

**FIRST RECORDS OF THREE SPIDER SPECIES IN IRELAND (ARANEAE): *GLYPHESIS COTTONAE* (LA TOUCHE), *MIOXENA BLANDA* (SIMON) (LINYPHIIDAE) AND *SEGESTRIA FLORENTINA* (ROSSI) (SEGESTRIIDAE)**

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**Introduction**

The first records of three spiders in Ireland are detailed: two of these are presumed native, the third is of uncertain origin. None of these species are noted in Helsdingen (1996) or subsequent publications pertaining to the Irish spider fauna. *Glyphesis cottonae* (La Touche) was collected at All Saints Bog, Co. Offaly, a site of considerable interest due to the presence of substantial birch *Betula* woodland on the raised bog. *G. cottonae* may be an internationally threatened species and is one of a number of species in Britain for which a Biodiversity Action Plan is to be developed. *Mioxena blanda* (Simon) is considered rare in Britain and was collected in Ireland in 1980 on coastal dune in Co. Wexford, though the specimen was misidentified at the time. *Segestria florentina* (Rossi) is a species that has been quite frequently imported into Britain and has established colonies at a number of coastal and market towns. It is not known if it is established in Ireland and a number of possible origins for the specimen are discussed. All three species were identified using Roberts (1985; 1987).

***Glyphesis cottonae* (La Touche, 1945) (Linyphiidae)**

One male and one female of this very small (1-1.1mm) linyphiid spider were caught in pitfall traps set in All Saints Bog, Co. Offaly (N0111). Traps (n= 10) were run over two periods; 25 April to 23 May (♂ taken) and 23 May to 12 June 2008 (♀ taken). The trapping forms part of an investigation of the spiders of this site carried out on foot of an award from the Heritage Council under the Wildlife

Grant Scheme 2008 (WLD/2008/16452). The site is a raised bog and active raised bog is a priority habitat under the EU Annex I habitats guide (European Commission, 1996). All Saints Bog is more remarkable in an Irish context however on account of the presence of a substantial area of birch *Betula* woodland on the bog. Bog woodland is priority habitat under the same directive. The woodland is of considerable age and has yielded previously a number of interesting invertebrate finds (O'Connor and Speight, 1987; Speight, 1990).

The traps were set in a flushed area of bog lying between the main area of woodland and a substantial copse of Scots pine *Pinus sylvestris*. The pine seems to have secondarily invaded the woodland and is now present in substantial amounts. The station is wet, with some open pools dominated by *Sphagnum cuspidatum* and moss hummocks formed by a variety of species (primarily *Sphagnum*). The hummocks are overgrown by heather *Calluna vulgaris* and hare's tail cotton grass *Eriophorum vaginatum* and a range of other typical bog species are also abundant including cross-leaved heath *Erica tetralix*, common sundew *Drosera rotundifolia*, bog rosemary *Andromeda polifolia* and cranberry *Vaccinium oxycoccus*. Less typical, both crowberry *Empetrum nigrum* – on hummocks – and royal fern *Osmunda regalis* are also locally abundant. Small and tallish (circa 1.5-2m) saplings of birch and pine (the latter more abundant) are also to be seen and a good number of dead saplings (killed by fire) are still standing in the vicinity.

*Glyphesis cottonae* had Nationally Scarce (Notable A) status in Britain (Harvey *et al.*, 2002) where it is abundant in a small number of *Sphagnum* bogs associated with heathlands in Dorset, Hampshire and Surrey. Merrett (*in* Harvey *et al.*, 2002) suggests the species has a preference for sturdy growth of *Sphagnum* above water level and this is echoed in All Saints Bog by the presence of *Sphagnum* hummocks at the trapping station. The loss of heathland and drainage of bog threaten the species in Britain and maintenance of a high water table is suggested as being important with respect to its conservation. In 2005, *G. cottonae* was one amongst a number of species selected for preliminary inclusion in a U.K. Biodiversity Action Plan for spiders (Russell-Smith and Harvey, 2005). Since then the original list was

subject to intensive scrutiny and this has resulted in the generation of a shorter list of species which still includes *G. cottonae* – given that it had undergone a marked decline in the U.K. – and, ministerial approval has recently been given for the development of a conservation plan for each of these species (Harvey and Russell-Smith, 2008). In a recent draft revision of the national status of spiders in Britain using I.U.C.N. standards, *G. cottonae* has been given Vulnerable status (Dawson *et al.*, 2008).

Elsewhere in Europe the spider has been recorded in association with wet heathland and natural *Picea* forest (Hänggi *et al.*, 1995). It has a Palearctic distribution (Platnick, 2008) but is restricted in Europe where it occurs in Belgium, Finland, Germany, Kaliningrad (Russia), Poland and Sweden (Helsdingen, 2007). It has been recorded from Japan (Saito and Yasuda, 1990) but seems not as yet to have been recorded from other parts of Asia or Russia.

It is argued (Speight, 1990) that the birch woodland component of All Saints Bog represents a relict biotope in Ireland that may be of international interest and that this component also provides the most interesting cross-section of invertebrates from the site in general. The presence of *G. cottonae* certainly adds to the interest of the site and while the species does not have a strong association with forest habitats *per se*, the Irish specimens was found in relative proximity to the woodland. The continuous presence of the forest over an extended period would suggest an absence of significant grazing over the same time-frame and would have served to discourage extraction of peat. Its presence as a deterrent to exploitation may have helped protect other components of the bog as a whole, and offer habitat continuity for a range of plant and animal species. The north-east section of All Saints Bog has been subject to extensive drainage and mechanical harvesting of peat, and while this has now stopped, the process seems to have caused significant drainage from the area of remaining high bog where little open/*Sphagnum* dominated pools or hummock/hollow development was evident to the author on a significant number of visits through 2008 (>10 days). Continued lowering of the water table within the bog may adversely affect the population of

*G. cottonae*.

*G. cottonae* is most usually found between September and May but more frequently from October to February. The specimens from All Saints Bog are thus perhaps late appearing in the species' season and may evidence the presence of a substantial local population. Collecting from the site at a more appropriate time of year would be necessary to answer this question.

***Mioxena blanda* (Simon, 1884) (Linyphiidae)**

A single male specimen of this very small species (1.5-2mm) was found in a collection of spiders held in the Natural History Division of the National Museum of Ireland. This collection was made by Lesley Gibson between 1979 and 1982 at Carnsore Point, Co. Wexford and a list of species recorded, based on a brief examination of the collection, was published previously (Nolan, 2000). In 2006, the National Biodiversity Data Centre, Co. Waterford, commissioned the author to verify identifications and digitise information pertaining to the collection and it was during this process that the specimen of *M. blanda* was identified. It had been originally misidentified as *Lepthyphantes ericaeus* (Blackwall, 1853) (Linyphiidae). In Britain, the species has Nationally Scarce (Notable B) status and is considered rare. It was felt that prior to the species' inclusion in a U.K. Biodiversity Action Plan, its status should be further investigated (Russell-Smith and Harvey, 2005). But since then, it has been given Endangered status under I.U.C.N. guidelines (Dawson *et al.*, 2008).

The Irish specimen was collected in a pitfall trap set between 26 October and 9 November 1980 at Pullinstown Burrow, Carnsore Point, Co. Wexford T114039. The trap was set in fixed yellow-dunes on the south-coast, amongst vegetation dominated by marram *Ammophila arenaria*, burnet rose *Rosa spinosissima*, creeping red fescue *Festuca rubra*, the bent grass *Agrostis stolonifera*, lady's bedstraw *Galium verum*, bracken *Pteridium aquilinum* and other mixed grass species. The species' occurrence in this habitat agrees with some records from other countries. The spider is most usually recorded from disturbed or cultivated habitats: cereal and oilseed fields; vineyards; surfaces of spoil heaps (Hänggi *et*

al., 1995). The greater abundance of records from natural and semi-natural habitats are from oligotrophic grasslands, fallow and cultivated meadows, and to a lesser extent from forest types including alder *Alnus*, birch, and mixed oak/birch. It has been found in dense stands of *Ammophila* in Denmark (Boggild, 1975). British records are from an essentially similar range of habitats but also include saltmarsh, pine litter and riparian gravels (Harvey *et al.* 2002). Thornhill (1980) has collected it in pitfall traps set in arable fields between autumn and spring.

It is suggested that its preferred habitat is subterranean (Harvey *et al.* 2002) (there is a record from inside a tin mine (Cowden, 1983)) but this broad suggestion is made on the basis of no preferred habitat having been supposedly observed in Britain. The species does seem however to prefer habitats subject to a fairly high degree of disturbance – with a thin vegetative sward or significant amounts of exposed soils. This being the case and knowing that it occurs on spoil heaps associated with mining, a record from inside a mine is perhaps not as unexpected as it may seem and does not necessarily suggest it is preferentially subterranean. At microsite level the spider is found within litter, deep amongst tussocky grasses at ground level, amongst gravels or piles of stones subject to disturbance.

Both sexes are recorded from August through to January, the majority appearing from October to December (Harvey *et al.*, 2002) and the Irish record fits this pattern. The fact of the species being mature during winter can at least partially account for its not having been noted previously from Ireland, since little collecting is generally carried out during this time of year.

*M. blanda* is widely scattered through southern Britain (there are no records from Scotland) though there are few records, most of these from southern England (Harvey *et al.* 2002). It is limited in distribution to Europe and Russia and has a northern distribution in this region, occurring throughout Scandinavia but not recorded from much of the Mediterranean including Spain, Portugal and Greece (Helsdingen, 2007).

Assessing the occurrence and abundance of such a small species is not easy. In this case, collecting from tilled cereal/arable fields in the south-east of Ireland

during the later autumn and winter months would perhaps be the most efficient way of demonstrating the species' presence and distribution, though this obviously does not target the natural or semi-natural habitats that may be of conservation priority.

***Segestria florentina* (Rossi, 1790) (Segestriidae)**

A single female specimen of this species was collected in a large food retail store in the city centre of Dublin O1533 around September 2005 by an employee, who brought the spider to the Natural History Museum, Dublin in early October of the same year. The specimen supposedly emerged from a box of Fyffes bananas which he had opened one morning. This box had been sitting on a pallet of various fruits and vegetables which had been left at the store in the early hours of the morning.

*S. florentina* is significantly larger than *S. senoculata* L. 1758, the other species of *Segestria* found in Ireland. A third species, *S. bavarica* C. L. Koch, 1843 occurs in Britain but has not yet been recorded from Ireland. The single female of *S. florentina* seen by the author measures 20mm in length (about twice the size of a large female of *S. senoculata*) from the tip of the prognathous chelicerae to the rear of the abdomen. Legs I and II are long, robust, dark and quite hairy. The specimen has a very dark abdomen and lacks the distinctive dorsal pattern seen in the common species (males of *S. florentina* apparently have a more distinct pattern). It was readily identified by the ventral spination on metatarsus I and by the large chelicerae which under direct light have a striking metallic green sheen. Immatures of *S. florentina* may be identified on the basis of the same characters.

In behaviour *S. florentina* is typical of the genus, establishing a retreat in a crack or crevice which it lines lightly with silk. The spider then extends silken tripwires from the mouth of the retreat in a radial pattern. Potential prey crossing these lines trigger an attack by the occupant. The presence of such lines at the mouth of a retreat is diagnostic of the genus in Ireland and Britain and webs of large specimens of *S. florentina* would have a noticeably large opening.

The species originally was limited in distribution to Europe, having its base in

the Mediterranean region, however since it spreads *via* port towns, it is now found further afield in Europe (Helsdingen, 2007; Platnick, 2008). The collector of the specimen in question felt quite certain that the spider came from within the box of bananas and it seemed worthwhile to trace the path taken by such a box. To this end Fyffes, Ireland, was contacted and the following information pertaining to the importation and distribution of bananas was obtained. Import and distribution practices have changed significantly even since the end of 2005, notably as a consequence of the rise of the mutiples who have taken over many of the services once offered by a company such as Fyffes – so the information contained herein pertains to the practice at the end of 2005. It must be stressed that while the present note mentions Fyffes there is no implication that Fyffes is more likely to accidentally introduce specimens than any other importer or is any less vigilant with respect to the observation of the regulations governing the import of goods or foodstuffs.

The procedure whereby bananas were at the time imported may be briefly summarised: the fruit was boxed at the point of origin (a proportion of it also being bagged in small amounts depending on the placed orders), then loaded and shipped. At that time, Ireland was the first port of call for all of Fyffes European fruit imports from Central and South America (as many as eleven countries). Shipping took place under temperature controlled conditions, the fruit being maintained at 13.6° Celsius to temporarily stall the ripening process. Unloading occurred at the port of Foynes, Co. Limerick, and boxes were brought to ripening plants all over Ireland where they were stored again at a temperature of 13.6°C. Depending on local sales/demands, batches of fruit would be exposed to a very small amount of ethylene gas at a temperature of approximately 18°C for three to four hours in order to re-activate the ripening process. After a few days, they would be ready for distribution to retail outlets countrywide. Other companies at that time imported bananas into Ireland *via* England or Continental Europe, whence they were trucked in *via* roll-on-roll-off facilities.

This information does not however satisfactorily answer the question of the

specimen's origin. The fact that *S. florentina* is a European species weighs strongly against a South American origin (unless it is shown to have already established itself there) despite its being clear that a stowaway specimen could potentially quite easily survive the above procedures – temperatures not being so low as to be life threatening. Other fruits e.g. grapes, are imported from Mediterranean countries by Fyffes, and it is certainly more plausible that the specimen's presence in the banana box could have been a consequence of cross-contamination – holes on the side of the boxes to allow for handling would grant a spider easy access; and an essentially nocturnal species such as *S. florentina* could be drawn to the dark interior. A third possibility however is that the specimen originated from a population already established in Ireland and had no association with the fruit until the shipment arrived in the country. Since however no established population of *S. florentina* has been found here, the actual origin of the specimen must remain speculative. As such the record should perhaps be considered an observation of an imported species that one could fairly reasonably expect to see established in Ireland. This note may assist in the identification of colonies if they exist.

In Britain, *S. florentina* is known from a fairly large number of sites at ports and market towns in the very south of England, and is spreading. According to Helsdingen (2007), *S. florentina* occurs primarily throughout the Mediterranean but has been recorded from Germany and the Netherlands. It occurs in Europe as far east as Georgia (former U.S.S.R.) (Platnick, 2007).

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