



Booklice and their Relatives (Psocoptera)

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Do You Know?

- Although some species resemble lice, booklice and their relatives are not true lice.
- Booklice do not feed on book bindings or glue; they feed on mold and other fungi, which are sometimes present in books.
- Eliminating sources of mold will help control booklice. Mold growth can be discouraged by decreasing humidity and increasing airflow.

Booklice, barklice, moldlice, and dustlice are members of the order Psocoptera, which contains about 3,200 species worldwide. About 30 species from the booklice family, Liposcelidae, occur in North America.

BIOLOGY

Booklice are flat, pale, yellowish or grayish-white, soft-bodied, and 1-4 mm long (Fig. 1). The head and abdomen are large relative to the thorax. They have long, threadlike, segmented antennae, chewing mouthparts, and protruding eyes (Fig. 2). Booklice are wingless. Other psocids are often rounded and may be wingless or have one or two pairs of wings.

Booklice and their relatives are not true lice, although some species resemble lice. True lice are parasites of animals. Many, but not all, species reproduce parthenogenetically, meaning that they are all females that do not require fertilization by males.

The eggs are white ovals that may be covered with a crust, silk, or debris. Eggs are laid near a food source, singly or in clusters. Depending on species, the life cycle of booklice can be 4 weeks to 2 months long, with 1-8 generations per year. Under ideal conditions, a single generation may be completed in as few as 25 days.



Fig. 1. Adult booklice.¹



Fig. 2. Adult booklice feeding on moist bread.²

HABITS

Psocids prefer warm, damp conditions. They may live indoors or outdoors. Barklice live outdoors, where they mostly feed on algae, lichen, and organic debris.

Booklice live indoors, where they feed mainly on mold and other fungi. Although they are sometimes thought to feed on glues or bindings of books, they actually feed on molds within the books. They can also occur in rugs, stored foods such as grains, and other damp items, including construction materials (Fig. 2). When booklice are found in stored grains, it is an indication that the grain is too warm and moist. Booklice are usually considered pests more because of their presence than because of their damage. They do not bite or transmit disease.

MANAGEMENT

The first step to control is reduce food sources. Limit conditions that promote mold growth by decreasing humidity and increasing airflow. Products designed to decrease moisture and/or control mold and mildew, such as dehumidifiers, moisture absorbers, or mold inhibitors (all available at home improvement stores) may help. Clean up existing mold as much as possible. Remember you may not actually be able to see the mold. To prevent infestation, foods may be stored in tightly sealed containers or in the freezer.

Because booklice are harmless and cause little damage, insecticides are rarely used for their control. If an insecticide is required, be sure to follow the instructions on the label. Be cautious about using insecticides indoors, especially in food prep areas or if the insecticide has a long residual period. Use insecticides containing pyrethrins, cyfluthrin, or lambda-cyhalothrin that are labeled for use against booklice or "creeping, crawling insects." Make sure that the insecticide used is labeled for use indoors.

ADDITIONAL RESOURCES

- Shettlar, D. 2009. Booklice and Psocids. The Ohio State University Extension No. HYG-2080-09, http://ohioline.osu.edu/hyg-fact/2000/pdf/hyg_2080_09.pdf.
- Koehler, P. G., D. Branscome, and F. M. Oi. 2009. Booklice and Silverfish. University of Florida IFAS Extension, Publication No. ENY-225, <http://edis.ifas.ufl.edu/ig094>.

¹Image courtesy of Mario David Bazan, BCE, <http://bugguide.net/node/view/284213>.

²Image courtesy of David Shettlar, The Ohio State University.

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