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(Concluded—from Page 175.)

*Question 8.*—The origin, distribution, and classification of soils ?

*Answer.*—Soils are in general derived from the rocks upon which they lie, caused by their disintegration, by the action of water, heat, or the atmosphere, or by a combination of them. Water was, and still is, a powerful agent in the distribution. Soils in general have a close relation to the underlying strata, except in drifts brought often from considerable distances. As rocks vary in their composition, so consequently do soils, which may be classified for practical purposes under light or sandy, abounding in silica; clayey, or stiff and heavy, abounding in alumina; calcareous, abounding in lime. These three minerals mainly constitute all soils, infinitely varying in their proportions. Loams are soils containing a happy combination of them, with large quantities of organic matter. These again are divided into heavy or light, just as clay or sand predominates.

*Question 9.*—What are the principles and uses of ordinary ploughing, subsoil, and trench ploughing, and in what conditions of the soil are the latter operations necessary ?

Ordinary ploughing should be done straight and of a uniform depth, so as to turn over the furrow at a uniform angle, varying according to the purpose or nature of cropping. Ploughing disintegrates and mechanically prepares the soil for seed, which cannot germinate and progress without a loosened bed of fine earth. Subsoil ploughing breaks up the ground below the furrow of the ordinary plough, exposing a greater depth of soil to the action of air and moisture, gives the roots of plants a wider range in search of food, and allows of injurious matters in a solvent state to escape downwards. Trench ploughing brings the greater part of the subsoil to the surface, exposes it to the action of light and air, often effects beneficial, chemical and mechanical changes.

Ploughing of all kinds should be performed when the ground is dry, when the breaking up and dividing the soil is more thoroughly done, and the injury by the treading of cattle avoided. In wet land subsoil ploughing should not be done till a year, at least, after under-draining. The former on heavy lands especially, facilitates the operation of the latter.

*Question 10.*—Give a brief sketch of the modern improvements in Agricultural Implements and Machines.

The modern improvements of the Plough are striking and beneficial. This implement is now as varied in its construction to meet special ends, as differences of soil and variations in preparing land for different crops. The substitution of iron for wood, especially in mould boards, has proved of great benefit, while the form of the Plough has been so mechanically improved, that it is less laborious