

the Irish growers altogether. In many cases they know that the seedsmen is not in fault, although they prosecute him for damages; whilst, in many other instances they themselves are the real delinquents, by their neglect of proper tillage, or want of manure. On the contrary, the English farmer knows that the turnips, as well as the mangolds, have of late become precarious, and less able to withstand the casualties of the season. The cause of this no one is able to determine; but certainly it is not owing to defects in cultivation or want of manure, and the farmers themselves are too well informed on the subject to ascribe it to the badness of seed. The subject, however, has been well ventilated this season, and we hope that no further attempts will be made to insist on the return of money from the seedsmen, who are as free from blame in the matter as the farmers themselves, and in many cases much more so."

**Harrowing by Steam.**

We learn from the *Scottish Farmer* that the Messrs. Howards, of Bedford, have, in addition to their well known steam plough and cultivator, invented a most efficient harrow, which was recently put to work on the farm of Mr. Hope, of Fenton Barns. "If our forefathers," observes the *Farmer*, "had a peep at the agriculture of the present day, they would certainly feel a little astonished. In the Drem district of East Lothian, no less than three or four 'iron horses' can be seen any day digging, ploughing, and cultivating the land; but it was not until last week that *bona fide* harrowing by steam was ever, we believe, attempted in Scotland."

The harrow in this instance was preparing for beans, the tines sinking six inches into the ground, making admirable work, and avoiding the treading of horses, which is always felt to be a serious disadvantage, particularly in wet land and rainy weather. The pace was about twice that of horses, and the engine and windlass were placed in an adjoining grass field.

"The width of the harrow is ten feet, and it is divided into three jointed sections of Howard's well known zig-zag, about twice or three times heavier than those made for horses. There are four guide wheels, two in front and two behind, with a seat over each, upon which sits the steersman. Many may wonder how a harrow possibly can be steered; but this operation is nevertheless fully accomplished by means of a lever connected with the front wheels, and reaching back to the harrowman's seat. The cost of the harrow is £20."

The progress which steam culture is making must be regarded as full of promise, every year bringing about some improvement of structure and increased facilities of operation. In our small, and in most cases but partially cleared, enclosures, the principle of steam tillage is not yet applicable; but in the course of improvement is it doubtless destined some day to play a conspicuous part, and will probably obtain its greatest triumphs on the broad prairie lands of the West.

**AN OHIO FLAX CROP.**—The following report of a small field of flax was sent by a farmer in Ohio to his local paper, and is worthy attention as showing what can be done, under peculiarly favourable circumstances, with this crop.

PRODUCT FROM THREE ACRES.		
1440 lbs. dressed flax, at 17 cents	- - -	\$244 80
70 bushels seed at \$1 60	- - -	112 00
<b>Total</b>	- - -	<b>\$356 80</b>
COST OF RAISING.		
Two and one-half bushels seed sown	- - -	\$10 00
Plowing	- - -	4 00
Harrowing	- - -	2 00
Falling, at \$5 per acre	- - -	15 00
Threshing off seed and rotting	- - -	10 00
Dressing, about 3 cents per lb	- - -	34 00
<b>Total</b>	- - -	<b>\$75 00</b>
<b>Profit</b>	- - -	<b>\$281 80</b>

This exhibit shows an enormous profit, and though it is only in rare cases and under special circumstances such a return is obtained, we are satisfied that nothing the farmer can raise is more sure to be remunerative than flax.

It is the law in Japan that no fir or cypress tree can be cut down without the permission of a magistrate, and for every full-grown tree that is felled a sapling must be planted.

**Smut in Wheat.**

To the Editor of THE CANADA FARMER.

SIR.—As the time for sowing wheat is near at hand I would suggest a few hints gathered from my own experience, which I think may be of use to some of your readers. I would recommend, in the first place, to procure seed as free from smut as possible, as, I believe, sowing smut, in the seed, will infect the crop, and also infect the land on which it is sown.—That there is infection in the land as well as the seed, is in my mind beyond a doubt. I will give you my reasons for the statement. In the year 1852, I fallowed about 26 acres of land for fall wheat. Sixteen acres of this field had been under good cultivation for many years, while the rest of it had never been broken up since it was first cleared up from the bush, but was covered with briars and rubbish of every description. We ploughed the field three times, and bestowed the same amount of labour per acre on each part of the field. The seed sown was extremely smutty, but was prepared in the following manner: one half was washed in a solution of blue vitriol, the smut and dirt skimmed off, and the wheat dried with wood ashes. The other half was washed in a solution of arsenic, and dried in like manner. Running short of seed, prepared in this manner, and having about a quarter of an acre to sow, we used the seed just as it was. Now for the result:—I could see no difference in the wheat prepared from the two different recipes; but there was a vast deal of difference in the grain grown on the land which had lain so many years in an uncultivated state. It was very smutty, while the other part was free from it. With respect to the small quantity sown without preparation, it was nearly all smut, showing that the infection can be carried to the land, in the seed, in a great measure. But that there is infection in the land, as well as the seed, is a matter I firmly believe. For instance—I have never seen smut in a field of what we call new-land wheat, where it has been properly burnt off; but if there should be places which have escaped the fire, covered with leaves and other rubbish, there, no matter how the seed has been prepared, I have invariably seen more or less smut. Now the only hints I can give towards ridding the land of infection, is to cultivate carefully—see that there are no corners left here and there unploughed; and when fences require repairs, pull them down and build them up on a fresh place, then plough up the site of the old one, for it is my opinion that while there are fences crowded with bushes, and weeds, and stone heaps, that the farm will never produce crops free from smut. I have had a good chance to observe what has been going on among our farmers for the last ten years, having threshed among them two or three months each year. During that time, I have generally observed, that where they have sowed their wheat in a careless manner, on land but poorly handled, that, to use a common expression, they had a little wheat among the smut. On the other hand, I know farmers who cultivate thoroughly, and prepare their seed carefully, and such a thing as a ball of smut is rarely ever seen in their grain. Now, as every head of smut is a loss to the person raising it, (for he might make sure of a head of good wheat in its place if he tried,) I would recommend great care in the selection of seed, and always to prepare, in some way or other, before sowing. I will give you one or two recipes which I have used with good success:—Take strong lime water, sufficient in quantity to wet the wheat nicely, stir it up thoroughly, to see that it has been well mixed, then dry it to your mind with lime. Or take blue vitriol, arsenic, or any ingredient that will destroy animal life, and use it in the same manner as the lime water, and you will have the desired result.

T. BRETT.

Mono Mills, March 22nd, 1864.

**Management of Manure on Clay Farms.**

To the Editor of THE CANADA FARMER:

SIR.—Upon clay soils, where wheat forms a principal part of the crop, where great quantities of beans are cultivated, and few turnips sown, unless for the use of milch cows, the rotting of dung is not only a troublesome but an expensive affair. Independently of what is consumed by the ordinary farm stock, the overplus of the straw must be rotted by lean cattle kept in the yard, who either receive the straw in racks or have it thrown across the yard, to be eaten and trodden down by them. According to this mode of consumption, it is evident that a still greater necessity arises for a frequent removal of this unmade dung. To prepare it sufficiently upon farms of this description, is at all times an arduous task, especially in dry seasons, for if it once gets fire-fangled, it is

almost impossible to bring it into a suitable state of preparation, and, at all events, its virtues are thereby considerably diminished. It is therefore recommended, upon clay land farms, especially those of considerable size, that the yard be frequently cleared, and that the greatest care be taken to mix the stable or horse dung in a regular way with what is gathered in the yard, or made by other animals, in order that a gradual heat or fermentation may be speedily produced.

The heap or pile, in the case of turnip dung, should be formed in a secluded spot, if such can be got at hand, because the less it is exposed to the influence of the sun and wind, so much faster will fermentation proceed. Separate heaps are necessary, so that too much may not be deposited at once. By shifting the mass frequently, and allowing each covering or coat to settle and ferment before laying on any more, the best effects will follow. All such heaps as are completed before the 1st of May may reasonably be expected to be in a fit condition for applying to the summer-fallow fields, in the end of July or first of August.

If the external parts get dry at any time during the process, it will be proper to water them thoroughly, and in many cases to turn over the heap completely. Upon large farms, where the management of manure is sufficiently understood and properly practised, it is considered an important matter to have dung-hills of all ages, and ready for use whenever the condition of a field calls for restoratives.

As to the proper quantity of dung to be used, no more ought to be given at one time than is sufficient to render the ground capable of producing good crops, until the time arrives when a fresh dose can be administered. N.B.

Grantham, April 3, 1864.

**English Horse Beans.**

To the Editor of THE CANADA FARMER:

SIR.—I was somewhat surprised to see the statement of J. Ewing, in the sixth number of THE CANADA FARMER, of his bad luck with the above named beans, and the only way that I can account for it is that he must have sown them on a small scale, and rather thinly, in which case the sun would have a bad effect on the flowers, and as the lower ones would be most shaded, they would be likely to thrive while the others withered. I have grown them myself for several years and have always had a pretty fair crop.

The way I cultivate them is as follows:—I rib about an acre sixteen inches apart, so as to allow room to hoe or scuffle them. I generally sow two bushels to the acre, which makes them come up pretty thickly, and the tops keep the sun from the flowers. The best soil is a black loam, with a clay subsoil. I sow them as early as possible in the spring, as the frost will not affect them. By this means I generally get from 15 to 20 pods on the stalk, which will yield from 25 to 30 bushels per acre. The beans are superior to those grown in England, as the black ones there rot, but here they keep as long as the white. A damp season suits them best the last was very favourable for them. They are generally ready to cut about the middle of September, and I cut them with the reaping machine, bind them with straw bands, and stand them in ruckles until they are dry enough to lead into the barn. R. G. T.

Malton, C. W.

**The most Profitable Variety of Potato.**

At a recent meeting of the Farmers' Club of the American Institute, Mr. Carpenter gave his experience with Goodrich's potatoes. He said that he had cultivated all four varieties, and he believed that the Cuzco-white, with good culture, would yield 300 bushels to the acre.

Mr. Williams said that in 1862 he tried all four varieties in comparison with some of the best old kinds, carefully measured the ground and the crop, and having his note-book with him he could give the results. The ground, manuring and culture were the same in all cases. The rate per acre of the yield was:—

Prince Albert	86 bush. 6 quarts.
Jersey Mercer	91 bush. 18 quarts.
Nova Scotia	163 bush. 20 quarts.
Peach-blow	114 bush. 3 quarts.
Garner-Chill	120 bush. 3 quarts.
Coppermine	199 bush. 2 quarts.
Rusty-coat	216 bush. 6 quarts.
Cuzco	240 bush. 7 quarts.

The last four are Goodrich's. Mr. Williams thought that the Cuzco surpassed all other varieties of potato in the abundance of its yield, and though in quality it was not perhaps quite equal to the Mercer, it brought the same price in the Newark market.—*Scientific American.*