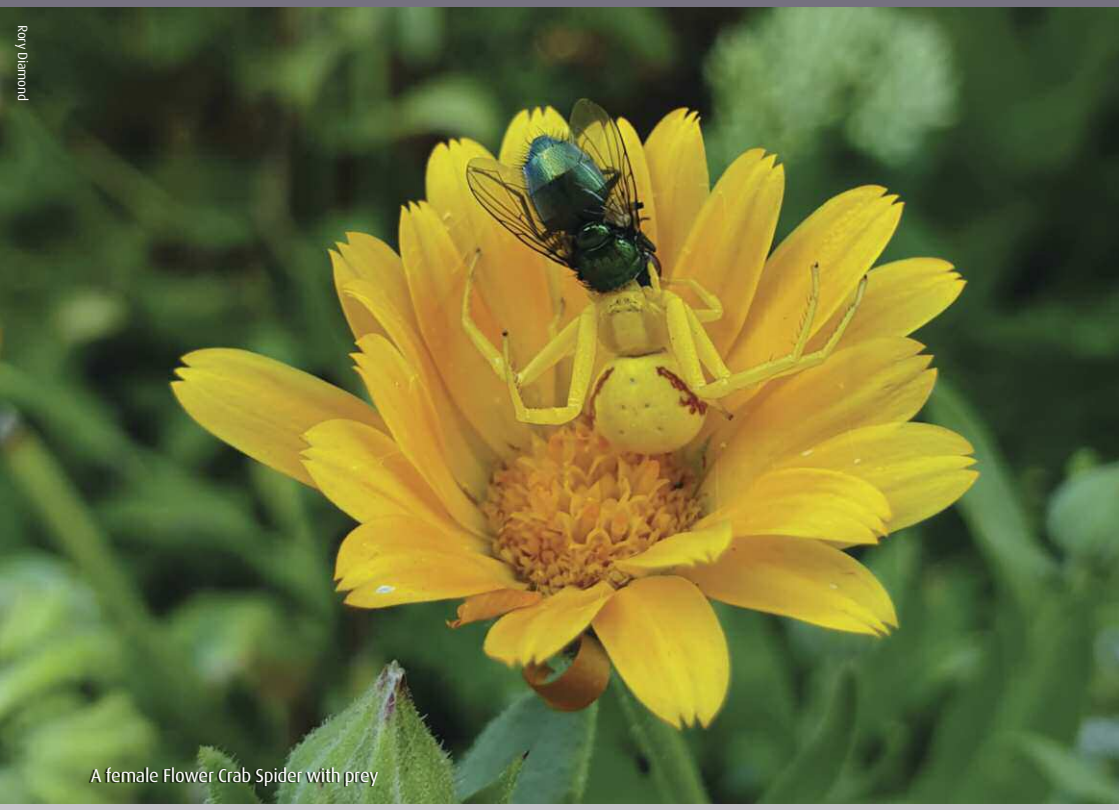
FACTSHEET
12

Flower Crab Spider

(*Misumena vatia*)

British Arachnological Society

Advancing Arachnology



Rory Diamond

A female Flower Crab Spider with prey

This unmistakable species from southern Britain, best known for its ability to change colour, is often seen lurking on flowers awaiting the arrival of pollinating insects on which it feeds.

A female guarding her egg sac, wrapped-up inside leaf

Tone Killick

How to recognise a Flower Crab Spider

Like other members of the Crab spider family, the Flower Crab Spider has a distinctly crab-like appearance. Their bodies are broad and squat, their front two pairs of legs are longer than the back pairs, and they can move sideways like a crab. Juveniles, and some mature females, have abdomens that are almost completely chalky-white – unique amongst British spiders. Mature females can also be a uniform deep yellow or cream (see **Colour change** below). Whatever the background colour, some individuals can have a pair of oblique red stripes (or dots) either side of the abdomen. Although males are initially very similar to females, they become thinner and darker as they mature (see **Fact File**). As adults they are only a third the size of females and look very different indeed. Flower Crab Spiders, like other spiders, do not actively hunt or build silk snares to catch insects. Instead they sit and wait. Mature females and immatures are typically found motionless on flower heads waiting to ambush their prey, while mature males spend more time deeper in the vegetation as they wander in search of females.

Life cycle

During May and early June males mature, with females following in mid to late June. Males find females by discovering and following their silk draglines, which they leave while moving between flowerheads. Mating is rather inelegant, with the male climbing over the female's head and working his way round to under her abdomen where insemination occurs (See Factsheet 1). The female constructs her egg sac within a rolled leaf and guards it until the young emerge about three to four weeks later. The young spend their

FACT FILE

Flower Crab Spider
(*Misumena vatia*)

Body length:
males, 3-4 mm;
females, 9-11 mm

Appearance:
• Cephalothorax (front section of the body) – Female: translucent white or yellow with a wide, white, median band flanked by narrower, often green(ish) bands. Mature male: dark brown with whitish-green median band. The eye area, in both sexes, is often suffused with yellow, each eye surrounded by a white circle.

• Abdomen (back section) – Female: rounded, squat and rather dumpy, widest at the rear end. Usually uniformly coloured, white, cream or deep yellow; sometimes with a pair of red, oblique, lateral lines (or dots) in the front half. Mature male: oval, white with two, dark brown stripes in the back half, and dark brown sides.

• Legs – The first two pairs are much longer than the others and are held out to the side like those of a crab. Female: same uniform colour as the cephalothorax. Mature male: front two pairs of legs with alternate dark and light bands, back two pairs uniform pale.

Habitat: Common in gardens and flower-rich meadows, and amongst grass and scrub along woodland margins.

first winter as juveniles, maturing the following year. Adults of both sexes die before their second winter; females live for about two years, with males a month or so less.

Prey far bigger than themselves

Flower Crab Spiders rely on speed, brute strength and venom to subdue their prey, mostly insects alighting on flower heads to collect pollen or nectar. Mature female spiders can catch insects many times larger than themselves, such as bumblebees and butterflies. Once the prey has been grasped by the spider's first pairs of legs, bitten and rapidly subdued, digestive juices are applied to the surface of the prey. After the insides are digested, the resultant liquid 'soup' is sucked out. Unlike many spiders species, Crab spiders lack teeth on their jaws (chelicerae) and merely puncture their prey, rather than mashing it to a pulp. As a result, the insect's empty hulk is left looking superficially intact, as if it was still alive.

Colour change

This species is one of a very small number of British spiders that can change colour, between white and yellow, according to their background. The white coloration of the spider's abdomen is a result of crystals of guanine (the main excretory product of spiders) being laid down in a dense deposit under the almost transparent cuticle. When a white mature female is placed on a yellow background, she starts to synthesise a yellow pigment between the guanine and the cuticle. Over several days she darkens progressively through creams to bright yellow. The yellow pigment can later be broken down again to reverse the colour change. The reasons for the colour change, which might seem intuitively obvious, are complex. It has been shown that Flower Crab Spiders are difficult to see at a distance for both bees (potential prey) and birds (potential predators) but at shorter ranges they often are visible, depending on the particular plant species they occupy. However, blowflies (potential prey) cannot detect them, even at close quarters.

The red lateral stripes or dots on some females are fixed and not affected by the background. The most likely insect predators of the Flower Crab Spider, such as wasps, cannot see red and the patches are not distinguishable to them in the ultraviolet spectrum either. It seems more likely that they may act as a warning colour for birds and other vertebrates that are not red-blind.

Tone Killick

This pure white female on a white flower contrasts with the yellow female on a yellow flower in the cover image

David James

Dance fly caught by female Flower Crab Spider with a courting male on her abdomen

Based on Spider Recording Scheme data 2022

Flower Crab Spider in Britain

Where are they?

The Flower Crab Spider is a southern species in Britain, and does not occur north of an east-west line drawn along the north Wales coast. It is not present on the Welsh mountains and, strangely, is rarely recorded in the central Midlands and western East Anglia.

The size, shape and coloration of this spider means it is one of the relatively few British species that can be identified confidently from a photograph.

For more information

britishspiders.org.uk/srs_Misumena_vatia

Bee, L., Oxford, G. & Smith, H. (2020) *Britain's Spiders*. 2nd edn. Princeton, WILD*Guides*.

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,** on **Twitter @BritishSpiders** and on **YouTube** at **youtube.com/c/BritishArachnologicalSociety**

Registered Charity - England and Wales No. 1185594, Scotland No. SC050006

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