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UT Extension
SP341-O

Insects

Silverfish and Firebrats

Karen M. Vail, Associate Professor;
Harry E. Williams, former Professor Emeritus; Jaime Yanes, Jr., former Assistant Professor

Silverfish and firebrats eat a wide variety of food, including glue, wallpaper paste, bookbindings, paper, starch in clothing, rayon fabric, wheat flour, cereals, dried meats and dead insects. Usually they are found trapped in a bathtub, sink or washbasin.

Identification

Silverfish have flat, elongated bodies 1⁄3 to 1⁄2 inch long and wider at the front end than the rear. These fragile, wingless insects are covered with scales and have two long, slender antennae on the head and three long, tail-like appendages on the rear. These three appendages, one directed backward and the other two curving outward, plus the two antennae, are nearly as long as the body. Sometimes these insects are known as bristletails. The silverfish adult is about 1⁄2 inch long with a uniform silvery color, whereas the four-lined silverfish is about 5⁄8 inch long and the back displays four dark lines the length of the body. The gray silverfish is about 3⁄4 inch long and uniform light to dark gray. The firebrat is about 1⁄2 inch long and mottled gray. The young resemble the adults.

Life Cycle and Habits

Silverfish and firebrats are active at night and hide during the day. When objects are moved where they are hiding, they dart out and seek new hiding places. The silverfish live and develop in dark, cool places, often in the basement. Large numbers may be found in new buildings where the walls are dark and damp. The firebrat lives in hot, dark places such as around furnaces and fireplaces or insulation around hot water and heat pipes. They follow pipelines from the basement to rooms on lower floors, living in bookcases, around closet shelves, behind baseboards and behind window or door frames.

They are hardy and can live without food for many months. A female silverfish may lay over 100 eggs during her lifetime. Eggs are laid singly, or in small groups, and hatch in three to six weeks. The whitish immatures take on the silver color in four to six weeks. Adults may live two to three years.

Firebrats lay about 50 eggs at a time in several batches. Eggs hatch in about two weeks. Silverfish and firebrats reach maturity in three to 24 months.

These insects normally hitchhike into the home in food, furniture, old books, papers and old starched clothing.

Control Measures

Prevention: Sanitation is important but not entirely effective in reducing populations, because insects often reside between wall partitions, in insulation materials, in books and paper and in other protected places. However, be sure to remove old stacks of newspapers, magazines, paper, books and fabrics stored for long periods of time, as well as spilled food. Sometimes reducing available water and lowering the home's relative humidity with

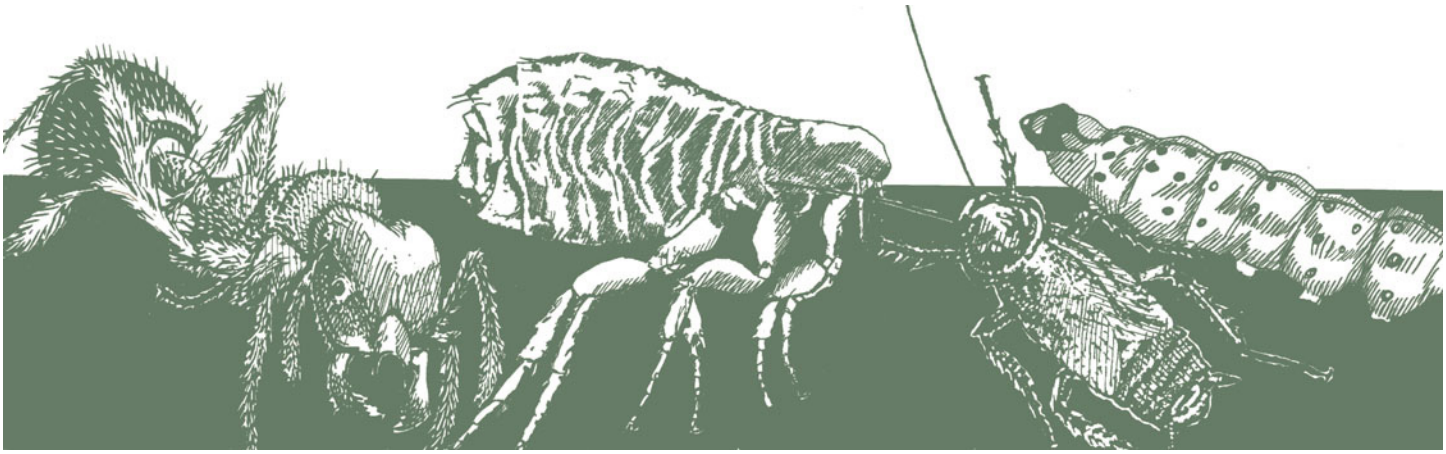
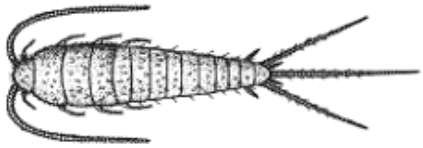
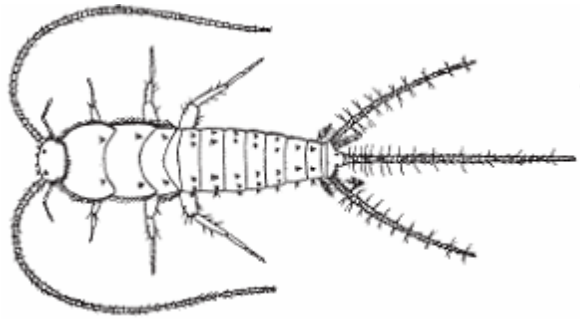
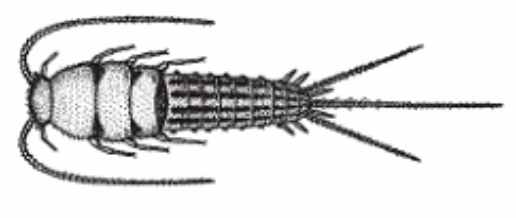
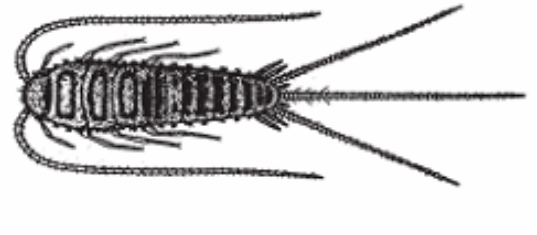


Table 1. Identifying silverfish and firebrats

Species	Adult Size	Appearance	Preferences	Location in houses
Common silverfish *Lepisma saccharina* 	1/2 inch (1.5 cm)	**Color** uniform; silvery sheen **Markings** none	**Temp** 70-80 F **Moisture** high humidity	Near moisture; basements, lower floors, crawl spaces, etc.
Gray silverfish *Ctenolepisma longicaudata* 	3/4 inch (2.0 cm)	**Color** uniform; gray **Markings** none	**Temp** 80-85 F **Moisture** wide humidity range	Throughout; from basement to attic, closets, storage areas, kitchens, etc.
Four-lined silverfish *Ctenolepisma quadriseriata* 	1/2 inch (2.0 cm)	**Color** tannish-gray **Markings** four lines down back	**Temp** 80-85 F **Moisture** wide humidity range	Throughout; from basement to attic, closets, storage areas, kitchens, etc.
Firebrat *Thermobia domestica* 	5/8 inch (1.6 cm)	**Color** mottled; gray **Markings** dark patches on back	**Temp** 100 F **Moisture** moderate humidity	Warmer areas; boiler rooms, hot water heaters, ovens, attic, etc.

Source: Richard M. Houseman. 2001 G07376. Silverfish and Firebrats. http://muextension.missouri.edu/explore/agguides/pests/g07376.htm

dehumidifiers and fans is helpful. Lighting a dark, sheltered area may force these insects to move to new sites where they can be controlled more easily. Once the infestation is eliminated, sanitation will help prevent reinfestation.

Insecticides: Treatments should be applied thoroughly to all potential hiding places such as cracks, crevices, around floor molding, around steam and water pipes, in and behind seldom-moved furniture, under bathroom fixtures and even in attics. It may be necessary to drill small holes in the walls to treat large populations.

• Dusts of pyrethrins, boric acid or silica gel may be effective in hard to reach places such as wall voids, behind baseboards, under insulation in attics, crawl spaces and under commodes.

• Residual sprays of bifenthrin, beta-cyfluthrin, cyfluthrin, deltamethrin, lambda-cyfluthrin and others may be used.

• Boric acid baits may also be effective.

• Space sprays of nonresidual insecticides, such as resmethrin or synergized pyrethrins, directed towards possible hiding places may flush silverfish onto residual treated surfaces.

It is advisable to use the services of a pest management professional when infestations are persistent and hard to reach. Before using any insecticide, READ THE LABEL and follow directions.

For specific pesticide suggestions, see UT Extension PB1690 Insect and Plant Disease Control Manual at http://eppserver.ag.utk.edu/redbook/sections/structural.htm.

Sources

Houseman, R. 2001. G07376 Silverfish and Firebrats. http://muextension.missouri.edu/explore/agguides/pests/g07376.htm.

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store, or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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