

this respect. He relates that a pasture field, left undisturbed by the plough, had received a heavy top-dressing of lime twelve years, and of cinders three years previously; on examination lumps of lime were found, forming a well marked white line at a uniform depth of two inches below the surface, and at the depth of one inch was a line of black spots formed by the remains of the cinders, the soil below the white line being gravelly, and differing very perceptibly from the fine mould above. This deposit of earthy matter heat-trifles almost entirely to the work of the earth-worm in bringing up its castings to the surface.

These worms appear to have their principal habitation at a depth of about a foot, or a little more, below the surface, and there, when the soil is rich and the creatures are numerous, the earth is completely mined by their burrows, which extend in every direction, like a labyrinth. On these grounds, then, we consider the earth-worms to be eminently beneficial, enriching the soil and rendering it loose and porous by their minute system of underdrainage.

As, however, they do occasionally give trouble by their attacks upon fallen fruit, vegetables and plants, and as our correspondent wishes to get rid of those infesting his lawn, we may quote the remedies mentioned by Mr. Curtis in his great work on Farm Insects: "A solution of salt and water will destroy worms, as will also corrosive sublimate, but one of the easiest and most efficacious modes of extirpating them is to water the land with lime water. It is, however, said that while unslaked stone-lime is efficacious, lime of chalk has no effect upon them."

We have never endeavoured to get rid of these worms, and therefore have no experience as to the amount of salt or lime required per acre for their destruction. We should be glad to learn from our correspondent in what way they have been troublesome to him. Salt should be used very cautiously, as an overdose would injure or kill the grass.

The Curculio-catcher.

The following queries and replies respecting the curculio-catcher we cull from the *Prairie Farmer*, the editor of whose horticultural department was, if we mistake not the original inventor of this machine, and is therefore thoroughly competent to describe it. Some of our readers may feel inclined to try the "catcher" this year, though we trust that the vigorous and liberal action of the Fruit Growers' Association will soon "stamp out" the pestilent creature in this Province, and leave no necessity for further war against him :-

We have received a number of inquiries of late with respect to the height of trees must be to admit of our curculio catcher being successfully run under them, the weight a catcher ought to be, what preparation we make of ploughed ground before we pass over it, the number of trees one man can tend, cost of machine and if patented, and by whom made, &c., &c.

We are pleased to see that so much interest has been awakened to the importance of capturing the worst of all our insect foes, the curculio, and will cheerfully give any information we are able.

It is very unfortunate that, in neighbourhoods liable to be infested by the curculio, low-headed trees, so called, should have been grown. By the term low-headed, we

mean trees branched so low that a team in cultivating, or a curculio catcher, cannot be conveniently run under them. But to the queries :-

1st. With respect to the height of the trees.

It is practicable with our cat her, as recently improved, to jar trees having clean stems not more than sixteen to eighteen inches high, though the labour of jarring higher-headed trees would be, perhaps, one-third less.

2nd. Weight of machine.

We have never weighed a catcher to ascertain just what the weight would be, but should suppose that one ten and a half feet wide by twelve feet long would weigh 75 to 80 pounds—possibly more. Such an implement would be large and heavy enough for the largest peach or plum trees, but too heavy for trees only three years old. For such small trees the catcher could be run under and the tree jarred by the operator with a long-handled padded mallet, carried in the back part for the purpose.

3rd. Making a curculio catcher.

The principal difficulty is in knowing how to curve the stretchers, and so balance and adjust the whole with respect to the wheel, that, by giving it a certain tilt, its own weight will in part propel it.

4th. Cost of a curculio catcher.

We are informed that the cost, exclusive of cloth (which any one can put on) boxed, will be \$18 or \$19.

5th. Preparation of ground.

Our orchard is kept under plough. After harrowing the ground, we load and drag a large scraper midway between the rows, and at right angles to this, up to the trees, level with a hoe. In driving the machine a man follows the path made by the scraper until opposite the trees, then turns and bumps the trees on one side of the path, backs to the centre, turns half round and bumps the opposite tree. Three or four bumps to each is sufficient. In this way one man will easily jar two hundred trees per hour. We suppose these catchers will be advertised in time for spring trade, provided the prospect for fruit the coming year continues good, when the manufacturer will doubtless give the additional information desired.

Insects Affecting the Plum

THE OBLIQUE BANDED LEAF ROLLER.

(*Lozotenia Rosaceana*, Harris)

This moth is a member of a very large family of very little moths that are called, scientifically, Tortrices or Twisters, and popularly, Leaf Rollers, because the larvæ roll up the leaves in which they dwell, and form them into hollow cylinders, disfiguring and destroying them at the same time. Most of these insects, when disturbed, let themselves down to the ground by a fine silken thread. The larvæ of the *Lozotenia Rosaceana* is about half an inch in length; its colour is a pale yellowish-green, with three or four black spots about the head and second segment. The body, which is rough to the touch, is covered with minute warts, each of which produces a short almost invisible hair. They attain their full size about June, after which they line the surface of the twisted leaf in which they live with a web of fine silk, and there change into dark brown chrysalids. After the lapse of a few weeks the chrysalis, by means of minute prickles which are placed across the rings of its hinder part, pushes itself half way out of the leaf, and bursting open at the upper end gives egress to the perfect moth.

Dr. Harris thus describes the moth: "The forewings are very much arched on their outer edge, and curve in the contrary direction at the tip like a little hook or short tail. They are of a light cinnamon-brown colour, crossed with little wavy darker brown lines, and with three broad oblique dark brown bands, whereof one covers the base of the wing and is often very indistinct or wanting; the second crosses the middle of the wing, and the third, which is broad on the front edge and narrow behind, is near the outer hind margin of the wing. The hind wings are ochreous-yellow, with the folded part next to the body blackish. It expands one inch or a little more." The larvæ when disturbed escapes by its silken thread, and being very active often eludes capture.

Its depredations are sometimes very serious, and more especially as the insect appears to select the terminal branches of the tree, and thus effectually checks its growth. Whenever practicable, the curled and twisted clusters of leaves should be picked and crushed; it has also been suggested to thoroughly drench the trees with a mixture consisting of a pound of whale oil soap in seven or eight gallons of water, and thus destroy the caterpillars hidden in the leaves; a weak solution of carbolic acid is also recommended.

THE EYE-SPOTTED BUD MOTH.

(*Grapholitha oculana*)

This moth is a member of the same family as the one last described. The chief peculiarity of the larvæ consists in its selecting the opening bud for its attack. The caterpillar is a small cylindrical naked worm, about three-quarters of an inch in length, of a pale, dull, brownish colour, with small warts from which arise fine short hairs; the head and the top of the next segment being black. Its *modus operandi* is thus described by W. Saunders, who found it depredating his plum orchard: "Its tenement consists of a dried-up blackened leaf, portions of which are drawn together so as to make a rude case, the centre part of which, where his highness resides, is lined with silk. It is very fond of going just where you do not want it. It is partial to the blossoms and newly formed fruit. If you have a new pear or plum fruiting with a single bunch of blossoms on it, which you are anxiously watching, by and by you find that several of the blossoms have set, and while you are flattering yourself that they are doing well, along comes this mischief-maker, pitches his tent alongside this very spot, and drawing the young fruit together with silken threads, holds high carnival among them and frustrates your hopes. Another of its tricks is to gnaw a hole into the top of the branch from which your bunch of blossoms issue, and tunnelling it down, causes the whole thing to wither and die. Often it contents itself with damaging the leaves only, and this one does not mind so much, drawing one after another around its small inside case until it forms quite a little bed of withered and blackened leaves. The moth, which expands about half an inch, is of dark ash-grey colour, the fore wings having a paler whitish grey band across the middle; there are two small eye-like spots on each of them, one near the tip being composed of four little black marks placed close together in a row, on a light brown ground, the inner marks being longer than the others; the second eye-spot is near the inner hind angle, and is formed by three minute black spots arranged in a triangle, in the middle of which there is sometimes a black dot. The hind wings are dusky brown."

Similar remedies to those described for the last mentioned insect should be applied, hand-picking being the most preferable —E. B. Reel in 1st Report of Entomological Society of Canada.