

An Experiment with Pearl Millet.

BY PETER HENDERSON.

Pearl Millet has been cultivated for some years as a forage plant in some of the Southern States, as "African Cane," "Egyptian Millet," "Japan Millet," and in some places as "Horse Millet," but little was known of it at the North before last year, and then only in such small quantities as to hardly allow of a fair trial. From what we saw of it in 1877, we determined to give it a thorough trial this season. A piece of good strong loamy ground was prepared as if for a beet or turnip crop, by manuring with stable-manure at the rate of ten tons to the acre, plowing ten inches deep, and thoroughly harrowing. The millet was then sown in drills 18 inches apart, at the rate of 8 quarts to the acre. We sowed on the 15th of May, about the date that we plant corn; in 12 days the plants were up so that a cultivator could be run between the rows, after which no further culture was necessary, for the growth became so rapid and luxuriant as to crowd down every weed that attempted to get a foothold. The first cutting was made July 1st—45 days after sowing; it was then 7 feet high, covering the whole ground, and the crop, cut 3 inches above the ground, weighed, green, at the rate of 30 tons per acre; this, when dried, gave 6½ tons per acre as hay. After cutting, a second growth started, and was cut August 15th—45 days from the time of the first cutting—its height was 9 feet; it weighed this time at the rate of 55 tons to the acre, green, and 8 tons dried. The third crop started as rapidly as the second, but the cool September nights lessened its tropical luxuriance, so that this crop, which was cut on October 1st, only weighed 10 tons green, and 1½ tons dried. The growth was simply enormous; thus: 1st crop in 45 days, gave 30 tons green, or 6½ tons dry. 2nd crop in 45 days, gave 55 tons green, or 8 tons dry. 3rd crop in 45 days, gave 10 tons green, or 1½ tons dry. The aggregate weight being 95 tons of green fodder in 135 days from date of sowing, and 16 tons when dried to hay. This exceeds the clover meadows of Mid-Lothian, which, when irrigated by the sewerage from the city of Edinburgh, and cut every four weeks, gave an aggregate of 75 tons of green clover per acre. There is little doubt that Pearl Millet is equally as nutritious as corn-fodder, which it resembles even more than it does any of the other millets. We found that all our horses and cattle ate it greedily, whether green or dry. If sowing in drills is not practicable, it may be sown broadcast, using double the quantity of seed—say 16 quarts per acre. The ground should be smoothed by the harrow, and again lightly harrowed after sowing; if rolled after harrowing, all the better. I know of no farm crop that will better repay high manuring, but so great is its luxuriance that it will produce a better crop without manure than any other plant I know of. In those parts of the Southern States where hay cannot be raised this is a substitute of the easiest culture, and being of tropical origin, it will luxuriate in their long hot summers; even though our Northern seasons may be too short to mature the seeds, our experiments in New Jersey this summer show what abundant crops may be expected if the similar conditions are secured. Pearl Millet as a fodder-plant presents a new feature in our agriculture, and I feel sure that within ten years we shall wonder how we ever got on without it.—American Agriculturist.

Deterioration of Soil.

The following article by M. B. Bateham, on the deterioration of Ohio soils, is so applicable to the soils of Canada, as to that South of our border, that we reprint from the *Prairie Farmer*—

"When first cleared of the forest these clay lands were rich in vegetable matter from the decayed leaves, etc., and the mineral elements of the surface soil were readily available for plant growth. So well suited was the soil for grass, that red-top, blue grass, and white clover came in spontaneously, after a year or two, without any seeding; though, of course, it was better to sow the seed and harrow or brush it in, when it was desirable to save time. But a large portion of the pastures have been seeded or plowed. When seeding was practiced it was by sowing timothy, and in a few years this gave place to the grasses above named, which came in of themselves. For some years these pastures were quite productive; the vegetable matter at the surface, and decaying roots of trees beneath, keeping the soil porous and

fertile. But gradually this organic matter was all decomposed, dissipated, by the winds, or absorbed by the grass roots in the form of carbonic acid gas. Then the clay soil began to harden by the saturation of rains, and the treading of cattle while wet, rendering it difficult for grass roots to penetrate to any depth, and there being no organic matter below the surface, no fertilizing gasses were found there, and none could enter from the atmosphere. As this hardening process went on, the grass roots could only grow on the surface, and hence were often injured or destroyed by the summer drouths, and also by the heaving and freezing in winter. Hence we hear the farmers complaining that drouths are more frequent and injurious of late years than formerly, and the winters more severe and destructive. If the surface is undulating, the water from summer rains runs off at once, instead of entering the soil where it is wanted; and if at all flat, the water in rainy times stands in many places, and this brings in sedges and other worthless weeds in place of useful grasses.

"Too close feeding is another prominent cause of deterioration. Most of the dairy farmers admit that they have all the time kept more cows than was for their interest in the long run; but some present emergency is made the excuse. As a consequence, they have been obliged to turn their stock out to pasture before the grass had made a good start in the spring and it was kept fed off closely during the drouths of summer, and until several frosts came on in the fall. Every farmer should know that no plants can thrive or make healthy roots without being allowed to make leaves. Even Canada thistles and quack grass are killed by keeping the leaves cut off, or fed closely with sheep; and the owners of suburban residences have found out that the sod of their nice lawns can be ruined by the too frequent use of the lawnmower. Such close feeding as has been practiced by many of the dairy farmers, along with the other causes, could not fail to prove destructive to the finer grasses. This is sufficient, also, to explain why it is that "poverty grass" (*Danthonia*) and other weeds which cattle will not eat, seem to thrive where the useful grasses die out. Not being cropped off like the rest, they, of course, have full chance to grow."

The writer also thinks the lack of some mineral elements is another cause of deterioration in the old pasture soils. How to recuperate claims a large share of his attention. First he believes it can be done with "more brains," more muscle, a greater variety of products, the plowing up of old pastures, pulverizing the soil, plowing in green crops as manure, the use of common manure, top-dressing with manure, the use of fertilizers, rotation of crops, draining, mixing grasses, etc. On the important subject of drainage, Mr. Bateham says:—

"Of course under-draining would prove the most effective and enduring means of improving these clay lands, if the expense could be afforded, but for pasture mainly few men would think it could pay. Some old worn-out pasture fields near Hudson, in Summit County, have been under-drained at a cost of about \$60 per acre, and then used for hay and grain crops, with such complete success that the owners assured me the investment for drainage paid not less than 12 per cent. annual interest, and more than doubled the value of the crops. Where under-draining cannot be afforded, enough surface drains should be made to carry off all standing water, and prevent, if possible, that saturation during winter which leaves the soil lifeless and solid in the spring—all air having been expelled, and the process of cohesion filling its place."

In concluding his observations on recuperation, Mr. Bateham says regarding grass mixtures:—

"Using a mixture of grasses, instead of timothy alone, or with blue grass, when seeding for pasture, I have no doubt will be found of much advantage on these dairy farms. Five or six kinds will yield more herbage and endure much longer than one or two. English farmers understand this, and use a mixture of six or eight kinds for permanent pastures and half as many for meadow. Of course, where it is necessary to bring the land under the plow often, by means of a short rotation, timothy alone may do as well. Of the grasses that are known to flourish on clay lands and make good pasture, I would name the following six as forming a desirable mixture:—Timothy, blue grass, red-top, orchard grass, rye grass, meadow fescue. The seeds of rye grass and fescue are not often saved in this country, but are annually imported,

and can be had at reasonable prices from the leading seedsmen. The meadow fescue grass has been gradually coming into the northern parts of the State, in some way, for a number of years past, and flourishes finely along the roadsides on clay soils where a little moist. It is highly esteemed in England as a pasture grass, though cattle do not seem quite as fond of it as of timothy and blue grass."

Premiums for Farms.

The *Grange Bulletin* says:—We are in favor of giving a premium for the best conducted farm in each township. Heretofore premiums for the best managed farms have been awarded in most cases by State Agricultural Societies to large farms, the owners of whom had ample funds at command and could thus put their farms in excellent order previous to the visit of the committee to inspect it. If our country organizations would offer liberal premiums for the best managed farms in each township, it would beget a spirited rivalry, which would be of the most beneficial character. While great credit is due to the farmer who has unlimited means at his command to make a model farm, much more is really due the one, who, with limited means at his disposal, produces results that attract the attention of the neighbors. Such a farmer above all others should be entitled to a liberal premium.

The advantages that would result to the farming community by awakening competition from the offer of a premium by our county fair associations for the best conducted farm in the township of each, would be almost incalculable. The lesson such teaching would convey would be of permanent value to the farming community. The competitors for the premium should be required to keep an accurate account of the expenses and total receipts. That is to say, the cost of labor, the amount of work expended on each field, time of performing operations, plowing, sowing, cultivating and harvesting, amount of crops, prices at which sales were made, etc.

An important feature in such a record of facts as would be presented in the report of the committee, would be that they could be incorporated in the annual reports of the State Agricultural Society, and thus be made of value to farmers in other portions of the State. In this way many a modest but model farmer who would not otherwise become widely known for his tact and ability. We fully believe that all our County Agricultural Societies could scarcely do a better thing than to appoint a competent committee made up of farmers from adjoining townships, whose duty it should be to visit the farms of those in other townships than their own, that may have been reported to the secretary of the fair association as competing ones for a premium.

This committee should report mutually everything pertaining to the farm, as enumerated in printed blanks, which the State Agricultural Society might very properly furnish to County Fair Associations.

They should report as to the kind of soil, system of rotation, buildings, fences, etc. A premium awarded for actual merit would be a step in the right direction. Now is the time to agitate this matter before the premium lists are printed. Let generous premiums be offered for the best managed farms, and we believe that those who are really deserving will get them, and that within a very short time a marked improvement will be seen in all counties where the plan is adopted.

Movable Wire Fence.

A novelty in wire fences was exhibited in England, at Auchintoul farm, the invention of the "Master of Blantyre." This gentleman would seem to be one who not only looked after his own affairs (albeit he is the nephew of a duke) but knows how to improve what is crude. The improvement is thus described by the *North British Agriculturist*:—

"By lifting a bolt at the end, the fence falls over in tension, so that by using precautions for its protection from the wheels, carts may enter the field from any point. The arrangement is also a convenient one for allowing free play to the wire ropes of the steam plough, in the event of the engine being stationed outside of the field. Mr. Greig said the fence admirably answered the purposes for which it was invented; and as it had excited much attention among many gentlemen from the south, it was likely soon to come into general use."