Reclamation of Eleven Thousand Acres of Moor Land.

The most important agricultural operations of this age of agricultural improvement are the works carried on in Sutherland, Scotland. There have been reclaimed of what has till now been a swampy waste, not less than 2,074 acres, and converted into good arable land and pasture. The work is carried on by the Duke of Sutherland, of whose large estates it forms part. Of the 1,176,837 acres owned by the Duke in this County, only 26,837 are under cultivation, and many of the sheep farms, though containing from 30,000 to 77,000 acres, have not an acre that can be cultivated. Of this vast territory, a large proportion is mountain and barren rock, and can never be brought under cultivation, but there are 50,000 acres that can be or have been reclaimed and rendered fit for cultivation. At present, sparse as the population must necessarily be, the grain grown in the county is not sufficient to give them bread, and thousands of pounds have to be paid for imported breadstuffs.

The tract of country now being reclaimed is a broad basin having to the south-east a lake over twenty miles long and from one to two miles in breadth. The first work to be done in the reclamation of this swampy waste was to drain off the stagnant water that must, until drawn off, prevent the slightest improvement of the soil. To carry out the proposed improvement the application of steam power was necessary; much of the work to be done in the vast undertaking could not be otherwise accomplished, and even the ordinary steam plow was unequal to the task to be performed, so that new machinery had to be constructed. By the introduction of a revolving cutter, the plow was enabled to ride over boulders when too large to be raised by it, and to it was attached a subsoiler in the shape of a large anchor-shaped crook. This following the plowshare, tears up the subsoil two feet deep, and throws out stones and boulders when not too large. An iron sledge or slag is used for the removal of large stones aud boulders that encumber the surface of the ground. Of this also the motive power is steam. One hundred tons of stones are by this means collected in a day. The larger boulders are broken up by means of dynamite, which is also extensively used in tearing up the larger stumps of the old forest that formerly occupied the ground. The furrow turned measures 18 inches wide by 10 deep. Then follow grubbing, clod-crushing and harrowing.

This land has not always been a waste morass. That at some remote period it was possessed of more than ordinary fertility is conclusively proved by the roots and trunks of large trees that are met with in the process of the work. Were it as unproductive as it has been of late years such timber could not have grown on it. Its barrenness is owing to the obstruction of the natural drainage which at a remote time existed. This obstruction caused the water to accumulate till the ground, naturally fertile, became a dreary morass.

This morass is now first drained where necessary, then plowed and at the same time subsoiled. The stones are removed—the large ones for building, dividing-dykes, &c.—the smaller ones to be used in draining. Then the land, having been cleared of stones and roots, is harrowed to break up the large clods. This having been done, there is a liberal application of lime. This is found necessary, as by the chemical action of lime in the soil, it loses its sour and barren qualities and becomes fertile. The first crop taken off generally is oats, followed by turnips; then the third year, oats seeded down with grass seeds. The report from the land that is now bearing its second crop is that the crops were very much superior to the average crops in the north of Scotland, while the cereals on the land taken in last year, notwithstanding the unfavorable spring, were not so light as was expected. Better turnips than were grown this season on such land were never seen.

The expenditure, taking drains, roads, farm steddings and houses into account, approached nearly £30 per acre.

Mangolds for Stock.

A "New Subscriber," Richmond, P. Q., wishes "for some information through the ADVOCATE of the value of mangolds for stock feeding, and how to feed them to the best advantage."

The result of our experience of mangolds for stock feeding is that there is no crop grown on the farm more suitable for the purpose, or more profitable than mangolds, and this opinion is confirmed by good authority on the subject. As a farm crop it is as easily cultivated as the turnip, and it is less precarious, being free from the attacks of the fly, and that new enemy—the turnip-bug. It also produces a heavier crop than the turnip, as is shown by agricultural reports from different parts of the country, twelve hundred bushels per acre being sometimes reported here. So far, the comparison of the mangold with the turnip is in favor of the former.

On their first introduction into British agriculture, they were said to be inferior to turnips for fattening stock; but they have grown in the estimation of stock-feeders. They are used for feeding horses, young cattle and hogs, and also for fattening cattle, always, of course, with hay or straw, as the case may be. The time when their value is most recognized is the latter part of spring, when other feed is becoming scarce, and also when stock is needing the addition of succulent food such as the mangold. Then, before the soiling commences a bin of mangolds is of great service; and then they are in their prime.

To have mangolds in the best state for feeding it is necessary that they be fully matured before being lifted and stored. If fed too green, they sometimes cause scouring—only under some circumstances, and never when the roots are ripe. On their being properly lifted and stored, at the proper time, and as it ought to be done, much of the value of the mangolds for feeding depends, though, even if they be stored when not fully ripe, but at the same time dry, they will mature in the pit or bin by remaining in it till late in the season, when they are most needed.

One great profit from feeding with mangolds is from the manure made by its means. Straw fed with them is put to the very best account. Regular feeding with mangolds induces stock to eat dry feed, as straw, freely, which they would otherwise *nose* about and tread under foot—a perfect waste; whereas the feeding it with mangolds is converting it into manure of the very best quality.

Provident farmers and stock-feeders grow roots of different varieties adapted to the different seasons, and in feeding reserve the mangolds for the last. Turnips are the best food in the earlier months, when the mangolds are maturing in store for their fittest time.

The best mode of feeding mangolds is to pulp them or steam them, and mix them so prepared with chaff or cut hay or straw—sixty pounds of roots with the dry food; this is sufficient each day for a steer. Even without pulping or steaming they are good, profitable food, and always with hay or straw. If two or three pounds per day of corn meal be added, it will make a great improvement in the beef.

Cattle Feeding.

From a lecture on this subject delivered by Mr. Gilbert Murray, before an English Chamber of Agriculture, we select and abridge the following extracts. At this season the subject is the most opportune for our consideration.

"In general practice the farmer frequently overlooks the facts that by allowing his stock to retrograde in condition he is entailing on himself a heavy loss, yet how often do we see the accumulated stores of the summer dissipated in providing for the wants of the winter! Stock rearing and feeding can only prove remunerative where the animals are kept in a state of progression from birth to maturity.

"I would impress on your minds the great value of pure blood in the sires you use. I do say, whether you prefer to use a Shorthorn or a Highland Scott, or one from any other of the various breeds, go in for blood and select what the Americans term a live animal. Throughout the whole of the different races of our domesticated animals, we find close-bred sires invariably the most prepotent.

"Now, as to rearing. If our object is beef, the calves should be dropped between the 1st of November and the end of February; winter-reared calves always thrive best. We consider it most conducive to the health of the mother and her progeny to allow the calf to remain with its dam one, or at the most, two days, when it should be removed and fed on skim milk from the pail. With the present high prices of butter, the cream may be taken off and the fatty matter naturally contained in the milk substituted by a combination of less concentrated and cheaper materials. During the first three weeks a mixture of skim milk and linseed meal or oatmeal porridge may be used with very satisfactory results.

"The food should be given three times a day until the young animal begins to eat. A mixture of finely broken linseed cake, wheat meal, pulped roots and a small quantity of hay chaff are the best to begin with; the porridge need not be continued beyond the first eight weeks; if well cared for, the calf will by this time be sufficiently advanced to support itself on other food. At twelve weeks old one pound per day of cake and corn, with a quantity of hay chaff and pulped roots, will be a liberal allowance. Calves may be kept the first year at little cost by turning them out to grass the middle of May and allowing them to shift for themselves."

The author, however, does not approve of the method of keeping at little cost. Compared with the more costly method, he finds it less profitable; but he recommends providing a succession of special forage crops—Italian rye grass, tares, clovers or mixed seeds; these will carry the animals on until the cabbage crop is nearly ready. This green food may be used either in a prepared or an unprepared state, mixed with hay or straw cut into chaff and the mass sprinkled with corn meal, bean or pea meal, or other farinaceous food. "About 2 lb. per head per day of meals and linseed cake will be a fair allowance for calves under a year old. If turned out to graze the first summer, they should receive 2 lb. per head per day of good linseed cake, and be provided with a well-littered shed for shade or shelter."

The food for the succeeding winter, as recommended by Mr. M., is not less nutritive. The quantity consumed by each animal will vary; he takes the daily average at 56 lbs. pulped roots, 30 lbs. of chaff, and 2 lbs. of corn meal, &c., as recommended above, and linseed meal. If the pastures are ready, they may be turned out to grass about the middle of May. "About the 1st of October the animals should again be housed, and at once commence their final preparation for the butcher. The daily allowance of food should now consist of 70 lbs. of pulped roots mixed with from 30 to 40 lbs. of cut chaff, with 2 lbs. barley, 2 lbs. bean or pea meal, and 4 lbs. of linseed cake. With the treatment we have described, the steers will come out ripe at from 20 to 24 months old, and if fairly well descended, will readily reach the weight of from 90 to 100 stones of 8 lbs., which at the