



VOL. IV. No. 8.

TORONTO, UPPER CANADA, APRIL 15, 1867.

POSTAGE FREE.

The Field.

Familiar Talks on Agricultural Principles.

GRASS CROPS.

THE grasses, it has been well observed, "are nature's care." They grow spontaneously in all parts of the world, and are a most important source of food both for man and beast. But though in a state of nature they grow without culture, they well repay the study and application of agricultural principles by the intelligent and skilled husbandman.

Properly speaking, the grasses include most of the grains cultivated and used by man, as wheat, rye, Indian corn, barley and rice, all of which have leaves and stems very similar to those of the plants popularly known as grasses. The general designation of grasses is, in a common way of speaking, given to certain plants, mostly leguminous, which do not really belong to the grass family, such for example as the clovers, which belong to another class of plants altogether, though commonly ranked among the grasses.

In this country, the culture of grass crops must necessarily be a most important branch of practical farming, from the necessity of providing for the sustentation of stock through a long winter. The practice, now happily becoming so general, of raising root crops, to some extent lessens the cattle-keeper's dependence on grass, but after all it is of the highest importance that abundant stores of hay should be provided. With plenty of hay and roots, in addition to comfortable shelter for his animals, the farmer is independent, and may smile defiance at the longest and hardest winter that is ever known in Canada.

In a brief "talk" on this subject, which is a very wide one, we can only touch on two or three points in reference to which agricultural principles need to be better understood in their application to grass crops. And first, farmers require to be reminded that these crops, like others, cannot be grown unless there is nutriment for them in the soil. The idea that any description of land, however poor, will raise grass, is extensively entertained, and also that hay may be cut year after year without supplying loss by means of manure. It should be known more widely than it is that timothy, one of the most valuable and widely-cultivated grasses, requires very much the same substances in the soil as grain crops, in order to be grown with profit. The failure of grass crops, often regarded as a mysterious matter, and vaguely attributed to faults in the seed or peculiarities in the season, if not to that extensive mischief-maker "bad-uck," may often find its true explanation in the impoverished condition of the soil, and at once its prevention and cure in the enrichment of the land. As to expecting successive hay crops from ground to which no equivalent for what is taken out of it is given in the way of top-

dressing or liquid manure, it is so unreasonable and absurd, that the wonder is intelligent people should have ever been foolish enough to indulge such an expectation. Chemical analysis of the ash of timothy gives the following result: Silica, 31.09; Phosphoric acid, 11.29; Sulphuric acid, 4.86; Carbonic acid, 4.02; Lime, 14.94; Magnesia, 5.90; Peroxide of iron, trace; Potash, 24.25; Chloride of Potassium, .70; Chloride of Sodium, 3.24. It follows that land is only fit to be seeded down to grass when it is in good heart, and that even then not more than one, or at most two crops, should be taken without the application of a good top-dressing of some kind, which should be repeated annually, so long as hay continues to be cut. By generously top-dressing meadow land, several good yields of hay may be obtained from it, after which it may be left, if desirable, for pasturage. It is, however, the poorest and most discouraging kind of farming to attempt to grow hay on worn-out land; and while, if desired, successive grass crops may be obtained in the way just described, it will be found, on a plan of mixed husbandry, that the best method is to alternate grass with other crops, allowing say two years in the rotation to grass.

Another point that deserves more attention is the wisdom of sowing a variety of grasses in conjunction with each other, especially when it is intended to form what are called permanent grass lands. In this respect, a lesson may be learnt from nature's economy of grass-growing. If a piece of natural green sward be closely examined, it will be found to comprise a great variety of kinds. The advantages of imitating nature in this respect will appear obvious on a little reflection. Some grasses are early, and others late in the season; some flourish better in wet seasons than others; some endure drought more patiently than others; some are more liable to suffer from early and late frosts than others; some run out more quickly than others. This policy of mixing seeds is to some extent acted on, but it needs to be carried out more fully, and experiments with particular grasses in various parts of the country would, no doubt, be of great value in showing what sorts were likely to succeed best in different localities. The usual course with the great majority of our farmers is to sow a mixture of timothy and clover, but it is certainly advisable to increase the variety. Red-top is often sown with timothy and clover, in which case the clover quickly disappears, timothy follows, and ultimately red-top, with a few self-sown wild grasses, occupies the ground. In England it is common to sow, along with timothy and clover, rye-grass, meadow fox-tail, cocksfoot, meadow and hard fescue, several sorts of meadow grass, sweet-scented vernal grass, and others too numerous to mention. While, no doubt, the moist climate of the "sea-girt isle" has much to do with producing the thick, luxuriant velvet sward for which England is so famous, we have no doubt that the custom of sowing a miscellany of

grasses, and also of top-dressing permanent meadow and pasture lands, aids in no small degree, and in this, as in many other respects, we may copy old-country husbandry to advantage.

Another important matter, and one that cannot be too strongly pressed upon the attention of Canadian farmers, is the cultivation of clover. This will flourish in soil of only moderate capacity, provided it contains a good proportion of potash, lime, and gypsum, while the great advantages this plant confers on the land in which it grows, render it of the highest value. Clover sends its roots deeply into the soil, living to a considerable extent on the sub-soil, and what is derived by the action of its leaves from the atmosphere. There is no better green manure than a crop of clover ploughed under when in bloom. This plant requires a deep, dry soil, and some care the season it is sown, in order that it may not be enfeebled by close cutting when the grain is reaped, or destroyed by turning in cattle and sheep during the fall. The cost of seed deters many farmers from growing clover, but with a little attention and care this difficulty may be obviated by farmers growing their own seed.

In conclusion, we will only add that grass crops, when grown for fodder, should be cut early. A large amount of the hay produced all over the country is rendered worthless or nearly so by being allowed to stand too long. It should be cut while the stalk is yet tender and full of nutritive juices, and never left to mature seed, unless the crop is grown for the purpose of obtaining seed, and not for feeding stock.

On the Cultivation of Hops.

SETTING OUT AND PLANTING.—The general mode of planting hops is to place the hills at equal distances, either square or triangular, the distance between each hill varying from six to seven feet, according to the strength of the soil, and the habit of growth of the variety cultivated. We have seen hops planted in rows eight or nine feet apart, in hills only three or four feet asunder. This is a very objectionable system in many points of view, and offers but a single advantage, and that more apparent than real; the facility of ploughing and cultivating the ground. The hills should be planted, whether square or triangular, at equal distances from each other, thus affording an equal access of solar action and free circulation of air, processes of the utmost importance to the uniform growth and maturity of the crop. Six feet may be considered the minimum distance, for less than that it is found impracticable to work the land by the horse hoe, during the period of growth; and there are few soils so strong, and varieties worth cultivating so rough and biny, that seven feet is not sufficient.

The ground being properly prepared, and the sort for planting, and the distance, whether square or tri-