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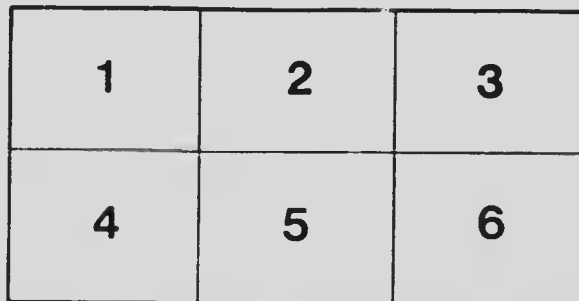
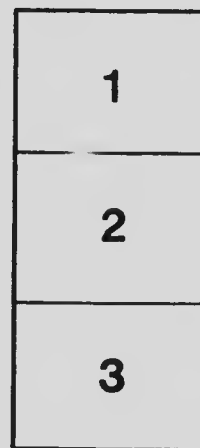
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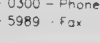
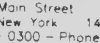
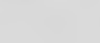
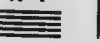
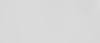
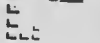
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PROVINCE OF NOVA SCOTIA.

COLLEGE OF AGRICULTURE

Truro, N. S., December, 1917

TWO IMPORTANT VEGETABLE PESTS

BY

W. H. BRITAIN

Provincial Entomologist.

PLATE I.
THE POTATO STEM BORER. (*Gortyna micacea* Esp.)



1. Eggs in place on stem; insert, single egg greatly enlarged. 2. Rhubarb stem showing entrance holes of caterpillar near ground. 3. Rhubarb stem showing borings of caterpillar. 4. Fully grown caterpillar enlarged about two times. 5. Pupa enlarged about two times. 6. Adult enlarged about two times.

TWO IMPORTANT VEGETABLE PESTS.

BY W. H. BRITTAIN
PROVINCIAL ENTOMOLOGIST.

The Potato Stem Borer (*Gortyna micacea* Esp.)

During the past summer numerous complaints have been heard concerning the damage to potatoes, corn, rhubarb, etc. by a boring caterpillar and articles on this "new potato pest" received wide circulation in the local press. The culprit responsible was described as a naked caterpillar, about an inch and three eighths long when full grown, with a shiny chestnut-brown head, pinkish or greyish-pink back, pale at the joints of the body and with under surface and legs lighter in color. This is not a new pest as many suppose, though it undoubtedly has been unusually common during the past summer, possibly due to the fact that so many new back yard gardens were planted on waste land that had formerly been overgrown with weeds. The insect is an emigrant from Europe and gained a foothold in Canada several years ago. It has been under observation at the Agricultural College for the past three years. It is called the potato stem borer because the potato is one of its favorite food plants.

Food Plants.

We have found the insect attacking not only the potato, but also corn, rhubarb and sugar beets and very likely it will be to infest other garden crops. It has been recorded

elsewhere as feeding on docks, horsetails, sedges and other plants, so evidently it is a very general feeder. We have never known it to attack turnips, cabbages, cauliflowers carrots or parsnips even when neighboring crops suffered severely.

Injuries.

The principal damage has been done to potatoes, though local outbreaks of more or less severity have been recorded to rhubarb and corn. The insect enters the stalk at the surface of the ground and bores upward through the centre. The first symptom noticed is the wilting of the plant, usually followed by the collapse of the stalk. In the case of rhubarb the insect generally bores through and through the crown as well as in the stalk and this results in the gradual wilting and death of the part above ground.

Life History.

The eggs are laid by the female moth during the latter part of August and September. They are doubtless deposited on various weeds, though we have only found them on couch grass. They are very small pinkish colored eggs, faintly ribbed and are laid loosely, sometimes in rather large numbers, on the stems partially surrounded by the leaf sheath. The larvae hatch in June and make their way to a suitable food plant where they bore a tiny entrance hole in the stem, usually at the surface of the ground. They bore in the stem or in the crown of the plant until some time in August and then enter the ground where they transform to a pupa, emerging in late August or September as an adult moth.

Control.

Control measures may be summarized as follows:

1. Carefully destroy all weeds during the latter part

of August and September, when the moth is depositing her eggs. This is particularly important in the case of a permanent plantation like rhubarb.

2. Gardens should not be planted on waste land that has been allowed to grow to weeds the previous year. Such land should be plowed and cultivated the autumn previous to planting.

3. Rotation of crops is beneficial when the insect has gained a foothold in a plantation, e. g. follow potatoes with turnips, cabbage, etc., that are not subject to attack.

4. As the insect is chiefly a garden pest, picking the injured stalks and destroying the caterpillars is practicable and should always be done to prevent outbreaks in future seasons.

The Zebra Caterpillar (*Ceramica picta* Harr.)

A yellow and black striped naked caterpillar has recently been doing considerable damage in certain parts of the province, stripping whole fields of turnips of their leaves and also feeding on potatoes, beets, mangolds, beans, peas and even apple and other plants. This insect is known as the zebra caterpillar and unlike the potato stem borer is a native insect. It is a periodic pest and only rarely occurs in destructive numbers.

Life History and Habits.

There are two broods of the zebra caterpillar. One feeding in the early part of the summer the other in the late summer and fall, the second brood being the more destructive. The eggs are laid in flat masses on the leaves of various plants, those of the first brood hatching during the latter part of June or early in July and those of the second,

during the latter part of August. The larvae of the first brood feed for about six weeks, then enter the ground, where they remain for two or three weeks, when they emerge as moths to lay the eggs for the next brood. Individuals of the second brood may be found feeding from late August up until freezing weather. The winter is passed in the pupal state.

Control

On a small scale and where cheap labor is available, hand-picking and destroying the leaves bearing eggs or newly hatched caterpillars, is the most practicable method of control. Over large areas, dusting with powdered arsenicals, e.g. arsenate of lime, arsenate of lead, Paris green, etc., diluted with 8 to 10 parts of hydrated lime, applied with a powder gun or blower, will prove more satisfactory. Treatment must be given early, since when half grown or more the insects are too difficult to kill.

PLATE II.
THE ZEBRA CATERPILLAR. (*Cetamea pica* Harr.)



1. Egg-masses on leaf; insert, single egg greatly enlarged.
2. Newly hatched caterpillars—time for treatment.
3. Mature caterpillars—too late for treatment.
4. Pupa dorsal and ventral view.
5. Adult moths at rest on leaf.
6. Moth with wings expanded.

