

FARM FORESTRY.

In the pioneer days the forest was an enemy to agricultural settlement. Few realize what it cost our fathers and forefathers to clear and build the structure we now know as the Ontario farm. These early settlers met an almost unbroken forest, and an early writer, who was qualified to judge, states that this forest contained one of the most valuable masses of timber that ever existed in a region of its size. The work of clearing is still going on, and at present there is probably not fifteen per cent. of good woodlands left in the older part of the Province. In these early days much land was unwisely cleared, and to-day we can find in almost any district soil which would have been more productive if left for wood crops. Many arguments are brought forward to show that the Ontario wood-lot is a good investment on the farm as a wood-producer. Wise and far-sighted farmers are taking up the question seriously, and we find a few who are treating the wood-lot in a rational manner.

The question we wish to discuss at present is not, however, the care of the wood-lot, but the reforestation of lands which are not producing any rental, and are sometimes spoken of as waste lands. The term waste land is frequently criticised, and we often meet persons who ridicule the statement that old agricultural Ontario contains waste lands. The fact remains, however, that we have, in even the oldest and best parts of the Province, lands which, from an agricultural standpoint, are non-productive, or, in other words, waste lands. These lands are of various descriptions, such as steep hillsides, rocky, thin soils, and light, shifting sandy soils. We find a wide range of conditions, which need attention and treatment.

A first-class farm may have a steep hillside which cannot be cultivated, but which would produce trees. A certain field may be so stony, or the soil so shallow, that cultivation is impossible. Light, sandy soil may exist which will not support an annual crop. This condition may exist over areas forming a large proportion of a township, or may be limited to a few acres on the farm. We have no quarrel with the past, but it seems strange to find men to-day clearing off soil which, as soon as cleared, will become unproductive waste land. We meet every season clearing which can only result in leaving unproductive soil. One of the most striking examples in relation to such clearing was found last summer. A man had just purchased a farm, the greater portion of which was on a limestone ridge. It was considered a cheap farm, and it truly was a cheap farm. The previous owner had cleared a field on the limestone formation where here and there the bed-rock cropped out, and where the soil at the deepest places was from 12 to 15 inches deep. After clearing, years ago, it was soon found that the land was worthless, and it soon fell into a condition where it was neither pasture nor woodland. It had originally been covered with white pine, red oak and mixed hard woods, and, five years ago, in going over the place, I found many young pines, cedars, etc., getting a start. In a few years the field would have been covered with tree-growth. Last season the newcomer was actually found clearing the field for agricultural purposes, spending both time and money in an operation which, I venture to say, he will regret in less than five years.

Little blame can be attached to the early settler for mistakes in clearing, but there is little excuse for us to-day, with the experience of a century to guide us. Arguments may be required to show the wisdom of protecting the woodlands existing on good agricultural soil, but it surely needs little thought to see the advantage of keeping waste lands under perpetual wood crops. If the non-agricultural soils of Ontario were under normal forest conditions, and were managed for perpetual wood-production purposes, this Province would never need fear a wood famine.

Is it possible to remedy the mistakes of the past? Can waste land be restocked with trees, and, most important, can it be done practically? In other words, can the farmer or small land-owner reforest waste land at a cost which will not make the work prohibitive to the average owner? Before discussing the question of re-planting, it is well to ask of what value will the plantation be after we make it. Some men are willing to plant trees on waste land, and even on good soil, from a sentimental standpoint. Others want to know "What is there in it for me?" The answer is that any farm in Ontario having its waste portions covered with trees, is going to have a higher sale value than such portions were lying unproductive. A few years old plantation of white pine on a steep hillside will certainly add to the value of the farm. In some cases the actual returns may be a long time in the future, but quick-growing species are produced on some waste lands, so that

posts and fuel wood may be obtained in about ten years.

In most of our waste lands it will be found that evergreens will give the best results in re-planting. From the standpoint of soil conditions, it would be unwise to plant such species as black walnut or white oak, which make rather high demands on the soil. The species best suited to this kind of work will be white pine, Scotch pine, larch and spruce.

The popular idea of tree-planting is that of roadside, park or orchard planting, where a sapling from six to fifteen feet high is used, and where a large hole has to be made in which to

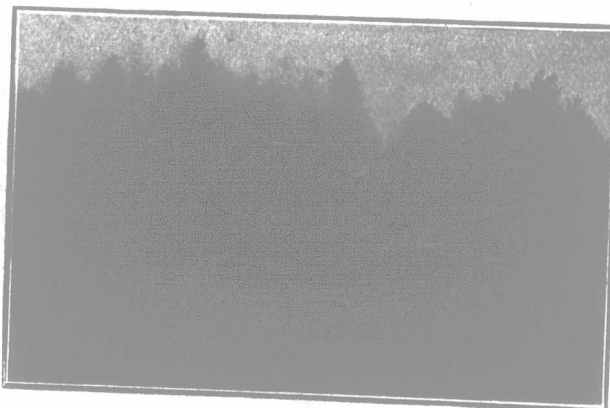


Reforesting Waste Land.

Waste sandy land being planted to White Pine.

place the tree. In waste land planting, the forester uses a small plant, from ten inches to eighteen inches in height, and is able to plant a large number in a day. Trees are planted about five feet apart each way, which would require about 1,746 trees per acre. Where the soil is loose sand, without any turf or sod, the tree is planted by the use of a spade. When there is a sod, the planting spot is prepared by cutting out a piece of turf about fifteen to eighteen inches square with a mattock or grub hoe; and if the ground is stony or rather heavy, the spot should be loosened with the pick. After the soil has been loosened, the tree can be inserted with the spade. Naturally loose, sandy soil can be planted with less labor than heavy, stony soil. The labor expended in planting an acre five feet apart each way, will vary from two men per day in sandy soil, to four men per day in heavy, rough soil. A great deal also depends on the quality of the labor, some men being able to do twice as much as others in a day.

Another factor in connection with the cost of waste-land planting, is the availability of planting material. The following is a table of quotations taken from 1907 catalogues of firms in America and Europe who are supplying forest-tree planting material. These prices are for season of 1906-07, and are quotations per thousand at point of shipment for plants fit for final planting. Better quotations may be had for 10,000 and 100,000 lots:

Twenty-five-year-old Larch Plantation.
Ground was originally an old gravel pit.

Species.	Age or size.	North America.	Europe.
Scotch pine ...	6 in. to 10 in.	\$ 6 00	\$1 20
Norway spruce.	10 in. to 12 in.	15 00	2 00
Larch ...	10 in. to 12 in.	20 00	2 90
White pine ...	6 in. to 10 in.	16 00	3 00

When it is understood that from two to four men can plant an acre of waste land in a day, and planting material may be obtained as reasonably as in Europe, many will desire to carry on such work.

In order to show the practicability of such planting, the Government desires to co-operate with the farmers of the Province in waste-land planting. The Government will supply the trees and expert advice free of cost, but the applicant must pay the charges of transportation and do the actual work in connection with the plan-

tation. The owner shall also agree to give reasonable care and protection to the plantation. Information regarding this work may be obtained by application to the Forestry Department, Ontario Agricultural College, Guelph.

E. J. ZAVITZ.

MORE PRAISE FOR ALFALFA.

Editor "The Farmer's Advocate":

Your subscribers of last year will remember something of what appeared in "The Farmer's Advocate" regarding this legume (alfalfa), which has—in the estimation of many of us—no equal. It is my intention to seed down more of it this year, as no doubt many others are thinking of doing, encouraged by what has been said regarding it in the columns of your valuable paper. It is too good a thing to miss, and I will be very much surprised if there is not much more of it sown in the future. What I have is a mixture of grasses and clovers seeded down in 1903. A few grasses remain, but only one of the clovers, which is, of course, the alfalfa. The first cutting contained a mixture of the grasses and alfalfa, but the second was practically all alfalfa. Now, although less of it was sown to the acre than would have been sown alone (about seven lbs. to the acre), yet it has given wonderful returns, so much so that in the future I will have nothing else, except possibly a little timothy with it.

The first cutting last year gave about three tons to the acre, and was taken the middle of June. The second, four weeks later, about two tons—one can have an idea how rapidly it grows when I tell you that the same day we were taking off our second crop, our neighbor on the adjoining farm was stacking his first crop of timothy. We could have taken, I suppose, one and a half or two tons more as a third crop, but it was pastured instead. Apart from the third crop, when we consider five tons to the acre of the very best of hay, well, who would not grow it, and how much would be added to the wealth of this country did every farmer have some? We are feeding this hay now and I estimate for milk cows at least one ton is as good as two tons of timothy. Of course alfalfa requires to be cut early, when just coming into bloom. Do not have any forebodings that it will all shrink away. I think most farmers are too fearful of losing a little in this way, and are unmindful of the much better article, saying nothing of the increase in the second or after growth. I believe that at least 90 per cent. of farmers do not cut their hay soon enough.

Now, as to seeding with alfalfa, you, as well as some of your correspondents, advise sowing 25 lbs. of seed to the acre. Now, while I cannot state positively that this is more than necessary, I am of the opinion that it is. For example, the field I refer to has only about seven pounds to the acre, and while more than this would no doubt have been better, yet I think that less than twenty-five pounds would do. As a matter of fact, no matter how much seed is sown, if other conditions are not favorable, it will be of no use. I would say if one-third less seed was sown, and one-third more work was expended in getting the conditions right that better results would be obtained. In other words, seventeen pounds to the acre on soil well prepared, will give better results than twenty-five pounds on poorly-prepared soil, yes, better than fifty pounds. The reason is plain. If the soil is not well pulverized, and perchance some seeds fall where it would be a second miracle for them to grow, then no matter how many seeds fall in the same place they would all share the same fate. One thing is absolutely necessary for a good catch, namely, to have the soil well pulverized. How is it possible for such tiny seeds to take root and grow on soil as rough as it is sometimes found? We need only go to the gardener to discover the secret of successful seeding. How carefully all the lumps are broken up or raked off, and although for field crops it may not be possible to do it as well, yet we can at least do something towards it, and be well rewarded for so doing. Of course, the richer the soil the better, but apart from having it right, I believe that many fail to get "a catch" because it is left too late in the season. It no doubt should be done as early as possible, for the reason that when sown early every rain that follows helps to cover it and it also gets a start before a dry time may set in, which is fatal. You say, Mr. Editor, to harrow it in well. I am a little dubious about this. I am afraid some seeds would be so covered that they would never come up. I wish I was sure about this. Land should be fall plowed. It will then form a firmer seed-bed. The soil should be fine, but not loose. It is then worked in the spring to the depth of a few inches. After working thoroughly, if lumpy, I would roll, then harrow and sow, and then harrow once more the opposite way. I think that rolling would not only make the soil firm and help to pulverize it, but would also prevent the seed from going down too deep.

I believe alfalfa is the easiest of all clovers to