

liberal application of bone-dust cultivated in before sowing, to have a most marked effect.

Good Cultivation.—The preparation of land for wheat should be thorough. If a summer fallow has been properly carried out, one single ploughing before sowing is sufficient. If wheat, however, follow a spring crop, it is well to plough lightly; cultivate or gang-plough the stubble as soon as possible after the preceding crop has been harvested. This has the effect of starting into growth such grains as may have shelled in carrying the spring crop, and also many weeds which may have been deposited in the ground.

As soon as these grains and weed seeds have been fairly started, a second deep ploughing will cover them and completely destroy them, and we are ready for our wheat. Where it is feasible, we think that the drill should always be used for fall wheat. Fall wheat seed should be deposited sufficiently deep to give it a good hold upon the ground. This depth should, however, be regulated by the nature of the soil. Upon this point we do not feel competent to lay down any arbitrary rules, but we think that about two inches is the right depth for clay; while upon more friable land, or even upon a summer fallow, we think that a greater depth would be admissible.

Where it can be avoided, as in the case of a summer fallow, we do not think it advisable to plough in our manure just previous to sowing, but rather to turn under lightly with the last summer ploughing, and thus by again ploughing with plough or cultivator just before seeding, ripping up the manure, incorporate it with the soil near the surface.

In manuring upon pea or barley stubble we should plough first, and then spreading well rotted barn-yard manure upon the surface, cultivate it in, and thus incorporate it with the surface soil before sowing.

If lime be used as a fertilizer, from 10 to 20 bushels staked per acre is the usual dose. This should be sown broadcast, and incorporated with the soil by cultivation before sowing the grain.

Bone dust is another excellent manure to be used where there is a deficiency of barn-yard manure; this at the rate of two or three cwt. per acre should be mixed with the soil as above.

It will never pay to put in a crop of wheat unless the land be rich enough to give fair promise of from 25 to 40 bushels per acre. If the land be not in good order, let it be remembered that ten bushels extra upon an acre of wheat is equivalent to at least ten dollars (for the work of the teams, seeding, cutting and harvesting is about the same, be the crop light or heavy), and that ten dollars will manure an acre very liberally.

An immense breadth of barley has been sown along the Bay of Quinte, and the Napanee Beaver says not less than 500,000 bushels will find cash buyers this season in that town.

Hints on Fall Work and Preparation for Spring Crops.

Harvest being now well over, and wheat sowing or the preparation of the land for that crop far advanced, it becomes advisable for us to consider what course is the best for another year. Most farmers throughout Ontario have become convinced of the necessity of somewhat altering the old programme of field operations, and have also had their attention turned to the growth of roots. With scarcely a dissenting voice, one and all say that they have found the benefit in a most decided manner, in spite of previous prejudice. It is true that turnips are to be taken care of in fall weather, and often in rain and snow storms, yet turnip culture and harvesting are now practically found much easier than was formerly thought possible. It was formerly a vain attempt to convince a Canadian farmer that there was any possibility of contending with ten acres of turnips; now this is an ordinary piece to sow, and many have more acres under cultivation, and few regret sowing them.

A visit to an agricultural implement depot, such as we have now in Toronto, will be found profitable and instructive, as well as amusing. The visitor will there see what has produced this revolution in turnip culture. Every species of drill, for horses or hand power, may be there seen, and even machines for harvesting turnips; and thus one great difficulty is overcome. We now have within our reach such implements as will lessen the cost of turnip growing by one-half. Manufacturing enterprise and capital have to a great extent been put in force; but these have failed to influence the farmer as much as the great falling off, for some years past, of the quantity of wheat that could be raised on an acre, taking the average throughout the country. Bad crops have forced farmers into turnip growing, and now that this year we are blessed with an old-fashioned yield of wheat—40 to 50 bushels per acre in many parts—we probably shall again fall back on wheat growing, and comparatively abandon turnips for a season. But let us beware of doing this. Do not suppose that our harvests are hereafter always to be like that of this year. Depend upon it, we shall not find our barns so well filled next season as this, and it therefore behoves us to look forward to such a contingency, and certainly not to abandon turnips for wheat. Both crops should be raised to the extent of our ability.

The present season is the best for preparing the land for next year's crop of turnips. If the manure is hauled out in the latter end of September, and, after being well spread abroad, it be covered by ridge and furrow-ploughing, the land will be dry and wholesome two weeks sooner in the spring. All that will then be requisite will be to harrow every ten days with the ridges, not across them, using the harrows that are constructed to do this to the best advantage, and there

will not be under this course of cultivation one weed where one hundred would spring up under the old system, and the labour is not one-half as much.

The same observations apply to growing sugar beet. The first great difficulty in growing root crops is to get all the manure crops in a decomposed state directly underneath the growing roots, and yet to have the manure to lie wet and solid, not dry and light as when applied in spring, when any long continuance of drought will invariably destroy the chance of a good crop. The next desideratum is to have as little labour as possible put on the turnip land during spring work, when the white crops want every day in our short season given to them. The next is to have the land rich, and ready to sow at a day's notice, when you find just the most suitable time coming, when rain may be expected to bring up the young plants in a hurry. The next is, most emphatically, to have no weeds. These conditions, and especially the first, to have the manure so directly under the plant, and in such a moist state of decomposition, that the young plant is forced on its way, and by its rapid growth escapes the fly, are all important. All these conditions are fulfilled by the plan proposed, namely, manure applied in the fall, ploughed in by ridge and furrow, whereby four acres can be well enough ploughed over in a day, and all weeds killed by surface harrowing during May. The first week in June the turnips can be sowed, after which, under this regime, a crop of turnips is almost an absolute certainty.

Increase and Intensify the Manure Heap.

A prize essay of the Illinois Agricultural Society for 1870, by R. Giddings, details the cheapest and most practical plan of increasing the farm-manure pile and saving its elements from waste, and which should be adopted by every farmer. His plan is simply to save every particle of the animal excrements, liquid and solid, with all its fertilizing elements intact, free from waste by washing, evaporation, or fire-fang. To do this, he fills a stall, or large bin, in his stable, during dry weather, with pulverized clay, road scrapings, or common soil. With this he covers the floor of each stall three inches deep, and then places the litter for the animals' bedding on it; by this means, all the urine will be absorbed, and its wealth of nitrogen saved; and such is the absorbing power of dried earth, that one three-inch flooring will not be so thoroughly saturated in a long time as to require replacing. He says his experiment required but one large bin of pulverized earth to absorb the urine of ten or twelve cattle during the stabling season; and that two men with a team filled the bin in one day. Dried clay was applied also to the pig-pen and hen-roost, with the same ammonia-saving results; and if applied to the privy or earth