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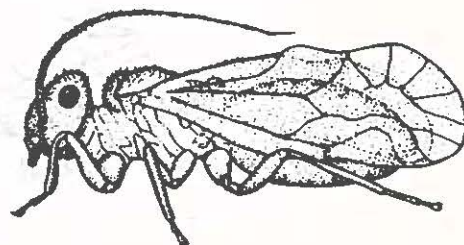
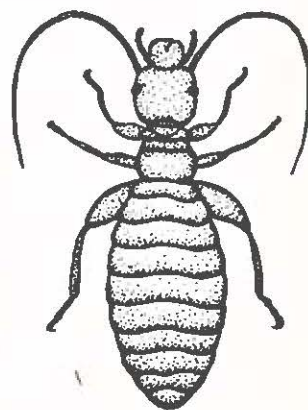
BOOKLICE OR PSOCOPTERA

Booklice are small, almost microscopic, insects that are grouped together in the insect order Psocoptera. Other members of this order are the "barklice". Although there are many species of psocoptera, most people see only a few species that occur in houses or buildings. Most of the species found in buildings are wingless, and because they often live among books and papers, they are usually called "booklice". The term "lice" in the names "booklice" and "barklice" is somewhat misleading, for none of these insects is parasitic, and they are not louselike in appearance. The majority of the psocopterans live outdoors, and occur on the bark or leaves of trees or shrubs. A few species live indoors, but rarely cause any damage beyond being a nuisance to homeowners!

Psocopterans feed on molds, fungi, cereals, pollen, fragments of dead insects or other similar materials. Booklice (in houses) are frequently found associated with old books and papers. Booklice are very common in libraries, paper storage warehouses, packing and shipping warehouses that contain a lot of cardboard boxes, accounting and billing offices, large secretarial offices, and other places in which large quantities of paper are stored or used on a daily basis. In houses these small insects can be found infesting cereals, grits, flour, and grain in the kitchen or



INSECT NOTES



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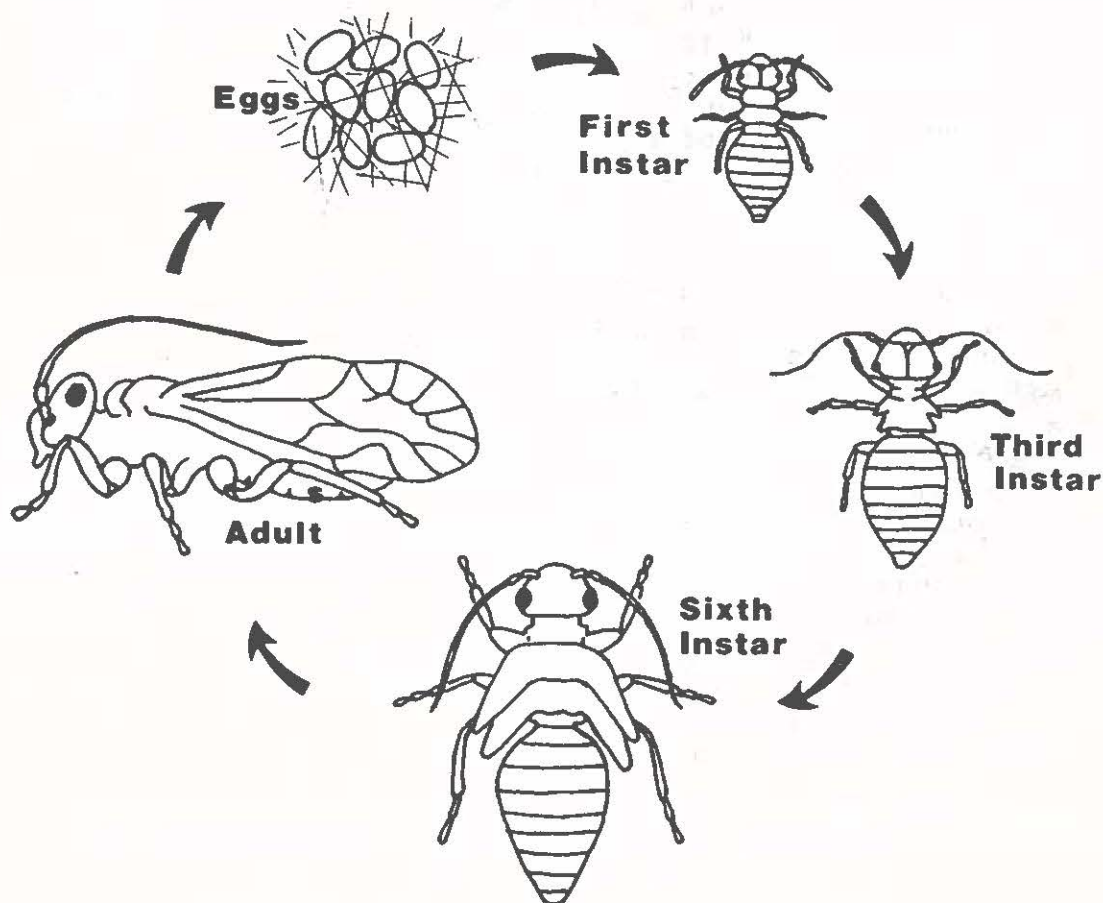
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basement. They can be very common in the late summer when temperatures and relative humidities are high.

The most favorable environment for booklice is one of high temperature and relative humidity. The eggs are laid singly or in clusters and are often covered with a silken web. Most species pass through six nymphal stages, and time between egg and adult can range from 30 to 60 days--depending on the environment.

Control. These insects are probably found in every house in eastern and southeastern U.S. They are usually present in small numbers and go unnoticed. However, when conditions are favorable, and there is adequate food available, Booklice can become numerous and a nuisance. There are a few instances in which these small insects were the cause of delusory parasitosis, that is people thought that these tiny insects were causing bites and skin rashes. In fact, booklice do not bite humans.

Adjusting the environment is the first step in controlling booklice. If there are unnecessary collections of books or papers--remove them!, especially if they are in the basement or other damp storage area. Reduce the relative humidity by heating the environment for several days (over a weekend if a commercial establishment). If these methods fail to give adequate control, the use of aerosol insecticides in areas booklice have occurred will be effective. Whole-house spraying is not necessary.



LARDER BEETLES IN HOUSES

The larder beetle is often found in houses--and not just in the larder! (the kitchen). This beetle is a member of the carpet beetle family Dermestidae; however, the larder beetle, Dermestes lardarius can feed on a great variety of materials--not just carpets. They will feed on any stored animal or plant products, such as leather, insect, bird, and mammal specimens, cured meats, cheese, tobacco, dried fish meal, and a few things we can't even mention!

Outdoors the life cycle of this insect is regulated by the seasons, indoors it may breed continuously throughout the year. Eggs are laid in batches of 6-8, with the total per female being about 200. The larvae are dark colored and covered with dark brown hairs. The larvae pass through five or six stages during the 35 to 80 days of their life. The larvae have a strong tendency to remain in dark places. Just before the larvae pupate they begin to migrate, and are often encountered by homeowners at this time. These older larvae often bore into materials such as wood, cork, or insulation looking for a place to pupate. The pupal period lasts about 15 days. The adults mate soon after emerging and eggs are laid near a food source.

Control. Identifying and eliminating the food source is the first step in controlling these pests. Larder beetles found in and around the kitchen may be infesting stored food, larvae or adults found in an upstairs room or attic may be infesting a dead animal. Consider all the possibilities for food when looking for an in-house infestation site. Applying aerosol chemicals in areas where larvae are found may provide some control. However, larvae do travel when they are full grown and the place they are sited may be far from the actual food source!

SOLDIER BEETLE LARVAE

The larvae of soldier beetles are on the move this time of year. The small (half inch), brown larvae have well-developed legs, and prominent mouthparts. They feed on other insects found in the grass surrounding houses. The adult beetles are yellow and black and usually go unnoticed. In the fall the larvae migrate toward buildings (for the heat?), apparently looking for a place to overwinter. They can occur in great numbers, and cause quite a stir! These larvae frequently show up on patios and sidewalks around houses. They will not infest the house or bite humans. If control is needed, 2% carbaryl (Sevin) will be effective.

NATIONAL GYPSY MOTH ANNUAL REVIEW

The 1986 annual meeting of the National Gypsy Moth Management Board will be held December 1-4, at the Omni International Hotel in Norfolk. Recent meetings have been in Columbus OH (1985), Charleston WV (1984), and Albany NY (1983). This year the Annual Review is being co-hosted by VDACS, VDF, and VCES. Approximately 200-250 have attended the meetings.

The meeting is open to anyone interested in or working with gypsy moth programs. The agenda includes reports and up-dates of research, suppression programs, methods improvement, status of infestations, and related subjects. Announcements of the meeting were distributed to past attendees on October 1.

If you wish to attend the Annual Review, contact Daniel J. Schweitzer; Virginia Department of Agriculture and Consumer Services; P.O. Box 1163; Richmond VA 23209 (Telephone: SCATS 786-3516) for an announcement and pre-registration materials. The pre-registration deadline is November 14. The program agenda has not yet been sent out, but will be soon to those receiving announcements.

Since Insect Notes is distributed only to Extension Unit Offices, agents should inform gypsy moth coordinators and others involved with local programs of the forthcoming Annual Review.

J. A. Weidhaas