

have a soil, which if drained and in proper condition, will produce excellent crops of the best varieties of oats. The finest crop I ever saw was grown on this sort of soil. On the "marge of the salt flood," near Brighton, on land as flat as a pancake and formed from the detritus of the chalk-hills of the South Downs my friend, William Rigden, grew 140 bushels of White Tartar oats to the acre: the piece was 11 acres in extent! I once grew 108 bushels per acre but it was on an old garden, so that don't count. Mr. Clare Sewell Read, in his report of the "Recent improvements in Norfolk farming" (1858), mentions a 46 acre field belonging to Mr. Hudson, of Castle Acre, which, in 1856 yielded the great return of 120 bushels an acre! The treatment of this piece of land is worth attention: previous crop, wheat; soon after harvest, the little couch-grass in the stubble was *forked* out; during the winter turnip tops, &c., were thrown on the land for the ewes, which were removed at night and folded elsewhere, and in February the field was regularly folded over with 2000 sheep, eating on every acre five tons of mangels, and $\frac{1}{2}$ lb. of linseed cake each per day. The ground was then ploughed, and 2 cwt of guano (it would take 3 cwt of the present strength) an acre sown on the poorest portion of the field, white Tartar oats were drilled in March, and afterwards top-dressed with 1 cwt of nitrate of soda and 2 cwt. of common salt. The result was one of the most level and glorious crops of grain ever seen in Norfolk. The following year, the field produced the best crop of swedes in the county, and the barley which followed was when Mr. Read wrote, *showing signs of over-luxuriance*. This is the perfection of farming; to grow such excellent and profitable crop, and yet keep the land free from weeds and increasing in fertility.

On the clay soils along the St. Lawrence, from Montreal downward towards the sea, the cultivation of oats seems to be very precarious, and the yield greatly depends on the character of the seed time. When the ground has been properly mellowed by the frost, the sowing season dry, and the summer particularly during the month of July and the beginning of August, not too hot fair crops of oats, can be grown on these soils. I do not say fair crops are generally grown, because it would not be true for the general cultivation of the soil is about as bad as can be. Narrow ridges may be necessary for the surface drainage, the growth of root- and green-crops may be a difficult undertaking, but nothing can excuse the infamous ploughing, the negligent harrowing, and the total absence of the roller, so constantly observable all through these districts.

Oats are found to succeed best on clay land after a crop of clover and other grasses, and the stronger the grasses are, the better is the grain-crop. The roots of the grasses, no doubt, tend greatly to open up the soil, and to render it more friable and less apt to consolidate around the tender rootlets of the oat plant. But wherever potatoes have been grown on such heavy land, and the ploughing and general "fitting" of the piece properly carried out, I should prefer sowing barley, unless previous experience has proved the soil to be unsuited to the growth of that plant. Grass-seeds, too, take better, as a general rule, with barley than with any of the other cereals; the reason why I could never understand. Certain clays in England bear first-rate malting barley, but these have a chalk sub-soil, and in some queer way the *Chevalier* barley succeeds there, and the great malting firms of Essex, Cambridgeshire, and Hertfordshire, prefer their growth to any other; whereas, grown on our Kentish clays, the barley is entirely unfit for the brewer's purpose. As for grinding-barley, for pig-food, the cheapness of Indian corn does away with any necessity for sowing it; unless expense is no object; for no pork is to be compared with a four months old pig of good breed—Berkshire or Suffolk—fed on nothing but barley-

meal and skim-milk from the day of weaning. And, parenthetically, as to weaning pigs, we have a rather crafty plan of management: supposing a sow has nine pigs, we wean three at six weeks old, which three are kept moderately till they are put up to fatten, on barley-meal at first and then finished off on pease for about three weeks, for *bacon-hogs*. The next three are kept on the sow for another week or two, and are intended for pickled pork. The remainder are not weaned till they are nine weeks old, and are put on barley-meal, whey, or skim-milk, and sent to London weighing from 50 lbs. to 60 lbs. each. A perfectly grown pig, about 50 lbs. in weight, and neither too fat nor too lean, always fetches the very highest price in the market; a very difficult market it is to suit, but when suited, the most profitable one to deal with in the world.

But to return. There are several kinds of moory soils on which oats refuse to grow, especially those lying on a subsoil of mixed clay, sand, and oxide of iron, hardened together by infiltration from above, and known, here, as *hard-pan*. Both wheat and barley can be grown with tolerable success on such soils, but the cultivation of oats is a thankless, unprofitable, task. Liming would, doubtless, be highly useful on such land, and draining is indispensable; but with lime at 40c 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 not in our time.

I see, by the reports in the agricultural papers published in the United-States, that the price per rod of 16 $\frac{1}{2}$ feet for 3 $\frac{1}{2}$ 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 times 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 Tartan, all 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-known 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.

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