

rather get new land, and I want it in the western part of Canada."

"What is the matter with your land in Cartwright? I know that when the land there was first cleared up you used to get three and often four crops of wheat one after the other, merely harvesting one crop, burning the stubble, and sowing fall wheat again."

"Yes, we used to do so; but now all the muck seems to be gone out of the clay, and it leaves it stiff and hard, and we cannot be certain of more than from six to ten bushels per acre, where we used to get forty at least at first, and thirty bushels afterwards."

"Is it the season, do you think, or the seed?"

"No, it is not the season nor the seed; for where we can clear up new land we can get as good crops as ever; so it can be neither seed nor season." [This can only apply to Cartwright, and land in that neighbourhood, for elsewhere all over the Province the new land has been represented to me as failing in crop, as bad as the old land.]

"What is the principal cause of the bad crops you now suffer from?"

"Winter killing. We have cut down all the woods, and the snow won't lie on the wheat, and the fall wheat kills out almost every season."

"Are you sure that is the cause of winter killing?"

"Oh, yes; for where we clear a new bit out of the forest, and where we sow the fall wheat in fields close to the woods, it does not winter kill."

"Won't spring wheat do well with you?"

"No, not for certain; we get only very poor crops of spring wheat now: It is not like the old time of the Siberian wheat, when we were sure of 30 bushels per acre; or like the first few years of the Fife wheat (which we call the Scotch wheat), and which gave us good crops, but which now fails as bad as the other. The Siberian is gone altogether, and we now sow a spring wheat we have got from the States. It is very clear and bright in the straw, and never rusts, and is very stiff in the straw as well."

"Ah, but the spring wheat never rusted, did it?"

"It did not at first, nor for many years; but of late it has rusted more or less on the lower stem and some of the leaves. The Fife is not nearly as bright straw as the new Yankee wheat."

"Do you grow turnips?"

"No, it costs too much in labour and expense. We can't afford the time and expense."

This settled the matter in my mind, and proved to me that my friend, although an old settler and a highly respectable man in his way, was no farmer in the real sense of the term. Like thousands of others, he could work industriously, though without

judgment; save and scrape together, without true economy; and take all out of the land so long as it would bear it, yet think expense and trouble ill bestowed in renovating the soil and restoring the missing elements. He could not count cost either, nor believe that one-half the expense of cost of removal, change of life, and the loss attendant on from one to two seasons without produce, while he was bringing his new farm into a state of semi-production from the forest, would have rendered his old farm like a garden, doubled his receipts, and made him wealthy, for his land is really good. There is such fertility about the soil of Cartwright and the neighbourhood of the little lakes, that it only wants a very slight renewal to come back to a state of normal fruitfulness; that three or even four grain crops might (though improperly) be raised one after the other, on occasions of extraordinary prices or other anomalous circumstances. Although the CANADA FARMER would ordinarily be the last to advocate such a course, yet there may be circumstances which would palliate, if not justify, so heavy an agricultural offence. The writer is well acquainted with the fact that hundreds of farms in the most fertile parts of the Province have been used in the same way, and have been reduced from the height of fertility to very medium and often poor state of productiveness. These places only want the hand and sense of the true farmer, the man who understands his business, to have their elements restored, and to become most remunerative.

This naturally brings the question to the mind: What is the element that has been removed from the soil? Modern discoveries and the researches of Dr. Voelcker have shown, that however useful as an indication of the constituents chemical analysis is, yet it cannot be depended on as a means of pointing out the missing element of fertility in a soil. In the case of the injured farm, it cannot be the phosphates and other mineral constituents, for we daily see people take hold of the most exhausted farms (and those which were the most exhausted were generally originally the best), and in the course of three years, by ordinary means and apparently with no extraordinary amount of labour, the fertility of the land is restored, and the occupant is not only able to pay rent for what would not before pay expenses, but to become wealthy. The writer has known scores of farmers (worthy the name) who, would they enter the land where the Canada thistles, although they could be reckoned by millions and where nothing else green could be seen, but where even the thistles would only grow from six to ten inches high, yet in three or four years, with *only the means on the land*, and with their own skill, such farmers would raise remunerative crops, and would keep the soil in an increasing state of fertility.

Unfortunately these people do not seem to be able to impart the knowledge they pos-

sess; and our best agricultural writers, and our most deeply read agricultural philosophers, are too often at fault when they come to the actual practice.

Our friend "Harris," formerly of the *Genessee Farmer*, and now of the *American Agriculturist*, and a student under James & Gilbert, of England, the most scientific farmers in the world, and who are two of the greatest farming philosophers of the present age, is in this situation. He is now on a large farm, and is bringing all his scientific knowledge to bear upon it; yet even he pleads guilty to want of success, and allows that there are hundreds of people scarcely removed by education and literary attainments from the ranks of the labourer, yet who can restore fertility, manage economically, and eliminate all the elements of success out of the most worn-out soils, that are foul with weeds, and apparently all but unmanageable; and in a few years these people will be the most successful men of the neighbourhood. Could our Agricultural College men "open this oyster," and make these dark places plain, they would indeed be benefactors to the species.

VECTIS.

Turnips as a Manure.

To the Editor.

At the request of the writer of the article on "Turnip Crops for Manure," in your issue of the 15th June, I would beg to give my experience, although not on a very large scale, still I had observed that when my turnips had been frozen in the ground in 1868 and 1869, I had a very heavy crop of grain.

I had two acres of turnips frozen in, and another acre of ground on which I had grown corn for fodder. On these three acres I sowed what is called mixed grain—that is, one-half oats, and a quarter each peas and barley; this is grown and used for provender. From these three acres I harvested three hundred and three bushels; and this without any further manuring than that given to the crop the previous year.

The acre where the corn grew was not nearly so stout as that where the turnips had been; the straw being shorter, and the heads not nearly so well filled nor as long.

The yield of this mixed grain is usually fifty to sixty bushels per acre, sometimes seventy-five; consequently you can see that I had an extraordinary crop on the turnips grown—from one hundred and fifteen to one hundred and twenty bushels per acre.

I mentioned this crop to my neighbours, but as only a few had any turnips, and fewer still had lost them, they had not had the opportunity of witnessing the result produced by a turnip crop frozen in and used as a manure.

A. B. BALL.

Stanstead, June 28.