

Silverfish and Firebrats

Phillip E. Sloderbeck
Entomologist
Southwest Area Office

Introduction

Silverfish and firebrats belong to the order *Thysanura* or bristletails. Bristletails are primitive insects that owe their survival to their secretive life in the soil, under stones, in leaf litter, and in homes and buildings. They hide during the day and are active at night. Homeowners find bristletails when objects are moved and the insects scatter to seek a new hiding place. They also are noticed when they crawl into a bathtub or sink and cannot escape. These insects feed on a variety of materials including paper; glue and paste in book bindings; wallpaper paste; starch in clothing; cotton, linen, and rayon fabrics; wheat flour; breakfast cereals; dried meats; and even dead insects. Bristletails are a nuisance pest, but they also consume food and contaminate it with their body scales and droppings. They can damage some natural and synthetic fi-



Common silverfish



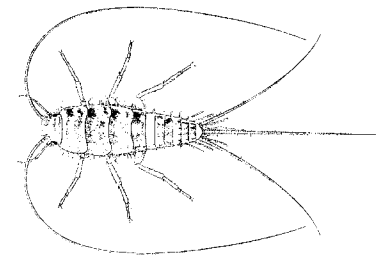
Four-lined silverfish

bers and they may leave yellow stains, especially on linens. They can be a problem in libraries and other places where books, documents and papers are stored.

Silverfish

Silverfish have a distinct body form called thysanuriform. They are spindle-shaped: broad at the front end and taper to the rear. They are wingless and covered with scales (except when very young). The name silverfish or fishmoth comes from their fish-like appearance. They have long, slender antennae and three long, antennae-like appendages at the tapered end of the body, hence the name bristletail. Immature silverfish look exactly like adults, except for size. Adult silverfish are $\frac{1}{2}$ to $\frac{3}{4}$ inch long. There are three species of silverfish that commonly infest houses: the common silverfish (*Lepisma saccharina*), the gray silverfish (*Ctenolepisma longicudata*) and the fourlined silverfish (*Ctenolepisma lineata*).

The common silverfish lives in damp, cool places. In homes, it is generally found in the basement, around the plumbing, and beneath or behind cabinets in the bathroom or kitchen. Gray silverfish can be found throughout the house even in dry areas such as crawl spaces and in the attic. The fourlined silverfish may be found in extremely dry or moist conditions inside and outside the home. These insects have a long life span. Some live



Firebrat

as long as seven years. It may take up to two years for silverfish to become adults. Silverfish can withstand long periods of starvation. Some specimens have been reported to live 307 days without food. The female silverfish lays between 50 and 150 eggs during her lifetime. The eggs are laid singly or in small groups and are either randomly distributed or in concealed places near food. The eggs hatch in three to six weeks depending on temperature. The first nymphal instar lasts seven to 10 days and successive molts occur every two to three weeks depending on temperature.

Firebrats

The firebrat (*Thermobia domestica*) looks similar to the silverfish. Firebrats are mottled in shades of gray, white, brown and black, and adults are about $\frac{1}{2}$ inch long. This insect is found only in extremely warm places such as furnace rooms, fireplaces, ovens and bakeries. This species does not reproduce unless the temperature is above 90°F. Temperatures below freezing or above 112°F kill immature firebrats. The female lays approximately 50

eggs during her lifetime. Under good conditions, the firebrat may complete a life cycle in 11 to 12 weeks. The average life span of this insect is 1 to 1½ years. Because firebrats molt throughout life, they may pass through 40 to 60 molts and can regenerate lost appendages.

Control

Prevention: Sanitation is an important step in controlling silverfish and firebrats. Be sure to remove old stacks of newspapers, magazines, paper, books, fabrics, foodstuffs and spilled food products. Sometimes, especially for the common silverfish, reducing available water and lowering the home's relative humidity with dehumidifiers and fans can help. Lighting a dark, sheltered area may force these insects to seek hiding places where they can be controlled more easily. These insects normally enter the home in food, furniture, old books, papers and old clothing. Be careful when bringing these items into your home from infested locations.

Pesticides: Sanitation alone often is not enough to control serious infestations. Insecticides containing allethrin, bifenthrin, boric acid, carbaryl, cypermethrin, deltamethrin, esfenvalerate, permethrin, D-phenothrin, prallethrin, propoxur or resmethrin are labeled to control these pests. Be sure to select a

product labeled for the intended use. Treatments should be applied to all hiding places such as cracks and crevices in basements, around baseboards, cupboards, closets and around pipes.

Before using any insecticide, read and follow instructions. Contact a pest control professional when infestations are persistent and hard to find. Pest control professionals are licensed and certified to apply restricted use insecticides that are not available to homeowners.

Photos courtesy of the Kansas Department of Agriculture

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