

Grasses and Forage Plants.

Neglected Forage Crops.

It may, no doubt, be argued with too much truth, that all forage crops are too much neglected so far as the mode of their cultivation is concerned, but this is not what we are driving at in the caption of the present article. Neglect in the way of not attempting to cultivate them at all, is what we have in view, rather than negligent culture.

How many farms are wholly innocent of all forage crops but hay and straw. No fodder corn, no roots, no rape, no cabbages. Now that winter has set in, there is nothing to feed on that will supply the place of the succulent herbage of the summer time and early fall. Only dry hay and still dryer straw, and such grain as can be spared from the market, are offered to tempt the appetites which crave juicy plants for their full satisfaction. How much better provided for the wants of the stock in winters, is the farmer who has abundance of carrots for his horses, mangolds, cabbages, and turnips for his neat cattle and sheep, and succulent corn stalks for all, than he who has only dry forage in store.

These neglected forage crops are not hard to grow. Considering the effect they have upon land in smothering weed growth, and leaving the soil in the best possible condition for succeeding crops, there are other arguments for their cultivation, besides the all-sufficient one of providing a varied and attractive bill of fare for the animals kept on the farm.

Some of these crops from their special suitability for the use of sheep offer the further advantage that they go far to meet the grand practical difficulty in the way of good real farming, which arises out of the scarcity of manure, and the expense connected with working and hauling it. On light soils, especially, where sheep according to the old proverb, have golden feet, the benefit accruing from this plan of manuring, cannot be over-estimated. Grow vetches, rape, or kohl rabi upon a bit of ground you want to enrich, fold sheep on it, and when the crop is eaten off, the land will be left fit for any crop you may desire to put in. No foraging over of manure, no time and labor spent in hauling it out to the field, — there it is just as you want it, evenly distributed, free from liability to waste, every rain-fall washing its virtue into the soil. It may be argued that there is cost and trouble connected with the folding of sheep; but, beyond the preparation of hurdles in the first instance, the cost and trouble are very trifling. Hurdle-making is a nice winter job. Any man who cannot make a sheep-hurdle, is too stupid and useless to cumber the ground of a farmer. If you make them at odd times in the winter, the only expense will be that of the lumber, and that will not exceed twenty cents a-piece.

Now is the time to reflect on the oversights and errors of the past, and to form plans of better farming next year, and in all coming time. Let these forage crops be neglected no longer. Set apart the cleanest and best piece of land on the farm for turnips. Economize and eke out the manure all winter so as to have as much as possible to put on the turnip land next summer. If there is a bit of rich ground that is dirty with weeds, resolve to devote that to green forage, to be fed off by the sheep. Say not "I have only half-a-dozen or a dozen sheep," but consider how you can get more; for one might as well try to farm well without proper tools, as try to farm without a flock of sheep.

Manure from Clover Hay or Wheat Straw.

We make the following extract from Mr. Harris' last paper in the *American Agriculturist*, headed "Walks and Talks":—

"Yesterday," said the Deacon, "a farmer took a load of clover hay to Rochester, and all he could get

for it was \$10 per ton. Another farmer took a load of wheat straw, and sold it readily for \$12 per ton. This does not look as though farmers had much faith in your chemical notion, that the manure from a ton of clover hay is worth three times as much as from a ton of straw. The facts seem to be against you." "So much the worse for the facts," I replied. "But I am not going to argue that matter with you. There are some things so well established, that it is no use listening to the objections of those who do not understand what they are talking about. A farmer who sells clover hay at the above prices, and keeps his straw, is not a wise man. When he can exchange a ton of straw for a half a ton of bran, he had better do it."

"You pretend to be able to tell," said the Deacon, "what a ton of manure is worth; but I notice that the chemists differ very much among themselves as to the value of the same identical manure, and I do not see how you can tell with any certainty how much good a ton of manure will do." No one pretends to do so. What we say is this: Here are two samples of barn-yard manure in about the same condition. One contains twice as much nitrogen, phosphoric acid and potash, as the other, and we say, if the one is worth \$1 per ton, the other is worth \$2 per ton. We do not say that if you put 20 tons of the former, or 10 tons of the latter upon an acre of land, the difference of the crops will be worth \$20. This may or may not be the case. The chemist's estimate of the value of different manures is based on their chemical composition and on the condition of the ingredients. The chemist does not undertake to tell a farmer, whether he can afford to buy sulphate of ammonia, or nitrate of soda, to sow on his wheat or barley crop. But if you are going to sow these manures, the chemist can tell you to a certainty which of two samples is the cheapest for you to buy. For instance, he finds that one sample contains 22 per cent. of ammonia, and the other 18 per cent. He tells you the latter is worth \$72 per ton, and the former \$83 per ton, he merely uses these figures in a comparative sense. If he should say the one was worth \$38, and the other \$44, he would be equally correct. He has nothing to do with the commercial value on the one hand, or the fertilizing value on the other. The latter must be determined by the experience of farmers themselves, and on repeated experiments. Where wheat is worth only 75 cents per bushel, and other crops on the same scale, ammonia is only worth half as much to a farmer as in a section where wheat is worth \$1.50 per bushel. When an agent for some artificial fertilizer shows me a whole string of testimonials as to the value of his fertilizer, I tell him that a good analysis would be more satisfactory to me than an actual trial on my own land and under my own eye. A man need not swallow a lot of Glauber salts to tell if they are pure. The chemist cannot tell him whether he needs a dose of the salts, but he can tell him whether the salts are genuine or not. Chemistry cannot tell us whether our land needs this or that manure, but it can tell us whether the manure is genuine or spurious. If farmers had clearer views on this subject, the sale of inferior or worthless fertilizers would soon cease.

Rapid Method of Topping Roots.

"Carrots, beets, parsnips, and turnips are now very generally cultivated in rows, by those who raise any or all of the kinds enumerated, to any extent. When the time arrives for pulling, each man or boy takes two rows and pulls them, and as fast as pulled they are placed in one row, side by side, one deep, and in the same relative position. The next two rows are pulled and placed in the same way, with the roots of row number two facing those of number one. By following this plan with every four rows the labor of gathering the roots, when topped, will be found much less. The main point to be carried out, in pulling and placing turnips or other kinds of roots, is to be sure and keep the necks as near in a straight line as possible. With an hour's practice a man can pull and place the roots in this position about as fast as throwing them in heaps. One active man will cut off the tops as fast as two men can pull. Equipped with an ordinary table knife the boy follows the puller, covering each top in turn, and frequently two at once, without removing the roots from the position in which they are placed by the men pulling, so there is no time wasted in taking up or throwing down the turnips, beets, or carrots. The topper keeps constantly moving along the line of each row cutting off the tops as he walks along, being forced to make enough of motion to keep warm even on a cold day. I have topped sixty rita bagas by this method in a minute, when trying hard to work against time. Of course this speed could not be kept up very long. But when rita bagas have grown full size, say from one

to two pounds apiece, and the ground is evenly stocked, an active workman can without over exertion, pull and top in a working day of ten hours from 150 to 175 bushels. This I know to be the case, for a month ago I had the matter demonstrated in the open field, and therefore can vouch for these figures. By this method turnips grown to full size, can, without any doubt, be pulled, topped, and put in "pits" for an amount not to exceed two cents a bushel. When the ground is stony it is well for the toppers to carry with them a piece of whetstone, so as to keep a keen edge on their knives, which makes the work go easier, a fact soon found out in practice.

As soon as convenient after topping, a wagon or cart may be drawn alongside and the roots gathered therein into the cart and hauled to the root cellar or "pit" in some suitable spot. If intended for market, it will be a saving of time to sort such roots at the time of gathering. This is especially so with turnips. Toward the close of the season we tested for this method of topping turnips, knives of different shapes and sizes, and from these experiments I feel confident that another season I can have made a style of knife that will be a decided improvement on the ordinary table knives for this kind of work. This knife will be the shape of a carpenter's chisel, the edge three inches wide, beveled from both sides, a handle four inches long, with a cross piece on top to give full bearing for the hand. In topping turnips with a knife of this shape the weight of the body helps force the knife through, lessening the labor, while the work goes on much faster.—PATRICK QUINN, in *Tribune*.

Turnips among Corn

A Westchester County, (N. Y.) farmer is in the habit of sowing Yellow Aberdeen turnips among his corn at the last passing of the cultivator, when the plants are about two feet in height. The turnips do not make much growth until the corn is cut, after which they swell rapidly. The cost is nothing except for seed and harvesting, and the corn being already cut is not injured when the turnips are gathered in. From one to four hundred bushels of turnips per acre have been thus obtained without lessening the corn crop. Weeds are not tolerated, and the whole strength of the land is devoted, as it should be, to useful crops.

DESTRUCTION OF WIRE-WORM.—Having been bothered with wire-worm more or less in my crop for some time, may I take the liberty of asking through your paper if there is any way of destroying them? I am advised to sow rape-dust, also salt, to destroy them. Could you, or any of your numerous readers, give me any practical knowledge regarding this pest? I may state that the field is only a few hundred yards from the sea, out of sea; in 1872 planted with potatoes, in 1873 wheat, one-half eaten up with wire-worm, in fact, some totally destroyed. The field is now ploughed from 10 to 12 inches deep for turnips, and in turning up the soil it is literally moving with wire-worm, and I am afraid there will be little chance of a turnip crop unless I get something to destroy the worm. I have tried lime with no effect, and will be glad if you can put me in the way of getting rid of such a pest.—A SUBSCRIBER. [A fortnight ago, in answer to another correspondent, we supplied, in considerable detail, the information which you desire, recommending broken rape cake in portions such as would be given to cattle or sheep to be broadcasted over the field. Lightly harrow the newly-ploughed surface, if it is dry enough, and apply about five cwt. of the cake. On these pieces the wire worms speedily fasten; a score may be found attached to one lump. The feast, however, does not agree with them; they seem to be weakened and sometimes poisoned by the rape cake; whilst myriads attracted to the surface after the food are picked up by gulls, rooks, or other enemies; or when thus exposed are more likely to be destroyed by frost.—N. D. *Agriculturist*.

THE WELL-KNOWN GRASS, *Zizania aquatica*, is coming into use for making paper. This plant, which is known in this country as "Canada Rice," grows in enormous quantities on the shores of Lakes Erie, Ontario, St. Clair and others. Doubtless Rice Lake got its name in this way. It is stated that a supply from these sources of 100,000 tons annually may be looked on as certain. It grows in swamps, ponds, and shallow streams, where it attains a height of from 7 to 8, or even 12 to 14 feet. The structure is similar to that of rice except that the flowers are bisexual. The grain is largely used by the Indians for food, and is superior in flavor to most other cereals.