

VARIED CARPET BEETLE



Common Name: Varied carpet beetle
Scientific Name: *Anthrenus verbasci*

Introduction. The varied carpet beetle probably gets its common name because there is great variation in the color pattern on its upper surface.

Recognition. Varied carpet beetle adults are 1/16 to 1/8 inch long, oval and black, with a pattern of beige, yellow and white scales on the pronotum (upper front portion of the thorax) and elytra (wing covers or hardened front wings). The underside of the body is covered with grayish-yellow scales. The head is more or less concealed from above. The Larvae are 1/8 to 1/4 inch long, dark brown to black, stout and widest posteriorly. They are covered with brown hairs and have rear-facing tufts of hairs arising from the sides of the rear end.

Similar Beetles. Other common beetles of like size and oval body form lack the distinctive mottled pattern of beige, yellow and white scales on the upper surface.

Damage and Signs of Infestation. Infested fabrics typically have much surface damage and holes here and there; but larvae can also cause large irregular holes in material. Furs and brushes have mostly the tips of hairs damaged, leaving uneven areas. When museum specimens are infested, the accumulation of fine powder (frass) beneath the specimen is often the only indication of these beetles' presence. Larval caste skins are often present. Frass (droppings) are minute, irregular in form, and often the color of the material being damaged. The larvae may burrow through packaging materials when seeking food.

Biology. Varied carpet beetle females do not always lay their eggs on larval food material. The eggs hatch in 17 to 18 days. The larval period ranges from 222 to 323 days but may last up to 623 days under adverse conditions of temperature, humidity and food, and requires an average of 7 to 8 molts (range 5 to 16). The larva pupates in the last larval skin and pupation lasts 10 to 13 days. Developmental time (egg to adult) usually requires 249 to 354 days at room temperature, but may take as long as 2 to 3 years depending on temperature and food. Adult males live 13 to 28 days whereas, females live 14 to 44 days.

Habits. Varied carpet beetle larvae feed on a wide variety of animal and plant products. Animal-origin materials include woolens, carpets, furs, hides, feathers, horns, bones, hair, silk, fish meal, insect pupae, and dead insects. Plant-origin materials include rye meal, corn, red pepper, cacao, and cereals. Their favored foods are dried insects and spiders, therefore they are a major pest of museum collections and buildings that contain the dry remains of overwintering insects and treated yellow jackets nests.

Varied carpet beetle adults are found outside during warm weather. They are often found on flowers, particularly in the spring and especially on *Spiraea* blossoms, where they fed on the pollen. Females seek out the nests of bees, wasps, and spiders as oviposition (egg-laying) sites, as well as bird nests. Indoors, adults often are found at windows during the spring.

The primary breeding areas are quite diverse and may include: (1) wall and ceiling voids, where cluster flies, boxelder bugs, lady beetles, leaf-footed bugs and paper wasps, overwintered; (2) attics where yellow jackets, mud daubers, hornets, paper wasps and/or honey bees nested; (3) wherever left-over rodent bait can be found (e.g., attics, crawl spaces, basements); (4) recessed light fixtures; (5) behind and under baseboards where lint and hair accumulate; (6) poorly-preserved (untreated) animal trophies or rugs; (7) insulation which contains animal hair; (8) dead animals in the chimney flue.

The larvae tend to wander about and can be found far from the primary infestation. When disturbed, the larvae erect their hair tufts and spread the bristles and hairs, forming a ball.

Adults hatching from indoor pupae avoid or shun light until egg laying is mostly complete, and then become attracted to light. Most outdoor adults show an attraction to light.

Cultural Control & Precautionary Measures. The key to controlling varied carpet beetles is to find the primary sources of infestation and eliminate them. Besides the obvious woolen carpeting, clothing, furs, fabric-covered furniture, and stored products, it may be necessary to check for the more unusual sites such as listed above. Consider sites that may contain the remains of overwintering and nesting pests (like cluster flies, boxelder bugs, mice, sparrows and starlings). The thorough inspection should be followed by good sanitation practices, pest-proofing measures, and pesticide application by a professional, when required. Museum specimens and valuable collectibles may be treated with the use of heat (140 °F for 30 minutes) or cold (0 °F for 72 hours) if appropriate and non-damaging to the infested item(s). Exposed Beetles, larvae and frass can be removed using a vacuum cleaner fitted with a hose attachment.

Professional Control. A Rottler technician will seek out and expedite removal of all visible, accessible breeding sites for varied carpet beetles. Spot treatments, crack and crevice applications and/or structural void injections with appropriate residual and non-residual insecticides may be made to facilitate beetle elimination and help prevent re-infestation.



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