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Minute Brown Scavenger Beetle



GENERAL INFORMATION

Many species of beetles fall under the category of minute brown scavenger beetles. Both the ecology and morphology of this taxon are described at the family level of Latridiidae (Erichson, 1842); however diagnostic features of this group include elongate and oval-shaped bodies, and brown to piceous coloration (Andrews, 2002; Majka *et al.*, 2009). Currently, the family consists of 1,050 species with 140 represented in the United States and 55 in Canada (Bosquet, 1991; Majka *et al.* 2009; Andrews, 2002). In the wild, Latridiids are found in open and forested environments among decomposing vegetation including: leaf litter, herbaceous vegetation, inside or on trees, and decomposing wood. They have also been observed in bird, mammal and Hymenoptera nests (Majka *et al.* 2009). Adult beetles and larvae are fungivores and mainly feed on the hyphae and spores of filamentous fungi; however several species in this taxon also feed on slime molds (Majka *et al.* 2009). *Dienerella argus* is considered a pest organism of dried grain stored products, and its global distribution can be attributed to its accidental introduction inside shipping crates that have been transported internationally. Some of the most common species encountered are *Cartodere constricta*, *Lathridius minutus* and *Dienerella filum*.

In museums their presence is an indicator that the ideal damp conditions exist for their fungal food source to thrive. Species in this taxon are also commonly referred to as "mold beetles" or "plaster beetles" because integrated pest management professionals associate their presence with damp sheetrock material (P.E.I. Pest Control LTD, 2006).



DIAGNOSTIC MORPHOLOGY

Adults:

- Most species have these characteristics;
- 1.2 - 2.4 mm in length
- Coloration is reddish brown to brown
- Punctate elytra (indented rows on wing covers)
- Antennae have 11 antennomeres (segments)
- Pronotum wider than head, and narrower than base of elytra (wing covers)



Immature Stage:

- Most larva have these characteristics;
- Coloration is white with dark head
- Larvae body shape is elongate and sub-cylindrical

SIGNS OF INFESTATION

Adults are highly mobile and can be captured on sticky traps. The presence of adults is indicative of an active population. No larvae, pupae, or juveniles have been observed on sticky traps.

FOOD SOURCES

Food sources consist of fungus that grows in damp moist microclimates.

LIFE CYCLE

The adult minute brown scavenger beetle is very distinctive looking. It is very small. It is 1.2 – 2.4 mm long and flat. It is pear-shaped. The head and thorax are much narrower than the abdomen. Most species are brown. Other species are yellow-brown to dark brown in colour. The adult has clubbed antennae. Most species are sculptured. This means that the thorax and elytra may have distinct raised ridges or rows of pits. In some species, the thorax is constricted in a narrow waist and may be sculptured or pitted. Other species are covered in hairs. The adult is long lived and can fly.

The female lays eggs singly on a food source. Temperatures required for development range from 15°C to 23°C.

The larva is slender and slightly flattened. It is lightly coloured. The larva is active. It does not have urogomphi. The larva moults three times. The range of development time is 30 to 50 days. The temperature range required for development is 15°C to 23°C, and a relative humidity of 80%. The larva pupates in the food source. (Canadian Grain Commission, 2009)

CONTROL & TREATMENT

Preventing beetle introduction by freezing newly mounted plant specimens and reducing relative humidity in collections is preferred. Keep collections rooms dry, and eliminate any moisture so that the beetle's fungal food source can not grow and attract dienerellid species. Although sticky traps will capture adults, they do not prevent resurging populations.

Fact Sheet: Minute Brown Scavenger Beetle

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1: Compilers: Drew Lynford and Alina Freire-Fierro, PH Herbarium, Academy of Natural Sciences. August 25, 2011

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Photo credits: *Cartodere constricta*, Natasha Wright, Florida Department of Agriculture and Consumer Services, Bugwood.org Upper right image of *Melanophthalma* by Tom Murray, 2012 from www.bugguide.net