

are composed almost entirely of silica; and being destitute of organic matter, can not sustain vegetation.

*Peat*, when perfectly formed, is destitute of a fibrous structure, and when wet is a fine black mud; and when dry, a powder. It consists chiefly of the decomposed organic matter called *geine* or *humic acid*, with crenic and apocrenic acids, phosphates, etc., part of which are soluble, and a part insoluble, in water. These deposits of peat are sometimes 30 or 40 feet thick; but they are not formed in tropical climates on account of the too rapid decomposition of the organic matter.

*Alluvial marl* is usually a fine powder, consisting of carbonate of lime, clay, and soluble and insoluble *geine*; and is found usually beneath peat in limestone countries; sometimes at the bottom of ponds. It is produced partly by the decay of shells of molluscous animals, and partly by the deposition of carbonate of lime from solution. It contains numerous small fresh water shells, and has hence received the name of *shell marl*.

*Other kinds of Marl*.—Several other substances, that contain no carbonate of lime, have often been denominated marl, by agriculturists, and not with-