

Dr. A. Rothpletz has stated that, according to his observations at Great Salt Lake, Utah, the concretionary grains of oölyte are due to the growth and calcareous secretion of a minute Alga or water-plant (1893); and that they are formed there within a bluish green alga-mass. He is disposed to account thus for the formation of ordinary oölyte. Oölyte is an abundant product along the low coral-sand shores of southern Florida, and its formation has been attributed to deposition from the sea water around minute grains of the sand, or around some still more minute shell of a Diatom or other microscopic organism.

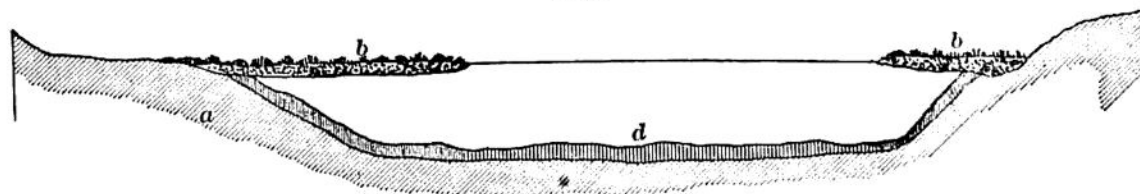
3. PHOSPHATIC DEPOSITS.

Guano beds are the important deposits of phosphatic material. The origin and constitution of guano are described on page 72. The composition is approximately: organic and volatile matter 40 per cent, phosphoric acid 14, lime 12, potash and soda 7, nitrogen 9, along with water. The agricultural value is largely owing to the nitrogen. Besides the kinds mentioned, Bat guano is formed in some caves; and in Victoria, southern Australia, it has a depth of 30 feet in the Skipton caves. The prominent localities of guano are: islands on the nearly rainless Peruvian coast, which were worked as early as the sixteenth century; various islands of the equatorial Pacific, between 155° W. and 277° W.; Sombrero and neighboring islands in the West Indies, and also large coastal areas in South Carolina and Florida. In the West Indies, and in South Carolina and Florida, where the rains are common, the guano is mostly destitute of nitrogen, it being the impure calcium phosphate made by the filtration of rain-waters through the original guano, carrying the soluble phosphates into underlying calcareous deposits. Fossil shells and bones are among the phosphatized products.

4. Peat and other Carbonaceous Formations.

Peat is an accumulation of half-decomposed vegetable matter, in wet or swampy places over the interior of a continent or about its estuaries. In temperate climates, it is due to the growth mainly of spongy Mosses, of the genus *Sphagnum*, which are very absorbent of water. Beside spreading over

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Peat-forming in progress, with a Diatom deposit (*d*) over the bottom of the pond. Shaler.

the swampy surfaces, they extend out a floating layer from the borders of shallow ponds (*b*), as illustrated in Fig. 153, from Shaler's Memoir on the Origin and Nature of Soils. The floating layer (*b, b*) drops portions to the