

Silverfish and Firebrats



Wizzie Brown*

Silverfish and firebrats can be nuisances in homes, consuming and staining books, fabric, foods, and wallpaper. These insects prefer starchy foods such as flour, rolled oats, paper, or glue.

Significant damage occurs only if a large population is present for a long period. Damaged paper may have notched edges or holes. Book bindings can have ragged edges or marks. Items can be stained by fecal material, cast skins, or scales.

Silverfish and firebrats belong to the insect order Thysanura. These insects differ from most other insects by continuing to molt, or shed their exoskeleton, throughout their lives.

Biology and description

Silverfish and firebrats have long, flattened bodies that taper at the end like a carrot. They have chewing mouthparts, long antennae, and three tail-like



Figure 1. Silverfish, *Leptismia saccharina* (Linnaeus).

projections at the end of the abdomen. They have no wings. Both species have fine scales that cover their bodies. Silverfish and firebrat immatures look like the adults, only smaller.

Silverfish and firebrats typically run quickly and are active mostly at night. In homes, they are often found in closets, in attics, or near bookcases; they hide behind baseboards or casings around doors and windows.

The silverfish (Fig. 1), *Leptismia saccharina* (Linnaeus), is probably the most damaging pest species of Thysanura. Silverfish prefer temperatures of 70 to 80 degrees F with a relative humidity of 75 percent to 95 percent.

Females lay eggs singly or in batches either daily or at irregular intervals, depending on how much food is available. If temperatures are low—about 70 degrees F—the eggs will hatch in about 40 days; in temperatures of about 90 degrees F, they will hatch in about 20 days.

A silverfish may molt up to 60 times in its lifetime, which is usually about 2 to 3 years.

The firebrat, *Thermobia domestica* (Packard), is like a silverfish but is mottled brown. Firebrats prefer temperatures to be over 90 degrees F; they are often found near ovens, dryers, or water heaters.

Eggs are laid in clusters with an average of 50 per cluster. Under good conditions, the eggs hatch within 13 days, and the nymphs begin their development.

A firebrat may molt 50 to 60 times during its lifespan, which can be up to 2 years in warm areas.

*Extension Program Specialist—Integrated Pest Management, The Texas A&M University System

Control

Although sanitation can help prevent infestations of silverfish and firebrats, it cannot be used alone to eliminate infestations. Remove old books, magazines, and newspapers. If fabrics have been stored for long periods, inspect them for damage or infestation. Store books or fabrics in sealed plastic containers.

To kill silverfish in valuable books or papers, seal the items in plastic bags and place them in the freezer for several days.

Clean closets regularly to remove hiding places. Vacuum often and clean up spilled food or drink immediately. To avoid introducing an infestation, inspect any items brought into the home, especially those that have been in storage. Use sealant to exclude any cracks and holes on the outside of structures that could allow silverfish and firebrats to enter the home.

In areas of infestation or where books are stored, reduce humidity by using air conditioning units, fans, or dehumidifiers. Repair plumbing leaks to cut off water sources for these insects.

Target insecticide treatments to cracks, crevices, closets, attics, and areas around baseboards. For large infestations, small holes may be drilled in walls to treat the wall void.

Look for products labeled to control silverfish,

firebrats, or bristletails. Natural active ingredients include d-limonene, clove oil, thyme oil, soybean oil, boric acid, or diatomaceous earth. Synthetic active ingredients include bifenthrin, lambda-cyhalothrin, cypermethrin, permethrin, cyfluthrin, deltamethrin, and carbaryl.

Formulations of these products may be baits, dusts, or aerosols. Use them in attics, cracks, crevices, wall voids, and other areas that are inaccessible to children and pets. Use dusts carefully, and do not inhale them during application.

The services of a pest control operator may be needed if the population is large, persistent, or hard to find.

Insecticide label clearances are subject to change, and changes may have occurred since this publication was printed. The pesticide **user** is responsible for the effects of pesticide residues on plants or household goods, as well as problems arising from contamination of neighboring properties or plants.

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