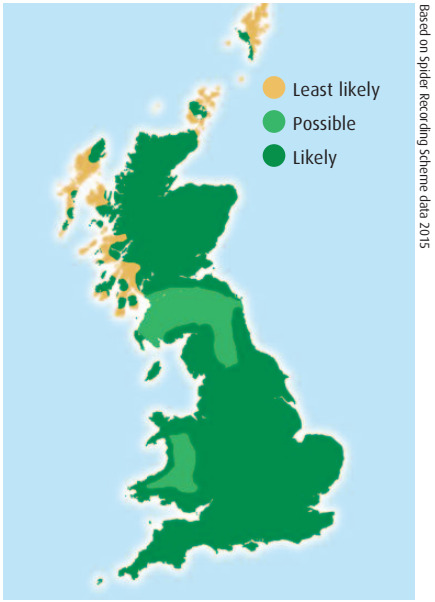
Where are they?

The Garden spider is probably the most common and widespread large spider in Britain. It's certainly not restricted to gardens and can be found in many different habitats, from woodlands and heaths to urban environments, where suitable structures are available to support its webs. It's rarely found indoors though, probably because most houses are too dry - those that do venture inside are unlikely to survive for long.

This is one spider that is readily recognizable from photographs. This means that you can help to put it on the map by submitting your records – visit the Spider Recording Scheme website at: britishspiders.org.uk/srs_surveys



Based on Spider Recording Scheme data 2015

Garden spiders in Britain

For more information

britishspiders.org.uk/srs_garden_spider

Bee, L., Oxford, G. & Smith, H. (2017) Britain's Spiders. Princeton WILDGuides

Charlotte's Web, the classic children's novel by E.B. White, about a very similar American spider species, is a great introduction to the lives of these orb weavers.

The British Arachnological Society

The BAS is Britain's only charity devoted exclusively to spiders and their relatives. We use science and education to advance the wider understanding and appreciation of arachnids, and to promote their conservation.

Find us at **www.britishspiders.org.uk**, www.facebook.com/BritishSpiders or on Twitter @BritishSpiders.

Registered Charity - England and Wales No. 260346, Scotland No. SC044090

Factsheet text by Francis Farr-Cox, Geoff Oxford and Helen Smith, edited by Nicky Rowbottom, designed by Colin Edwards Graphic Design

FACTSHEET 4

Garden spider

(*Araneus diadematus*)

British Arachnological Society

Advancing Arachnology

Francis Farr-Cox

Female Garden spider

The Garden spider is probably our most familiar, common spider found outdoors. They are most noticeable in autumn when full grown adult females are obvious in the centre of their bicycle-wheel-shaped orb webs. The webs are iconic structures, and are what most people think of as a typical spider's web.

Identification

Although the shape of the Garden spider's abdomen is usually quite distinctive the 'shoulders' are less obvious when it has just eaten. These rounder individuals could be confused with the Four-spot Orb-weaver *Araneus quadratus*, but that species is unlikely to be found in gardens and has an abdomen with four large, white spots. Two very common species, *Metellina segmentata* and *Metellina mengei*, can also look like the Garden spider but they are a lot smaller and their webs have a hole in the centre - the centre of a Garden spider's web is criss-crossed with silk. Adult male garden spiders look like females but are very much smaller. Without their enlarged pedipalps ('boxing gloves' – see *Essential spider info*. Factsheet 1) they could be mistaken for juveniles.

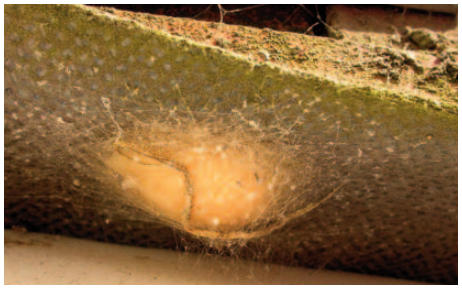
Life history

The tiny, yellow young have a black tapering mark on the abdomen, quite unlike the colouration of larger juveniles and adults. They emerge from their egg sac in May and initially cluster together as a tight, golden ball in a tangle of silk. Any disturbance causes the ball to 'explode' as the spiderlings temporarily scatter. After about a week they begin to disperse, build their own miniature webs and start to feed. They usually moult two or three times before overwintering as half-grown juveniles. Growth resumes the following spring and the spiders reach maturity later that year. In the south of Britain, however, they can reach adulthood in their first year.

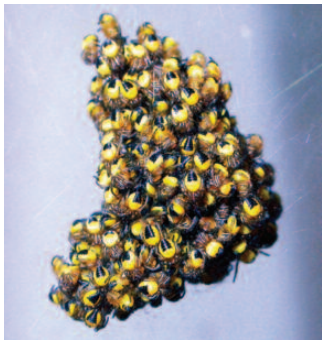
Males mature in August or September and females a couple of weeks later. Mature males don't make webs but seek out adult females, recognising chemical signals they leave on their silk. When a male finds a female's web he announces his arrival by gently plucking the silk strands. These vibrations tell the female that he is a suitor and not potential food. After successfully mating he beats a quick retreat, hopefully to mate with another female.

Mated females feed voraciously in late summer with their abdomens enlarging as they convert food to eggs. This is the season when these spiders are most obvious in the garden. As winter approaches, the female abandons her web and seeks out a sheltered spot to lay her eggs – in vegetation, at the base of a wall or sometimes inside outbuildings. The egg sac is covered in tough, yellowish silk and is initially guarded by the now eggless and shrivelled mother. She will die before the new year, leaving her egg sac secure within its protective silk.

Mary Sykes



Geoff Oxford



Geoff Oxford

Above, Garden spider web

Far left, Garden spider egg sac - length 25mm

Left, Newly-emerged Garden spiders

Webs

Garden spiders spin the classic orb web, strung between suitable supports up to two metres from the ground. Its main supporting strand can be over three metres long. The web consists of a series of silk threads radiating from the centre across which the spider lays a spiral of thread. The very centre of the web is filled with a criss-cross of strands. Although the web appears to us a marvel of engineering its construction takes the spider just half an hour - using only the sense of touch. Normally the spider hangs head down at the centre of the web but a single strand runs from here to a safe retreat where the spider is sometimes found.

During web building the spiral threads are coated with sticky droplets produced, like the silk itself, from the spinnerets at the tip of the abdomen. The spider's feet are cleverly adapted to prevent them sticking to these spiral threads but the animals they catch are less fortunate. Their struggle to escape rapidly attracts the spider which characteristically wraps its victim in swathes of silk before biting it. The wrapped prey may be eaten there and then or left for later. Dust and pollen in the air mean that the droplets on the web soon lose their stickiness and so the spider normally rebuilds its web every day or so. During rebuilding the spider eats the old web, recycling the silk proteins with remarkable efficiency. An interesting behavioural characteristic of Garden spiders is that, if gently disturbed when in the centre of their webs, they rapidly oscillate the web to and fro until they become a blur, presumably to confuse potential predators.

FACT FILE

Garden spider, Cross spider or Diadem spider (*Araneus diadematus*)

Body length: males, 4–8 mm; females, 10–18 mm.

Appearance:

- Cephalothorax (front section of body) – colouration very variable, see abdomen below
- Abdomen (back section) – a distinctive shape with 'shoulders' making the body much wider at the front. The background colour can range from pale straw to dark brown or even reddish with a darker central pattern tapering backwards. In the middle of the dark patch are white markings that can look like a cross
- Legs – brown, banded with darker brown and with many short (very visible) spines.

Habitat: gardens, hedges, fences, scrub, woodland edge and understory, heathland.