

"term *SANDY*, should never be applied to any soil that does not contain at least seven-eighths of sand," and "that sandy soils, which effervesce with acids should be called by the name of "calcareous sandy soils."

Clay, marl, warp, sea shells, peat and vegetable earth, according to Sir John Sinclair, are the best correctives of sandy soil, and enable it to retain moisture and manure.

The soil in Norfolk, in England, is of a sandy nature, but the farmers, by these means, have converted it into an eminent agricultural country. Indeed, sandy soils, when thus improved, form one of "the most valuable soils that can be worked." Top dressing, with broken down peat, forms an excellent dressing for such soils, which are favourable for the growth of common turnips, potatoes, carrots, barley, rye, buckwheat, peas, clover, and other grasses.

Droughts easily injure crops on sandy soils, owing to the ready evaporation of moisture from the open particles.—Deep ploughing assists in preventing this evaporation, and retaining a degree of moisture in the deeper earth. The small stones on the surface of such soils assist in retaining moisture; therefore, in dry climates, they ought not to be removed.

Gravelly and sandy soils are treated upon similar principles, the means used being such as will give tenacity and fertility to them. Such soils should have frequent returns of grass crops.

LIME or *calcareous earth*, is never found in a pure state. It is always combined with acids, especially with the carbonic acid, for which it has a very powerful affinity; attracting it from the atmospheric air.

Burning deprives lime of its carbonic acid; and in this state it absorbs moisture, and again attracts carbonic acid from putrescent animal and vegetable manures—it promotes putrefaction—it fixes the carbonic acid, thus generated, or floating in the air, near the surface of the earth, in the soil; and "it freely imparts this gas, in union with water, for the nourishment of

"plants." It is therefore a most valuable article to the agriculturist, and we shall enter fully into the consideration of it, when we treat of its application as a manure.

Magnesia "is a primitive earth found in some soils, but in a much smaller proportion than the above three. Its properties are nearly analogous to those of lime, but of doubtful value; and it is certainly injurious when mingled in large quantities with the other earths."

Loams, strictly speaking, are not distinct soils, but combinations of clay, sand, or calcareous matter. When clay abounds in them, they are called clayey loams; and when sand preponderates, they are called light, open loams.—These two original ingredients, clay and sand, "seem capable of being compounded in such an infinite variety of ways, as to give occasion to that diversified texture of soils, met with in all countries and in all situations."

The richness of soils is dependent upon the quantity of the putrid relics of organized substances, that have grown and decayed upon them, or have been carried to them in the process of cultivation.

Soils in general are found to contain various chemical compounds, mineral salts, and metallic oxides, some of which are beneficial, others harmless, and some injurious to vegetation.

Experiments have been made by agricultural chemists to discover the constituents of a fertile soil. A good turnip soil, according to Sir Humphrey Davy, "contained eight parts out of nine of silicious sand, and the finely divided matter consisted of:

Carbonate of lime,	63
Silicia,	15
Alumne,	11
Oxide of Iron,	3
Vegetable and saline matter, . .	5
Moisture,	3

A wheat soil gave three parts in five of silicious sand, and the finely divided matter contained: