The tobacco should be cultivated as soon as possible after every rain in order to conserve the moisture, and the field should be kept as nearly level as possible for the same reason. Cultivation should be stopped after topping, as to cultivate after this operation has a tendency to keep the tobacco growing and it does not ripen up as it should.

INSECT PESTS.

The most common and troublesome insects which the Canadian tobacco grower has to combat are the wireworm, cutworm, tobacco hornworm, and grasshopper.

Wireworms.—The wireworm usually attacks the plant soon after it has been transplanted; generally starting near the roots, it bores its way into the plant and upward through the heart. Since the plants attacked do not die for some time, and, if the weather is cloudy and cool, do not even wilt, this insect is especially troublesome in securing a good stand of tobacco. The field may be reset several times, under such conditions, without any indications of damage.

The most effective means of controlling this insect consists of rotating the crops in such a manner that tobacco follows some crop, such as oats, which the insect does not use as a place to harbour; and fall ploughing followed by spring cultivation to keep down the grass and weeds and thereby starve it out before the tobacco is transplanted.

Cutworms.—The cutworm is also a serious drawback in obtaining a good stand of tobacco. This insect cuts the plants off near the surface of the ground and frequently necessitates several replantings of the crop.

The cutworm may be largely controlled either by preventive measures or by the use of poisoned baits. Fall ploughing after the 20th of September, about which date the moth stops laying its eggs, is very effective as a control measure. The use of a mixture consisting of 1 pound of Paris green, 50 pounds of bran, and one gallon of molasses is also beneficial. The bran and Paris green should be mixed while dry, then the molasses, and enough water is added to form a paste. This should be sown over the field broadcast several days before planting, care being taken first to go over the field and kill or cover up all weeds and grasses. Cloudy days are especially adapted to the use of this mixture as it does not dry out so rapidly and lose its attractiveness so soon on such days. If this mixture is applied after transplanting it is not so effective and frequently the tobacco plants are killed by coming into contact with the Paris green. The quantity of mixture given above is sufficient for one acre. Spraying the plants with a solution of arsenate of lead, at the rate of 1½ ounces of dry, powdered arsenate of lead per gallon of water, long enough before setting to allow the plant to dry, is also beneficial.

Fighting the hornworm.—Spraying the tobacco with arsenate of lead, as soon as the worms appear in appreciable numbers, is about the safest and most effective method of combatting the tobacco hornworm. Paris green is also good for this purpose; however, there is more danger of burning the tobacco with the Paris green; and too, if the tobacco is sprayed too frequently with the latter, there is a tendency for the leaf tissue to be killed just at the point where the leaf joins the stalk, and as a result the leaves break off much more easily at the time of harvest. The Paris green also washes off more readily and therefore loses its effectiveness more quickly than does the arsenate of lead.

Arsenate of lead may be applied either as a dry powder or in solution. It has been found that until the tobacco is about half grown, a solution consisting of 6 pounds of dry, powdered arsenate of lead per 100 gallons of water is most effective. The solution apparently covers the plant more completely and adheres to it longer than does the powder. After the tobacco becomes too large to get through it with the spray cart, the dust gun may be resorted to. For use in the dust gun, the dry, powdered arsenate of lead should be mixed with equal parts of dry, sifted wood ashes, or if they are not