

meetings, as the growers were extremely interested in the living insects and were amazed at the number and kinds, both beneficial and destructive, which were collected from a few sweeps of the net. Progressive growers will probably use these boxes in order to determine pests present, since the new and specific sprays have been developed. The entire control program will eventually change from standard practices to particular treatments against certain pests, timed by their first

appearance, as determined by the Collecting Box.

The box is 8"x13"x11". The insect net is emptied by inverting it into a hinged trap door at the back of the box. The liberated insects go toward the light from the glass jar at the opposite end. Damaged specimens are unable to fly or crawl into the jar, and only perfect specimens are collected. The top is provided with a handle and is also hinged in order to empty contents and permit cleaning.

## DDT AS AN INSECTICIDE AGAINST THE ONION MAGGOT<sup>1</sup>

By

J. A. Munro, Entomologist

**DDT as an Insecticide Against the Onion Maggot** The onion maggot was especially troublesome in the Fargo area in 1945. At the request of onion growers, an examination was then made of a few plantings. Results showed for four field plantings an average of 6 per cent of the plants infested, but of thirteen small garden plantings, an average of 28 per cent of the onions contained maggots. The samples for examination were taken at random from well distributed points throughout the plantings.

There was slight variation in the maggot incidence in the samples examined from field plantings, but wide variation in samples taken from gardens. This is probably due to a combination of factors including (1) the wider assortment of varieties grown in the small garden plantings, and (2) the fact that the small plantings were in the city where the closer proximity of gardens probably contributed to heavier infestations.

The heaviest infestation encountered in the small garden plantings examined, was a victory garden planting which included both the "Shallot" onions and "Bermudas" grown from seedlings. The "Shallots" were apparently 100% infested, while the nearby planting of "Bermudas" showed less than 10%.

To test the effectiveness of DDT, it was decided to treat one-half of the plot of "Shallot" onions and leave the balance untreated. The treatment given consisted of a suspension of 1 ounce of 25% DDT in one gallon of water. The mixture was applied from a garden sprayer (with the nozzle removed) to the base of the plants, as a coarse stream. Only enough spray was applied to dampen the

<sup>1</sup> *Hylemya antiqua* (Meig.)

soil at the base of each plant. The application was made promptly after the maggots were first observed—before the plants began to “go down”.

Within four days after the application of the DDT, it was apparent that the damage to the treated plants had been arrested; the plants in the untreated portion of the plot, however, showed rapid deterioration. A final examination made three weeks following the application of the DDT suspension showed 90 per cent survival of the onions in the treated portion of plot as contrasted with a 12 per cent survival in the untreated portion. It was also noted for the surviving plants, that the treated plants showed a marked increase in growth over the untreated survivors. At the examination made three weeks following the treatment, a measurement of the surviving plants showed the treated plants to average 16 inches high, while the untreated survivors averaged 11¼ inches. It was apparent that the more vigorous growth and greater survival of the treated plants was due to the DDT destroying the maggots. The results, while of a preliminary nature, point the way to more effective control of a pest which has at times caused serious loss to growers.

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## The NDAC Insect Collection

By

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**T**HE value of a state collection of insects has been emphasized in an article by Dr. H. S. Telford in the November, 1940 issue of the Bimonthly Bulletin. A collection serves the entomologist in the identification of insects in somewhat the same manner a dictionary does in the definition of words.

According to Z. P. Metcalf<sup>3</sup> 1,500,000 species of insects have been described from 1758 to date. No one person can ever know but a small portion of this multitude. A reference collection of authentically determined insects is essential for the entomologist of an Agricultural College so that he may identify the many insects being constantly sent to him for determination. A few examples of the need for a reference collection follow:

1. In Plant Regulatory and Nursery Inspection Work a lack of knowledge may permit entry of insect pests into new territory, or inspectors may condemn a shipment which contains only harmless insects.
2. Certain insects transmit diseases of man; others are only annoying. A reference collection helps in settling the question.
3. Much money may be spent in an attempt to control harmless insects which may superficially resemble injurious species.

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<sup>3</sup> Entomological News Vol. 51: 219-222. 1940.