

the others, as they are easily destroyed in comparison.

In considering this weed, I may observe that I have heard much discussion as to its destruction, but I have not yet met the farmer of experience, who has the hardihood to say that it is easily destroyed. I sowed it with some imported grass seed, and after an experience of over 40 years with it. I approach the question with a diffidence born of defeat.

For after having many times thought I had them completely mastered, another ploughing brought a fresh lot to contend with. And until the theory which I lay down, and a method pursued, accepting that theory as a basis. I doubt the practicability of destroying weeds.

THE SMOTHERING METHOD.

I claim that the general idea that daisies (this includes the other weeds named) grow from the roots, that is, that an inverted daisy-root, covered up in the ground, will grow again, is erroneous. On trial it will be found, that a daisy inverted, and covered up, is destroyed. It will also be found that the new growths are completely on the surface of the ground, and not attached to the old root. This being a further proof that they do not proceed from the old root.

Proceeding on this basis, we will consider a meadow. The first object is, to prevent the weeds from seeding. To do this the grass must be cut about the middle of June, immediately ploughed, properly harrowed and seeded with long red clover, and orchard grass, harrowed in, and rolled, and until the next ploughing, all the weeds I have named except Burdock and Daisies, will be immediately smothered by the clover. For the purpose of preventing the seeding of the daisies, it will be necessary that the crop be cut before there is danger of shedding seed, or, of heads which may fall to the ground being able to ripen the seed in the head. It is very obvious, that after one year of complete work of this kind, or two years, the usual term of life of clover, that there will be no seed upon the surface of the ground, and that upon the ploughing of the field all the roots will be smothered, excepting those that may grow up between the furrows. Here again however, a complete seeding is turned up by the plough, which must be proceeded with as before, and, after another ploughing, if the work has been thoroughly done, the daisies will be completely destroyed. With this method there is no loss of the use of the land, and if the manure made from the crops, is made use of on the land it will be in better condition than before the effort to destroy the daisies commenced. But for those who desire a sudden and complete destruction of weeds, there is nothing equal to the

SUMMER FALLOW METHOD

Properly done, with this method they will be thoroughly eradicated in one season.

Another method is the

HOED-CROP METHOD.

With this method, two successive hoed crops thoroughly cultivated, will destroy weeds and seeds of all kinds. The use of the Harrow on potato lands, and on mellow land the horse rake for corn, are great helps in the early part of the season. And the drill harrow, and cultivator later on, will be found excellent, and with very little hoe work on the drills, the weeds will be effectually destroyed.

It will be observed, that in the different methods, there is a difference in length of time necessary to success.

The summer fallow requires one year, with loss of a season's crop. Hoed crops require two years, without loss of crop. And the Smothering Meadow Method, six years without loss of crop. The fallow and hoed crops are no doubt more efficient, but in this Province of dairy farms the smothering meadow method is more convenient, and if faithfully carried out, quite effective.

It will also be observed, that according to the theory advanced, it is impossible to destroy the weeds while cropping with grain, as the seeds of weeds fall before the earliest grain ripens. And the fact also, that weeds are often well advanced in growth, before the crop is sown, especially is this true in moist seasons, and when the ploughing has been done some months before.

BURDOCK.

No amount of cutting will destroy this weed unless the taproot is cut several inches below the surface. An old chisel of good size or speed, is a proper implement for this. And for weeds of all kinds among grain, a very light, and handy implement, is a Scotch reaping hook, fastened to a handle about six feet long, of spruce or other light wood. With this, a worker can by changing hands, trim a width of 5 or 6 feet on each side of him.

THISTLES.

Where the system of continuous grain growing is pursued, this is a troublesome weed, on account of its early maturity. But after the first cutting of them in a clover meadow, they will be lost sight of until the seeds are again ploughed out.

One more point and I have done. There is not the slightest doubt that the theory I advance is correct. Nor is there the least doubt that the methods I propose for the practice of that theory is successful. But it is also true, that one load of unrotted manure, made from ripe daisy hay, and scattered on a field, will wreck the hope of years. And don't forget to put that under your bonnet.

THE BEST METHOD OF IMPROVING PASTURE.

There are so many conditions connected with this matter, that a general rule cannot be laid down which would answer in all cases, even in the same field.

We will first consider the case of a field which is undergoing the system of a rotation of crops, or, which it is intended to pasture, after it has been in meadow for some time.

It is well known that there is not a sufficiency of grass roots in a meadow to make a good pasture. And the usual custom of simply turning the stock on the field, does not fulfil the term pasture. And in such a case, the first thing done by the stock, in its efforts to get a bite of grass, is to pull up the bulb of the root of the timothy, until some times they can be gathered by the handful.

WHAT ARE THE REQUISITES TO CONSTITUTE A GOOD PASTURE?

A thick coating of verdure. I am aware of the supposition that it is necessary to harrow in the seeds sown in a pasture. It is not so at any time, and more particularly on a meadow such as we are considering.

One year before it is intended placing the field in pasture, in the early spring on a light snow, broadcast one lb. each of short red clover, Alsike clover, Orchard grass or lucerne, and Red Top. I would also add White Clover, but as it takes a couple of years to be of much account, except for permanent pasture, it does not pay. In the following spring there will be a thick mass of feed, growing between the roots of the meadow grass. There will then be an excellent pasture, and a valuable mass of roots growing to make humus for the future crops.

IMPROVING PERMANENT PASTURE.

A permanent pasture in this Province generally means a field which cannot be utilised as a grain, and meadow field. That is, it is stony, rocky, swaley, in the edge of the wood, and amongst logs and brush.

It is true that stock can pick grass from amongst the stones, but as each stone occupies just as much surface upon which grass ought to be growing the necessity of them being picked off, is very evident.

The first thing to be done about the swales, is to get off the surface water. It is a fact, that stock do not reach much of the grass grown in swales. It is equally true, that grasses of other, and better kinds, will not grow until the surplus moisture is taken from the land. And even supposing that the stock is starved until it is glad to eat swale grass: when it is eaten, it is not so nourishing as the tame grasses, as it has not the qualities of grasses that abstract from the soil the minerals which are necessary to build up the system of an animal. But immediately the surplus water is taken out of the soil, the air obtains ingress, the natural process of solubilisation goes on, (call it rotting if you will) the root abstracts, and the plant appropriates those qualities which are necessary for the building up of the animal, and this continuous process goes on, when all the conditions are fulfilled.

Usually, the easiest way to take the water from a swale in a pasture, is to make a simple open ditch, with a plough, scraper, and shovels, with a sufficient width at top to prevent the edge being broken in by the stock. If the dirt from this, is scattered thinly, it will do no harm to the grass, but rather be a benefit.

Of course, underdraining with tile is better than what I propose, but I am suggesting the best method, considering the fact, that the majority of farmers cannot enter into the expense especially with pasture. But very generally, the making of a simple surface ditch, reclaims as much good land, as the making an equal quantity of new cleared land. To illustrate: one swale, angleways across the entire width of my farm, part of it in permanent pasture, grew a forest of willows, cattails, and rushes, over part of which cattle never passed, and a man could only do so by stepping on the bunches of the roots. About twenty-five years ago, I had a spade ditch made through it. This took the water from a spring near the upper end of the swale, and in two years after sowing with seeds, I had the best feed in the pasture, and it is the best still, it is irregular in shape, on a stony, broken field, else it would make as good a piece of meadow as there is on the farm.

There are also, sometimes, patches of bush, and by the edge of the woods, etc., in which there is grass, but for the want of sunlight it grows so tenderly

that the roots do not abstract the proper nourishment from the soil, nor can the foliage derive from the atmosphere the moisture for the promotion of its growth, and it will be found that, like swale grass, stock do not relish grass grown in the shade.

The best month to cut brush is in July, but it will always be found that the best time to cut bushes in a pasture is when the axe is in hand, as the stock will crop the shoots.

The easiest way to get rid of the brush, is, to leave it where it is cut, the cattle will trim the leaves and during the next summer it will be dry and less than half the labour to pile it together. If it is scattering, the stock will get all the grass without its being piled at all. In early spring, sow about equal quantities of alsike, red top, and orchard grass on the swales, and low lying places, and on high land add one of the fescues and white clover, instead of alsike. The judgment of the sower will come into play as to how much is required on the different parts of the pasture, some parts of it may require only a small sprinkling of white clover, the other grasses being sufficiently represented. And just here, in concluding, let me emphasize, that there is no pasture feed, to make beef or butter, and of the best quality, like White Clover. (1)

As the improvement of pasture includes anything that can be done, not only to improve the feed, but also anything that can be done to ameliorate the condition of the stock, and make the most of the feed,

I INCLUDE SHADE, AND FENCES.

As to shade, even on some of otherwise well managed farms, it is the usual method to allow trees and bushes to grow in pasture for the purpose of shade. Shade is required, but in that way, year after, year, a great amount of droppings are left there and around the fences, being entirely wasted. And something ought to be done to make use of the droppings to improve the pasture. This can easily be done by a shed made with crotches, planted in the ground, and upon these place poles and brush, open on three sides. The South side being brushed up to prevent draught, else the stock will not use it. Make it long, rather than wide, and on the poorest spot in the field. Scrape up the droppings, and scatter around away from the shed. And change the situation of the shed as required.

FENCES.

If there is any one thing outside of good feed which tends to the improvement of the stock, and to a certain extent the improvement of the pasture, it is a good fence. A herd of uneasy cattle working towards a weak part of the fence, and a dog sending them back on the scamp, does the pasture a great deal of harm, and also certainly the cattle. It is a well known fact, that an animal with a quiet, amiable, disposition makes more milk or meat, on the same amount of food, than one otherwise disposed.

And also, that for the time, bad fences will ruin the amiability, and destroy the quiet of an otherwise tranquil herd.

There is nothing simpler, or more secure, than to stretch a barbed wire on the top of the fence, between the pickets, several inches above the fence, driving a staple into every second or third picket. This is better than an extra

(1) A trifling dressing of lime will bring up white-clover almost anywhere.—Ed.