

Fig. 461 is a 1-celled species; the others are compound, and contain a number of exceedingly minute cells. A few are comparatively large species, and have the shape of a disk or coin, as Fig. 473, a *Nummulite*, natural size; the figure shows the interior cells of one half: these cells form a coil about the center. *Orbitoides* is the name of another genus of coin-like species. Fig. 474 *a* is a species of *Fusulina*, a kind nearly as large as a grain of wheat, related to the Nummulites; 474 *b* is a transverse view of the same. This is one of the ancient forms of Rhizopods, occurring in the rocks of the Coal formation. Rhizopods of the genus *Globigerina* and other forms have been already mentioned (page 144) as the chief constituents of the calcareous ooze or mud making much of the sea-bottom. Fig. 475 represents an aggregation of *Globigerinæ* with Diatoms, found at a depth of 880 feet, off Alligator Reef, near the south coast of Florida, as figured by A. Agassiz.

Each Rhizopod cell is occupied by a separate animal or zoöid, though organically connected with the others of the same group or shell. The animal is of the simplest kind, having no mouth or stomach, and no members except slender processes of its own substance, which it extrudes through pores in the shell, if it have any. The name *Rhizopods* comes from the Greek for *root-like feet*, — in allusion to the root-like processes they throw out. Some of the species not secreting shells (as in the genus *Amœba*) have been seen to extemporize a mouth and stomach. When a particle of food touches the surface, the part begins to be depressed, and finally the sides of the depression close over the particle, and thus mouth and stomach are made when needed; after digestion is complete, the refuse portion is allowed to escape.

The shells of some Rhizopods do not consist of distinct cells: the aggregate living mass secretes carbonate of lime, without retaining the distinction of the zoöids. This is the case, as Carpenter has observed, in the Nummulite-like genus *Orbitolites*. Some species make large coral-like masses instead of small shells.

2. **Radiolarians** (*Polycystines*). — Secrete siliceous shells which are symmetrically radiate or circular. Three species, from the Barbados, are represented in Figs. 476 to 478. Fig. 476, *Lychnocanium lucerna* Ehr.; Fig. 477, *Eucyrtidium Mongolfieri* Ehr.; Fig. 478, *Halicalyptra fimbriata* Ehr., the first two magnified 100 diameters, the last about 75. From these deeply concave forms, there are gradations in one direction to disks with concave centers, and to flat disks, both with plain and pointed borders, and in the other direction to elongate, conical, and spindle-shaped forms. Others have the shape of a flattened cross; another is an open diamond, with narrow diagonals and periphery. The disks have a *concentric*, and not a spiral, structure, and thus are unlike those of Nummulites.

The annexed figure represents a minute spherical species of Radiolarian—a jelly-like globule bristled with spicules—which sometimes beclouds the water in the Pacific and East Indian seas (*Sphærozoum orientale* D.).

475.

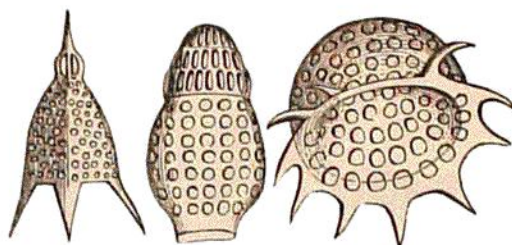


Globigerinæ, with Diatoms, from a deposit off Alligator Reef ($\times 15$). A. Agassiz.

476.

477.

478.



476, *Lychnocanium lucerna* ($\times 100$); 477, *Eucyrtidium Mongolfieri* ($\times 100$); 478, *Halicalyptra fimbriata* ($\times 75$).

479.

