

The Britannia Farms.

Mr. James Howard, of Bedford, England, chiefly known to the world as a distinguished implement-maker, is also an enterprising farmer. We find in a recent number of the Gardener's Chronicle, an interesting account of his operations in this direction, a condensation of which may prove suggestive and instructive in some particulars.

His estate, on which he has recently erected a fine residence, is located two miles north of Bedford, on a range of hills, composed of "drift," or boulder clay. It is described as a beautiful spot, forming part of one of those wide and charming landscapes of rural scenery for which England is noted, the valley of the Ouse filling the lower level, and giving perfection to the picture. The land was of a very unpromising character when the present proprietor took possession of it, consisting of heavy clay, cold and stoney in some parts, but under Mr. Howard's energetic management, it has wonderfully improved. He has this season completed his fourteenth harvest by steam cultivation, and up to the 25th ult., had further advanced his work by breaking up and crossing 60 acres of pasturable, and also, notwithstanding very unfavorable weather, "crushed" or crossed 170 acres more. Even in the climate of England where the frost is less helpful and the springs are more leisurely, the best farmers appreciate the great advantage of fall ploughing.

Mr. Howard is particularly careful and highly successful in his meadow and pasture lands. It is no wonder that in England the grasses are so durable, when it is considered with what pains they are sown and established in the soil. Mr. Howard follows his land for two years previous to sowing grass seeds, and then sows them, without a crop, and in the early autumn, instead of the spring, finding that in the most active period of vegetation, weeds compete with the grasses, necessitating costly extirpation of them. Close grazing stock, like sheep and horses, are not permitted on the newer pastures, or are only permitted to pass lightly over them late in the season for three or four years till the turf is well established. Mr. Howard believes in the old Suffolk ditty which inculcates judicious laying down and careful treatment of grass.—"To break a pasture will make a man. To make a pasture will break a man." In nothing perhaps, do Canadian farmers more need to take lessons from their British brethren, than in the treatment of meadows and pastures. We are too superficial, slovenly, and negligent in regard to our grass lands, and it is not surprising that, under the circumstances, they are not more permanent, clean harrows, cinerashes, dressings of barn-yards, artificial and liquid manures, are the chief means used by Mr. Howard to maintain and increase the productivity of his grasses, but what Canadian farmer ever dreams of such things, or does any thing better than dream about them?

Mr. Howard is an advocate of deep cultivation, but after careful experiment, does not favor the extra deep tillage contemplated for by Mr. Mechi and others. He has had plots dug two and three feet deep, but finds that they yield no better crops than are grown in fields which have been tilled to an average depth of twelve inches.

Drainage is thoroughly carried out on this well-managed estate. Some of the land was at first drained 4 feet deep and 19 yards apart, but finding put in the theory that the deeper the drain the water apart they may be, but upon about 40 acres it was found necessary to put in intermediate drains. On such lands it has been ascertained that however deep the drains, they must not be more than 7 or 8 yards apart, and Mr. Howard's rule is to dig them from 3 to 3½ feet deep and 22 feet apart. It is a noteworthy fact, that with all this drainage, it is considered that the ventilation and purification caused by worms is of immense service. As the land has been cultivated

they have increased, and are valued as a highly-efficient army of under-ground farm laborers.

As already mentioned, Mr. Howard employs steam power on his farms. They comprise 636 acres, including 40 acres of wood, and 196 acres of pasture, of which 150 acres have been recently laid down as a park. With the amount of land he cultivates, steam power versus horse-power means eleven horses, instead of eighteen or nineteen. Beside the substantial question of cost, it is found that while the best neighboring farmers who use only horse-power can get as good crops of wheat, they cannot do as well with roots, and that is a drawback of itself, sufficient to decide the case in favor of steam-power. The autumn cultivation by steam is not usually finished before the end of October or early in November, but as fine and long days are essential to the most profitable use of this powerful tillage machinery, it is considered desirable to get through before autumn is "let in winter and rough weather," and the tackle is then carefully stowed away "until the fly-lark gives the signal for spring-work to commence."

Mr. Howard practices the following rotation of crops:—1. roots, (i. e. kohlrabi and mangold); 2. barley; 3. beans; 4. wheat; 5. roots, (i. e. kohlrabi, turnips, rape, mustard, and cabbage); 6. wheat; 7. clover; 8. wheat. Beside the manure made on the estate, superphosphate of lime is purchased to the extent of about 20 to 25 tons a year, giving an average dressing of 5 cwt. per acre for 80 acres of roots.

We append without condensation the account given in the Gardener's Chronicle of Mr. Howard's

Live Stock.

From twelve to twenty calves are weaned yearly, and dairy cows supply the house. A herd of Ayrshire is beginning to collect, nine have been purchased at the late Highland Show at Stirling. The pastures, including the new grass land, are stocked with cattle by the purchase of young Short-horns at one and a-half and two years old. The older beasts are fattened off, the rest are kept in yards in store condition. About thirty oxen are fattened yearly. As regards the feeding of the land, the sheep are by far the most important agents, even on this heavy land, and very much to the credit of the management; but the finer herd of "large white" pigs must be mentioned with honor, due quite as much for their excellences as for the scores of prize cards which I saw attached to the walls of the feeding-house, and which have promoted the circulation of the stock throughout England and many foreign countries. Mr. Howard tried Berkshire, but prefers the large white breed, which he comes to maturity earlier, and yields a larger profit than either Berkshires or the small breed. The figures and facts relating to sheep will only occupy a few lines, but they are important in connection with heavy land farming and the national food supply; I therefore invite the reader to form a mental abstract as he scans this dry summary between crop, fishes, clay-land fields, with bare plots, and occasionally, perhaps, a few apologetic notes, and the cheerful scene of mutton-making which is a feature during the winter. There are, in brief, 300 ewes and 1000 lambs, which are fattened on 6000 lbs. of kohlrabi and mangold, commencing November 1, and finishing on mangold carried to the pasture in March and early in April. 160 ewes and their lambs are also provided for. The average crops of kohlrabi are from 20 to 25 tons per acre, and of mangold about 30 to 35 tons. The roots grown on the first and fifth course of the rotation would hardly support so large a head of stock, but for the large quantity of chaff (i. e. clover and sweet straw) which is consumed in the fold in addition to corn and cake. This dry diet is found essential on heavy land, to keep up the natural warmth; and in order to induce the sheep to consume a large quantity of chaff, two sets of troughs are provided, the dry and the succulent food being served separately three times a day, the former is always afforded first to the animals, so as to tempt them to take what is good for them when they are hungry. In the winter months they eat probably more than 1 lb. a head of chaff daily, and as much at the morning meal as during the rest of the day. Horses: The number is ten and a jobbing pony, or scarcely more than 2½ per 100 acres of arable land, throwing the 235 acres of pasture into the bargain. I shall avoid elaborate calculations, confining myself merely to a simple narrative of farm operations in connection with a name so widely known. I may, however, mention here that I never knew a farm in

Essex, well done as to tillage by horse labor only, where a good breadth of roots and beans were sown, with fewer than four horses per 100 acres. And on a large heavy-land farm in Essex the pasturage does not often exceed 20 or 30 acres, including the orchard and home paddock. The horses are valuable, several of them prize-winners, and, judging from their appearance, they must have cost considerably more than that nimble 12-horse power traction engine, which has supplanted at least eight horses on this occupation, which knocks off the heavy field work before the close of October, and in favorable seasons by the beginning; drills a 50-acre field beautiful in two days, sleeps through the winter, or does the thrashing; takes the field again in spring, and sometimes, in case of need, is fastened to a train of harvest waggons, and brings home the corn while the horses are engaged in reaping.

English Method of Land Drainage.

A farmer in New Brunswick lately wrote to Mr. Mechi, to ask his advice about land drainage, and especially that he would, if possible send out from England a man competent to take charge of such work. This letter was placed by Mr. Mechi in the hands of a draining engineer at London, whose name does not appear. He answered as follows, in a letter containing some items of information which will be of interest to our readers:—

"LONDON, E. C., July 5.  
"DEAR SIR—Mr. Mechi has sent me your letter to him of June 19, knowing, as he does, that I have long been engaged in works of land drainage. Our approved mode of operation here is, 1st, to bore and dig the ground; 2nd, take the necessary levels; 3rd, to lay off the lines of main and minor drains, and fix the depths; 4th, to make a map of the proposed work; 5th, put this in the hands of a well paid foreman or superintendent, if the work is on a large scale, or of a pipe-layer only, if it is under 100 acres, and not more than from 20 to 30 men are to be employed to cut the drains, and who would require only two or three pipe-layers. The foreman or head pipe-layer sees that every drain is cut to its proper depth, with an even and uniform bottom to fit the pipes accurately, and then he sees all the pipes laid before they are covered; and as these men are paid good day wages, they have no inducement to "scamp" the work, or to allow it to be imperfectly executed by the cutters, who are all paid by the piece, i. e., so much per perch or per chain. When the work is completed a map is made, showing the line of every drain and the size of the pipes used. For ordinary farm land drainage, the depths run from 3 feet to 5 feet, the lines of the drains being always along the greatest falls, irrespective of the artificial configuration of the surface, except in the case of very high ridges or permanent pasture land, when they may occasionally be run in the furrows with advantage. I often employ over 1,000 hands, and on one estate which Mr. Mechi visited a few years ago I employed over 600 men for two years, and drained nearly 30 acres a day. The wages we are now giving to foremen are from 30s. to 40s. a week, to pipe-layers from 20s. to 25s. An estimate for the drainage of an acre of ordinary stiff soil would be as under, which is 20 per cent. more than it would have cost ten years ago:—

Table with 2 columns: Description of work and cost in £. s. d.

Total, £ 47 9 1  
I believe, out of my staff, I could find a man who would be willing to emigrate, and, I think a married man would be the most reliable. I think I could select a suitable man of experience, if he were guaranteed, say a free passage and 30s. a week for twelve months, and perhaps he could induce some good hands to come with him, if they got a free passage, or some other inducement. It is a good time to get such men, as drainage is specially slack in England at present, and, out of regard for my friend, Mr. Mechi, to whom I am personally indebted, as we agriculturists are publicly, I shall be glad to arrange the matter on hearing from you. I don't suppose there are anything like fortunes to be made in your country for farmers, but I should think good skilled