

## The Field.

### Summer Fallowing and Green Manuring.

It was a theory in farming, as formerly practised, that after a certain amount of cropping, land required rest, very much as the man who tilled the land, after a period of labour, found it needful to rest. Experience proved that summer fallowing had the effect of restoring fertility to the soil; but it may be doubted if many of our forefathers had any correct idea of the principles in nature according to which this result was obtained. Some vague notion about the land being exhausted, and needing rest, was well-nigh all they knew in reference to the matter. But the scientific explanation of reinvigoration by fallowing is, that in consequence of the exposure of the soil to sun and air, elements of fertility are absorbed, and chemical conditions obtained, which restore productiveness. Land is never exhausted by growing crops upon it; the exhaustion comes of removing the crops without giving back to the soil what has been taken out of it in the course of their growth. If the plant food taken out of the soil by a particular crop were faithfully returned, there would be no exhaustion, and no need of rest. Indeed under such treatment land would increase in fertility, since, to a certain extent, tillage is manure, and a constant stirring of the soil is highly favourable to productiveness. So, also, if the crop were suffered to remain on the land, and there undergo the process of natural decay, not only would there be no impoverishment of the soil, but it would increase in fertility, because growing plants obtain a portion of their nutriment from the air. Again, if, instead of its being left to decay, the crop is fed to animals who consume it on the land, their manure will so far enrich the soil as to prevent deterioration, and maintain the average standard of fertility; while by feeding these animals meal, grain, or oil-cake, in addition to such crop, the land is actually enriched.

Among intelligent and scientific farmers, the practice of green manuring has quite superseded the old plan of summer fallowing. This proceeding consists in the growth of green crops for the express purpose of the vegetable matter thus produced being ploughed under as manure. The most beneficial results have been found to follow this method, and it is every way desirable that it should be more extensively adopted. In explanation of the benefits thus obtained, it is only necessary to refer to a fact mentioned a few sentences back, viz: that plants derive a portion of their subsistence from the air. If the soil were the only source of plant food, the growth of a crop could not add any new material to the land, or augment its fertility. The processes of growth might act beneficially on the soil, as they doubtless do, but nothing would be given to the land except what had been derived from it. But it has been abundantly proved that growing crops absorb a large amount of vegetable matter from the atmosphere, and when this is incorporated with the soil, there must be proportionate enrichment. Nor is this increase of nutriment the only beneficial result arising from the use of green manures. If this were the case, it might be a question whether a like quantity of fertilizing material might not be purchased, and applied to the soil at the same or less cost. There is, however, the mechanical action of green manures to be taken into account, as well as their chemical action. In the case of strong, clay soils, this mechanical action is especially valuable. Such soils, though highly productive, are so dense and compact in their texture, that they are hard to work, and their stores of fertility may be said to be locked up, and to a great extent unavailable. After thorough preparation for a crop, they soon harden again, especially when subject to the influence of dry, hot weather. Ploughing under green manures renders a stiff soil

porous and friable, a state of things very encouraging to the growth of roots, enabling them to penetrate the soil more freely in search of nutriment. Sandy and loamy soils are also benefited, especially by their becoming more capable of retaining moisture, which is held by the vegetable tissues thus added to the land. Manure is also more easily retained in such light soils, as the result of this process. Even blowing sands have by this means been so improved, that in process of time superior farms have been formed on tracts of land previously considered barren and worthless.

A crop, to be suitable for green manure, must be of rapid growth, and a greedy feeder on the atmosphere. Mustard, buckwheat and lupin are chiefly used in Great Britain for this purpose. In this country, clover, buckwheat and Indian corn are the best green manures. The last mentioned crop cannot be allowed much growth before ploughing under, or it will become too tall for burial with the plough. Buckwheat is a most excellent plant for the purpose under consideration. It grows very fast, feeds largely on the atmosphere, and is fit to plough under in four or five weeks from the time it is put into the ground. There is no better preparation for fall wheat than ploughing under a luxuriant growth of this plant or of red clover.

The age of the crop at the time it is ploughed in is a matter of much importance. Just before blooming, or when in full bloom, are considered the best periods, and authorities differ as to whether before or while blooming is the preferable time. By all means, however, the plant must not be allowed to ripen and perfect its seed. If this is permitted, the soil is robbed greatly, and much of the fertilizing material consolidated into woody fibre, in which condition it is not so nutritious, or so readily available for plant food.

Another beneficial effect of green manuring, which has led to its being much encouraged in certain localities, is its destructiveness to the wire-worm. This insect, which is one of the wheat farmer's greatest pests, is greatly checked in its ravages by the practice we are commending, and it would be well for those who are troubled with this marauder to try a dose of green buckwheat.

### Haying.

BY HENRY WARD BEECHER.

Alas for the poetry of farming! All the songs of milk-maids must be now listened for in the old English poets. The whetting of the mower's scythe is almost over—quite over—on my farm! Instead of that, one hears the sharp rattle of the mower, and sees the driving man quite at his ease riding round and round the meadow, for all the world as if he were out airing! Whereas, heretofore, two acres would be counted a large day's work, now ten and twelve are easily accomplished!

Nor is the contrast less remarkable in all the after-work. When I was a boy I was placed in line, with all the men that could be mustered, to shake out the hay with forks; and after a few hours all hands were called to go over the ground and turn it. To do this rapidly, and yet so that the bottom side shall really come on the top, was no small knack. Now, a tedder, with one man riding, will literally do the work of ten men, and do it far better than the most expert can. Have you ever seen a tedder? I have now a perfect one. The grass rolls up behind it and foams, I was going to say, like water behind the wheels of a steamer. The grass leaps up and whirls as if it were amazingly tickled with such dealings. The result is, that unless the grass is very heavy, and the weather very bad, you may cut your hay in the morning and get it into your barn before night, in far better condition than it used to be when it required never less than two, and generally a part of three days to cure it.

But, I have forgotten the horse-rake. Instead of the old-fashioned, long-handled rake, and the five or

six men, pulling and hauling to get the grass into winnows, that same fellow, with that same horse, rides his luxurious rake, and in the fifth part of the time formerly required, puts it in equally good shape. Indeed, haying, if it has lost its poetry, has also lost its drudgery. A man can now manage a hundred acres of grass easier than he formerly could twenty. The only thing that remains to be made easy is pitching on and off the load. It is true that horse-forks have been invented, but I have never seen any that did their work well; and in my barn, at any rate, the old work of pitching and mowing remains; and if you wish to know what fun is, get on to the mow, under the slate roof of my barn, on a hot day, and let Tim pitch off hay, as he will if I give him the wink. You will have to step lively, and even then, you will often be seen emerging from heaps of hay thrown over you, like a rat from a bunch of oakum. And then it is so pleasant, when a man is all sweat, to have his shirt filled with hay seed, each particular particle of which makes believe that it is a flea, and wiggles and tickles upon every square inch of your skin, until you are half desperate!

It is the 2nd of July, and my grass is all cut, and the last load is rolling into the barn while I write. How sweet it smells! How jolly the children are that have been mounted on top of the load; and their little scarlet jackets peep out from their nests while Tim stands guard and nurse. A child that has not ridden up from the meadow to the barn on a load of hay has yet to learn one of the luxuries of exultant childhood! What care they for jolts, when the whole load is a vast multiplex spring? The more the wagon "jounces" the better they like it! Then come the bars, leading into the lane with maple trees on each side. The limbs reach over, and the green leaves kiss the children over and over again. So would I, if I were a green leaf, and not consider myself so green after all! And so the load rolls slowly up the hill. There is no such thing as momentum in an ox. He is always at the dead pull and at the very hardest. But the children like it! The slower, the longer the ride! Let them take all the comfort they can. By and by they will be grown, and own fine carriages, and roll in style through the streets. But there is many a fair face that rides in a silk-lined coach, with a sad heart, and would go back if she could, oh how gladly, to the joyous ride on a load of hay!—N. Y. Ledger.

### The Spruce for Hedges.

To the Editor of THE CANADA FARMER:

SIR,—Many of your correspondents' letters are so interesting that I wish to furnish my quota, especially about hedges.

I quite agree with Mr. J. Nicholson about trimming hedges, viz., that the triangular form should be always observed. A hedge trained in this way must be thick at the bottom, the rule being—one foot high, one foot at the base, and so on to six feet.

If this principle is a correct one, the question then comes, what form of tree will yield most easily to such conditions? The thorn is always trying to get top-py, and consequently thin at the bottom; in fact most thorn hedges, if turned top-py turvy, would make good hedges. I also find all classes of domestic animals feed greedily on the thorn shoots; another objection I make is that early in the year the hedge looks thin, until the leaves come out. I have, therefore, abandoned thorn hedges to adopt the Spruce Fir. This tree, if planted two feet apart, comes up to my idea of what a good hedge ought to be; it readily conforms to the shape required, viz., the triangular; it looks tremendously strong; no animal eats it, and it is handsomer in winter than in summer, besides growing quicker. I know of no insect which destroys the Spruce Fir. I have about twenty acres of Fir hedge planted on my farm; I clip them with shears as there is little or no trouble with them. The thorn, on the contrary, is always trying to bother us, and it is the work of a careful man or the master himself to keep them in bounds.

Spruce Firs are delivered on my farm, two feet high, at five cents each. I always prefer those grown in a field to those brought out of a wood. Fir hedges are used on the railways in Switzerland as thorns are used in England.

W. RHODES.

Sillery, Quebec, 20th June, 1868.