

is well worthy the consideration of the citizens of Toronto. While the establishment of such a manufactory would be an improvement, it would be a great boon to the city to get rid of this surplus population, and turn their services to good account. The great advantages of a linen manufactory are most obvious where water-power is not available, and when a scutch mill is attached, it will furnish its own fuel—no small item with wood as it is in Toronto, at \$8 a cord.

The wardens of each County will excuse my making a suggestion, as I am confident would be productive of much good if acted on. Let a small appropriation be made in each County, and offered as a premium to the party who would erect the first scutching mill in a Township or County. This has been done already in the County of Simcoe, and with good results. Before farmers will grow flax, a mill must be built—to prepare it for market. Parties who may not be acquainted with the mode of cultivation, &c., &c., who wish to make the trial, and will let me know, I will only be too glad to attend a meeting in their neighbourhood, and explain why we should grow flax more extensively in Canada.

JOHN A. DONALDSON.

Large Crops of Wheat.

THE discussion about the peck of Wheat per acre, the laughter and disbelief about 7 quarters of White Wheat, or 8 quarters of Revett Wheat per imperial acre, present to my mind a painful sense of our national agricultural humiliation; because, if those sneers and laughter are honest and genuine, it proves that small crops are the order of the day, and that crops such as I have described are very uncommon and produced at very great cost. I also come to be convinced that great corn crops cannot be grown by the ordinary thick sowing, and that this thick sowing is a national calamity, owing to its injuring and diminishing the crops. I know and expect that this statement of my honest conviction will raise a fresh storm of doubt and disbelief, but I will nevertheless calmly give my reasons for coming to such a conclusion; and, first, when I recommend high farming, I am very frequently told "that it is all very well for root and green crops, but that it won't do for corn, for we get our crops laid prematurely, and the quality and quantity both injured if we farm so high." But it seems never to have occurred to such persons that the real cause of disaster in such cases is not too much manure, but too much seed. The roots of the thickly sown plants, when the rootlets attempt to extend and ramify, meet with opponents having the same requirements; a grand battle ensues as to which shall have the greatest number of soil granules, and, as in all other battles, the weaker perish, and the victors are either crippled or injured. There can be no more mistake about this than about an over-thick or uninjured plantation, or a crop of unhoed and unsingled Turnips. Liebig justly says that the greatest enemy to a Wheat plant is another Wheat plant, for the very obvious reason that they both require identical elements of food. Small heads and kernels and weak flabby straw are the natural consequences of this competition.

I never heard one of my own laborers say that I farmed too high for Wheat. Well, then, I assert confidently that one main cause of small grown crops is thick sowing, and that however rich your soil, you can rarely obtain a great crop with the usual quantities of seed sown. There are several awkward attempts at correcting this evil; first, by sowing late, and secondly, by flagging the Wheat at certain periods of its growth. A money-making high farmer (an old friend of mine) who grows 400 acres of Wheat annually, employs a whole gang of men in flagging all his Wheat, and very often all his Oats and Barley. This is done when the broad or flag leaf is well grown in June, care being taken to avoid cutting into the sheath that contains the ear. He knows quite well that unless this were done the crop would be prematurely laid and greatly injured. By this flagging the stem is relieved of weight, and stands more erect, the air and light are thus admitted to the lower portion of the stem, the overhanging canopy of flags no longer prevents evaporation or causes mildew. All this is rendered unnecessary by a more moderate quantity of seed. Let it be well understood that I lay down no fixed rate of quantity, but merely commend my brother farmers to try on a small scale comparative quantities, so as to arrive at conclusions suitable to their very various soils

and climates. Now, when a man sneers or gibes at one peck of seed per acre on heavy land, or even at my general quantity of one bushel per imperial acre, I know at once that he has never tried it, and therefore knows nothing about it, having had or seen no experimental facts on which to form his opinion, and, therefore, instead of being angry, I can only pity or regret the absence of a more sound mode of arriving at a just and safe conclusion. I plead guilty to being an agricultural disturber in this matter of thin sowing, and so long as I live and have my faculties I will continue to deprecate erroneous agricultural practice, with the sole and earnest view to benefit and elevate my country. But, eschewing motives, let us see what there is extraordinary in growing 7 quarters of White Wheat, and then from 6 to 8 quarters of Revett, on the same ground in two successive years, the land being poor stiff heavy land, and the season suitable to such land; namely, plenty of sunshine and not too much moisture, such as 1864 and 1865. "Oh! but then you take Wheat after Wheat, Mr. Mèchl, which we dare not do."

Let there be no misunderstanding about this. I know that many who make this remark, and farm high, take Barley after Wheat, and get it of better quality as well, under their system of thick sowing, than taking it immediately after Turnips sown off with cake. The land has less "branching" force after the removal of the Wheat crop.

Now, although I take two Wheat crops, the kinds differ a most as much as Wheat and Barley. I never attempt to take two glassy Wheat crops in succession. I know that they would fail, because the silica is not dissolved in time for a second glassy crop; but, as a second crop I take the pithy-strawed non-glassy Bearded Revett, which gives, on our stiff soil, a larger return than Barley.

But, then I am convinced by practical experiment that I should be unable to obtain 7 or 8 quarters from 2 or 3 bushels of seed, although I frequently do so from 4 pecks, or even from 1 peck. These conclusions have been arrived at by careful experiment. For several years I tried one bushel of Wheat per acre, against 2 bushels of Wheat per acre—both drilled. The difference in favour of the 1 bushel was equal to a rent of 30s. per acre. This settled the question so far as my heavy land was concerned; but every man must judge for himself, not by imagination, but by experiment. Whenever we hear of very great yields, it is generally from a very thin plant, that was almost condemned to be ploughed up in the spring—a branching crop is almost always a good one; but thick-sown cannot branch—there is no room or power for this. As to manuring, I keep plenty of live stock, and so make much manure.

I use 2 cwt of Peruvian guano, mixed with 1 to 2 cwt of salt, as manure for Wheat after Beans, or roots drawn off, and also for Revett Wheat after White Wheat. So much does a warm, dry summer, benefit our heavy land, that in 1865 my 40 acres of heavy land Wheat averaged 7 quarters per acre—not farmers' acres, but really and correctly measured acres. After a crop of Mangel I got 7 quarters, and after beans 7 to 5 bushels of Red Wheat, and after 7 quarters of White Wheat 8 quarters of Revett.

In conclusion, it must not be supposed that I recommend a general seeding or sowing of 1 peck an acre of Wheat; but the success during three years of such a quantity proves that a great reduction in the absurd quantities usually sown may safely take place. A bushel an acre on my heavy land is more than is required, and leaves an ample margin for slug or other damage. The peck an acre has, however, in my case, surpassed the bushel in yield of corn and straw two years out of three.

My object is to induce agriculturists to try reasonable comparative experiments, which as men of business they are bound to do, and not rely upon antiquated quantities only suited to a state of things either long since passed away, or gradually changing. Broadcast quantities are not suited to modern drill culture.

That there is need for great amendment is clear when I am even now frequently told, "We always put in 7 bushels of Oats, 4 of Barley, and 3 of Wheat." Take heed to local measures, for at Carlisle some farmers told me, to my surprise, that they only put in a bushel of Wheat, but I soon found that a Carlisle bushel is equal to 3 imperial bushels.

On very light land, where Wheat does not usually branch freely, more seed is required, especially where subject to wireworm and foot. In this case plenty of salt, some Rape-cake, and compression are more beneficial than too much seed. Salt not only removes wire-worm, but protects the roots against frost.

I hope that another year, instead of silly sneers and mis-statements, I may receive a list of carefully conducted experiments from various districts and

differing soils. On poor, miserably farmed, un-drained small fields, shut in by immense weed-growing hedges, and robbed by the roots of worthless pollards, a good crop can scarcely be expected, be the quantity of seed large or small. Unfortunately, I know of too much such land. My usual quantity of seed on the heavy land is 2 bushels of Oats, 6 pecks of Barley. 4 pecks of wheat per imperial acre.—*J. J. Mechi, Tiptree, Jan. 1.*

I take this opportunity of wishing many happy and prosperous years to my brother agriculturists. In our county Wheats promise particularly well, and the land is altogether in a more fit condition than at the same period last year. Let us, therefore, hope for a good crop and a fair price.—*Gardeners' Chronicle.*

Experiments in Top Dressing.

To the Editor of THE CANADA FARMER :

SIR,—I see in your journal some discussion on top-dressing, or ploughing under manure. My experience is in favour of top-dressing for any crop, excepting corn. For corn, I would rather have the manure under ground, for this reason: I think it hoes better, and in a dry season gives the land more moisture. Such at least seems the effect on my land, which is principally a black sandy mould. Another reason is that I always plough a sod in the spring for corn; and I think in ploughing the manure down with the sod, that it rots the sod better. But for barley, I would not have it put on any other way than on the top, evenly scattered over—as evenly as possible. The manure should be previously piled and limed enough to cause it to rot thoroughly, and to kill foul seeds. I think the difference in my crop of barley is nearly one-third over and above what is raised with the manure ploughed under. Let farmers try it, and see on a small scale how it will answer; and I will warrant they will never regret the trial if they succeed as I did. The first trial I gave it I sowed two acres, using two and a half bushels of two rowed barley to the acre. I top-dressed this patch, and harvested one hundred and fifteen bushels from the two acres, and I have not heard of a better crop secured by ploughing manure under yet. I have also experimented more or less on sowing plaster and unleached ashes on barley, after it was about two inches out of the ground, sowing it broad-cast, and following after with a roller to press it down. It is my opinion that if there are any wire worms attacking it at that time, the roller alone will drive them down a peg or two; but the ashes and plaster will set them back farther yet; for I had a piece of barley which, when up about two inches high, looked as though the fire had run through it, and my neighbours thought it was gone up; the true cause of the mischief was the wire-worms eating it up. I sowed ashes and plaster on it, and rolled it down, and in less than a week I was told that I had the best thriving piece of barley in the county of Welland. W. D.

Thorold township, Co. of Welland.

Manufacture of Sugar from the Beet in Canada.

To the Editor of THE CANADA FARMER :

SIR,—In the report of the proceedings of the Board of Trade of Toronto, published in the *Leader*, I see that Mr. Clarkson called the attention of the meeting to the growing importance of the manufacture of beet-root sugar in Europe, and it was finally resolved that the President of the Board, who was about to visit Europe, be requested to examine the beet-root sugar establishments there, and to procure samples of the best seed suitable for the manufacture of sugar in this country, in order to encourage the farmers of Canada to plant beets the ensuing spring.

I would not unnecessarily throw anything in the way of improvements in Canada; quite the reverse; and, with the same object in view, this subject engaged my attention many years ago.

When I saw the delightful white sugar made from the beet-root that is used all over France, and know-