

## The Chess and Wheat Conversion.

To the Editor of THE CANADA FARMER :

SIR, Notwithstanding your article on the alleged change of wheat into chess, in No. 20 of THE CANADA FARMER, there are, it seems, people still left who imagine that their crude experiments prove the impossible transmutation. I wish to show that no such careless experiments as those of Mr. J. Hunter Sears deserve the slightest attention, for none of the elements of deception are precluded in such ill-conducted efforts. He does not seem to be aware of the wonderful amount of seeds contained in the soil, whose vitality is only dormant, waiting for their development, favourable circumstances. Yet any Canadian, of even ordinary observation, ought to be well acquainted with the fact, that as soon as he has cleared off the original forest a new variety of vegetation appears on the soil. Raspberries spring up where trees had grown, and species of forest trees differing widely from the former occupants, always are the first to grow on the cleared land; yet I suppose that Mr. Sears will not assert that maples are converted into raspberries. In Scotland, when the heather is cleared off the land, Dutch clover covers the soil, yet, I presume, it is not converted heather. Sowing wheat in a rod or two of cleared forest, and finding, a year after it has ripened, chess growing on the spot, is exactly analogous to the instances I have related; for what has really happened in this case, that the disturbance of the soil has brought other seeds into a condition favourable for their growth, and I am confident that if the ground had been examined by a competent botanist, chess would not have been the only plant different from the neighbouring vegetation that would have been found developed. To show the wonderful abundance of lying seeds in the earth waiting for favourable circumstances to enable them to grow, I will instance an experiment of Darwin's, who took six and three-quarter ounces of soil from six inches beneath the surface, and placed it in his study beneath a bell glass, and gathered no less than 557 plants from that soil, occupying no greater space than a breakfast cup. Here we have an extraordinary number of plants springing into life the very moment circumstances favour their growth, but which had remained in the ground dormant for an unknown period, and very likely would have remained for many years, perhaps ages, if they had not been brought into light, air and heat. Every farmer knows, or ought to know, that he cannot keep his land, however clean he may think he has made it, free from weeds, without the constant use of the plough, scuffle and harrow, for the deeper ploughing and the more he stirs the soil, the greater the number of seeds he brings into those conditions favourable to growth.

Chess, then, may lie in the ground, and only be developed by the proceedings necessary for planting the wheat, and we ought, in all fairness, to conclude this to be the case, unless accidents are provided against in our experiments more carefully than they were in Mr. Sears' industrious, yet worthless efforts. Birds, even, might have brought the chess seeds to that very spot, for we know that birds would select that easily-moved ground to work and associate in rather than the hard, never disturbed forest, and we know that in the crops of birds seeds undergo no change for many hours, indeed not at all in the crops, or until they pass into the gizzard. Suppose an accident, no improbable supposition, happened to a bird scratching in that soil ground, by a hawk or rat seizing it and devouring it on the spot, what is to prevent the seeds in its crop growing in ground so favourably prepared for them? Why not chess seed in its crop. Before the transmutation of wheat into chess, of a plant that is of one species, suddenly and violently changed into another species, can be admitted, it is incumbent on all experimenters to show that they have excluded most carefully all sources of error. No man, of even very moderate knowledge, would place the slightest faith in Mr. Sears' experience, not from any doubt of his honour or veracity, but from the manifest imperfection of his mode of handling the subject. Let him take wheat and sow it in ground which has been subjected to a temperature say of 300 Fahr., and then placed in a box covered with glass, and then let it grow for as many years as he pleases, and note its changes, if any; but the moment he perceives any other plant growing with his wheat, let him carefully examine how that plant or its seed might have effected an entrance into his box, when he has proved entrance impossible, it will be time enough to consider how the transmutation has been effected.

CAUTION.

P. S.—My friend A. sowed a field with timothy, and was disgusted the year after to find it converted into pigeon grass, and the more he cut the timothy the more the pigeon grass took its place. I think this is as much an instance of conversion as Mr. Sears', though all my friend's neighbours thought the pigeon grass came from seeds lying dormant in the ground until ploughing brought them up for growth.

## Summer Fallowing and Thistle Killing.

To the Editor of THE CANADA FARMER :

SIR.—I observed in your paper of the 15th November, some remarks about Canada thistles. I have been trying experiments on them for several years, to try and destroy them, as they are the most troublesome weed we have to contend with. Your correspondent says that mowing them will destroy them. I should like to know if there is any particular time when it ought to be done. I have been mowing them several years without success; I have a piece of meadow that I have mowed for four years, and the thistles are now on the increase. There is one plan I have been trying with good success, only it costs a good deal of labour. It is ploughing. Four years ago I summer fallowed about four acres; I ploughed it eight times over during the summer, never allowing the thistles to come more than an inch or two above the ground till I ploughed it again, and I have not seen one thistle on that piece of ground since, excepting where they branch out from the fence. The year following I summer fallowed a field; I ploughed it six times over, and a few odd ones came up the year after. Last summer I summer fallowed nine acres; we ploughed it three times, and cultivated it several times with a wide pointed cultivator. The last ploughing was done about the last of September. I have walked over it since, and have not seen one thistle make its appearance. The ordinary way of summer fallowing does the thistles but very little harm; I mean three or four times ploughing. In regard to the seed it never troubles me much. I believe there is not more than one thistle out of twenty that grows from the seed. I have had patches of thistles in my fields for a number of years; I observe they have spread out from the root, and perhaps moved about a little with the plough and harrows. If they spread from the seed as much as some people suppose they do, in a year or two they would be all over the field, as they have been allowed to ripen and have been harvested with the grain. I have examined the thistle and seldom could find any good seed in them that looked like growing.

J. R.

## The Breeder and Grazier.

### Food for Cattle.

One hundred pounds of good hay affords as much nourishment to cattle which feed upon it as, 43 lbs. of wheat, 44 dried peas, 46 beans, 49 rye, 51 barley, 56 corn, 59 oats, 64 buckwheat, 64 linseed oil cake, 68 acorns, 96 red clover hay, 105 wheat bran, 109 rye bran, 153 pea straw, 153 pea chaff, 167 wheat or oat chaff, 170 rye or barley chaff, 175 raw potatoes, 197 boiled potatoes, 220 oat straw, 262 ruta baga, 275 green corn, 280 carrots, 339 mangold wurzel, 346 field beets, 355 rye straw, 504 turnips.

Food for Cows.—German chemists have found the relative value of food for cows giving milk to be as follows:—One hundred pounds of good hay contains as much nourishment as 26 lbs. of peas, 25 beans, 50 oats, 60 oil cake, 80 clover hay, 80 vetches, 200 potatoes, 250 pea straw, 300 barley straw, 300 oat straw, 500 Siberian cabbage, 400 rye straw, 400 wheat straw, 400 beet-root with leaves.

The English give their cows weighing a thousand pounds, eight pounds of good hay, thrice a day in winter. A cow which was given 27 lbs. of hay daily, yielded in four days one quart of more milk than when she consumed only 21 lbs. of hay; that is, the extra 24 lbs. of hay in four days, gave one quart of milk extra. While horses require eight per cent. of their weight good English hay a day, milch cows require only two and three-quarters per cent. A milch cow will not eat more than 25 or 30 lbs. of hay a day, and if more milk is desired, it must be obtained by giving her richer food, that containing more oil, albumen, &c. *Hall's Journal of Health.*

## What is the Cheapest Way of Feeding Pork?

To the Editor of THE CANADA FARMER :

SIR.—This is a question often asked, and which, if answered satisfactorily, would be readily adopted by many whose experience goes to prove that pork-feeding is anything but a profitable speculation in Canada. Although our farmers very seldom keep an account of the expense of raising pigs for the market, it is nevertheless a settled conviction, that it is one of their most unprofitable operations; and yet to abandon it altogether would never do, as in that case there would not be a market for the coarse grains which it is indispensible to raise on a farm to secure a rotation of crops. Nor would it do to give up eating pork. Admitting, then, that as a necessity farmers must feed pork, the point to be arrived at is, the best and most profitable way this can be attained. Most farmers begin the winter with a brood or more of spring pigs, and a sow or two for breeding. These all are usually brought through with as little food as will keep them tolerably quiet. The breeding sows are a little better looked after in the spring, but the others, as soon as the snow is off, are given to understand that they are to shift for themselves; and because they manage to rub along with grass and roots until harvest, it is supposed all is well. They are then turned into the stubble fields, and when time can be had to thresh peas, they are perhaps put up to fatten, or allowed to run around, but well fed. But with this new mode of treatment, they begin to grow, and before his pigs get really fat, the farmer finds his peas are about done, and he must kill. When he weighs his hogs and reckons how much he could have made of his grain at the market price, he finds that there is a decided loss, and he says "it don't pay."

Now, can there be no improvement of the general method pursued in Canada of raising pork? I think there can, and I propose to give a few thoughts as they have occurred to me from observation and reflection. I would suggest curtailing the period of keeping pigs, as well as the number kept. If they are to be kept through a winter, let the sow have her brood somewhere about the first of June. When the young pigs are weaned, let them be well and regularly fed. They may run on grass, but should not be allowed to depend upon it for a subsistence. They should be regularly fed through the winter, and next season should be put up early to fatten, and be ready for the market when pork usually brings the best price. Now all this can be accomplished by a little attention and forethought. If a farmer raises only what peas he feeds to his hogs, let him go one year without feeding hogs at all. Let him keep his peas over and feed his young pigs; thus having once started, he can easily follow on. I have found it profitable to feed early spring pigs and kill them in the fall. For several years I have killed spring pigs 7 or 8 months old averaging over 200 lbs. About the middle of last April, I bought two small pigs 4 or 5 weeks old for \$1 each. They got the refuse from the kitchen, and milk, &c.—occasionally some peas. Towards autumn they got more peas, and when confined for fattening, I boiled the peas. I killed them on the 18th November, and they weighed respectively 278 and 282, making a total of 560 lbs. This at \$6 per 100 lbs, which I could have obtained at the time, would realize \$33 60. I kept no account of the grain I gave them, but I estimated it at 20 bushels of peas, which, at 60 cents per bushel, was worth \$12. They would eat neither corn nor potatoes; their food was exclusively peas and milk. I consider there was a fair margin for profit, and am positive that others pursuing a similar course would find it equally remunerative. I have never before had my pigs above 246 lbs., and I account for the extra weight this year by my own supervision, and boiling their food. Not being acquainted with the different breeds, I can not say to which they belonged. I believe they were but a common sort. I have had them before that were styled excellent breed, with an extra price. A farmer should, of course, keep the best, as they will pay the best. If it be a fact that pigs require so much feed to make them a certain weight, it remains to be ascertained whether it is most profitable to give them that amount of feed in 8 or 18 months. I think it decidedly most profitable to the feeder to adopt the shorter period. Had I kept mine a fortnight more, they would have made 300 lbs. a piece. When killed they were about 247 days old, so that they were some 30 lbs. over one pound per day.

Rocklands, December, 1864.

J. E.