upper part of the great stratum at Bilin another heavier and more compact stone, a kind of semi-opal, in which innumerable parts of Diatomaceæ and spiculæ of the *Spongilla* are filled with, and cemented together by, siliceous matter. It is supposed that the siliceous remains of the most delicate Diatomaceæ have been dissolved by water, and have thus given rise to this opal in which the more durable fossils are preserved like insects in amber. This opinion is confirmed by the fact that the organic bodies decrease in number and sharpness of outline in proportion as the opaline cement increases in quantity.

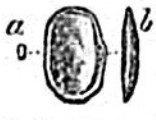
In the Bohemian tripoli above described, as in that of Planitz in Saxony, the species of Diatomaceæ (or Infusoria, as termed by Ehrenberg) are freshwater; but in other countries, as in the tripoli of the Isle of France, they are of marine species, and they all belong to formations of the *tertiary* period, which will be spoken of hereafter.

A well-known substance, called bog-iron ore, often met with in peat-mosses, has also been shown by Ehrenberg to consist of innumerable articulated threads, of a yellow ochre color, composed partly of flint and partly of oxide of iron. These threads are the cases of a minute microscopic body, called *Gaillonella ferruginea* (fig. 18).

It is clear that much time must have been required for the accumulation of strata to which countless generations of Diatomaceæ have contributed their remains; and these discoveries lead us naturally to suspect that other deposits, of which the materials have usually been supposed to be inorganic, may in reality have been derived from microscopic organic bodies. That this is the case with the white chalk, has often been imagined, this rock having been observed to abound in a variety of marine fossils, such as echini, testacea, bryozoa, corals, sponges, crustacea, and fishes. Mr. Lonsdale, on examining, Oct., 1835, in the museum of the Geological Society of London, portions of white chalk from different parts of England, found, on carefully pulverizing them in water, that what appear to the eye simply as white grains were, in fact, well preserved fossils. He obtained above a thousand of these from each pound weight of chalk, some being fragments of minute bryozoa and corallines, others entire Foraminifera and Cytheridæ. The annexed drawings will give an idea of the beautiful forms of many of these bodies. The figures *a a* represent their natural size, but, minute as they seem, the smallest of them, such as *a*, fig. 24,

Cytheridæ and *Foraminifera* from the chalk.

Fig. 21.

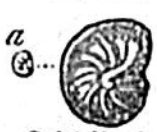


Cythere, Müll.
Cytherina, Lam.

Fig. 22.

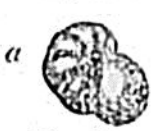
Portion of *Nodosaria*.

Fig. 23.



Cristellaria rotulata.

Fig. 24.



Rosalina.

are gigantic in comparison with the cases of Diatomaceæ before mentioned. It has, moreover, been lately discovered that the chambers into which these Foraminifera are divided are actually often filled with thou-