

## Bronze Cutworm Is Causing Trouble In Fundy Marsh Land

Periodically Appears and Destroys Hundreds of Acres.

By Press and Publicity Division,  
Department of Agriculture,  
Ottawa, Ontario.

The bronze cutworm is a periodic insect enemy of grass on the marsh lands about the Chignecto isthmus at the head of the Bay of Fundy in the Maritime Provinces. At intervals of five or six years, outbreaks develop which destroy the grass on some hundreds of acres of meadow during the first three weeks of June. These outbreaks commonly last three years, appearing as scattered local outbreaks the first year, becoming more extensive in the second year and dying out in the third year from the effects of natural control agencies, parasitic enemies, predators, and diseases. Usually, they are confined to the area between the Tantramar and Aulac Rivers where there is a body of marsh land some 24 square miles in area. At longer intervals, 20 to 35 years, more extensive outbreaks occur, extending over all of the marsh lands along the several rivers which flow into the head of the Bay of Fundy. Local outbreaks occurred on the central body of the marsh land in 1921-22-23 and 1928-29-30, covering a few thousand acres.

An outbreak developed in 1935 and appeared in scattered infestations on not only the central body of marsh land between the Tantramar and Aulac Rivers but on the marsh lands along the Maccan, Nappan, La Planche, Missiquash, Memramcook and Petitcodiac Rivers in Cumberland County, N.S., and Westmorland County, N.B., and also on marsh lands near Riverside in Albert County, roughly, an area 30 miles by 20 miles in extent. A survey in June showed the grass on about 2,000 acres destroyed and in addition an equal amount was damaged by feeding.

Natural control features were not operative to any marked extent and a large number of moths developed on all the local infested areas to deposit eggs. The records for the months of September and October giving the numbers of eggs deposited showed that for 83 samples of sod taken from the meadows between Nappan, N.S. and Lutes Mountain, N.B., the general average was 32 eggs per square foot. On the central body of marsh land between the Tantramar and Aulac Rivers, 31 samples showed an average of 61 eggs per square foot, with some samples showing more than 20 eggs per square foot. Sixty per cent. of these eggs had hatched at the beginning of October, 1935, so that the prospects for a severe outbreak in 1936 would appear to be certain.

Control experiments were carried out by the Dominion Entomological Branch, and when the seriousness of the situation was ascertained, a tentative advisory committee, representing the Departments of Agriculture of the Dominion, of Nova Scotia, and of New Brunswick, was formed. Circulars giving the life history of the insect and suggested control measures were sent to 1,800 marshland owners.

In September, exhibits showing the life history of the insect and the nature of the injury caused were prominently displayed for two weeks in both Sackville, N.B., and Amherst, N.S. The advisory committee on control was definitely organized in October and has approved the cultural control features suggested in the circulars already sent out. The committee has also advised that further efforts be made through meetings, exhibits, and the co-operation of the local newspapers to warn all marshland owners in the area likely to be infested of the probable danger of loss in 1936, in order that they will be able to take steps to protect their hay land.

# AGRICULTURE

## Hardy Trees Used As Base For More Delicate Varieties

Apples Are Thus Produced by Means of Grafting.

By M. B. DAVIS,  
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Apple growing in every part of Eastern Canada is fraught with a certain amount of uncertainty and loss, due to the ravages of severe winters. Whilst some of this loss has been overcome by the selection of hardier varieties much of it is still apparent in the form of trunk injury and sun-scald. The variety of McIntosh has been particularly susceptible during the last two years and many trees of this variety are badly mutilated and serious affected as economic producers for years to come.

McIntosh has always been looked upon as one of our hardiest sorts, and rightly, as it came through this last severe test with a small amount of bud injury and very little top injury. With main limbs badly sun-scalded and large areas of bark on the trunk loosened, as a result of winter injury, it avails little to have the top portion of the tree come through in good condition.

To discard a variety like McIntosh on account of this weakness would be a calamity, since at present there is no other variety in sight which could actually replace it in our orchards and markets.

There is, however, available a method whereby much of this type of injury may be eliminated. This method is called double-working.

There are some very hardy varieties of long standing which do not show any appreciable amount of trunk injury or sun-scald in the crotches of the main limbs. By using these varieties for the purpose of building the main framework of the trees, and later budding or grafting to the variety desired, much future damage may be avoided.

The cost of this method is greater at the outset it is true; more time and labor are involved in constructing the orchard, but since permanency is better assured and losses bound to be reduced the increased cost is well worthwhile. The procedure is simply to bud or graft these hardier sorts on seedling root-sticks, permit them to grow in the nursery until the main limbs, four or five in number, have been produced and then either bud or graft in the nursery to the desired sort, or transplant to permanent location and do the budding or grafting later.

There are numerous very hardy varieties available, among them being varieties like Antonovka, Hiberna, Charlamoff and the still hardier sorts, Osman and Columbia. Of these, considerable is known of Antonovka and Hiberna as being suitable for top-working. They both make very good crotches and have proved to be hardy enough for our eastern fruit districts. Where vigor is essential, that is, a large and quick growing tree, Hiberna perhaps is the better. In addition it makes admirable crotches with nice right angles, which will not break down very easily. Either Charlamoff, Hiberna or Antonovka, however, should prove much superior to the main limbs of McIntosh and other varieties subject to bark splitting and crotch injury.

Generally speaking tomato diseases are not usually very serious, but there can be considerable loss due to leaf spot, fungus preventing maturing of late-formed fruit.

## WILD MUSTARD ERADICATION

Wild mustard, an insidious weed which grows prolifically throughout Canada on farms and waste places, is one of the commonest and most injurious of the mustard family. A single plant will produce from 15,000 to 20,000 seeds, and a single plant of tumbling mustard is credited with being able to yield 1,500,000 seeds. Eradication of mustard from badly infested land is very difficult as seeds lying several inches below the surface of the soil are capable of retaining their viability for many years without germination. Indeed, experiments have shown that mustard seeds can germinate after having been buried in the soil for forty years. Mustard seeds which have been ploughed under in previous years may be brought to the surface by subsequent cultural operations. In view of these and many other facts, a pamphlet dealing with the eradication of wild mustard has been issued by the Dominion Department of Agriculture, Ottawa, and may be obtained free on application.

## Goat Very Popular As Milk Producer In Mining Areas

Found Particularly Valuable in Grass-Grown Rocky Country.

By Press and Publicity Division,  
Department of Agriculture,  
Ottawa, Ontario.

Goat raising in Canada continues to expand in all the provinces. In Northern Ontario, particularly in the mining areas, the goat is coming more into prominence as a source of milk supply for the miners' families. Likewise in the Maritime Provinces, fishermen resident along rocky shores find the goat an economic asset. Indeed, Canada with a sufficiency of grass-grown rocky country producing an abundance of browsing fodder is admirably suited for goats, and it is to be expected that, as the mining and lumbering industries reach farther into the northland, the milk goat will follow settlement. Opportunely, at this moment, the Dominion Department of Agriculture has issued a booklet (Bulletin No. 177) giving full information concerning the goat industry in Canada and how best to rear goats. The Province of British Columbia has the greatest number of milk goats in the Dominion, due no doubt to the mountainous nature of the province and the mild climate of the west coast. The principal breeds of milk goats in Canada are the Saanen, Toggenburg, and the Anglo-Nubian. They appear to be hardy and suited to all climatic conditions of the Dominion, provided reasonable care is bestowed on them. In most of the other Provinces, goats are kept as a rule by truck gardeners and others living in the suburbs, but in the mining trail northward in Ontario and Quebec the goat is following the gold. The goat has been well-named the poor man's cow, for not only is its milk of high dietic value but every year in Canada sees an increase of commercial dairy products made from goat's milk.

## Wax Plucking Of Poultry Is Making Rapid Progress

Chief Reason For Popularity Is Its Cheapness.

By Press and Publicity Division,  
Department of Agriculture,  
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One of the reasons for the popular adoption of the wax plucking of poultry is that the process is not an expensive one. Recovery of 95 per cent. of the wax—a figure which can be realized without much difficulty—means a loss of about one pound of wax in the dressing of 40 average birds. The reclaimed wax may be used repeatedly. The reclaiming operation consists in simply melting down the pieces of wax, allowing the mass of wax and feathers to get quite hot, and then straining. A broad-bladed pliable knife, or even a flat stick, can be used to press the larger part of the residual wax out of feathers, pins, and other extraneous matter left in the bottom of the strainer. Slight changes do occur in the wax on long usage, but these will not be serious, states the bulletin recently issued on the use of wax in the plucking of poultry, and the farmer-operator will be able to use the wax almost indefinitely. Repeated melting and straining of the wax removes most of the dirt and keeps the mixture comparatively sterile. As the wax is used up, fresh wax may be added to keep up the volume. The bulletin may be obtained from the Publicity and Extension Branch, Dominion Department of Agriculture, Ottawa, Ontario.

## Potato Has A High Value As A Stock Feed, It Is Shown

Used To Take Place of Expensive Mill Feeds.

By Press and Publicity Division,  
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Ottawa, Ontario.

When the true value of potatoes as feed for livestock and poultry is realized, much larger quantities than at present employed will be used. With high prices for stock and poultry feeds and a surplus of potatoes in Eastern Canada, stock raisers near the plentiful supplies of potatoes have a good opportunity to reduce their feed bills by feeding potatoes. Other countries make much use of potatoes as stock-feed. In Germany, for instance, only 30 per cent. of the total potato crop is used for table purposes, and approximately 40 per cent. for stock feeding. On the other hand, in Canada 64.5 per cent. of the crop finds its way to the table and only about 11 per cent. for stock feeding. Stock raisers would be well advised to inform themselves on the proper methods of feeding potatoes in the rations to ensure the best results. In brief, potatoes are in fact "watered" carbohydrate concentrates. They may be used, therefore, as a substitute for barley and corn, as in the rations of pigs, in which case it is important to bear in mind that four pounds of potatoes are equal to one pound of cereal meal.

## FERNS NEED REST

In some cases the drying up of the fronds of hardy ferns suggests that the ferns are in need of a rest—all plants require a rest for a period similar to that which they have under natural conditions in the winter.

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## Only Best Stock Should Be Used In Poultry Breeding

Whole Future of Flock Depends on This Matter.

By GEORGE ROBERTSON,  
Central Experimental Farm,  
Ottawa, Ontario.

The mating of the breeding pen should be a matter of serious study, and careful consideration, for the success of future operations depends more on this than on any other phase of poultry work. Not only does next season's success depend on it, but it may seriously affect the work of the future years as well.

If trapnesting and pedigree breeding laws have been followed, full advantage should be taken of the progeny test, and males and females that have been proved to be breeders by the test should be used in future matings and the offspring, particularly the sons of those matings that have proven best retained.

For many years the endeavor in breeding has been largely along high egg production lines and in many cases not sufficient attention has been paid to breed type which is conducive to high table quality.

A drive has been inaugurated this year to try to improve the type of Canada's market poultry. (See publication 482, Farmer's Bulletin 2, Dominion Department of Agriculture). Stress should be laid on vigor, breed type and the qualities as outlined in the bulletin, without, however, losing sight of the egg-laying qualities of the flock.

The male is half the pen, and special care should be taken in his selection. He should be the son of a high-laying, large-egg hen, and should be well-grown, show good size and breed type, and above all he should be vigorous.

While vigor may be denoted in every section of the bird—the broad back, deep body, well set legs, and general action—nervous force, the paramount requirement in an egg breeding male, is indicated by a bright prominent eye set in a clean-cut face. This is the kind of a male that should give results when mated to equally carefully selected females.

It will pay those who have no such males to purchase them from careful breeders who have them.

A safe plan to avoid all danger of the bringing in of disease, is to purchase pedigreed hatching eggs or day-old chicks, and select the breeders from among the males raised from them.