

The Rock Mill, near Stroud, in Gloucestershire, is built of this stone. In almost all limestone countries, there are instances of calcareous incrustations formed in springs, which have received the name of petrifying wells.

Thermal waters, that contain calcareous earth in solution, deposit beds of tufa, very rapidly. Nearly the whole bottom of the valley at Matlock Baths, in Derbyshire, is filled with calcareous tufa, forming a bed not less than fifty feet in thickness, and half a mile in length. It contains fragments of moss, and some land shells. The horns of a stag were found in excavating this tufa; it is deposited by the thermal springs, that, every where, gush out from the hill behind the baths. Except the depositions from thermal waters, beds of calcareous tufa, of any considerable magnitude, are seldom formed on land, but thermal waters have probably been important agents, in the formation of many of the secondary strata at the bottom of the ocean. (See Chap. XV.)

Mr. Lyell, in the first volume of his "Principles of Geology," has described many depositions of calcareous tufa in the volcanic districts of France and Italy.

There are depositions of fresh-water limestone slowly forming in some of our present lakes. Mr. Lyell, in the "Geological Transactions," 1826, describes a small lake about nine miles west of Forfar, in Scotland. It once extended over two hundred acres, but is now reduced to a peat moss, or swampy hollow in diluvium. The bed of the lake has been, in a great part, excavated for marl; it contains different strata, of variable thickness. The upper covering is peat, one or two feet thick, under which is shell or rock marl, varying from one to sixteen feet; quick-sand two feet, and lower shell marl, of a good quality, from one to two feet thick, resting on a bed of fine sand, of variable thickness. The rock marl consists wholly of carbonate of lime; it is hard and compact, and in some parts crystalline. The lower shell marl rarely contains any distinguishable quantity of shelly matter. In the rock marl are found shells of *Helices*, the *Turbo fontinalis*, and the *Patella lacustris*.

There are remains of land quadrupeds in the shell marl, but not in the rock marl. The rock marl, (it appears from Mr. Lyell's description,) nearly resembles the upper fresh-water limestone in the Paris basin, and, like it, is traversed by tubular cavities. Some part of the rock marl is, however, stated to be a tufaceous limestone. This recent formation of fresh-water limestone, is, in so many respects, analogous to the most recent formation of fresh-water strata of the ancient world, that all the particular circumstances described by Mr. Lyell, deserve the careful attention of the geologist.

Peat is a substance which has been classed with alluvial soils, though it is obviously a vegetable production. Peat formerly covered extensive tracts in England, but is disappearing before the genius of agricultural improvement, which has no where produced more