

ART. XIII. *Monograph of the CONES of North America, including three new species—By JACOB GREEN, M. D., Professor of Chemistry in Jefferson Medical College, Philadelphia, Corresponding Member.*

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The genus *Conus* derives its name from the conical shape of the shells which it embraces. It may be considered a natural association of species—for though they are exceedingly numerous, their similarity in form renders it scarcely possible for the merest tyro ever to mistake them. It appears to have been first established by Linnè, and it still remains precisely as he left it, notwithstanding the numerous changes which the science of conchology has suffered.

Many of the shells of this genus are extremely beautiful, from the diversity and richness of their markings. They are the diamonds or gems of conchology, and therefore the rarer species are among the most costly articles of the cabinet. As examples, we may notice the *Conus gloria-maris* and the *Conus cedo-nulli*; a very few perfect examples of which have ever as yet been discovered. As the strong influence of light seems to be necessary for the richness and variety of colour in the animal kingdom, we are not to expect, and have certainly not found, any beautiful species of the cone in the northern parts of America.

All the shells of this genus have the whorls or convolutions flattened, and rolled over each other; the lower part or base terminating in an obtuse point, the upper part or spire being expanded. The outer whorl only is therefore entirely visible, and the other convolutions are only seen at their upper edges, with a suture or groove between them: these form the spire. This spire is either flat or convex, or more or less produced; and in a few instances it is even slightly concave. The upper edges of the whorls are either smooth or carinated: the aperture is long and narrow; effuse at the base, and never toothed; its upper part terminates in a notch occasioned by the separation of the external whorl, from the others, in that place: the outer lip, in perfect specimens, is always smooth and sharp. The conical contour of these shells is various: in some it is long, narrow, and somewhat oval, and in others it is short and wide; the surface is sometimes covered with granulations; sometimes marked with grooves and striæ, and

sometimes it is entirely smooth. All of them, in their living state, are covered with an epidermis or periostracha.

But few accurate observations appear to have been made on the animal which inhabits the cone. I am informed by a friend, that in the bay of Bengal it is frequently taken with a bait—a piece of flesh is attached to a long line and sunk to the bottom; upon drawing up the line cautiously, the cones will be found adhering to the bait; when near the surface of the water, a small hand net must be dexterously slipped under them to secure them as they drop off.

As this genus includes a vast variety of species, many subdivisions of it have been proposed, founded on certain peculiar characters. La Marck has divided it into two sections; the first including *coronated* cones, and the second those which have a *plain* spire. Dillwyn makes four subdivisions: 1st. Cones with a spire truncated; 2d. Pyriform cones, rounded at the base; 3d. Elongated cones, the body whorl being as long again as the spire; and 4th. Ventricose cones, with a wide aperture. In a general monograph, the species could perhaps be better described and identified, by combining the *sections* of La Marck with the divisions of Dillwyn.

As far as the coast of North America has hitherto been examined, but five or six species of the cone have as yet been found; but since the animal inhabits the deep parts of the ocean, it is believed that when our shores shall be more fully explored by dredging and by other methods, many new varieties of this interesting genus will be added to our Fauna. The following species are all that have as yet fallen under our personal observation.

Conus Mus. *Bruguiere*. Plate 3. Fig. 1.

Shell conical, pyriform with elevated transverse striæ; brown, with longitudinal confluent streaks of a lighter colour; a single transverse irregular band of white below the middle of the body whorl; spire acute; its whorls coronated on the lower side; the upper being marked with cancellate striæ; the tubercles are white, and the interstices of a rich brown: one inch and a half long and half as broad.

Good specimens of this shell are uncommon, but worn and imperfect ones are often brought from the West-India islands. Mr. Peale found a number of them on the Florida Keys. Dillwyn says that "the transverse striæ are *alternately* larger." This is

not the case, in our shell, or in either of the figures to which he refers. See Lister, t. 784, fig. 31, and Enc. Meth. t. 320, fig. 9.

Conus Leucosticus. *Gmelin.* Plate 3, fig. 4.

Shell conical ; white, marbled with brown or yellow ; spire acute and coronated ; body whorl marked with transverse granulated striæ, especially near the base ; length about an inch and half, and half as broad.

Many varieties of this beautiful species inhabit the West-Indies, and, as it is said, other parts of the world. Those found on the Florida Keys are commonly about an inch long ; but in other places they often reach twice that size. Some of the varieties of the *C. Leucosticus* resemble very much the far famed *C. cedo-nulli*, a specimen of which, now in the museum at Paris, has been valued at 1500 dollars.

Conus Pealii. *New species.* Plate 3, fig. 3.

Shell conical ; whitish, marked with light yellow irregular stripes : these markings on the whorls of the spire give them a nodulous aspect, being alternately white and yellow ; spire acute ; the whorls coronated at their edges ; body whorl traversed throughout with deep transverse grooves, forming regular rounded ribs ; length less than an inch, and half as broad.

This pretty little cone was found by Mr. Titian R. Peale, near Key Vache, on the Florida coast. While exploring the extensive and interesting shoals in that region, this enterprising and acute naturalist discovered three other species of the genus *conus*, all of which appear to have been undescribed ; but from their worn and mutilated state, it would be injudicious to introduce them at present into our Fauna.

Conus Mamillaris. *New species.* Plate 3, figs. 5 and 6.

Shell conical ; smooth ; yellowish white ; spire depressed, and terminated at its apex with a whitish mamillary knob ; whorls of the spire channeled, having a double indented line on each, which follows their whole course, but is rarely apparent on the outer whorls ; length two inches, breadth one inch.

This shell, which in its perfect state must be a splendid species, was found in Florida by Mr. Peale. The colour and markings on the body whorl are a good deal defaced. The spire is almost perfect, and the shell is here marked with orange coloured spots on a whitish ground, something like the *Conus tessellatus*, to which it bears a distant resemblance in other respects.

Fig. 5. Plate 3. Represents a front view of the spire.

Fig. 6. Plate 3. Is an outline of the whole shell.

Conus Marylandicus. New species. Plate 3, fig. 2.

Shell conical, pyriform, with 8 or 10 deep grooves at the base. In some specimens, upon very close examination, impressed transverse lines may be discovered on the upper half of the body whorl; spire elevated and acute; the whorls channeled and carinated on their lower edges: length an inch and a half, and half as broad.

For this fine fossil species I am indebted to John Finch, Esq. who found it in Maryland, during his laborious and persevering researches into the rich and extensive locality of fossil shells in that state. We are greatly indebted to the personal exertions and public lectures of this gentleman for much of our knowledge of the mineral conchology and geological character of the United States.

Conus Deluvianus. New species.

Shell conical, and somewhat elongated; spire elevated and rather acute; whorls slightly grooved and concave; base of the columella slightly twisted inwards: length three inches, and less than half as broad.

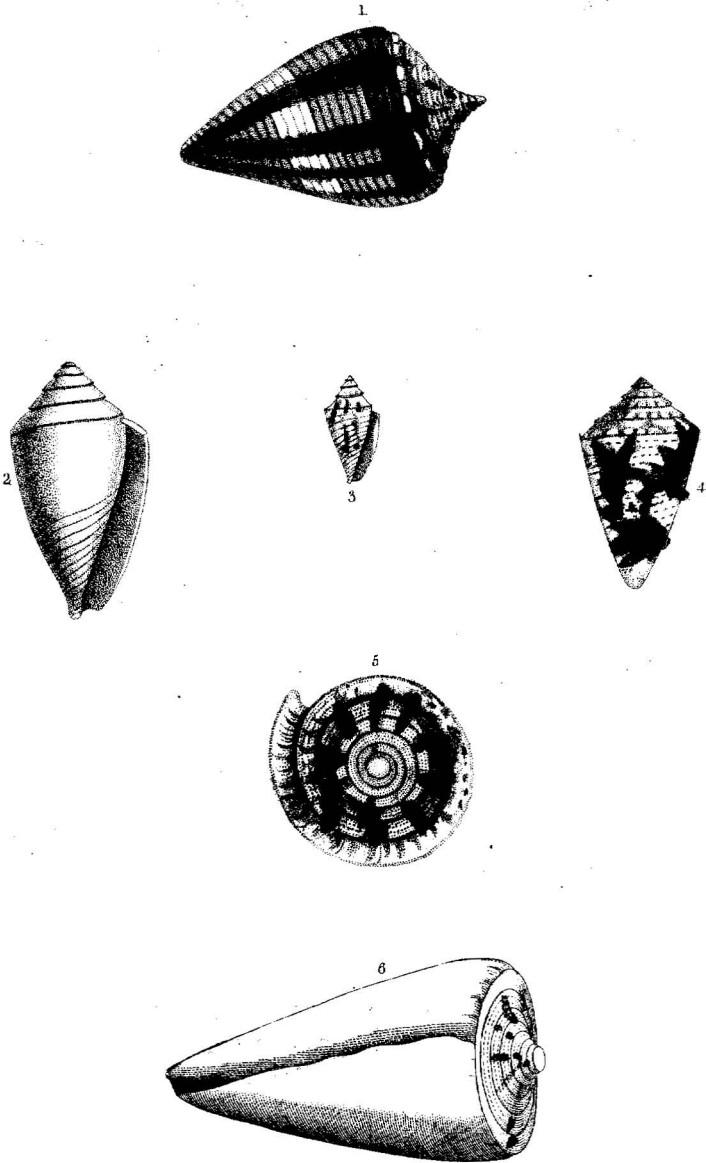
I am indebted to the politeness of Mr. T. A. Conrad for this shell, who found it, together with many other new species of fossil relics, at St. Mary's, in Maryland. The whorls at first sight appear to be entirely smooth; but on close examination, a few transverse impressed lines may be seen in the aperture. It has some resemblance to the *Marylandicus*, but differs from that shell in the spire not being carinated; in the whorls being concave, and in the general contour of the shell. Though entirely distinct, it approaches nearer the *conus deperditus*, figured in Enc. Meth. t. 337, f. 7, than the *C. Marylandicus*, for which this last shell has been sometimes mistaken.

It is well known that many of the fossil shells found in the upper marine formation of Maryland, are often in a more perfect state of maturity, and precisely identical with those which now inhabit our coast. The two cones from that locality, above described, have not as yet been found recent.*

The *conus tæniatus* is mentioned by Chemnitz as inhabiting the

* In the rich repository of fossils in Maryland, most of the mineralized shells are of the same species as those which now inhabit our middle and southern coasts. There is however a large pecten found there, and described by Mr. Say as the *P. Clintonius*, which appears to be identical with the recent shell called *P. Magellanicus*, found by Mr. T. R. Peale on the coast of Maine, and which seems not to occur in a more southerly latitude. Chemnitz states that this magnificent species inhabits the Straits of Magellan, and hence Gmelin's specific name, *Magellanicus*; but if our suggestion be correct, that locality for it must be erroneous.

North American seas : this is no doubt a mistake. Lamarck seems to imply that the *conus daucus*, *conus nivosus*, and some others, may also be found on our coast ; but as we have no personal knowledge of these facts, we shall not insert them in this monograph. Mr. J. Finch has in his possession the *cast* of a cone which he discovered along the Chesapeake and Delaware canal, but this does not furnish characters sufficiently distinct to make out a satisfactory description.



1. *C. Mus*. 2. *C. Marylandicus*. 3. *C. Pealii*.
4. *C. Leucosticus*. 5 & 6. *C. Mamillaris*.