

## The Barberry.

*Berberis vulgaris.*

A CORRESPONDENT sends the following communication and inquiry:—

"It is commonly believed in England that the barberry bush is destructive to vegetation, and particularly to wheat, when sown at all near it. Last year I had wheat in what had been used for many years as a garden; in the corner stands a large barberry bush. The wheat looked alike till it began to ripen, when a sort of blight commenced at the corner near the bush, and gradually extended to sixty or seventy feet into the standing grain, becoming less affected till it ceased altogether; beyond which line the heads were well filled and the grain plump. Have any of your readers seen similar results? if so, it will be well to know them before we plant hedges of it."

This bush, as our correspondent observes, has been believed in England and in other countries of Europe to exert an injurious influence on cereals, particularly wheat, growing within its immediate vicinity. A number of apparently authentic facts have been repeatedly stated that appear to sustain this serious charge against this pretty and useful shrub, which it is confidently affirmed produces, during the period of its inflorescence, rust and mildew in wheat and other grain, at distances varying from close proximity to three or four hundred feet, or even more.

It is impossible to prove an absolute negative in cases such as these, but scientific inquiry and more careful observation have of late years, to say the least, thrown very grave doubts on the charges made against the Barberry, and a growing conviction exists, the result of more accurate knowledge and observation, that they are altogether groundless. As in the instance adduced by our correspondent, and others of a similar character, other trees besides the barberry, the oak and ash in our own experience, have occasionally been seen accompanied by similar results. We have known considerable portions of hedges in arable fields, in England, to consist largely or exclusively of the barberry, without any such injurious effects on the crops as have by others been ascribed to it. Indeed, the bush has been planted and protected in the centre of arable fields for several years, and by several persons, without any injurious results being apparent to the crops in direct proximity.

The late Rev. J. Henslow, Professor of Botany in the University of Cambridge, who took a very lively interest in all matters pertaining to agriculture, to which his own special science was in any degree related, came to the conclusion that the evil power ascribed to the barberry was a popular fallacy. On frequent examinations of cases of this sort, he found that the shade of trees, wetness, or other conditions of the soil, would more rationally account for rust and mildew than the presence of the barberry bush. He observes: "To those who feel as interested as myself in having this question settled beyond dispute, and who may possess the opportunity of doing so, I would suggest the following experiment: Let barberry bushes be planted in the middle of some fields, and protected by fences; let it be observed whether the corn grown in those fields is mildewed, and the circumstances under which this happens accurately noted; let all failures be equally recorded. If the results of these experiments should tell to the prejudice of the barberry, I would willingly travel many miles to be convinced, by personal inspection, that this pretty and botanically interesting shrub had really caused the evil imputed to it."

The late Mr. Knight, the distinguished scientific horticulturist, found wheat sprinkled with water, in which barberry branches had been washed, speedily became infected with mildew; but he also ascertained that wheat sprinkled with clear water became similarly diseased. "The parasite which affects the barberry is not the *Puccinia graminis*; the sporidia are dissimilar, and the color totally unlike; but it may be, and certainly much resembles, the *Euredo rubigo*. It is no objection to say that the identity is unlikely, because the plants attacked are so widely distant; for, as already noticed, these parasites will vegetate on very various and even dead vegetable matters. The parasite which infects the leaves of the barberry is *Aecidium Berberidis*; it is a beautiful minute gastro myces, and there is no resemblance between it and the rust of wheat except in colour. It is a vulgar error to suppose that an *Aecidium* on the barberry could produce a *Puccinia* on wheat.

## Storing Root Crops.

MANY farmers are prevented from growing root crops extensively by the great amount of labor, and consequent expense incurred in taking them out of the ground, and storing them for the winter. A large crop of rutabagas, mangels, beets, carrots, or parsnips require much labor to handle them properly and secure them from the frost. In the mild climates of Great Britain and Ireland, France and Germany, root crops are always brought to the farm-yard as soon as they are taken up, and stored in sheds, or made into roof-like piles in some secure place, and thatched with straw. Even there it is injurious to roots to be frozen and thawed in the open air, but if they are frozen and thawed under cover they do not suffer much damage from those causes.

Rutabagas are much harder than beets, mangels, or carrots, and will not be damaged by slight frost, but it is a good plan to leave them in the ground until they recover from the check which an early frost may have given them. This they will do in a few days of mild weather, as long as the leaves are green. A bulb of any kind cannot bear even a slight frost, deprived of the protection of the leaves. When sheep are folded on turnips, they are confined to a certain spot by hurdles or rails, so that they make a clean finish of the tops and roots as they go along, without stripping off the tops and rinds in patches all over the field: as, in the latter case, the greater part of the crop would be destroyed by frost and rain.

The bulbs of rutabagas, and of all other varieties of turnips, increase rapidly in size and weight when the leaves have done growing. These crops should be sowed early enough to admit of the bulbs being matured before frost checks the growth of the plants. One acre of well managed rutabagas will produce as much as two or three acres managed in the ordinary way.

A field of rutabagas, managed in the ordinary way, without any after culture of the crop, except singling or thinning, will probably produce bulbs four or five inches in diameter, while the same field, by careful after culture, such as frequent cultivation of the soil between the drills, and hoeing between the plants, will produce bulbs six or seven inches in diameter, thus trebling or quadrupling the acreable product.

When storing rutabagas, it is well to weigh some of the largest bulbs and some of ordinary size, and ascertain the great disparity between them. If rutabagas are grown in drills, twenty-eight inches asunder, plants ten inches apart, there will be 22,402 bulbs in an acre, which, at three pounds each, amount to a little more than thirty-three tons per acre; increase these bulbs one pound each, and the produce will be forty-four and three quarter tons per acre. Increase the size to five pounds each, and the produce will amount to fifty-six tons per acre.

As it is not expedient to take up rutabagas before they have done growing, nor to delay until they are damaged by frost, there is but a very short time for performing the operation, and as it may not be possible to bring them to the barn-yard from a distant part of the farm, the best plan will be to pile them in the field where they grow, selecting elevated spots, where they will be above the reach of water. If the field is large, several roof-like heaps may be made, and covered with the tops, or with earth or straw, according to circumstances. If properly secured, these heaps may be allowed to remain in the field until they are needed for stock, or they may be transferred to some more convenient place, when horses and men can be spared better than at the time the roots were taken up.

Mangel wurzel is very nutritious food for cattle or sheep; it is specially adapted for feeding milch cows, and on this account is highly esteemed by dairy farmers. The leaves make very good fodder for stock, and also are useful for feeding store hogs, but they should not be removed until the roots are about to be taken up, for the latter cannot stand a very slight frost in the absence of the leaves.

Mangels are very tender, and should be handled with the greatest care. If the roots are flung carelessly one over the other, the bruises which they receive will cause them to rot. They may be safely kept throughout the winter by piling them in the manner recommended for rutabagas. Holes for ventilation should be left in the top or sides of the heap, and kept stopped with straw or hay. A covering of straw, with six or eight inches of earth over it, is the most approved manner of protecting roots in winter, in the absence of a root house or capacious cellar.

In Alderney, Jersey and Guernsey, where parsnips are raised in large quantities for feeding milch cows in winter, the roots are boiled and then pressed compactly into barrels and boxes. It is said that roots managed in this way keep for a long time, and are relished by cattle. A small quantity of salt is mixed with them.

Parsnips are perfectly hardy, but in order to have them accessible for feeding stock, they should be kept in pits or piles, in some convenient place, and covered with earth or straw. Carrots are tender, and cannot stand frost.

Cabbages are very nutritious food for cattle, and every farmer should have an abundance of them. They may be safely kept by pitting them, like potatoes, and covering them completely with earth, or in the usual way, by covering the heads and leaving the stems exposed. When managed in either of these ways, they are not accessible at all times in winter, and a temporary supply should always be kept in the root house, in barrels or large boxes, covered with straw.—*Western Rural.*

## Spreading Manure in Winter.

THE following extract from the *Country Gentleman* is in accordance with advice that has repeatedly been given in the columns of the CANADA FARMER:—

There is but one object in allowing large piles of manure to accumulate in barn-yards during winter, namely: for the purpose of working down the fibrous material intermixed through it in the form of straw or cornstalks, to be applied next summer or autumn. Manure intended for spring crops should be drawn out and spread now, for several reasons. There is usually more leisure on the part of the team and teamster, and it is desirable to give winter employment to hired men. The loads of manure may be more easily drawn over the frozen ground than when it is wet and soft in spring, and grass land is not cut up or injured in this way. The manure, being spread upon the surface, is dissolved and carried into the soil at every thaw or rain, and is thus finely diffused through the particles. The remaining fibrous portions are then ploughed under, if it is intended to plant or sow a crop; or they remain as a partial and thin mulch upon the surface of grass lands. It is obvious that for the last mentioned purpose, the manure should be very evenly spread, and no lumps permitted to remain to obstruct the mowing machine. It is especially important, on three accounts, that manure on ploughed or stubble ground, which it is intended to plant or sow in spring, should be spread in winter. The ground is not injured by the sinking of the wheels; the manure is more perfectly diffused than could be effected by harrowing; and an amount of time is gained for early sowing, equal to the number of days required to draw out and spread the manure.

We often hear the objection that the manure will wash away and be lost. We have found this objection to be groundless, unless it is spread in the bottoms of hollows or swales and in channels of streams. As soon as snow melts or rain falls, there is always enough of frozen soil at the surface to absorb the dissolved manure. Even when placed on steep hillsides, we have never found the enriching effects of the manure to extend down the surface more than three feet on grass lands. Those familiar with the process of irrigation are aware that the large quantity of water, used for this purpose, has its fertilizing portions quickly abstracted from it by the grass among which it runs. The same result is more thoroughly produced when the water comes down upon the surface, not as a flowing current, but merely in minute rain drops.

As corn is planted later in the spring than some other crops, it may seem less necessary to draw out the manure in winter; nevertheless, after several years' trial, we have become satisfied that winter manuring is much better than applying just before the ploughing is done, at the same time that the injury to the soil in spring, by drawing heavy loads upon it, is avoided.

## Cultivation of Flax in 1868.

THE *Northern Whig* (Belfast), in an excellent article on "The Prospects of the Linen Trade," gives the following advice to farmers regarding the cultivation of flax during the coming season:

The great difficulty under which the linen trade suffers is the dearth of flax, and the chief remedy for this is to increase the average yield per acre. No doubt improvements can be effected in every portion of the preliminary operations, from the selecting of the seed and the managing of the ground down to the scutching. We are, however, disposed to attach equal importance to the careful selection of the most suitable soil for the growth of flax; and, to secure this, we believe the area over which flax is grown must be further increased, so that only the best ground may be used, and only such a proportion of this best ground as will allow of a due rotation of crops, and prevent the farmer from being