draining is indispensable; but with lime at 20c. a bushel, and drain-pipes at $10.00 a thousand, exclusive of carriage, there is not much chance of the reclamation of these hard-pan lands being carried out, at least, in our time.

I see, by the reports in the agricultural papers published in the United States, that the price per rod of 16½ feet for 3½ feet drains is about 30 cents, and this for only digging the drain and laying the pipes, the filling up being done by horses and being altogether an extra job. It is clear to me that either the men do not understand the work, or that they earn extravagantly high wages, for my men in England, in 4 feet work, were well paid at 12 cents a rod, were the pick was not wanted, getting regularly through their six rods a day, in the short winter days, and filling up as fast as the pipes were laid. Allowing men here, to earn a dollar a day—quite enough as time go—18 cents a rod should be quite enough. I tried a small piece of drainage this autumn: the man I set about it did his work quite fast enough, but he could not keep his drain straight, though working, of course, with a line, and the bottom was like the waves of the sea; so I gave it up in despair. (1).

Varieties of oats.—With the exception of Black Tartars, most of the oats I have met with in this country derive their origin from Scotland. They are the following.

Potato oat.—This is one of the finest of the early varieties both for quality and quantity of produce. It is probably the oldest *early* white variety at present in cultivation. It was introduced into Scotland towards the end of the last century, but the accounts of its origin are somewhat contradictory. According to a writer in the "Farmer's Magazine" for February, 1803, potato oats were first imported from South America in a small parcel containing a quantity not larger than would fill an ordinary snuff-box. They were inclosed in a larger package containing potatoes: hence their name. But another account states that they were first discovered growing in a field of potatoes in Cumberland in 1788. The latter is Lawson's account, and I think the true one; Dr Chevalier found the celebrated barley known by his name in the same position; and Lawson, the well-know seedsman of Edinburgh, is no doubt, to be trusted, both from his long experience and his many opportunities of becoming acquainted with facts relating to the origin and introduction of agricultural plants.

The grain of the potato oat is white, short, and plump, when well grown, and the straw is of a pale yellow colour, and moderately bulky. The young plants tiller freely when the seed is not too thickly sown, and the stems usually stand close and carry a large bushy ear, which gives the crop a remarkably rich and luxuriant appearance when fully shot out. The grain varies in weight from 38 lbs. to 47 lbs. a bushel. At the latter weight, 134 pickles weigh one drachm. The grain yields more meal per bushel, weight for weight, than any other variety. I heard, many years ago, when in Scotland, of a very fine sample of potato oats yielding 245 lbs. of meal from a quarter—8 bushels, weighing 368 lbs.—but, in general, what the Scotch millers call "even meal," is considered pretty fair, that is, one hundred pounds of oats should give 50 lbs of meal. The soils suited to the growth of the potato oat will rarely be found in the province of Quebec. Perhaps, some of the soils at the base of the Laurentide hills, and some of the lower slopes of the Coaticook and St. Francis valleys might do, but I cannot recommend it as a rule, fine as it is when successfully grown. On our ordinary clay lands it is hopeless to attempt it. This oat sheds easily when ripe, and should therefore be cut early. (1) See engraving, fig 1. A degenerated

Fig. 1

Fig. 2

descendant of the potato oat is the sort most commonly met with here; but the sooner it is got rid of the better, for it yields badly, and sheds worse than any oats I ever saw.

Hopetown oat.—The Hopetown oat was greatly admired on its first introduction. On good land in high condition it answers better than the potato oat, as it is stronger in the straw and, therefore, not so liable to lodge.

Till I went to Scotland, I always fancied that the *Sandy oat* was so called from its colour! Not at all: Lawson says that it was discovered in 1824, on the farm of Miltoun of North, Alberdeenshire, by a herd-boy, Alexander Thomson, who found it growing in a bank of recently thrown up earth. —*Sandy*, as all my Scotch friends know, is short for Alexander. (1) The grain of this oat is neat and compact, but small and should therefore be crushed if given to horses, as otherwise they will be likely to swallow some of the pickles whole. The Sandy oat does well on soft, mossy land, as it will stand up when other oats, from over-luxuriance, are lodged.

Sherriff oat.—I strongly recommend the Department of Agriculture of the province of Quebec to import a few hundred bushels of this oat for seed. It is the earliest of all the white oats—new lots appear in the Edinburgh market a fortnight before any other kinds are ready; and earliness is a tremendously important point here Individually, I do not care for any white oat, but if the prejudice in favour of them is ineradicable, the Sherriff is the sort best fitted for our climate and soil.

The above are the chief varieties of early white oats; the late sorts are numerous, but it is quite unnecessary to speak of them here, as, in nine seasons out of ten, they would not ripen their seed, unless sown very early in the season.

Dun oats.—Somewhere about the year 1849, I bought some seed oats of the late Mr. Hewitt Davis. He called them "Sovereign" oats, but I believe them to have been the common *dun* oats, and nothing but a hybrid between the old black variety (not the Tartar, by any means) and one of the ordinary sorts. They yielded fairly, but nothing like as well as our ordinary black Tartar, so I did not try them again. They seemed suited to inferior cold clay land, though Mr. Davis grew the Sovereign oats on a poor gravel, in the neighbourhood of Croydon, Surrey, where, he protested, his average crop was 96 bushels an acre! Mr. Davis was a thin sower; 3 pecks of wheat, 6 pecks of barley, 8 pecks of oats, and 4 pecks of winter beans, were his usual quantities. As to his yield per acre, I can say nothing positively, as I did not see the crops threshed; but, looking over the fields just before harvest, I must say that the appearance was magnificent. All the grain was sown in rows 12 inches apart, and the winter beans 27 inches, the land, all crops having been horse-hoed, was as clean as a garden. And the farm was not on a small scale either, there having been 850 acres under the plough. I should like to see it in a dry year, for when I went over it we had had a *dripping* summer, which just suited it.

Tartar, or Tartarian oats. v. f. 2.—Ten years ago, when I tried to introduce the Black Tartars into the Eastern Townships, I was gravely told that the horses would not touch them. They had been tried, said the farmers, and they could not give them away! The same absurd sort of prejudice I observe to exist in the *Sorel* market, clover-hay is unsaleable; (2) nothing but timothy stands a chance of bringing a price. Mr. Cochrane, of Hillhurst, however, had seen too much of the world to indulge in such fantaisies, and, on my recommendation, imported seed for 20 acres, the yield of which amounted to 1500 bushels; upwards of 72 bushels an acre! His horses, like their master, were devoid of prejudice, and devoured their rations with equal zest, whether they were composed of the white or of the black sorts. The great trainers of Newmarket and Yorkshire, the Days, the Scotts, and others, refuse the finest samples of Scotch potato oats in favour of the Tartars. Like the Scotch *late* oats, the meal of the Tartars is *flinty*, and of superior quality, making a *sharp* porridge. From experiments I carried on this summer on the Lincoln College farm with three different kinds of oats I deduce the following conclusions.

The ordinary white oats of the country—as descendant probably, of the Scotch potato oat—sown after potatoes, require very thick seeding; are short in the straw; do not tiller much; and, though they stand up well, do not head out regularly, nor do they yield as they ought to do.

The *White Tartars* imported last spring—sown on a one year "pacage," i. e. an oat stubble grazed without seeding down—were satisfied with a moderate amount of seed per acre; were shortish in the straw; tillered well; stood perfectly; yielded well; but were at least eight days longer in *ripening than their black brothers.*

Black Tartars.—These oats, bought of Mr. William Evans, of Montreal, and grown in that neighbourhood, received exactly the same treatment and were sown on the same piece of land as the white Tartars. They require a fair amount of seed; were long in the straw—many straws measured four feet six inches in length; they tillered amazingly; went down very little for so bulky a crop; yield at least 8 bushels an acre more than the white Tartars, and, certainly 12 bushels an acre more than the country oats; and, though not sown till the first of June, were ready for harvest on the 1st of September; whereas the white country oats, sown on the 5th *of May were hardly ready on the 17th* of August. I should say that the common oats were sown on land which was at least a week earlier in general effects than the land where the black Tartars were grown; in other words, the black Tartars if sown on the same piece and at the same time as the common white oats would as far as I can judge, have been fit to cut ten days before the others. I have no interest to serve in the matter, as I have no seed to sell. There are no less than 54 varieties of oats described in "Lawson's Agriculturist Manual," and of all these I most earnestly recommend the Black Tartars to the attention of my brother farmers. It was only last week, I was told that the people of St. Barthélemi, a parish in the rear of Berthier, between the St. Lawrence and Laurentian Hills, can grow neither oats nor pease; the oats go down and lodge; the pease never stop growing and blooming, and in consequence, neither crop ripens its seed! The soil is so rich, according to my informant, that these evil consequences invariably ensue, if any attempt is made to sow either of these two crops. It is very odd! There must be some way out of the difficulty. I will attack the pea question, when I come to treat of that plant; but, at present, I will simply describe my way of cultivating oats, and if any of the farmers who are fortunate enough to possess too rich a soil will try my system, I believe they will find a very great difference next harvest in the state of their oat-crop. Since writing the above, I see that Mr. Hewitt Davis died July 15th 1884.

Quantity of seed per acre—A very important element in the cultivation of oats in a dry, warm climate, like ours, is the quantity of seed that should be sown per acre. Six bushels are commonly sown in Scotland, even seven bushels, when the land is not in

(1) I'll try again, of course.

(1) As, indeed, should all kinds.

(1) And *Saunderson* or *Sanderson*, are really *Alexanderson.*

(2) In England, clover-hay is always worth $5.00 a ton more than any other.