

shallower slopes near banks of reeds, where there is no strong current of water, occurring in granular concretions (Bohnerz) that vary from the size of grains of coarse gunpowder up to nodules 6 inches in diameter, and forming layers 10 to 200 yards long, 5 to 15 yards broad, and 8 to 30 inches thick. These deposits are worked during winter by inserting perforated iron shovels through holes cut in the ice; and so rapidly do they accumulate, that instances are known where, after having been completely removed, the ore at the end of twenty-six years was found to have gathered again to a thickness of several inches. A layer of loose earthy ochre 10 feet thick is believed to have formed in 600 years on the floor of the Lake Tisken near the old copper mine of Falun in Sweden.¹⁴⁸ According to Ehrenberg, the formation of bog-ore is due, not merely to the chemical actions arising from the decay of organic matter, but to a power possessed by diatoms of separating iron from water and depositing it as hydrous peroxide within their siliceous framework.

Aluminous Yellow Iron-Ore is closely related to the foregoing. It is a mixture of yellow or pale brown, hydrated peroxide of iron, with clay and sand, sometimes with silicate of iron, hydrated oxide of manganese, and carbonate of lime, and occurs in dull, usually pulverulent grains and nodules. Occasionally these nodules may be observed to consist of a shell of harder material, within which the yellow oxide becomes progressively softer toward the centre, which is sometimes quite empty. Such concretions are known as *ætites* or *eagle-stones*. This ore occurs in the Coal-measures of Saxony and Silesia, also in the Harz, Baden, Bavaria, etc., and among the Jurassic rocks in England.

Clay-Ironstone (*Sphærosiderite*) has been already (p. 143) referred to. It occurs abundantly in nodules and beds in

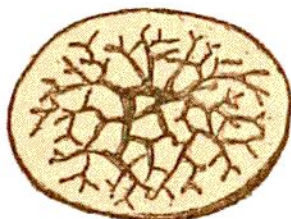


Fig. 26.—Septarian Nodule of Clay-ironstone.

the Carboniferous system in most parts of Europe. The nodules are generally oval and flattened in form, varying in size from a small bean up to concretions a foot or more in diameter, and with an internal system of radiating cracks, often filled with calcite (Fig. 26). In many cases, they contain in the centre some organic substance, such as a coprolite, fern, cone, shell, or fish, that has served as a surface round which the iron in

¹⁴⁸ A. F. Thoreld, Geol. Fören. Förhand. Stockholm, iii. p. 20, postea, pp. 407, 483.