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attempt to grow a crop on spring broken sod.—B.D.C.

Autumn Cultivation for Weed Control

The plowing of the land in the fall is desirable as a part of the regular work of the farm since it enables the ground to be got into proper condition for sowing the seed in spring considerably earlier than would otherwise be the case. But it is perhaps of even greater importance as a means of keeping weeds in check. In the case of perennial weeds the mere turning up and exposing of the rootstocks to the action of the frost will serve as a considerable check to the weeds in cases where they are not killed outright. Where it is desirable to collect and burn creeping rootstocks this can be more readily accomplished where the ground has been pulverized by the frost and snow of winter.

In the case of annual weeds these are of two classes from the point of view of their life-history. One group requires a resting period before the seeds will germinate and this holds good even if the conditions with regard to moisture and temperature are suitable. These normally germinate in the spring of the following year after they are shed, but in many species the germination can be delayed for several years if the seeds are buried to a considerable depth in the soil. This is true of such species as wild oats and wild mustard. Each time the surface of the ground is disturbed some of these buried seeds will germinate and if no other seeds are allowed to fall into the soil in the meantime, the ground will eventually become clear of them.

In another group of annual species, known as winter annuals, the seeds germinate immediately after they are scattered and pass the winter in the form of a small seedling plant which survives the winter under the snow and resumes growth in the following spring. Belonging to this group are the following weeds: chess, purple cockle, night-flowering catchfly, stinkweed, shepherd's purse, false flax, ball mustard, wild radish, hare's ear mustard, tumbling mustard, peppercress, wormseed mustard, corn, crowweed, blue bur, or stickweed, and stinking mayweed. It is in the case of these weeds that autumn cultivation is specially desirable as if they are turned under with the plow and covered sufficiently deeply, very few of them will be able to continue their growth after the snow melts.

The Cabbage Root Maggot

By A. V. Mitchener, Lecturer in Horticulture, Manitoba Agricultural College.

A serious outbreak of Cabbage Root Maggot (*Phorbia Brassicae* Bouche) has occurred in the gardens around Winnipeg and in other parts of Manitoba. This insect is fairly common in Eastern Canada, and also in British Columbia, but this is the first outbreak of importance in Manitoba. The maggot usually manifests itself early in the season, but this year remained unnoticed and unreported until near the end of August. At the present time, fully 90 per cent. to 95 per cent. of the cabbages and cauliflowers of many gardens are being attacked and in many cases will be destroyed.

Injury was first noticed when the outer and larger leaves of the plants began to droop. This is almost the final stage. Many of the plants, which show no sign of drooping are badly infested and will soon reach this final stage. Upon pulling the plant out of the ground, numerous white maggots may be seen upon that part of the stem which was below the soil. Maggots are also found feeding upon the juices of the lower parts of the roots. When the stem becomes girdled, the plant is no longer able to pump up sufficient moisture from the soil, and consequently wilts. Not only is the cabbage attacked, but also this year the insect has been found upon cauliflowers, turnips and radishes.

The adult of this maggot is a fly, which somewhat resembles the house fly, although it is smaller. It may be seen flying among the cabbage plants on warm days throughout the summer. The adult female usually lays her eggs upon, or in the soil near the stem of the plant. These eggs are cylindrical, white, ridged longitudinally and are about 1-25 of an inch in length. They

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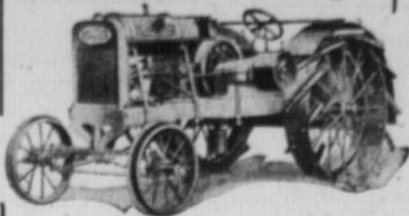
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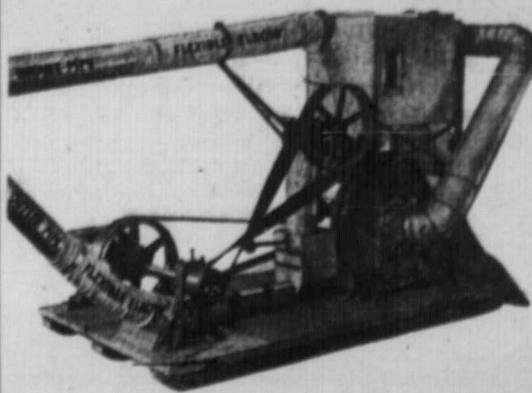
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