

THE CANADA FARMER

Vol. III. No. 11.

TORONTO, CANADA, NOVEMBER 15, 1871.

NEW SERIES.

The Field.

Fall Ploughing.

In Canada, ploughing in the fall of the year is a matter of no small importance to the farmer, and he who can accomplish a large acreage finds himself forehanded in our short spring months. At the same time there is amongst many men an impression that quantity is the great desideratum to be looked to in this operation, and they are apt to neglect quality.

This is the right season of the year to plough deeply. It is said that Great Britain would double her crop were the system of deep cultivation to become universal, and with much greater force may the same opinion be applied to Canada, where our land has been utterly run out upon the surface, and where a few inches under nearly every farm lies a hard pan compacted by the passage of the plough year after year.

Shallow ploughing is, we consider, one of the chief causes of that deterioration of crops which takes place so rapidly after the virgin soil has once become partially exhausted.

Of course in the discussion of such a wide question as that of deep ploughing, consideration must always be had to the various combinations and states in which different soils exist.

There are exceptional cases—or, we should say, there is an exceptional case—in which deep ploughing would actually be prejudicial, and that is where a shallow top soil is underlain with gravel or sand highly impregnated with an oxide of iron. Such a soil is, however, fortunately of rare occurrence, and, where it exists, we should advise the farmer to work it as little as possible. But even upon such a soil the use of a purely subsoil plough, such as was exhibited at the Central Fair in Hamilton this year, would be very beneficial.

The presence of oxygen and carbonaceous gases in the soil, is absolutely necessary to the growth of all plants, and these can only

be made available by thoroughly aerating or impregnating the pores of the earth with atmospheric air.

Good agriculture exists not only in renewing but also in prolonging the fertile properties of the soil. Of course all deepening of the soil must be done gradually and with judgment. There are men who, having heard something of the benefits of deep ploughing, have rushed into it without due consideration—have turned up a subsoil, and upon it have sown a crop which has proved a failure. They have then condemned the principle; yet the principle was good—the fault was in their application of it.

Presuming that all soil is disintegrated rock, and that these rocks contain in a greater or less proportion the salts necessary to the growth of plants, the roots of living plants, by the power which they obtain from their very principle of life, are enabled to extract and imbibe whatever of these salts are attached to or contained in the particles of soil. The plough then carries this disintegration still further, and exposes new surfaces or new sources of food to the roots of the growing plant.

Now this subsoil contains no mould or decaying vegetable matter, and thus is usually termed sour, or, in other words, contains much that is absolutely detrimental to the vigor of plant life. It therefore requires to be aerated to be relieved of its noxious gases, and there is no season so propitious and no action so effectual for this purpose, as that of frost and snow. Frost breaks up and crumbles the particles of soil, opening them to the action of the atmosphere, while the snow carries to them nitrogenous matter in large quantities.

The farmer, then, who feels convinced that a deeper ploughing would be of benefit to his land, must be gradual in his application—should plough, say, an inch deeper each time, giving the subsoil, cold or unavailable to the plant, but rich in vegetable food, time to make those chemical combinations with the oxygen and carbonaceous gases of the air, which shall enable it to give forth its plant

food to the tender rootlets seeking sustenance.

Another advantageous time to plough deep is just before an application of manure.

When the young plant first sends out its tender rootlets, they readily find food in the manure from which to gather strength, and then are enabled to take up food contained in the new soil, before unavailable by reason of their tenderness.

Again, deep ploughing is a system of drainage.

What is the secret of that yellow tint upon the barley blade when put in the ground too early in spring? The farmer will tell you that the soil was too cold, and he is right; but what made it too cold? Simply the presence of stagnant water. Water percolating the soil is beneficial; but the instant that water gathers in a spot it becomes injurious.

The farmer knows the ill effects of stagnant water upon the surface of the land, because he can see it, and yet it is hard to make him recognise the fact that there is an immense pool of water lying stagnant over many acres of his land, just out of sight, a few inches below the surface.

Thorough underdraining is the effectual cure to this evil, and next to that comes deep ploughing.

There are fields that have been ploughed the same depth for perhaps forty years; the farmer does not try to force his plough below, and in consequence, with the pressure of the plough and the trampling of horse and man, there is a hard pan through which no water can possibly sink away, nor can any root obtain a hold upon it. Break that up, an inch at a time, and you will relieve your land of stagnant water, prolong the fertility of the soil, get upon the land a fortnight earlier in the spring, and plough it later in the fall; your wheat will not heave out, because there will be no stagnant water about the roots upon which the frost can act; your cedar posts will stop in the ground for 30 years, instead of being thrown out inch by inch per annum.