

Carrot Fly, "Rust Fly" (*Psila rosæ*, Fab.)

*Attack*.—1. Early in the season the leaves of young carrots turn reddish, and the roots will be found to be blotched with rusty patches.

2. Carrots stored for winter use will be found to contain long transparent white maggots, which bore holes in every direction.

During the past season I have received no report of injuries by this insect, but in 1886 it did a great deal of damage, particularly to roots stored for the winter. Mr. F. B. Caulfield, of Montreal, says, in February, 1887: "They must be pretty numerous in this district, for nearly all the carrots that I have seen exposed for sale are more or less attacked." Mr. Thomas Henderson, of Nepean, Ont., when enquiring for a remedy, states: "The Early Horn Carrots in my garden are badly attacked, nearly every root shows signs of their presence, at any rate two-thirds are seriously injured for the market."

In a garden at Ottawa I found the young plants badly attacked in the spring of 1886, but the injury was checked and did not again recur.

*Remedies*.—The remedy applied above was as follows: Immediately upon the detection of the injury, sand saturated with kerosene (coal oil) was sown along the rows, this was repeated 5 or 6 times with one week intervening, and was always put on immediately after the carrots had been thinned out. Upon consulting Miss Ormerod, she was kind enough to send me the following advice which was subsequently adopted: "My view of the best way to prevent *P. rosæ* from doing damage is so to manage operations that there may be the smallest possible number of chinks or cracks in the ground down which the flies may travel to start mischief at the roots. I always advise that the greatest amount of thinning that can be managed should be done as early as possible, and give good waterings after thinning, and from time to time to drive the surface soil together."

Where carrots are stored during the winter in sand or earth this of course must be treated to destroy the pupæ which leave the roots and enter the soil to pass their last preparatory stage. Miss Ormerod suggests that this earth might be put into a wet manure pit or soaked with gas water so as to prevent the hatching out of the flies. Should neither of these methods be convenient, at any rate it might be buried in a deep hole dug in the ground for the purpose.

## CABBAGE.

The value of the cabbage crop has been very seriously diminished during the past year or two. During the last season where no efforts were made to put a stop to their depredations, the caterpillars of the imported White Cabbage Butterfly utterly ruined whole patches of this vegetable. Nor were the Anthomyian flies or Root Maggots much less injurious.

"The Cabbage Worm," Imported White Cabbage Butterfly (*Pieris Rapæ*, L.)

*Attack*.—Velvety green caterpillars about an inch in length with a broken yellow line along each side and an unbroken one down the middle of the back. At first eating the outside leaves but eventually boring right into the heart of the cabbage. These, after three or four weeks, produce the white butterflies so common in gardens.

Notwithstanding all efforts to keep it down, and the great prevalence of the infectious disease known as *flacherie*, in all the districts to which it has penetrated in Canada, this injurious insect continues to spread. In every garden in the Ottawa district last season great damage was done, unless special efforts were exerted to prevent the loss. Nor were its ravages confined to the cabbage alone. Turnips and many wild cruciferous plants were attacked. Mr. A. T. White, writing from Pembroke says, "a year ago last summer I had a field of turnips that was so badly attacked that they literally stripped the leaves and left only the stalks. Last season however, we had none or so little that they did really no damage."