland, &c, they are taken to market, and are exported in barrels to the Antilles;" he adds "c'est un aliment sain, succulent et prolifique."

Lamarek's genus *Carocolla*, is much like *Helix*, but the volutions are always acutely angulated. In *Bulimus* the aperture is longer than wide, and in *Pupa*, *Clausilia*, &c., the form is cylindrical, and the labia are continuous.

HELIX ALBOLABRIS.

DESCRIPTION.

Shell convex, imperforated, immaculate, pale reddish brown; *volutions* about five and a half with rather obtuse wrinkles, crossed by very minute lines, more obvious on the body whorl than on the spire: *suture* distinct, not very deeply impressed: *labrum* abruptly contracting the mouth, rather widely and abruptly reflected, flattened in the plane

of the mouth, white, rather deeply and abruptly more ar-
quated at base.

SYNONYMS.

HELIX ALBOLABRIS. *Nobis. Am. Ed. of Nichols. Encycl.* vol. iv. *Ferussac, Hist. Nat.* pl. 43, f. 1 to 5.
Cochlea virginiana, subalbida, mediocris, circiter quinis orbibus parum altis ad claviculam circumscripta. Lister Synops. pl. 47, f. 45.

OBSERVATIONS.

This is one of our most common species, less abundant however in the Western than the Eastern portion of the United States; and is an inhabitant of an extensive region, extending from Canada to South Carolina whence an individual was sent me by the late Mr. Elliott, and it is probably found even in Florida. It belongs to the genus *Acarus*, Montfort, which he separates from *Helix*, in consequence of being destitute of umbilicus.

A species of the Linnæan genus *Acarus* infests the animal. I have frequently seen this little active parasite, running out and in the respiratory cavity, when the orifice was opened to receive the air. Sometimes it is excluded for a few moments by the closing of the orifice, but it courses nimbly about until another dilatation of the pulmonary aperture, receives it into the interior. An analogous species

inhabits the *Helix nemoralis*, L. of Europe, according to Kirby and Spence.

REFERENCE TO THE PLATE.

The two upper figures represent profile and basal views of the shell.

HELIX THYROIDUS.

DESCRIPTION.

Shell rather thin, convex, umbilicate, pale reddish brown, immaculate: *revolutions* five, wrinkled: *suture* distinct, but not very deeply impressed: *labrum* abruptly contracting the aperture, rather widely reflected, flattened in the plane of the mouth, excepting the superior third, and white: *umbilicus* narrow, distinct: *labium* with an oblique white tooth, rather above the middle and not very prominent.

SYNONYMS.

HELIX THYROIDUS. *Nobis. Journ. Acad. Nat. Sc.* vol. i. p. 123. *Nicholson's Encycl. (Am. edition,)*—*Ferussac, Tabl. System.* p. 33.

Cochlea umbilicata, capillaceis stryis per obliquum donata, Unico dente ad fundum oris. *Lister Synopsis Conch.* pl. 91, f. 91.

The following synonyms are from *Ferussac Tab. Syst. Petiver, Gazophyll.* t. 405, f. 4. *Philos. Trans.* vol. xx, p. 375; *COCHLEA TERRESTRIS VIRGINIANA &c., Schroter, Enleit.* ii. p. 192, No. 60.

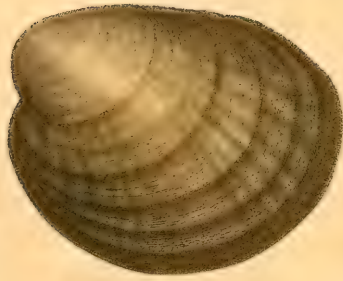
OBSERVATIONS.

A very abundant species, much more numerous than the preceding, in this region. It has certainly a general resemblance to the *albolabris*, but it is smaller, always umbilicated, the labrum near its junction with the penultimate whorl is not so flatly reflected and the tooth of the labium is very conspicuous. It belongs to Montfort's genus **CEPOLIS**.

REFERENCE TO THE PLATE.

The two lower figures exhibit the profile and basal appearances of the shell.

PLATE XIII.



UNIO.

For the generic character see plate IV.

UNIO ELLIPSIS.

SPECIFIC CHARACTER.

Shell very oblique, suboval ; summit prominent, as long as the posterior side.

SYNONYM.

UNIO ELLIPSIS. *Lea. Trans. Amer. Philos. Soc.* (new series) vol. iii, pl. 4, fig. 4.

DESCRIPTION.

Shell very oblique, oval-subovate, ventricose, ponderous : *disk* convex, lines of growth deeply impressed, somewhat undulating the surface ; yellowish-olivaceous, more or less radiate with green, particularly before ; never spotted : the old shell uniform brown or fuscous : *margin* regularly arquated, even at the anterior tip : *summit* prominent, as long as the posterior side : *posterior side* remarkably short : *cavity of the hinge membranes* profound, much dilated between the summits and not extending posteriorly beyond the line of the summits ; visible portion triangular,

its posterior line transverse, slightly arquated, widest : *within* white, perlaceous, iridescent before : *teeth* large, prominent, the cardinal anterior of the right valve and both of the left valve parallel to the lateral teeth, which are a little arquated, those of the right valve united at tip and even after the union a little more elevated than the surrounding surface : *sinus* of the cartilage, regular, definite : *cavity* of the umbo not deep, its muscular impressions very distinct : *posterior muscular impression* remarkably deep, subobconic : *palleal impression* anteriorly arquated, hardly extending beyond the line of the muscular impression.

OBSERVATIONS.

This species is not uncommon. The young shell which we have represented in the plate has a different colouring from the old specimen, which is of a uniform dark, or even blackish-brown, the radii being entirely invisible. It varies in its radii, some being radiated over the whole surface, others having capillary radii only on the anterior side and others being entirely destitute of radii at all ages. Another variety is tinged with rosaceous, especially on the hinge laminae. In its youth it somewhat resembles the *sulcatus*, Lea, but is distinguished by many characters, and remarkably by being destitute of any sulcation anteriorly. The largest one I have seen was nearly four inches in its greatest diameter ; but this is gigantic for the species.

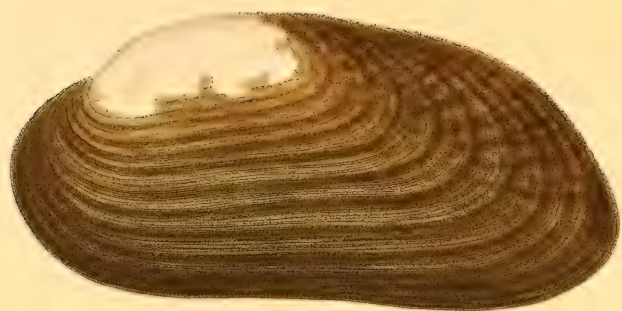
REFERENCE TO THE PLATE.

Upper figure—exterior of a valve.

Middle figure—back view of the shell.

Lower figure—inside of a valve.

PLATE XIV.



UNIO SUBTENTUS.

SPECIFIC CHARACTER.

Transverse; anterior dorsal margin sculptured with small elevated costæ.

SYNONYM.

UNIO SUBTENTUS. *Nobis. Jour. Acad. Nat. Sc.* vol. v.
p. 130.

DESCRIPTION.

Shell transversely oblong-suboval, very widely and slightly contracted at base; brownish olivaceous, obsolete radiated: *posterior side* short regularly rounded: *cavity of the hinge membranes*, behind the summits elongate, somewhat fusiform, acute: *summits* hardly elevated, decorticated: *anterior basal angle* a little prominent, rounded: *anterior dorsal* and *anterior margins*, from the umbo to the angle with numerous, subramous, slightly arquated, oblique, parallel costæ: *within* reddish fulvous: *cavity of the umbo* not deep: *primary teeth* somewhat longitudinal: *lateral teeth* slightly arquated, hardly reaching the extremity of the sinus of the cartilage: *pallial impression* extending anteriorly a little beyond the muscular impression: *smaller posterior muscular impression* oblong, of moderate size.

PLATE XV.

OBSERVATIONS.

In general outline this shell has some resemblance to *U. purpureus*,* Nob. ; but it is distinguished by many characters, and more obviously by the character of the anterior costated margin. It is a native of South Carolina and was sent to me by Professor Vanuxen, who obtained it from the North fork of the Holstein river.

REFERENCE TO THE PLATE.

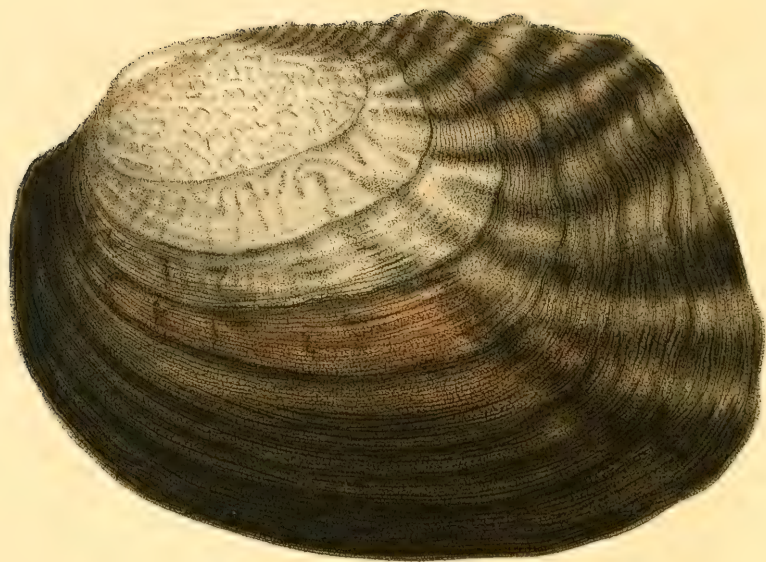
Upper figure, exterior of a valve.

Middle figure, back of the shell.

Lower figure, interior of a valve.

PLATE XV.

* Although Mr. Lamarck quotes the proper name of this species as a synonym, yet he has by some error changed it to *purpurascens*. That it is an error is to be inferred from the observation under his description of *U. carinifera*, where he says, "très-distinct de l'*U. purpurea*."



UNIO UNDULATUS.

SPECIFIC CHARACTER.

Transversely undulated ; umbo literate.

SYNONYM.

UNIO UNDULATUS. *Barnes. Silliman's Journal*, vol. vi.
p. 120, pl. 2.

DESCRIPTION.

Transversely oval, somewhat oblong, with large, distinct undulations, three or four in number, directed towards the anterior margin and not proceeding directly from the umbo : *surface* with a few abbreviated, longitudinal lines, placed without any regularity : *umbo* placed far backward, not prominent, hardly elevated above the general curvature, more or less literate with short, irregular lines or slight elevations : *hinge margin* compressed, nearly rectilinear, prominently angulated or subalated at tip, in the more perfect specimens with numerous, connected, regular lines, curved to the edge and undulating it : *anterior margin* rectilinear from the extremity of the hinge margin to the rounded inferior half, and undulated by the tip of the grooves of the disk : *posterior margin* very short, regularly rounded : *base* very obtusely rounded, in many specimens a little contracted near the anterior termination : *fosset* elongated, very distinct : *within* bluish-white ; perlaceous.

OBSERVATIONS.

This large and handsomely sculptured shell, was found in the Fox river of the Wabash, by Mr. Lesueur and Dr. Troost.

It resembles *U. plicatus*, Nob., but on comparison it will be observed to differ very essentially from that common species. The umbo and beaks of the *plicatus* are very prominent and altogether destitute of any small iterations or divaricating lines, having only the origin of one or two of the large undulations grooved upon it. The primary teeth of the *plicatus* also are much thicker than those of this species.

I formerly considered this species, with much doubt, as distinct from the *undulatus* of Barnes, and gave to it the name of *heros*, but notwithstanding some differences, I have concluded, after a more mature examination and comparison, that it may be with propriety referred to that species. Barnes drew his description and figure from a specimen then unique, belonging to the cabinet of Mr. S. B. Collins, which was so eroded as not to exhibit the ornamental tubercles of the umbo and beak.

The dimensions of a fine specimen found by Mr. O. Evans are, length five inches, breadth over seven, and convexity two inches and seven-tenths.

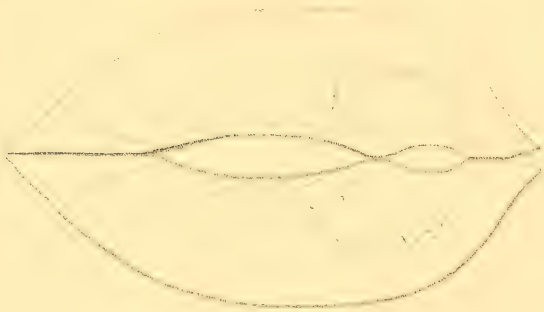
It is not uncommon in Fox river, an arm of the Wabash, in muddy and sluggish parts of the stream.

REFERENCE TO THE PLATE.

Upper figure, exterior view.

Lower figure, inner view.

PLATE XVI.



UNIO ABRUPTUS.

SPECIFIC CHARACTER.

Subquadrate, truncate before.

DESCRIPTION.

Shell oval-quadrate, yellowish olive or brownish, slightly radiated with blackish-brown narrow lines, which do not extend to the base: *umbo* not very prominent, rounded, slightly compressed, generally radiated with obscure greenish, and placed far back, almost terminal: *disk* convex, anteriorly with a hardly raised, very obtuse elevation, becoming obvious towards the margin and a little prominent at the anterior basal angle: *hinge margin* a little depressed, so as to form an angle with the disk, more acute towards the umbo: *ligament* higher than the beaks: *anterior margin* truncated by an almost straight line: *basal margin* very slightly contracted: *posterior margin* very short, gaping considerably from the middle of the base to the cavity of the hinge membranes: *cavity of the hinge membranes* very obvious, rather wide, as long or longer behind the beaks than broad: *within* white, or tinged with very fine fulvous-pink, or salmon colour: *posterior cicatrix* profound; smaller cicatrix rather large, oblique, arquated: *palatal impression* hardly more prominent than the anterior cicatrix: *cardinal teeth* thick, direct; that of the left valve subtrifid: *tooth plate* rather broad, projecting in a ledge on the inner side of the lamelliform tooth of the left valve.

Var. a. Anteriorly more prominent and hardly truncate.

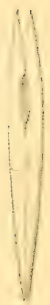
OBSERVATIONS.

The colour of the inner surface is, in most specimens very beautiful. The umbo is generally decorticated, exposing a surface slightly tinged with the colour of the cavity of the shell. The internal surface of this shell, as in several species, is minutely granulated and undulated; a character very sensible under the magnifier.

Some conchologists have considered this shell a mere variety of the *cariosus*, Nob., probably because like that species it is generally more or less truncated before; but there are other characters which appear to me to forbid a specific union. The *abruptus* is always of much less breadth, the beaks much nearer to the posterior extremity, the perpendicular length from the beaks to the base much greater; the cardinal teeth direct, much more robust, that of the left valve being trifid: whereas in *cariosus* the cardinal teeth are decidedly oblique, bifid in each valve, and the plate on which the teeth rest is much more slender, even when the general thickness of the shells is the same. It is more closely related to *U. ellipticus*, Barnes, by the variety *a.*; but although the teeth are nearly similar, yet that species is never truncated, the beaks are never situated so far back; the cavity of the hinge membranes is much narrower; the anterior division of the cardinal tooth of the left valve is less obvious, and the ledge on the inner side of the lamelliform tooth of the same valve is but slight, the aspect or habit also is quite different. It occurs frequently in the Wabash.

REFERENCE TO THE PLATE.

Upper figure outside of a valve. Lower figure inside of a valve. Middle figure back of a valve.



SOLECURTUS.

GENERIC CHARACTER.

Shell equivalved, transversely elongated, gaping at the extremities, which are obtusely and equally rounded; hinge and basal margins nearly parallel; apex not prominent; hinge distant from the extremity; ligament external, short; muscular impressions two, remote, oval or angular, distinct: impression of the mantle profoundly sinuous before; teeth various, generally imperfect.

OBSERVATIONS.

A genus formed by Blainville to receive ten or twelve species, hitherto referred to the genus Solen, and to which they are indeed very closely allied. He divides the genus into three parts, viz.

- A. Compressed, thin, with an anterior rib, obliquely decurrent from the apex to the basal margin. *S. radiatus*, Linn. (Genus Siliqua, Mégerlé; Leguminaria, Schum.)
- B. More cylindric and destitute of the interior rib. *S. strigillatus*, Linn.
- C. More elongated and subcylindric. *S. legumen*, Linn.

These species shew the connection of the two genera to be intimate; but there is certainly a great difference in habit, which, in conjunction with the notable characters of the rounded form of the muscular impressions, the distance of the hinge from the extremity, &c., in the present group,

seem to justify its separation from Solen. Like the species of that genus, these reside in the sand on the sea shores, secluded from observation.

SOLECURTUS COSTATUS.

SPECIFIC CHARACTER.

Hinge nearly equidistant from the posterior termination of the shell and the middle of the hinge margin.

SYNONYM.

SOLEN COSTATUS. *Nobis. Journ. Acad. Nat. Sc.* vol. ii. p. 315.

DESCRIPTION.

Shell transversely elongate-oval, concentrically wrinkled, very much compressed, very thin and fragile: *hinge* nearly equidistant from the posterior termination of the shell and the middle of the hinge margin: *teeth* three, two, and sometimes none, in each valve, the posterior ones upright, the anterior one inclining forward: *within* a strong, broad, elevated rib passes almost perpendicularly from the hinge towards the base and becomes obsolete near that part: *colour* pale brownish, with a slight violaceous tinge and two or three obsolete, paler rays; within perlaceous, somewhat sericeous.

OBSERVATIONS.

I obtained a few incomplete specimens on the coast of Newjersey, near Great Egg-Harbour. Since which Dr. T. W. Harris of Milton, Massachusetts, has sent me several individuals in perfect preservation, from Nahant, where it is therefore probable that they are not uncommon.— When this species was published, the present genus had not been formed, it was of course referred to solen. *S. centralis*, Nob., of the same work, is also of the same group.

REFERENCE TO THE PLATE.

Upper figure, exterior of a valve.

Middle figure, dorsal view.

Lower figure, inside of a valve.

PLATE XVIII.





19

FULGUR.

GENERIC CHARACTER.

Shell pyriform; spire very short; varices none; body whorl very large; aperture large, oval extended towards the base into an elongate-conic, open canal, which is entire at base; umbilicus none; epidermis deciduous; labium concave with a single fold or oblique groove near the origin of the canal and a slight calcareous deposition above: labrum simple; within having elevated striæ which do not revolve far within the shell, nor do they reach the edge of the labrum, but leave a smooth border; operculum horny.

OBSERVATIONS.

This genus was formed by Montfort. Linné placed all the species with which he was acquainted in his great genus *Murex*. Bruguières, Lamarek and Blainville referred them to *Pyrula*, a genus with which they are certainly very closely allied, but from which they differ in having a fold on the labium, in not being vesicular and thin, in having elevated lines or striæ within the labrum, &c.—Linné did not even perceive this alliance, if we may judge from the fact that he placed these shells with *Murex*, as above stated, whilst he referred the true *Pyrulæ* to his reservoir *Bulla*. We do not know what difference exists between the animals. Naturalists do not appear to know whether or not they are operculated, but we can affirm with

certainly that the operculum exists in the present genus.— When recent the surface of the shell is covered with a thin epidermis. It is always destitute of varices and of umbilicus, and bears the same relation to *Pyrula* that *Fasciolaria* does to *Fusus*. Indeed we would have more readily acquiesced in referring them to *Fasciolaria* than to *Pyrula*, although there exists but one fold on the columella, in place of two or three.

The excluded ovaries consist of a long series of oval, parallel follicles or disks of little thickness, attached by one side to a connecting string; each of these disks contains numerous young ones, of which the shell is very obvious and even tolerably firm in its consistence. Such ovaries are very abundant on our coast. They exhibit at length, a rounded perforation in the edge of the follicle, opposite to the string, whence the young shells escape. All this is very well represented by Lister in his *Conchology*, plates 879 and 881.

FULGUR PYRULOIDES.

SPECIFIC CHARACTER.

Pale yellowish or white, with rufous, dilated lines, interrupted in the middle; suture canaliculated.

SYNONYMS.

Seba. Mus. vol. iii. pl. 68, fig. 19, 20?

List. Conch. pl. 877.

Martini, Conch. 3, t. 661, f. 736, 737. (*Lam.*)

Encycl. Meth. pl. 433, f. 2, a. b. (*Lam.*)

BULLA FICUS, var. b. *Gmel.*

FULGUR PYRULOIDES. *Nob. Jour. Acad. Nat. Sc.* vol. 2, p. 237.

PYRULA SPIRATA. *Lam. Anim. sans Vert.* vol. 7, p. 142.

BULLA PYRUM. *Dillwyn, ed. Lister Conch. Index*, p. 39.

DESCRIPTION.

Shell remarkably pyriform. perfectly unarmed, longitudinally lineated with irregular, dilated, dark ferruginous lines on a yellowish or white ground, interrupted or obsolete in the middle by a paler revolving band, more obvious in the young shell; very numerous revolving, slightly elevated lines, alternately somewhat larger, towards the base of the shell somewhat larger, more distant and obviously undulated: *spire* very much depressed: *whorls* above flattened, shoulder acute, unarmed, becoming more or less obtuse and even rounded in the old shell: *suture* profoundly canaliculated: *labrum* gradually contracting to the canal, which is rather long.

OBSERVATIONS.

In its general form, this species certainly resembles the true *Pyrrula* more accurately than either of the other species of our coast, but the groove on the labium readily distinguishes it. I formerly mistook the young shells for those of *F. canaliculata*, Linn., which they very much resemble in form, in the grooved suture and in the spiral striae; but they differ from them in having a much less elevated spire,

in being entirely destitute of armature, either of spines or tubercles, upon the angulated shoulder of the volutions, and in being marked by coloured lines. In this last character they approach *F. perversus*, Linn., but they will not be mistaken for that species. As the shell advances in growth, the acute edge of the depressed top of the whorls becomes obtuse, and in the old shell it is nearly obsolete ; in which state the almost regular curvature of the whorl is very like that of *Pyrula*.

Seba's figures above quoted, are probably intended for this species ; they certainly represent it very well as it appears in the young state.

Lamarck was unacquainted with the native country of his *spirata*, the description of which he published in August, 1822, which gives the priority to *pyruloides*, as this was published in July of the same year, twelve months after it had been read to the academy. It inhabits our southern coast and I never found it so far north as New-Jersey.

REFERENCE TO THE PLATE.

The plate represents the back and front of the shell.

PLATE XIX.



GLANDINA.

GENERIC CHARACTER.

Shell subturriculated, oblong-suboval, somewhat fragile, terrestrial, simple; front of the shell gradually attenuated to the base of the columella; aperture unarmed, rather narrow, nearly longitudinal; labrum simple, a little undulated; columella incurved, truncated at base.

OBSERVATIONS.

Conchologists differ much in the arrangement of this small group of shells. Chemnitz refers them to *Bulla*, and *Buccinum*; Gmelin and Dillwyn to *Bulla*, *Helix* and *Voluta*, and the former has even placed one species in *Strombus*; Bruguière to *Bulinus*; Blainville and Sowerby to *Achatina*; and Ferussac to a subgenus of *Helix*. Montfort who, for the period in which he published, formed genera with a profuse hand, was the first to separate this group from all others. He distinguished it by the name of *Polyphemus*, which we regret that we cannot adopt, inasmuch as it was preoccupied by Muller for a genus of Crustaceous animals, and is still in use. It is to Schumacher that we are indebted for the present generic name, to which we are not aware of any objection. With respect to the characters of the shell, there can be no doubt that *Glandina* is very closely allied to *Achatina*, and not-

withstanding the difference which really exists in the general habit, in the labrum a columella, it would coalesce with it, were it not that the inhabitant possesses characters which cannot justify the union. Ferussac was aware of these distinctions, and after extracting what we formerly published relative to the characters of the animal, he states, "Si cependant on les reconnoît dans toutes les autres espèces du groupe auquel elles appartiennent, ou devra en faire un genre à part, où l'aiguillette et quelques unes des espèces analogues, que nous y réunissons, entreront par l'influence des rapports généraux de leur coquille," and "De toutes les espèces que nous réunissons dans les hélix, aucunes, sans doute, n'offrent des caractères de dissemblance aussi prononcés."

Having unfortunately mislaid a sketch of the animal, taken during a visit to Florida, I can now only repeat my description of it as published in Mitchell's edition of Nicholson's Encyclopedia. Animal elongated, as long again as the shell, granulated; tentacula four, superior ones oculiferous, abruptly deflected at tip, beyond the eyes; inferior ones much shorter, and abruptly deflected at tip; lips beneath the tentacula, elongated, palpiform, almost as long as the superior tentacula, retractile, generally more or less recurved, compressed, attenuated, and acute at tip, and forming a considerable interval between their prominent bases. When the animal is in motion, the elongated lips are used as tentacula to feel the way.

PLATE XX.

GLANDINA TRUNCATA.

SPECIFIC CHARACTER.

Shell pale rosaceous, immaculate, becoming paler towards the aperture.

SYNONYM.

BUCCINUM STRIATUM. *Chemnitz*, ix, t. 120, fig. 1028, 1029. (*Ferussac.*)

BULLA TRUNCATA. *Gmelin, Dillwyn.* (*Ferussac.*)

POLYPHEMUS GLANS. *Nob. Nicholson's Encycl.*

HELIX ROSEA. *Ferussac.*

è FLUMINE QUODAM CAROLINÆ. *Lister Conch.* 1059, fig. 4.

DESCRIPTION.

Shell pale reddish-brown or slightly tinted with rosaceous, often deepest on the spire, gradually becoming paler to the aperture : *spire* rather prominent, somewhat mammary at tip : *volutions* five or six, very obviously wrinkled ; two or three apical *volutions* almost destitute of wrinkles ; *suture* well defined, irregularly crenulated : *columella* decidedly incurved.

OBSERVATIONS.

When in the sea islands of Georgia and in Florida with Mr. Maclure, we found this species, in great abundance

in marshy districts immediately behind the sand-hills of the coast. In Florida they also occurred on elevated mounds of Oyster shells, called Hammocks and generally in such situations as were tenanted by *Succinea campestris*, Nob. On these elevations they were generally small, translucent and of a fragile consistence, and we observed that they obtained their greatest developement only in the low, marshy places. Mr. Elliott of Charleston, South Carolina, since favoured me with living specimens from near that city, where, he informed me, they are not very abundant. These individuals refused such vegetable food as I could procure for them, (in December,) but one of them devoured the animal of a helix which was in the vessel that contained them. Lister's figure above quoted is referred to with doubt by Ferussac in his *Tab. Syst.* p. 57, for his *Helix goniostoma*.

In Lesueur's collection are specimens which he found at St. Francisville on the Mississippi, and Mr. Titian Peale found specimens on the Florida Keys. So that, taking the above mentioned localities into consideration, this shell seems to be an inhabitant of the whole alluvial region, from at least the middle of South Carolina to the Mississippi, and perhaps even still farther south.

In the American Edition of Nicholson's *Encyclopedia* I published an account of this species under the name of *Polyphemus glans*. I supposed it to be that species, as Montfort says it lives in the interior of Louisiana. But Ferussac says that our shell is not the *glans* of Bruguière, which is not an inhabitant of Louisiana, but of St. Domingo. In his general observations, as well as in a letter to me, he says it is the *Buccinum striatum* of Chemnitz and Bu-

limus striatus of Bruguière ; whereas in his enumeration of the species, he rejects the name *striatus* entirely and places those two synonyms under two separate species, to which he gives new names. I think however that this name cannot in justice to Muller, from whom Bruguière adopted it, be applied to our species, inasmuch as he had reference to the South American species. As it is, therefore, neither the *glans* nor the *striata*, I adopt the name applied by Gmelin, for which I am indebted to the synonyms collected by Ferussac, on whose accuracy and opportunities for comparison in this instance, I wholly rely, when in my own opinion, the reference would, but for this authority, be doubtful.

REFERENCE TO THE PLATE.

Upper figure, back view.

Lower figure, front view.

PLATE XX.



THE AMERICAN CONCHOLOGY.

The object of this work, is to fix the species of our Molluscous animals, by accurate delineations in their appropriate colours, so that they may be readily recognized even by those who have not extensive cabinets for comparison.

Although it is intended to elucidate the Molluscous animals of *all* North America, yet it is proposed to introduce those of the United States chiefly, into the first part of the work, so that those subscribers who may wish to limit their enquiries or expenditure to the shells of this Union, may be accommodated.

The price to subscribers will be *one dollar and fifty cents* each number, with the right to withdraw their names on the publication of the fourth number, after having paid for them.

The publishers, however, pledge themselves to their subscribers, to reduce the price of the *future numbers* to ONE DOLLAR, that may be published *after* the subscription list shall justify a reasonable hope of a *reimbursement of the actual expenditure*. It is intended also to add to the work an introduction to the science of Conchology, showing the proper succession of the orders, families and genera, together with an explanation of the technical terms used in describing.

The subscribers and all those who wish to encourage this undertaking, are therefore solicited to assist in enabling us to accomplish these objects, by making the work and the proposals known, and by communicating the names of subscribers to the 'office of the Disseminator, New-Harmony, Indiana.' Several public institutions and State libraries have already subscribed and the patronage of all is respectfully requested.

The publishers confidently hope, that their endeavours to put the work within the reach of the finances, of almost all those whose enjoyments are augmented by an examination of the works of nature, will meet with such encouragement, as shall enable them to produce at least one number, each three months.

ERRATA.

When describing the *Paludina vivipara* of the first No., I omitted to mention that it sometimes varies to a brownish colour, with fuscous bands; and this variety is represented on our plate 10.

No. III. Price, \$1,50, coloured.

AMERICAN
CONCHOLOGY,

OR

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA

ILLUSTRATED BY

COLOURED FIGURES

FROM

ORIGINAL DRAWINGS EXECUTED FROM NATURE.

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NEW-HARMONY, INDIANA.

Printed at the School Press.

(September, 1830.)



ALASMODONTA.

GENERIC CHARACTER.

Shell unattached, transverse equivalved, inequilateral : cardinal teeth one in each valve, irregular, simple or biparted ; lateral teeth none ; muscular impressions two principal ones ; compound ligament exterior ; palleal line entire, uniting the two muscular impressions.

OBSERVATIONS.

I formed this genus to receive several species of fluviatile bivalves, which the characters of *Unio* and *Anodonta* exclude. Lamarck placed some of the species in his genus *Unio*, notwithstanding his character of lateral teeth “allongée, comprimée, se prolongeant sous le corselet.”

Blainville in his “*Manuel*,” has placed the genus as a subgenus under *Anodonta*, with *Iridina* of Lamarck and *Dipsas* of Leach.

Cuvier in the first edition of his *Règne Animal* unites all the genera of this family in *Anodonta* and *Unio*; and is still followed in this arrangement by some other naturalists, upon the principle that inosculating species destroy genera. They appear to forget that the same principle would reduce those two genera to a unit, and would in fact eliminate a great portion of those groups, in all departments of Natural science.

Four different names have been applied by as many writers, to designate this genus. Leach called it *Damar-*

is ; another name, according to Swainson, was given by Dr. Turton ; and a third, that of *Margaritaria** by Mr. Schumacher. To all these generic names the *A. margaritifera* of Linné was referred by their respective authors, who do not appear to have been acquainted with either of the several species which inhabit our waters.

Those who change the orthography of *Anodonta* to *Anodon*, will write the name of this genus *Alasmodon* for the same reason. One author writes it *Alasmidonta* and Blainville changes it to *Alasmisodonta*, without abbreviation.

But those who assume the task of rejecting genera in this family, in order to be consistent, must revert to the principles laid down by Ferussac in his "Essai d'une méthode Conchyliologique" published in 1807. He reduces all the Naiads to the genus *Unio*, and the remaining parts of his system, chiefly, correspond with this view of the subject. Mr. Sowerby in the *Zool. Journal*, 1824, has made the same proposition, though in his "Genera" he retains *Anodonta*, *Iridina*, and *Hyria*, as well as many genera in other families, which the same principles of arrangement would abolish. Ferussac, however, in his "Tableaux Syst." 1822, has concluded to admit four of the genera ; viz, *Anodonta*, *Hyria*, *Unio* and *Castalia*.

PLATE XXI.

* *Essai d'un nouveaux systeme des habitations des Vers Testacés*, 1817.—The priority of this date would lead me to adopt the name given by that author, did it not appear that the work was not published for several years after it was printed. It was not known to the naturalists of this country, France, Germany or England until the year 1824.

ALASMODONTA CONFRAGOSA.

SPECIFIC CHARACTER.

Disks with short, oblique undulations, and tuberculated beaks.

SYNONYM.

ALASMODONTA CONFRAGOSA. *Nobis. Disseminator of Useful Knowledge.* vol. 2, p. 339.

DESCRIPTION.

Shell transversely suboval, very dark or blackish: *disk* convex, with oblique, irregular, abbreviated undulations, not directed towards the beak; and numerous, more or less abbreviated, slightly elevated lines from the umbo, becoming obsolete towards the base, those before divaricating towards the hinge margin: *beak* with a groove and double series of three or four tubercles: *lumule*, or *cavity of the hinge membranes* somewhat arquated: *within* white, margined with opaque whitish, or violaceous.

OBSERVATIONS.

This species was first obtained by Mr. O. Evans in a side stream of the Wabash, called Fox river; several specimens have been since obtained but it is rather rare. The teeth resemble those of the *A. rugosa*, Barnes, but are much less prominent. On a passing glance it might almost be mistaken for *Unio plicatus*, Nob.

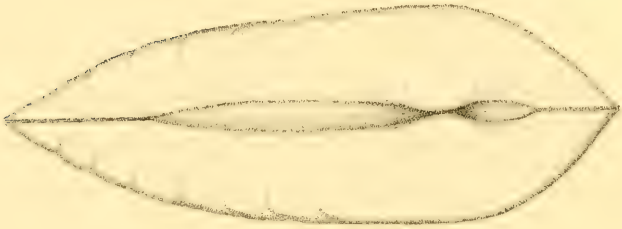
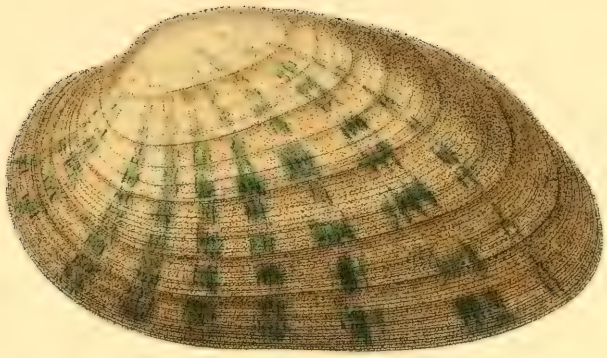
The tuberculated beaks are somewhat like those of the figure 9, plate 248 of the *Encyclopedie Methodique*, but that is represented to have the lamelliform teeth.— The largest individual I have seen measures three inches and a half long, by five and six tenths broad and two and a half inches in convexity. In a particular, oblique, reflected light, the surface exhibits a tinge of dark green.

I have recently received several specimens from Mr. Barabino of New-Orleans, near which city he obtained them, and where they are probably not uncommon. He did not state the precise locality, but I presume they inhabit the sluggish waters in the rear of the city, and not in the Mississippi.

REFERENCE TO THE PLATE.

Three views are exhibited of the shell.

PLATE XXI.



UNIO PHASEOLUS.

SPECIFIC CHARACTER.

Umbo compressed ; cardinal plate very thick ; lateral tooth short ; surface radiated ; beaks simple.

SYNONYMS.

UNIO PHASEOLUS. *Hildreth. Journal of Science*, vol. xiv. p. 283. *Short and Eaton, Transylvania Journ. of Medicine, for February, 1831.*

UNIO CUNEATUS. *Var. Barne. (note to Hildreth's essay.)*

UNIO PLANULATUS. *Lea, Trans. American Philos. Soc. N. S. vol. 3 pl. 9 p. 13.*

DESCRIPTION.

Shell transversly oblongovate, thick : *surface* yellowish brown, with several rather broad radii, which are often interrupted, by the larger lines of growth, into spots ; *disks* and umbo compressed : *beaks* simple or not undulated : not elevated : *cavity of the hinge membranes* or *lunule* oval, acute : *ligament* not elevated : *within* white, somewhat grooved obtusely : *cardinal plate* very thick, with a considerable flattened space between the cardinal and lateral teeth : *cardinal teeth* rather small, direct : *lateral teeth* very short, oblique, and very thick : anterior smaller muscular impression immediately anterior to the tips of the lateral teeth.

OBSERVATIONS.

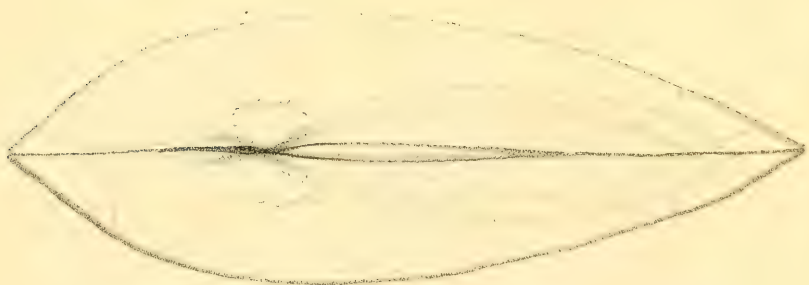
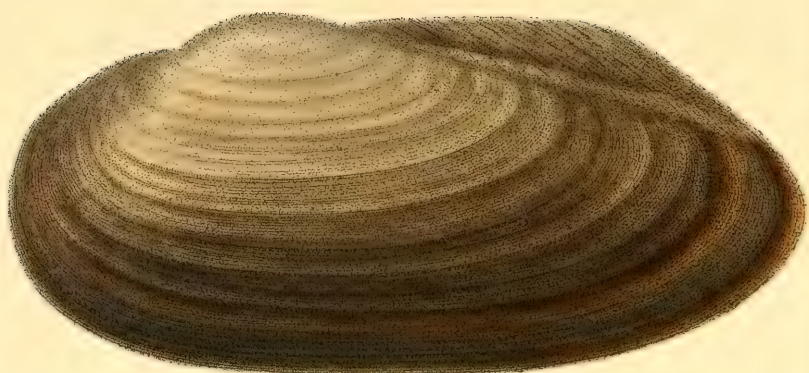
A striking similarity exists between this shell and the *cuneatus* and *gibbosus* of Barnes, the latter of which, however, is somewhat more slender, the cardinal teeth larger, the lateral teeth longer, and the beaks undulated.

In a note on Dr. Hildreth's description of *phaseolus*, Barnes says it is a "white variety of *cuneatus*;" and it must be confessed that a considerable resemblance exists between some of their varieties. But the latter species differs in the much less dilated cardinal plate; in having the anterior smaller muscular impression, situated immediately beneath the tip of the lamelliform teeth; in having the anterior lunule much more depressed, with slightly elevated lines crossing the wrinkles.

The young, of a corresponding age, accurately resembles, in its outline, Barnes' figure of his *mucronatus*, but his description of *mucronatus* agrees better with *cuneatus* than with any other species, certainly much better than with *gibbosus*, inasmuch as it is stated to be "purplish on the margin and whitish in the centre," whereas the latter is more commonly whitish on the margin than in the centre, and the "anterior lunule long, distinct, with a marginal furrow," of *mucronatus*, agrees with *cuneatus*, but not at all with *gibbosus*.

This species is found in plenty in the Wabash, and is probably also an inhabitant of most of the larger tributaries of the Ohio.

The branchial oviducts when inflated with eggs, exhibit a series of tubes, which, when dried, appear granulated under the microscope; these tubes are dirty yellowish, with a few blackish spots near their tip; beyond these



spots is a yellow band, the tip itself being bright sanguineous.

REFERENCE TO THE PLATE.

The exterior, dorsal and interior views of the shell. The lower figures represent the branchial oviducts; that of the middle is a lateral view of a portion of the natural size, as distended by the included eggs. On the right is represented the summits of the tubes of which this organ is composed. On the left are two of the tubes magnified.

PLATE XXII.

UNIO TETRALASMUS.

SPECIFIC CHARACTER.

Transversely elongated; lateral teeth two in each valve.

DESCRIPTION.

Shell transversely oblong-elliptic; rather thin, moderately convex: *beaks* but little elevated, decorticated: *hinge margin* parallel to the basal margin, sub-rectilinear: *posterior margin* regularly rounded: *anterior slope* with two impressed lines: *anterior margin* declining in an oblique rectilinear line from the extremity of the hinge margin to the subrostrated tip: *basal margin* subrectilinear: *cavity of the hinge membranes* (lunule) very slender, obsolete: *umbonial slope* not prominent: *within* white, iridescent anteriorly and on the margin; numerous minute, slightly impressed, longitudinal lines: *palleal im-*

pression not indented, curved beyond the anterior muscular impression : *anterior accessory* muscular impression very large, separate : *cardinal teeth* transversely long, slender, very oblique : *lateral teeth* distant from the cardinal teeth, two in each valve, equally prominent in the two valves.

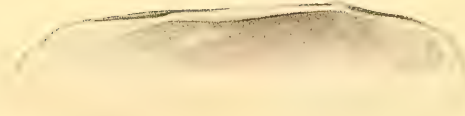
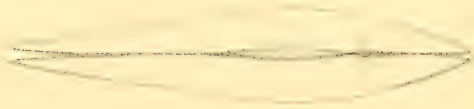
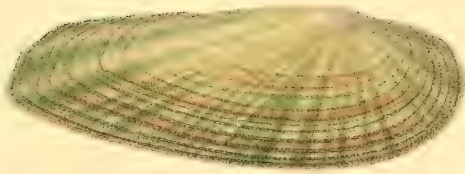
OBSERVATIONS.

For an opportunity to examine this species I am indebted to Mr. Lesueur, who obtained it in Bayou St. John, near New-Orleans. It is readily distinguishable from any other species.

REFERENCE TO THE PLATE.

Three views are exhibited of the shell.

PLATE XXIII.



UNIO DEHISCENS.

SPECIFIC CHARACTER.

Anteriorly biemarginate; teeth obsolete.

SYNONYM.

UNIO DEHISCENS. *Nobis. Disseminator of Useful Knowledge*, vol. ii, p. 308.

DESCRIPTION.

Transversely much elongated, thin, rather compressed, polished, pale yellowish green, or brownish, radiate with somewhat interrupted green lines which are more or less dilated and compound, and obsolete in the aged specimen; anteriorly gaping, and at the posterior inferior margin also gaping nearly to the middle of the base; a slightly impressed line on the anterior hinge submargin passes to the anterior margin, which is emarginate both above and below the line, and subangulated at tip: *posterior margin* rounded, extending considerably beyond the beaks: *umbo* and *beak* not prominent, with slight undulations on the latter: primary teeth consisting of a slightly elevated, very obtuse angle in the right valve and obsolete sinus in the left for its reception: *lateral teeth* denoted by an impressed line; *cavity of the umbo* slight, but with a deep, obvious and large muscular impression, immediately under the beak; more or less tinged with purple.

OBSERVATIONS.

The anterior emarginations, above mentioned, are obvious in many species, but are more particularly remarkable in the present shell; they mark the situation of the tubes of the animal.

The form and arrangement of the teeth are very much like those of the *monodonta*, Nob. but the outline and other characters of this shell, as expressed in the above description and exhibited in the plate, are widely different.

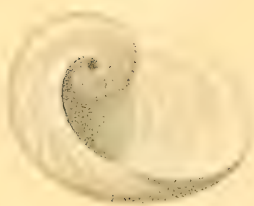
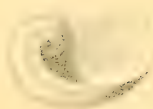
It is certainly an inosculating species between *Unio* and *Anodonta*, but traces of the primary and lamelliform teeth are, I believe always discoverable. It is an inhabitant of the Wabash river, and is not uncommon.

The largest individual that has occurred, is in length one inch and three tenths, and in breadth three inches and two fifths; but the plate exhibits the usual magnitude. The cavity of the beaks is often more or less tinted with purple.

REFERENCE TO THE PLATE.

The plate represents the exterior, dorsal, and inner views of the shell.

PLATE XXIV.



SIGARETUS.

GENERIC CHARACTER.

Shell ear shaped, univalve, spiral, depressed: aperture very large, entire, embracing a portion of the preceding volution, much wider than long; destitute of naere: columella short, spiral: labrum simple: volutions two or three: muscular impressions two, distant: operculum none: a revolving slightly elevated line on the inner surface: spire lateral: periostraca none.

OBSERVATIONS.

There are marine shells, inhabiting various parts of the globe. Like *Ovula*, *Oliva*, &c., the shell is included within the mantle of the animal. Of the few species yet discovered, Linné considered one a *Helix*. Lamarck adopted the name of the genus from Adanson and placed it in his family of *Macrostomes*, with *Stomatella*, *Stomatia* and *Haliotis*, distinguishing it from the others by being destitute of naere. He says, it seems to have some relation to *Natica*: and indeed some similarity is exhibited by the *S. concavus* of that author, and an allied fossil species which Mr. Hoeninghaus sent me under the name of *canaliculatus*. But as those shells are external, or not enveloped in the mantle of the animal, the relation must be considered as of analogy rather than of affinity.

Cuvier, who examined the structure of the animal of a species of this genus, but we are not informed which,

either by name or description, says, it is so much like that of a *Buccinum*, that “to make of the *Sigaretus* a *Buccinum*, it is only necessary that the whorls of the shell should be less unequal, and should be elongated into a more acute spire.” The animal as delineated in his plate, or that part which is visible from above, consisting entirely of the expanse of the thick, fleshy mantle, is oval and convex. On the anterior margin, a little on the left, is a deep emargination, which is the extremity of an open canal beneath, originating above the neck in the branchial cavity, to which it conveys the water, and in which are two pectinated and vascular lamelliform branchiæ. The shell is entirely enclosed in the convexity of the mantle. The head is formed as in *Buccinum*. The tentacula are conic, with the eyes at their base. The vent is posterior to the canal and before the middle of the body. The foot much smaller than the mantle and also oval. The sexes are in separate individuals.

Blainville has formed a new genus under the name of *Cryptostoma*, for one or two East Indian species, the shells of which though more depressed, are altogether generically similar to *Sigaretus*, in which other naturalists place them; but the animal, agreeably to his description, differs in having a more elongated form, appendiculated tentacula and but one large branchial pecten.

PLATE XXV.

SIGARETUS PERSPECTIVUS.

SPECIFIC CHARACTER.

Depressed; beneath, revolutions visible almost to the summit.

DESCRIPTION.

Shell oval, very much depressed, but a little convex, with numerous, transverse, slightly undulated, sub-equidistant, impressed lines and longitudinal wrinkles; transverse lines obsolete beneath: *spire* not at all prominent, only a little convex: *revolutions* about three: *suture* a simple impressed line: *within*, the slightly elevated line is more or less obvious, not reaching the margin of the labrum: revolution of the whorls visible almost to the summit.

OBSERVATIONS.

This shell is abundant on the coast of New Jersey and farther south; but I have never had an opportunity to examine the animal.

I have carefully compared many specimens with a shell sent me by Mr. G. B. Sowerby, under the name of *halioideus*, L. but which seems more accurately to correspond with the *leachii*, Blainville, as figured by Sowerby in his "Genera," and of which Blainville has formed his

genus *Cryptostoma*. So striking is the resemblance that I have hesitated much to consider it a distinct species.

The chief differences appear to be, that the present species has more general convexity and the spire itself is slightly convex: beneath, the breadth is less considerable between the outer margin and the edge of the mouth, and the revolutions of the spire within are much more obvious.

REFERENCE TO THE PLATE.

The upper and lower figures are the superior and inferior views.

PLATE XXV.

SIGARETUS MACULATUS.

SPECIFIC CHARACTER.

Shell with two maculated bands.

DESCRIPTION.

Shell oval, depressed, with very numerous, transverse, hardly undulated, subequidistant, impressed lines, and longitudinal wrinkles; the transverse lines are obsolete beneath; two bands of pale rufous spots, and a rufous band near the suture: *spire* hardly prominent, slightly convex; *revolutions* about three; *suture* a simple impressed line: *aperture* very large.

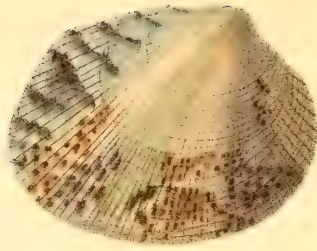
OBSERVATIONS.

Although very much depressed, this pretty species is more convex than the preceding, and the spire when viewed from the side is more distinct; the striæ also are more close set. It differs from all the species in having coloured spotted bands, and within it has a slight pearly appearance. This species is found on the southern coast and is rare.

REFERENCE TO THE PLATE.

The middle figures are the superior and inferior views.

PLATE XXV.



VENUS.

GENERIC CHARACTER.

Shell equivalved, inequilateral, regular, closed, transverse or suborbicular; cardinal teeth three on each valve, approximate, anterior and posterior ones diverging from the summit; ligament exterior; muscular impressions two, not elongated, remote, connected by the submarginal impression, which is deeply sinuous before.

OBSERVATIONS.

In this extensive genus are included some of the most beautiful of bivalve shells. Linnè referred to it species of the following genera: *Petricola*, *Venerupis*, *Sanguinolaria*, *Corbis*, *Lucina*, *Donax*, *Astarte*, *Cyrena*, *Cyprina*, *Megadesma*, *Cytherea*, *Venus* and *Venericardia*. Although those species have been since eliminated and more naturally distributed, yet in consequence of the great accessions from the zeal of modern observers, and owing to the considerable variation, both in sculpture and colouring, that many of them undergo, great difficulty and uncertainty often meet the conchologist in his endeavours to ascertain species, and more than usual caution is requisite in determining any one to be new.

In general form and exterior appearance these shells are undistinguishable from *Cytherea*, but the hinge of the latter has the posterior cardinal tooth situated immediately under, and parallel to, the edge of the lunule in the right

valve, and a recipient cavity in the left valve, similarly situated. *Cyprina* was separated, from the circumstance of having an anterior, lateral, remote tooth. *Venerupis* is very closely allied to *Venus*; but the cardinal teeth are parallel, and not divergent as in *Venus*; they have the habit of perforating and residing in limestone rocks. Sowerby has changed the name of *Venerupis* and united to it several transverse species of *Venus*, such as *papilionacea*, *literata*, &c., some of which or perhaps all might enter Schumacher's genus *Tapis*. Several other genera have been separated from the Linnæan *Venus*, such as *Calista* and *Arthemis* of Poli; *Arthemis*, *Loripes* and *Meretrix* of Ocken; *Orbiculus*, *Trigonia*, *Chione* and *Tapes* of Megerle, and others by Schumacher, but as we are unacquainted with the characters of several of these, we cannot estimate their relative value, though we readily assent to the necessity of a reform in this numerous and somewhat artificial group.

The animal of *Venus* has the foot rather large and compressed; the mantle is undulated and furnished with a series of cirri; the tubes are moderately long and united; mouth small, semi-lunar; branchiæ not united, broad and short. Lamarck described eighty-eight recent species and six fossil ones, and Blainville states that DeFrance announces forty fossil species.

One of the most useful of our shells, the Clam, (*V. mercenaria*, Linn.) belongs to this genus, but Schumacher has separated it under the generic name of *Mercenaria*. It is the shell of which our aborigines, with much persevering labor, formed their wampum beads which they valued so highly, and which they strung together in the form of belts and other ornaments.

VENUS GRATA.

SPECIFIC CHARACTER.

Granulated with longitudinal and transverse striæ ; whitish, with dotted rays of pale ferruginous and blackish ; blackish oblique lines before.

DESCRIPTION.

Shell transversely suboval, convex, with very numerous close set, longitudinal striæ ; those on the anterior two-thirds of the shell have a slight appearance of folds, or as if each one originated beneath the one posterior to it in a somewhat imbricated manner ; these striæ are granulated by very numerous transverse striæ, which are more obvious on the posterior third of the shell, and almost obsolete on the middle : *colour* whitish, somewhat tinged with green towards the umbones, broadly radiated with very pale ferruginous and dusky purplish, with numerous dots and abbreviated lines of purple-black : *anterior margin* with transverse, oblique, purple black lines : *posterior margin* pale ferruginous : *lunule* dusky, bounded by an impressed line : *umbones* not very prominent : *hinge margin* nearly rectilinear, terminated anteriorly by an obtuse angle ; in this part the edge of the left valve laps a little over and conceals the corresponding part of the edge of the right valve : *ligament* deeply seated : *posterior margin* rounded : *lunule* impressed, distinct by an impressed line : *within*, very broadly margined with violaceous ; margin crenated : *intermediate tooth* emarginated at tip : *anterior tooth* of the left valve also emarginated.

OBSERVATIONS.

This beautiful species was presented to me by the late Mr. Stephen Elliott of Charleston, S. Carolina, as an inhabitant of the west coast of Mexico. The coloured lines on the anterior part of the shell, are somewhat like those of *V. geographica*, Gmel., but these lines have a bluish shade forwards, are more regular than in the figure of that species in the *Encycl. Meth.*, and as a species it is widely distinct.

I have an indistinct recollection of a figure resembling this species, but I cannot recall the work, for the purpose of comparing the characters.

REFERENCE TO THE PLATE.

The exterior, dorsal and inferior aspects of the shell are represented.

PLATE XXVI.



SCALARIA.

GENERIC CHARACTER.

Shell turritid; volutions convex, gradually increasing in size to the aperture, with numerous, elevated, longitudinal ribs or varices; aperture nearly orbicular, slightly longer than broad; peristome continuous, reflected; operculum horny, spiral, thin.

OBSERVATIONS.

A genus of very pretty shells, known by the name of *Staircase shells* by some collectors, and with respect to the nature of which, naturalists formerly differed much. Favanne and Gaulteri and others, believed them to be closely related to *Serpula*; and Rumphius placed them in his *Buccinum*. Such as were known to Linné he referred to *Turbo*, on account of the rotundity of the aperture. In this respect they certainly also resemble *Cyclostoma* and *Pupa*; but the elevated ribs distinguish them from the first, and the successive and regular increase in the size of the volutions separate them from such species of the latter, as have slight rib-like elevations. They seem also to approach some species of the genus *Rissoa* in the character of the ribs.

The largest and most beautiful species, the *scalaris*, L. (to which Lamarck has since given a different name) was separated by Leach as the type of a new genus, to which he gave the name of *ACIONA*; it is the "Wentletrap or royal

staircase shell" of the English collectors, and Scalata of the French, belonging to the subdivision of this genus, which is distinguished by having the volutions separated, or only touching each other by the projecting ribs. This shell was very highly valued, and Leach mentions a specimen "which was purchased at a sale for twenty pounds; but it is now (1815) estimated as worth more than double that sum." Cubières says that in his time, a fine specimen of four French inches long by three inches at base, was worth six thousand livres. To the same division of the genus, it is said, about twelve species are now referred.

Blainville, after Plancus and Muller, describes the animal to be spiral, with a short oval foot inserted under the neck; two tentacula, with a filiform termination, supporting the eyes at the extremity of the inflated part; a proboscis?; a long canal at the anterior right margin of the respiratory cavity; sexes separate.

They are all inhabitants of the sea. Lamarck has characterized seven recent and five fossil species; but De-france enumerates twelve fossil species.

PLATE XXVII.

SCALARIA CLATHRUS.

SYNONYMS.

TURBO CLATHRUS. *Linn. Gmel. &c.*

SCALARIA COMMUNIS. *Lam.*

SCALARIA CLATHRUS. *Auct.*

DESCRIPTION.

Variety, c. *Shell* conic, turreted, imperforate, white, immaculate: *whorls* from six to eleven, touching each other only by the ribs, but with a very narrow interval: *ribs* nine to each volution, prominent, simple, a little oblique, somewhat recurved and with a more or less obvious, obtuse angle or shoulder above near the suture: *aperture* oval-orbicular: *base* a little angulated: *labium* distinct.

Length from three-fifths to nearly nine-tenths of an inch.

OBSERVATIONS.

Inasmuch as the European specimens of *clathrus* in my collection are almost all coloured, spotted or banded and destitute of any obvious angle or shoulder on the ribs near the suture, and the suture is somewhat more contracted, I was led to describe this as a distinct species under the name of *angulata*; but as the *clathrus* is often, and perhaps usually, destitute of colour, and our specimens frequently occur without much appearance of the angle of the ribs, I have judged it prudent to place it as a variety of the *clathrus*, though I propose that it be separated under the above name. Lamarek describes a variety b., and although he quotes the true Linnæan name of *clathrus*, yet he has placed the species under a new name, which agreeably to our principle relative to the exclusive right of priority of description, we cannot admit, notwithstanding the fact, that the word *clathrus* may apply equally well to other species.

Our shell varies much in proportional diameter. The body whorl, I believe never becomes so large as in some specimens of the European clathrus, neither does the whole shell ever become so long as in other transatlantic specimens.

REFERENCE TO THE PLATE.

The two upper figures.

PLATE XXVII.

SCALARIA MULTISTRIATA.

SPECIFIC CHARACTER.

Interstitial spaces with very numerous, impressed, transverse lines.

DESCRIPTION.

Shell conic turreted, tapering to an acute apex, white, immaculate, imperforate : *whorls* about eight, in contact : *costæ* regular, simple, not reflected, equidistant, moderately elevated ; *spaces between the costæ* with very numerous, approximate, equidistant, impressed lines : *suture* well impressed : *body whorl* with about sixteen *costæ*.

OBSERVATIONS.

Like the preceding, this is an inhabitant of the southern coast, and is about half an inch in length. Mr. Elliot sent

me a specimen from Charleston, South Carolina, and I obtained two on the coast of Florida. It is readily distinguished from the preceding species, by the very numerous small lineations that exist in the spaces between the ribs, and at right angles with them.

REFERENCE TO THE PLATE.

The lower right figure is a front somewhat enlarged view ; the line represents the natural length, and the outline figure immediately above is an enlarged representation of the interval between two of the costæ, to shew the transverse impressed lines.

PLATE XXVII.

SCALARIA LINEATA.

SPECIFIC CHARACTER.

Costæ on the body whorl about eighteen ; peristome very robust ; body whorl with a transverse raised line.

SYNONYM.

S. LINEATA. *Nob. Journ. Acad. Nat. Sc.* vol. ii, p. 242

DESCRIPTION.

Shell white or brownish, conic-turritid, imperforate, with two distant, rufous or blackish bands, which are often confluent into one, the inferior band almost concealed on the spire : *costæ* robust, obtuse, little elevated and from

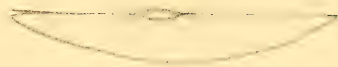
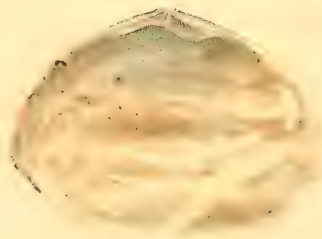
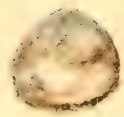
sixteen to twenty on the body whorl : *volutions* in contact : *body whorl* with an elevated line below the middle, and on the superior edge of the inferior band : *aperture* with the margin robust, white, somewhat dilated at the base.

OBSERVATIONS.

This species is not uncommon on our southern coast. Its length is about half an inch. A variety occurs, of which the costæ are almost obsolete, and another in which each rib, particularly of the body whorl, has an impressed line. The margin of the mouth is greatly thicker than the ribs. What I have called in the above description an *elevated line*, is strictly speaking, the line of junction with the basal surface which is a little more elevated than the remaining surface of the volution, making a kind of step, and not in reality a simple elevated line. In my observations on this species, in the Journal above mentioned, I remarked that it "very much resembles the *clathratulus*, Montagu, but the lip is more robust and the basal portion of that part is more dilated."

REFERENCE TO THE PLATE.

The lower left figure is a front somewhat enlarged view ; the line represents the natural length, and the outline figure immediately above is a still more enlarged representation of the body whorl, to show the bands and the elevated line.



AMPHIDESMA:

GENERIC CHARACTER.

Shell rounded or transversely somewhat oval, subinequilateral; hinge with one or two cardinal teeth, and having a lateral tooth each side, sometimes obsolete; a slender oblique fosset originating immediately under the beak and passing anteriorly: ligament divided into two parts, of which the true ligament is exterior and very short, and the cartilage portion is interior, affixed in the oblique fosset: muscular impressions two, remote, not elongated: pallial line with a much dilated and profound sinus.

OBSERVATIONS.

The characters of this genus are very distinct and easily recognized from all those that have no part of the ligament internal. Lamarek first distinguished it by the name of *Donacilla*, which I think ought to be retained on the principle of priority, and that of *Amphidesma*, that he afterwards applied to it, ought to be rejected. He has associated it, in the same small group, with *Ungulina* and *Solemya*, from both of which it may be known by its much dilated and profound sinus of the pallial line. Other genera of his family of *Mastracæ* have divided ligaments, particularly *Mactra*, with which, in fact, Linne arranged the species; but their cardinal fosset is more direct, dilated and deltoid, whilst that of *Amphidesma* is nearly parallel with the edge and fusiform. *Lutraria* is entirely destitute

of lateral teeth, the valves gape and the ligament is fixed in a deltoid cavity. Blainville unites *Amphidesma* with *Lucina* and with *Fimbria*, *Megerle*, or *Corbis*, Cuv. But *Corbis* has lateral teeth; an exterior ligament, though deeply seated; and the palleal line is entire; it therefore does not belong to the *Mastraceæ* of Lamarck. The latter remark is also true of *Lucina*, of which the ligament is exterior, the palleal line entire, and the posterior muscular impression is elongated.

PLATE XXVIII.

AMPHIDESMA TRANSVERSUM.

SPECIFIC CHARACTER.

Transversely short oval; hinge nearly central.

DESCRIPTION.

Shell transversely short oval, nearly equilateral, compressed, a little gaping: *anterior* and *posterior margins* subequally rounded, the latter somewhat more obtusely so: *basal margin* regularly rounded, without any undulation before: *apex* obtuse, but little prominent: *cardinal teeth* two: *fosset* dilated fusiform, abruptly very narrow at the beaks: *lateral teeth* none: *posterior muscular impression* very slender, and elongated.

OBSERVATIONS.

This species is more transverse than usual in this genus; it is altogether destitute of lateral teeth, and the posterior muscular impression is remarkably slender. It is superior in point of size to either the *orbiculatum*, or *radiatum*, Nob., though proportionally somewhat thinner. I obtained a specimen on the coast of Georgia, that is somewhat worn; its colour is whitish, a little tinged with yellowish.

REFERENCE TO THE PLATE.

The middle figures represent the exterior, interior and dorsal aspects of the shell.

PLATE XXVIII.

AMPHIDESMA ÆQUALE.

SPECIFIC CHARACTER.

Left valve with remote grooves instead of lateral teeth.

SYNONYM.

A. ÆQUALE. *Nobis. Jour. Acad. Nat. Sc.* vol. 2. p. 307.

DESCRIPTION.

Shell orbicular-triangular, a little oblique, polished, white, with minute and numerous wrinkles towards the margin.

which are almost obsolete on the disk and umbo: *beaks* subcentral, a little prominent: *posterior margin* rather longer and much more obtusely rounded: *hinge margin* nearly rectangular: *umbonial slope* with a slight undulation: *anterior margin* subangulated at base: *cardinal teeth* two in each valve, posterior one much thicker and more prominent; the anterior one of the right valve is obsolete: remote from the cardinal teeth in the left valve, on each side is a long and deep groove, which receives the corresponding edge of the right valve: right valve destitute of any appearance of lateral grooves or lateral teeth.

OBSERVATIONS.

This is allied to the *A. tenue* and *Boysii*, Montagu, of the coast of England, of which however I have not any good description or specimen to compare, and it may possibly prove to be the same with one of these, when comparison shall be made.

Since my quoted description was given, many specimens have been found on the coast of Charleston, for which I am indebted to the late Mr. Stephen Elliott.

It belongs to the genus *Abra* of Leach.

REFERENCE TO THE PLATE.

The two lower exterior figures represent the natural size; the upper ones are somewhat enlarged, the right one exhibiting the interior view, and the left one is a detail of the cardinal characters.

PLATE XXVIII.



FUSUS.

GENERIC CHARACTER.

Shell univalve, spiral, fusiform, canaliculated at base, covered with an epidermis, and destitute of varices; spire elevated; aperture oval; columella simple; labrum on its edge simple; operculum horny, subconcentric.

OBSERVATIONS.

This genus was separated from the Linnaean *Murex* by Bruguières, who however included *Pyrula*, *Fasciolaria*, *Fulgur*, and *Pleurotoma*, which have since been withdrawn from it by Lamarck and Montfort. The latter author distinguished another genus by the name of *Latirus*, for the umbilicated species. Notwithstanding these improvements, it is still acknowledged to be an artificial assemblage, and more divisions must therefore be made. Lamarck places the genus in his family of *Canalifères*; from all the genera of which it is distinguished by very obvious characters, excepting *Pyrula*, which however consists of thin, more or less cancellate shells. (I mean the true *Pyrula*;) with a very short spire, and pyriform, having the greatest diameter above the middle. But as *Buccinum*, in another family, is at present constituted, *Fusus* is allied artificially even to that genus.

The species are numerous, and are marine. Lamarck enumerates thirty-seven recent and thirty-six fossil species; but we are informed that DeFrance makes the number of fossil species amount to sixty-six.

FUSUS CORNEUS.

SPECIFIC CHARACTER.

Fusiform, unarmed, transversely striated; beak rather short, recurved.

SYNONYMS.

MUREX CORNEUS. *Linn. Syst. Nat.* p. 1224. *Pennant Zool.* vol. iv, p. 124, pl. 76. *Donovan Nat. Hist. Brit. Shells*, vol. 2, pl. 38. *Mont. Test. Brit.* p. 158. (*Dillwyn.*)

FUSUS ISLANDICUS. *Martini Conch.* vol. 4, p. 159, pl. 141, (*Dillwyn.*)

MUREX ISLANDICUS. *Gmel, Schrebers, (Dillw.) &c.*—*Lister Conch.* pl. 913, fig. 5.

DESCRIPTION.

Shell turritid-fusiform; the greatest dilatation a little below the middle; unarmed: *whorls* about eight, convex, transversely striated and longitudinally a little wrinkled: *epidermis* pale brownish, deciduous: *spire* tapering, nearly as long as the aperture and beak, terminating obtusely: *labrum* simple, smooth within: *columella* naked, simple: *beak* of moderate length, slightly arquated and a little recurved.

OBSERVATIONS.

This is one of the several species of shells, which inhabit the northern shores of America, in common with the coast of Europe, and particularly that of Great Britain, as well as Iceland. The late Mr. Z. Collins, a zealous and enlightened naturalist, presented to me an individual which he found on the coast of Newjersey. The colour is whitish, but when living, it is covered with a brownish deciduous epidermis.

Although the name *icelandicus* has been adopted by Lamarck and other distinguished conchologists, yet with Pennant, Dillwyn and others, I have retained the Linnæan name, for the allsufficient reason, that it has the priority; whilst, at the same time, it has the advantage of being preferable in itself, as the shell is not limited to Iceland.

The resemblance between this shell and the antiquus, L. has been noticed by many writers; but that species is much larger, more robust, the aperture more dilated, and the striæ much more crowded. Lamarck and others say that they may be distinguished by the rectilinear beak of the antiquus. This also is a good character but in my cabinet is a large and fine specimen of the latter, of which the beak is as much recurved as in the present species.

REFERENCE TO THE PLATE.

The upper and lower figures.

PLATE XXIX.

FUSUS CINEREUS.

SPECIFIC CHARACTER.

With elevated costæ ; and transverse, filiform lines.

SYNONYM.

F. CINEREUS. *Nob. Journ. Acad. Nat. Sc.* vol. 2, p. 236.

DESCRIPTION.

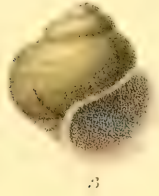
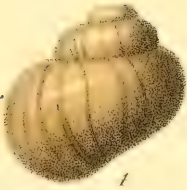
Shell rather short fusiform ; cinereous or pale reddish brown, with two obsolete rufous bands ; somewhat ponderous, with large approximate, longitudinal, thick ribs or undulations, about eleven in the body whorl ; and transverse, elevated lines forming shallow grooves between them, and somewhat alternately smaller: *spire* tapering, acute: *labrum* a little crenate exteriorly by the elevated lines ; within striate and purplish: *beak* short, a little reflected.

OBSERVATIONS.

This species is common in the estuaries of the eastern shores of Maryland and Newjersey. It has considerable resemblance to two figures in Lister's *Hist. Conch.* pl. 924, f. 16, *b.* and pl. 939, f. 34, *a.* The first of which is considered an uncertain figure and the latter is said by Dillwyn to be the *undatus* and is interrogatively referred to by Lamarck. Our shell certainly approaches the genus *Purpura* in habit, but it cannot enter with Lamarck's characters.

REFERENCE TO THE PLATE.

The two middle figures.



PALUDINA.

OBSERVATIONS.

This genus may be distinguished from *Melania* by the construction of the operculum, which has no other than concentric lines of growth, whilst that of *Melania* has the lines of accretion spirally radiate.

The name of the genus was adopted by Lamarck from Bruguière, but Montfort applied to it the name of *Viviparus*, which is retained by Blainville in his plate, though in the text he adopts that of *Paludina*.

PLATE XXX.

PALUDINA PONDEROSA.

SPECIFIC CHARACTER.

Shell thick ; labrum more prominent towards the base.

SYNONYM.

PALUDINA PONDEROSA. *Nob. Jour. Acad. Nat. Sc. vol. ii, p. 173.*

DESCRIPTION.

Shell somewhat ventricose, much thickened, greenish or olivaceous : *spire* prominent : *whorls* six, slightly wrinkled across : *suture* deeply indented : *aperture* ovate, above narrowed a little, but obtuse at the superior extremity : *labium* with much calcareous deposit, often thickened into a callosity at the superior angle : *labrum* very obviously more prominent towards the base : *within* bluish-white.

OBSERVATIONS.

This shell is common in many parts of the Ohio as well as of its tributaries. In its full grown state it is very thick and ponderous, enlarging so much in its body whorl, as to appear very different from the young shell. In the early stages of growth it resembles *P. decisa*, Nob. from which indeed the back view would hardly distinguish it ; but a sufficiently distinctive character resides in the lower part of the labrum, which in the *decisa* is not obviously produced, whereas in the present species it is considerably advanced as in many species of *Melania*, to which genus it is closely related.

REFERENCE TO THE PLATE.

Figure 1st represents a large and very perfect specimen.

PLATE XXX.

PALUDINA SUBPURPUREA.

SPECIFIC CHARACTER.

Penultimate longer in proportion than the other volutions.

SYNONYM.

P. SUBPURPUREA. *Disseminator of Useful Knowledge.*
vol. ii, p. 245.

DESCRIPTION.

Shell subglobular oval, not remarkably thickened: *spire* longer than the aperture, entire at tip: *whorls* five, slightly wrinkled across, rounded but not very convex; penultimate volution somewhat elongated: *suture* impressed: *aperture* ovate-orbicular, less than half the length of the shell: *labium* with calcareous deposit: *animal* very pale bluish, with minute yellow points, particularly on the rostrum, tentacula and prominent respiratory tube, which is as long as the tentacula: *eyes* on the exterior side of the tentacula, near the middle of their length: the anterior portion of the foot is very short.

OBSERVATIONS.

This species was first found by Mr. Lesueur and Dr. Troost, in Fox river, of the Wabash. In the young state the figure is subglobose, and the aperture, although it hardly differs in form, from that of the adult, is yet longer than

the spire. They become proportionally more elongated as they advance in age, and the form, therefore, of the adult, is so different from that of the young or half grown, that in these states it may, very readily, be mistaken for a widely distinct species.

The colour of the shell is variable. In some it is pale horn, more tinged with dull yellowish, than with green; in others are traces of obsolete purplish bands, and in many specimens the whole shell is reddish-purple, more or less obscure in different individuals.

In the autumn it is frequently found between the valves of dead Unios, in which it enters perhaps to hybernate. The species is certainly allied to the *vivipara*, but it cannot well be mistaken for it, as it is much less dilated, the volutions less convex; the penultimate volution is much longer in proportion to the length of the body whorl, and the umbilicus is obsolete.

REFERENCE TO THE PLATE.

Figure 2nd is that of the adult.

PLATE XXX.

PALUDINA INTERTEXTA.

SPECIFIC CHARACTER.

Shell with numerous, minute, transverse, epidermal lines.

SYNONYM.

PALUDINA INTERTEXTA. *Nob. Disseminator of Useful Knowledge*, vol. 2, p. 244.

DESCRIPTION.

Shell subglobose, yellowish green or brownish, olivaceous with one to three obsolete bands, wrinkled, and with minute, numerous, obsolete, revolving lines on the epidermis: *spire* depressed-conic, obtuse: *volutions* four, convex: *suture* deeply indented: *aperture* much dilated, short oval.

OBSERVATIONS.

This shell I found abundantly in the lakes and marshes near New Orleans, and even in the Carondelet canal which connects Lake Ponchartrain with the city. It is remarkable for its globular form and for the numerous, obsolete, transverse lines, which seem like equidistant corrugations of the epidermis, having no effect whatever in modifying the calcareous surface, upon which no trace of them is exhibited. In good specimens two or three, obsolete, pale bands are visible by transmitted light.

REFERENCE TO THE PLATE.

- Figure 3. The adult shell.
4. An old specimen.
A. The operculum.



NOTICE.

The insulated residence of the author, precluding a reference to any other cabinet than his own limited one, or to any extensive library, excites a fear that some errors in nomenclature may occur in this work, that under more advantageous circumstances might be avoided. In order therefore to render the "Conchology," as perfect in this respect as possible, and that the interests of science may not be endangered by his local disadvantages, the author invites judicious criticism, which shall be inserted on the cover of the number with due acknowledgment to the writer.

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AMERICAN
CONCHOLOGY,

OR

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA.

ILLUSTRATED BY

COLOURED FIGURES

FROM

ORIGINAL DRAWINGS EXECUTED FROM NATURE.

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NEW-HARMONY, INDIANA.

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(March, 1832.)







3



2



1

- 1 *Lymnaea umbrosus*, S.
 2 *reflexus*, S.
 3 *doctus*, S.

M^o Say Del.

LIMNEUS.

GENERIC CHARACTER.

Shell oblong, ovate, oval, conic or turritid, thin, smooth : spire prominent, more or less elongated : aperture more or less dilated, longitudinal, entire ; columella at its superior part or junction with the labium entering the aperture by a very oblique fold or undulation ; labrum acutely edged ; operculum none.

“Animal oval, more or less spiral ; margin of the mantle thickened on the neck ; foot large, oval ; head with two triangular, compressed, earshaped tentacula ; eyes sessile, at the inner base of the tentacula ; mouth with two lateral appendices, and armed with a superior tooth ; orifice of the pulmonary cavity on the right and bordered by an appendage which can be folded in gutter ; orifice of the reproductive organs distant ; that of the oviduct at the entrance of the pulmonary cavity ; that of the male organ under the right tentacula.”—(Blainville.)

OBSERVATIONS.

A numerous genus of fresh water shells, inhabiting almost every part of the globe. The species known to Linné were placed in his great reservoir *Helix* ; in which he has been followed by many of the English Conchologists, even of late years. Bruguières, eminent for his use-

ful reform in this science, separated it from that genus, but did not distinguish it from his *Bulimus*; thus uniting the differently organized animals of land and water in one group. It is very true that some species of these two natural genera resemble each other in the form of the shell, but they may always be distinguished by the fold of the columella in the present genus. Lamarek, aware that the animals were quite different in organization, and that the one has two tentacula and the other four, that one lives only in the water and the other altogether on land, placed them in different families, and formed a separate genus (as Muller and others had already done) under the above name which is now almost universally adopted, for the present aquatic group. The shell resembles *Succinea*, which however is destitute of the fold of the columella, and its animal has four tentacula. But of all the adopted genera, it is most intimately related to *Physa*; and Sowerby in his "Genera," has reunited the two groups. The peculiar fold of the columella exists in both, but the animal of *Physa* has the mantle remarkably dilated, so as to extend over more or less of the exterior surface of the shell, and is digitated on its margin, and the tentacula, which are short and compressed in *Limneus*, are longer and almost filiform in the *Physæ*. The shell also of the latter may be distinguished by being heterostrophic. For these reasons we agree with Draparnaud and most modern Conchologists in separating *Physa* as a genus. It would seem also proper to separate *Aplexa* of Fleming, the animal of which is destitute of a dilated mantle, though the shell itself resembles that of *Physa*. *Mixis* of Leach may also, perhaps, be separated from *Limneus*; it was formed for the L.

glutinosus, Drap. which is a fragile, vesicular shell, the spire hardly elevated, dextral, and the mantle of the animal is reflected.

These shells are abundant in most of our lakes and ponds, as well as in the rivers, east of the Alleghany Mountains. In our western streams they are less frequent and even in some of them, are of rather rare occurrence. As the animal can only respire air unmixed with water, it is under the necessity of residing near the surface or shore, to obtain it. Which, as its motions are slow, it cannot do in rivers that are subject to very great, sudden and long continued changes in depth, as is remarkably the case with our western streams. In order to take in a supply of air the respiratory orifice is opened at the surface with an audible snapping sound, like that produced by the resilience of the nib of a pen.

Like the animals of some other shells it is capable of sustaining itself at the surface of the water in a reversed position, the shell being downward, and thus it can glide along to a considerable distance, by a slow movement. It does not appear to be capable of rising from a depth to the surface voluntarily : but it gradually reverses its position from a supporting body that meets the surface, or that approaches it within reaching distance.

Lamarck has described only twelve recent species, but many more have been since made known and several fossil species have also been described.

LIMNEUS UMBROSUS.

DESCRIPTION.

Shell horn colour, tinged with reddish brown: *spire* elongated, tapering, acute: *whorls* six or seven, slightly convex, wrinkled across: *body whorl* measured at the back, more than half the total length: *suture* moderately indented: *aperture* less than half the length of the shell: *labium* with calcareous deposit, the fold of the columella is very slight.

SYNONYM.

Limneus elongatus, Nob. Journ. Acad. Nat. Sc. Vol. 2, p. 167.

OBSERVATIONS.

It inhabits in considerable numbers, the ponds and tranquil waters of the Missouri, in the vicinity of Council Bluff, and Dr. Bigsby obtained specimens in Rainy lake and Seine river of Upper Canada.

I am under the necessity of changing the name which I first applied to this shell, that of *elongatus* being preoccupied by Draparnaud for a very different species.

The fold of the columella is much less profound than that of *L. palustris*, L. which it resembles.

REFERENCE TO THE PLATE.

Fig. 1. Two views; natural size.

Pl. 31

LIMNEUS REFLEXUS.

DESCRIPTION.

Shell fragile, very much elongated, narrow, honey-yellowish, tintured with brownish, translucent, slightly reflected from the middle: *revolutions* six, oblique, wrinkled transversely: *spire* more than one and a half times the length of the aperture, acute, two or three terminal whorls vitreous: *body whorl* very little dilated: *aperture* rather narrow: *labrum* with a pale margin, and dusky red or blackish submargin.

SYNONYM.

LIMNEUS REFLEXUS, Nob. Journ. Acad. Nat. Sc. Vol. 2, p. 168.

OBSERVATIONS.

This shell is remarkable for a narrow and elongated form, and for the consequent very oblique revolutions of

Pl. 31.

its whorls. When viewed in profile it exhibits a slightly reflected appearance. It was kindly sent to me for examination by my friends Messrs. S. B. Collins and D. H. Barnes of New York, and was found in Lake Superior by Mr. Schoolcraft. Mr. James Griffiths obtained specimens in Lake Erie. It is proportionally longer than *L. umbrosus*.

REFERENCE TO THE PLATE.

Fig. 2, Two views; natural size.

Pl. 31.

LIMNEUS ELODES.

DESCRIPTION.

Shell oblong conic, gradually acuminate, somewhat reticulate with irregular transverse lines and longitudinal wrinkles: *whorls* rather more than six: *spire* acutely terminated: *suture* moderately impressed: *aperture* shorter than the spire: *labrum*, inner submargin obscure reddish: *labium*, calcareous deposit rather copious, not appressed at base, but leaving a linear umbilical aperture: *body whorl* on the back longer than the spire.

Pl. 31.

SYNONYM.

LIMNEUS ELODES. *Nob. Journ. Acad. Nat. Sc.* vol. ii.
p. 169.

L. PALUSTRIS L.?

OBSERVATIONS.

I am indebted to Mr. A. Jessup for this species, who found it in Canadaigua lake, State of New York. Mr S. B. Collins subsequently sent me specimens which he obtained in a marsh near the Saratoga springs. It bears the most striking resemblance to *L. palustris*, L. of Europe and I am almost inclined to think it a mere variety of that species. The fold of the columella is much more profound than that of *umbrosus*.

REFERENCE TO THE PLATE.

Fig. 3, Two views ; natural size.

Pl. 31.





Unio ventricosus, Barnes

UNIO VENTRICOSUS.

SPECIFIC CHARACTER.

Shell large, thick, triangularly ovate, convex; umbones large, round, prominent; beaks recurved; cavity capacious.

SYNONYMS.

U. VENTRICOSUS, *Barnes, Silliman's Journal*, Vol. 6, No. 2, p. 267, pl. 13, fig. 14, a, b, c,

U. OVATUS, *Var. b. Lam. Anim. Sans. Vertebr. Vol. 6.* p. 75.

U. OCCIDENS? *Lea. Trans. Amer. Philos. Soc. New Series, Vol. 3.*

DESCRIPTION.

Shell with the anterior side very broad, sub-truncate, posterior side rapidly narrowed, sub-angulated; disks very convex; umbones large, round, elevated; beaks recurved over the ligament; ligament large and prominent, passing under the beaks; anterior lunule depressed at the margin, fuscous, broad-heart-shaped, longitudinally waved; hinge margin depressed between the beaks; posterior slope carinate; epidermis yellowish-olive, becoming chesnut-brown on the umbones; rayed with green, more conspicuous in young specimens; in old ones the dark chesnut brown covers the whole and conceals the rays; surface smooth

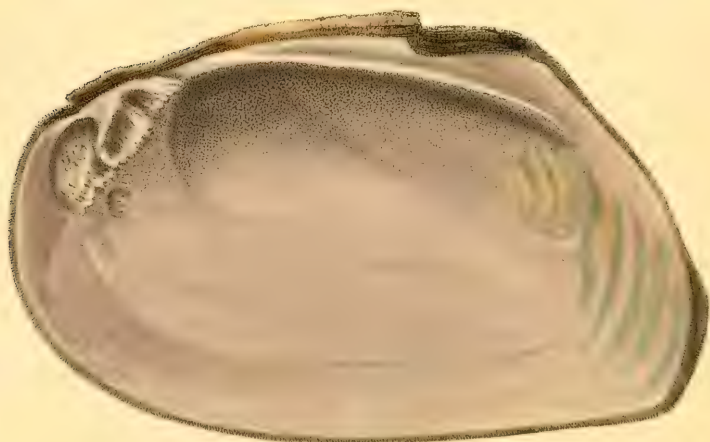
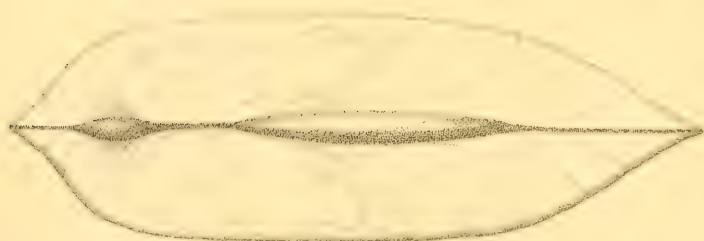
and shining, reflecting the face of the observer; young shells are splendid, having a much stronger lustre on the outside than on the inside; cardinal teeth broad, prominent and obliquely flattened; lateral teeth broad, elevated and terminating abruptly before; cicatrices large; cavity of the beaks unusually large; naker pearly white; surface smooth, but not highly polished."

OBSERVATIONS.

I quote the above description from Barnes' very useful essay "On the genera *Unio* and *Alasmodonta*," in which this species was first distinguished from the *U. ovatus*, Nob. to which it is very closely allied and appears to be absolutely connected by a gradual transition of intermediate varieties. The most striking difference seems to be the more depressed anterior slope of the *ovatus*. Some old specimens and varieties are transversely more elongated, as is represented in Barnes' figure c. The colour also is more or less yellow, radiated with green, or tinged with reddish brown, particularly on the umbo and sometimes extending over the whole surface, almost obliterating the rays. On the inner anterior side, some specimens are beautifully tinted with a pink colour, but this is not very common; they are generally white. It is very common in our western waters. The *U. occidentis* of Lea may perhaps be *U. ventricosus*, Var. b. Barnes.

REFERENCE TO THE PLATE.

The plate exhibits an exterior and interior view of the shell.
Pl. 32.



V. interruptus S

523
737

UNIO INTERRUPTUS.

SPECIFIC CHARACTER.

An elevated umbonial slope, separating folds of the disk from folds of the anterior margin.

SYNONYM.

U. INTERRUPTUS, Nob. *Transylvania Journal*, Vol. 4, p. 525.

DESCRIPTION.

Shell transversely oblong oval or subrhomboidal, blackish brown; an elevated rib extends from the apex to the anterior basal angle along the umbonial slope; anterior half of the disk with somewhat oblique undulations extending nearly to the umbonial rib; anterior to the umbonial rib are several arquated undulations, which do not reach the edge of the shell, and are cut by an impressed line which is nearly parallel to the rib: *umbo* compressed: *beaks* not elevated, deeply eroded: *posterior margin* very short, rounded: *ligament margin* rectilinear, the anterior angle elevated, obtuse; *anterior slope* very oblique: *base* rectilinear, parallel to the ligament margin; *anterior basal* angle somewhat rostrated: *cavity of the hinge membranes* (or excavated lunule) fusiform: *within* purplish, iridescent: *cardinal teeth* direct, deeply granulated and

lineated over their whole surface: *lateral teeth* entire: *posterior cicatrices* rough, the smaller one orbicular: anterior edge blackish.

OBSERVATIONS.

The species to which this makes the nearest approach, is undoubtedly the *undulatus*, Barnes; but it is more transverse, more oblique anteriorly; the edges of the hinge margin and of the anterior slope are not undulated, the umbonial slope is elevated into a distinct separating rib; and it is of a fine livid purple colour within. The eroded surface of the umbones is perlaceous, iridescent, and at the apices it exhibits a dull waxen yellow surface.

For this interesting species I am indebted to Mr. Joseph Barabino of New Orleans, who informs me that it inhabits Bayou Teche in the parish of St. Mary, Louisiana.

REFERENCE TO THE PLATE.

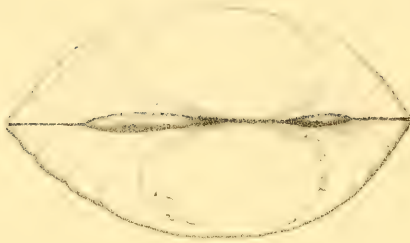
The plate represents exterior, interior and back views.
Pl. 33.

UNIO GLEBULUS.

SPECIFIC CHARACTER.

Oval orbicular; lateral teeth remote, very short, granulated.

Pl. 33.



Unio glebulus, nob.

M^s Say Del.

C. Deshayes Sc.

SYNONYM.

U. GLEBULUS, Nob. *Transylvania Journal*, Vol. 4,
p. 526.

DESCRIPTION.

Shell transversely oval orbicular, sometimes subovate, very convex, dark brownish: *umbones* not elevated above the general curvature: *beaks* not prominent, (much eroded, exposing a wax yellow surface:) *hinge* and *basal margins* correspondingly arquated; destitute of any prominent angle: *anterior* and *posterior* margins almost equally arquated; the former extending a little with age into a more or less obtuse angle at the extremity of the umbonial slope: *umbonial slope* slightly elevated: *lumule* not dilated: *within* a little tinted with rosaceous: *cardinal teeth* deeply and approximately granulated and sulcated: *lateral teeth* remote from the cardinal teeth, remarkably granulated; length hardly greater than their distance from the cardinal teeth: *posterior accessory cicatrix* small and approximate.

OBSERVATIONS.

The transverse simple rotundity of this shell, combined with the much sulcated cardinal teeth and the remote, short lateral teeth, readily distinguish it. Several specimens were sent to me by Mr. Barabino, as inhabiting the same locality with the preceding.

REFERENCE TO THE PLATE.

The plate represents exterior, interior and back views.

Pl. 34.

UNIO DECLIVIS.

SPECIFIC CHARACTER.

Anterior margin rectilinearly and obliquely truncate.

SYNONYM.

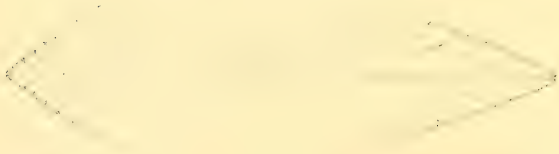
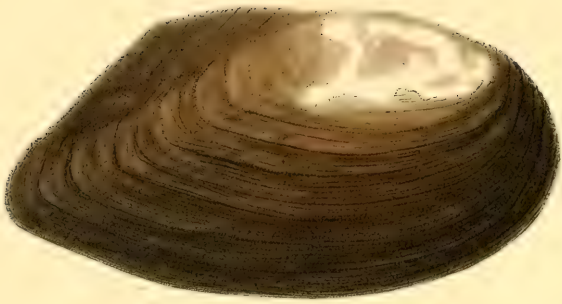
U. DECLIVIS, *Nob. Transylvania Journal, Vol. 4, p. 527.*

DESCRIPTION.

Shell transverse, moderately thick; *posterior margin* short and obtusely rounded: *beaks* hardly elevated: *hinge margin* rather elevated and compressed, angulated at tip: *anterior margin* rectilinear, descending obliquely forward, to a prominent rostrum of the anterior basal margin at the extremity of the umbonial slope: *umbonial slope* not elevated above the curvature of the disk, but is bounded on its anterior side by two slightly impressed lines: *basal margin* arquated: *surface* deeply wrinkled: *within* tinged with purplish: *cardinal teeth* oblique: *lateral teeth* distant from the cardinal teeth, rectilinear, oblique with respect to the base.

OBSERVATIONS.

Several specimens were sent to me by Mr. Barabino,
Pl. 35.



Uvula lectus S.

37

L. Lyon 86

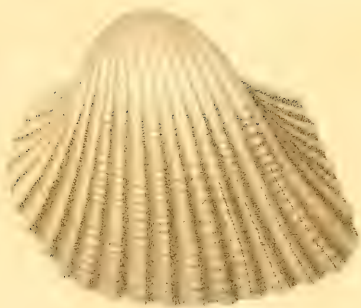
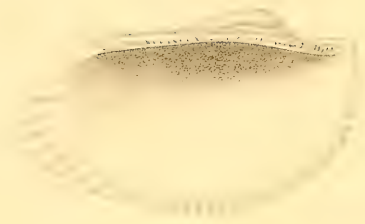
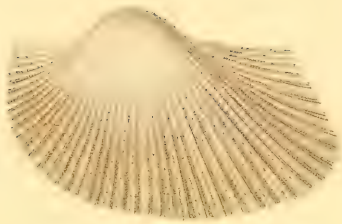
who informs me that that they were found with the preceding by his friend Mr. Janin in the Bayou Teche.

It resembles *purpureus*, Nob., but in that species the cardinal teeth are direct, and a remarkable feature is exhibited by this shell in its anterior rectilinear declivity, terminating below the anterior middle in a kind of rostrum or prominent angle, which may be compared to that of *nasutus*, N. excepting that it is nearly on a line with the base. I have not seen any variety of either of those species that could be mistaken for this. The beaks and umbones in my specimens are very much eroded, exposing a wax coloured surface.

REFERENCE TO THE PLATE.

The plate represents exterior, interior, and back views.

Pl. 35.



2

M^r Say Del.

1 *Area limosa* S.
2 *laminea* S.

C. Tibbot Sc!

ARCA.

GENERIC CHARACTER.

Shell transverse, more or less elongated, and oblique; anteriorly subrhomboidal, inequilateral, subequivalve; summits remote; hinge rectilinear or slightly curved and furnished with a series of numerous, vertical, inserting teeth, which decrease in size from the extremities to the centre; two muscular impressions, remote, connected by a simple pallial line; ligament broad, extending both before and behind the summits, and expanding over the rhomboidal surface between the summits; *animal* with a byssus.

OBSERVATIONS.

Linné included in his genus *Arca*, not only the species of which it is at present constituted, but those also which have been since distinguished by the names of *Pectunculus* and *Nucula*. Gmelin added to it his *A. cucullus*, afterwards separated by Lamarek under the generic name of *Cucullæa*.

As respects *Nucula* it appears that the relation to *Arca* is rather one of analogy than of affinity, and it is possible that Turton may be right in separating it entirely from the *Arcaceæ*, with which its numerous teeth bear some resemblance; but the propriety of placing it in the family

of Mactraceæ, only by the character of the internal ligament, seems to be questionable.

Cucullæa corresponds with the present genus in its general appearance, and we know of no other difference than that exhibited by the teeth, which are less regular, and those at each extremity of the series are transversely elongated.

Pectunculus is a closely related genus, differing chiefly by the arquated series of teeth; the general orbicular form, and by the valves closing completely so as to prevent the passage of a byssus.

Ferussac in his *Tabl. Syst.* places *Trigonia* in this family; but the teeth are dissimilar, and the animal is unknown.

The *Arca* are marine shells, and, as Lamarck observes, some of the species have one of the valves extending beyond the other on the basal edge. Some are covered by a kind of hairy epidermis. Blainville says, that the animal has the body thick, of a somewhat variable form; abdomen provided with a pedunculated, compressed foot, longitudinally divided; mantle with a simple range of cirri, and a little elongated before; the tentacula are very small and very slender.

ARCA STAMINEA.

DESCRIPTION.

Shell thick, prominently convex; with about twenty-eight ribs which are rounded and narrower than the inter-

vening spaces, excepting on the anterior side, where they are broader, and simply wrinkled, those of the anterior part of the disk have one or two longitudinal impressed lines: they are crossed by numerous transverse, elevated lines, which are hardly more distant from each other than their own width; intervening spaces wrinkled: *beaks* distant, curved a little backward, and the tip a little behind the middle of the hinge margin: *area* flattened, a little curved, rather spacious, with obvious impressed, oblique lines: *hinge margin* rectilinear, with small, numerous teeth: *posterior margin* regularly arquated: *base* subrectilinear, very deeply crenated: *anterior margin* oblique, rectilinear: *anterior side* abruptly compressed.

OBSERVATIONS.

This is a fossil shell. I am indebted for a specimen to my excellent correspondent, the late Stephen Elliott, of Charleston, who informed me that he obtained it from the Santee river, below the confluence of the Congaree and Wateree rivers.

It seems to be related to some of the varieties of *A. granulosa*, L.; but the ribs are more slender; the apex is curved a little backward, &c.

REFERENCE TO THE PLATE.

Fig. 2, Exterior and Interior views.

Pl. 36.

ARCA LIENOSA.

DESCRIPTION.

Shell rather thin, transversely oblong; ribs about forty, somewhat flattened and much broader than the intervening spaces which are very narrow, and with a longitudinal impressed line, particularly on those of the posterior margin, which are almost bifid; and with numerous slightly elevated transverse lines, which being divided by the longitudinal striæ appear granulated: *beak* but little prominent, and nearly opposite to the posterior third of the length of the hinge margin: *area* narrow and elongated: *hinge margin* rectilinear, angulated at each extremity; teeth numerous, small; *posterior margin* obliquely rounded inwards, no part of it extending further backward than the angle: *anterior margin* obliquely truncate: *inner margin* crenate.

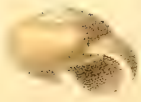
OBSERVATIONS.

A fossil shell from the same locality as the preceding, and also sent to me by Mr. Elliott.

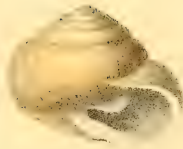
REFERENCE TO THE PLATE.

Fig. 1, Exterior and Interior views.

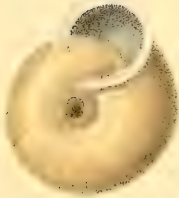
Pl. 36.



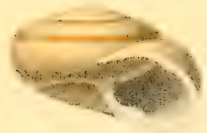
1



2



3



- 1 *Helix clausa* S
- 2 *dexata* S
- 3 *profunda* S

HELIX CLAUSA.

DESCRIPTION.

Shell rather fragile, slightly perforated. subglobular, yellowish horn-color; above convex: *whorls* four or five: *aperture* slightly contracted by the labrum: *labrum* reflected, flat, white, at base nearly covering the umbilicus.

SYNONYM.

H. CLAUSA, *Nob. Journ. Acad. Nat. Sc.* Vol. 2. p. 154.

OBSERVATIONS.

This species occurs in several parts of the Union, and particularly in the Western States. It is a pretty species, much like *albolabris*, *Nob.* but is smaller, more rounded and is subumbilicate.

REFERENCE TO THE PLATE.

Fig. 1, Front and inferior views.

Pl. 36.

HELIX ELEVATA.

DESCRIPTION.

Shell pale horn-color; *spire* elevated: *whorls* seven, regularly rounded: *umbilicus* none: *aperture* somewhat angulated: *labrum* dilated, reflected, pure white at base and pressed to the body whorl, abruptly narrowed on the inner edge beneath the middle, and continuing thus narrowed to the superior termination, leaving a projecting angle behind the middle: *labium* with a large, robust, very oblique, subarquated, pure white tooth.

SYNONYMS.

H. ELEVATA, *Nob. Journ. Acad. Nat. Sc.* Vol. 2, p. 154.

H. KNOXVILLINA? *FERUSS. Tabl. Syst.* p. 33.

OBSERVATIONS.

This shell occurs not unfrequently in many parts of the Western States. When descending the Ohio with Major Long's exploring party I first observed it in the vicinity of Cincinnati. It is related to *thyroidus*, *Nob.* by the tooth on the labium; but this tooth is much more robust; it differs more essentially by its much more elevated spire, and by the superior half of the dilated lip being abruptly

narrowed, so as to form a prominent angle near the middle; it is also a much thicker shell.

REFERENCE TO THE PLATE.

Fig. 2, Front view.

Pl. 37.

HELIX PROFUNDA.

DESCRIPTION.

Shell pale horn-colour: *spire* convex, very little elevated: *whorls* five, regularly rounded, and wrinkled transversely; *body whorl* with a single revolving rufous line, which is almost concealed upon the spire by the suture, but which passes for a short distance above the aperture: *aperture* dilated: *labrum* reflected, white, and, excepting near the superior angle, flat; a slightly prominent callus or obtuse tooth near the base on the inner edge: *umbilicus* large, profound, exhibiting all the volutions to the apex.

Variety, a. Multilineated with rufous.

Variety b. Rufous line obsolete.

SYNONYM.

H. PROFUNDA, *Nob. Journ. Acad. Nat. Sc. Vol. 2, p. 160.*

H. RICHARDI, *Lam. Anim. Sans. Vertèbr. Vol. 6, pt. 2, p. 72.*

OBSERVATIONS.

I first discovered this shell in the vicinity of Cincinnati. It afterwards occurred near Council Bluff on the Missouri, and it is frequently found in Indiana. I have no doubt it is an inhabitant of the greater part of the Western States.

My description of this shell was published in the year 1821. Lamarck's description of his *H. Richardi* did not appear until April 1822, but he quotes by anticipation Ferussac's *Hist. des Moll.* No. 174, for the specific name, which was however not then published in that work, but appeared in the *Tableau Systematique* of the latter author in the earlier part of the same year. The name of *profunda* has therefore the priority and consequently must be adopted.

REFERENCE TO THE PLATE.

Fig. 3, Inferior and front views.

Pl. 37.



1



2



3



4

M^{re} Say Del.

Siphonaria alternata S.
30

L. Lyon Sc.

SIPHONARIA.

GENERIC CHARACTER.

Shell oval or subovate, patelliform; apex nearer one side and one end, curved in a direction opposite to an angle on the basal edge; within, an indentation dividing the muscular impression and extending to the angle of the lateral edge.

OBSERVATIONS.

Adanson was the first to detect the difference between a species of this genus, the *S. mouretus*, Bl. and *Patella* which it resembles in general form. He was succeeded by Blainville, but it is to Sowerby that we are indebted for the genus and name which are now adopted. Gray formed a genus for the *Gadin* of Adanson, which however is referred by other authors to the present group; Adanson did not describe its animal; but it is evident from his figure that the two sides of the shell are not symmetrical.

It resembles *Patella*, but the shell is distinguished by an unsymmetrical angle on one side, (sometimes obsolete,) denoting the position beneath of the termination of a siphon or respiratory organ of the animal of which the trace remains. On the outer surface, corresponding with this mark, is generally an elevation or rib, extending from the summit to the edge. but it is sometimes obsolete.

Blainville gives the following characters of the animal body oval subdepressed; head subdivided in two equal lobes; tentacula and eyes indistinct; margin of the mantle crenulated and extending beyond a suborbicular foot as in the Patellas, branchial cavity transverse, open a little before the middle of the right side and provided in that part with a fleshy lobe, of a square form, situated in the sinus between the mantle and the foot; retractor muscle of the foot, divided into two parts, of which the posterior is much the larger, arquated; the other very small, before the branchial orifice.

Several species are known, attaching themselves to rocks and other fixed bodies.

SIPHONARIA ALTERNATA.

DESCRIPTION.

Shell conical, with more than thirty obsolete, hardly elevated, unequal ribs: *apex* obliquely curved, the tip pointing nearly in a parallel direction with the surface of the shell, and acute: *color* brown, radiated with whitish: *base* nearly oval.

SYNONYM.

PATELLA ALTERNATA, *Nob. Journ. Acad. Nat. Sc.*
Vol. 5, p. 215.

OBSERVATIONS.

This is a small species, and the slight irregularity in the curvature of the lateral edge, exhibits the unequivocal characters of this genus.

I am indebted for specimens to the late excellent Mr Stephen Elliott to whom I shall have frequent occasion to express my obligations in the course of this work : he obtained them from the coast of East Florida.

REFERENCE TO THE PLATE.

Figs. 1, 2, and 3, Lateral; superior and inferior views, enlarged

Fig. 4, Superior view ; natural size.

Pl. 38.



I

BULLINA.

GENERIC CHARACTER.

Shell cylindrical-oval, convolute, imperforate; spire elevated, short; aperture longitudinal, elongated, much narrowed above; labrum simple, gradually much more prominent in the middle than at the extremities, meeting the preceding volution with a deeply reentering angle; at base widely and regularly rounded; columella with a slight fold.

OBSERVATIONS.

Blainville quotes Ferussac for this genus, which, perhaps inadvertantly, he calls *Buline*, with one l, instead of *Bullina* as the latter author writes the word. He has, however, considerably limited the group by assigning to it the character of "fortement involvées, spire visible et saillante à l'exterieur; l'overture très étroite en arrière," which excludes some of the species comprehended by Ferussac. He also places it as a subgenus under *Bulla*, with "*la Bulle, la Jonkaire*," of Basterot, as its type. The animal differs from those of the genera *Bulla*, *Scaphander* and *Atys*, by having two distinct tentacula, and from *Bullea* by being included within the shell. The shell differs by its prominent spire, which in those genera, when it exists at all, is umbilicated.

In its general form and habit it has much resemblance

to *Volvaria* ; but the shells of that genus are emarginate at base.

BULLINA CANALICULATA.

DESCRIPTION.

Shell white, immaculate, cylindric, with very minute, obsolete wrinkles : *spire* convex, a little elevated, mammillated at tip : *volutions* about five, with their shoulder very obtusely grooved : *labrum* with the edge prominently and obtusely arquated : *labium* overspread with a calcareous lamina, and with a single fold or oblique tooth near the base.

SYNONYM.

VOLVARIA CANALICULATA, *Nob. Journ. Acad. Nat. Sc. Vol. 5, p. 211.*

OBSERVATIONS.

This genus has been constructed subsequently to the publication of my description of the above species.

Two specimens of the shell were sent to me by the late Mr. Stephen Elliott, from the coast of South Carolina. The arquated form of the edge of the labrum is very obvious when viewed in profile.

In comparison with a fossil shell of Dax, sent to me by Mr. Hoeninghaus of Crefeld under the name of *B. lajonkeriana*, Baster. before mentioned, it is a little larger, and

evidently different in having the shoulder grooved ; where
as in that species the shoulder is acute and the suture is
profoundly impressed.

REFERENCE TO THE PLATE.

Upper figure ; front view.

Middle figure spire viewed from above. } Enlarged

Inferior figure lateral view.

The line represents the natural length.

Pl. 39.



3



CARDITA.

GENERIC CHARACTER.

Shell equivalved, inequilateral, thick, suborbicular, free, regular, ribbed, the margin crenate; epidermis distinct; hinge of two teeth, one of which is short, direct, and the other oblique, elongated in one valve, and in the other valve, is a large cardinal recipient cavity with an oblique tooth on each side of it, nearly parallel with the margin; ligament subexterior; two obvious muscular impressions united by an arquated, entire palleal line.

OBSERVATIONS.

Poli, informs us, that the animal resembles that of *Anodonta* and *Unio*; and accordingly Blainville places the genus next to that group with *Venericardia* and *Cypricardia* as subgenera; both of which Lamarek had separated from Brugueire's genus *Cardita*.

Venericardia is much like the present genus, with which Sowerby unites it, and is chiefly distinguished by the teeth being all oblique and directed towards one side. *Cypricardia* is also very similar; it is remarkably inequilateral and has three teeth in each valve. Many of the species of *Cardita* resemble *Cardium* on their exterior surface, but the insulated lateral teeth of the latter are an obvious distinction. The three genera are certainly very closely allied in nature.

Some changes will undoubtedly be required in this genus. It is not now to be admitted that the *C. conca-merata*, Brug. can remain in the same genus with the species represented in our plate. Particularly as the remarkable chamber which exists in that shell seems to be devoted to a purpose altogether peculiar. On this subject the late ingenious Miller wrote me as follows: "You have probably seen an account of the interesting discovery of the use of the conic chamber or pouch in *Chama conca-merata*; almost immediately after the statement was published, I received specimens from the Cape, that not only shew the eggs, but also minute shells, in the pouch."

Some slight approach towards a similar form may be found in the *Jeson* of Adanson and in the *C. rufescens*, Lam. and perhaps even in the *C. calyculata*, L. and *C. crassa*, Lam. which are included in the subgenus that Blainville named *Mytilicardia*; though it is hardly probable, that they can enter into the same group with the *conca-merata*.

Lamarck has described twenty-five species, of which three are fossil.

CARDITA TRIDENTATA.

DESCRIPTION.

Shell suborbicular, subequilateral, thick and ponderous, with about eighteen convex, longitudinal ribs, cancellate

by concentric elevated lines, which do not penetrate into the interstitial narrow spaces, and which are obsolete on the umbo, and on the anterior side: *inner margin* deeply crenate: *hinge* with two diverging teeth, separated by a large cavity on the right valve; and on the other, a single large triangular, prominent, recurved tooth, closing into the cavity.

SYNONYM.

VENERICARDIA TRIDENTATA. *Nob. Journ. Acad. Nat. Sc.* Vol. 5, p. 216.

OBSERVATIONS.

This interesting shell was discovered by Mr. Stephen Elliott, on the coast of South Carolina. I formerly placed it, with much doubt however, in the genus *Venericardia*, but I think it corresponds better with *Cardita* as now estimated, inasmuch as the teeth are not all oblique.

The large recipient cavity of the hinge of the right valve is somewhat similar, though wider in proportion, to that of the corresponding valve of *Cypricardia modiolaris*, a very entire specimen of which was sent to me by Mr. Hoeninghaus.

REFERENCE TO THE PLATE.

Figs. 1, and 2, Exterior and interior enlarged views of the right valve.

" 3, Outline to shew the natural size.

" 4, Enlarged hinge of the left valve.

" 5, Enlarged profile view of the teeth of the right valve.

Pl. 40.

NOTICE.

In the last No. I remarked that the *Alasmodonta confragosa*, Nob. was found by Mr. Barabino near the city of New Orleans; this is an error altogether my own and which I thank that gentleman for enabling me to correct. He obtained his specimens from Bayou Teche in the Parish of St. Mary, Louisiana, about two hundred miles N. N. W. from New Orleans. I did not suppose they were found in the Mississippi, and my interesting correspondent says "I have not yet discovered any bivalves in the Mississippi, (near New Orleans) although I have tried two summers successively, with an instrument made for that purpose."

The *Ampularia urceus*, L. (*rugosa* Lam.) is stated in the books, to inhabit the Mississippi river; but I have never been so fortunate as to find it, or to gain any information relative to it there. Mr. O. Evans did me the favor to make enquiry at various places on that river and to exhibit as somewhat similar, a coloured plate of the *A. globosa*, Swains. to persons from whom information might be expected, and amongst others to some indians, who in general are known to be accurate observers; but no one had seen any similar shell in the waters of the Mississippi. I am therefore much inclined to believe that the species is a native of some of the more southern rivers, probably those of Texas. Any information in relation to it, or specimens of the shell, will be very acceptable.

* * * Since the publication of the preceding No. we have had to regret the decease of Mr. Tiebout, engraver for this work; but it is hoped that this bereavement will not much retard the publication of the work in future.

No. V. Price \$1,50, coloured.

AMERICAN
CONCHOLOGY,

OR

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA.

ILLUSTRATED BY

COLOURED FIGURES

FROM

ORIGINAL DRAWINGS FROM NATURE.

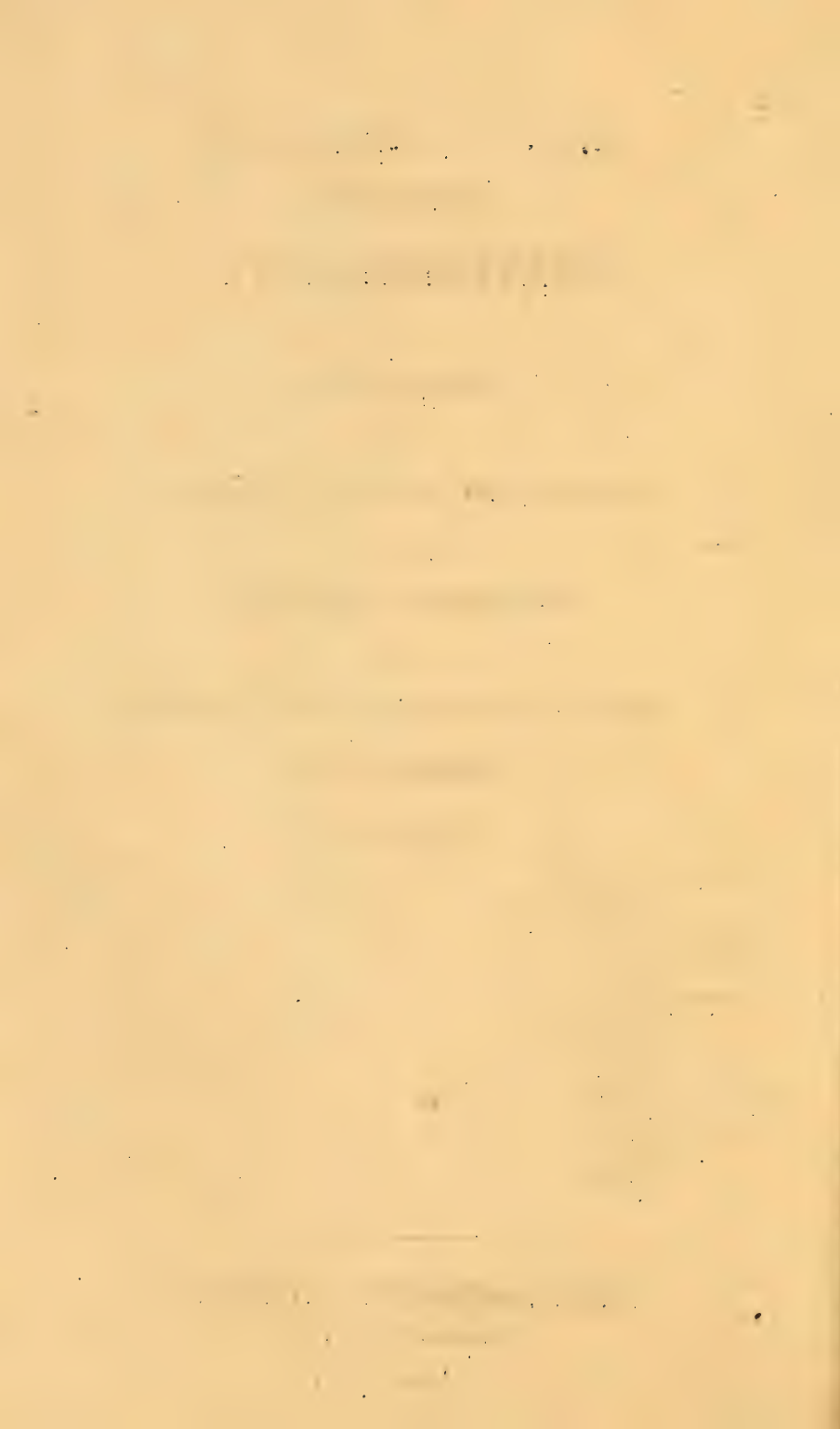
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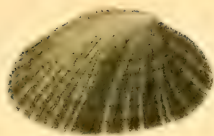
Corithium ferrugineum, - - - - -	Pl. xlix
" muscarum, - - - - -	"
" septemstriatum, - - - - -	"
Crepidula plana, - - - - -	xliv
Helicina occulta, - - - - -	xlvi
" orbiculata, - - - - -	"
Melania laqueata, - - - - -	xlvii
" multilinata, - - - - -	"
" semicarinata, - - - - -	"
" virginica, - - - - -	"
Modiola papuana, - - - - -	xiv
Mytilus hamatus, - - - - -	l
Ranella caudata, - - - - -	xlvi
Unio comptodon, - - - - -	xlii
" lapillus, - - - - -	xli
" lugubris, - - - - -	xliii

NEW-HARMONY, INDIANA.

Printed at the M Press.

(August, 1832.)





M^{rs} Say Del.

Unio lapillus S.
H

L. Lyon Sc!

UNIO LAPILLUS.

SPECIFIC CHARACTER.

Very small, thick, radiated; teeth very thick.

SYNONYM.

U. LAPILLUS, *Nob. Transylvania Journal of Medicine*
Vol. 4. p. 528.

DESCRIPTION.

Shell transversely suboval, thick, obscure yellowish, with very numerous dark green radiating lines: *posterior margin* not very short, rounded: *beaks* but little elevated, simple: *lunule* fusiform, very obvious: *hinge margin* and *anterior margin* a little depressed, declining gradually in an arquated line: *anterior basal margin* rounded: *basal margin* nearly rectilinear in the middle: *within* pearly white; *cardinal teeth* direct, thick; *lateral teeth* thick, oblique with respect to the base: *cicatrices* very deep and rounded: *cavity of the beaks* almost obliterated, with a series of small *cicatrices*, extending downwards and backwards.

OBSERVATIONS.

The robust teeth and the thickness of the whole shell, have induced many, and myself amongst the number, to

consider this shell as the young of *gibbosus*, Barnes; but a very slight examination serves to show that it is very distinct. The young of that species is always much more elongated transversely, not so thick, with the beaks much undulated, and the series of small cicatrices in the cavity of the beaks is parallel to the hinge margin. As respects magnitude it approaches *parvus*, Barnes, which however has the beaks undulated, is rather thin, with oblique, small cardinal teeth.

REFERENCE TO THE PLATE.

The plate shows the exterior, interior and dorsal views of the shell.

Pl. 41

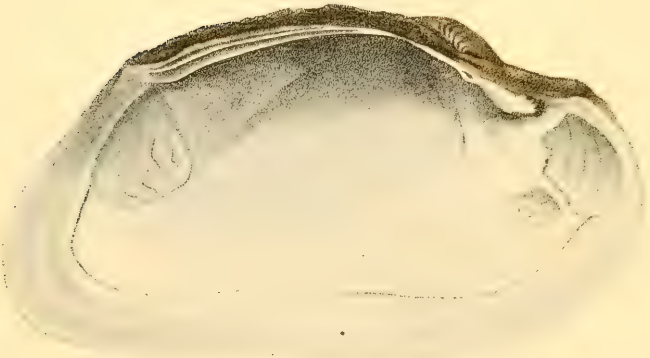
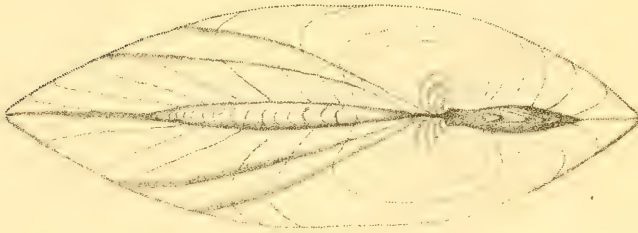
UNIO CAMPTODON.

SPECIFIC CHARACTER.

Beaks distinct from the posterior margin; lamelliform teeth arquated at tip.

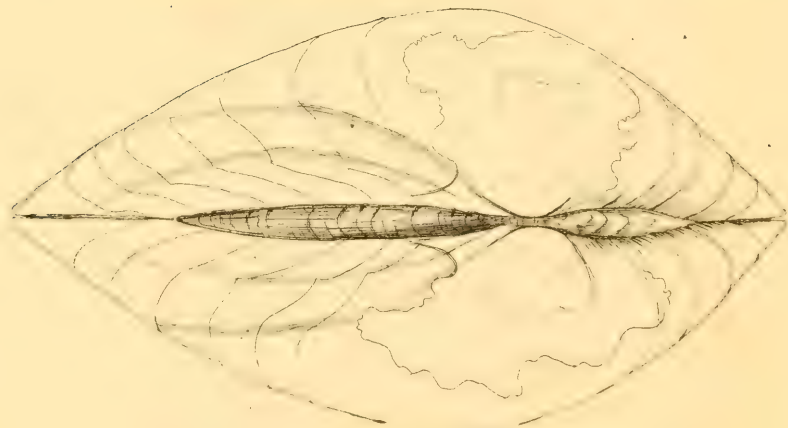
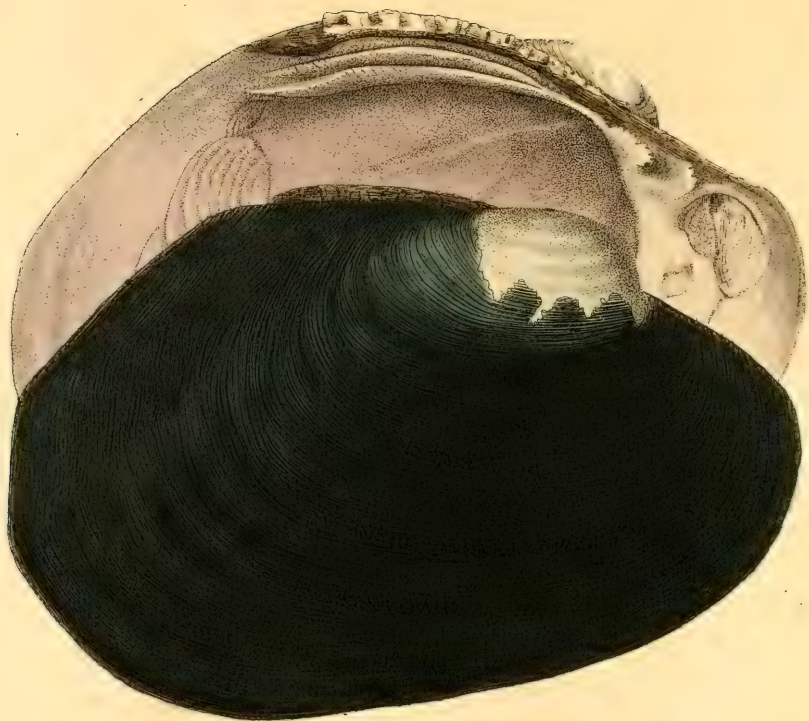
DESCRIPTION.

Shell moderately thin, transversely oblong-oval, a little compressed, dark brownish, or blackish; beaks with regular small undulations, behind the middle but remote from the posterior edge, but little prominent; ligament slope somewhat compressed, with two distinct compressed lines; umbonial slope not elevated above the level of the disk; anterior margin a little prominent towards the base and



Unio campitodon S
42

L. Lxon 27



Atlas

Unio lugubris, S.

L. Linn.

rounded ; lunule large ; posterior margin prominent, extending far behind the beaks and rounded ; base a little contracted in the middle ; within milk white ; teeth, a single rather long, oblique, undivided primary tooth in each valve ; lateral teeth rather slender, towards the tip a little arquated.

OBSERVATIONS.

This interesting, new shell was sent to me by Mr. Barabino, who discovered it opposite to New Orleans in ponds. An exterior view of the shell would not immediately distinguish it from *Alasmodonta edentula*, Nob. but the inner surface is quite different, and the armature of teeth separates them generically.

REFERENCE TO THE PLATE.

The plate exhibits the exterior, interior and dorsal views of the shell.
Pl. 42.

UNIO LUGUBRIS.

DESCRIPTION.

Shell transversely subovate. inflated, dark brownish or blackish, wrinkled ; umbones prominent ; beaks not very prominent, eroded ; ligament margin slightly arquated ; ligament more or less concealed ; anterior margin very widely rounded, sometimes truncate or even submargin-

nate; posterior margin rather prominent, but very short; base often a little contracted in the middle; within pale lilac; cardinal teeth oblique, compressed, denticulated; lamelliform teeth slightly arquated, granulated and striated at tip; posterior accessory cicatrix rounded, rather deep; anterior margin somewhat iridescent.

SYNONYMS.

UNIO ATER, LEA. *Trans. Amer. Philos. Soc. Vol. 3, pl. 7, New Series.*

OBSERVATIONS.

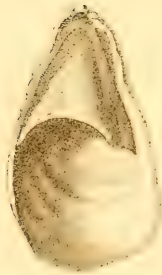
I received several specimens of this shell from Mr. Barabino, who obtained them from Bayou Teche, Parish of St. Mary, Louisiana. It seems to be intermediate, and almost connected by means of varieties, to *U. cariosus*, Nob., and *ventricosus*, Barnes; like those species it has the posterior side prominent and very short, the anterior margin often truncate and the primary teeth often double in both valves; but however close this alliance may be, it can be distinguished by its somewhat different habit. It is differently coloured, less cylindrical than *cariosus* and proportionally longer and more cylindrical than *ventricosus*.

In the young state the ligament margin appears to be coalite, and that of the older shell retains this union on its anterior portion.

The name *aler* is preoccupied by Nilsson for a very distinct species.

REFERENCE TO THE PLATE.

The plate represents the exterior, interior and dorsal views of the shell.
Pl. 43.



M^s. Say del.

Crepidula plana S.

L. Linn. S^d.

1/2

CREPIDULA.

GENERIC CHARACTER,

Shell free, univalve, irregular, ovate or oblong, convex, somewhat patelliform, with an epidermis; spire very short or obsolete, apex obvious, obliquely inclined, towards the margin; within horizontally divided about half the length by a diaphragm; muscular impression lunate.

Animal more or less depressed, oval, curved in the posterior part; mantle very thin, without marginal tentacula; foot not thick, small and rounded; body each side of the head auriculated; head emarginate before; tentacula two, subcylindric, or subconic, slightly contractile, with the eyes near their exterior base; mouth in the emargination, without teeth; branchial cavity very large, situated obliquely on the anterior part of the back, containing a fascicle of long branchial filaments, which extend forward and at tip float on the right side of the neck; anus on the right side.

OBSERVATIONS.

These are marine shells attaching themselves to various objects. At least many of the species have no locomotion, passing their whole life in one spot, and being moulded upon the surface of their resting place, exhibit its curvatures and inequalities.

Lamarck separated the species from the Linnean Patellæ, forming a very natural and very distinct group. For although it exhibits a slight similarity to *Septaria*, Feruss.

yet it is readily distinguished from that shell, which has not a proper diaphragm, the labium being only a little prominent and acute; it is also a fresh water, operculated shell, allied to *Neritina*.

The genus *Pileolus*, Sowerby, has a very prominent labium or diaphragm, but the spire is altogether concealed.

CREPIDULA PLANA.

DESCRIPTION.

Shell depressed, flat, oblong oval, transversely wrinkled, lateral margins abruptly deflected; apex not prominent and constituting a mere terminal angle, obsolete in the old shells; within white; diaphragm occupying half the length of the shell, convex, at the edge contracted in the middle and at one side.

SYNONYM.

C. PLANA, *Nob. Journ. Acad. Nat. Sc., Vol. 2, p. 226.*

OBSERVATIONS.

This species is remarkable for its depression, being without convexity above, and is even often curved upward. In order to give space beneath for the substance of the animal, the margin of the shell is vertically deflected. The general curvature is various in different individuals, being modified in compliance with that of the surface on which

they rest. It inhabits the coast of the United States, at least from New York to Florida and is common. The young shell is generally orbicular and gradually becomes proportionally more elongated as it increases in size.

REFERENCE TO THE PLATE.

The plate exhibits the exterior, interior and profile views of the shell
Pl. 44.



M^s Say Del.

Modiola papuana Lam.

L. L. Sen. Sc^t

MODIOLA.

GENERIC CHARACTER.

Shell equivalve, inequilateral, obliquely elongated, more or less subovate, regular; summits near the posterior extremity, but not terminal; anterior margin obtusely rounded; posterior margin short, rounded; posterior base a little gaping to permit the passage of the byssus; ligament marginal, rectilinear, subinterior, elongated; hinge edentulous; two principal, remote muscular impressions, of which the anterior one is larger, and securiform; palleal impressions entire.

OBSERVATIONS.

A genus of marine bivalves, separated by Lamarck from the Linnaean genus *Mytilus*, in consequence of the beaks not being terminal, as they are in that group. It must be confessed however that they are very closely related, corresponding in the other characters of the shell, as well as in the habits of the animal, the organization of which, according to the anatomist Poli is similar, and to which collectively he appropriates the name of *Callitriche*; for a description of it the reader is referred to the genus *Mytilus*. Several species blended by Lamarck in *Modiola*, were separated by Cuvier under the name of *Lithodomus*, in consequence of their habit of penetrating and dwelling in the interior of calcareous rocks and other solid substances; their shell, excepting its more cylindrical form, has

much the character of *Modiola*; but it is probable, judging by their mode of life that the characters of the animal, will justify the arrangement of Cuvier.

The byssus is a fascicle of filiform fibres, each of which is suddenly enlarged at tip so as to form a little disk, that is applied by the foot of the animal to the supporting object.

Lamarck described twenty three recent and several fossil species.

MODIOLA PAPUANA.

SPECIFIC CHARACTER.

Shell oblong, epidermis reddish-brown, shell violaceous.

SYNONYMS.

MUSCULUS PAPUANUS, *D'Argenv. Conch.* (Lam.)

MODIOLA PAPUANA, *Lam. An. sans Vert. &c.*

DESCRIPTION.

Shell oblong subovate, very narrow behind and widely rounded before; umbonial slope obtusely rounded and prominent; surface rather deeply wrinkled; epidermis reddish-brown, beneath which the surface of the shell is more or less violaceous; within dull whitish, somewhat iridescent.

OBSERVATIONS.

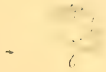
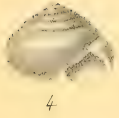
I received several fine specimens of this shell from Dr. D. H. Storer as inhabiting Cape Elizabeth and Prout's Neck, Maine. It is the common "Horse muscle" of the English collectors and appears to be abundant in the European Ocean and Mediterranean Sea. Leach says, "beneath the epidermis the shell is invariably whitish," whilst Lamarck says, "Epiderme noirâtre; test lilas." The shell appears to become more elongated with age.

Adanson's figure (pl. 15, fig. 1,) generally quoted for this species, is probably altogether distinct; it is but little more widely rounded anteriorly than posteriorly, and the dorsal angle is much more prominent. Leach quotes *Mytilus modiolus*, Linn. as a synonym of *M. papuana*; but Lamarck and some other conchologists quote it, with doubt, as the same as *Modiola tulipa*, Lam.

Laskey in the *Transact. of the Wern. Soc.* says they attain to the length of nine inches; the largest in my collection is five inches and three fourths long.

REFERENCE TO THE PLATE.

The plate represents the exterior and interior views.
Pl. 45.



1.22 *Helicina orientalis*, S.
4.56. *occulta*, S.

HELICINA.

GENERIC CHARACTER.

Shell subglobular; spire depressed or but little elevated; aperture semiorbicular, modified by the preceding volution; base with a more or less obvious callosity covering the umbilicus; labrum acute or a little reflected; columella at base a little prominent and joined to the labrum at an angle; operculum horny, and with concentric elements.

Animal terrestrial, globular, subspiral; head rostrated; rostrum bilabiated at the tip and shorter than the tentacula, which are two in number, filiform, and have the prominent eyes at the exterior part of their base, upon a tubercle; the organs of respiration as in *Cyclostoma*; the branchial cavity communicates with the atmosphere by a large slit; foot simple, with an anterior marginal groove.

OBSERVATIONS.

The general appearance of the shell resembles much that of a *Helix*, but the base of the columella is a little prominent, and the locality of the umbilicus is more obviously covered with a callus. But the most striking difference is in the animal, which in *Helix* has the eyes at the tip of the superior pair of tentacula, whereas in *Helicina* they are at the exterior base of the only pair; the operculum of the latter is also a sufficient distinction.

Lamarek formerly united several species under this genus that he has since very properly separated under the name

of *Rotella*, (*Pitonillus*, Montf.,) as being inhabitants of the ocean, with a much dilated basal callus. This union led me to form my genus *Oligyra* for the reception of one of the following species, well knowing it could not be naturally congeneric with the Linnæan *Trochus vestiarius*, the type of that genus.

In the *Zoological Journal*, for 1824, Gray has described fifteen species, which he disposes in several minor groups; but Ferussac states, that he possesses from twelve to fifteen species which seem to be unknown to Gray, some of which he could not refer to either of those groups. Notwithstanding the variations and transitions of the species, it may be found convenient and even natural to separate generically, those in which the fissure is very obvious, in the labrum, under the name of *Helicina*, from those of which the labrum is simple or nearly so; and to the latter the name of *Oligyra* could be retained, under which name I described the animal, 'till then entirely unknown.

HELICINA ORBICULATA.

SPECIFIC CHARACTER.

Shell pale greenish, or yellowish, with one or two bands.

SYNONYM.

OLIGYRA ORBICULATA. *Nob. Nicholson's Encycl.*
(*Amer. 3d. Ed.*)

DESCRIPTION.

Shell subglobular; spire not very prominent, but more than convex; whorls five, obsolete striated across, regularly rounded; colour pale greenish, yellowish, or slightly tinged with reddish, particularly on the body, and margined above by a paler line; on the middle of the body whorl a paler band revolves which is sometimes margined by a dusky colour, and is also sometimes obsolete or altogether wanting; base of the columella very slightly projecting into an obtuse angle; labrum whitish, reflected. *Animal* pale; rostrum and tentacula blackish, the latter with a white line; eyes very black, elevated in form of a short tubercle; length about equal to the breadth of the shell; foot not broader than the body; operculum yellowish brown, granulated.

OBSERVATIONS.

During a short visit to Florida, in company with Mr. Maclure, I discovered this shell, in great numbers on the "Oyster shell Hammocks." These are elevated knolls of oyster shells intermixed with earth, which rise by an abrupt acclivity on all sides, from the salt marshes near the mouth of St. John's river, to the elevation of fifteen or twenty feet.

REFERENCE TO THE PLATE.

Fig. 1, dorsal view, } Enlarged
 2, front view, }
 3, natural size.

HELICINA OCCULTA.

SPECIFIC CHARACTER.

Carinated; carina almost concealed on the spire and nearly obsolete on the body whorl.

SYNONYM.

H. OCCULTA. *Nob. Transylvania Journal of Medicine*,
Vol. 4, p. 529.

DESCRIPTION.

Whorls about five, carinate, or with an acute shoulder which is almost concealed on the spire by the suture; it becomes more obtuse and almost obsolete or even impressed, on the body whorl, but near the labrum it is again very obvious: the whole surface has slightly elevated, somewhat regular lines, forming grooves between them, across the whorls and there is an appearance of revolving lines on the body whorl, particularly beneath: *labrum* entire, thick, a little reflected, obtusely a little more prominent towards the base, but not angulated.

OBSERVATIONS.

All the specimens that I have yet found are dead and bleached. They occur abundantly in the rugged and abrupt "bluff," half a mile below New Harmony, near

the river bank, with many *Helices*, that are commonly found in the Western States. They are much the same size, or even a little larger than the *Helicina orbiculata*; Nob.; which species is destitute of carina and of prominent wrinkles or elevated lines, its labrum is reflected, but not thickened, with a distinct angle near its base.

REFERENCE TO THE PLATE.

Fig. 4, front view; adult, { Enlarged
5, front view; young, }
6, natural size.

MELANIA VIRGINICA.

DESCRIPTION.

Shell turritid, usually truncate-eroded at tip; olivaceous or blackish brown; whorls about six, but little rounded, crossed by obvious wrinkles; a dull reddish line revolves near the base of the whorls, and another near or upon the middle, both sometimes obsolete or wanting; labrum a little prominent towards the base.

Animal bluish-white beneath, with orange clouds each side of the mouth; above pale orange shaded with dusky and banded with numerous black interrupted lines; mouth advanced into a rostrum as long as the tentacula, which are darker at base, and setaceous; foot with an undulated outline.

Var. a. Shell destitute of the rufous bands.

SYNONYMS.

BUCCINUM VIRGINICUM, *Gmel. p. 3505, Dillw. Descr. Catal. p. 652.*

Lister Synop. pl. 113, fig. 7.

PALUDINA VIRGINICA, *Nob. Nicholson's Encycl. (3d. Amer. Ed.) art. Conch. pl. 2, fig. 4.*

MELANIA FASCIATA, *Menke, Synop. Mollusc. p. 82.*

[Var. a.] *Lister Synop. pl. 110, fig. 4.*

OBSERVATIONS.

This species is very abundant in the Delaware and Schuylkill Rivers. The basal portion of the labrum in Lister's figure of plate 113 above quoted is deficient, nevertheless I have no doubt that the figure was intended for this species, and that his figure 4, of pl. 110 is intended to represent the variety.

REFERENCE TO THE PLATE.

Fig. 2, front view

Pl. 47.

MELANIA MULTILINEATA.

DESCRIPTION.

Shell turritid, usually truncate-eroded at tip; dark brown; whorls six or seven, very slightly convex, with numerous, filiform, elevated, subequal revolving lines, which are from ten to twenty in number on the body whorl; labrum a little prominent towards the base.

SYNONYMS.

M. MULTILINEATA, *Nob, Journ. Acad. Nat. Sc. Vol.*
p. 380.

M. CURTA, *Menke. Synop. Mollusc. p. 81.*

OBSERVATIONS.

This shell occurs in the eastern waters, particularly in Frankford Creek, near Philadelphia, and Professor Vanuxem gave me specimens which he obtained from a stream in New Jersey. It is closely related to *M. virginica*, Nob. but may be distinguished by its striae.

REFERENCE TO THE PLATE.

Fig. 3, back view

Pl. 47

MELANIA SEMICARINATA.

DESCRIPTION.

Shell small, conic-turreted; spire acute at the apex, the four apical volutions carinate below; volutions about eight, somewhat convex; suture moderately impressed; surface, especially of the body whorl slightly wrinkled; labrum a little prominent near the base; within slightly tinged with reddish brown.

SYNONYM.

M. SEMICARINATA, Nob. *Disseminator of Useful Knowledge*, Vol. 3.

OBSERVATIONS.

This pretty little species occurred in great numbers in a small stream in Kentucky. It may be distinguished from our other species by its small size, combined with the existence of a carinated line only formed in its immature state; having increased to four or five volutions the carina is no longer formed.

REFERENCE TO THE PLATE.

Figure 4, front view.

a, the spire enlarged to show the carina.

Pl. 47.

MELANIA LAQUEATA.

DESCRIPTION.

Shell oblong, conic; spire longer than the aperture, elevated, acute at tip; volutions moderately convex, with about seventeen, regular, elevated, equal, equidistant costæ on the superior half of each volution, extending from suture to suture and but little lower on the spire, and becoming obsolete on the body whorl; suture moderately impressed; labrum and columella a little extended at base.

SYNONYM.

M. LAQUEATA, *Nob. Disseminator of Useful Knowledge*,
Vol. 3.

OBSERVATIONS.

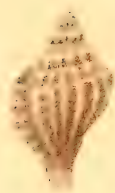
This species was found by Dr. Troost in Cumberland River. The elevated costæ, without any revolving lines, distinguish this shell from the other species of our country.

REFERENCE TO THE PLATE

Figure 1, front view

Pl. 47.





Ronella canale

L. 8

RANELLA.

GENERIC CHARACTER.

Shell oval or oblong, more or less depressed in consequence of having a range of varices only on each side, forming a somewhat oblique longitudinal series; aperture oval, the labium being much arquated; base canaliculated, sometimes a little emarginated; a sinus at the superior termination of the labrum: epidermis distinct: operculum horny?

OBSERVATIONS.

These are the Frog and Toad shells of collectors, a genus of well marked Marine shells dismembered by Lamarck from the Linnean Murex in consequence of their lateral margined character. Montfort made another division of these shells; to those with an umbilicated columella he gave the generic name of Apollon, and those which have no appearance of umbilicus he named Buffo: these designations, or rather their corresponding words Apolle and Crapaud, are adopted by Blainville as subgenera of Ranelia. These shells are sufficiently distinct from those of any other group and cannot be mistaken, if we except a few species which approach Triton, (a name which ought to be changed, as it had been previously applied as a scientific designation by Laurenti to a genus of Amphibia) a genus which is distinguished by having its varices rare and not at the equal distances of half volutions from each other. The animal does not seem to be known, but judg-

ing by analogy, it probably resembles that of Triton and Murex and has therefore a horny operculum, composed of lamelliform elements, disposed in an imbricated manner and commencing at the superior tip. It must also be carnivorous.

RANELLA CAUDATA.

DESCRIPTION.

Shell pale reddish-brown, cancellate with eleven robust costæ on the body whorl and several revolving filiform lines passing over them, and more prominent on the varix of the aperture, terminate at its inner edge, and there alternate with the raised lines of the fauces; volutions flattened at their summits, abruptly declining to the suture; canal coarctate, rather longer than the spire; beak rectilinear, reflected at tip.

SYNONYM.

RANELLA CAUDATA, *Nob. Journ. Acad. Nat. Sc. Vol.*
p. 236.

OBSERVATIONS.

This is a common species on the coast of the United States. Its generic affinity is not always obvious, as in some specimens the varix of the aperture, only, is well formed.

The generic name borders rather too closely upon *Renilla*, which designates a genus of the class Polypi of Lamarck. Montfort's appellation *Buffo* is not preferable for a similar reason, as it would be liable to be confounded with *Bufo*, a genus of Reptilia.

REFERENCE TO THE PLATE.

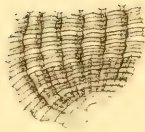
The plate shews the back and front views.

Pl. 48.





2



1



3

1 *Cerithium muscarum*, S.
2 *7-striatum*, G.
 ferrugineum, S.

CERITHIUM

GENERIC CHARACTER.

Shell more or less turrated, often tubercular; aperture small, oblique, with a short, truncated or recurved canal at base, which is not emarginated; labium concave, more or less callous; a more or less distinct groove at the junction of the labrum with the preceding whorl; operculum small, rounded.

Animal much elongated; mantle prolonged in a canal on the left side; foot short, oval, with an anterior marginal groove; head with a proboscis, depressed; tentacula remote, with the eyes on their middle, beyond which they are slender; mouth terminal, vertical, without labial tooth and with a very small tongue; a long and narrow branchia

OBSERVATIONS.

Brugueire adopted the name of this genus from Adanson, who says, that Fabius Columna used the word to designate one of the species. The following is the descriptive appellation of the latter, "*Buccinum tuberosum Cerithium parvum.*" All the species which Adanson referred to it are correctly placed, with the exception of the Ligar, (*Turritella terebra*, L.) and the Mesal, both of which he was aware differ generically from the others. He thus describes the operculum of *C. radula*, L. and his figure corresponds in character, "opercule exactement orbiculaire, cartilagineux, fort mince, brun transparent et

marqué de cinq sillons circulaires concentriques," but Blainville says, it is subspiral. They are Marine and crawl upon the mud, feeding upon small animals.

These shells are generally elongated cones, beautifully decorated with regular series and bands of granules, tubercles and other symmetrical protuberances. Linne placed the species known to him, in the very different genera *Murex*, *Trochus* and *Strombus*. Blainville includes, as subgenera, *Pyrena*, Lam., *Potamides*, Brong., *Pyrazus*, Montf., *Nerine*, Def., and *Triphora*, Desh. The aperture of the two latter have a complicated appearance, and the others are altogether destitute of canal.

Numerous recent and still more fossil species have been described, chiefly by Lamarck, who remarks, that the more our collections become enriched, the more difficulty attends the determination of genera and particularly of species; the vacancies which we supposed to be natural limits, become proportionally filled up. The difficulty he experienced in fixing the character of each species of *Cerithium* led him to the conclusion, that it is principally in this genus that this fact is the most evidently shown, because the collections abound in these shells. The study of these shells is very important to the geologist in his attempts to ascertain the changes that have taken place in the surface of the globe.

CERITHIUM MUSCARUM.

SPECIFIC CHARACTER.

White, with costæ, transverse striæ and series of brown spots.

DESCRIPTION.

Shell oblong-conical, with rather distant, longitudinal, prominent ribs, and distant prominent spiral striæ, which by passing over the ribs give the latter a crenate appearance, and are five in number on the body whorl and four on the second, the intervals with smaller parallel striæ; ribs about eleven on the body whorl; *volutions* nine, a little convex; *suture* indented, distinct; *aperture* oblique, oval-orbicular; *labium* concave; *colour* pure white, with reddish brown spots on the striæ so arranged as to exhibit longitudinal and transverse series.

OBSERVATIONS.

The regularly arranged spots on a white ground, give this species a very neat and delicate appearance.

It was communicated by Mr. Elliott, who informed me that it inhabits the southern shores of Florida.

REFERENCE TO THE PLATE.

Fig. 1, front view, enlarged.

a natural length.

Pl. 49.

CERITHIUM SEPTEMSTRIATUM.

SPECIFIC CHARACTER.

With longitudinal costæ and transverse striæ; the costæ bifid towards the base; volutions blackish, white above.

DESCRIPTION.

Shell turreted, with longitudinal ribs rendered somewhat nodulous by the passage of elevated spiral striæ over them; ribs thirteen on the body whorl, their interstices much more deeply excavated near the suture, and each divided into two on the basal half; spiral striæ on the body whorl seven, with smaller parallel striæ between them, on the second whorl are four striæ, and on the third three; *volutions* nine; *suture* not indented; aperture oblique, oval-orbicular, dark livid within and not distinctly striated; *labrum* whitish on the inner margin, often interrupted by small brown lines corresponding with the exterior striæ, exterior margin slightly thickened; *labium* concave with a callous at the junction with the labrum, and with

the *canal* livid ; *colour* dusky or blackish, the interstices of the *striæ* often whitish, with a white superior margin to the whorls.

From Mr. Elliott. It is a very pretty shell, inhabiting the southern coast of Florida. I think that it approaches *C. zonale*, Brug. though it does not perfectly agree with Lamarck's description, particularly in not being "longitudinaliter obsolete plicate," for the folds in our shell are so prominent and robust as to deserve the name of ribs.

It seems probable that Lister's figure 81, of pl. 1018 is intended for this shell ; to which figure Gmelin gave the name of *Murex minimus*. This practice of naming figures of older authors, I conceive leads to error, and ought to be condemned by every modern naturalist.

REFERENCE TO THE PLATE.

Fig. 2, front view, enlarged.

b, natural length.

Pl. 49.

CERITHIUM FERRUGINEUM.

SPECIFIC CHARACTER.

Pale ferruginous, granulated by longitudinal ribs and transverse *striæ*.

DESCRIPTION.

Shell oblong-conical with longitudinal ribs rendered nodulous or moniliform by the passing of elevated spiral striæ over them; ribs about twenty on the body whorl, almost interrupted by the interstices of the striæ; striæ about seven, with intermediate smaller ones, on the body whorl, and but three on the second whorl; *volutions* seven; *suture* inconspicuous; *aperture* oblique, oval, whitish within; *labrum* slightly thickened on the exterior margin, and with obsolete impressed lines on the inner side corresponding with the exterior striæ; *colour* ferruginous.

OBSERVATIONS.

Communicated by Mr. Elliott as an inhabitant of the southern coast of Florida. Its general form is similar to that of the preceding species, but it is smaller, its elevations are more rounded like granules, and its ribs are not bifid.

REFERENCE TO THE PLATE.

Fig. 3, front view, enlarged.

c natural length.

Pl. 49.



MYTILLUS.

GENERIC CHARACTER.

Shell equivalve, inequilateral, obliquely elongated, more or less ovate-acute or subtriangular, or subcuneiform, regular; summits posterior and terminal, acute; anterior extremity obtusely rounded; posterior base a little gaping to permit the passage of the byssus; ligament marginal, deeply seated, subinterior, rectilinear, elongated; hinge edentulous, or with one or two rudiments of teeth; two principal remote muscular impressions, of which the anterior one is large and elongated; palleal impression entire.

OBSERVATIONS.

This genus has been considerably modified since it came from the hands of our great master Linné, who united in one assemblage shells of divers characters, and constructed by animals of opposite habits, forms and organization. Bruguiere distinguished the widely different genera Anodonta, and Avicula; Lamarck separated Modiola, and Leach parted from Avicula the celebrated pearl shell of Ceylon under the name of Margarita, which was afterwards called Melcagrina by Lamarck. Cuvier instituted the genus Lithodomus, for *M. lithodomus* and some other species which perforate and reside within calcareous rocks. But of these the most closely allied to the present group are unquestionably Modiola and Lithodomus, which two are united together by Lamarck. and are considered by

Blainville only as subgenera of *Mytillus*; and however closely allied we may acknowledge them to be, those genera may be distinguished by having the posterior margin arquated somewhat prominently, the apices or beaks not being terminal as in *Mytillus*. The latter naturalist gives the following account of the animal. "Body oval, dilated; mantle open at its inferior middle only, which at its anterior extremity is fringed; foot linguiform, canaliculate, with a byssus at its base and many pairs of retractor muscles; mouth with simple lips; two adductor muscles, of which the posterior one is very small.

Several species are eatable, and the common Muscle of Europe (*M. edulis*, L.) is taken to market in large quantities for the table. All the species are marine with the exception of the *M. polymorphus*, Gm. or *Chemnitzii*, which inhabits the Danube and the Commercial Docks near London, but which is probably not strictly speaking of this genus, if we may judge by the somewhat chambered appearance of the beak cavity.

They attach themselves by means of their byssus to rocks, stones and other fixed bodies and even to one another. The species are numerous; Lamarck enumerates thirty seven, of which two are fossil, and several have been more recently described. Some species are infested by a parasitical *Pinnotheres*.

MYTILLUS HAMATUS.

Longitudinally grooved; incurved at base.

SYNONYM.

M. HAMATUS. *Nob. Journ. Acad. Nat. Sc. Vol. 2, p. 265.*

M. STRIATUS, *Barnes.*

DESCRIPTION.

Shell at base incurved and acute; valves on every part of the exterior with longitudinal, elevated lines, which are bifid and sometimes trifid towards the tip, and transversely striated with numerous small equal lines; colour blackish-brown with an olivaceous reflection; within dark purpur-
escent, subiridescent; margin crenate, whitish.

OBSERVATIONS.

A very common species in the Gulf of Mexico, and is carried to the New Orleans market in consequence of its parasitical attachment to the common oyster. Hardly a cluster of oysters can there be found unaccompanied by one or more and generally numerous specimens of this shell, in various stages of growth. Our figure represents a fine large specimen, in which the incurved tip is not so remarkable as in many smaller individuals, and the form is somewhat more elongated and less triangular. It seems to approach *M. decussatus* as described by Lamarek, but

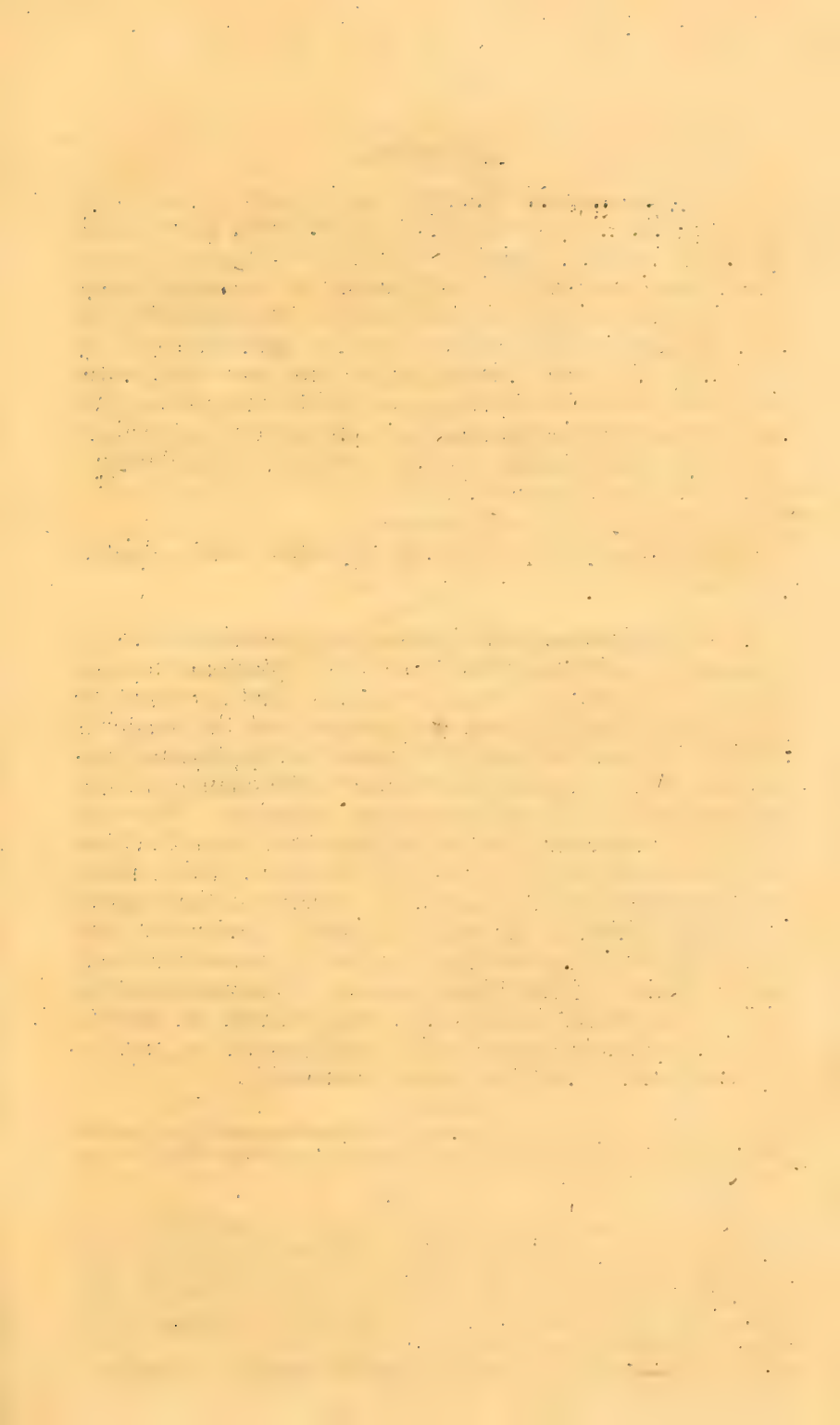
in that species the transverse striæ are stated to be unequal, and its inner margin is not said to be of a different colour; a character which in our shell is very obvious. Barnes read a description of it to the Lyceum of Natural History of New York in 1823 (see Silliman's Journal, Vol. 6, p. 364.)

It does not reach the attributed magnitude of *M. crenatus*, Lam. a species which was supposed by that author to inhabit the coast of Carolina; but if either of the different figures of Lister, Sowerby, or that of the Encyclopædia Methodique is a tolerably correct representation of it, I have certainly not met with it.

REFERENCE TO THE PLATE.

The plate exhibits the inner and outer views of a valve.

Pl. 50.



NOTICE.

* * With this Number we send gratis to those who have * paid for the preceding Nos., a copy of a work which we have recently printed, entitled "Glossary to the American Conchology," explanatory of the terms made use of in the science of Conchology. A copy will also be presented to each subscriber who shall transmit by mail, free of postage, his respective sum now due, within one month after having received this number. We hope at a future day to be able to present our subscribers with an "Introduction to the science of Conchology" with plates, on the same terms.

Add to the synonyms of *M. papuana*, Lam.—Lister, pl. 1057.

In the observations on *Sigaretus perspectivus* in No. 3, I remarked its striking similarity to *Cryptostoma leachii*, Blainv. On further comparison I find that it cannot be generically separated from that species, and the reader is therefore requested to alter the name to *Cryptostoma perspectiva* Nob. Analogy also indicates the change of *Sigaretus maculatus*, N. to *Cryptostoma maculata*. We shall in our next number give the generic character of *Cryptostoma*, to be substituted for that of *Sigaretus*, which latter can be retained until we publish a species of that genus. In the 2d edition of the *Règne Animal*, Cuvier in a note to the genus *Cryptostoma* says, that a species was sent from Carolina by Mr. L'Hermenier. This was doubtless one of the above, perhaps the *perspectivus*, N. and to which he gives the name of *Cr. carolinum*, Cuv., not being aware that I had long since described it.

Of *Unio glebulus*, N. Mr. Barabino has recently sent me some fine specimens from Bayou Teche, one of which is four inches and three tenths broad and two inches and four fifths long.

A *Venericardia* was presented to me several years since by my brother, who obtained it on the coast of New-Jersey. I described it under the name of *cribraria*, but as the specimen is imperfect I did not publish an account of it. It is longitudinally ovate-orbicular, with twenty slightly elevated ribs, more distant from each other than their width, decussated by concentric, almost equally elevated lines. Length one inch and about three twentieths, and breadth one inch and one twentieth.

Can this be a variety of the *borealis* of Conrad? Having but a single specimen I cannot determine this question.

No. VI. Price \$1.50, coloured.

AMERICAN
CONCHOLOGY,

OR

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA.

ILLUSTRATED BY

COLOURED FIGURES

FROM

ORIGINAL DRAWINGS EXECUTED FROM NATURE

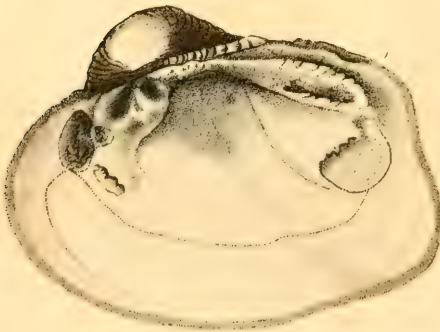
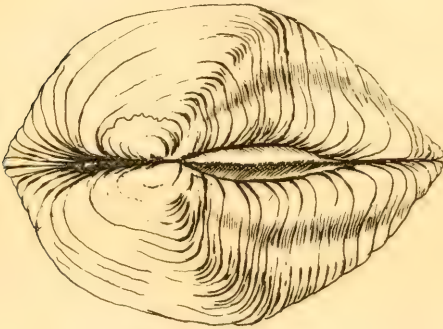
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NEW-HARMONY, INDIANA.

PRINTED AT THE M. PRESS,

April, 1834.



UNIO NEXUS.

DESCRIPTION.

Shell transversely triangular-subrhomboidal, much inflated, thick: *beaks* prominent: *anterior side* much depressed, in its middle elevated so as to make an almost rectilinear hinge margin, with a broad, shallow groove, which extends from the beak to the anterior margin: *anterior margin* forming nearly a right angle with the base, obtusely emarginate in the middle by the termination of the groove: *umbonial slope* carinated, in consequence of the depression of the anterior side: *lunule* very short: *posterior margin* very short, rounded: *colour* light brownish, obsolete radiated: *within* white: *cardinal teeth* direct: *lateral teeth* rectilinear, short, with but little obliquity: *posterior accessory cicatrix* obliquely elongated, slender: *anterior accessory cicatrix* confluent.

SYNONYMS.

UNIO NEXUS, *Nob.*, *Transylvania Journal*, vol. 4, p. 527, 1831.

U. ARCEFORMIS, *Trans. Amer. Philos. Soc.* vol. 4, N. S. 1832.

Pl. 51.

The shell which we have designated by the above name is closely related to *triqueter* Raf. ; but differs in the greater prominence of the superior portion of the anterior margin ; the shorter posterior margin and lunule ; the direct cardinal teeth, and the little obliquity of the lateral ones. It was sent to me from Nashville by Dr. Troost. I may remark that some of the shells of Cumberland river vary much from their corresponding species of other streams, if I may judge by several specimens which I have seen from that river.

In stating the generic character, the number of muscular impressions is said to be two, by which is understood, two principal ones, for that there are many smaller ones is familiar to all those who have examined these shells. Dr. J. G. Klees in his "Dissertatio Inauguralis" (for which work I am indebted to Dr. L. D. Schweinitz) says "musculis duobus binis majoribus clausoribus accessoriis." Ferrussac in his "Notice sur les Ethéries" says "Presque toutes les muléttes et les Anodontes offrent quatre impressions séparées, et l'on n'a point encore distingué d'une manière comparative celui des muscles d'attache que dans leur position variée acquiert une prédominance sur les autres, selon la forme de l'animale la grosseur ou la figure des valves." The four principal cicatrices of course exist in all the species of this family, but they are sometimes so approximated in pairs as to form but two or three separate impressions. The several smaller cicatrices in the cavity of the beaks indicate points of the attachment of small dorsal muscles, for the secure support of that part of the



Unio apiculatus, S.

animal. The palleal impression is also very distinct.— These dorsal cicatrices were, no doubt, taken into account by Mery, Mem. Acad. Royale des Sc. for 1710, p. 409, who says that there are eight muscles attached to the inner surface of the shell.

REFERENCE TO THE PLATE.

Exterior, dorsal and interior views.

Pl. 51.

UNIO APICULATUS.

DESCRIPTION.

Shell subquadrate, the diameters being subequal: *summits* not very prominent: *hinge margin* declining, and with the anterior margin compressed and separated by an obtuse angle: *anterior margin* generally retuse: *basal margin* retuse before the middle: *posterior margin* rounded: *disk* with a costa from the summit descending to the anterior basal angle, which is somewhat prominent and rounded; behind the costa is a much dilated groove, not very deeply impressed; the whole surface, without exception, is studded with small, subequal eminences, which are more or less rounded or transverse and arranged more or less symmetrically in lines, which before the costa, curve towards the ligament and anterior margin, are angulated in the groove and on the middle and thence are arquated to—

Pl. 52.

wards the posterior margin: *within* pearly white, iridescent before: *anterior accessory cicatrix* confluent: *posterior accessory cicatrix* small, hardly distinct, rounded.

SYNONYMS.

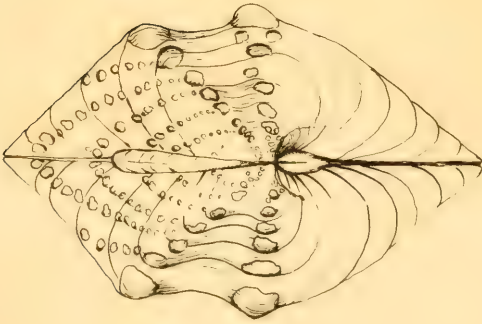
U. APICULATUS, *Nobis*, "*Disseminator*," 1829.

U. ASPER, *Amer. Philos. Trans.* 1832.

OBSERVATIONS.

I obtained a few single valves of this handsome species, from a large quantity, consisting of many wagon loads, of the *Gnathodon truncatus*. Lam. (Cyrena) at New-Orleans, during a short sojourn in that city with Mr. Maclure in 1827. This vast heap of dead and bleached shells, had been collected on the shore of Lake Ponchartrain, and conveyed by means of small vessels through the canal, for the purpose of covering part of the "levee" of that city, as a substitute for a pavement. I have subsequently received several good specimens from my friend Mr. Barabino.

In general outline and form of the disc, it has a very close resemblance to *U. quadrulus*, Raf., but the surface is in every part ornamented with crowded, elevated, more or less rounded tubercles, not very different in point of size, and symmetrically arranged in angulated and arquated series. Notwithstanding these differential traits, I think it not improbable that when we shall become better acquainted with this Protean genus, the *apiculatus*, may be considered as a variety only of the *quadrulus*.



Unio quadratus Raf.

53.

REFERENCE TO THE PLATE.

Interior, exterior and dorsal views.

Pl. 52.

UNIO QUADRULUS.

SPECIFIC CHARACTER.

Shell subquadrate, tuberculated, with a nodulous ridge and dilated groove.

SYNONYMS.

U. QUADRULUS, Raf., *Ann. gen. des Sc. Phys.* vol. 5.

U. RUGOSUS, Barnes, *Silliman's Journ.* vol. 6, p. 126.
Hildreth, Silliman's Journ. vol. 14, p. 282.

U. LACRYMOSUS, } *Trans. Amer. Philos. Soc. N. S.* vol.
U. ASPERRIMUS, } 3 and 4.

DESCRIPTION.

Shell narrowed, compressed and thin before; short, obtuse, rounded and wider behind; beaks slightly elevated; ligament more elevated than the beaks; hinge margin compressed, carinate; basal margin falcate, emarginate, and compressed; anterior margin subangulate; anterior dorsal margin subtruncate, nearly straight; anterior basal margin projecting; epidermis dark brown, under the

epidermis pearly white: *surface* rough and scaly, wrinkled transversely and waved longitudinally, having distinct irregular transversely compressed tubercles; a broad nodulus, elevated, somewhat double ridge extending from the beaks to the anterior basal edge, and projecting on that part; a broad furrow or wave behind the ridge ending in the emarginate basal edge, and a furrow before separating the anterior hinge and anterior dorsal margin: *cardinal teeth* sulcated: *lateral tooth* striated, rough, and in the left valve somewhat double: *posterior muscular impression* deep and partly rough: *cavity of the beaks* angular, compressed and directed backward under the cardinal tooth: *naker* pearly white, and on the fore part iridescent.

OBSERVATIONS.

The above is Barnes' description of this strongly marked, common species. It is an inhabitant of the Ohio and its tributaries, and approximates, by its varieties to some of the varieties of *U. bullatus*, Raf. Barnes compares it with the *U. verrucosus*, Raf., to which, however, it has but a remote affinity. I have received specimens from Dr. Hildreth of Marietta and Mr. Barabino of New-Orleans. The impressions of the plate, with Barnes' name of *rugosus*, were colored before I received the "Monograph of the Bivalve shells of the Ohio," the faithful translation of which, Mr. Poulson presented to me.

REFERENCE TO THE PLATE.

The internal, external and dorsal views.

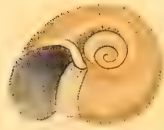
Pl. 53:



1



3



2

1. *Planorbis lentus*, S
2. *turcolus*, S
3. *bicarinatus*, S

PLANORBIS.

GENERIC CHARACTER.

Shell univalve, thin, fragile, discoidal or revolving in the same horizontal plane; concave above and beneath, the spire, being impressed; aperture rounded-ovate, entire at base, the labia interrupted by the convexity of the penultimate volution; labrum simple; operculum none. Animal depressed spiral sinistral; foot rounded, small; tentacula two, long, slender, contractile; eyes at the inner base of the tentacula; mouth somewhat exertile, armed above with a lunate, simple tooth, and beneath with small cartilaginous hooks; pulmonary orifice on the collar, near that of the vent; genitals on the same side, and separate, that of the male near the tentaculum, of the female at the margin of the collar.

OBSERVATIONS.

Lister first separated these shells by placing them in a distinct section of the fluviatile kinds. In 1756 Guettard characterized the genus very accurately, both the animal and its shell, and applied to it the name by which it is now universally known. Adanson and Geoffroy afterwards adopted the genus, the former under the name of *Goret*. Although this natural genus appeared to be thus firmly established, our great master Linné subsequently placed the species in the genus *Helix*, without any distinction what-

ever; an arrangement however in which he was not followed by any of the distinguished naturalists who succeeded him.

Lamarck in his earlier works, placed the genus near *Ampularia*, deceived perhaps by the equivocal characters of *A. cornu arietes*, which he supposed to be a *Planorbis*, but he afterwards referred the genus to its true place in the family of *Pulmonea Aquatica*, next to *Limneus*. Like all the species of this family the *Planorbis* never reside in deep water, but frequent the shores where they can resort to the surface to inhale the air. They inhabit fresh water and abound in various parts of the globe.

The shell of *Planorbis* has the appearance of being sinistral, and this character has been almost universally stated in the generic definition; several conchologists, however, are now of the opinion that it is dextral, notwithstanding the sinistral form of the animal. Des Moulins in the "Actes de la Soc. Linn. de Bordeaux," says that "the shell of the *Planorbis* is essentially dextral." Deshayes in his account of this genus says that it is only necessary to examine the greater number of the species and to compare them with the dextral *Limneus* and sinistral *Physa*, to be convinced, that in the normal position, the shell of *Planorbis* is truly dextral; but that the animal is really sinistral; and he thinks we ought rather to admit that a sinistral animal has a dextral shell, than that the aperture is not in the normal direction, corresponding with that of all shells yet discovered; and that there is an evident contradiction between the animal and its shell, as is also exhibited in the *Haliotis* and probably in *Ancylus*.

The species are rather numerous and Deshayes describes eleven fossil species of the environs of Paris.

In the following descriptions the shells are considered as sinistral.

Pl. 54.

PLANORBIS LENTUS.

DESCRIPTION.

Shell dull brownish or yellowish brown, sub-carinate above, particularly in the young shell; *whirls* nearly five, striate across with five, raised, subequidistant lines, forming grooves between them; *spire* concave; *aperture* large, embracing a large portion of the penultimate volution; *labrum* more acutely, but not very prominently arquated above, its basal portion horizontally subrectilinear in the adult and not extending below the level of the base.

OBSERVATIONS.

I obtained this species in the canal at New-Orleans and I am indebted to Mr. Maelure and also to Mr. Barabino for many fine specimens collected in the vicinity of that city. I also found the same species at Ojo de Agua, Mexico, when travelling in that country with Mr. Maelure. It differs from the following species in having the labrum less prominent above, and the basal portion of this part being in the adult horizontally subrectilinear so as not to

Pl 54.

touch a plane on which the base of the shell may rest ; the aperture also is more transverse.

REFERENCE TO THE PLATE.

Fig. 1. Two views ; natural size.
Pl. 54.

PLANORBIS TRIVOLVIS.

DESCRIPTION.

Shell yellowish white, brownish or chestnut color, subcarinate above and beneath, particularly in the young shell ; *whirls* four, striate across with five, raised, equidistant, acute lines, forming grooves between them ; *spire* concave, rather deeply impressed ; *aperture* large, embracing a considerable portion of the penultimate volution ; *within* bluish white ; *labrum* a little thickened on the inner submargin, and more acutely and rather prominently arquated above ; its basal arquation extending below the level of the base ; *animal* dark ferruginous or dusky, with very numerous, confluent, pale-yellowish points, which also extend upon the tentacula.

SYNONYMS.

P. TRIVOLVIS, S., *Amer. Ed. of Nicholson's Encyc., Article Conchology*, pl. 2, f. 2.

CERULEA, TRIUM OBBIUM, *Lister, Conch.* pl. 140, f. 46.

PETIVER, *Gazophyl.* pl. 106, f. 17.

Pl. 54.

OBSERVATIONS.

This is an inhabitant of the middle and northern States and is very common in many districts. I have found it in Pennsylvania, Newjersey, Delaware, Maryland. Falls of Niagara, Upper Canada and in the vicinity of Council Bluff on the Missouri. Dr. Eights sent me specimens from Albany, New-York, and Mr. Jessup gave several from Cayuga lake. Lister gives two pretty good figures of this shell and quotes Virginia as the native locality. Muller, Gmelin and Dillwyn, incorrectly refered to Lister's figures as *Helix albella*, but the latter author in his edition of Lister agrees with us in considering them as representations of the present species.

REFERENCE TO THE PLATE.

Fig. 2. Two views; natural size:
Pl. 54.

PLANORBIS BICARINATUS.

DESCRIPTION.

Shell yellowish-white or brownish, subearinate above and beneath; *whirls* rather more than three, irregularly wrinkled across and with minute revolving lines; *spire* profoundly impressed, obconic; *aperture* large, embracing a considerable portion of the preceding volution; *labrum*

Pl. 54.

prominently and almost acutely vaulted above ; its basal portion not extending below the level of the base ; sometimes expanded ; *animal* ferruginous, with numerous yellowish dots ; tentacula dotted and flexuous.

SYNONYMS.

P. BICARINATUS, *S.*, *Amer. Ed. of Nicholson's Encycl.*, *Article Conchology*, pl. 1, fig. 4.

HELIX ANGULATUS, *Racket, Linn. Trans.* vol. 13, p. 42, pl. 5, fig. 1.

P. BICARINATUS, *Sowerby's Genera*.

OBSERVATIONS.

It has some resemblance to the *trivolvus*, but differs in the remarkably umbilicated form of the spire ; it is also irregularly wrinkled, and is furnished with minute striæ, never visible in that species ; the superior portion of the labrum is more prominently vaulted, and the carinæ are more conspicuous. It is an inhabitant of the same extensive region as the *trivolvus*, and was obtained from Lake Huron by Mr. Racket, whose name had been previously applied in this genus by Brard. in the *Ann. du Museum*. vol. 14.

It is remarkable that Sowerby has represented this species under the name of *bicarinatus*, apparently without being aware that I had previously described it under the same name.

REFERENCE TO THE PLATE.

Fig. 3, Two views : natural size.

Pl. 54.



1



2



3



- 1 *Linneus emarginatus*, S.
 2. *ataseopium*, S.
 3. *deciduosus*, S.

LIMNEUS EMARGINATUS.

DESCRIPTION.

Shell subovate, somewhat thin, translucent, ventricose : *volumations* nearly four, convex : *suture* deeply impressed : *spire* somewhat prominent, eroded : *aperture* two thirds of the length of the shell : *columella* with the fold very deep.

SYNONYM.

L. EMARGINATUS, *S. Journ. Acad. Nat. Sc.* vol. 2, p. 170.

OBSERVATIONS.

This is a somewhat larger, and considerably more ventricose species than *L. catascopium*, S., and the undulation of the columella is much more profound. In general obesity it has a resemblance to *L. inflatus*, Brong. It was first sent to me by Mr. Aaron Stone from the lakes of Maine. Dr. Bigsby presented me with a specimen which he obtained in Upper Canada, and I have recently received several from Mr. Titian Peale, also found in Maine, one of which is double the size of the figure represented in our plate.

REFERENCE TO THE PLATE.

Fig. 1, Back and front views ; natural size.

Pl. 55.

LIMNEUS CATASCOPIUM.

DESCRIPTION.

Shell oblong-ovate, moderately thin, brownish horn colour: *whirls* four or five, wrinkled across, convex, decreasing to an acute apex; *suture* well impressed: *aperture* not much dilated, suboval: *columella* with the fold not remarkably profound.

SYNONYM.

L. CATASCOPIUM, S., *Amer. Ed. of Nicholson's Encycl. Article Conchology.*

OBSERVATIONS.

This species is abundant in the river Delaware; it is also an inhabitant of the Schuylkill, and specimens were sent me from Albany on the Hudson by Dr. Eights.

Its European analogue is the *L. peregrum*, L., from which it may be distinguished by a deeper fold of the columella and a more acute curvature of the inferior portion of the aperture. The animal is dull yellowish, sprinkled with small, often confluent, paler dots. It may be found abundantly during the recess of the tide, about the smaller streams through which the marshy grounds are drained, in company with several other shells. Like other species both of the present and other allied genera, it not only glides upon the surface of solid bodies, but proceeds along the surface of the water, the shell downward, with regular-

ity of motion and apparent ease. In this case the reverted foot of the animal is concave, and the surface of the water within its circumference is compelled to a corresponding figure.

REFERENCE TO THE PLATE.

Fig. 2, back and front views ; natural size.

Pl. 55.

LIMNEUS DECIDIOSUS.

DESCRIPTION.

Shell oblong-subconic, acute : *revolutions* five, convex, the fourth and fifth small, the second rather large : *suture* well impressed : *aperture* about equal to the length of the spire : *columella* with the fold not deeply impressed : *umbilicus* obvious, but very narrow.

SYNONYM.

L. DECIDIOSUS, S., *Journ. Acad. Nat. S.* vol. 2, p. 169.

OBSERVATIONS.

Several specimens were presented to me by Mr. Augustus Jessup who obtained them in Cayuga lake, New-York and my brother B. Say subsequently ascertained it

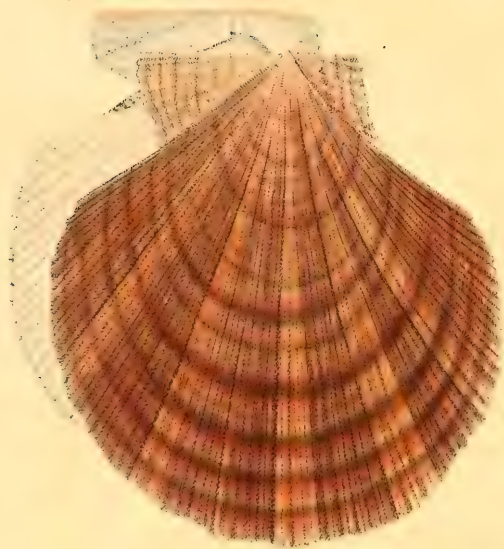
Pl. 55.

to be an inhabitant of Pennsylvania : found also near New-Harmony by Lesueur. It resembles *L. elodes*, S., but is somewhat smaller, the whorls more convex, one less in number and the fold of the columella is less deeply impressed.

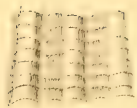
REFERENCE TO THE PLATE.

Fig. 3, Back and front views : natural size.

Pl. 55.



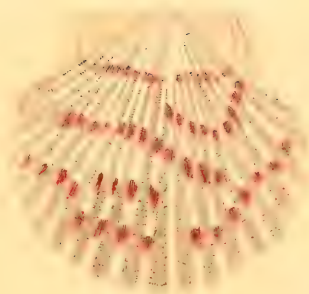
1



266



111



2

1. *Pecten islandicus*, Mull.
2. *deltoideus*, S.

PECTEN.

GENERIC CHARACTER.

Shell free, bivalve, inequivalve, thin, auriculated, equilateral; hinge margin transverse, rectilinear, connected throughout by a ligament, the cartilage being interior, fixed in a triangular fosset of each valve under the apex; apices contiguous, not elevated; muscular impression large, subcentral; pallial impression without sinus: *animal* suborbicular; foot very small, sometimes with a byssus; mantle fringed with tentacular papillæ, of which the series is interrupted somewhat regularly by shorter cylindrical processes terminating in oculiform disks; mouth large, transverse, surrounded with fringed lobes, and with a thin lamellated palp on each side; anus free; branchiæ large.

OBSERVATIONS.

The numerous species of shells which form this very beautiful and natural genus, inhabit, almost universally the margins of the marine portion of the globe, from the torrid zone to the inhospitable shores of the Polar seas. Attracted by the regularity of their form and the beauty of their colouring the ancients distinguished them as a group from all other shells. Aristotle and Pliny indicated several species, and compared them to a comb or pecten from the similitude of their ornamental rib-formed

radii. Distinguished artists have judged them worthy of representation on their canvas, and the voluptuous form of Venus is seen supported on the waves by the valve of a pecten. A beautiful species which inhabits a portion of the Pacific is deified by the natives of some of the islands in that ocean. In catholic countries they are commonly called *Saint James' shells*, and the pilgrims who visited the shrine of St. James of Compostella, in Spain, were careful to attach one or more to their dress, collected on the neighbouring shore, where they abound.

It is not a little surprising that although all the earlier writers separated these shells from others as a natural group, yet our great master Linné placed them in his genus *Ostrea*, notwithstanding the striking difference in the structure of their animals, already indicated by Lister and others. Bruguière corrected this error and restored them to the just rank of a separate genus, now universally acknowledged. The family of Pectinides to which it belongs is composed of the genera *Lima*, *Plagiostoma*, *Pedum*, *Pecten*, *Hinnite*, *Plicatula*, *Spondylus* and *Podopsis*. The latter is so nearly related to *Spondylus*, and *Plagiostoma* so closely resembles *Lima* that it has been proposed to suppress them both, which would leave but six genera. Sowerby insists that *Hinnite* cannot be a separate genus, but must be reunited to *pecten*. Of these the three first only are symmetrical, and furnished with a byssus. The apices of *Lima* are distant and the auricles are similar in both valves. The ligament in *Pedum* is inserted in a canaliform fosset on the inner face of the summits, prolonged into the interior.

The ears of *Pecten* are equal in some species and unequal in others, but generally on one of the valves one of the ears is deeply emarginated beneath, to admit the passage of the byssus, by which the animal attaches itself to foreign bodies, as represented by Reaumur in *Mem. Acad. Royale des Sc.*, 1711, pl. 2, fig. 12. Some species have a small divergent tooth on each side of the cardinal fosset in one valve, and corresponding depressions in the opposite valve. In many species are several very small tubercles or teeth, at the base of the emarginated ear extending from near the apex to a point beyond the ear.

Many of the *Mollusca* are fixed during life to one spot, others glide along with a slow and regular snail-like movement; but locomotion in this genus is rapid, and by a succession of springs or leaps. An alternate motion of opening and quickly and forceably closing the valves, enables them to rise to the surface, and they sometimes make small leaps above it in *ricochet*. When left upon the beach by the recession of the tide, they regain the water by the same action. Mr. Lesson immersed a basket of *Pectens* in the water of the sea, within about six inches of its rim. The individuals, he says, which formed the superior layer, constrained in their movements by those that were beneath, after many fruitless efforts, succeeded in leaping from their prison. No sooner did they fall upon the water, than by striking their valves rapidly together, they ran or rather skipped a few seconds upon the surface and then sunk to the bottom. In this way all the contents of the basket disappeared within fifteen minutes. Smellie repeats from Pliny that "when the sea is calm, troops, or little fleets of *Scallops*, are often observed swimming on

the surface. They raise one valve of their shell above the surface, which becomes a kind of sail, while the other remains under the water, and answers the purpose of an anchor, by steadying the animal and preventing its being overset. When an enemy approaches, they instantly shut their shells, plunge to the bottom, and the whole fleet disappears!" We have not learned that this remarkable flotilla has been observed since the time of Pliny.

Many of the species are esteemed as food and are exposed for sale in the markets. They are commonly known by the name of Scallop, and the English collectors call them *Fans* in allusion to their form. D'Herbigny says that in Italy they are called *cape sante*, in Holland *mantels*; in Languedoc *coquilles large*, in Brittany and Lower Normandy, *Kofiches*. Deshayes enumerates two hundred species, more of which are fossil than living.

PECTEN ISLANDICUS.

SPECIFIC CHARACTER.

Shell suborbicular, with numerous rays; orange or rufous, with darker concentric bands.

SYNONYMS.

OSTREA ISLANDICA, *Muller, Chemn. and Mart. Conch.* vol. 7, p. 314, and 318, pl. 65, fig. 615 and 616. *Gmel. Lam. an. sans verb.* p. 474. *Desh. Encycl. Meth.* p. 724, pl. 212, fig. 1.

OSTREA CINNABARINA, *Born. Mus.* p. 103. *Dillie. Catal.* p. 256.

PECTEN PEALEII, *Conrad. Marine Conch.* p. 12, pl. 2, f. 2. *Lister Conch.* pl. 1057, fig. 4. (The ears are represented as being equal.) *Seba Mus.* pl. 87, fig. 7. *Olaussen, Voyage*, pl. 10, fig. 1, (Huitre.)

DESCRIPTION.

Shell with very numerous, elevated, somewhat scaly radiating lines, alternately smaller, increasing in number according to the growth of the shell to upwards of an hundred; intervals reticulated; ears unequal, beneath the emarginated one are five or six little teeth; valves not very unequal, of a reddish or orange colour, with many concentric darker bands and about three outer radii; on the flatter valve the colours are much paler; edge jagged with the produced elevated lines; within the convex valve is a

arge purplish spot, sometimes occupying a considerable portion of the surface.

OBSERVATIONS.

Several fine specimens were sent to me a few years since by Dr. Harris, who obtained them from Dr. Bass of Boston; they were taken by fishermen in Chaleur's bay, New-Brunswick. Dr. Storer has not yet found it near Boston.

Mr. T. Peale presented a specimen, which he found on the coast of Maine. According to Dillwyn it has been found on the coast of Scotland, and Banks procured one from the stomach of a cod fish on the banks of Newfoundland. The late Mr. S. Coates of Philadelphia had an individual in his collection, which was drawn up on the lead by Capt. Coffin, in fifty-two fathoms water, on the eastern edge of the banks of Newfoundland in latitude 45 deg. 40 min. Linné obtained it at West Gothland, and Olafsen in Iceland.

It varies much in depth of colouring and one in my collection has the convex valve dark purplish both within and without, destitute of bands, and the opposite valve is tinted with purplish within on the upper half. Mr. Peale's specimen is more of an uniform dull orange both within and without, and with but little appearance of bands.

REFERENCE TO THE PLATE.

Fig. 1, Exterior and a portion of the interior views.

1 a. A small portion of the exterior surface magnified.

Pl 58.

PECTEN DISLOCATUS.

DESCRIPTION.

Shell suborbicular, with twenty or twenty-two elevated rounded ribs and very numerous concentric wrinkles, which are transversely rectilinear between the ribs and equidistant; longitudinal striæ none; whitish tinged with yellow or reddish, with a few narrow, transverse, interrupted and dislocated sanguineous undulated bands; auricles equal.

SYNONYM.

P. DISLOCATUS, *S. Journ. Acad. Nat. Sc.* vol. 2, p. 260.
Encyc. Meth. pl. 213, fig. 3.

OBSERVATIONS.

The specimen represented in the annexed plate I obtained on the coast of South Carolina, where it is rare. I do not know that the figure referred to above has been quoted by any author excepting Dillwyn under the *P. opercularis*, L. Mr. Conrad considers the *dislocatus* as identical with the *purpuratus*, Lam.

REFERENCE TO THE PLATE.

Fig. 2, Exterior of a valve.

2 a. A small portion of the exterior surface magnified:

Pl. 56.



1



1a



3



2

- 1. *Nassia uncinata*. S
- 2. *sibirica*. S
- 3. *acuta*. S

NASSA.

GENERIC CHARACTER.

Shell univalve, subovate, ventricose, or subturreted, acute; aperture suborbicular, emarginated and reflected at base; *labium* with a more or less dilated callosity or calcareous deposit; *labrum* striated or sulcated within; *operculum* horny; *animal* depressed; *tentacula* two, conecylindric, inflated at the eyes; eyes near the exterior middle of the *tentacula*; *proboscis* very short or obsolete; *mantle* folded into a distinct tube before; orifice of the *oviduct* situated on the right at the opening of the *branchial* cavity; *branchiæ* pectiniform, unequal, nearly parallel; *male organ* on the right side of the neck; *anus* on the right; *foot* large, prominent and angular before, attenuated behind.

OBSERVATIONS.

Deshayes informs us that Klein first used this generic term for some shells of a reticulated surface, having a fancied resemblance to the "Nasse d'osier" or willow net of fishermen. Lamark, however, first separated the present genus from the Linnean *Buccinum*, but has subsequently reunited it as a subgenus. In this arrangement many distinguished authors coincide, as Cuvier, Blainville, Ferussac (in his *Tabl. Syst.*) and Deshayes. Sowerby and some other naturalists still separate it as a distinct genus nearly

related to *Cassis*: Montfort carries the division still further, and divides the *Nassæ* into *Phos*, *Alectrion* and *Cyclops*, and Schumacher has also separated from it a few species, under the name of *Nana*, neither of which have been admitted by the best authorities; and it is not improbable that *Nassa* itself may be ultimately admitted universally as only a subgenus of *Buccinum*.

The species are numerous and are both recent and fossii. They feed on animal food and they sometimes devour the animal of some bivalve shells such as *Tellina alternata*, S. and one of the valves of this species often exhibits a neatly formed, round perforation, near the umbo, bored by a *Nassa*. These shells are sometimes smooth, but more generally with impressed striæ or grooves; others are reticulated so as to appear granulated or tuberculated.

A remarkable, depressed and even transverse species, the *neritea*, L. of which Montfort formed his genus *Cyclops*, differs so much in appearance from the usual form, that Gmelin considered it a variety of *vestiarius*, L. the type of the genus *Rotella*, and I observed it in a cabinet, arranged with species of that genus, from which it is in reality so widely distinct.

NASSA UNICINCTA.

DESCRIPTION.

Shell yellowish-white, or cinereous, subovate-conic; *whirls* with numerous revolving lines and transverse un-

dulations, the former eleven or twelve in number, with often a smaller one in the intervening spaces ; undulations about ten on the body whirl, placed at the distance of their own diameters apart, and somewhat closer on the spire ; *whirls* eight ; *apex* acute ; *body whirl* with a brown, narrow band, sometimes obsolete, interrupted by the undulations and consisting of about two spots in each of the intervening spaces ; *labrum* within with ten parallel striæ, which revolve on the inner surface of the shell ; *labium* in the middle concave, with about two obsolete striæ, and a more profound one at base.

SYNONYM.

N. UNICINCTA, S. *Journ. Acad. Nat. Sc.* vol. 5, p. 211.

OBSERVATIONS.

I am indebted to the late Mr. Stephen Elliott for this species, who found it on the coast of South Carolina. In the collection of the Academy of Natural Sciences of Philadelphia is a shell from the Antilles, resembling this, and although the striæ of the labrum are double in the former, yet it is probable that the two shells will be found to constitute one species, when more specimens shall be examined and compared.

REFERENCE TO THE PLATE.

Fig. 1, Front of the shell.

1 a. Magnified detail of a portion of the body whirl.

Pl. 57.

NASSA VIBEX.

DESCRIPTION.

Shell cancellate, ventricose, cinereous or whitish with pale reddish brown narrow bands; with two or three broad sometimes obsolete darker fascia within; *bodywhirl* with twelve thick, prominent longitudinal costæ, and about as many revolving filiform lines, which are not much elevated, and but simply crenate the costæ and labrum; *labrum* thickened both externally and internally, with about four or five teeth within; *labium* very concave, callous, with an impressed line at base; *spire* short, rapidly attenuated to an acute tip.

SYNONYM.

N. VIBEX, *S. Journ. Acad. Nat. Sc.* vol. 2, p. 231.

OBSERVATIONS.

I obtained a few specimens on our southern coast, and my brother brought me one from the coast of Newjersey. I have since received a very perfect individual from the Academy of Natural Sciences, and several specimens from Dr. Ravenel of Charleston, a gentleman who has devoted much attention to the shells of that region and to whom I am indebted for numerous interesting species.

REFERENCE TO THE PLATE.

Fig. 2, Front view of the shell.

Pl. 57.

NASSA ACUTA.

DESCRIPTION.

Shell conic-acute, whitish, cancellated so as to appear granulated; granules prominent, somewhat transverse, the longitudinal grooves a little more profound than the spiral ones which are about six in number; *spire* longer than the body whirl, slender towards the tip, acute; *suture* impressed, but not profoundly; *beak* distinguished by a depression from the body whirl, and slightly reflected; *labrum* thickened within and without and with elevated lines within, which do not attain to the edge.

SYNONYM.

N. ACUTA, *S. Journ. Acad. Nat. Sc.* vol. 2, p. 234.

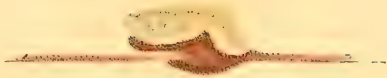
OBSERVATIONS.

This species occurs not unfrequently on our southern coasts.

REFERENCE TO THE PLATE.

Fig. 3, Front view.

Pl. 57.



Ostrea equestris S.

Sax Del

Weller sc

OSTREA.

GENERIC CHARACTER.

Shell bivalve, attached, foliaceous, inæquivalve, irregular; apices becoming very unequal by age, the position of the superior valve being gradually changed with respect to the lower valve produces a corresponding elongation of the inferior apex; superior valve depressed; inferior valve larger, concave; hinge without teeth, tripartite, the middle portion in the inferior valve being a longitudinal groove for the reception of the cartilage, corresponding with a convexity of the upper valve; ligament attached to the lateral portions; muscular impression one, large, subcentral.

Animal depressed, margins of the mantle thick, not adherent, retractile, with a double range of short and numerous tentacular filaments; labial palpi long triangular; foot none; muscle bipartite, subcentral, no prominent syphon and no byssus.

OBSERVATIONS.

Oysters are familiar to the knowledge of all those who reside in maritime districts, in almost every part of the globe. Under a rugged and irregular exterior is included an animal which supplies the most delicate food, and which has accordingly been eagerly sought for in all ages, as one of the chief luxuries of the table. Although the consump-

tion of them has been immense from the time of the Romans to the present day, yet such is the rapidity of their increase, that their abundance does not appear to be limited. It is believed that the Romans first devised the present method of improving their good qualities, by transporting them when young to favorable situations, where there is an admixture of fresh water. The shells were used by the Athenians in the performance of their right of suffrage, during the earlier periods of their government, and the sentence of condemnation or acquittal of the arraigned, was marked upon a shell; whence the word *ostracism* had its origin.

The oysters of England are held in higher estimation than those of Germany, France or Italy. We are informed that a foreign ambassador at the Hague gave a sumptuous entertainment, during which oysters were introduced, that were supposed by their color to be from England. But all who ate of them were immediately seized with violent and continued vomiting. On enquiry it was ascertained that the oysterman had tinted the common oyster with verdeggris, to obtain a high price for them as English oysters.

It is related of Apicius that he had a method of preserving oysters for a long time and that he sent them from Italy to the Emperor Trajan in Persia, as fresh as the day they were taken from the water. There is doubtless some exaggeration in this, and it is probable that his method may not have been preferable to that of our oystermen, who transport the animal in kegs to great distances. Aldrovandus and others of the earlier writers, entertained a singular and erroneous notion relative to the crab and the

Oyster. They state that the crab, in order to obtain the animal of the oyster without danger to their own claws, watch their opportunity when the shell is open, to advance without noise and cast a pebble between their shells, to prevent their closing, and then extract the animal in safety. "What craft!" exclaims the author "in animals that are destitute of reason and voice." We scarcely need to add, that the craft existed only in the imagination of a person who may have seen a crab feeding on an oyster that had fortuitously closed on a pebble.

In the acceptance of Linné the genus *Ostrea* included numerous species of various types of organization and exterior character, although Lister had already circumscribed the boundaries with correctness. From Linné's genus, Bruguière separated *Pecten*, *Perna* and *Pedum*, which are provided with a byssus. Lamarck conducted the analysis still further and formed the genera *Gryphæa*, *Lima* and *Malleus*. Of these the two latter are attached by a byssus. Lamarck gives the following characters to his family of *Ostracea*: "Ligament interior or half interior. Shell irregular, foliaceous, sometimes papyraceous." It comprehends his genera *Gryphæa*, *Ostrea*, *Vulsella*, *Placuna* and *Anomia*. The two latter have the ligament interior, and *Vulsella* which is closely allied, is imbedded in sponges, and has a cardinal callosity in each valve, extending somewhat into the interior. *Gryphæa* is now by most authors considered as a group of the present genus, distinguished from the others only by the curved umbo, and I may remark that I possess an individual of *O. virginica*, which has the incurved apex of *Gryphæa*.

In the generic character we have mentioned but one muscular impression. There is however at least one other, which is very small and situated near the hinge, for the support of the back of the animal.

OSTREA EQUESTRIS.

DESCRIPTION.

Shell small, with transverse wrinkles, and more or less deeply and angularly folded longitudinally; ovate-triangular, tinted with violaceous; lateral margins near the hinge with from six to twelve denticulations of the superior valve received into corresponding cavities of the inferior valve; *superior valve* depressed but slightly folded; *inferior valve* convex, attached by a portion of its surface, the margins elevated, folds unequal, much more profound than those of the superior valve; *hinge* very narrow, and curved laterally and abruptly.

OBSERVATIONS.

This small species is remarkable for the very abrupt lateral curvature of the beak, the continued line of which may be traced in favorable specimens on the exterior and inferior part of the umbo.

I obtained several specimens on the coast of Florida, attached to various objects, and Dr. Ravenel of Charleston

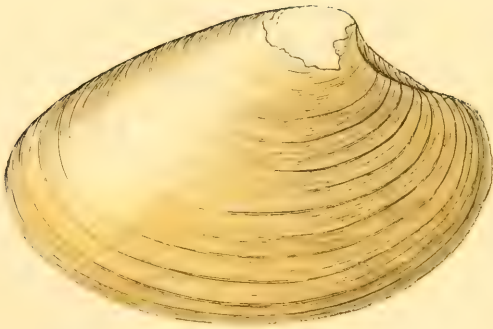
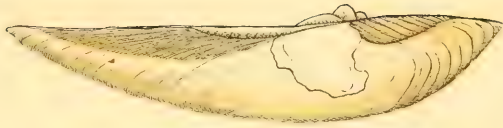
sent me the individual represented in the upper part of the plate. It is seated on a *Conopea elongata*, S. which is attached to a branch of our common *Gorgonia*. He obtained it at Sullivan's island. The tendency towards the depressed spiral form in this shell, evinced by the great obliquity of the cardinal portion, which hardly protrudes beyond the margin, would arrange it with the genus *Gryphæa* in the estimation of some authors; a group, however, which we consider as a mere subdivision of the present genus. On the lower part of the plate is represented one of many specimens which I obtained in Florida attached to various objects. It seems to be closely related to a fossil of Virginia, to which Mr. Conrad has given the name of *O. solea*, but as my specimen of that shell is imperfect and I have not his description, I cannot determine the degree of affinity; it may possibly be a variety of that species. I have also a specimen from the Antilles, and another that is reversed.

REFERENCE TO THE PLATE.

The two upper figures; natural size. Middle figures, interior of the two valves, magnified.

Lower figure, a large specimen, exterior view.

Pl. 38.



Cythera altaria S.

CYTHEREA.

GENERIC CHARACTER.

Shell bivalve, equivalve, inequilateral, suborbicular, trigonate or transverse; four cardinal teeth on one valve, three of which diverge from the summit and one is isolated, situated under the lunule; three divergent cardinal teeth upon the other valve, and a fosset at a little distance, parallel to the lunule margin; no lateral teeth.

OBSERVATIONS.

A genus of beautiful marine shells, included by Linné in the genus *Venus*, but separated by Lamarck in consequence of the middle tooth of the hinge being profoundly divided into two and the posterior tooth being distant and parallel to the lunule edge. The name of *Meretrix* which that author first applied to this genus he subsequently thought proper to reject in favor of the present designation. An allied genus the *Astarte* of Sowerby (*Crassina*, Lam.) has but two teeth in each valve. *Cyclas*, *Cyrena* and *Megadesma* have remote lateral teeth; *Cyprina* has one remote lateral tooth, and the posterior muscular impression of *Lucina* is elongated.

The species are numerous, inhabitants of almost every shore, and are imbedded in many fossil localities. The Japanese and Chinese paint and gild the innerside of *C. lusoria* with various devices and make use of it in their games of chance, whence its name.

CYTHEREA ALBARIA.

DESCRIPTION.

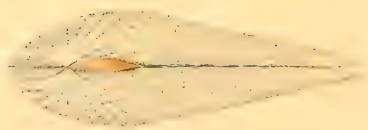
Shell transversely oblong-ovate, inequilateral, wrinkles of growth more obvious towards the margin, somewhat polished, with a slight appearance of rather broad, numerous radii; *beaks* a little prominent in consequence of the concave curvature of the posterior dorsal margin; *lunule* rather large, impressed, distinct, oblong-cordate; *posterior side* prominent; *anterior dorsal margin* slightly arcuated, depressed, towards the beaks obtusely carinated on the submargin; *anterior tip* narrowed and rounded; *within*, margin simple; *fosset of the posterior tooth* simple.

OBSERVATIONS.

This fossil shell was sent to me by the late Mr. Stephen Elliott who informed me that it was found on the banks of the Santee river, below the confluence of the Congaree and Wateree rivers in South Carolina. It is proportionally broader than *C. lilacina*, Lam., and much less broad than *C. gigantea*, Gm. of Florida. The specimen is very much thickened within on the inner side of the palleal impression, which is deeply sinuous anteriorly.

REFERENCE TO THE PLATE.

Dorsal and exterior views of a valve.



1. *Petricola pholodyermis*, Lam.
2. *Petricola pholodyermis*, Lam.

PETRICOLA.

GENERIC CHARACTER.

Shell bivalve, transverse, subtrigonal, or oblong, inequilateral, rounded behind, anteriorly narrowed and a little gaping; hinge having one or two teeth on each valve, or upon one of the valves only; pallial impression profoundly sinuous anteriorly.

Animal with two siphons, divided only at tip, unequal in length and diameter, contractile within the shell; mantle thicker on the margin and united, with a very small opening for the rudimental conic foot; mantle very small, transverse, chiefly concealed by two lips, which are extended laterally into small triangular palpi.

OBSERVATIONS.

Lamarck in his last work, united *Rupellaria* of Bellevue to his *Petricola*, in his family *Lithophaga*, which, as its name implies, contains these genera of shells, which are destitute of accessory pieces and have the remarkable property of penetrating calcareous rocks and thus establishing for themselves a permanent and secure dwelling. This family consists of three genera, *Saxicava*, *Petricola* and *Venerupis*, which are closely allied. The hinge of the former is destitute of teeth, or, in some instances has only obsolete tubercles, and the siphons of the animal are longer than in the present genus and united to the extremity in

one fleshy envelope, not retractile within the shell, but always in part exposed. *Venerupis* approaches nearer to *Venus* in the number of its teeth, which, however, are not divaricated as in the latter genus.

The means by which these animals penetrate dense calcareous substances, has been discussed by many able writers, without a satisfactory solution of the problem. Some have supposed that the operation is effected by the friction of the valves of the shell; but the valves of some species are very thin and not so dense as the substance they penetrate, and never exhibit any abrasion of their attenuated edges. Others contend that a peculiar acid or solvent must be secreted by some appropriate organ, which dissolves the rock by a chemical action; but neither anatomy nor chemistry have exhibited proofs in support of this opinion, and in this state of uncertainty we are still left to conjecture and analogy. We know that the power of penetrating calcareous substances, as well as wood and extremely dense earth, is not confined to animals of this family, but that many others bore through shells to devour the inhabitant, with too small a hole to admit any part of their own shell, and numerous other species as their whirls revolve in the growth, remove the asperities of the preceding volution as the aperture approaches them. This effect is observable in almost all rough univalve shells; some indeed cover their slight inequalities with the calcareous deposite of the labium, but whenever the inequality is prominent, it is sure to be removed at the aperture, and it would seem that the operation may possibly be, in some instances at least, effected by the constant action of the soft parts of the animal, or by the agency of absorbents acting on the

ultimate particles. This operation is by no means extraordinary, as every anatomist is aware that the bony portions of the animal frame are universally modified by the action of the softer parts. In many of the Annelides we find animals of a very soft, almost gelatinous structure, penetrating the hardest calcareous rocks, and into the substance of the thick valves of many shells. These analogies lead us to the conclusion that the Lithophaga excavate a lodgement in solid substances not by the friction or boring of their shells, but by the operation of their soft parts upon them, and not, as a distinguished naturalist has recently supposed, exclusively by maceration of their animal mucus. There are however some facts which seem to indicate the presence of a solvent. Mr. Osler has a specimen of a hard calcareous rock in which small masses of silix remain in relief on the sides of excavations formed by *Saxicava rugosa* and *Venerupis irus*; and another specimen of lime mixed with argil, in which the progress of three *Saxicavas* was arrested by a thin layer purely argillaceous.

PETRICOLA PHOLADIFORMIS.

DESCRIPTION.

Shell transversely elongated. white; *posterior side* very short; *anterior side* a little gaping; *hinge and dorsal margins* nearly parallel; *surface* longitudinally radiated with elevated lines, which, anterior to the middle are but slightly

prominent, filiform, sometimes obsolete anteriorly, and behind the middle are seven or eight fornicated costæ; concentric wrinkles more obvious and somewhat undulated on the anterior margin; *lunule* ovate-acute, simply sculptured with the concentric wrinkles; *within* radiated with strongly indented lines, which are obsolete on the anterior margin; *teeth* two in each valve, the posterior one of the right valve sometimes so deeply divided as to resemble two, and one of those of the left valve rudimental.

SYNONYMS.

- P. PHOLADIFORMIS, *Lam. An. sans Vertebr.*, vol. 5. p. 505.
Sowerby's Genera, pl. Petricola, fig. 1 and 2. *Conrad's Marine shells*, pl. 7. *Desh. Enc. Meth.* p. 747.
P. FORNICATA, *S. Journ. Acad. Nat. Sc.* vol. 2, p. 319.

OBSERVATIONS.

This shell may be truly said to be an extraordinary species, having the deceptive exterior aspect of a Pholas, and like many of that genus residing in cavities drilled out of the most compact earth, as is also sometimes the case with the *P. ochroleuca*, Lam.

It is abundant on many parts of our coast from Maine to Florida. Dr. Ravenel sent me specimens from Charleston and Dr. Storer informs me that it is common at Chelsea and Martha's Vineyard in Massachusetts.

REFERENCE TO THE PLATE.

The upper and lower figures, represent the exterior and dorsal views.

PETRICOLA DACTYLUS.

DESCRIPTION.

Shell transversely oblong-oval, white, with radiating raised striæ, which on the posterior half of the shell, from twelve to eighteen in number are larger, and approximate, those of the anterior portion of the shell filiform, the transverse striæ are undulated on the anterior part of the shell; *basal margin* arquated; *teeth* two in the right valve and one prominent one in the left.

SYNONYM.

P. DACTYLUS, *Sowerby's Genera*, pl. *Petricola*, fig. 3.

OBSERVATIONS.

For this species I am indebted to the kindness of Dr. Ravenel, who distinguished it from the preceding as a separate species. The largest specimen in my possession measures nearly two inches in breadth. It resembles the *pholadiformis* but is a more robust shell, being less transversely elongated, the base more arquated, the larger striæ are more numerous and destitute of vaulted scales and the teeth are quite different. I had distinguished it by the name of *flagellata*, but on a more close comparison with Sowerby's figure and very short description in which no locality is given, it evidently approaches that species and is probably identical.

CRYPTOSTOMA.

GENERIC CHARACTER.

Shell ear-shaped, univalve, spiral, very much depressed ; spire hardly elevated above the general curvature, lateral ; aperture very large, oblong, entire, embracing a portion of the preceding volution ; labrum simple ; volutions two or three ; columella short, spiral : nacre none ; muscular impressions two, lateral, distant ; a slightly revolving, elevated line on the inner surface ; operculum none.

Animal tongue shaped, chiefly formed by a very long, and very thick foot, which is narrower and massive before, truncated behind, canaliculated on each side and widely margining on all sides the contorted visceral mass, which is very small, slightly convex above, and covered by an interior shell ; head depressed ; mouth very small, concealed under the anterior and superior margin of the foot ; tentacula two, compressed and appendiculate at base ; a large branchial pecten ; male organ under the right tentaculum ; mantle without emargination.

OBSERVATIONS.

That able anatomist Blainville was the first to detect the difference between the animal of the much depressed species of the genus *Sigaretus*, Adans., and of those with a more elevated spire ; and notwithstanding the similarity of the shells he very judiciously separated them and form-

ed the present genus, if we may judge by the characters he has stated, for which we rely entirely on his accuracy. It differs much from *Coriocella*, Blainv., the animal of which has a very small foot and a coriaceous shell.

SPECIES.

C. PERSPECTIVUS, S.

C. MACULATUS, S.

An attempt to exhibit a synonymy of the Western, North American species of the genera Unio and Alasmodontia.

UNIO.

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 <i>U. niger</i> , Rafinesque.*
<i>cuneatus</i> , Barnes. | 14 <i>U. alatus</i> , S. Lam. B. Hildr. Desh.
<i>megapterus</i> , Raf. [Eaton.] |
| 2 <i>U. cariosus</i> , S. Lam. B.
<i>viridis</i> , Raf.
<i>siliquoides</i> , B. (var.)
<i>radiatus</i> ? Gm. | 15 <i>U. triquetter</i> , Raf.
<i>triangularis</i> , B. Hildr. Eaton
<i>cuneatus</i> , Sw.
<i>formosus</i> , Lea. (var) |
| 3 <i>U. fasciatus</i> , Raf.
<i>carinatus</i> , B. | 16 <i>U. truncatus</i> , R.
<i>undatus</i> , var. a Barnes.
<i>elegans</i> , Lea. |
| 4 <i>U. leptodon</i> , Raf.
<i>planus</i> , B.
<i>purpurescens</i> , Swainson.
<i>tenuissimus</i> , Lea. | 17 <i>U. interruptus</i> , R.
<i>brevidens</i> , Lea. |
| 5 <i>U. fragilis</i> , R. Sw. Deshayes.
<i>gracilis</i> , B. Hildr. Lea. Eaton. | 18 <i>U. lineolatus</i> , R.
<i>depressus</i> , R. (young)
<i>securis</i> , Lea. Desh. |
| 6 <i>U. nervosus</i> , R.
<i>zigzag</i> , Lea.
<i>donaciformis</i> , Lea. | 19 <i>U. ellipsarius</i> , R.
<i>ellipticus</i> , B.
<i>crassus</i> , S. |
| 7 <i>U. lævigatus</i> , R.
<i>castaneus</i> ? Lea. | 20 <i>U. fasciolaris</i> , R.
<i>crassus</i> , Wood?
<i>ponderosus</i> , Gray?
<i>mucronatus</i> , (young) B.
<i>phaseolus</i> , Hildr. S.
<i>planulatus</i> , Lea. |
| 8 <i>U. rectus</i> , Lam. Valenc. Eaton.
<i>latissimus</i> , R.
<i>prælongus</i> , B. Hildr. | 21 <i>U. verrucosus</i> , R.
<i>tuberculatus</i> , B. Hildr. |
| 9 <i>U. dilatatus</i> , R.
<i>nasutus</i> , Lam.
<i>gibbosus</i> , B. Hildreth. | 22 <i>U. flavus</i> , R.
<i>rubiginosus</i> , Lea. |
| 10 <i>U. cylindricus</i> , S. B. Hildr. [Desh.
<i>naviformis</i> , Lam. Blainv. Valenc.
<i>solenoides</i> , R. | 23 <i>U. cyphius</i> , R.
<i>ætopus</i> , Green. |
| 11 <i>U. cardium</i> , R.
<i>ventricosus</i> , B.
<i>occidens</i> , Lea.
<i>subovatus</i> , Lea. (var.)
<i>capax</i> , Green. (var.) | 24 <i>U. metanevrus</i> , R.
<i>nodosus</i> , B. Hildr. |
| 12 <i>U. ovatus</i> , S. Lam. B. Hildr. Valenc | 25 <i>U. reflexus</i> R.
<i>cornutus</i> , B. |
| 13 <i>U. fasciolus</i> , R.
<i>multiradiatus</i> , Lea. | 26 <i>U. retusus</i> , R.
<i>stapes</i> ? Lea. (var.) |
| | 27 <i>U. flexuosus</i> , R.
<i>pileus</i> , Lea.? |

* This writer and some others imitated Lamarck in giving the specific names in this genus a feminine termination, which we have changed in this table.

- 28 *U. nodulatus*, R.
pustulatus, Lea.
- 29 *U. quadrulus*, R.
rugosus, B. Hildr.
lacrymosus, Lea.
asperimus, Lea.
- 30 *U. nodulosus*, Wood, Dillw.
bullatus, R.
verrucosus, B. (var.) Valenc.
verrucosus albus, Hildr.
pustulosus, Lea.
- 31 *U. tuberculatus*, R.
verrucosus, B.
verrucosus purpureus, Hildr.
tuberculosis, Valenc.
- 32 *U. subrotundus*, R.
rotundatus? Lam.
orbiculatus, Hildr.
circulus, Lea.
lens? Lea (young var.)
- 33 *U. obliquatus*, R.
sulcatus, Lea.
- 34 *U. triangularis*, R.
ellipsis, Lea.
- 35 *U. scalenius*, R.
decisus? Lea. (var.)
- 36 *U. obovalis*, R.
ebenus, Lea.
- 37 *U. stegarius*, R.
irroratus, Lea.
- 38 *U. mytiloides*, R.
cardiacea, Say of Guerin.
pyramidatus, Lea.
- 39 *U. cuneatus*, R.
patulus, Lea.
- 40 *U. gibbosus*, R.
perplexus.
- 41 *U. costatus*, R.
peruvianus? Lam.
undulatus, B.
- 42 *U. teres*, R.
anodontoides, Lea.
- 43 *U. ohiensis*, R. (Anodonta.)
lævissimus, Lea. (Symphonota)
inflatus? Lea. (") var.
- 44 *U. latus*, R. (Anod.)
dehiscens, S.
oriens, Lea.
- 45 *U. heros*, S.
undulatus, S.
multiplicatus, Lea.
- 46 *U. lugubris*, S.
ater, Lea.
atra, Desh.
- 47 *U. interruptus*, S.
trapezoides, Lea.
- 48 *U. apiculatus*, S.
asper, Lea.
- 49 *U. lapillus*, S.
fabalis, Lea.
- 50 *U. monodontus*, S. Eaton.
soleniformis, Lea.
- 51 *U. metallicus*, S.
cuprinus, Lea.
- 52 *U. nexus*, S.
arcæformis, Lea.
- 53 *U. politus*, Nob.
subrotundus, Lea. (not Raf.)
- 54 *U. cicatricosus*, S.
varicosus, Lea.
- 55 *U. plicatus*, S. B.
rariplicatus, Lam. Blainv. Desh.
- 56 *U. parvus*, B. Eaton.
glans? Lea. (var)
- 57 *U. undatus*, B.
trigonus, Lea.
- 58 *U. subrostratus*, S.
iris, Lea.

ALASMODONTA.

- 1 *A. marginata*, S. B.
U. calceolus, Lea.
- 2 *A. costata*, R.
rugosa, B. Hildr. Eaton.
- 3 *A. complanata*, B. Hildr. Eaton.



NOTES AND SYNONYMS.

The long delay in the publication of this number has been occasioned by the protracted illness and final decease of our engraver Mr. Lyon. A young man of amiable manners and much promise in his profession.

Agreeably to our promise we now give the characters of the genus *Cryptotoma*.

Pecten varius, L. A specimen of this shell was presented to me several years since by Mr. Lesueur, as having been found by himself on the Northeastern coast of the United States. I have not learned that another has been obtained on our coast.

It seems probable that *H. irrorata*, is a variety of *H. lactea*, Mull., with which I compared it when describing it. I have a shell from Rio Janeiro, presented by Mr. T. Peale, that corresponds in all its character with the latter species. Mr. Hyde also sent me the same shells, from near Buenos Ayres, so that the *lactea*, like the *aspersa* and some of the smaller species, seems to be very widely distributed.

Melania semicarinata, Nob. pl. 47, add to the synonyms of this species, *M. zcuta*, Trans. Amer. Philos. Soc. vol. 4, N. S.

Valvata arenifera, Trans. Amer. Philos. Soc. vol. 4, N. S. In the Wissickon and other streams of water in the vicinity of Philadelphia is the larva of a common insect belonging to the Linnæan genus *Phryganea*, which constructs a spiral follicle precisely similar to the description and figure above referred to, excepting, of course, that it is destitute of operculum, which the author says, in two of his specimens was "sufficiently perfect to exhibit a striated horny structure." The operculum seems to have been imperfect in both specimens, and we fear that a mistake may have been made, and that the *V. arenifera*, is in reality only the follicle of a larva and not the production of a moluscosus animal. It would be easy to make the necessary comparison, as the follicle is well known to most of the conchologists of that city.

Caracolla helicoides, *ibid.* is variety a. of *Helix palliata* S. *H. denotata*, Fer.

Helix carolinensis, *ibid.* corresponds by description and figures with *H. apressa*, S., var. a.

Melania tuberculata, *ibid.* is a variety of *M. stygia*, S.

Melania elongata, *ibid.* seems very closely related to *M. elevata*, S., and may probably prove to be the same.

CORRECTIONS.

In the note to the observations on the genus *Alasmodonta*, on the second page, instead of "1824," read 1822, and on the cover of No. 3, instead of "1830," read 1831.

Plate 53 was inadvertently printed and colored, with Barnes' name *Unio rugosus*, instead of Rafinesque's name *U. quadrulus*, which is the true name, or the allsufficient reason that it has the priority.

No. VII.

A M E R I C A N
C O N C H O L O G Y ;

OR,

DESCRIPTIONS

OF THE

SHELLS OF NORTH AMERICA.

ILLUSTRATED BY

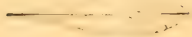
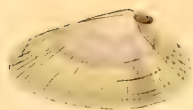
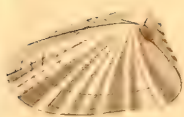
COLOURED FIGURES

FROM

ORIGINAL DRAWINGS EXECUTED FROM NATURE.

C O N T E N T S.

DONAX VARIABILIS,	PLATE 61
—— FOSSOR,	“ “
CYRENA CAROLINENSIS,	“ 62
VENUS ALVEATA,	“ 63
TELLINA BREVIFRONS,	“ 64
—— MERA,	“ “
—— TENUIS,	“ “
—— ALTERNATA,	“ 65
—— POLITA,	“ “
—— TENTA,	“ “
ARCA ZEBRA,	“ 66
UNIO TRUNCATUS,	“ 67
—— LINEOLATUS,	“ 68



1. *Donax variabilis*. S.

2. *Donax* *...*

DONAX VARIABILIS.

DESCRIPTION.

1. *D. variabilis*. Shell triangular; anterior margin obliquely truncated, cordate, suture a little convex; posterior hinge margin nearly rectilinear, suture indented; base a little prominent, beyond a regular curve, near the middle; valves longitudinally striated with numerous, equal, parallel, regular, impressed lines, hardly visible to the unassisted eye, and obsolete on the posterior margin; basal edge within crenate.

SYNONYM.

DONAX VARIABILIS, Nob. *Jour. Acad. Nat. Sciences*, vol. ii. p. 305.

OBSERVATIONS.

Inhabits the coasts of Georgia and East Florida.

Cabinet of the Academy and Philadelphia Museum.

Varies very much in colour, and is a very pretty shell. Its usual varieties are red, white, yellow, or elegantly radiated with dilated reddish-brown lines, upon a white or yellow ground; lines are purpurescent within the shell. A very common shell; I found it more particularly numerous on the beach of Cumberland island, where, in favourable situations, at the recess of the tide, it may be taken up in handfuls, without any intermixture of sand. It is very distinct from *D. rugosus*, but approaches much nearer to *D. trunculus*, from which it is distinguished by being more abruptly truncated before, smaller, and the longitudinal lines are more indented. I have no doubt but this species has been regarded, by authors, as the same with *trunculus*; if so, judging by an individual of that species in the collection of the Academy, at least two distinct species have been confounded together under that common name.

Pl. 61—Fig. 1.

DONAX FOSSOR.

DESCRIPTION.

2. *D. fossor*. Shell subtriangular; anterior margin short and rounded; posterior hinge slope rectilinear; base very slightly prominent beyond a regular curve at the middle; valves longitudinally striated with numerous, equal, parallel, regular, impressed lines, not visible to the unassisted eye, and obsolete on the posterior margin; basal edge within crenate; colour pale-livid, with two longitudinal whitish rays before the middle, both within and without.

Var. a, Whitish. Var. b, Yellowish.

SYNONYM.

DONAX FOSSOR, *Nob. Jour. Acad. Nat. Sciences*, vol. ii. p. 306.

OBSERVATIONS.

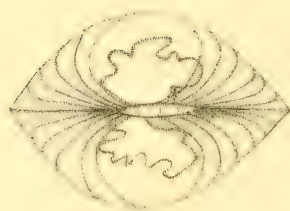
Inhabits the coast of New Jersey and Maryland.

Cabinet of the Academy and Philadelphia Museum.

Very numerous under the surface of the sand, which is exposed at the recess of the tide. A wave by removing the surface of the sand, exposes a great many individuals to view; at its refluxence, these immediately penetrate the sand, and before the recurrence of the surge they are concealed.

They are preyed upon by several shore birds and fish: the drum (*Sciæna chromis*) and sheep's-head, (*Sparus ovicephalus*) are sometimes caught in the surf in considerable numbers, whilst in pursuit of them.

Pl. 61—Fig. 2.



Cyprina caudiniensis

02

CYRENA CAROLINENSIS.

DESCRIPTION.

Shell cordate, turgid, brown on the disks, with a yellowish or greenish margin and submargin; surface with numerous membranaceous wrinkles; umbo much eroded; beaks distant; two of the primary teeth canaliculate at tip.

SYNONYMS.

CYRENA CAROLINENSIS, *Say*. *Nicholson's Encyclopedia*,
(3d American edition,) article *Conchology*.

CYCLAS CAROLINENSIS, *Bosc*.

OBSERVATIONS.

Inhabits the rivers of South Carolina and Georgia, but is not found so far north as New Jersey. We found it in plenty near Charleston, South Carolina, and in St. John's river, Florida.—*Say*.

It inhabits Mobile Bay, in the vicinity of Mobile, Alabama, and occurs fossil in the Newer Pliocene of North Carolina, near Newbern.—*Editor*.

VENUS ALVEATA.

DESCRIPTION.

Shell ventricose; valves very thick, subtriangular, cordate, with eight remarkably thick, very prominent, much recurved, transverse approximate ribs, of an uniform thickness throughout, terminating abruptly at their anterior slope, which is much impressed; lunule cordate, included by an impressed line.

SYNONYMS.

VENUS ALVEATA, *Conrad. Jour. Acad. Nat. Sc.*, vol. vi. p. 264, pl. xi., fig. 14, 15.

VENUS PAPHIA? *Lam. Anim. sans. Vert.*, vol. v. p. 608.

OBSERVATIONS.

For an opportunity of examining this interesting species I am indebted to Dr. Ravenel, who informs me that he obtained it on Sullivan's Island, near Charleston, S. C. It differs from *V. paphia*, Linn., in not having the ribs abruptly smaller before they reach the anterior slope; and it does not agree with the figure in the *Encyc. Meth.* of *V. fasciata*. Although probably recent, the specimen has very much the appearance of a fossil, and this circumstance, combined with its character, leads me to believe that it is the *V. paphia*, Lam., but certainly not that of Linné.*

REFERENCE TO THE PLATE.

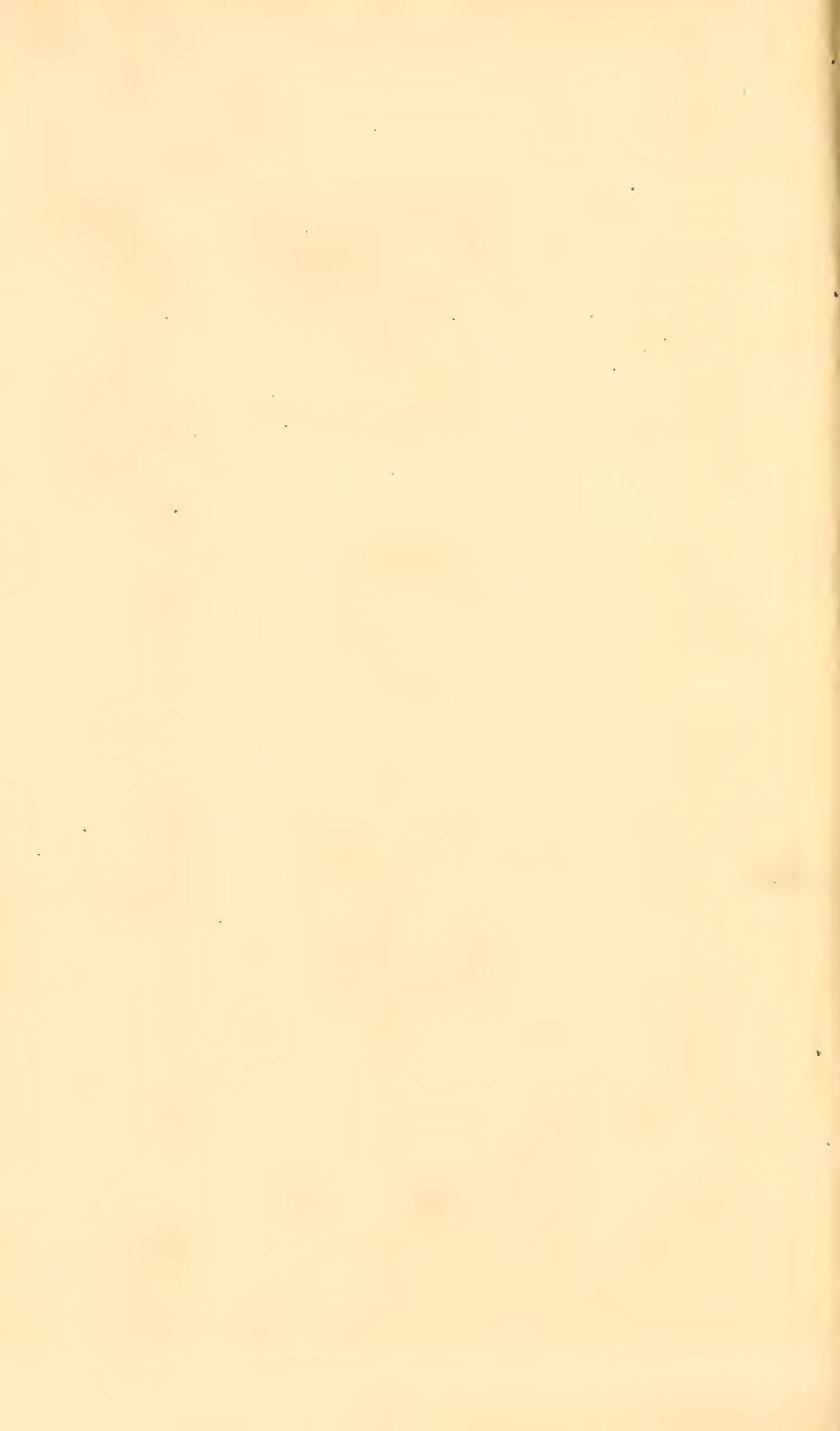
Three views of the shell.

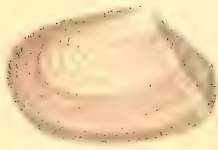
Pl. 63.

* Having examined the specimens sent to Mr. Say, I find them to be fossil shells. The species is characteristic of the Older Pliocene formation, and occurs at Wilmington, N. C.; St. Mary's river, Maryland; and City Point, Virginia.—*Ed.*

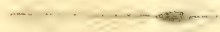


Venus abricata, Conrad.

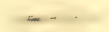




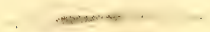
1



2



3



1 *Tellina lucidioris* S.
2 " *tenuis* S.

64

Mrs Say del.

TELLINA BREVIFRONS.

SPECIFIC CHARACTER.

Ovate, white, tinged with yellowish; anterior side very short.

DESCRIPTION.

Shell thin and fragile, not very convex, white, tinged, particularly on the umbo, with pale dull fulvous; with transverse slender striæ, and in a particular light obsolete longitudinal striæ are visible; beaks much anterior to the middle, forming an angle in consequence of the anterior and posterior hinge margins being rectilinear to a considerable distance, the latter parallel to the base; anterior side short and abrupt, rounded at tip, and with a sub-marginal undulation; posterior side more than as long again as the anterior, rounded at tip; *within* much more deeply coloured with fulvous; cardinal teeth, two in the left valve and one in the right valve; lateral teeth none.

OBSERVATIONS.

Inhabits the coast of South Carolina.

The outline of this shell corresponds with *T. donacina*, Lin., but it is more convex, and not radiated with reddish. Dr. Ravenel informs me that it is very rare. He obtained but a single specimen, which he obligingly sent me for examination. It also resembles *T. decora*, Say, and may readily be mistaken for it, but is altogether destitute of oblique striæ and rosaceous radiations.

Pl. 64—Fig. 1.

TELLINA MERA.

SPECIFIC CHARACTER.

Ovate-orbicular, transversely striated, hinge anterior to the middle, bidentate, with a lateral tooth in one valve.

DESCRIPTION.

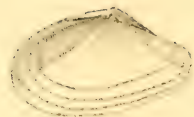
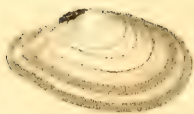
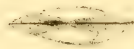
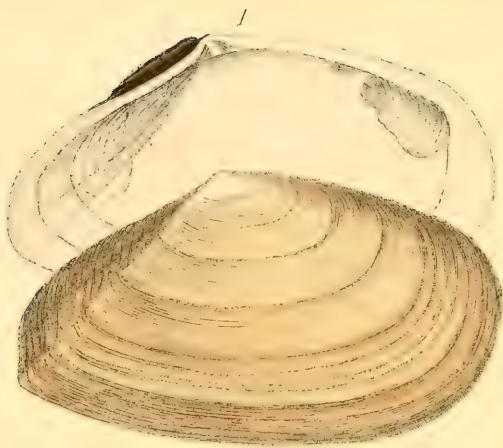
Shell small, thin, white, not very convex, somewhat regularly striated transversely; beaks forming a rather prominent angle; anterior side with an obvious undulation, and rectilinear as far as double the length of the ligament; at tip rounded; ligament rufous; posterior side nearly rectilinear half the distance from the beaks to the middle of the tip, which is regularly and obtusely rounded; basal margin obtusely and regularly arquated; hinge with two primary teeth in each valve; posterior tooth small and triangular; anterior tooth thicker, obtuse, and with an impressed line on its summit; a single prominent lateral triangular tooth in the left valve; sinus of the palleal impression remarkably large, in its posterior curvature almost confluent with the tip of the muscular impression.

OBSERVATIONS.

Inhabits the coast of South Carolina.—*Dr. Ravenel.*

In a particular light it has a slight appearance of longitudinal lines.

Pl. 64—Fig. 2.



65

- 1. *Tollina - alternata*
- 2. - - *polita*
- 3. - - *lenta*

TELLINA ALTERNATA.

DESCRIPTION.

Shell compressed, oblong, narrowed and angulated before; white; numerous parallel, equal, equidistant, impressed concentric lines, which on the anterior margin are alternately obsolete; interstitial spaces flat; *within* tinged with yellow; a callous line, which is sometimes obsolete, passes from behind the hinge to the inner margin of the posterior cicatrix, and another from before the hinge to the inner margin of the anterior cicatrix; anterior hinge tooth emarginate; posterior lamellar tooth very near the cardinal teeth, so as to appear like a primary tooth, that of the right valve wanting; anterior lamellar tooth at the extremity of the ligament; anterior hinge slope declining in a somewhat concave line to an obliquely truncated tip.

SYNONYM.

TELLINA ALTERNATA, *Say. Jour. Acad. Nat. Sc.*, vol. ii. p. 275.

OBSERVATIONS.

Inhabits the coasts of South Carolina, Georgia and Florida.

Rather a common shell, beautifully and very regularly striated. When cast upon the beach, one of the valves is very commonly perforated near the hinge. This operation, it would seem, is most frequently performed upon the left valve, as, of ten specimens thus mutilated, two only were perforated upon the right valve. It varies in being destitute of the yellow colour within. It is proba-

bly allied to *T. punicea*, but I have never found it so far north as the state of New Jersey. It is much more elongated than the latter, the striæ are far more distinct, and it is entirely and always destitute of the rose coloured bands and lines, such as are represented in Born's figure of that shell. It cannot be the *T. angulosa* of Gmelin, as that species is described to be suborbicular, and to have the lateral teeth remote, whereas the *alternata* has but one of the lateral teeth remote.

It is abundant in the Upper Tertiary or Newer Pliocene beds near Newbern, North Carolina.—*Editor*.

Pl. 65—Fig. 1.

TELLINA POLITA.

DESCRIPTION.

Shell transversely subtriangular, minutely wrinkled concentrically, white, immaculate; *anterior* margin rather shorter than the posterior one, the hinge slope declining, in a very slightly arquated line, to a subacute termination; *basal margin* nearly rectilinear from behind the middle to the anterior termination; a lateral tooth behind the primary teeth.

SYNONYM.

TELLINA POLITA, *Nob.* *Jour. Acad. Nat. Sc.* vol. ii. p. 276.

OBSERVATION.

Not uncommon on the beach of South Carolina and East Florida.

Pl. 65—Fig. 2.

TELLINA TENTA.

SPECIFIC CHARACTER.

Rostrum curved to the left; no lateral teeth.

DESCRIPTION.

Shell transversely oblong-ovate, fragile, a little compressed, white, with a tinge of dull yellowish towards the umbones; wrinkles of growth not very prominent, but more obvious on the anterior side; beaks a little before the middle, not much elevated; anterior side narrowed, curved to the left, at tip truncated or obviously emarginate; umbonial slope hardly elevated; within with an obsolete appearance of radiating lines; lateral teeth none; cardinal teeth in the left valve prominent; a tinge of dull yellowish on the disk as on the exterior.

OBSERVATIONS.

Inhabits the coast of South Carolina.—*Dr. Ravenel.*

The proportion of length and breadth is nearly that of *Tellina nitida*, Poli, but the beaks are rather more anterior. The anterior side is a little more obtuse than that of *T. pulchella*, Lam., and a little more curved to the left nearer the tip. It evidently resembles *T. depressa*, Gmelin, but I cannot perceive any lateral tooth.

Pl. 65—Fig. 3.

TELLINA TENUIS.

SPECIFIC CHARACTER.

Shell oval triangular, irregularly striate concentrically; each valve with two teeth, and one of them with lateral teeth.

SYNONYMS.

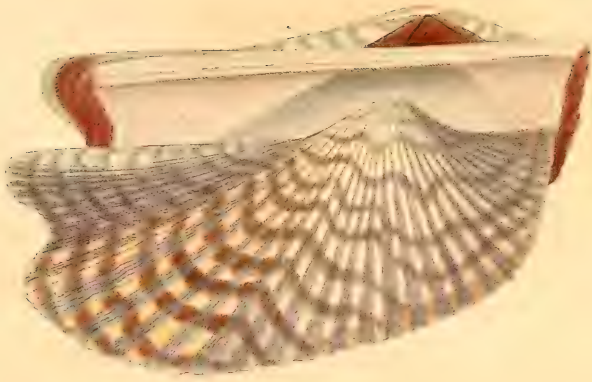
T. TENUIS, Da Costa, Brit. Conch., p. 210. Chemn. vi. p. 124, tab. 12, fig. 117. Donovan i. tab. 19, three lower figures. Penn. Brit. Zool. iv. p. 180, tab. 51, fig. 2. Mont. Test. Brit., p. 59. Turton Brit. Fauna, p. 150. Wood Conch., p. 155, tab. 44, figs. 3 and 4. Conch. Dict., p. 169. Conch. Ins. Brit., p. 107.

T. LEVIS, List. Conch., t. 405, fig. 251.

OBSERVATIONS.

There may frequently be observed some very minute and fine longitudinal white lines, from which circumstance it has been often mistaken for *T. striata*; but the lateral teeth will at all times distinguish it, there being two small lateral teeth in one of the valves only. We believe that the *T. balaustina* and *T. planata* of Linnæus are among the numerous varieties of this species.—(*Turton.*)

I have copied the above from Turton's "Bivalves of the British Islands," believing our shell to be the *tenuis* of authors. Mr. Say, unfortunately, has left no description of this species, which was sent to him by Professor Ravenel of Charleston, who found it on the shore of Sullivan's Island.—*Ed.*



Arca zebra, Sw.

ARCA ZEBRA.

SPECIFIC CHARACTER.

Margins angulated; valves marked with simple uniform and regular grooves radiating from the umbones; shell transversely and obliquely striped with brown.

SYNONYM.

ARCA ZEBRA, *Swainson. Zool. Illus.*, No. 26, pl. 118.

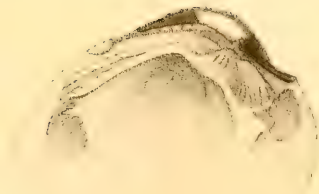
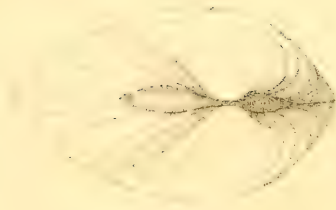
OBSERVATIONS.

Inhabits the coast of the peninsula of Florida.

Mr. Swainson has separated this species from the *Arca Novæ* of authors, and refers it to his subgenus *Byssoarca*. He observes: "The animals of these shells affix themselves to other bodies by a particular muscle, which is protruded through the gaping part of the valves; they also adhere, when young, by the byssiform epidermis which covers the exterior. A specimen now before us, which we procured in the bay of Naples, exemplifies this singular property. The present species is not uncommon in the West Indies, and has been sent to us from Jamaica. Like all others of this particular type, it is almost constantly covered with coralline substances."

REFERENCE TO THE PLATE.

Interior, exterior and dorsal views.
Pl. 66.



17

Enio truncatus Raf.

John Say del.

UNIO TRUNCATUS.

DESCRIPTION.

Shell triangular, very convex, gaping a little at the posterior extremity; *posterior lunule* distinct; anterior margin very much flattened, forming a right angle with the disk; *disk* with an indented groove on the posterior side, extending from beak to base; *anterior tip* truncated; *ligament slope* slightly grooved; *basal margin* dilated in the middle; *anterior margin* slightly retuse; epidermis olive-yellow, radiate with green, interrupted into short lines and spots generally sagittate; *within* white or rose-colour; *cardinal teeth* large and prominent; *muscular impressions* small; *anterior impression* oval, impressed.

SYNONYMS.

UNIO TRUNCATA, Raf. *Ann. gen. des Sc. Phys.*, vol. v. Poulson's translation, p. 31.

U. ELEGANS, Lea. *Trans. Amer. Phil. Soc.*, new series, vol. iv. p. 83, pl. ix. fig. 13.

OBSERVATION.

This shell inhabits the Wabash, Scioto, Ohio, and other western rivers.

Pl. 67.

UNIO LINEOLATUS.

SPECIFIC CHARACTER.

Subtriangular, disk and umbo much depressed; beaks simple, prominent.

SYNONYMS.

U. LINEOLATA; U. DEPRESSA, (young,) Raf. *Ann. gen. des Sc. Phys.*, vol. v. Mr. Poulson's translation, p. 35.

U. SECURIS, Lea. *Trans. Amer. Phil. Soc.*, new series, vol. iii. p. 437, pl. xi. fig. 17.

DESCRIPTION.

Shell subtriangular, surface brownish-yellow, with numerous slender green radii and broader distant radii, frequently composed of series of angular dark spots, with pale intervening spaces; disk and umbo much compressed; beaks simple, prominent, in the young acute at the apex; anterior side subcuneiform; anterior margin regularly but slightly arquated, very much flattened, forming a right angle with the disks; posterior side short, obtusely rounded at tip; within white; cardinal teeth very large, profoundly sulcated and striated; lateral teeth inclining to be double in each valve.

OBSERVATION.

This species is common in the Ohio, Alabama, and Black Warrior rivers.

Pl. 68.



Tridacna striata, Linn.



APPENDIX.

Among Mr. Say's manuscripts I find the following observation and description of a new species of Chiton, which it is deemed proper to publish at the present opportunity.—*Ed.*

VENUS CINGENDA, *Dillw.*

V. CANCELLATA, *Lam.*

Having obtained numerous specimens of this variable shell, I find that my *V. elevata* must be placed as a variety of it.

CHITON, *L.*

C. apiculatus, valves eight; dorsal triangles with series of elevated points; lateral triangles with scattered elevated points.

Inhabits the coast of South Carolina.

Whitish; oval-oblong, convex, subcarinated; eight valved; anterior valve with numerous, separate, elevated, equal, sub-equidistant points; the six following valves have on their dorsal triangles from twenty to thirty longitudinal series of equal, elevated, approximate rounded points; their lateral triangles with elevated points, as on the anterior valve; posterior valve at base like the dorsal triangles, and its broad margin with the points like those of the anterior valve.

Length nearly half an inch.

This very pretty species was sent to me from Charleston by Dr. Ravenel, of that city, who informs me that it is so rare that he has not found more than this specimen, which he has been so liberal as to present to me. The regular, longitudinal series of elevations on the dorsal triangles, resemble so many minute strings of pearl.







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