

A Farmyard Manure Spreader.

On the invitation of Captain Delf, I went, on Tuesday last, to see a new Manure Spreader, of which he is a joint inventor, at work on his farm at Great Bentley, Essex. On that occasion it was distributing a fair coat of well rotted London manure, but at other times it has spread long manure direct from the farm-yard. The work was well done, and without any stoppage, except when an old tin saucepan blocked the machine for a minute. The manure could not have been spread more regularly if done by hand, and the work was got over at least as quickly as if the man who unloads had been simply pulling the stuff out of the cart into heaps, as in the ordinary fashion. The machine runs on iron wheels behind the cart, to which it is hooked on by a simple arrangement. Indeed, the whole apparatus is very simple, the only working parts consisting of a revolving lath platform, bolted on to two endless chains, and an agitator (or separator, as I should prefer to term it), which also revolves. The motion is communicated by the driving wheels by means of two cog-wheels, and the draught is so light that no extra horse is required beyond the one or two usually employed in laying down farm-yard manure. A man stand on the manure in the cart, and feeds the machine with a fork, a boy leading the horse up and down the field. The spreader is much lower than the cart, so that the feeder has only to throw the manure down, and never to raise it. The agitator consists of a series of prongs fixed into a spindle, and arranged in an irregular spiral (helical) form, so as to distribute the manure evenly over the platform, which revolves in the reverse direction. As the platform revolves it carries the manure, finely divided by the agitator, over to the back of the machine, throwing it on to the ground in a regular and continuous stream of small pieces. The quantity of manure distributed is regulated by altering the width of feed, or by the speed at which the cart and machine travel. A width of 6½ ft. is spread each time the machine travels up or down the field, but the inventors think that for land on the flat 1½ feet may with advantage be added to the width of the spreader. They have only just perfected their machine, and consequently have not yet brought it before the public; but those who have been invited to a private inspection have without exception, I believe, expressed themselves as highly pleased with its working. The advantages of a manure spreading machine are many and obvious. Among these may be mentioned the great saving of labour; the advantage of being able to let the ploughs follow closely after the manure carts, thus avoiding waste from evaporation or washing; the avoidance of the small heap bottoms, which are rarely shovelled up closely enough, and which absorb a large portion of the juices of the manure; and the avoidance of the damage done to young clover by the dragging of the carts after they are tipped, and by the shovelling up of the heap bottoms. It would be an additional advantage if the machine could be made to feed itself, but this Captain Delf cannot yet see his way to attain without sacrificing some of the existing advantages of his spreader. There seems to be no reason why chalk and lime, as well as manure, should not be spread by the machine, for which purpose it would probably be advisable to take out the agitator. Any one desirous of seeing the spreader at work should make an appointment immediately by writing to Captain Delf, Great Bentley, near Colchester.—*Bell's Messenger*

A New Turnip Raiser.

EDITOR CANADA FARMER: Sir—Enclosed is an account of a new Turnip Raiser now coming into use in Scotland; from the account given it would seem to be a very useful implement, and one that it is desirable to introduce into Canada, as topping and tailing turnips by hand is a laborious, back-aching work at best. As our reaping, mowing, threshing and other machines are now brought to a good degree of perfection, some of our enterprising implement and machine makers might turn their attention to introducing or inventing a machine for the purpose of enabling the farmers to harvest their turnips quicker, easier, and cheaper, than they can be done by hand. The following is the description:

"In the application of machinery to agricultural labor, there are still a number of wants which engineers and implement makers will doubtless supply in coming years. A machine attached to the reaper to bind the sheaves seems in a fair way of being accomplished, and it is certain that no pains will be spared to produce one equal to the work. Among the latest inventions may be named a machine for topping, tailing and raising turnips, an operation that on many a farm will very soon involve considerable weekly expenditure. The first tool of the kind worthy of notice was exhibited at the Highland Agricultural Society's show at Stirling in 1873. Mr. Hunter, of Maybale, improved

upon that implement, and exhibited at the Royal Agricultural Show at Bedford in 1874, when it attracted considerable attention. Since then its construction has been improved, in fact almost remodelled, the amendment being the placing of the wheel that runs between the rows of the turnips nearer the centre of the body of the machine wherein its adaption to the inequalities of the ground crop has been perfectly secured. Many of our readers must have seen the implement at the Agricultural Show at Birmingham last July, as it was the only machine of the kind that was exhibited. The implement is light, but sufficiently strong for the purpose required, and its simplicity is its good recommendation—both in relation to its work in the field and removal by road. It is easily worked by one horse and one man. A large number of them were in use last winter in Scotland, and they state that they raise six to eight acres a day, and where there is an ordinary breadth of turnips to lift, it will recoup itself in one season.

The storing of the turnips comes at a time of the year when the weather is uncertain, and the days are rapidly shortening, and thus dispatch is of prime importance then, as economy is at all times. On both grounds Mr. Hunter's turnip lifter seems to us worthy of the trials which many of the leading farmers in Scotland are giving it.

COLCHESTER.

W. R.

Culture of Broom Corn.

The *Journal of Agriculture* describes the culture of broom-corn on this wise: "Broom-corn requires rich soil; bottom land is the best, and it should be as free from grass as possible. The reason for choosing clean land will appear plain to a man who has raised a crop. The ground should be well ploughed and made perfectly fine with the harrow, then marked out with shallow marks if to be planted by hand, so as not to get the seed too deep in the ground; but the best plan is to plant with a drill. The stalks must be as close as five or six inches, to prevent the straw from becoming too heavy. Of course it cannot be drilled with much regularity, but must be cut out with the hoe to the right distance when small. It is like sorghum, grows slow while small, and on most land it is positively necessary to hoe the grass out, which gives a good opportunity for cutting out to the right distance. After this is done the cultivation is similar to that of corn. When the seed begins to hill the straw will bend over from the weight, and to prevent this the full force of the hands must be put to break the stalks over, say ten or twelve inches from where the straw grows out, or more properly the head. The weight of the seed will then, by hanging down, keep the straw straight. Now comes the busy season and the time when labor and care will add much to the value of the crop. The green straw being altogether the most valuable, it is important that it be cut before it turns red, and dried in the shade. To do this a shed is necessary, with shelves on which to lay it, say six inches deep, and enough hands be employed to cut the crop before any or much of it turns red. The seed is stripped by means of a machine made for the purpose, with two cylinders between which the corn is held in handfuls. The process is very rapid, only an instant being necessary to knock the seed all off. The corn is baled before being sent to market. The price is very fluctuating, running from \$60 to \$250 per ton."

Suggestions About Wheat and Seed.

One of our English journals suggests: "It is sound advice in buying young stock, to select them from a poorer district than that for which they are destined, and it is equally reasonable to purchase seed wheat that has experienced something of the struggle for life—and will therefore the better appreciate your sheltered warm soils and milder air.

"The varieties of wheat are simply endless. They differ from each other in the shape of the head or ear; the degree of beard or awn; the color and texture of the chaff scale; the set of the florets; color, quality and shape of the grain; length, strength and color of the straw; hardihood; and adaptation to particular sorts of soil. With so many directions in which characteristic properties may be developed, it is no wonder that we have great variety. Dalbret cultivated 150 to 160 kinds, which we are told all kept true; Colonel Le Couteur possessed upwards of 150, and Phillippar 322 varieties. We are informed by Colonel Le Couteur that in a field of his own wheat, which he considered at least as pure as any of his neighbors, Prof. La G. sea found 23 sorts; and Mr. Patrick Sheriff, the well known Scotch

wheat experimenter, had observed similar facts. It is said by those who have paid attention to the subject, that the wheat at the base of the ear is always different in appearance to that at the top, and not only so, but they will each retain their peculiarities when propagated. Such facts point to an endless variety of sorts of wheat."

"Practical men may smile at the ideas of the learned Professor emerging from the Colonel's wheat field with his 24 distinct sorts, but it must be remembered that a trained eye is a wonderful thing. The man who can tell Booth from Bates in the dark, simply by touch, may be supposed capable of sympathy with such wheat experts as Professor La Gascas. So far back as 1850, Colonel Le Couteur drew attention to the practical importance of attention to the varieties of wheat in the following pithy words: "It is the suitability of each sort to each soil that will enable the farmer to pay his rent by growing one variety, where he would be unable to do so by attempting to grow another of a seemingly better sort."

"We may ask, who is sufficient for these things? Has the farmer not only to understand the routine of his business, but to weigh with refined and scrupulous care the merits of the many varieties of wheat, barley, roots, oats &c., which are offered by seedmen? It has long been acknowledged that this kind of mental penetration is required on the part of graziers. They must be alive to the aptitudes of different races, and the minute differences of quality in individuals. Why, then, may not the arable farmer be required to weigh with greater care than heretofore the special adaptabilities of certain sorts of wheat? Depend upon it, it is not sufficiently considered, and in consequence, anything is thought good enough for seed. The sort which ought to be sown will of course vary in every situation, but it behoves every agriculturist to take serious pains to select a kind suitable to the quality, condition and climate of his farm.

Seed wheat may not be in what millers call "condition," but it may be new, clean and perfect. It should not have suffered from heating either in the stack or sack, it should neither have been injured in passing through the machine or by the attacks of insects, neither should sprouted grains occur, indicating that it has been exposed to bad weather. If we are right in thinking that the altitude of our chalk hills, and the exposed and cold character of their soils is the reason why they are looked to for a supply of wheat—may we not go a step further. Mr. Darwin tells us that wheat is easily acclimated. "Nearly all the plants raised from summer (spring) wheat, which was sown in autumn perished from frost; but a few were saved and produced seed, and in three years this summer was converted into a winter one." In Canada the first settlers, according to Kalm (Travels in North America) found their winters too severe for winter wheat brought from France, and their summers often too short for summer wheat, and until they procured summer wheat from the Northern parts of Europe, which succeeds well, they thought that their country was useless for corn growing. No doubt wheat, wherever cultivated, requires heat in summer, and is well known that the hotter the summer the quicker and better will it ripen. Still the above is cited by Darwin as interesting, especially if taken in connection with our own partiality for wheat grown on the high situations of the chalk. On the other hand, we know that the Australian wheat grown in 1875 in this country was much blighted, as see Mr. Mechi's report which our own experience endorsed. Might it not then be worth while to try some creeping red from Northumberland? Or from Fife or Inverness?

WHAT CROPS TO LEAVE IN THE SOIL.—Many farmers are rather slow to learn that what they take out of and off the soil in the form of a crop must be paid back to the soil or it becomes greatly impoverished. Ignorance of or indifference to this great law of nature has caused many worn out, worthless farms throughout the country, and it is high time farmers should begin to realize that they must pay back what they get from their soil, or else stand condemned as murderers of the life-giving soil bequeathed or falling into their hands in the order of Providence, and transmitting to their children a ruined, worthless inheritance of land. On this point it may not be amiss to publish the experiments made in Germany by Dr. Weiske and several other savans, showing that the stubble and roots left in the earth by crops that have been harvested, add to the soil much more nutritive value than is commonly supposed. These experiments fully explain the great value of clover as a preparatory crop for wheat, and for all other crops that are not manured with nitrogen potash and phosphates. The clover of a single acre has been found to leave nitrogen for 110 bushels of wheat, phosphoric acid enough for 114 bushels, and potash enough for 78 bushels. Moreover, it is found that most of this valuable material is left in the best possible condition for use. Whether the nitrogen of the clover comes wholly or partly from the soil, or from the air, it is certainly taken from a condition in which it is of little use to most crops, and it is converted into an available one, so that, practically, the clover is a creator of nitrogen in the soil, as it is also an efficient purveyor of potash and phosphoric acid.—*Rural Sun*.