A Method for Collecting Feather Lice (Mallophaga)

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Source: *Journal of the Kansas Entomological Society*, Apr., 1967, Vol. 40, No. 2 (Apr., 1967), pp. 192-194

Published by: Kansas (Central States) Entomological Society

Stable URL: https://www.jstor.org/stable/25083619

A METHOD FOR COLLECTING FEATHER LICE (Mallophaga)[1]

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ABSTRACT

An efficient field method for rapidly collecting feather lice from large numbers of dead or living birds is described. Ethyl acetate vapors in polyethylene bags are used as a fumigant.

An improved field technique for collecting Mallophaga is presented in this paper. Developed for living passerine birds that were banded and released unharmed, this method was also used successfully on recently killed waterfowl brought into a public hunter checking station. The present method avoids most of the deficiencies inherent in previous collecting techniques.

Peters (1928) hand picked lice from recently killed birds' plumages, and brushed or combed them from museum bird skin plumages. Wilson (1928) wrapped freshly killed birds in cotton which entangled the lice as they left the host.

The use of fumigants for ectoparasite collecting was first described by Dunn (1932), who subjected restrained animals to chloroform vapors and then combed the parasites from the pelage or plumage. Harshbarger and Raffensperger (1959) exposed chickens to methyl bromide for three hours to kill both lice and chicken, and then fluffed the feathers to dislodge the lice. An insecticide powder, dusted through the feathers, was suggested by Malcomson (1960). Recently, Clay (pers. comm., 1964) and Dalgleish (1966) have recommended a silica aerogel powder insecticide, Dri-die®. (Registered trade name. Silicon dioxide plus ammonium silicofluoride to extent of 3% fluorine.)

Beer and Cook (1957) described an efficient method by which the bird's skin was liquefied in a heated buffered solution of distilled water and trypsin. The ectoparasites were filtered from the solute.

Each of these techniques has one or more of the following disadvantages: requires the bird's death, inapplicable to rapid handling of large numbers of birds, inefficient, unsuitable for field use, or admits high contamination risks, e.g., lice straggling from their natural host species to another host.

I am indebted to Dr. Roland L. Fischer, Professor of Entomology at Michigan State University, for his guidance during this work and for helpful criticism of an earlier draft of the manuscript. Appreciation

[1] A portion of a thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Entomology at Michigan State University.

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is expressed to Dr. C. T. Black and his staff at Rose Lake Wildlife Experiment Station, Michigan Department of Conservation, East Lansing, for their assistance and the use of the station facilities.

MATERIALS AND METHODS

This method was based on the temporary containment of either living or freshly killed birds in an ethyl acetate atmosphere, the fumigating agent for the lice. A dead bird and several ethyl acetate saturated cotton balls were placed in a polyethylene bag. In the case of a living bird, the head was allowed to protrude from the mouth of the bag which was held tightly about the bird's head just behind the eyes. Satisfactory vapor penetration through the plumage of dead birds was achieved in about five minutes, whereas only two or three minutes were required for living birds due to their struggling.

The bird was removed from the bag, placed on a large white enamel pan, and the feathers were brushed with an artist's oil brush. The proper brush size depended upon the size of the bird treated: a Grumbacher no. 14 (4 cm wide) brush was satisfactory for duck-size birds. To reduce contamination risks, a careful examination for lice clinging to the brush bristles was made after each bird was treated.

A thorough examination for Mallophaga was made of the pan and the inside of the polyethylene bag, which was cut and opened flat to facilitate examination. All lice were picked up with fine-tipped forceps and transferred to 70 per cent ethyl alcohol for storage in dental ampules. Mallophaga from each bird were stored separately.

MODIFICATIONS

Rapid processing, without attendant increases in contamination risks and inefficiency, was necessary when many birds were obtained simultaneously. Output was greatly increased by handling the birds on a production line basis, i.e., one bird at each operational stage. Foreign particles that might be confused with lice were rinsed from the pan with hot water after each use. Considerable field time was saved by refrigerating the unexamined plastic bags, with the proper data labels inside, until a more leisurely examination of their contents could be made.

Tedium in the field was reduced by a data labeling innovation. A series of 3 by 5 inch file cards was consecutively numbered. Each number was inked in triplicate in the upper left corner of the card. When a bird was examined, one of the three numbers was detached and put in the plastic bag if the bag was to be examined later. The second of the matching numbers was removed and inserted, with the lice from that bird, in the ampule. The third number was left on the card; and the bird's species, age and sex, and the date and locality of collection were then added in ink.

Raptors and other large, powerful birds must be restrained while

in the polyethylene bag. One inch wide gauze strip is recommended for restraining the wings and legs of such birds.

As many as thirty dead waterfowl, or ten living passerines, have been successfully processed in one hour with this method. It is particularly applicable for use on living birds, and enables a single operator to rapidly process several birds simultaneously in the field.

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THE FALL WEBWORM, *HYPHANTRIA CUNEA*, ITS DISTRIBUTION AND NATURAL ENEMIES: A WORLD LIST (Lepidoptera: Arctiidae)[1]

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ABSTRACT

The fall webworm, *Hyphantria cunea* Dr., has appeared in Europe, Japan and Korea in recent years. In its new habitats, it has found suitable host plants and is not hindered by its native parasites and predators. Consequently, there is international interest in the natural enemies of the fall webworm and their effect on suppressing its numbers. The number of species of parasites and predators known to attack the fall webworm in Asia, Europe and America is approximately 175. Of these, *Rogas hyphantriae* (Hymenoptera: Braconidae), has been recorded only from the fall webworm.

[1] Supported in part by NSF Grant GB-3941. Published with the approval of the Director, Arkansas Agricultural Experiment Station. Accepted for publication September 15, 1966.

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[4] Special acknowledgement is given to Dr. W. H. Anderson, Chief, Insect Identification and Parasite Introduction Research Branch, and to Dr. V. Delucchi, Entomologist, FAO, and their associates for reviewing the names of the species listed in Figure 2.

JOURNAL OF THE KANSAS ENTOMOLOGICAL SOCIETY **40**:194–202. April, 1967.