

Essential spider info

Hairy but harmless and very **very** helpful...



Advancing Arachnology

Paul Richards



Zebra spider (*Salticus scenicus*)

Spiders are a remarkable group of animals and often misunderstood.

They need all the friends they can get.

In Britain we have about 660 species (of which around 280 are the tiny money spiders).

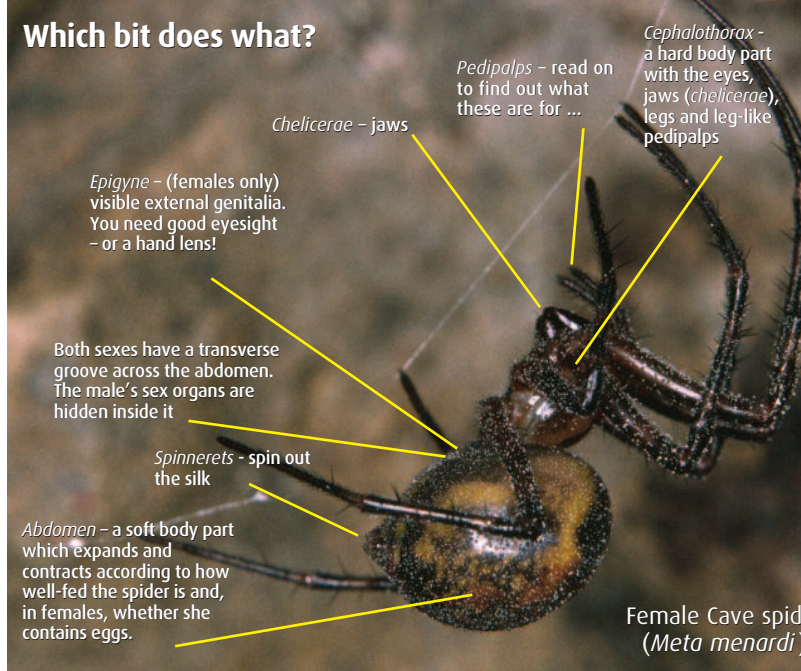
Insect or spider?

Although they look similar, spiders and insects are very different.

Spiders have:

- a) four (rather than three) pairs of legs,
- b) two (rather than three) major body sections,
- c) no wings (although some insects are wingless too), and
- d) six or, more usually, eight simple eyes (rather than two compound eyes).

Which bit does what?



A spider's life

In some species the females lay eggs within a few days of mating, in others it happens after several months. The eggs are produced from the genital opening and are wrapped in silk. In some species the female immediately abandons the egg sac while in others she guards it until the young emerge. Some carry their egg sacs around with them, ensuring their safety and providing the best possible conditions for the eggs' development.

In a few British spiders the female even feeds her young for a short while on regurgitated food, like many birds do. The newly-hatched young resemble their parents in every way except for sexual organs and possibly colour. They grow in size by moulting - shedding their 'skin' (exoskeleton) from time to time. The number of moults required to mature varies between species, as does the overall lifespan. Many spiders live for only a few months as adults, while others like the female large house spiders (*Eratigena* species) can survive for a couple of years.



Geoff Oxford

A spider's egg sac

Food and catching it

British spiders catch live prey such as flies, bees and moths. All spiders produce silk (for a variety of functions) but not all use silk to catch food. Some families such as the wolf spiders (*Lycosidae*) and the jumping spiders (*Salticidae*) use their remarkably acute eyesight to spot prey. They then overpower it either by speed (*Lycosidae*) or by jumping on it (*Salticidae*). Many families, however, produce some kind



What sex and which species?

Have a good look at the spiders in your house. Very soon you'll be able to spot the males, on the hunt for females.



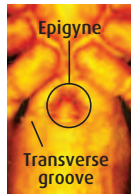
Pedipalps
Male Large House spider
Eratigena saeva

Males – have 'boxing gloves'...

In most spider species, when males are nearly full grown, the ends of the pedipalps begin to swell and resemble miniature boxing gloves. When mature, they are very complex structures, which vary in detail from species to species. They are the main feature of males used for identification.

... females – don't

The pedipalps of females remain as slim, leg-like structures throughout their lives. The main feature used to identify female spiders is the epigyne, (external genitals) revealed when they reach maturity.



Epigyne
Transverse groove
Female Large House spider
Eratigena saeva
(underside)

of web to ensnare their prey. The most iconic are the orb-webs built by four spider families. The classic web is the one made by the Garden spider (*Araneus*

diadematus). These orb-webs incorporate sticky silk which holds the captured prey long enough for the spider to strike.

Other webs are non-sticky and are designed so that the legs of prey get tangled. Once caught, the prey is subdued by the injection of poison via hollow fangs on the

chelicerae. Digestive juices are then secreted over the food and, after a while, the liquid 'soup' is sucked up.

Courtship and mating

In many spiders, males mature more quickly than females. Mature males spin a small silk pad on which they deposit sperm. They then draw the sperm into the pedipalps, which act like syringes. Males abandon their webs (if they make one – see box below left) and go in search of females. Courtship is very long in some species, very brief in others, and differs in detail depending on whether the species builds webs. In others it includes dancing or giving gifts. The culmination of courtship is the locking of the male pedipalp to the female epigyne, and the transfer of sperm.

Why spiders matter

Although the sight, or even thought, of spiders makes many people distinctly uncomfortable we should remember that British spiders are largely harmless and do lots of good for people. Spiders are so numerous that they are a vital part of the ecosystems on which we all depend. Over 800 can be found in a square metre of grassland. They catch and eat many of the insects (houseflies, midges, wasps) which bother us in our homes and gardens and help to prevent the build-up of agricultural pests, reducing the need for artificial pesticides. Spider silk is currently of interest to medical researchers as a potential material for making artificial joints and as an aid to regenerating severed nerve fibres. Finally, many people gain immense pleasure from seeing frosted orb-webs on a winter morning and from watching and studying the fascinating lives and amazing forms and behaviours of our native spiders.

Spider bites - myth and reality

Although they do produce potent venoms with which they immobilise and kill their prey, the vast majority of British spiders cannot break human or pet skin with their fangs. There are a few species that, if provoked, can bite and inject venom, but this usually happens when trapped inside clothing or bedclothes, or poked with a finger! The effect of a bite is usually very mild but, as with bee and wasp stings, people's responses vary widely. Most rashes or wounds attributed to a 'spider bite' have other causes – it's almost never a spider.



Jumping spider (*Marpissa muscosa*)

Further information

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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.

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