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# Psocids: Barklice and Booklice

Psocodea: various families

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**Description** Psocids are small, oval insects with soft bodies that usually measure only several millimeters long. A psocid measuring 6 mm (0.25 inches) long is rather large for this group of insects. Psocids generally occur in shades of brown, black, or pale colors; some have distinctive mottled or striped markings. Typically they have long thin legs and antennae, a somewhat bulbous head with prominent eyes, and the thorax may appear "humpbacked." In general, adults have membranous wings that are held over the body in a tented position, but in some species the adults remain wingless or have very small wings. Despite having "lice" in their common name, bark lice and book lice are not are not parasitic and do not cause harm to plants or people. They graze on mold, yeasts, algae, fungi, and decaying plant matter with their chewing mouthparts. Psocids do well in areas with high humidity that support the growth of their food.


Adult psocid, *Metylophorus novaescotia*. (Jessica Lawrence, Eurofins Agroscience Services, Bugwood.org)

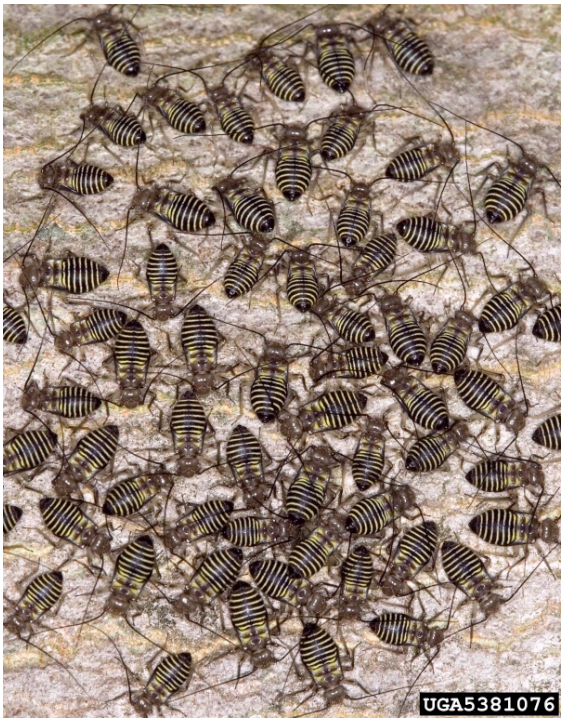
Typical "booklouse" psocid. (Texas A&M Agrilife Extension)

**Life Cycle** Psocids have an incomplete lifecycle of 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 the sight of large numbers of barklice on the trunk and branches of their trees. Some psocids live in a large communal group that may sway in a 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 very visible and unsightly, but it is

fragile and will deteriorate on its own. No control measures are necessary for any species of barklice as they pose no harm to the tree itself.


Heavy silk webbing produced by barklice on base of tree. (Alan Isler, Georgia Forestry Commission, Bugwood.org)




Aggregation of bark lice, *Cerastipsocus venosus*, on a tree. (David Cappaert, Michigan State University, Bugwood.org)

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 and their associated debris is unlikely to be a medical concern. Psocids feeding on the starches found in books, paper goods, fabric, and similar materials are called booklice. They can damage these items over time, so they are of importance to museums and libraries. Indoor infestations of psocids indicate a problem with high moisture levels and a lack of air circulation.

**Habitat/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, and under bark; in the thatch of grasses; and on stone outcrops and rock walls. 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 contamination by psocids and to 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°, or by storing them in a deep freezer for 4 days at 0°. Once the products are treated by heat or cold, place them in containers with a tight 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 air flow will help reduce populations of booklice.

**Note** The parasitic lice (the Phthiraptera) have recently been placed within the Order Psocodea with the barklice and booklice. Parasitic lice do not infest plants or stored products. For information on lice on humans, see Virginia Coooperative Extension Factsheets on body lice and crab lice.