New cockroach about!

A species of cockroach native to southern Europe, Turkey and the Caucasus has taken up residence in the UK. Independent consultant and *Pest* Technical Advisory Board member, Clive Boase, Isabelle Landau of the Urban Pest Advisory Service of the City of Zurich and Hannes Baur of the Natural History Museum in Bern, Switzerland report on their findings.

In August 2017, Ian Sullivan of Little Monster Environmental Pest Control received reports of cockroaches from a customer in Hertfordshire. The cockroaches had been seen on external window sills of a first-floor apartment, occasionally coming indoors around window and door frames or through ventilation openings and, occasionally, flying.

Initial inspection showed that they resembled the German cockroach, but there were strange differences. Richard Moseley of Bayer Crop Science confirmed that these were not German cockroaches, so involved Clive Boase and the expert team from Switzerland to help resolve this situation.

Further investigation in Hertfordshire in the summer of 2018 revealed that the cockroaches were still present. They were identified as *Ectobius vittiventris* (A. Costa), a species native to southern Europe, and not previously found in the UK.

Bayer Crop Science generously supported the investigation.

Ectobius vittiventris

The cockroach *Ectobius vittiventris* is native to southern Europe, Turkey and the Caucasus. However, in recent decades it has been extending its range north-westwards and is now widespread in some areas of Switzerland (first reported in 1985), Austria, and southern Germany.

In Germany and Switzerland, this species is known as the 'Bernstein Waldschabe', i.e. the 'Amber Wood-Cockroach'. In the UK, the 'Garden Cockroach', may be a better description, although this remains to be decided.

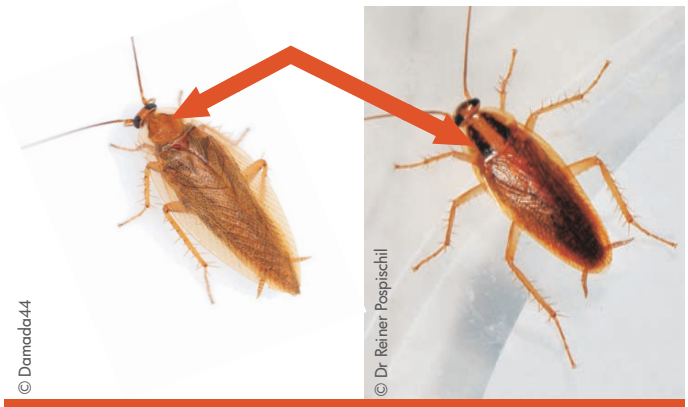
Key features of this cockroach's appearance and behaviour are detailed in the table opposite. **Note:** The UK has three native species of cockroaches in the Ectobius genus. All are restricted to areas of dry, sun-warmed outdoor habitat in the south of England, such as heaths, sand-dunes and cliff-tops. None are associated with buildings or urban areas.

Separating *E. vittiventris* from the German cockroach

Given that *E. vittiventris* can fly, is active in the daytime, and lives outdoors on plants, it has a very different behaviour to the German cockroach *B. germanica*.

However, in terms of size and appearance, *E. vittiventris* could be confused with the German cockroach. The most reliable way to separate the two species, in both adults and nymphs, is to examine the pronotum (the plate covering the dorsal surface of the thorax):

- In *E. vittiventris*, the centre of the pronotum is a uniform brown with no longitudinal stripes.
- In *B. germanica*, the pronotum is brown with two dark longitudinal stripes.



E. vittiventris, left and B. germanica right. The main difference, as indicated, is in the pronotum

Note: A mutant form of the German cockroach known as 'orange body', occurs occasionally. In this form, the dark marks on the pronotum are much paler, but still just about visible. This mutant occurs in the usual German cockroach situations.

The Hertfordshire *E. vittiventris* population

The cockroaches were initially reported from one apartment within a block of c.20 apartments. However, subsequent investigation found that they were present around the apartment building and extended across an area of at least one hectare, including several businesses, car parks, roads, gardens, hedges, areas of amenity planting and roadside verges. However, the full extent of the population was not determined, so it may be more extensive. Given this extent and this species' development, they are likely to have been present for several years.

Nymphs and adults, including females carrying oothecae, were found. The number of individuals present in a handful of leaf-litter was up to around six, with similar numbers falling onto a 1 x 1.5m white sheet from overhanging shrubs.

No obvious source of the cockroaches was established. There was nothing unusual about the affected area.

Habitat

This cockroach lives outdoors, primarily in shrubs, flower beds, hedges, gardens and parks. In Hertfordshire, most were found

***E vittiventris* – appearance and behaviour**	
Size:	Adult: 9-14 mm long (similar to the German cockroach)
Colour:	In adults and nymphs, the dorsal surface of both the pronotum (upper surface of the thorax) and the wings are a uniform rusty-brown
Male & female:	Similar in overall appearance, although the male is more elongated
Habitat:	Outdoors in gardens, hedges, parks etc. Occasionally comes indoors, but soon dies. Does not become established in kitchens etc
Flight:	The male flies readily, like a moth, especially in warm weather. The female does not fly as strongly.
Activity & seasonality:	Active by day as well as at night. Only noticed during the warmer months
Reproduction & lifecycle:	Egg cases laid in one year overwinter and the nymphs emerge the following year. The nymphs then develop that year up to the third-fifth nymphal stage, overwinter again, and then mature into adults in the following year.

E. vittiventris shaken from the bushes onto a white sheet

either a) in accumulations of dry leaf-litter under shrubs or around the perimeter of buildings, or b) amongst the foliage of shrubs and hedges. They were more commonly associated with deciduous plants such as hawthorn, oak and buckthorn and less commonly with evergreens, such as laurel and cypress. Residents in an apartment block and in offices within the affected area, reported them coming indoors through open doors and windows. However, they do not become established indoors, unlike the German cockroach.

The population in Hertfordshire survived the 2017-18 winter which was particularly harsh. However, given that this species is now well-established in central Europe where the winters are often more severe than in the UK, this is not surprising.

Monitoring and detection

This species does not appear to be easily caught on standard adhesive crawling insect detectors. Twenty monitors were placed at various potentially suitable outdoor locations at the Hertfordshire site and caught no cockroaches over a three-month period.

Instead, they were found most easily by either placing a handful of dry leaf-litter in a white tray and sorting through it for the cockroaches, or by placing a white sheet on the ground under a shrub, shaking the branches and looking for cockroaches that fell onto the sheet.

Risk of onward spread

The type of suburban habitat in which the Hertfordshire population was found is very common across the UK, so there would appear to be many potentially suitable areas that could be colonised. Given that they can fly in warm weather, there may be other nearby populations in the Hertfordshire area. Over longer distances, the presence of these insects in leaf-litter and shrubs in gardens and amenity planting, make it likely that the cockroaches are moved around during removal of garden waste. It would be surprising therefore if the Hertfordshire population is the only one in the UK.

Impact

Given that this species does not appear to become established indoors, it is unlikely to have as great an impact as the more common German and Oriental cockroaches. Nonetheless it is likely that many residents and businesses finding this species will assume that they have an infestation of the more serious German cockroach, and seek professional advice (see Uçkay *et al*, 2009, below).

The likely impact and interaction of this species with native wildlife in the UK is not known. There are no reports so far of negative interactions where this species has recently become established in central Europe.

Control

In Hertfordshire, a residual spray with bendiocarb wettable powder around entrance points was effective at reducing cockroach ingress into the building.

The Swiss Pest Control Association advises its members not to treat this species, but to inform customers that it does not become established indoors, is harmless and may be prevented from coming indoors with fly screens.

Other UK populations

Pest controllers who suspect they may be involved with this species should contact clive@pest-management.com. The UK Non-Native Species Secretariat has been notified.

E. vittiventris was present in the border planting (top), in the vegetation at the entrance to the property (middle) and in dead leaves around the building

Further reading

Baur, H., Landau Lüscher I., Müller, G., Schmidt, M., Coray, A. 2004. Taxonomie der Bernstein-Waldschabe Ectobius vittiventris (A. Costa, 1847) (Blattodea: Blattellidae) und ihre Verbreitung in der Schweiz. Revue Suisse de Zoologie, Jun; 111(2): 395-424. (This article has a good summary in English)

Uçkay, I., Sax, H., Longet, S., Di Pietro, Baur, H., Boulch, M.F., Akakpo, C., Jean-Claude Chevrolet, J.C., Pittet, D. 2009. Cockroaches (Ectobius vittiventris) in an Intensive Care Unit, Switzerland. Emerging Infectious Diseases, Mar; 15(3): 496–497.

Useful information on the UK's native cockroaches can be found at: http://species.orthoptera.org.uk/species_dictyoptera.aspx?userid=0