

to cover the roots. This latter method is very noticeable in some orchards where they believe that by leaving the trees on the ridge on the land they can get sufficient soil and sufficient drainage to make them thrive.

Some practical instances of lack of knowledge in pruning are also seen through the country. In some orchards the trees have been planted just as they came from the nursery without being headed back or shortened, and to-day they stand as monuments of some one's folly with trunks from four to six feet in length and with branches coming out all along it. Another instance that came under my observation is that of quite a large orchard in which the nurserymen had instructed the grower to cut back all to fourteen inches, and the grower had obeyed him implicitly without the slightest consideration for the size of the tree or bud growth on it. The question of cutting back young stock and heading in severely at one, two and three years will admit of a great deal of discussion.

In sections like Kent and Elgin and parts of Lambton, heading back too severely does not do, as the growth is too tender to stand the severer winter. In these sections very little cutting back should be practised. In the Niagara peninsula we have the two extremes, that in which the grower does not thin out or cut back his tree until three years of age and that in which the tree is systematically pruned summer and winter to produce a head according to the grower's idea. There is more danger from freezing when the tree is cut back than when it is not, and it requires much more skilful orchard practice to bring a severely pruned orchard through a severe winter. Many claim that on an average more fruit is produced on the unpruned tree at three years of age than on the pruned tree. I am not prepared to say which is better, but I do say that

if you are cutting back in any section, except the Niagara peninsula, cease cultivation in early July and sow a cover crop to harden and prepare the fruit buds for winter.

Our best growers differ a great deal in their opinions as to what is the best method of cultivation. A large number plow twice in the year, some plow only in the fall, some only in the spring, and some do not plow at all, and a large number have no regular system. In the eastern townships of the Niagara penin-

sula to twenty who plow both spring and fall, fifteen plow in the spring only and seven in the fall only, and three do not plow at all, and seven plow when they are ready, not when the trees are. Those figures are given relatively. I believe though that the tendency is to plow less and that the use of extension orchard implements is gaining ground. Three or four of our best growers do not plow their bearing orchards. They use the extension disc and the spring tooth harrow.

The Railroad Worm or Apple Maggot*

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THE Railroad Worm or Apple Maggot is not, as many suppose, a new pest in Ontario. Its occurrence in Lennox county in eighteen hundred and ninety-five was recorded by the late Dr. Fletcher in the Central Farm Report for eighteen hundred and ninety-six. Since then it has extended its range considerably and has gained in notoriety every year. I have now records of it having been found in the following counties: Prince Edward, Lennox, Hastings, Frontenac, Northumberland, Durham, Ontario, Wentworth, Lincoln, Welland, and Norfolk.

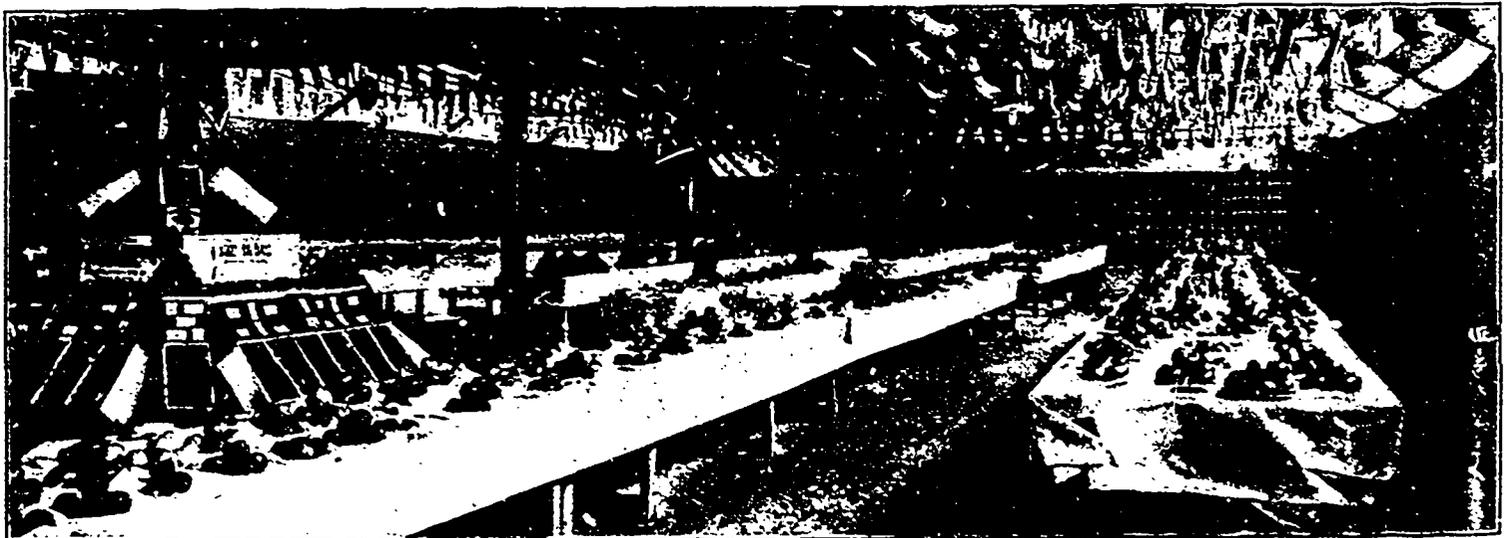
Fruitgrowers from the eastern counties are all more or less familiar with the work of this destructive pest—it is responsible for what is commonly called "railroaded" or "woody" apples. The flesh of such fruit is characterized by the presence of winding, brownish streaks, which are the burrows or tracks of Railroad Worms or tiny maggots, who lead a parasitic life within the fruit. These maggots or worms are the larvæ of a two-winged fly, whose handsome

exterior somewhat belies its evil character. It is somewhat smaller than the house or typhoid fly, is of a general black color, with yellowish head and legs, prominent greenish eyes and barred, pictured wings (each wing is crossed by four dark bars). In the female there are four, in the male three, white bands across the abdomen.

LIFE HISTORY

The insect passes the winter as a pupa in the soil. The pupa somewhat resembles a kernel of wheat. In eastern Ontario adult flies first begin to put in an appearance during the second and third weeks of July, and they continue to emerge from the soil over a period of four or five weeks. The female, by means of a sharp instrument, an ovipositor, punctures the skin of the apple and makes a minute, cylindrical passage in the flesh, into which the egg is laid. The egg puncture appears at first as a minute brown speck, but later it becomes the centre of a small depression. The egg hatches in about six days' time, and the young maggot, which at this stage is not visible to the naked eye, then proceeds to burrow here and there

*A paper read at the annual convention of the Ontario Fruit Growers' Association, held in Toronto, November, 1911.



A View of the Plate and Boxed Fruit Exhibits at the Recent New Brunswick Horticultural Exhibition. Notice the Splendid Display of Boxed Fruit.