

Nurseryweb Spider

(*Pisaura mirabilis*)



Advancing Arachnology



Female Nurseryweb Spider

The Nurseryweb Spider shows a unique combination of fascinating behaviours: the male presents his partner with a nuptial gift prior to mating, the female carefully controls the rate at which her eggs develop and finally builds a nursery web for them - hence the name.



A male Nurseryweb Spider presents a silk-wrapped gift to a potential mate

Tone Millick



Female carrying her large egg sac

Geoff Oxford

How to recognise a Nurseryweb Spider

The Nurseryweb Spider is easy to recognise throughout its life. Although its colour, and the prominence of its pattern, are extremely variable, the pale mid-line down its cephalothorax, together with its tapering shape, and characteristic posture, make it distinctive. They are often seen basking, or waiting to ambush insect prey, on leaves and stems, with their front two pairs of legs held close and outstretched. More rarely they sit with their front legs bent inwards at the 'knee' in an 'arms akimbo' posture.

Nurseryweb Spiders share their ambush hunting life style with ground-dwelling Wolf spiders but tend to hunt higher in vegetation and are easily distinguished from them by their very different shape and patterning. The differences become even more obvious in the breeding season when female Wolf

spiders carry their small grey or white egg sacs under the end of their abdomen, held on their spinnerets. Once young Wolf spiders hatch, they travel for a few days on their mother's back. By contrast, Nurseryweb Spiders carry their much larger, round, cream egg sac under the front of the body, held in their jaws, before building a tent-like nursery web in which to guard their spiderlings.

Life history

Young emerge from the egg sac in mid-summer, initially within a silken nursery tent produced by their mother. After a few days they disperse to lead a solitary existence. By the start of winter they are about half-grown and pass the colder months down at grass-roots level. In spring they resume growth with most males maturing in May and June and females a few weeks later. Males are mostly dead by August but

FACT FILE

Nurseryweb Spider (*Pisaura mirabilis*)

Body length:
males, 10-13 mm;
females, 12-15 mm

Appearance:

- Cephalothorax (front section of the body) – colour/pattern is very

variable but generally colour co-ordinated with that of the abdomen (see below). Constant features are a central light stripe with broad, darker borders and a pair of large, pale, triangular patches like tear-drops just below the eyes, which give the 'face' a sad expression.

- Abdomen (back section) – elongated and tapering. The abdomen

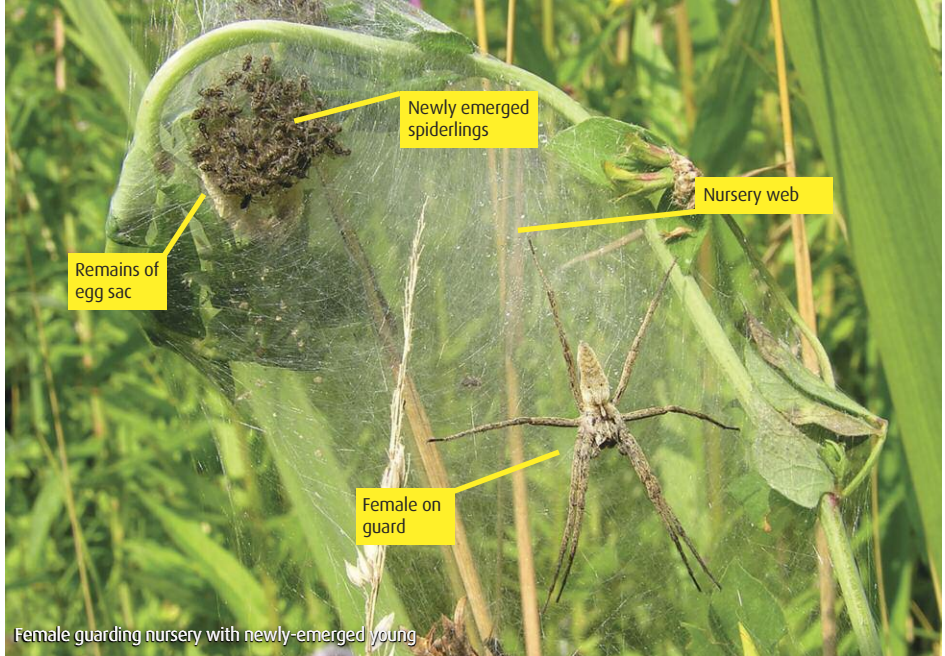
is often flanked by two, longitudinal, broad, pale bands but within these the coloration can be brown, either uniform or with darker brown chevrons, or with a cream/orange middle stripe (continuing that on the cephalothorax) sometimes with black or brown edging or patches. There are many combinations of

these features so no two individuals are identical.

- Legs – Uniform brown, sometimes with black or white mottling.

Habitat:

Found in a variety of habitats such as rough grassland, heathland, roadside verges and open woodland.



Female guarding nursery with newly-emerged young

females can hang on and, in the south of the country, some produce a second egg sac in September or October, dying before winter.

Sneaky seduction and maternal care

The Nurseryweb Spider's courtship behaviour is unique amongst British spiders. Before a male seeks out a female he catches a prey item, wraps it firmly in a ball of silk and holds it in his jaws (chelicerae). He then goes courting. If the female is receptive, he presents her with this 'nuptial gift' and, while she deals with it, he takes the opportunity to mate. Copulation duration increases with the gift's size and this, in turn, enhances fertilization success. Sometimes, however, males cheat and wrap up pieces of non-nutritional plant material as their gift, or even proffer an empty ball of silk!

Just over a week later the female produces a round, cream-coloured egg-sac about 7-8 mm in diameter containing around 150 eggs, which she carries about in her jaws for approximately three weeks. During this time she controls the temperature of the egg-sac by sitting with it on top of a leaf if the

weather is dull but moving to below a leaf if the sun is too hot. When she detects that the young have hatched within the egg-sac she begins to weave a nursery tent. This dense, roughly conical web encloses the tops of grasses, stinging nettles, rushes or other vegetation. The female sits inside it, still holding the sac in her jaws, until the young emerge. She then moves to patrol the exterior of the web, inside which the young cluster in a tight, dark ball by day. If the nursery is disturbed, the young 'explode' from the cluster before regrouping again; at night, they disperse throughout the web. Over a matter of four to seven days, the young disperse from the nursery and establish independent lives.

Why so variable in colour and pattern?

The short answer is that we don't know. One possibility is that it prevents predators, such as birds, building up a clear image of what the spider looks like. This leads to a hesitancy to attack when a Nurseryweb Spider is encountered, providing it with a split-second opportunity to dive into the vegetation.



Geoff Oxford

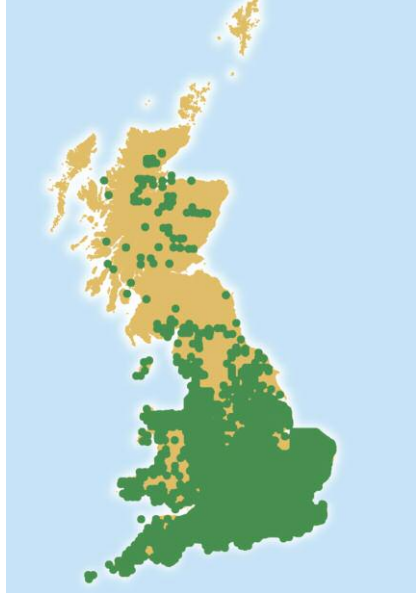


Helen Kirk



Ian Ballam

Some different colour forms of female Nurseryweb Spiders



Based on Spider Recording Scheme data 2022

Nurseryweb Spider in Britain

Where are they?

From northern England down to the south coast, the Nurseryweb Spider is common and widespread except on the higher ground of the Welsh Mountains, the Pennines and Dartmoor and Exmoor. The distribution is much patchier in Northumberland, Cumbria and northwards into Scotland.

Despite the extreme colour and pattern variation, this is one of the relatively few British spiders that can be identified confidently from a photograph.

For more information

britishspiders.org.uk/srs_Pisaura_mirabilis

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

The British Arachnological Society

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