

Museum Pests

A Quick Guide for Pest Management Professions

Insect Pests

The range of pests found in museums may be different from those found in domestic situations.

Museums divide insect pests into three categories:

- Borers
- Shredders
- Grazers

Borers

- These include the larvae of wood-boring beetles. They damage hardwoods and softwoods, animal-glued plywood, furniture, wicker work, wood-pulp paper and old books.



Images by Dr Uwe Noldt, Johann Heinrich von Thunen-Institute

- Evidence of borer activity includes exit holes, tunnels, frass and adult beetle sightings. Larvae hatch from eggs laid on a favourable substrate. They tunnel into the substrate, and when reaching adulthood, fly out of an exit hole.

Borers

Common furniture beetle, woodworm

Anobium punctatum



adults

- 2-9mm
- reddish brown to almost black
- prothorax is hood-like and covers the head
- oval and compact shape

larvae

- 2-5mm
- c-shaped

Borers

Powderpost beetle *Lyctus spp.*



Images by USDA Forest Service Archive, Bugwood.org

adults

- 3-6mm
- dark brown to nearly black
- Flattened, slender, cylindrical body

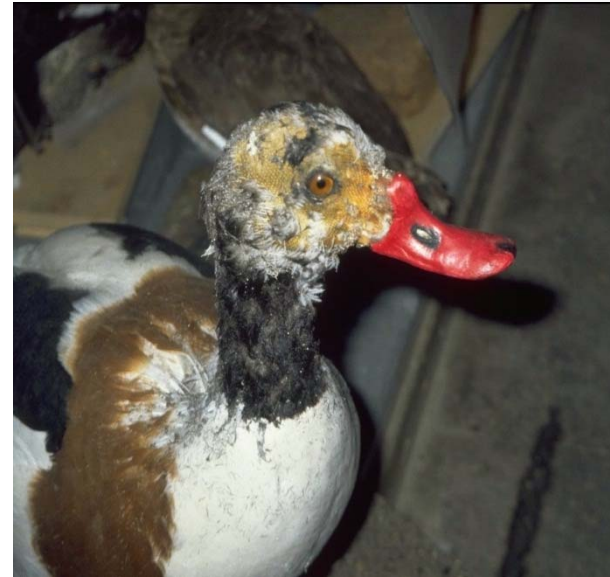
larvae

- c-shaped
- creamy white with dark brown mandible
- have 3 pairs of hairy, spinelike legs immediately behind head

Shredders

- Shredders include the larvae of:
 - Webbing clothes moth
 - Case-making clothes moth
 - White-Shouldered house moth
- Carpet Beetle
- Shredders are pests of keratin, the structural protein of hair, wool, parchment, feathers, skin, horn, nails and hooves. The more soiled and contaminated it is, the better they like it!

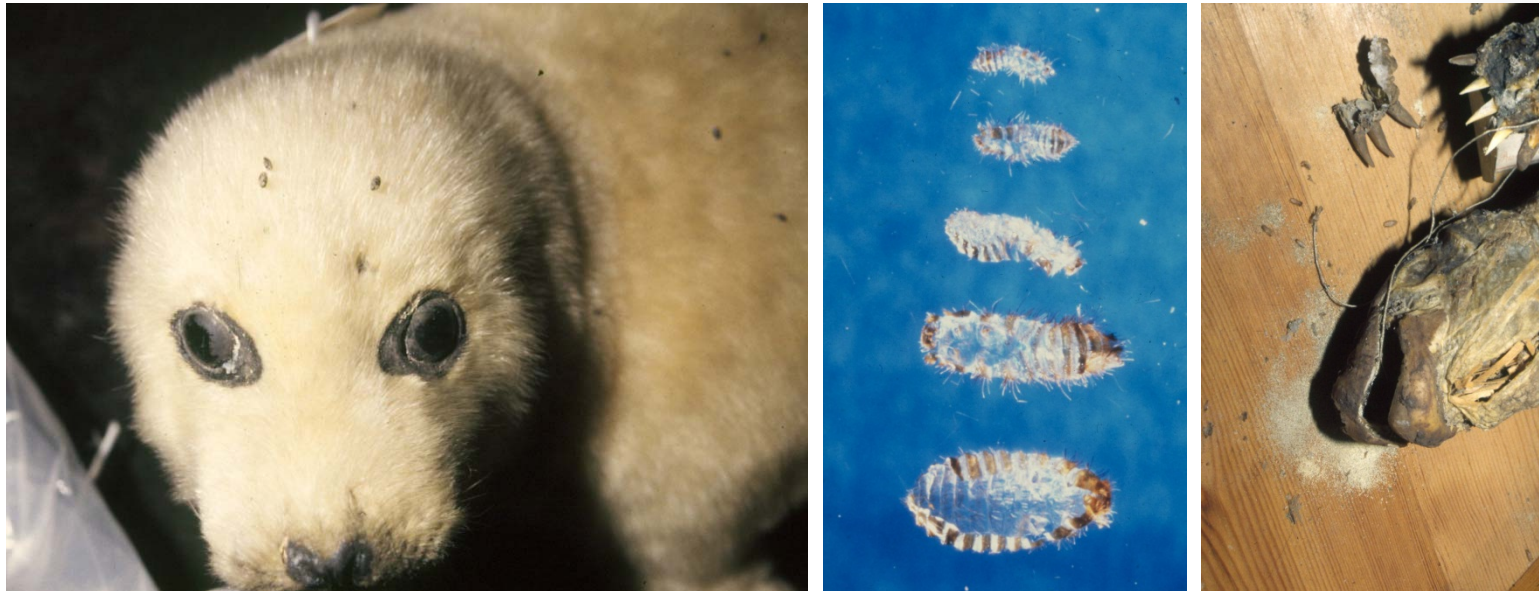
Shredders (moths)



Courtesy of: Pat Kelley, Insects Limited

Webbing clothes moths leave silken tubes and gritty frass adhered to the surface; they are the most voracious. Case-making clothes moth larvae feed from a case, with no obvious webbing.

Shredders (beetles)



The larvae of dermestid beetles cause irregular shaped holes in protein-based materials. They leave fine frass (the colour of the material on which they are feeding), and larval cast skins. Sightings of adults and/or larvae are common.

Shredders

Webbing clothes moth

Tineola bisselliella



Courtesy of: Insects Limited

adults

- 6-11mm
- wingspread approx. 11mm
- wings golden-yellow with satiny sheen
- at rest the wings are folded
- wings are fringed with hairs
- long, slender antennae
- coppery upright tuft of hairs on the head

larvae

- cream with a brown head capsule

Shredders

Case-making clothes moth

Tinea pellionella



Courtesy of: Pat Kelley, Insects Limited



adults

- 10-14mm wingspan
- buff to golden with a brownish tinge
- three dark spots on each wing
- long and narrow wings fringed with long hairs

larvae

- inside silken case it drags around

Shredders

White-shouldered house moth

Endrosis sarcitrella



Courtesy of: DBP/CSL

MuseumPests

adults

- 6-10mm
- white shoulder and prothorax
- greyish-white forewings marked with dark patches
- 10-25mm wingspan
- hind wings narrow towards tips

larvae

- approximately 12mm
- white with brownish head

Shredders

Varied carpet beetle

Anthrenus verbasci



Courtesy of: Pat Kelley, Insects Limited

adults

- 2-3mm
- elytra exhibit irregular pattern of white, brown, and dark yellow scales (blacken with age as scales wear off)

larvae

- 0.5-5mm
- covered with dense tufts of hair that extend upright if disturbed
- light and dark brown transverse stripes
- carrot shaped (broader in rear, narrower in front)

Shredders

Vodka beetle

Attagenus smirnovi



adults

- 5-8mm
- reddish brown wing case
- black head and thorax
- oval and compact shape



larvae

- 1-10mm
- torpedo-shaped and dark
- tuft of bristles at posterior end

Courtesy of: DBP/CSL

Shredders

Black carpet beetle

Attagenus unicolor



adults

- 5-8mm
- black
- oval and compact shape

larvae

- 1-10mm
- orange-rust
- torpedo-shaped
- tuft of bristles at posterior end

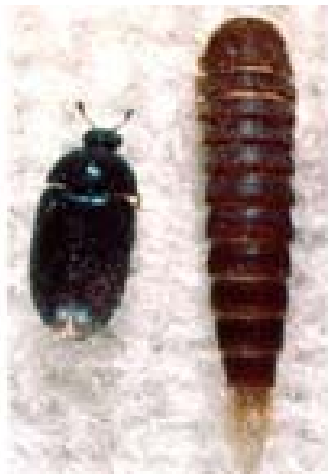


Image by Pat Kelley, Insects Limited

and some more shredders.....



Copyright Collections trust/DBP Entomology

Guernsey carpet beetle
Anthrenus sarnicus



Copyright Collections trust/DBP Entomology

Biscuit or drugstore beetle
Stegobium paniceum



Image by Alain Van Ryckeghem, Insects Limited

Hide beetle
Dermestes maculatus



Courtesy of: Pat Kelley, Insects Limited

Warehouse beetle
Trogoderma inclusum

Grazers

- These include:
 - Book Lice
 - Silverfish
 - Cigarette Beetles
 - Cockroaches

Grazers primarily feed on starch and protein. Feeding damage leaves the substrate scratched and eroded. Grazers thrive in damp conditions.

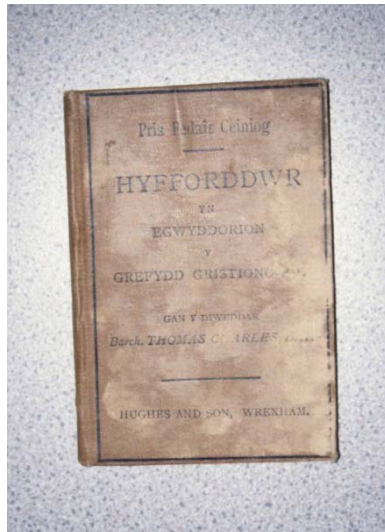
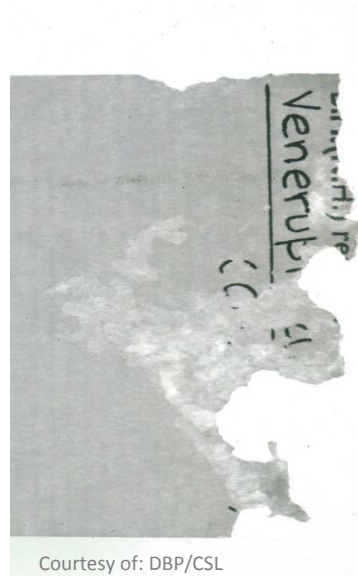
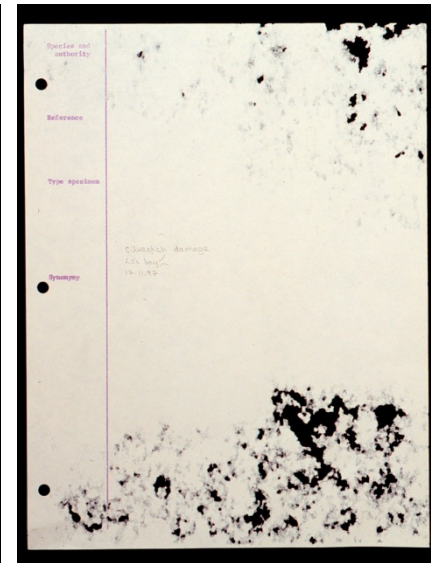
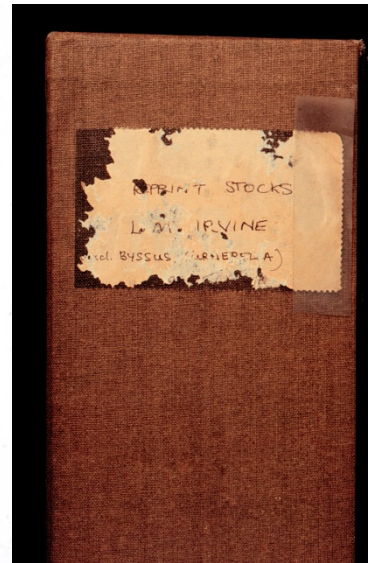


Image by: Bob Child



Courtesy of: DBP/CSL



Grazers

Book lice

Liposcelis bostrychophila



Courtesy of: DBP/CSL

- 0.5-1mm
- long, slender antennae and chewing mouth parts
- pale brown and translucent
- common species are wingless
- nymphs are similar in appearance to adults but smaller

Grazers

Silverfish

Lepisma saccharina



Courtesy of: DBP/CSL

- 2-15mm
- flattened-fish or carrot-shaped outline
- long segmented antennae
- body covered with scales
- 3 tail-like appendages
- nymphs resemble adults, but smaller and sometimes without scales

Grazers

Cigarette beetle

Lasioderma serricorne



Courtesy of: DBP/CSL

adults

- 2-3mm
- oval shaped
- reddish-brown
- wing covers are covered with golden hairs but appear smooth
- head is bent downward at almost a right angle to the body
- antennae are notched like the teeth of a saw

larvae

- c shaped
- body is white and covered in long hairs
- head and legs are brown

Museum pests also include common house pests

- Rodents
- Birds
- Wildlife
- Cockroaches
- Termites
- Stinging Insects
- Occasional Invaders
 - Crickets
 - Ground Beetles

More information on museum pest identification can be downloaded from the Museum**Pests**.net website. museumpests.net/identification.asp