

## Entomology.

## Cut Worms.

At a recent meeting of the Cincinnati Horticultural Society, Dr. J. A. Warder read a paper on this subject from which we make the following extracts:

We discover the ravages of these insects so soon as our garden vegetables appear above ground, when the worm, emerging from the soil during the night, eats the stalks, generally above the surface—in the morning he retreats, burrowing near the roots, and often drags the unconsumed portion of the young plant after him. The worms resemble each other in their general appearance, and might readily be taken for one species, and hence they are considered indiscriminate feeders, as they consume any of our garden products, but it may be found that a certain species of these rustic moths are provided for different species of our culinary vegetables—as the *devastator* for the cabbage, another for the corn, and so on. Their habit of descending into the earth very near to the plant they have consumed, however, is common to all the species, and enables the gardener to discover and destroy them by digging them out.

Dr. Melzheimer, of Pennsylvania, is quoted by Dr. Harris to the following effect: "The corn cut worms make their appearance in great numbers at irregular periods and confine themselves to no particular vegetables; all that are succulent appear to be relished by these indiscriminate devourers, but they prefer the maize plants when not more than a few inches above the earth. They seek their food in the night or in cloudy weather, and retire before sunrise into the ground, or beneath stones or other shelter from the rays of the sun. The transformation in pupae occurs at different periods, earlier or later, according to the forwardness of the season, usually not much later than the middle of July." The pupae become moths in about four weeks.

**Remedies.**—Having studied the habits of this insect, and learned something of its ways, we may be prepared to meet the foe, but, unfortunately for us, the worm, as well as the moth, being nocturnal, they escape our observation until too late, we see the damage the worm has done to our tender crops. The moth deposits her eggs on the ground; they are beneath our observation, and the young worms do little harm in the autumn, as they feed chiefly on the roots of grasses. But great numbers of the moths might be destroyed by burning lamps in vessels of water, in the summer. In the winter the young ones are supposed to lie torpid in the ground, and a fall or winter ploughing has been recommended for their exposure to the frost and to insectivorous birds.

The insects being very clumsy, and unable to climb up a steep bank, it has been recommended to make conical holes near the plants, as traps, into which they would fall when rambling about as they do at night, in search of food, and it is claimed that many are caught in this way, the holes being found half filled with worms. This can only be practiced where the soil is tenacious, else the holes will crumble down, and indeed the worms could burrow away after falling in, if the soil were mellow.

A very simple and efficient device, by the way of prevention, is the application of a strip of paper, wrapped about the stem of the cabbage or other plant, at the time of setting it out: this is so applied as to guard the stem for an inch or two at and above the surface of the ground. In my early experience we resorted to a leaf of the hickory, or other tree for the wrapping.

In the cornfield, however, where the depredations of this insect are very annoying, and where hand-picking is manifestly out of the question, other means must be resorted to. First in importance among these is the encouragement of our insectivorous birds.

We are assured that the crow is seeking these insects when he visits our corn fields, and Mr. Glover's examinations, alluded to in a previous report, prove this, and will no doubt give us a higher regard for the visitor than we have heretofore held, when calling him the bird of ill-omen. Most intelligent farmers, where the crow abounds, have already learned to appreciate his insectivorous propensities, and to value his services accordingly, and many not only exempt an injury offered to their sable friends, but take pains to encourage them by providing a few handbills of corn, to be cast upon the surface of the broadlands of their fields.

Predacious insects destroy a great many of the cut worms. One of these, the "Cut-worm's Dragon," is mentioned by Mr. Hatch as "a large, black, rather slender and fat larva of a beetle, of the family Curculionidae, probably the *Pezomachus caliginosus*; it is very

agile in its motions. When not glutted with food, it is running about incessantly, in search of these worms, and slays them without mercy, seizing them by the throat with its powerful jaws, and sucking their substance." Another is described by Mr. Morrison in the Albany *Cultivator* as follows: "A remarkable insect, somewhat resembling the black wasp, but longer, of a shining black and very active, was pointed out to me as their natural enemy." This, he says, hunts the worm as it were, by scent, digs it out and stings it, and afterwards buries it in the ground. It is probably a species of the Ichneumon fly. Many die from some cause when fully grown, and the popular belief is that this is produced by bright sunshine after a warm shower: they look bloated and swollen.

We recommend, also, early cultivation of the crop, to encourage the strong growth of the young plants, and also to invite the birds to come and examine the fresh soil, which the blackbird especially is sure to do, following close behind the plough, in his eager pursuit. It has been recommended to steep the seed and otherwise to prepare it so as to be obnoxious to the insects; but these worms do not eat the seed—they eat the succulent shoot at or near the surface. Steeping with the sulphate of iron, however, stimulates a vigorous growth, and is in that way of value.

It seldom happens that the cut-worms destroy all the shoots in a hill of corn, hence it is well to use plenty of seed at planting time. This accounts for the practice of the old farmers, who used to sing:

"One for the blackbird, one for the crow—  
Two for the cut worm, and three for to grow."

## Coal Oil and Insects.

Two correspondents testify to the efficacy of Coal Oil as an Insect Extirminator, as follows.

To the Editor of THE CANADA FARMER.

SIR,—As I was greatly annoyed with worms in my fruit trees during the spring of '61, '62 and '63 and as I have found a remedy by means of which their ravages may be stopped, I send you the following for the benefit of my fellow-farmers. After I had tried different things, and had about given up in despair, I thought at last I would try Coal Oil, which proved a perfect cure. I found that the worms ascended to the top of the trees at night to feed, and that they come down when the sun rises and collect together in groups on the trunks and large limbs. I accordingly took my oil can and saturated the places where the worms were with oil, and they died forthwith. As the result, I had more apples last year than I have had altogether in the past four years. I spent about a week at this work and was amply rewarded for my pains.

King, April, 1864.

To the Editor of THE CANADA FARMER:

SIR,—I take this opportunity of sending you a discovery which I found out last season, and now the spring is advancing and the proper time is at hand when the Canadian farmer is preparing his trees by pruning and washing them. I deem it my duty to send it, as I have found the same efficacious in keeping all insects from the trees. It is as follows:—Take a strip of cotton from three to five inches in breadth, well saturate the same with coal oil, wring it until there be no drops hanging, then tie round the trunk of the tree, about two feet from the ground. This, I think, will have to be renewed every spring at the time of budding.

A SUBSCRIBER.

Beverley, C. W., April 12th, 1864.

## Veterinary Department.

## Broken-wind.

It is not our intention to deal with the cure of broken-wind, but as much as is in our power with its prevention. Doubting the efficacy of medicine upon a heavy horse, we would urge upon our farmers the necessity of practically avoiding this disease.

With many owners, and more so with the regular teamsters, than with the farmers, the horse is often compelled to be exposed to every kind of weather, as well as the dusty atmosphere of our roads, and the foul air of our city stables. These, however, are partially irremediable evils, but not the most predominant nor aggressive. The farmer's horses, which seldom travel the road during its dusty period, suffer as severely, and in numerical comparison, as much

as those of the teamsters. This should not be; indeed we should not find the horses which have the best feed, air and exercise, suffering most severely with diseased lungs. But, if our reader will go any morning he will, when there is a fair assembly of farmers at any of our markets in the Western Province, he will not be at a loss to find specimen samples of heavy horses. Visit the stables where the farmer puts up his team, and he will find a considerable portion of them suffering with chronic coughs, broken-wind, or roaring. These three diseases are all derivable from the same causes; and their treatment, though never specific, is of the same class. But while none of these diseases can be cured, they can by care be considerably lessened, or relieved. That which will relieve them would also have prevented. In the Eastern Province broken-winded horses are not very prevalent, Montreal is by no means full of them; but as we get further east, and among the habitants of the neighbouring country of Quebec we may almost search in vain. In the St. Paul's market place, St. Roch, after a careful search we could discover but two broken-winded horses from amongst six hundred. In the upper town market place, where nearly five hundred stood, we found two broken-winded and one roarer. We, therefore, only found five with unsound wind, amongst say one thousand horses. The horses were generally in good condition.

In cases of emergency any horse may be over-driven, and his lungs impaired when too full of feed; but we have not to deal with special cases. To enumerate all the causes tending towards injuring the lungs of the horse is here unnecessary; therefore, we will only speak of those mostly practised, and with the most injurious effect.

When one section of a country or a different country finds the other surpassing it in producing a superior article, or a finer and sounder breed of cattle, it immediately commences to import or to imitate the other's mode of manufacturing. Why, then, when we find a larger percentage of broken-winded horses in the Western than the Eastern Province, should we not adopt their method of prevention; or rather discontinue the mode by which the horse's respiratory organs become impaired? The feed is, taking it as a standard, of a superior quality in the Western than in the Eastern Province, and the climate is not so severe. The water is as good in one section as in the other, and the horses as hardly worked in the one as in the other. No! the fault does not lie with the horse, its feed, or the climate; but it is entirely dependent upon the usage,—the manner in which they are fed and watered, and worked. In the neighbourhood of Toronto, where broken-winded horses abound, at every mile or two along any of its turnpikes is temptingly displayed to the horse, the water-trough, to the man driving, the bar-room sign. And there, the horse is allowed to injuriously swell himself with water, while his driver is exulting himself for a smart drive, and as he will tell you—"to prevent the water foundering his team." He forgets that in working the prevention of the one he does it at the cost of the horse's wind. The quantity of hay a regularly and hardly worked horse will eat, if it is good sweet hay, will not injure his wind; but he should not be allowed to stand with his rack full before him during Sundays, wet days, or resting days. In the Eastern Province it is not customary to pull up at a tavern and leave your horse standing over one of these pests of troughs; what water he is allowed is given him out of a pail, and if it is in the extreme cold weather, the chill taken off the water by pouring a little warm into it before he is allowed to drink. The hay is, also, nearly always tied up in bundles of sixteen pounds each, which gives the advantage to the person feeding of judging the proper quantity, giving a judicious allowance to any greedy feeder, or to any that has fasted for an unusual time.

A horse of the Lower Canadian breed travelled the distance from Chicoutimi to Quebec, three hundred and some odd miles, in five days. The sleighing was good; the horse allowed five gallons of oats per day, and not all the hay he would eat. Was allowed after he was cool, in the evening, as much water as he liked to drink, the same before he left the stable in the morning, but was very carefully and sparingly watered during the day. He averaged sixty miles per day for the five days. Could he have accomplished this if he had been allowed to drink his fill every few miles, at some water trough? We would warn all who have so delicate an animal under their care as a horse, to avoid extremes in watering and feeding. A horse had better suffer from thirst or hunger a little time, while travelling, than to have entailed upon him for the rest of his days, any chronic disease.