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## Firebrat

*Thermobia domestica* (Packard)



### GENERAL INFORMATION

Silverfish and Firebrats are placed in the order Thysanura which is considered one of the most primitive of the living insect orders. There are four species considered common in North America; the Common Silverfish (*Lepisma saccharina*), the Gray Silverfish (*Ctenolepisma longicaudata*), the Firebrat (*Thermobia domestica*), and the Four-Lined Silverfish (*Ctenolepisma lineata*). Though most are generally cosmopolitan in distribution, the Firebrat is found in hot climates. It is rare in the North America. Presence of Firebrats indicate a warm environment.

Firebrats will favor areas of higher temperatures (90 - 105°F) while Silverfish prefer cooler environments below 90° F. Adverse to light, they tend to be found in dark areas of suitable climate with an abundant supply of food.

However, their presence at a feeding site not warm or humid may indicate a nearby preferred micro-climate. The color of the different species can vary.

Common Silverfish= silvery metallic

Gray Silverfish = dull gray

Four Lined Silverfish = dark and light scales appear as four lines running down back

Firebrats = large patches of dark scales on the back.



### DIAGNOSTIC MORPHOLOGY

#### Adults:

- Size up to 12.5 mm
- Flattened body with carrot shaped outline
- Long segmented antennae
- Body covered with scales
- Swept back antennae that extend beyond the tip of the abdomen
- 3 tail - like appendages, as long as the body



Actual size

#### Immature Stage:

- Nymphs appear as young adults
- Scales do not appear after the third molt



### SIGNS OF INFESTATION

Damage from Firebrats on paper products are rare but their presence is characterized by ragged, scraped areas and irregular holes. Damage to textiles is indicated by the presence of feces (described as small, dark, and visible to the naked eye), scales (visible with a hand lens), and ground fibers.

### FOOD SOURCES

Firebrats are found in bakeries. In museums they can feed on paper and items containing starch. They can feed on wallpaper and its adhesive paste as well as glazed paper, as both have a high starch content. They are also reported to feed upon other paper products, book bindings, textiles, cotton, silk and other glues.

### LIFE CYCLE

The white eggs of the Firebrat hatch in 14-18 days and spend 11-12 weeks as nymphs.

Average lifespan is 2-4 years.

Sexual maturity is reached in a few months.

With a high birth rate, the species can multiply quickly and have an enormous biotic potential.

### CONTROL & TREATMENT

Firebrats thrive in warm environments. Climate control in terms of reducing humidity and lowering temperature can cause populations to decline. Also controlling nearby micro-environments where pests can migrate from is important.

### CONTROL & TREATMENT (Continued)

Controlling food sources such as removing cardboard boxes and removing paper products not part of a collection is advised. It is also recommended whenever possible that books and documents be placed in sealed containers.

Cleaning around bookcases in cracks and crevices with a HEPA vacuum and sealing afterward can reduce potential breeding habitat. Application of dessicant dust in the cracks and along walls is another option.



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## Fact Sheet: Firebrat

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