

some addition to it for a new edition, bringing the work down to the present time. And it will afford me great pleasure to aid Mr. French in so doing, for the public, and farmers more especially, are very apt to overlook, in the profusion of the day, much of the better class of agricultural literature of the past. I had an instance of this only the other day, in which an English agricultural paper "took the words of the Lord out of the mouth of his prophet," in an article on the destruction of the wire worm, entirely unconscious, apparently, of my paper on the subject, published in the Journal of the Royal Agricultural Society of England nearly forty years ago—recommending (as possibly some of your readers may remember) a dressing of 500 pounds per acre of rape cake in lumps, as a sure remedy. My writings on, and practice in, drainage operations, date back to fully forty years ago, when I first proposed the formation of drainage companies, and advocated, along with Smith of Deanston, Baily Denton, and others, an advance of public money, under certain conditions, to landowners for works of drainage. Mr. French may remember, perhaps, that in the early history of the modern art of drainage, when the old and shallow work was generally discarded and the more effective and durable system was insisted on, a prolonged controversy arose as to the depth and distances of drains. Mr. Parkes and others advocated in all cases a depth of not less than from four to five feet, and claimed for the greater cost in cutting that a much farther distance apart for the drains might be adopted with efficiency. Others, whose experience and observation justified the opinion, contended that no dogmatical rule, except that of securing the drain from any damage by the plough or other cause, could be laid down, but that such work must be done as to depth and distance in accordance with the character of the soil and subsoil; and when I say that the experience of the past forty years throughout England has completely established the common-sense practice and expelled all theoretical notions, I state what may really be regarded as the settled acme of the art of land drainage. It must not, of course, be inferred that the tendency has been to lessen the depth of drains, but simply that the execution of the work is in every case to be guided by the character of the land to be operated upon.

In 1853, when I first came to this Continent, I exhibited at the New-York State Agricultural Show, held at Saratoga in the autumn of that year, a model of the drain-tile machine which I had brought into use in England, and for which I had the honor of being awarded a silver medal. Many varieties of these machines have long been in use in England, and are, no doubt, at the present day very numerous in the United States. In Canada, I question whether there are more than three or four at work. Of machines for cutting drains, I know of none that are in use anywhere, and I concur with Mr. French when he says he has never yet seen in operation any machine that can perform what is required. The most apparently promising contrivance was that brought out some years ago by Mr. Fowler, (1) by which the pipes, strung on a succession of ropes, were drawn under ground at a depth regulated by a screw on the machine, and preceded by a cutter on the machine, like the old mode drain-plough. I saw this machine at work on one occasion, which at once satisfied me of practical difficulties which must prevent its working effectively. And although, like your correspondent, I should be glad to see a machine that would perform the operation, I must confess I hardly expect it. And really such an application is not specially desirable, for good drainers, with the perfect tools now in use, cut drains in subsoils free from stone, three and four feet deep with a surface width of not more than 12 to 15 inches, so that a two-inch pipe fits the bottom exactly, thus extracting the least quantity of earth,

(1) And exhibited at Gloucester 1853.

and reducing the labor to the minimum point. There is a cleanness and accuracy in the section of a well cut drain, which greatly facilitates the proper laying of the pipes, and which would hardly be possible to secure by a machine. When I was in England ten years ago I visited the show-yard in the implement section of the Royal Agricultural Society at the meeting in Cardiff, and there was no drain-cutting machine exhibited, and at the meeting of the society in York, last July, none was shown.

It would savor somewhat of presumption in one whose operations have been mainly on the clay lands of England, to offer advice to so able and practical and authority as Mr. French, but from what I have seen of the various soils in Canada, I consider that very effective work could be done on all the northern portion of this continent at a very much less cost than in England. Whereas, on the strong lands in England drains must be from 24 to 30 feet apart, double that distance, or even more, would be perfectly effective here. The frost on this continent, by its disintegrating action on the subsoil, is really an important factor in land drainage.

Milby, P. Q., Sept. 3.

JOHN H. CHARNOCK.

The above article, from the pen of my old friend Mr. Charnock, is worth attention. I perfectly agree with his ideas about draining machines, and also in his statement that drains here, in our comparatively mild clays, may be safely placed at double the customary distance in England, but from my own practice in the London Clay, in Kent, and in the alluvial soils in Gloucestershire, I must confess I still hanker after the four foot drain; still the hankering may be in part attributable to my acquaintance with the eighteen-inch work of Essex and Cambridgeshire, in the Saffron Walden and Ickleton districts. I was reading only the other day Mr. Charnock's description of his method of destroying the wireworm by the use of rape-cake in lumps. The article in question won the Gold medal of the English R. A. S. in 1844, and I have quoted it more than once in this Journal, giving due honour to Mr. Charnock: v. April number for 1885, p. 181.

A. R. J. F.

A Visit to "The Hills" Farm.

EDS. COUNTRY GENTLEMAN—A few weeks since I made a brief visit to "The Hills," a beautiful farm near the village of Frelighsburg, P. Q., formerly belonging to the late Hon. N. S. Whitney of Montreal. This gentleman, who died quite suddenly a few months since, took this farm some twenty years since in an impoverished condition, and had succeeded in bringing it into a fine state of cultivation and improvement. This was accomplished by drainage, proper rotation of crops, raising root crops, &c. This season, the roots, consisting of carrots, soft turnips and swedes, were looking remarkably well, and will assist materially in keeping the stock through the winter. Mr. Whitney took an active interest in all things pertaining to the farm, orchard, and garden, and, as a consequence, evidences of this interest were to be seen on every hand. For this northern climate, a fine orchard has been established, in a portion of which is an extensive apiary, while the vegetable, fruit and flower gardens are the finest of their kinds, and show plainly what can be accomplished on a farm by well designed and well executed labor. This old homestead is the summer residence of the family, and is greatly preferred to the usual resorts. I am pleased to learn that the family will continue to occupy it, and that a younger son, when his education is completed, will continue on in the good work in which the father took so much interest.

I was sorry to hear that it had been found advisable to dispose of a part or the whole of the excellent herd of Ayrshires that Mr. Whitney had been a score of years in getting together. It is one of the representative herds of the country, and has