THE VEGETABLE GARDEN.

Peppermint as a Paying Crop.

Why should not mint be grown profitably in Canada as it is in Michigan and New York? It is not grown, as a crop, here, that we are aware of, but we know of no reason why it should not be, except, perhaps, the cost of the building and the still necessary to extract the oil. Such objection is not of much weight, for one set of apparatus would be sufficient for a large extent of country, and the factory principle might be applied just as it now is to cheese-maying.

Let us look into the matter a little. A New York grower says that it takes 16 to 20 days' work to set, hoe and cut an acre of mint, and more than that if the land be exceptionally foul or hard to till. The mint will last three years, and, in the two last years, much less labour is required. The product will be from 10 to 40 pounds of oil per acre each year, diminishing slightly in the last year. The wholesale price of oil of peppermint in Toronto now is $5.50 to $7.00 per pound. The profits from a piece of wet, low-lying, otherwise worthless piece of land in mint will frequently exceed the profits from a crop of cereals on the most fertile land.

The best location is land that is wet, but free from surface water. Mint is propagated by scattering the roots in furrows two feet apart. During its growth, it should be well cultivated. When in blossom, it is cut down and allowed to remain till wilted. It is then gathered into piles, there to dry till fit to move to the still.

There are thousands of acres of wet land in Canada of which the drainage would be too difficult or expensive to be remunerative, which might be applied to mint-raising. We repeat that we see no adequate reason why oil of peppermint should not become a leading article of export. The variety cultivated is, we believe, the *Mintha piperita*, a European species naturalized in many parts of the Continent. The native species, *Mintha Canadensis*, we understand to be quite inferior in its product of oil, and not worth cultivation.

The Cabbage-Worm (Pieris Rapæ) and its Parasite.

EDITOR CANADA FARMER:—As is well known, this butterfly is "from England," and like many of the waifs from that "land of queer fellows," thrives well in Canada. Its first recorded appearance on this continent was at Quebec, in 1859. Already it has reached Virginia to the south, Lake Superior to the north, and Sandwich to the west; and the injury it has done to cultivated cruciferous crops amounts to millions of dollars.

In August, 1872, I saw for the first time in Toronto, a few specimens of this insect. In 1873, they had increased very much; in 1874 they were by far the most numerous of all our butterflies, and in the larval form, had done great injury to our cabbage, cauliflower and turnip crops. Later in the season, the fences and walls of buildings wherever cabbage had been growing, became thickly dotted with the pupæ; in which form they pass the winter.

In April, or early in May, the perfect insect makes its appearance, and soon the female seeks some of our native or naturalized early *cruciferæ* on which to deposit her eggs. I have found the larvæ feeding on *Nasturtium palustre*, D. C., Marsh cress; *Dentaria diphylla*, L., Pepper root; *Cardamine rhombaidea*, D. C., Spring cress; *Arabis hirsuta*, Scop., Early cress; *Capsella Bursa-pastoris*, L., Shepherd's purse. No doubt this list will be enlarged by further research.

By the time the first brood is perfected, our cultivated crops are well advanced and supply food for the second brood. The larvæ, being the color of cabbage and very sluggish, easily escape detection. Thus the conditions in Ontario are favorable to their rapid increase, and increasing they were so that it appeared certain the cabbage crop of 1875 would be entirely destroyed by them. But towards the end of October it became apparent from a change of color in the pupæ that they were not "doing well." Closer examination proved that about 87 per cent. were killed by ichneumons, of that tribe which are quite perfected before leaving the withered skeleton of their victims; each butterfly pupa contained from 20 to 50 ichneumon pupæ.

I collected 100 infected *Pieris* pupæ from 20 different points in Toronto. The perfect ichneumons began to emerge on June 1st, and were all out by the 12th, and proved to be the *Pteromalus puparum*, one of their English enemies, which has "dogged" them across the Atlantic.

P puparum is a four winged insect about $\frac{1}{10}$ inch in length, and when magnified resembles a wood wasp; probably lives 2 months in the *imago* form, flies well and appears to be quite hardy. If it is hardy we need not trouble ourselves much about this *Pieris* pest. Evidently, the best method of dealing with this butterfly, as with many other injurious insects, is to expend our efforts in destroying it in the *imago* form and to let its natural enemies deal with it in the larval and pupal forms.

Toronto, Ont. W. BRODIE.

Irrigation for the Garden.

Four years ago this summer, when the drouth with the attendant plague of grasshoppers was desolating our fields, pastures and gardens, what would not some of us have given for a convenient brook, river or pond to let loose upon the parched and thirsty soil, for the double purpose of drowning the insects and invigorating the crops? Since that time the attention of many thoughtful and intelligent farmers has been turned to the subject of irrigation; for, while it has been generally admitted that whoever has a brook or stream of water which by artificial means he can turn upon his fields, has a certain fortune at his command, provided he has the courage and ability to take advantage of it—little has been actually done that I am aware of, even by way of experiment. In fact, I suppose that owing to the physical conformation of our fields, irrigation upon a large scale will be found impracticable in this State; still there are few locations where, in one form or another, it will not be found both possible and profitable in the garden. Its importance here will be well understood by those who raise garden truck for market. The profits of a whole season often hinge upon the ability of the cultivator to carry the plants through a sharp drouth. It is true that thorough drainage, deep culture and liberal manuring will do much to bridge over these dangerous gaps, but all of these sometimes fail, and the gardener has the mortification to see his highly cultivated and skillfully tendered plants wither under a scorching sun, for the want of a seasonable rain. To be able at such a time to irrigate, is to have assured succes at one's command.

How to irrigate our gardens in the best and cheapest manner is, then, the question. If you have a brook or a spring upon your farm, the source of which is a little higher up than your garden, the solution of the problem is easy enough. The brook, by forming a dam sufficiently high up, can, by ditching or sluicing, be led into the garden, which, if gently sloping to the south, or south-east, as it should be, can thus be readily and cheaply watered. Or, if only a spring, it can be led into a reservoir of sufficient capacity, a little higher than the highest point in the garden, whence it can be drawn as needed into a large tub or trough. In this case a common garden engine, or one of the many kinds of force pumps, with hose and sprinkler attached, will be found very serviceable in distributing the water to every part of the garden. But if you have neither brook nor spring, then a supply must be drawn from the rain-fall. Construct a cistern of liberal capacity, to hold say from 300 to 500 hogsheads, on the upper side of the garden. Make the sides of concrete or of flat stones and mortar, and line them with two or three coats of cement mixed with sand. Conduct the water from the roofs of the farm buildings into this cistern. It may be pumped up with a common force pump, or if the bottom be a little higher than some point in the garden, it may be drawn into a tub by simply laying a pipe and inserting a faucet. It can then be distributed with an engine or force pump, or on a small scale with a common sprinkler. If the slops from the kitchen, the soap suds, etc., can be conveniently conducted into this reservoir so made, the better. A cistern thus constructed need not be very expensive, and it would enable the gardener to carry his plants safely through pretty severe drouths. The water should always be drawn in the morning and allowed to become warmed in the sun, then apply just at nightfall. A thorough soaking once or twice a week will be found far more effective than a slight sprinkling every night. Probably the most convenient way is to go over a certain portion of the garden one day and another the next, and so on in rotation. My own experience has taught me that a mere sprinkling in a dry time, so far from benefiting plants, is an actual injury to them, since it stimulates them to renewed growth, which there is not moisture enough in the soil to maintain. Liquid manure applied at such a time in small quantities, is for the same reason injurious.—*Cor. Maine Farmer.*

The Use of Tan in Gardens.

Writing in the *Revue Horticole*, M. Baltet urges the use of tan in gardens, where, he states, it is most useful for covering the walks, the acidity in the material checking, or, indeed, preventing, the growth of weeds, especially where they have first been cleared away. The paths are likewise rendered more pleasant to walk on than on gravel or on the scoria and shingle frequently used. Too thick a coating should not be given, as this is likely to harbour damp after rain; but this can be remedied by previously spreading upon the ground a layer of cinders, upon which the tan will rest, and which will drain off the water rapidly and efficiently. The tan should be renewed upon the walks in the spring, as they are much worn in winter. The old material is scraped off and deposited on the borders, where it forms excellent mulching, and may subsequently be incorporated with the soil as a manure; for Strawberry or Raspberry beds nothing is better. In la Brie the white maggot attacks those plants that are mulched with tan less frequently than any others. On the edge of the footpaths the roots of Abies excelsa are fond of developing their spongioles in old tan, for it is left for several years upon the less used walks. Some time back, M. Baltet made the following experiment upon a plot of Asparagus. One part of the bed was covered with tan, the other with saltpetrous earth. In the latter portion growth was very vigorous, whilst in the former it was the reverse. Tan, therefore, it may be presumed, is not conducive to the health of Asparagus. An accidental circumstance also showed that a young tree, having its roots dried up or weakened by a long journey, will recover and even throw out young rootlets when the roots have been placed in a heap of tan. An arboriculturist of Troyes, M. Lanier, wishing to re-invigorate an espalier of Pear trees, used a mulching of dung, but being deficient of a proper quantity, he tried fresh tan; and all those trees to which the latter was applied assumed a robust aspect, whilst the others remained unhealthy. M. Baltet states that he still uses tan in hot-bed frames, mixing it with a load of earth, and that the kitchen gardeners use it to fill up the paths between the beds; later on, this tan is mixed with dung. At Saint Hubert, in Belgium, gardeners make a good thing out of the heaps of tan from the tanneries; and it seems probable that more will be heard of this vegetable substance.

To Keep Frost from Plants.

EDITOR CANADA FARMER:—For the benefit of my brother farmers, I beg to forward the following receipe for keeping the frost from seed and hot-beds during early spring. I have found it invaluable. Make for seed-bed a light frame of lath, subscribe to the WEEKLY GLOBE, tack the old numbers over said frame, and cover seed-bed. This will admit sufficient light to the young plants, and if the paper be doubled, will keep out frost at 5 below zero. For hot-beds, line the inside with the same paper, and tack paper on the underside of sashes.

Don't try any other paper than the WEEKLY GLOBE, as bad results might follow. I attribute much of the success of the above plan to its extraordinary warmth on Agricultural matters.

A SUBSCRIBER.

Orillia, Ont.

ASPARAGUS BEDS.—Do not exhaust the powers of the asparagus bed by cutting too late. Give the bed a good dressing of stable manure when the cutting is over, and let the tops grow until fall. Then, if the seeds are not wanted for sowing, cut and destroy them.

SQUASH-BUGS.—There is no efficient preventive that we know against the depredations of Squash bugs but hand-picking, systematic and persistent. If the bugs get too numerous for hand-picking, or time is too valuable, sprinkle the vines with ashes, soot or air-slacked lime.

NO PART OF THE FARM pays so much profit as the garden, and yet none is so generally neglected. It is generally ploughed under protest and hurriedly, and left to the boys or the wife and daughters to rake and prepare. But, on the contrary, the garden should be carefully and thoroughly ploughed and dug, drained and manured; for a quarter of an acre of garden crops and small fruits will return more actual money value than any other two or three acres on the farm.

BROCOLI.—The plants should have been transplanted out by this time, or should be so served immediately. They should be set in rows two feet apart, and the same in the row, and well watered. As soon as they have rooted, they should be well hoed, and the operation should be repeated several times during their growth. They must be kept growing by constant watering until the cool days come on. When they begin to flower, protect them from the sun by breaking the large leaves over the head.