

continually attracted thither, and there congealed and accumulated—the inclined planes on which they alight, become at length inadequate to the support of their mass and weight, they descend to lower levels—they occupy the vale below, whence they never are removed, being incessantly renewed from the same permanent source of supply, by the same unalterable process, as rapidly as any portion of them yields to the temperature below; or even more rapidly in cases where they are observed to be increasing.

ART. X.—*Mrs. Sheppard of Woodfield on the recent shells which characterize Quebec and its environs.*

At the earnest solicitation of a member of the Society of Arts and Sciences,* I have endeavoured to compile a list of such few shells, inhabiting the grounds and waters in the neighbourhood of Quebec, as have come within my observation:

In making this list the system of De Lamarek has been followed; it contains perhaps but a small proportion of the Shells which may yet be found by more vigilant searchers; but imperfect as it is, it possibly may have some interest with the Society, if it be but to induce others to prosecute this interesting branch of natural history.

De Lamarek considers Conchology as part of the main body of Zoology; he begins with Infusoria, and goes regularly step, by step, up the ladder of life, which he divides into animals invertebrate and vertebrate; he has placed those animals with a testaceous covering, in the ninth, tenth, eleventh and twelfth Classes of his “*Animaux sans vertèbres.*”

* To the writer of which a silver medal was adjudged. This article was kindly communicated by the society to which it was presented, to the Literary and Historical Society,

Class the ninth, ANNULATA:

The two first orders have animals without shells (we have a few of those.) Testaceous animals commence in De Lamarcks third order:

ANNULATA SEDENTARIA.

AMPHITRITEA, third family.

Sabellaria.

“Tubes many, composed of sand and fragments of shells aggregated into a common mass.”

“Animal Subcylindrical, with three rows on each side of shining palce, mouth fissure shaped placed below the exterior palea:”

Sabellaria——? “Tubes brittle, summits jagged, orifices large rather angular.

This shell is met with about 100 miles below Quebec, covering other shells &c. Of the species I am uncertain, De Lamarck says there are several, he describes but two; this does not appear to be either of them. The tubes are very loosely cemented together, white, thin and, semitranslucent:

In the tenth class CIRRIPEDA, none have as yet been discovered here, nor do I know whether any of them inhabit this country, there probably may be some in, or near the gulf:

The eleventh class affords us several genera.

First order CONCHIFERA BIMUSCULOSA.

SOLENACEA, third family.

The following genus inhabits Rimouski, but having only met with an imperfect specimen, the species could not be fixed.

Solen: Shell bivalve, equivalve, elongated, gaping at both ends, beaks small, cardinal teeth small, sometimes none, ligament external near the hinge.

MYACEA, fourth family.

Mya. “Shell gaping at both ends, ligament short, internal; one large perpendicular tooth on one valve, a pit on the other.

Animal

Animal with a compressed thick foot at one extremity, at the other sending forth a large tube."

These shells are readily distinguished from *Unio*, which Linnæus had placed in the same genus, by their broad perpendicular tooth.

Mya arenaria. "Shell ovate, anterior side rounded, cardinal tooth denticulated:" inhabits near the mouth of this river—the large tooth is very sharp at the summit, the shell is of a whitish colour tinged with yellow or red.

CONCHE, ninth family.

Venus. "Shell equivalve, inequilateral, transverse or orbicular, three cardinal teeth on each valve, approximate at their base, lateral ones spreading obliquely open towards the summit, ligament external."

"The animal is possessed of two tubes which it often sends out beyond the shell."

Venus mercenaria. "Shell solid obliquely cordate, transversely striate, and sulcate; within white, with a large violet spot on the anterior side." This species is sometimes brought up with oysters from the gulf; it is a coarse heavy shell of a grayish colour, not in the least pretty, although belonging to the most beautiful family of the Conchifera.

NAIADA thirteenth family.

As the Naiada are all river shells, it is probable there may be several of them indogenous.

Unio. "Shell transverse, equivalve, inequilateral; beaks decorticated, hinge with two teeth on each valve, one cardinal short, mostly lobed, or bifid, substriated; the other elongated compressed; lateral extending under the corselet, along the lower margin:" this genus formed by Bruguiere out of some of the Linnæan Myas, is by DeLanark removed several families from them.

These shells as DeLanark observes, run one into the other to such a degree, that the species are rendered very uncertain.

We have three different ones here, perhaps *unio sinuata*, *radiata* and *nanca*; but it is almost impossible to decide without figures, or very elaborate descriptions, neither of which are to be had; could either be met with, the species of this intricate genus might perhaps be decided upon with some degree of certainty. Swainson asserts, in his "Zoological Illustrations" that the species cannot be fixed without both.

Unio sinuata, "shell ovate, oblong, compressed, sinuous; on the upper part thick, cardinal tooth lobed, and striated." Inhabits the Island of Orleans, not very common. I have sometimes found very small pearls in this species; it is a coarse large mother of pearl shell with a brown epidermis.

Unio radiata, "shell obovate, convex, rather depressed, thin, transversely striated, broader on the anterior side than on the other; epidermis yellow, longitudinally rayed."

Found on the beach at the Island of Orleans; the shell is much thicker than those from Saratoga, and is pink or flesh colour within.

Unio nanca, "shell transversely oblong, beaks depressed, lateral; tooth deeply canaliculated."

This species, much more common than either of the foregoing is likewise an inhabitant of the Island of Orleans; the shell is violet or clay colour within, and is rarely rayed, it is much lengthened the transverse way, and covered with a black or dark brown epidermis, under which is mother of pearl.

SECOND ORDER, UNIMUSCULOSA,

MYTELACEA, SECOND FAMILY.

Two of these are common in the salt water of this river.

Modiola,

Shell subtransverse, equivalve, regular, posterior side very short, beaks almost lateral, depressed on the short side.—Hinge without teeth, lateral, linear; ligament cardinal, al-

most wholly internal ; one sublateral, muscular, elongated impression, axe shaped."

Modiola plicatula, "shell oblong, towards the outside obliquely dilated ; longitudinally sulcated ; inside edge waved."

Common near the Gulf, likewise met with higher up the river ; the shell is white, covered with a brown, or yellow epidermis.

Mytelus.

"Shell longitudinal, equivalve, regular, pointed at the base, fixed by a byssus ; beaks almost strait, terminal pointed.—Hinge lateral, usually without teeth, ligament marginal, sub-internal. One large clavate muscular impression."

The *Modiolæ* formerly belonged to this genus, but were removed from it by Bruguiere.

Mytelus borealis, "Shell oblong, whitish blue, epidermis black, beaks incumbent divaricate." Inhabits several parts of the St. Lawrence : the shell is of a solid and flinty texture ; the beaks rather one sided. There is likewise a variety of this species found below Quebec, more pearly and sometimes obsoletely rayed, with the inside white and shining : both these shells are often brought up with Oysters,

OSTRACEA, FIFTH FAMILY:

Few of this family are to be met with here, the only one which has come within my observation is the well known

Ostrea.

"Shell adhering, inequivalve, irregular ; beaks distant, becoming very unequal by age. Hinge without teeth ; ligament internal, or partly so. Pit and beaks of the lower valve increasing by age, sometimes to a great length." The animals remain fixed to maritime bodies, and have no other motion than that of opening and shutting their valves to receive whatever nourishment the waters may bring them.

Ostrea canadensis, "shell elongated rather bent, broadish above, lamelated, thick, inferior valve convex." Inhabits the mouth of this river, sometimes grows to the length of eight inches.

TWELFTH CLASS MULLUSCA.
SECOND ORDER GASTEROPODA.

CALYPTRACIANA, FOURTH FAMILY.

Crepidula.

“Shell oblong, concave within, spire very much inclined towards the margin ; aperture partly closed by an horizontal lamina.”

“Animal, head forked anteriorly, two conical tentacula, with eyes at their base, mouth simple without jaws, foot very small.”

Crepidula fornicata: “Shell oval, posteriorly obliquely curved ; posterior lip concave.”

This species inhabits the Gulf ; is frequently brought up with oysters—the shell is shaped like a little *sabot*, it is of a gray colour, often streaked with brown ; within shining, and marbled with chesnut, the lamina is white, thin and semitransparent.

Third Order TRACHELIPODA.

COLEMACEA, Fifth Family.

Three of these are common here ; they are land animals.

Helix.

“Shell orbicular, convex, or conoidal ; spire very little elevated ; aperture entire, wider than long, oblique and near the axis of the shell ; margins disunited by the projection of the penultimate whorl.”

The animals live on vegetables, and remain dormant during the winter.

There are two species about Quebec ; they do not appear to be among those described in “*Les Animaux sans vertébrés* ;” but the species being so numerous, and De Lamarck having only described those in his cabinet, render it uncertain whether they may be new or not. The first, perhaps a variety of

Helix hortensis. “Shell imperforate ; spire flat ; epidermis yellow whitish ; whorl transversely striated ; lip

within white, margins reflected." Found on the bank near the plains of Abraham. Common in spring.

Helix———? Shell thin, conoidal, perforated; spire very flat; margin of the lip reflected.

Common in the same place with the above; it is a much less shell, with a brown epidermis; the penultimate whorl has an elevated white ridge near the aperture, which appears to be some remains of the last year's lip,

Corocolla.

"Shell orbicular, rather convex, or conoidal; on the upper part, with a sharp angular periphery. Aperture transverse, contiguous to the axis of the shell, right lip subangular, often toothed on the lower part."

De Lamarck formed this genus merely to reduce the number of species in that of *Helix*: they are, however, rather too closely allied. The species we have here, seems to be a connecting link; but De Lamarck, would, I think, range it under *corocolla*, and until it be ascertained to have been previously described might be called

Corocolla dubia. Shell orbicular, largely umbelicate; spire flat, whorls transversely striated, horn colour, spotted with brown. Common in the spring on the bank with the two foregoing shells; it is rather a pretty shell, often variegated with white and brown.

Succinea.

"Shell ovate, conical; aperture capacious; right margin sharp, not reflected, united at the lower part to a smooth acute columella. The animals have four tentacula, two of which have eyes on their summit." They inhabit land but are generally found near water.

Succinea amphibia, "shell ovate, thin, pellucid, yellowish; spire short, dilated at the lower part, subvertical." Inhabits gardens on the St. Louis road; it is horn coloured, and very transparent.

LYMNÆANA, Second Family.

There are some species here of all the genera belonging to this family.

Planorbis,

“Shell discoidal, all the whorls visible on both sides; aperture distant from the axis of the shell; margin not reflected. They are fresh water animals, have two tentacula with eyes at their base.”

Planorbis spirorbis, “one side flat, the other subumbelicated, reverse; horn coloured,”

Found in abundance in the water near Etchemin.

Planorbis alba? “Shell umbelicated on both sides; upper part of whorls flat, lower convex; aperture wide and angular.”

Found with the foregoing, but not so common, it is the *Helix alba* of Linnæus, but is not among DeLamarcks species.

Physa.

“Shell convolute, oval or oblong; spire projecting; aperture longitudinal, contracted above; columella twisted, right margin acute projecting beyond the plane of the aperture.”

They are fresh water animals; have two flattened tentacula with two eyes at their base.

“*Physa fontinalis*, reverse, oval, transparent smooth, horn coloured: spire short, subacute.”

Not very common, but is sometimes met with on the beach at the Island of Orleans.

Physa subopaca. “Shell reverse, oval, semipellucid, grayish yellow; spire short, acute.”

This species is rather more common than the foregoing, they are often found together at the Island; it resembles *fontinalis*, but is not so transparent. It is yellow without, and white within.

The third and last genus of this family is

Lymnæa.

“Shell oblong, often turrated, generally thin; spire projecting, aperture entire, longitudinal; margin sharp; columella twisted obliquely, with the lip passing over it, forming a very oblique fold.”

These animals inhabit swampy ground or fresh water.

Lymnæa stagnalis. “Shell acute, ovate, ventricose, thin, transparent, longitudinally substriated, reddish gray; last whorl subangular above; spire subulate; aperture large; lip broad.” Found abundantly at Sorel. The spire is often black and very long; lower part of the shell generally horn coloured.

Lymnæa palustris. “Shell ovate, oblong, longitudinally, and finely striated; spire conical, rather acute, aperture ovate.”

Found in ponds formed by the melted snow in the spring near Tower No. 1. This shell is not so large or thin as *stagnalis*; it is generally ash coloured.

PERISTOMIANA, Fourth Family.

Paludina.

“Shell conoidal, whorls rounded or convex, modifying the spiral cavity; aperture longitudinal, angular at the summit; the two margins united, acute, never turned out.” Some of these animals inhabit the sea or mouths of rivers, but the greater part live in fresh water. There are two species here, neither of them, I think, described by De Lamarck: they are both small shells.

Paludina ———? Shell white; epidermis olive; spire the length of the aperture; last whorl inflated.

Inhabits the Island of Orleans.

Paludina ———? Shell pale buff; spire longer than the aperture; top obtuse.

Found with the foregoing on the beach at the Island: the whorls are not so much inflated as those of this genus generally

rally are, but I think it would not range under any other : it has bluish bands of gray round the top of the whorls.

NERITACEA, Fifth Family.

Natica.

“ Shell subglobular umbilicated ; aperture entire semi-circular ; left lip oblique, not crenate, callous ; umbilicus often covered by the callus.”

Natica magdalena: Shell nearly orbicular, smooth, finely striated, grayish white ; spire black ; callus obsolete. Inhabits the Magdalen Islands : this species is not among De Lamarck's: neither is it described in any book of reference, that I have had an opportunity of seeing : it may be a new species, and is here designated as above, merely from its having been found in those islands.

PURPURIFERA, 13th Family.

The animals of this family, De Lamarck informs us, secrete that colouring matter which formed the beautiful purple of the Romans ; it prevails most in the genus *Purpura*.

Buccinum.

“ Shell oval, conical, aperture longitudinal, with a notch at the base, but no canal ; columella not flattened, turgid at the upper part.”

These animals inhabit the sea shore; they are not in general large : the following species is one of the largest ; about two inches long, it is not described by De Lamarck,

Buccinum ———? Shell oval, inflated, longitudinally ribbed ; ribs sometimes obsolete ; aperture grayish purple.

Inhabits Bic, generally surrounded with scarcely perceptible striæ, and has a chalky appearance, but not unfrequently the latter is wanting, or as if it were rubbed off, allowing large brown and blue nebulous spots to appear : sometimes the shell is of a yellowish colour, with the transverse striæ distinctly visible ; the aperture varies from purple to yellow and white.