Varied Carpet Beetle
Anthrenus verbasci

Identification & Advisory Service

IAS sheet **10**

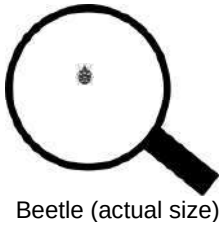
Classification
Class Insecta
Order Coleoptera
Family Dermestidae

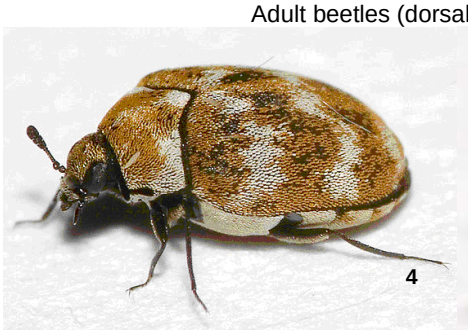
Carpet Beetles (*Anthrenus* sp.) are small oval beetles, the larvae (grubs) of which are common pests of woollen carpets. They will also attack woollen blankets and garments, silks, furs, underfelts and other dry materials of animal origin.

Identification
There are three native species in Britain, of which the **Varied Carpet Beetle** *Anthrenus verbasci* is a common house and museum pest. It is a small (1.5–3.5 mm) and round beetle with elytra (= the wing cases) clothed with white, golden-yellow and black scales forming a variegated pattern of white, orange and black patches. The legs are black. The head is small, kept hidden beneath the pronotum (= the plate that covers the upper part of the thorax). The eyes are large and black. The antennae are clubbed, with the three apical antennal segments forming the club and the two basal segments also bulged. The closely related Museum Beetle *A. museorum* is predominantly black with some orange spots, and has rust-coloured legs.

Adult beetles (dorsal views)

Adult beetle feeding on flower


Beetle (actual size)



Adult beetle (side view)

Head (to show antenna)

Larva (wooly bear)

The larvae of carpet beetles are called woolly bears because of their bodies being covered in hairs (= setae). The Varied Carpet Beetle larva has unevenly coloured tergites (= plates on its back covering its body segments); the ones in the middle are lighter brown, the three thoracic tergites just behind the head and the very last four abdominal tergites are visibly darker. The head is always light brown to orange, even when the tergites are quite dark. The last three abdominal segments carry thick tufts of special hairs growing backwards which are characteristic to the genus *Anthrenus*. The larva of the closely related Museum Beetle *A. museorum* is different in that all of its tergites are evenly coloured dark brown, and its head is also dark brown. Due to the small size of the larvae (4–4.5 mm) and because the differences between different stages of the same larva may be larger than differences between species, larvae are reliably identified only in their latest stage. Even so, separating related species is impossible without very powerful microscopes.

Distribution and habitat
A cosmopolitan species, the Varied Carpet Beetle can be found in Europe, North America, Australia, etc. It is a native, long-established species in Britain, and the most common of the genus *Anthrenus* here. It is more common in the London area and the southern counties. The larvae are usually domestic pests of woollen goods or museum pests, but also live in nests of birds and mammals. The adults visit flowers to feed on pollen and nectar, and in houses are often found on windowsills trying to get outside. Occasionally imported to Britain, mainly on dried fruit and nuts.

Life cycle
Like other insects, Varied Carpet Beetles pass through four different stages: egg, larva, pupa and adult. The females lay their eggs on or near a food source: materials containing chitin and keratin. Periods of larval growth are followed by a diapause (resting period) which may help the beetles living outdoors to synchronise with the seasons. Thus, adults will emerge usually in the wormer months when their preferred food – pollen – is available. The larvae need a temperature of 15-25 ^{o}C to develop. In winter, the larvae enter a resting period (diapause). The cycle takes two summer seasons for the full development of adults. Pupation takes place in the second spring. Indoors, the whole cycle may complete in a year. The adults live between two and six weeks.

Damage and control
The larvae of carpet beetles are voracious feeders and can cause considerable damage to woollens and to dried insect and mammal collections. They will not feed on entirely synthetic fabrics. The Varied Carpet Beetle is the only British species of the genus *Anthrenus* which is found in food stored products as well. Clothing and carpets affected by the larvae of these beetles can be recognised by small, clean holes which are not accompanied by strands of silk webbing (as is usually the case with clothes moth infestations), but have powdery, dust like droppings associated with them. The cast, transparent skins of the larvae are also a conspicuous sign of infestation. Prevention is clearly more desirable than coping with a large infestation, which by the time it is discovered has already caused some damage. Cleanliness within buildings is important as larvae can thrive out of sight and undisturbed, e.g. behind skirting boards, in the pile of woollen carpets (particularly close to skirting boards), in fibres and other organic dust between floor boards, and in the vicinity of spiders' webs, feeding there on any dead insects. Such infestations can usually be prevented by regular use of a vacuum cleaner. They can also be destroyed by applications of proprietary insecticides or, where feasible, by putting affected items in bags for a day or two in a deep freezer (at -18 ^{o}C).

Because birds' nests in roofs can act as important sources of infestations, these are best removed and destroyed. Cavities attractive to nesting birds should be blocked, e.g. by wire netting. Woollens and other natural fibres should be cleaned and stored within securely fastened plastic or polythene bags.

To find out more:
Detailed photos on Dermestidae.com:
http://www.dermestidae.com/Anthrenusverbasci.html