

Some recommend a mixture of lime and soot. The use of a long-haired hearth brush, lightly sweeping it along the young plants, to shake off the flies immediately followed by a dusting of quick-lime, is a good plan when the insects are numerous. Sowing a small quantity of white turnip seed in the hollows of the drills, will attract the flies from Swedes, as they prefer the white ones. But after all, the surest method of combatting insects, is to push forward the growth of the young plants by the use of stimulating manures at the time of sowing, and to keep the soil well stirred by timely after-culture.

#### "Finger and Toe."

Occasionally a disease to which the above name has been given, makes its appearance among turnips. Instead of a good, solid, round bulb forming, the root goes off into forks, and amounts to nothing. Defective seed is thought to be sometimes the cause of this trouble, and both seedsmen and their customers will do well to take the greatest pains in procuring the very best seed that can be had. But it cannot always be traced to this cause. It is thought, with much show of reason, to result often from the same condition of soil that occasions clover sickness. Soils which yield good crops of red clover, are but little liable to "finger and toe." A too frequent repetition of the turnip crop is supposed to be one cause of this disease, just as a too frequent repetition of clovering will cause "clover sickness." Cure of the disease is out of the question. One prevention is possible, and this is to be secured by taking care to have the land in excellent condition. Liming, drainage, deep ploughing, and ample manuring, are all of them means which have been successfully adopted to prevent this evil.

#### Harvesting and Storing the Crop.

Owing to the length of this article, these topics must be deferred to a future number.

#### Treatment of Grass Lands.

There is a pretty common expression of opinion among farmers, that land once laid down will do better to be kept in grass and will continue to improve and thicken up. In England, also, it is often maintained that grass land does better not to be broken up and reseeded; that the grass upon old fields is more abundant and more nutritive than on newly seeded lands, and hence there seems to be a disposition to keep such lands in condition without breaking up, by top-dressing and other means of renovation. Let us look at it a little.

Circumstances and soils differ so much that even if it were true, here and there, that grass lands do better to remain as they are, it would hardly do to lay it down as a rule of universal application. It is probably true, that with our imperfect modes of seeding, the use of so few of the many varieties that are naturally to be found in an old field, the turf will thicken up by the growth of many grasses that come into the soil in the course of time. This will for some years continue to increase the yield, so that the field will appear to be growing better after it is laid down, especially if the soil is strong and good, or naturally suited to grass. But this increase must have its limit, even in the best of soils without the judicious application of manure. The profitable growth and constant removal of grass and hay will lead to a depletion of the soil as true as the laws of nature are fixed and immutable.

But a large portion of our soils are not especially adapted to grass. Good crops are grown upon them with constantly increasing difficulty and labor, and though the liberal application of manure may keep them productive for a time, they soon begin to "bind out," as we say. The soil will get filled up and crowded with the roots of twitch or couch grass, or other objectionable permanent growths. We see instances of this every day on our lighter and poorer soils, especially where they are not often and liberally top dressed, and this on most farms is practically impossible, or at least so difficult and expensive that it is not often done. On our drier upland knolls and plains, the droughts of summer or the formation and continuance of ice upon them in the winter, will kill out many of the better grasses, in spite of all we can do, and it would be unreasonable to expect such lands to continue to improve indefinitely. In fact, the crop will and does deteriorate in the course of time, and grows less and less.

We find, therefore, that so far from leaving such lands in permanent grass, there is a growing inclination to subject them to some cultivation, even more frequent than was formerly practised, something that may be called the annual forage crop system, by which the whole farm, or rather all the grass land of the farm, is put under the plow as often as once in three or four years. Indeed, we know farmers, whose whole tillage land has been under the plow within three years, and who have settled down upon this as the most profitable system for them to pursue, especially since our seasons of terrible drought and our hard open winters have so seriously affected all our grass lands as to reduce their supplies for winter feeding.

The process is to plow up deeply and thoroughly early in the fall, let the land lie in the furrow till spring, put on the harrow or cultivator as often as once a week or ten days to keep down the weeds, and give it a partial fallowing, till the middle of June, and then sow on millet or Hungarian grass with a slight top dressing and roll or bush in the seed and the manure. By the tenth of August or thereabouts the crop will be fit to cut, and so far as our observation has gone, where the land is light and in fair condition, the yield has been from two to three tons to the acre of a good quality of winter forage.

The land is ready then to be ploughed up again, the turf sufficiently mellowed by frequent working to lay down to grass with another light dressing to give the seed a rapid and strong start, and if a sufficient variety of grass seed is sown the result will be a better crop of grass than it had borne for some years previously. We have known grass lands greatly improved in this way and at a little expense. The mere process of cultivating, loosening and breaking up, has been a positive benefit, while there has been no loss, but rather an increase of the winter stores of forage.

The great and prevailing error in laying down land has been insufficient seeding, or rather seeding with too limited a number of varieties of grass seed. The result is a poor, thin turf, and of course a light crop of grass. It takes too much time to wait for other grasses to come in and occupy the spaces left vacant by too light seeding with one or two varieties of grass, and before the process of breaking up often is condemned, we want to see the system of more liberal seeding with a larger number of varieties fairly tried. We are confident the results will be satisfactory.—*Mass. Ploughman.*

#### Growing Corn Fodder.

In growing corn fodder, our object should be to select a variety of corn containing the least woody fibre. I do not think any one has turned his attention to this point. Nearly all the advocates of corn fodder either recommend growing sweet corn or of sending to the south-west for seed of the large Dent variety. If they can get corn that will grow from ten to twenty feet high they think it is an advantage. I once saw a stalk grown in this State that was twenty-two feet high. I presume it was about as nutritious as a fishing-pole. What we want is a variety that produces the largest proportion of leaves and the shortest and smallest stalk. Instead of sending south for the large, late kinds of corn, we had better send north for the smallest variety we can find—and then make it grow as large as we can by high manuring and good cultivation.

Corn fodder ought to be grown on dry land. Many farmers if they have a piece of low, rich, muddy land too wet to plough in the spring, sow it to corn fodder or buckwheat because they can do nothing else with it. Occasionally they get a good crop, but as a rule they do not get corn fodder enough to pay for the labor. I advise the selection of the driest and richest and mellowest land he has. Then drill in the corn in rows 3 to 3½ feet apart. Three bushels of corn per acre is none too much. As soon as the corn is up go through it with a cultivator, and a few days later go through it again twice in a row. The object in going twice in a row is to run the cultivator as close as possible to the plants and thus destroy the weeds. Cultivate frequently as long as a horse can get between the rows of corn. If the land is rich enough this plan will give a large crop of green fodder. The common mistake in growing corn fodder is in sowing it broadcast. Three years ago I had three acres of warm, rich land where the clover had failed. We ploughed it up the last of May and drilled in corn, 3½ feet apart, and cultivated thoroughly. We had a splendid crop. The next year the Deacon thought he would raise some too, and he sowed a piece broadcast on low, wet land. His crop was not worth cutting. Last year he concluded he would drill in his crop, and borrowed my drill for the purpose. After he had got through his faith failed him; and he went

over the piece again, drilling in another row between each of the first rows. This of course made the rows so close together and so crooked that no could not use the cultivator. Weeds and corn had to grow together, and the result was what might have been expected—not half a crop, and the land left in a foul condition.

The essential points in raising good corn fodder are: (1) Rich, warm, dry land; (2) a small, early variety; (3) sowing in drills wide enough apart to allow the use of a horse-shoe; (4) thick seeding in the rows; and (5) thorough cultivation.—*J. Harris in Am. Agriculturist.*

#### Beets in Rotation of Crops.

It is improvident, and bad farming to cultivate the beet root two or more years in succession on the same piece of land. Dr. Voelcker, says that on the continent, beet is always looked upon as a fallow crop. There are various modes of growing it in different countries, dependent on the soil, the climate, and the requirements of the markets, but in all cases it is considered good farming to let it both follow and precede a corn crop. Beet succeeds best after winter wheat, well dunged. Clover or seeds, on the contrary, should not precede beets, for although the roots grow to a large size and yield well after clover seeds, they remain poor in sugar and take up too much saline matter from the decomposing vegetable remains of the preceding crop. Beets are usually followed on the continent by spring wheat. On land peculiarly well suited for roots, two or three crops of beets are sometimes taken in succession. In this case however, it is necessary to apply farm-yard or artificial manure to the second and third crops.

The following examples of rotations can be recommended:—

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|----------|-----------------------------------------|
| 1st year | ..... Beets, manured.                   |
| 2d "     | ..... Barley or Oats.                   |
| 3d "     | ..... Clover or Sainfoin.               |
| 4th "    | ..... Wheat.                            |
| 5th "    | ..... Beets, manured.                   |
| II.      |                                         |
| 1st year | ..... Beets, manured.                   |
| 2d "     | ..... Wheat.                            |
| 3d "     | ..... Clover.                           |
| 4th "    | ..... Rye or Oats.                      |
| 5th "    | ..... Beets, manured.                   |
| III.     |                                         |
| 1st year | ..... Potatoes, well manured.           |
| 2d "     | ..... Beets, not manured.               |
| 3d "     | ..... Wheat.                            |
| 4th "    | ..... Clover, hay, or some forage crop. |
| 5th "    | ..... Potatoes, manured.                |

Mr. Baruchuson, says that beet as an alternate crop is eminently suited to wheat, flax and turnips, all of which are then more abundant. That this is especially so with wheat is agreed by all who have made the experiment.—*Er.*

#### Sainfoin and Lupins.

This leads us to the consideration of Sainfoin. Of this there are now established two well-known varieties—the common sainfoin, *Onobrychis sativa*, and the giant or double-cut sainfoin, *O. sativa var. bifera*. The former of these is the most persistent, and the more valuable as a pasturage or soiling plant; but the latter yields an enormous crop of hay, and as we have experienced, may be cut twice a year for two years. Our first cut of this, the year before last, was so thick on the ground as to be almost unmanageable, and the second was a good crop; the fact that it yielded two good crops, though not quite so large, the year before, speaks well for it as a heavy cropper. It is, however, rather coarse and stemmy, but, even so, when cut into chaff we find all animals do uncommonly well upon it.

LUPINS will be known as garden flowers; they may have blue or yellow flowers. We have grown both, and consider the blue-flowered the larger plant. We know from experience that they will grow in very poor soils; but, as indeed they depend more upon climate than soil, they are apt to be disappointing. We remember one year growing them beautifully—we think in 1855—but, whatever the date, the next year they utterly failed, though under the same conditions. The fact is, the first season was a warm one, the next an exceedingly wet one. We expect that this crop would have been a failure for the past two summers; but we hope this year to try a field patch, drilled at the rate of two bushels an acre. In our uncertain springs it would be unwise to sow them early, as then the young plant may be injured with frost; and if they are meant to seed, it is next to impossible to get the beans ripened in time to harvest. Our object in trying them will be to use them cut up like green bean stalks; and if it be true that they will grow a tolerable crop on poor lands, we expect to make it answer our purpose.—*Professor Buchman in the London Field.*