

# MuseumPests.net

A Product of the Integrated Pest Management Working Group

## 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 Firebrat (*Thermobia domestica*), the Common Silverfish (*Lepisma saccharina*), the Gray or Longtailed Silverfish (*Ctenolepisma longicauda*), and the Four-Lined Silverfish (*Ctenolepisma quadriseriata*). Though most are generally cosmopolitan in distribution, the Gray Silverfish is found in the Midwest to California and South. Presence of either silverfish or firebrats indicate a warm humid environment. Firebrats will favor areas of higher temperatures (95-105F) while Silverfish prefer slightly cooler environments. 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 microclimate.

### SIGNS OF INFESTATION

Damage from silverfish and firebrats on paper products is often characterized by ragged scaped 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. A yellow stain is often apparent at the damaged area.

### FOOD SOURCES

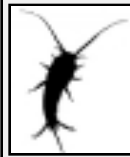
Silverfish and firebrats are particularly fond of starch and items containing starch. They can often be found to be feeding on wallpaper and its adhesive paste as well as glazed paper, as both



### DIAGNOSTIC MORPHOLOGY

#### Adults:

- Size up to 12.5 mm
- Flattened fish or carrot shaped outline
- Long segmented antennae
- Body covered with scales
- 3 tail-like appendages
- Firebrat has swept back antennae that extend beyond tip of abdomen



#### Immature Stage:

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

have a high starch content. They are also reported to feed upon other paper products, book bindings, textiles, cotton, silk and other glues. reduce potential breeding habitat.

### LIFE CYCLE

The white eggs of the Firebrat hatch in 14-18 days and spend 11-12 weeks as nymphs. Average lifespan 2-4 years.

Sexual maturity is reached in a few months. With a high birth rate both species can multiply quickly and have an enormous biotic potential.

### CONTROL & TREATMENT

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

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

## **Fact Sheet: Firebrat**

Firebrat image by Jim Kalishe of the University of Nebraska, Department of Entomology