



## A Brief Guide to Spider Webs

*by Geoff Oxford*



Not all spiders build webs to catch their, largely, insect prey, but those that do are responsible for some of the most iconic and beautiful structures in the living world. Katty Baird explored the magic of the Garden Spider orbweb in 'Wonderfully Woven Webs' (*Bug Club Magazine* No. 3-4, 2015); here I take a more general look at spider webs.

Firstly, the web descriptions in this article cannot be comprehensive, and there is often much variation within families. The outlines should, however, provide an indication of the many ways British spiders use silk to detect and trap their prey.

### Orb webs

The orb web is the structure children often draw when depicting spiders; it is made by four spider families in Britain. In three of the families the silk spirals are coated with sticky glue droplets. These detain any prey which hits the web, enabling the spider to strike. However *Uloborous plumipes*, an increasingly common orb-weaver in greenhouses and garden centres, produces an orb made of **cribellate silk** (see Fact File). Prey get their legs and bristles caught up in the Velcro-like strands.

### Funnel webs

Funnelweb builders in Britain should not be confused with the infamous Sydney funnelweb spider from Australia (which is in a completely different family). Our single

## WEB FACT FILE

**Not all spiders spin webs:** Spiders are unique in the way that silk is involved in virtually all aspects of their lives. However, although spiders and webs are commonly thought of together, only 17 out of the 37 spider families in Britain build webs in order to catch prey.

**Silk production:** Spiders produce silk proteins in glands deep within their abdomens. It emerges as fine strands of finished silk from highly mobile, finger-like organs (spinnerets), at the rear of the body. Some insects also produce silk (like the silkworm) but, unlike spiders, their silk emerges from the mouthparts.

**Web silk:** Spiders can produce many different sorts of silk which have distinct physical properties and which are used for a variety of purposes. The familiar orbweb of the Garden spider (*Araneus diadematus*), for example, requires silk from three separate types of silk gland during its construction. Some spider families produce a woolly, entangling silk (known as **cribellate silk**) which emerges from special glands and which is combed out by rows of bristles on the hind legs.

**Web types:** Broadly, seven different web architectures can be recognized among British spiders:

- |           |           |
|-----------|-----------|
| – orb     | - radial  |
| - funnel  | - hammock |
| - tangled | - purse   |
| - lacy    |           |





family of funnelweb spiders contains the, perhaps all too familiar, large house spiders (*Tegenaria* species). In the late summer and autumn males of these species run across floors and fall into baths and sinks in their quest for a female. Females, and for most of their lives males too, live in little-disturbed places, constructing a flat sheet of non-sticky silk with a tubular retreat in one corner. These webs can outlive their original builders and be used and refurbished by several generations of occupants.



Photo: Geoff Oxford

**Above: Classic orb web of the Garden Spider,  
*Araneus diadematus***

### **Tangled webs**

These three-dimensional criss-crosses of silk are built by three families of spiders. Perhaps the most familiar example, festooning the corners of rooms and the back of furniture, belongs to the Daddy-longlegs spider *Pholcus phalangioides*, a species that has rapidly spread north



Photo: Geoff Oxford



**Above: Funnel web of the large house spider *Tegenaria saeva*.**

through Britain over the last 50 years or so. Less noticeable are tangled webs on low vegetation made by the family of comb-footed spiders, Theridiidae. These spiders are mostly small and rounded and sometimes quite colourful. They include the well-known Noble False Widow spider *Steatoda nobilis*, which can build a tangled web as well as one resembling a funnel web.

### **Lacy webs**

Almost every wall with crevices, and dense garden conifers, will support untidy discs of bluish-grey silk around a central retreat. These are made by the cribellate (lace-weaving) spider, Amaurobius. The spiders shoot out at frightening speeds when the lacy lines are disturbed; they are easily fooled when the web is touched with a tuning fork or a rapidly vibrating electric toothbrush!







**Tangled web of the comb-footed spider *Enoplognatha ovata***

Photo: Geoff Oxford



Photo: Geoff Oxford



**Lacy web and retreat of Amaurobius**

### **Radial webs**

Here a number of trip-wires radiate out from a central, silk-lined retreat, built into a hole or crevice. This is probably the most primitive type of web in that it doesn't serve to entangle but merely alerts the spider to the prey's presence. Some species in the only British family to build these webs (Segestriidae) are large, such as *Segestria florentina* which is slowly increasing its range across southern England and south Wales and sports impressive green, iridescent jaws.







Photo: Rachel Strange



**Radial web of Segestria**

### **Sheet webs**

These are built by the money spiders (Linyphiidae), by far the largest family in Britain. On a cold morning the sheer number of webs, built low down in a grassy field and made visible with dew, is staggering. The web consists of a domed sheet (hammock) of silk supported, in the larger species, above and below by 'guy ropes'. The upper guys also help to intercept flying insects, which fall down onto the sheet, below which the spider lurks.

### **Purse webs**

The single British species representing the 'tarantula' side of the spider family tree, *Atypus affinis*, occurs largely in the south. It builds a (usually) sealed, silk tube which is partly underground and partly above. Prey walking over the above-ground portion are seized from within and dragged inside through a slit cut in the wall by the spider.



Photo: Helen Smith



**Sheet web of a money spider**

Photo: N R Hunt



**Purse web of *Atypus affinis***

Why not write in with photos of webs you've seen?

**Geoff**