FACTSHEET

Thursday, 28 June 2018

Nancy Cunningham SARDI Entomology Unit—8429 0933

SOUTH AUSTRALIAN RESEARCH & DEVELOPMENT INSTITUTE
PIRSA

Dermestids in Southern Australia

Dermestid beetles, commonly known as carpet or skin beetles, belong to the family Dermestidae and are common insect scavengers that feed on dry animal or plant material. The *Trogoderma* genus of Dermestidae are known pests of stored grain and *Trogoderma granarium*— the khapra beetle— not present in Australia— is listed in the top 100 Global Invasive Species Database (2004). An incursion of this exotic species into Australia could mean severe economic losses and market access issues for producers. It is important that we are able to clearly identify the differences between the various commonly found dermestids, including our native *Trogoderma* species and the exotic khapra beetle.

This fact sheet aims to show the major differences between Dermestidae genera found in South Australia and to discuss the differences between common dermestids and some of our native *Trogoderma* species as well as pest/exotic species that are not found in Australia.

Figure 1: Dermestidae Adult

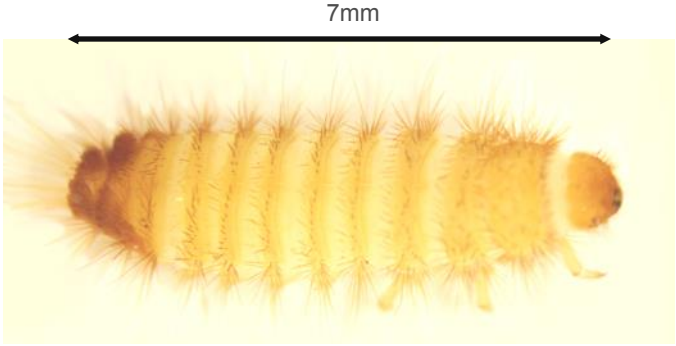

Figure 2: Dermestidae Larvae

Key features of Dermestidae

Vary in size between 1-12mm

Adults (Figure 1)

- Oval shaped bodies
- Covered in scales or setae (Genus dependent)
- Clubbed antennae often situated within a 'groove' on the underside of the head cavity

Larvae (Figure 2)

- Numerous setae and 'hairy' or 'fluffy' appearance
- Obvious head capsule with chewing mouthparts
- Well developed legs
- Often found on dried commodities/foodstuff

Research supported through:

South Australian Grains Industry Trust (Project S1217)
South Australian Research and Development Institute
PIRSA http://www.pir.sa.gov.au/

Acknowledgements:

Peter Taverner, Judy Bellati and Rebecca Hamdorf

SAGIT

Government of South Australia
Primary Industries and Regions SA

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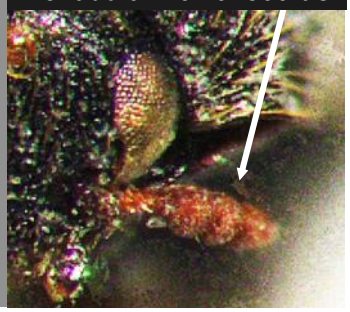
Genus *Anthrenocerus*

Adult features

Covered with hair (setae)

Antennal cavity closed behind

Antennae has a distinct club like formation and well defined



Distinct 3 segment club of adult *Anthrenocerus*

Genus *Anthrenus*

Adult features

Covered with scale like hair (setae)

Antennal cavity filled by antennae

Antennae visible from anterior view-point

Filled antennal cavity of Adult *Anthrenus*

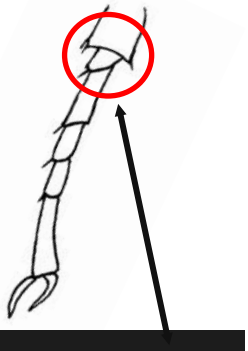
Genus *Attagenus*

Adult features

Covered with hair (setae)

Antennal cavity open behind

First segment of hind tarsus shorter than first segment



Adult *Attagenus* tarsus First segment shorter to second segment

Genus *Orphinus*

Adult features

Covered with hair (setae)

Antennal cavity filled by antennae

Antennal club circular and two segmented

Orphinus Antennal cavity and two segmented club

Genus *Trogoderma*

Adult features

Covered with hair (setae)

First segment of hind tarsus equal or as long as second segment

Antennal 'club' - segments taper >3

There are over 120 species of *Trogoderma* throughout the world.

Research has reported there are up to 52 species of native *Trogoderma* in Australia and at least one exotic species (*Trogoderma variable*).

Trogoderma adults have similar morphologically features and require specialist training to distinguish from other dermestid genera. There are diagnostic keys available in order to identify several of the known exotic *Trogoderma* species and to separate them from native species. These keys are used by diagnosticians to differentiate from other exotic *Trogoderma*.

***Trogoderma granarium* (Everts) - note variation in size and colour of adult beetles**

Native species

There are many species of native *Trogoderma.* The adults have similar distinguishing features as exotic *Trogoderma*, with some variations. For example, many native species have thicker coarse hairs (setae) than those of exotic species. Differences in native larvae vs exotic larvae can be seen in Figure 3 and 4 on the next page.

Exotic species

There are exotic pest species absent from Australia such as—*Trogoderma granarium.* Listed as present: *Trogoderma variable.*

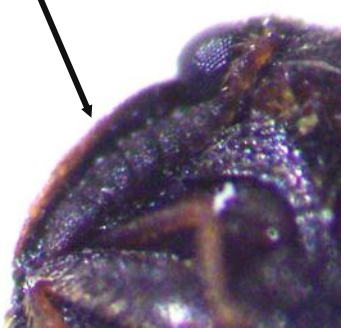
Due to the similarity of exotic *Trogoderma* species all suspect specimens are required to be reported. Contact your local state agricultural department for more information.

Emergency Plant Pest Hotline: 1800 084 881

Trogoderma variable

Adult *Trogoderma* tarsus. First segment never shorter than second segment

Adult *Trogoderma* antenna and cavity - notice tapered antenna



Native *Trogoderma*

Dermestidae Larvae

Dermestidae larvae are common in stored grain produce and are covered in various lengths of hair (setae) making them appear 'fluffy' to the naked eye. They have a hardened (sclerotized) head capsule and three sets of legs as well as pair of appendages at the end of the abdomen. They are

The larvae of some native *Trogoderma* species are morphological easy to discern from other dermestid species, with basket shaped hairs - (fiscisitae, Figure 3) compared with other genus which have hair-like setae with barbs at the end (hastisetae, Figure 4).

Larval specimens can be identified as *Trogoderma* but in order to differentiate species— a dissection is required.

If enough material is left intact, larval castings (exuviae) left after moulting can be used to identify the genus.

However, identification of dermestid larvae needs to be conducted by skilled diagnosticians.

Figure 3: Native *Trogoderma* larvae showing basket shaped hairs

Figure 4: common dermestid species larvae showing the barbed hairs

Diagnostic keys

There are a number of diagnostic keys that can be used to identify dermestid species and are listed in the references below.

References

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