

rational reason to give is, that from wet and low-lying land a greater amount of water is evaporated than from other land, and this evaporation produces the cold so much dreaded; but against this it may be said that from the dryer land (being warmer) the evaporation is greater, and therefore should produce greater cold. Then again, the black muck, from its colour, ought, during the day, to absorb a greater amount of heat from the sun's rays than lighter coloured land, and this heat so absorbed during the day ought, one would think, to keep the land from freezing during the night; but this is not so, for it is this very black soil that is the worst affected, and it is well known that the same soil, after a few years' ploughing, and when the stumps have all been taken out and the clay has been brought to the surface, will lose its frosty character altogether, and become productive. It is a very curious and perplexing question, and one which deserves research both by the farmer and by the philosopher.

Every observer must have noticed that during the first frosts certain portions of the country seem to be free, whilst the vegetation in other portions is entirely cut off. In travelling from Toronto to Hamilton this has often been observed; every now and then half a mile or a mile of country will be black with frost, and the intermediate portions scarcely touched. It seems as if the frost winds came in strips, and every now and then struck and clung to the earth, whilst other parts had the power of resistance. Every one you talk to has a different opinion and theory on the subject; all seem reasonable at the time, but there is great doubt whether any are absolutely right, although the wetness of the land is probably the principal cause, and points to draining as the remedy.

VECTIS.

### Preservation of Roots and Green Food.

The following, which we clip from the journal of the New York State Agricultural Society, opens a wide field for Canadian farmers. Winter food for cattle cannot be too highly recommended, if cows are to be kept in milk, and sheep are to do well, and if we can, as indicated in the following article, find a method by which mangolds can be preserved, the boon will be great to all. The only objection to mangolds is their tenderness to frost, and their injury, and indeed the destruction of their valuable properties, by heating and malting, as it were, by growth. Mangolds, as a food for cows, yield excellent milk and butter, and are far superior to any kind of turnips if taken at their best; but they rapidly deteriorate from many causes, and then fall below turnips in their useful effects. If on trial the plan recommended is found to answer, it will add one more to the farmer's winter resources. The following is the article alluded to:—

"We have seen that M. Leduc employs steam for the preservation of beetroot, but this

method preserves it only for a certain period. We know how difficult it is to preserve beetroot beyond the month of April, and how much it loses every day both in weight and quality when spring makes the plant vegetate. M. Leduc was compelled to use his beetroot in six months, and fatten up an inconvenient number of cattle. Thus the preservation of this root was of great interest to M. Leduc, since it would enable him to keep it for a whole year. Well, this plan has been discovered. Having succeeded on a small scale, it has been tried on a large scale at Beaufort. It has been stated by a certain number of persons that beet cut on the 6th day, and preserved in a certain manner, was kept in a state of great preservation. These beets were eaten with great eagerness by the cattle. It appears that this food would be quite as good next year. The following is the plan adopted: The beet was cut and mixed with straw—nine kilogrammes\* of beet for one kilogramme of straw. The whole was put in a ditch of brickwork or in a square trough, and put into the ground, not too moist, however. The food should be pressed very closely, in order to make it ferment equally. The ditch, once full, should be covered with twenty-five centimetres† of earth. At the end of six days' fermentation will have begun, and will last about ten days. During this the beet deprived of air is in a bath of steam, which gives it a piquant taste and preserves it thoroughly. M. Leduc writes the following: "When I was persuaded that the food cut on the 6th May was perfectly good, and would keep a long time, I decided on making provision for the next year, but I determined on making a new experiment. This took place 1st September, 1859, with 850 kilogrammes of beet cut down. The 19th October, I opened the ditch, and found the food would preserve as long as that cut on the 6th May. I had made this experiment because the beetroot cut in May had fermented in a mass, and I feared that which I cut in November would ferment too soon, and would not keep so well. This new experiment makes me work with all certainty of success.

"As M. Leduc hesitates no longer, at the end of October he cut down 200,000 kilogrammes of beetroot, which, mixed with wheat straw and straw of colza, have been placed in a heap measuring nearly twelve metres long, twelve broad, and three deep, and containing about 430 cubic metres of food. The beetroot was heaped in this large reservoir, then covered over with thirty-five centimetres of earth. In five days fermentation began; the beetroot, deprived of air, was kept in a bath of alcoholic steam, by degrees fermentation ceased, and when we opened the ditch on the 7th December, there was a strong odour of alcohol. Given to the

\* A kilogramme is equivalent to 2 lbs. 5½ drachms avoirdupois.

† A centimetre is equal to 39-100ths of an inch. 25 centimetres will therefore amount to 975 100ths, or a little over 9 inches.

animals, they ate it with eagerness. In these conditions the fermentation of the saccharine matter of the beet began; owing to the small quantity of air in the mass, and particularly in the straw dividing it, fermentation having absorbed this air, continued, and then terminated without any symptom of putrefaction. The carbonic acid in the heap must have been caused by the air. We can safely affirm that beetroot cut and fermented will afford for cattle the cheapest and most abundant food, and will be of great value to our farmers. Now, in what way does the use of beetroot present the most advantage? Should he extract the pulp, or should he use it entirely? That is a question intimately connected with the circumstances of the farmer, and he must discover which can be done with the greatest ease. But in all cases it will be an evident advantage for the small farmer to prepare the necessary food for the cattle economically to last the year. There will be an advantage also for the farmer who wishes to fatten a number of cattle to produce a quantity of manure."

While on this subject, we may mention another plan which seems to be increasing in use on the continent of Europe, namely, the preservation of green Indian corn stalks for winter cattle feed. The information was taken from a foreign publication, and the translation seemed to be imperfect, but the hints and suggestions may be useful, and lead to a successful experiment. A pit is prepared in the ground in a dry place, well drained to prevent the accumulation of water, and the bottom and sides boarded, or wattled so as to keep out the earth and keep the food clean. The entire stalks of green corn, leaves and all, are then laid close together, either across or lengthwise of the pit, and as soon as a depth of six inches is attained, salt is strewn over it, then another layer of the cornstalks is added, then more salt, and so on until the pit is filled. Boards are placed on the surface, and earth on the boards, until sufficient is laid on to exclude the air. The entire mass heats, and works itself into a rich vinous smelling food, which is (when ready in the winter) cut out with spades, and fed to the cattle, and of which they are immoderately fond. It is stated to be very wholesome and fattening, and not to affect the milk of cows with any disagreeable flavour. The thing is well recommended, and is worthy of a trial. Would not green clover do as well as Indian corn stalks?

VECTIS.

THE GARNET CHILI.—Mr. George Badger, of Caradoc, gives an account of his experience with this variety of potato during the last season. He obtained a yield of 87½ lbs. from two tubers weighing together less than a pound. The ground was not in favourable condition, being tough blue grass sod, and, owing to the wet season, it was found impossible to keep the grass down.