ing no natural lines of demarcation, it is evident that some system of classification must be adopted in order that we may know with sufficient clearness and exactness, what is meant by the term used to designate any particular variety of soil. Accordingly, many systems of classification have been proposed, but the following one appears to be the most complete, and would, if generally adopted, prevent in a great measure the confusion which so frequently arises from the indefinite use of the terms sandy, clayey, calcareous, &c., as applied to soils; and also that of local terms, to which different meanings are attached in different parts of the country This system is founded on the principle that soils generally consist of a mixture of clay, lime, humus, and silica, as above stated; and the divisions and subdivisions are formed according to the proportions in which the above constituents are found. Various examples of soils distinguished for remarkable peculiarities in different countries are given. It is presumed that, on the whole, a practically useful idea of the nature of soils will be afforded which may lead to their great improvement"

The classification that follows is too long to give in detail here, but I will try to condense it, as it may be of interest to some. Schübler divides the soil into 8 classes, and subdivides them, each, into from 3 to 15 divisions, all of which contain only clay, lime, humus and sand.

" 1st. Argillaceous soils, commonly called clay soils, contain above 50 % of clay, and not more than 5 % of lime. Before treating of this class of soils it will be necessary to explain what is meant by the term clay.

This substance is a combination of silica with alumina, the proportions of which vary in different sorts of clay; thus, in one clay there may be 40 % of alumina the remaining 60 % being silica together with some other substances; whilst in another sort of clay there may be only 30 % of alumina and nearly 70 % of silica. Clay is chiefly characterised by its plasticity and softeness to the touch. According to Schübler, pure clay does not effervesce with acids; diffuses when breathed upon in a dry state, a strong earthy odour; adheres to the tongue; quickly absorbs water, oils, and fatty substances; it remains, for a certain time, lightly suspended in water, which it renders muddy, but from which it perfectly separates again, by subsidence, when at rest. Of this water it retains, in its finer state, from 70 to 71 per cent, without allowing it to drop away from it. In a compact and moderately moistened state, water penetrates but slowly into its interstices; it dries up slowly, and in so doing shrinks into a smaller space, leaving many cracks and fissures throughout its substance; it readily takes up humus and humic acid in considerable quantities; these seem to combine with it, partly in a chemical manner, and partly in a physical one; in consequence of which it remains for a long time fertile, after it has once been properly penetrated by humus particles and other earths, which communicate to it the requisite lightness for cultivation.

Besides the above constituents, various other substances occur incidentally in clay. These principally consist of oxide of iron, sand, free silica, and often of lime, magnesia, oxide of manganese, potash, and soda. Clay which has been dried in the sun, always contains a certain amount of combined water, varying from 5 to 15 %, and which can only be driven off at a red heat. The colours which the varieties of clay assume are generally owing to the presence of iron in different states of oxidation. Thus, the brown colour results from the protoxide of iron, the red from the peroxide, and the greenish and blue from the hydrated protoxide. Clay soils are unfitted for the generality of garden operations till improved by draining, liming, trenching, long dung, ashes, or sand.

When so improved, if rendered sufficiently porous, they become very productive, and are not liable to be so soon exhausted as other kinds of soils.

2. Loamy soils—these contain not more than 50 nor less than 30 % of clay: of lime and humus there may be *less*, but not *more* than 5 per cent of each, and the remainder is sand and other matters.

T above would constitute a strong loam which when properly cultivated would make a good garden soil.

3 Sandy loams—these contain not more than 30 or less than 20 % of clay, and not more than 5 % of lime or of humus. This is a variety of soil that is well suited to grow good crops and is at the same time more easily cultivated than strong loam. They are also earlier, as they are not so retentive of moisture, and are capable of being (from that cause) more easily heated in the spring. At the same time they have enough clay in them to retain sufficient moisture to prevent them from drying out in spells of hot weather as very sandy soils do.

4. Loamy sands—contain not more than 20 or less than 10 % of clay and not more than 5 % of lime or of humus. They are too light for fruit trees, although when deep and on a good subsoil they may be made to succeed by adding compost, and by taking care that the roots are duly supplied with water. These soils are desirable for early crops; potatoes, carrots and turnips succeed well in them.

5. Sandy soils.—These contain at least 80 % of silicious sand. They differ in colour according to the quantity of oxide of iron they contain. When they consist of sand or gravel (*alone?*) they are extremely barren, but with as much as 3 to 5 % of humus they are very suitable for the growth of some crops. By the addition of clay or marl, soils of this nature are rendered more compact, thus retaining moisture and the more valuable parts of manure, that is, the parts that wash out, and that pure sand or gravel will not absorb the same as clay will.

6. Marly soils.—Not more than 20 or less than 5 % of lime. According as they partake of the nature of other soils they are termed clay marls, loamy marls, and sandy marls. They are intermediate between calcareous and clay soils, and, while not so retentive of moisture as the latter, they are not so porous as the generality of the former. Clay marls containing more than 50 % of clay are too stiff for gardens. Loamy marl, if rich in humus, is an excellent soil, suitable for fruit trees, and capable of bearing heavy crops. Sandy marls are good for early crops, especially if darkened in colour by humus.

7. Calcareous soils—These contain more than 20 % of lime, and according to the amount of sand or clay which they contain, they are called calcareous sands, calcareous loams and calcareous clays. These soils vary much in their fertility and productiveness, and where they are light coloured, are not so suitable for early crops. This defect can be remedied by the addition of such soils and manures as tend to darken them; but, on they other hand, if they are not so easily heated as dark soils, they retain their heat longer, as heat is radiated faster from a dark than from a light substance.

8. Humus soils or vegetable moulds.—All soils containing more than 5 % of humus, no matter what their other composition may be, are termed vegetable moulds. From this it results, that soils of very opposite natures are comprised in this class to which the rich and productive garden-moulds and the poor and barren peat or bog alike belong. Vegetable moulds are called clayey, loamy, or sandy, according to the amount of clay or sand they contain, and when the vegetable matter has been converted into the substance known as peat, the soil is termed peaty or boggy. Many kinds of vegetables such as potatoes, turnips, carrots, cabbages, and celery will grow very well on peaty soils when improved, as will also