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Psocids: Barklice and Booklice

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Description

Psocids (Order Psocodea) are small, oval insects with soft bodies that usually measure only several millimeters long (<3/16 of an inch). Psocids generally occur in shades of brown, black, or pale colors; some have distinctive mottled or striped markings. They have long, thin legs and antennae, a somewhat bulbous head with prominent eyes, and the thorax may appear "humpbacked" (Fig. 1). In general, adults have membranous wings that are held over the body in a tented position (Fig. 2), but in some species the adults remain wingless or have very small wings.

Figure 1. Typical psocid appearance (Mohammed El Dimir, Bugwood.org).

Despite being in the same order as parasitic lice and having "lice" in their common name, barklice and booklice are not parasitic and do not harm plants, animals, or people. For information about lice on humans, see Virginia Cooperative Extension factsheets on body lice and crab lice. Psocids graze on mold, yeasts, algae, fungi, and decaying plant matter with their chewing mouthparts. Psocids do well in high-humidity areas that support the growth of their food.

Figure 2. A winged barklouse (Jessica Louque, Smithers Viscient, Bugwood.org).

Life Cycle

Psocids have an incomplete life cycle with egg, nymphal, and adult stages. Nymphs largely resemble the adults, but they must grow and molt multiple times before reaching the adult stage. A few species give live birth to their young.

Damage

Psocids found on trees are called barklice. Homeowners may be alarmed by large numbers of barklice on the trunks and branches of their trees (Fig. 3). Some psocids live in large communal groups that may sway in synchronous movement when disturbed. Other species live under silk webbing that they spin from their mouths. They feed on fungi and decaying plant matter under the protection of thick silk sheets on the trunk and branches. The webbing may be highly noticeable, but it is fragile and will deteriorate on its own (Fig. 4). No control measures are necessary for any species of barklice as they pose no harm to the tree itself.

Some psocids can be pests of stored grain products. They reduce food quality by feeding and contaminating pantry goods, but the accidental consumption of psocids is unlikely to be a medical concern. Psocids in stored products indicate moisture and fungal problems in the facility. Psocids feeding on the starches found in books, paper goods, fabric, and similar materials are called booklice. They can damage these items over time and are pests in museums and libraries. Indoor infestations of psocids indicate a problem with high moisture levels and a lack of air circulation.

Figure 3. An aggregation of striped bark lice (David Cappaert, Bugwood.org).

Figure 4. Heavy silk webbing produced by barklice on tree trunk (Alan Isler, Georgia Forestry Commission, Bugwood.org).

Habitat and Distribution

Psocids are found wherever temperature and humidity levels support the growth of their food. Outdoors they are found on tree trunks and branches, in dead foliage, under bark, and on rock outcrops. Indoors, they are found among undisturbed books, papers, and cardboard boxes, as well as in stored grain products in the pantry.

Control

Pscocids infesting stored pantry products can be controlled by sanitary measures. In general, keep grain products dry and in sealed containers to prevent psocid contamination and limit their spread. If an infestation of psocids is found, remove all items from the infested location and thoroughly clean the shelves. Infested products can be thrown away or salvaged. Salvage them by baking in an oven for 30 minutes at 350°F, or by storing them in a deep freezer for 4 days at 0°F. Once the products are treated by heat or cold, place them in containers with a tightly sealing lid.

Barklice do not cause any damage to trees and do not require any control measures, even if there are large numbers of psocids and heavy webbing on the trees. Infestations of books and paper goods signal a problem with indoor moisture levels. Reducing humidity levels and increasing airflow will help reduce booklouse populations.

Revised

Patricia L.S. Wooden, August 29, 2026.

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