

ditions and yielding the greatest return, we can only admire all the more the grit and energy which has enabled them to achieve so much under such unfavorable conditions. It is an admitted fact that ten hours a day is enough for the teams engaged in farm or any other work, and if enough for the teams, then why not enough for the men who drive the teams. It is an easy matter to arrange the hours in such a way, that after allowing sufficient time for the teams to feed at noon, they can quit work at six or half-past six in the evening. After this a little time spent in caring for the horses, to make them as comfortable as possible, will, or should, complete the work of the day. I have read somewhere (can't remember where at present), of an attempt having been made to so arrange the working hours to allow the teams and men four or five hours rest in the heat of the day, by working the ten hours early in the morning and late in the evening. But it was not successful, as it was found that the horses were not so fit for their work by this arrangement as when allowed only sufficient rest at noon to feed, and the remainder in one unbroken period at night. Another good result that might perhaps follow the adoption of a system of shorter and more regular hours is, the prevention of so many of our young men leaving the farm. What wonder that young men raised on the farm get tired of its long hours and heavy work, when they go into town and see those of their own age, having neither more ability nor intelligence than they, handsomely dressed, and looking decidedly neat and tony, getting away from their work at six, with liberty to go where and when they please so long as they are at their places ready for work in the morning? If the young men in the country were only asked to work such hours as these, and after that could do as they desired, they would naturally take more interest and pleasure in the farm and farming. After the work was through they could spend an hour or two in study or reading the newspapers to keep posted on the general affairs of the world and the current events of the day; or if they choose to spend the time on their team, in breaking a colt, in doing a little gardening, or in any way similar to this, well and good. Don't deny them anything within reason in which they take an interest, so long as the tendency of that interest is to create a love for the farm and farming. There are, of course, times at which it is justifiable to work until dark and later if possible, viz: in haying or harvest, when a large amount of hay or grain has been cut and is ready to be hauled in and rain is threatening. Any man who would refuse to work extra time under such circumstances as these, is, in the opinion of most men, worse than a fool, in thus refusing to assist in securing safely those good things which Providence has so generously bestowed. A day given to farm hands to attend a fair or exhibition, or any institution of an interesting or instructive nature, is something almost every man would appreciate, and he must be slow indeed to learn who does not pick up some bit of information, or get hold of some idea that will be useful both to himself and his employer. Were some such measures as these adopted greater harmony would often exist between the farmer and his men, and as a result of this, it might lead to longer service which is very much to be desired both by employer and employee.

Don't sell your ashes or bones, they are of more value to you than the money you get for them.

#### How to Eradicate Thistles.

Thistles are thought by some farmers who have come in contact with them, to be unconquerable, says a correspondent of the Farmers' Review. The encumbrance to the ground in a growing crop absorbs in many cases the entire profit of the field. Nothing but a systematic and determined intelligent effort will eradicate this pest. I speak from knowledge founded on experience. Ten years ago I commenced to work a farm in Western Ontario. This farm had been rented for a number of years, and, as is usual in such cases, the object of the tenant was to get as much out of the land as possible without much consideration of future returns or condition. Taking possession in the fall, I found in some of the fields from one-third to two-thirds of the grain crops (oats and wheat) were not harvested, having been so choked out with the thistles that they were not worth cutting. This condition of things, although by no means uncommon, would soon lead to disastrous consequences. If 25 per cent. of the value of a crop is the normal profit over working expenses, and over 25 per cent. is weeds or thistles, it could not be expected that the bank account or capital stock of the farmer would increase very rapidly.

My plan was to run a gang or three-furrow plow over the ground directly after harvest, plowing only  $1\frac{1}{2}$  to 2 inches in depth, and then harrowing well and leaving it until later in the autumn or spring before using the large plow. This light plowing, covering the seeds of thistles and other weeds, induces them to germinate, and the next plowing kills them; whereas, if turned under with the large plow first, they either grow through to the surface in time to appear in the next crop or lie dormant in the soil, to grow when the next plowing takes place. By this method of shallow plowing after harvest, and a good deep plowing the following spring, a crop may be expected if the land is not very foul.

The process of cleaning a very dirty field is one requiring courage, perseverance and numerous other virtues. It is expensive, inasmuch as a complete summer fallow is required the first year. The advantage claimed for the summer fallow is that it furnishes employment for men and teams at odd times when other work is not pressing. Three plowings and nine harrowings is the general rule, but may be changed to suit different circumstances and seasons. I have always objected to bare fallowing when avoidable, on account of the loss from the soil by evaporation of valuable elements of plant food when exposed to the continual rays of the sun without any intervening green surface. A rapidly-growing green crop, such as buckwheat, rape, peas or clover, may be sown and plowed under with the additional advantage of ameliorating and fertilizing the land. When it is desirable to prepare for a crop of fall wheat, green manuring is not always practicable, if the object is to kill thistles also. This is where good judgment is required, and the farmer must know the condition of his fields and arrange his plans beforehand.

If the land is well summer-fallowed for one season the thistles will not be effectually killed out; they will be pretty well weakened, however, and a good and comparatively clean crop of grain may be secured the first year. With this crop the land should be seeded down. Two-thirds clover and one-third grass seed is a good proportion to sow. Variety of kinds is preferable in

most cases. The first crop after seeding will be principally clover hay; the next and succeeding crops principally timothy. It is in mowing the grass that thistles are killed. They do not mature their seed in time for haying, but ripen with grain crops, fall wheat sometimes excepted. Nothing is better than grass to check their growth, while grain growing is favorable to their development. After two or three mowings the sod should be broken up and two or three crops of grain, corn or roots may be taken. A hoed crop of corn or roots is a good preparation previous to again seeding down. When the ground is put into condition for seeding to grass, the great difficulty of thistles is removed. The same remarks will apply to the majority of weeds.

#### Should Potatoes be Hilled?

A number of potato growers would not find the least difficulty in answering this question. They would say:—"To be sure they should. Why, old Mike Fagen told me, when I was quite a lad, 'Hill the 'taties well, John; the larger and higher you make your hills the larger the crop of 'taties will be.'" But if we proceed to question them about the "whys" and "wherefores" they are unable to answer. They have never tried any other way than that which their fathers practiced before them.

The writer remembers quite well that when a boy on the farm he thought one day when told to hill a field of potatoes, "Well, now, why is this done?" and not finding a satisfactory answer in his mind he asked for permission to leave several rows at the end of the field unhilled to watch the results but was not granted the privilege, the boss replying, "Why, that would be a foolish thing; it would spoil that part." Next year we, however, received permission, and proved that hilling was not only unnecessary but injurious; for those hilled gave over 20 per cent. less than those that were not. The experiment was repeated the next year on a larger scale with like results. These tests shakened the farmer's confidence in his old and well tried method of hilling, which he gave up entirely after a few additional tests. All the experiments of this kind we have seen or heard of gave the same results, viz., a difference of 10 to 50 per cent., and even 100 per cent. in advance of those hilled.

Now, what are the reasons for such an extraordinary increase in the returns of a patch not hilled? The most important of these is that the moisture of the ground is better preserved when it is not ridged up; the practice of hilling does not only expose more surface to the sun's heat, but the centres of the rows being hard, owing to the removal of the loose earth on the top, evaporate a larger amount of water than the same surface would were it covered with a loose mold. (For further explanation read article on *Cultivation*, p. 170, June issue, this year.) The rain falling on such a plot, being shed by the hills, is also lost to some extent. The undue mutilation of the roots, caused by the hilling, is another disadvantage, and still another is that explained by an agricultural week y on the other side, viz., as the tubers will always grow at a certain depth, hilling them after they have commenced to form will cause new roots and tubers to be thrown out, which, drawing away the nutrition from those formed below, will cause a crop of a larger number of smaller potatoes.

The advantages for hilling are few indeed, if any, on soils properly drained. It may assist in keeping up the foliage and prevent some potatoes from becoming green on plots on which they have been planted too shallow, and may assist in digging them. On cold, wet soils and in excessively wet seasons it may, to some extent, prevent rotting, but that is all.

Try the experiment and increase your potato crop this year, by not hilling them, or at least not hilling them so high as it is customary to do,