

# WAREHOUSE BEETLE

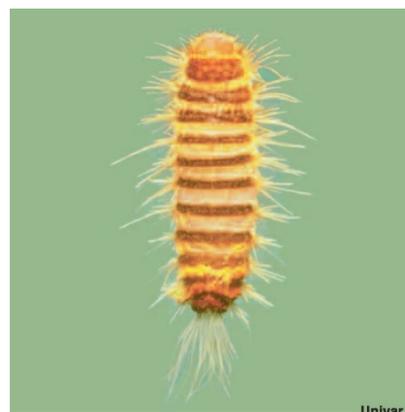
## INTRODUCTION

This beetle no doubt gets its common name of warehouse because it is extremely common in warehouses storing food items; worldwide it is second only to the khapra beetle (*Trogoderma granarium* Everts) as a dermestid pest of stored products. It is of medical concern because ingestion of larvae and/or larval molt skins of *Trogoderma* can cause enteric/intestinal irritation. It occurs throughout most of the United States and is commonly found in seaports throughout the world. This beetle was formerly known as *T. parabile* Beal.

## RECOGNITION

Adults about 1/8" (3.2 mm) long; oblong in shape. Color ***brownish black with yellowish to yellowish brown markings; elytra (wing covers) with pale basal, submedial, and subapical bands, basal band/loop not connected to submedial band.*** Head ***with a median ocellus, inner margin of eye straight*** or very slightly sinuous (wavy). Antenna short, club of male with segments compactly joined, not serrate (sawlike); antennal groove/cavity finely seriate (with fine grooves/impressed lines). ***Hind leg with coxal plate (what coxa attaches to) posterior/rear margin curved or sinuate,*** without a blunt tooth; with ***tarsal 1st segment longer than 2nd segment.*** Ventral ***metasternal plate*** (area between 2nd and 3rd pair of legs) ***with anterior/front margin with nipplelike projection at its middle*** (between coxae of 2nd pair of legs). Adults good fliers.

Larvae up to 1/4" (6.3 mm) long; early instars yellowish white, middle instars brownish, later instars dark brown. Covered with long hairs (setae), both spicisetae (slender, elongate, rattail shaped hair/seta bearing numerous sharp pointed needlelike projections) and hastisetae (spearheaded with numerous barbs) present; hastisetae arising from tergal plates (harden areas), not membranous areas, central area (disc) of thoracic and front abdominal segments with very few hastisetae; and terga usually with only 1 row of spicisetae. Antenna with hairs (setae) of basal segment reaching at least 3/4's length but not extending beyond apex of 2nd segment when antenna fully extended, bunched on inner (mesal) side of segment.



# BIOLOGY

Adult females lay up to 94 eggs over several days. At 90°F/32°C and 50% RH, eggs hatch in 6 days. Larvae of males molt 5 times and females 6 times. Pupation requires about 5 days. Developmental time (egg to adult) is about 32-43 days depending on temperature and RH, given ample food.

Both larvae and larval molt skins of Trogoderma beetles are of medical concern because ingestion of either can result in enteric/intestinal irritation, especially in infants. This irritation is caused by both the hastisetae and spicisetae, with some 1,700 and 2,200 respectively being present on a single warehouse beetle larva. An infant will show varying signs of distress for usually 2-3 days and then recover.

# HABITS

The warehouse beetle has been found infesting over 90 different kinds of dried plants and plant products such as cake mix, candy, cereals, cocoa, cookies, corn, corn meal, dog food (dried and burgers), egg noodles, hominy grits, macaroni, oats, peas, potato chips, raisins, rice, spices, and yeast. If available they will readily feed on animal origin materials such as a dead insect, dead mouse, or food products such as dog food, fish meal, and powdered milk.

The larvae prefer to live in dark places. They prefer high-protein food such as seeds, cereals, legumes, and nuts.