



## Silverfish and Firebrats

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Gray silverfish (Pest and Diseases Image Library, Bugwood.org)



Firebrat (Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org)

**Description** Both firebrats and silverfish (Order Zygentoma) are soft, flattened insects without wings and measuring approximately 0.5 to 1 inch long (12.7-25.4 mm). Silverfish are silvery gray in color while firebrats are darker with silver markings. Both insects have long antennae and three filaments extending broadly from the tip of the abdomen.

**Damage** Firebrats and silverfish are considered nuisance pests in buildings. Indoors these insects will feed on almost anything, including dried meats, flour, starch, paper, glue, cotton, linen, rayon, silk, sugar, cereals, and even molds in a damp bathroom. They can contaminate food and damage paper items and textiles, but mostly they are harmless. Outdoors these insects will eat lichens.

**Habitat/Distribution** Silverfish and firebrats are cosmopolitan insects found worldwide. Both insects require humidity to survive, but firebrats prefer higher temperatures than silverfish. In buildings, firebrats are often found near boilers and furnaces while silverfish are commonly seen in attics, basements, garages, bathrooms, and other areas with lower temperatures. Both silverfish and firebrats are nocturnal insects and move swiftly. Homeowners may not be aware

of the presence of these pests until they are found trapped in the bathtub or sink. Outdoors these insects live under rocks, bark, and leaf mold, or in the nests of birds, mammals, and ant colonies.

**Control** Decluttering the house by removing old papers, boxes, books, and clothes will help remove food and hiding places for these insects. Sanitation alone will not eliminate an infestation, although it may limit new ones from starting. Use an aerosol insecticide with residual activity to help control these pests. Spray all typical hiding places such as in cracks and crevices, in cupboards, and around water pipes. Diatomaceous earth or boric acid powders can be sprinkled in areas where silverfish or firebrats are seen; follow the directions on the labels of these products. Consider using a dehumidifier for damp basements and keeping pantry items like flour and rice in storage containers with tight lids.

**Life cycle** Adult female silverfish lay small eggs in cracks and crevices in batches of up to 50 eggs at a time. Females normally lay fewer than 100 eggs during a lifespan of two to eight years. Under ideal conditions, eggs hatch in two weeks but can take up to two months to hatch. Young nymphs look very much like the adults, only smaller. Several years are required before they are sexually mature and they must mate after each molt if viable eggs are to be produced. Populations do not build up rapidly because of the small number of eggs produced by each female and their slow development rate. A large infestation of silverfish usually means a building has been infested for some time.

Female firebrats lay eggs only when the temperatures are above 90°F (32°C). Firebrat nymphs look very much like a small version of the adult. Nymphs cannot survive temperatures below freezing or above 112°F (44°C). A female firebrat usually lays fewer than 100 eggs in her lifespan of 1 to 1.5 years. Unlike silverfish, firebrats can develop from egg to sexually mature adult in 11 to 12 weeks under ideal conditions.

**Interesting Facts** Silverfish can live for almost a year without any food.