



# CAES

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## SILVERFISH AND FIREBRATS

Silverfish and firebrats are primitive wingless insects of the order Zygentoma. They are occasional household pests, usually encountered in damp attics or basements. Their feeding can cause damage to improperly stored paper, fabrics, and other dry goods.



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**Fig. 1: Silverfish**

### Appearance and Life Cycle:

Silverfish come from an ancient lineage of insects and have simple development compared to modern insects. The young look like the adults. Adult silverfish and firebrats are flat and delicate, with a 1/2 to 3/4 inch-long carrot-shaped body. They have two slender antennae and three additional antennae-like filaments as tails. Silverfish are wingless, and their bodies are covered in scales that give them a slightly metallic, silvery appearance (Fig. 1). This, paired with their smooth

undulating run, gave rise to their common name. Firebrats' scales are a dull gray and marked with darker spots or stripes (Fig. 2). Juveniles are identical to adults but smaller. Development time from eggs to adults is slow; between 3 months to two years depending on species, temperature, and environmental conditions. Unlike modern insects, adult silverfish and firebrats continue to molt throughout their lives.



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**Fig. 2: Firebrat**

Silverfish prefer cool humid areas such as basements, while firebrats are named for their preference for warm and humid areas such as attics, near furnaces, fireplaces and heating ducts. Both hide in cracks and crevices during daylight hours and are active at night.

Silverfish and firebrats are scavengers that primarily feed on starch. In homes this includes glue, paste, paper, linens, and many stored products. They feed by scraping off individual layers of starchy materials, leading over time to a characteristic ‘thinning’ of damaged items. Heavily affected papers or fabrics take on the consistency of a tissue, with ragged-edged holes (Fig. 3).



**Fig. 3: Silverfish feeding damage to paper**

#### **Prevention and Control:**

As both silverfish and firebrats prefer humid environments, lowering humidity in potential problem areas such as basements, crawlspaces, and attics will discourage them. Water leaks in plumbing and excess moisture in areas such as bathrooms, laundries, and kitchens should be addressed. Properly store valuable paper items and fabrics in dry, airtight containers to prevent entry. Clean out storage areas regularly; discard unused cardboard boxes and unwanted newspapers and magazines. Infestations of silverfish and firebrats take a long time to establish, so regular sanitation is the best way to keep ahead of and prevent large populations.

To treat an existing population of silverfish or firebrats, a crevice treatment with a desiccant such as boric acid, diatomaceous earth, or cimexa may be used after a thorough cleaning (such as vacuuming) of an infested area. Broad-spectrum pesticides labelled for

indoor control of silverfish and firebrats may also be used, although these products often need to be directly applied to the insects for full control. Pesticides should not be applied in or around food storage or preparation areas. Before using any insecticides, read manufacturer’s label carefully. Follow all directions and safety precautions, and never over apply.