

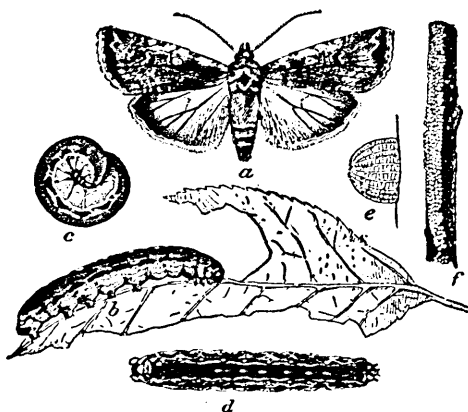
Cutworms on Golf Greens

By W. R. Walton

Bureau of Entomology, United States Department of Agriculture

Sodlands constitute the natural home of many of the most injurious species of cutworms inhabiting the United States east of the Mississippi River. It should not therefore cause surprise when they are found feeding on golf greens in large numbers. An instance of this kind is reported in this issue of the Bulletin, which occurred on the greens at the experimental farms, Arlington, Va., in which attention was focused on the matter through the useful agency of insectivorous birds. Fortunately the cutworm pest is one which can be rather easily eliminated in the great majority of cases by the application of simple poisoning methods, as herein described.

The annual or seasonal history of many common cutworms includes either one or two generations of the insects a year. The eggs are laid commonly on grass in middle or late summer, and the worms feed until partly mature during the late summer and autumn. Then they burrow into the soil, make a cavity or cell, and hibernate or sleep during the winter. In March or April they again become active and feed even more hungrily than in the fall. It may be seen from this program that where they have been found injurious in the fall, further injury may be expected in the spring unless successful poisoning operations were conducted in the fall.



Variegated cutworm (*Peridroma margaritosa*): (a) moth; (b) normal form of caterpillar, side view; (c) same in curved position; (d) dark form, view of back; (e) greatly enlarged egg, seen from side; (f) egg mass on twig.

The worms may be killed by spraying or sprinkling the infested turf with a solution of two pounds of powdered arsenate of lead in 50 gallons of water, or by the spreading of poisoned baits prepared in the following manner:

Wheat bran	50 pounds
Paris green or crude arsenic.....	2 pounds
Blackstrap molasses	2 quarts
Water	2 to 4 gallons
	or more as needed.

Mix the poison and the bran thoroughly together, in a dry state, add the diluted molasses, and stir vigorously until thoroughly mixed. Distribute this bait broadcast over the infested area. In case bran can not readily be obtained, middlings or alfalfa meal may be successfully substituted.

Where bran or other fillers for poisoned baits are prohibitively expensive or difficult to obtain in sufficient quantities, they may be diluted with equal parts of fresh hardwood sawdust. The formula for poisoned bait prepared in this manner is as follows:

Paris green or white arsenic.....	2 pounds
Fresh hardwood sawdust.....	25 pounds
Wheat bran	25 pounds
Molasses	2 quarts
Water	4 to 8 quarts
	or more as needed.

This mixture is not quite as efficient as the poisoned bait containing the entire amount of bran, but it has shown good results and may be used to advantage when necessary. Pine sawdust should not be used, as this seems to repel the insects.

Where only a small quantity of poisoned bait is required the following formula will be found most convenient:

White arsenic or Paris green.....	1 pound
Dry bran	1 peck
Molasses	1 pint
Water	2 to 4 quarts
	or more as needed.

It is often advantageous to allow the mash thus obtained to stand for several hours before using; this seems to result in greater effectiveness.

In areas known to be infested the distribution of this bait should be started early in the season so that the cutworms may be eliminated as quickly as possible. During the warm spring months cutworms do most of their feeding at night and burrow into the soil to the depth of an inch or two during the day; the bait will, therefore, usually be more effective if applied during the late afternoon or early evening hours.

Caution.—Poisoned bait should be distributed thinly. Domestic animals, including fowls, should be prevented from eating it. Arsenic and Paris green are poisonous to animals.

The United States Department of Agriculture receives about 15,000 letters a day at Washington. Most of these are requests for information on technical matters pertaining to agriculture and other work under the control of the Department, including the activities of the Weather Bureau, the Biological Survey, the Forest Service, the Bureau of Home Economics, and the Food and Drug Administration. The bulk of these inquiries are answered by printed circulars and pamphlets. About 30,000,000 publications of this kind are mailed annually by the Department in answer to inquiries. Less than half of these are requested by farmers. More than 1,000 news items are supplied annually by the Department to newspapers and other private publications. At least 3,500 persons in the country write agricultural news and feature articles, drawing chiefly on the Department of Agriculture for their information. At noon each week day a specialist of the Department broadcasts a timely talk over the radio, through the National Broadcasting Company, which has linked 39 stations for these daily programs from Washington. In addition, weather reports are broadcast daily by 215 stations. Market news is broadcast daily by 110 stations. Syndicate information obtained from the Department is broadcast by more than 150 stations. All told, 290 of the 610 broadcasting stations in the United States cooperate with the Department of Agriculture.