

**15. Extracts from A Second Series
of Zoological Letters written to
BARON CUVIER of Paris, by Prof.
RAFINESQUE in 1831.**

**Extracts from letter 1, March,
1831.**—I sent in 1821 to Paris, a
memoir on fifteen Trilobites of
North America, and published in
Lexington the new *G. Isoctomesa*
of that family, which Dr. DeKay
has since erroneously called *Octo-*
meris; there is a *G. Octomeris*,
already among shells; my Sp. was
however different from his, being
emarginated behind, and one of the
largest Trilobite known, being nine
inches long. It was preserved in
the Cabinet of the University.
There are also some very small
Trilobites nearly like the Ento-
mostraceous; such is my *Anopsites*

urocera, without eyes, of which I send you the figure.

I have found in Lake Erie, in 1826, two N. G. very near to the Trilobites, both lacustral living animals: both without antens and with concealed feet. I call them *Peltoma* with two eyes, and *Adeopus* without eyes. I send you the figures. Also the description and figure of another living sea N. G. from the atlantic shore between *Idotea* and my *Gonotus* of 1814. I call it *Mesotropis albipes*. Body oblong, back carinated, small head, no eyes, fourteen feet, tail with many articles and ciliated, two antens, *Sp. Car.* greenish-brown, both ends obtuse, antens equal to body and tail, feet white.

I send you the figure and description of a singular atlantic small sea shell, *Nemalix pelagica*, which suspends itself by a thread from the *Fucus natans* in the middle of the ocean, discovered 1815.

I send you, as you request, the figure, description, and a specimen of my *Trinectes Scabra*, a new G. of fish near to *Achirus* found in the river Schuylkill; it has only three fins, dorsal, anal and caudal. Also the description and figure of a large and beautiful new catfish from the river Tennessee discovered in 1823, *Pimelodus lutescens*: it was three feet long, excellent to eat, of a olivaceous yellow colour, belly white, jaws equal, eyes round, tail forked, first dorsal falciform, second dorsal nearly as large as the anal.

Extracts from letter 2, April, 1831. I send you the figure and description of two subterranean worms. The first *Ophelmis rugosa*, is near to *Gordius*, but dwells underground like *Lumbricus*. It was found in New York six feet underground in 1817, and was preserved in a museum. It was a gigantic worm, almost like a snake, three feet long. *Gen. C.* body fistular compressed, leathery, without viscera, not annulated but wrinkled

diagonally on the sides. Tail trilobe, vent oblong inferior, lateral lobes short obtuse, middle lobe long cylindrical. *Spec. C.* fulvescent, wrinkles equal in length but not in depth, inside smooth filled with a yellowish liquid.

The second *Geonema gordinea*, was a subterranean *Gordius* found two feet underground in Connecticut, with body filiform, fistular, filled with a fluid, elastic, the two ends equal attenuated, opening, hardly visible, *Spec. Description.* Flexuose fulvescent, both ends obtuse only four inches long.

Another akin N. G. but aquatic like *Gordius*, was found by me in a spring near the river Hugson in 1816. It differs from *Gordius* by body hardly fistular, head split or bilobe and tail simple. I call it *Cephachisma diphaia*. Length eight inches, size of a violin string, dark brown above, fulvove brown beneath, head clavate bilobe, tail obtuse black, with a white tip.

I have perhaps been the first naturalist, who has observed and studied the microscopical animals of infusions, swamps, pools, creeks, rivers, lakes, and the ocean, in America, and chiefly in Kentucky, as I once did in Sicily and the Mediterranean. This is quite a new world of animated beings, fecund and inexhaustible. They swarm every where and are from a size so minute as not to be seen without a large magnifying power, sometimes one thousand times smaller than a grain of sand, up to a size visible to the naked eye, and even reaching a gigantic size, in the ocean; where I have seen some a foot long, although quite identic with the most minute, being in common always destitute of mouths, and therefore living by absorbing their nourishment by the minute pores of the body: wherby they belong to the peculiar class or division of animals nearest to plants, and merely differing by their spontaneous motions, which I called *Po-nostomes* as early as 1814 in my

Somatology, and illustrated in my Analysis of Nature in 1815. This name is very good, but if not agreeable to all, I have half a dozen others to offer as substitutes: *Biopores*, or *Zoopores*, or *Leptremes*, or *Adiostomes*, &c. Because it is my wish that this class or large section of animals should bear a good name given by me, instead of the delusory one of *Animalcula* or *microscopic animals*, which does not apply to all.

Besides it is very probable that many other, if not all the animals without mouths, must belong to this class; such as the mouthless Meduses, the Tethya, Alcyons and Sponges; perhaps some *Oscillatoria* and *Conferves*. These porostome animals are generally aquatic and floating; but there are some fixed ones also. Others are parasitical (like many worms) living in other animals. Some may be terrestrial like the *Geonema* above. The *Miasmata* or miasmatic animalcula of the air, may be the invisible birds of this class, or aerial insects floating in the air. This may appear a bold surmise, but it is not preposterous; they have hardly been seen yet, but are perfectly well indicated already.

Lastly, there are also fossil animals of this class. They must have existed abundantly in the primitive earth; and some of those with a cartilaginous or leathery body have been fossilized. My fine N. G. *Trianisites* of 1818 may be one, also my N. G. *Bolactites*, *Geodites*, *Granulites*, *Tractinities*, &c. discovered in the oldest geological strata of Kentucky, and united protem to the Alcyonites. Some may also have been akin to the actual *Nullipores* of the sea, which are real stony plants and not animals: having no motion whatever, being fixed, without mouths nor viscera; no polyps about them: a mere vegetative concretion of the sea with minute pores. Some naturalists even deem them a kind of marine stalagmites. We may well

wonder how Lamarck put them among animals. It was probably like the Porostomes, Corallines, and Sponges upon a mere surmise of animality. But I defy any naturalist to perceive any motion in them, or to find out their polyps or mouths.

I send you the figures and descriptions of ten N. G. of aquatic porostomes, which will demonstrate the variety of size and form. I described besides as early as 1814 the gigantic *Approctomus* of Sicily, and in 1825 the large *Scalenium* of the ocean.

1. *Stigoma tripunctata*. Ocean, one inch, cuneate flat, head obliquely bilobe, tail mucronate, three dots on the back.

2. *Lobuloma inequalis*. Ocean, one line, flat with six unequal lobes on the margin.

3. *Thalanea capitata*. Ocean, two inches, filiform flexuose like *Vibrio*, but one end enlarged oboval obtuse.

4. *Zooconilon levis*. Sicily, half inch, subglobular, truncate, with a large cavity occupying the whole inside.

5. *Polasmus pectinatus*. Sicily, one inch, oblong lamellar or pectinate beneath transversally.

6. *Diplepha gibbosa*. Lake Erie, half line, oblong sinuose, gibbose, two pairs of geminate bristles, a fifth at one end.

7. *Disynema isella*. Kentucky, pools, microscopic. Two threads united at both ends, like a conserva, but with free motion.

8. *Blobula varians*. Kentucky, infusory. Oblong sinuate; one end with five bristles, the other with one.

9. *Pecticoma paradoxa*. Kent. infus. oblong sinuate, ciliated beneath, bristles unequal three longest, one in the middle and another at each end.

10. *Loncoma incurva*. Kent. infus. oblong compressed shaped like a curved knife, the two ends acute, one raised up, no organs.

I send you also the figures and descriptions of five new fishes No. 3 to 7. *Zonipus punctatus*, *Semotilus notatus*, *Lepemius fasciolatus* and *bilineatus*, *Luxilus arcuatus* and *Zonargyra virescens*. All observed in the waters of Kentucky since publishing my Ichthyology of the Ohio in 1820, except the *Lepemius*.

To be Continued.