


From the above observations we can readily see that the effect of subsoil plowing and trenching will vary with the character of the subsoil; if the latter is hard and compact it will probably arrest the downward passage of the water containing the valuable portions of the surface soil, which upon being again brought to the surface will of course enrich the surface soil; but if on the other hand the subsoil is light and loose, and of a texture not calculated to retain the saline constituents brought from above, they will pass through it, and when it is turned up it may not only not enrich the ground above, but may for a time decrease the crops, for the only benefit gained seems to be that of deepening the surface soil, which even of itself is an important one. This may in a great measure account for the varied success which always attends subsoil plowing, and a more careful attention to the difference may be the means of preventing much disappointment, as has been the case with your new correspondent, but old reader.—*Germantown Telegraph.*

#### ADVANTAGE OF DRAINING.

 THOROUGH draining with "deep plowing and good tillage is manure." How does drainage deepen the soil? Every one who has grown deep-rooted vegetables upon half-drained or wet land has observed that they would not extend downward their usual length. Parsnips and carrots on such land often grow large at the top, but divide into numerous small roots below the surface, and spread in different directions. No roots except water plants will grow in stagnant water. If it is of any advantage to have a deep rather than a shallow soil, it is necessary to lower the line of standing water at least to the extent to which the roots of our cultivated crops descend. A deep soil is better than a shallow one, because it furnishes more food and nourishment to plants, which they search out and find in the subsoil (where it has been washed by the rains) as well as at the surface, if no obstacle opposes. By striking deep roots, the plants stand more firmly and are not so easily drawn out or shaken by the winds. Again, a wet soil cannot be pulverized. Plowing clayey or loamy soils tend to press it together and render it less pervious to rain and water.

The first effect of underdraining is to

dry the surface soil, to draw out all the water that will run out of it, so that in early spring or autumn it may be worked with the plow as advantageously as undrained lands in midsummer.

Most land which is not in grass is liable to surface washing in spring and fall if not drained; being already filled with water that rain cannot pass directly downward, but runs away on the surface, carrying with it much of the soil, and washing out the valuable elements of fertility. If the land is properly drained the rain water is absorbed and passes downwards, saturating the soil as it goes, and carrying soluble substances with it to the roots, and the surplus, if any, percolates through the drains below. The absorbent power of drained land is great at times after a drought, that all the water of a heavy shower will be held or drank up by the soil, so that none will find its way into the drains for a day or two, nor run upon the surface. Again it allows the farmer to start his team in the spring so much earlier, to prepare for oats, corn and potatoes, &c., to say nothing of the garden and early vegetable growers, where the season is often lengthened two weeks at each end, as a farmer once said to his neighbor who planted his corn on a well-drained field the day after a rain storm of two days, "to have planted mine at the same time, I should have to do it from a raft." Many farmers have the same privileges of rafting, where it would be profitable to spend some time in ditching before the spring rains set in and fill the springs to overflowing.

G. Yeomans of New York, says, in a published statement, that on his drained lands "the ground becomes almost as dry in two or three days after the frost comes out in spring, or after a heavy rain, as it would do in as many weeks without draining." The additional time gained for vegetation is important. One or two weeks ten secures the corn crops against frost; a few days is often sufficient for the grain to pass from the milky to the glazed state, before which a single frosty night may injure if not ruin it. When the grain reaches this latter stage it is safe from cold, and twice the time alluded to is added by this removal of the surplus water.

Thorough drainage of our wheat and grass fields prevents that difficulty of freezing out which most of us, who have wet or stiff loam or clayey land, know. J. Johnstone of