

this custom prevails the clover is never kept a second year, it is either mowed and the second growth ploughed down for wheat, or it is pastured till October and then plowed down. This is called the four course husbandry, viz: Turnips, Barley, Clover, Wheat or Beans; an admirable system in the Old Country, but beyond our reach. The result of experience then shows that *thick* sowing of grain to a certain limit, is far more profitable than *thin* sowing. Though the seed may cost a little more, the acreable produce will be much greater in proportion. Every skilful farmer can easily ascertain what that limit is. The best and cleanest grain should be always used for seed as the shoots from such are always the strongest, and a constant renewal of seed is absolutely necessary to ensure an abundant crop.

After sowing, or rather after the grain is well up, there should be a free application of the roller, not only to level the land for the cradle or scythe but to retain the moisture in the soil, and mould the plants; and in the spring of the year, as soon as the land is dry enough to carry the horses without injury, all the winter wheat should be well harrowed to break the crust of the soil, to mould the plants and to admit air and moisture to the roots. Experience has fully shown that in every description of land, the free application of the harrow to winter wheat in spring, has a most beneficial effect, and the fear that most farmers have that the harrow will tear up and injure the wheat is most unfounded and absurd. Let every farmer but try a small piece one year, and he will undoubtedly harrow all he has every spring afterwards during his life.

This year, 1851, I had a field of wheat so much wintered out that I sowed spring wheat over it, and though well dragged four times over with a very heavy drag, the few spots that were not wintered out were benefitted, instead of being destroyed: but at all events, one good close bout of a heavy harrow is essentially beneficial.

DRAINING.

I should, perhaps, have observed before, that to secure good wheat, good draining is indispensable. By good draining I would not pretend to recommend tile draining, or covered underdraining, such as is found necessary to have in England or Scotland, except in peculiar localities. We do not require such in our dry climate, and the expense being from £4 to £6 per acre, exclusive of tiles, say in all £10 per acre, would overrun the advantage. In damp soils and situations it will be generally sufficient to ascertain the source of the spring, and by one good deep drain intercept the supply and cut it off. As a general rule this with good and judicious water furrowing, and a few surface drains will suffice. Neither our increased crops, nor prices, nor profits, would remunerate us for expensive draining: nor does the climate require it, except in a few local instances, and the farm that requires much expensive draining is

not worth having. I have never yet heard of any farmer in Canada, who is able to realize for five successive years, a net annual profit of 20s. per acre, over his whole cleared farm, i. e. after deducting seed and labor, (his own included) and the interest of the acreable value of the land: and I know of no land that would pay for expensive draining such as is done in the old country. If a farm require it, except in a few local instances, the owner should rise up and leave it: our average acreable produce, under the best circumstances, will not warrant a heavy expenditure of any kind. Even with the greatest skill and caution, our crops are too precarious to repay extensive outlay. Those who succeed best amongst us are those who do as much as possible within themselves, not employing much external aid, not laying out money for which they cannot calculate a certain return. This year, 1851, for instance, the finest wheat on the finest, richest and best drained soils is deteriorated fully one third, over all Canada, by a severity of spring and winter weather, which it would have been impossible to guard against, or even to foresee, and this is by no means uncommon. The greatest of all skill in farming is "properly to adapt our expenditure to the certainty or uncertainty of our returns." Those cannot be called *improvements*, the result of which will not pay for their completion; a real *practical* farmer will not enter into them. Theoretical farmers sometimes do commence expensive operations, but as soon as their money is gone they become practical farmers, sometimes buying their practical knowledge at a ruinous price.

Far be it from me then to recommend expensive draining, or expensive operations of any kind, on a farm in Canada; but it is a very important branch of a farmer's knowledge to be able to cut off the greatest body of surplus water by the least expensive means—this knowledge can only be attained by attentive observation and experience. I think, generally speaking, we do not lay out our ridges small enough; in heavy or flat land I always find that the grain on narrow ridges is the best, and recommend about nine feet as a proper width, and in no case, except on very sandy and porous soils, ought the ridges to exceed fifteen feet, in all cases to be rounded off, i. e. never flat in the centre or sides.

MANURES.

The time is much too limited to enlarge upon their variety and importance; the first great principle is *never to exhaust the land by severe cropping*; and the next great principle is to restore to it, in some shape or other, the properties which we have abstracted—by the system of cropping which we have pursued. We all know that manure benefits the land, but the thing is to know the why and the wherefore. Newton knew that an apple would fall to the ground, but it cost him years of study to know *why* it fell. So will it cost us farmers much time and attention to know what manures or stimulants or correctives are required under varying influences; our knowledge is but yet in its infancy; one thing, however, we do know, that almost all the strength of animal manure is in the urine, and not in the feces; and another thing we know that we are not by any means