

13. These peaty soils therefore differ essentially from the soils which have been produced by the pulverization or powdering of rocks. Peat soils consist almost entirely of vegetable matter, which often reaches as much as 97 per cent., and they contain very little mineral matter; whilst soils produced from rocks are chiefly composed of mineral matter, and have only a small proportion of vegetable matter.

14. For the convenience of being able to describe with accuracy the character of soils, so that soils of the same character may be called by the same names, it has become necessary to classify soils according to their texture and condition, as well as by their composition. The character is indicated by a mechanical analysis, and the composition is determined by chemical analysis. By these means we can inform ourselves with great accuracy as to the composition and character of any soil, and establish a regular classification.

15. The **mechanical analysis** of soils is largely based upon the proportions of clay and sand which they contain. The term **Clay** is applied to the finer portions of the mineral matter of the soil. These portions have by various means become so reduced in size that they are perfectly soft to the touch, and when pressed in the hand retain the form into which they may be moulded or pressed. The clay which is used for making bricks and pottery is familiar to every one. It is soft, and easily moulded in the hand, and when water is placed in any hollow on its surface the water does not readily soak away.

16. **Sand** is just the reverse. It really consists of very minute stones, and when pressed in the hand it is gritty and hard to the touch. If any attempt be made to mould it into any particular shape, it does not keep the form so given to it. If a hollow be made on the surface, and water be poured into it, the water quickly passes through it. In the sand upon the seashore we have a familiar example of the sand in soils.