

## GLOSSARY

A **barrier web**, also known as a labyrinth, is a haphazard series of silk lines in front of and/or behind an orb web. These are thought to help deter and detect predators. The lines may also help to disorient flying prey, making them more likely to fly into the orb, which is the catching part of the web.

**Catching surface:** the area of an orb web that is covered by spirals or switchbacks of sticky, stretchy silk. In missing sector webs, the missing sector is defined by not having this catching surface, although a tangle of lines may fill the gap.

**Debris** refers to the remains of the spider's meals and sometimes small scraps of leaves and bark that are incorporated into webs and retreats. Some spiders join these bits in a line and hang it from the web, whereas others attach it to the surface of the web using conspicuous white silk. Retreats may also be made from, or incorporate, debris.

**Decorations** are silk patterns, or sometimes the silk-wrapped remains of the spider's meals (debris), which are woven onto the surface of the orb web. If examined closely the silk patterns often zigzag.

**Fan:** indicating the shape of a hand fan. Extending out from a central point.

**Hammock:** what we have termed here a hammock web is a sheet web that is suspended like a trampoline or circus safety net. The main supports and stabilising lines are around the edge and below the sheet and the centre is lower than the edges. There is often a tangle below the sheet where the spider waits for prey.

**Horizontal:** see orientation

The **hub** is the central area of an orb web. This is typically an irregularly woven area where the radial support lines meet and are joined together. Some spiders eat away part of this area when they have finished making the sticky spiral.

A **knockdown web** is a tangle of lines above or below a sheet web which disorients or intercepts flying insects so they land or fall onto the sheet. Like barrier webs, knockdown webs probably also serve a protective function by preventing predators such as wasps from easily flying in.

**Lace webs** do not contain sticky silk, instead they capture prey by snagging. Each line is composed of many tiny fibres which are combed to produce an entangling fuzzy thread, rather like a fluffed out strand of wool or cotton. The web is constructed in a characteristic pattern of ladder-like sections with zigzag steps. New regions show this clearly, but as the web ages, this structure decomposes, and sometimes new layers are laid over the old. Eventually the structure of old areas of the web appears as a jumble of different-sized squares, rectangles and circles.

A **nest** can be considered as a glorified retreat. Here we are specifically referring to the densely woven home of a particular kind of spider. These are often solitary, in which case the nest may be small, but sometimes they live communally, and the large nest may contain up to one hundred or more spiders.

**Orientation: vertical, horizontal or sloping.** These are all terms used to describe how an orb web is positioned. Using a bicycle wheel as a model, 'vertical' would refer to the normal orientation with the bicycle held upright ready for use. 'Horizontal' would apply if the bicycle were lying on its side, or 'sloping' if it were angled from being leant against a low wall or post.

**Platform webs** are a kind of sheet web. The sheet is gently to steeply sloping up and out from the spider's retreat, which is in a silk-lined burrow. The sheet is pulled taut into a smooth surface, which the spider runs on. This is the platform. Above the platform is a maze of knockdown lines.

**Radials** are the silk lines that radiate from the centre of an orb web to the outer frame or support lines like the spokes of a wheel. They are the framework on which the catching spiral is laid.

A **retreat** is a hideaway where the owner of the web may be lurking. This is typically a dead, curled leaf; a hole in a dead twig; or pieces of debris joined to form a tube, which is bound with silk. Sometimes the retreat is just a denser area of silk lines woven into a tunnel, which is usually against a twig or leaf. Often there is a protective tangle of lines around the retreat area, which can make it look like a separate web.

**Sector:** if you think of the radial lines that go from the centre of an orb web to the frame as being like the spokes of a wheel, then the area between each spoke is a sector (like a pie slice). 'Missing sectors' might be filled in with a tangle, but there are rarely any catching spirals through them. The catching spirals either form a U-turn to either side or end abruptly.

A **sheet** is a closely woven mesh of non-sticky silk lines. Sheet webs can be simply guyed out to the adjacent substrate, e.g. vegetation etc., or associated with a tangle of vertical or haphazardly orientated lines. The sheet part can be seen as a distinct flat or curving surface among the supporting lines. Dew, or a fine spray of water droplets, shows a sheet up clearly.

A **signal line** allows the spider to hide away from an orb web in relative safety, whilst allowing it to monitor the web in case prey flies in. The signal line is usually attached in the hub area at one end and can be followed to the spider's retreat at the other. One leg of the spider can often be seen resting on the line.

**Silk** is composed of thin, strong protein fibres. Silks are produced by a number of invertebrates, including caterpillars such as the 'silkworm' and spiders. Whereas the caterpillars and other insects mostly use silk to make a nest or a cocoon, spiders have adapted silk for all kinds of purposes. These include the covering for egg sacs, for making secure retreats and, of course making webs. Spider silk is spun from the spinnerets, on the tip of the spider's abdomen. Several different kinds are made, including combed fluffy silk (cribellate silk) which is used in lace webs, strong non-sticky threads like those that support orb webs and the sticky silk that is coated with viscous droplets and makes up the catching spiral on many orb webs.

**Sloping:** see orientation.

**Spirals** form the catching surface of a typical orb web. Sometimes there is literally one continuous spiral from the outer edge of the web into the hub. In other webs there may be breaks, or the catching thread may reverse direction once or many times. In most orb webs the spirals are made of sticky silk that is coated in glue-like droplets. A few kinds of orb webs have catching silk of a different nature (cribellate silk). This cannot be as highly tensioned as sticky silk, and so these webs often appear untidy and 'floppy'.

A **tangle** is a more-or-less unstructured and haphazard collection of silk lines without other features like an orb or a sheet. As a guide, we have defined a simple tangle web as anything over five lines in roughly a 10 x 10 x 10 cm area. When tangles are a part of a different web type they usually have a special name; for example, a system of haphazard lines placed on either side of an orb or below it is usually called a 'labyrinth' or 'barrier web' and a similar tangle above a sheet web is often called a 'knockdown web'.

**Vertical:** see orientation.