



Vol. III. No. 18.

TORONTO, UPPER CANADA, SEPTEMBER 15, 1866.

POSTAGE FREE.

The Field.

Familiar Talks on Agricultural Principles.

TILLAGE.

The farmer's business is often described as being to "till the soil." This vague expression properly understood, well describes the most important part of his work. It is on the soil he has to operate. Out of it his returns must come. Everything depends upon the condition into which it is brought and kept. Its tillage, strictly speaking, has to do with securing a state favourable to the reception and growth of seed. Several processes are necessary in order to this. In a new country like Canada, where the woody wilderness has to be converted into fruitful fields, clearing and draining must precede ploughing, harrowing, and rolling. Much land is called "cleared," upon which this operation has been only half performed. It still bristles with stumps, or is thickly beset with stones. With such obstructions, it is impossible to bestow effectual tillage upon land, and every farmer should as quickly as possible get rid of stumps and stones. In ordinary circumstances, there must be patient waiting for the stumps to rot. But it would pay in many cases to extract the stumps by force. If several adjacent farmers would club together and buy an effective stump machine, the cost would be trifling to each, and the advantage great to all. A long lever, consisting simply of a stout, tough, round log, will do good service in twisting out stumps that are partially decayed. Fastened with an extra strong chain to the stump, such a lever worked by a good yoke of cattle, will "dislodge" many an "old settler" that left in the ground would be a nuisance, an eyesore, and a hindrance to the plough, for years. Stumps are often allowed to stand in a field when they are so rotten that a push with the hand or foot will send them over. This is negligent, slovenly procedure. By all means, be rid of the stumps and stones as quickly as possible.

When land is wet, but little progress can be made without draining. A soil saturated with stagnant water is utterly unfit to grow crops. It is impossible to work wet lands early in the spring, and thus valuable time is lost. When the seed is in, it will not germinate quickly, or grow fast, or ripen seasonably. An excess of water in the soil excludes the air, which is necessary to promote the assimilation of plant food. It also changes organic materials into vegetable acids, producing the condition which we call a "sour" or "cold" soil. Land not properly speaking wet, is greatly benefited by drainage, and there are few farms that would not be rendered far more valuable and productive by this important preparation for culture.

Supposing land to be cleared and drained, thorough ploughing is the next process. Its objects are to

make the soil mellow, to change the surface and bring up new portions for contact with the air, to mix the top soil and the subsoil together, to cover and distribute manure, and to destroy weeds. Ploughing should be deeply done. If shallow, it is to a great extent labour lost.

Deep ploughing has many advantages. It exposes more of the soil to the action of light, warmth, air, and moisture; affords more space for the roots of plants; produces many of the beneficial effects of draining; gives more land to the acre, adding deep acres to broad ones; preserves from the evil consequences of both drought and excessive rain; and saves labour by securing larger crops on the same space, than can be raised by mere skim-ploughing. Where shallow ploughing has been practised, the deepening of the soil should be gradually accomplished. By going down an inch lower each time, only a little of the hungry sub-soil is brought to the top. In this way, if in addition to deepening, manure is liberally applied, gradually the whole of a deep seed bed is pulverized and pervaded with fertilizing material. Subsoiling, as it is called, is an excellent practice. It is performed with a plough that does not turn a furrow, but simply stirs the soil beneath the furrow already turned. It has been known to add one-third to the crop. The importance of having a deep, rich, mellow soil cannot be over-rated. It is a pleasure to work such a soil, a pleasure to gaze at the luxuriant crops growing in it, a pleasure to harvest the abundant products it yields, and a pleasure to count up the gains derived from it. Most people are unaware of the immense good done by mere tillage. It is hardly possible to be too thorough in working the soil, so as thoroughly to stir and mix it. From the fact that a large amount of fertilizing material is absorbed from the air, and that a loose, light condition of soil is most favourable to extracting the supplies thus obtained, tillage not merely prepares the land for a growing crop, but to a considerable extent provides manure for it. Hence the maxim which should never be lost sight of by the farmer, "TILLAGE IS MANURE."

Early Fall Ploughing.

THE ploughing of land in the fall of the year is practised by many farmers merely to save time the following spring. It is a good practice, when viewed in this light, for the season of spring is so brief that there is always too much crowded into it, and it is well to lessen and lighten its labours if we can. But in this view of fall ploughing, the end is gained if the work be done any time before frost sets in. There are, however, special advantages which can be secured by early fall ploughing. If it be stubble land that is ploughed, a crop of weeds is turned under which might otherwise go to seed and give annoyance another year. These weeds together with the roots

of grass and the stubble of the cereals are converted into manure, during the mild weather that precedes the setting in of winter. If ploughing is done in cold weather, or just before frost sets in, the roots and stems will remain undecayed until spring. The turning up of fresh surfaces to the action of the weather before the season of growth is over, affords an opportunity for fertilizing gases to be absorbed, and fixed for the use of a future crop. The soil is not only a reservoir of plant-food, but it attracts that food, and when it is made to lie up lightly it is full of cells and interspaces, each one of which is a little store-house of nutriment for vegetable life. Moreover, early fall ploughing gives a chance for enriching the soil with the ammonia that descends in the rainfall of thunder storms, a benefit by no means to be despised. Fall ploughing, whether late or early, exposes the soil to the action of frost and snow during the winter, by which important results are secured. It becomes finely pulverized, many fertilizing ingredients are made available, ammonia is absorbed from the snow, and stored away for future use, tough clay is softened, hard sods are crumbled, and nature is made to help and lighten the toil of man.

Fall Sowing of Timothy.

TIMOTHY is usually sown in spring along with a grain crop, and, as is well known, there is always more or less of uncertainty as to its getting a good "catch." The grain, of course, comes on faster than the grass, and not only overshadows it, but extracts the lion's share of the moisture which the young timothy greatly needs in the earlier stages of its growth. It is considered that the shade afforded by the grain is favourable to the grass, preventing its being parched by the hot summer sun. This is doubtless true to some extent, but the shade is excessive, and being associated with a monopoly of the moisture, there can be no question that on the whole, the timothy has a pretty hard struggle to live. Evidence of this is furnished by the frequent partial or entire failure of a seeding down. Sometimes drought prevents its taking well, and when the summer is moist so that it gets a good start, many of the young plants are crowded out by the thick grain, or trodden and crushed to death in harvesting, or trampled, torn out and destroyed by the pasturing of cattle and pigs in the stubble. Under the most favourable circumstances it is questionable whether spring-sown timothy will cover the ground as well the following season, as that which is sown in the fall, provided the ground is properly prepared and the work well done. We believe that where a due amount of attention is paid to the getting in of the seed, fall sowing will result more satisfactorily than spring sowing. Generally speaking, farmers grudge the same trouble and labour for grass seed that they bestow cheerfully