

FIRST IRISH RECORDS OF *THERIDION PICTUM* (WALCKENAER, 1802) (ARANEAE, THERIDIIDAE) FROM COUNTIES ARMAGH AND ANTRIM

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Abstract

The first observation of *Theridion pictum* (Walckenaer, 1802) in Ireland was made in 2013 by Stephen Foster at Craigavon, County Armagh, and was evidenced by photographs. Voucher specimens were not collected however and because a critical identification had not been made, a note was not prepared. In May 2023, Myles Nolan visited the location at which the species had been observed and collected a number of specimens primarily from *Ulex* scrub confirming them as *T. pictum*. The species' ecology and distribution is briefly characterised.

Key words: Araneae, Theridiidae, *Theridion pictum*, first Irish records, Northern Ireland, Armagh, Antrim, Gorse, *Ulex*, waterside, lakeshore.

Introduction

In October 2013, Stephen Foster (SF) was beating *Ulex* shrubs on an embankment in the area of the Craigavon Lakes, County Armagh, when he collected a submature spider with a clear, dentate, dorsal pattern (Plate 1a). He felt, on the basis of examination of a range of photographs on the internet, that the species involved was most likely *Theridion pictum* (Walckenaer, 1802) although an unusually marked *T. varians* Hahn, 1831 seemed another possibility. Finding that the former species appeared not to be listed for Ireland he contacted Martin Cawley and then Myles Nolan (MN) for their opinion. MN agreed the photograph very strongly indicated *T. pictum* but suggested that in order to be absolutely certain it would be necessary to collect some adult specimens.

On 31 May 2014, SF collected spiders from *Ulex* at the same location, gathering some 10 specimens, a number of which he retained. He sent a photograph of a female's epigyne to MN in February 2015 (Plate 1b) which again strongly indicated that *T. pictum* was the species involved. However in 2013, MN had collected and published the first Irish records of the closely related *Theridion hemerobius* Simon, 1914 (Nolan, 2013) and given the similarities between the two species he was reluctant to commit to an identification until voucher specimens from Craigavon had been critically identified.

On the 26 May 2023, MN made a visit to the Craigavon Lakes in order to try and collect some specimens of the species. Having located a stand of *Ulex* on the southern side of a railway embankment separating the southern and northern lakes a typical retreat was quickly spotted which was occupied by a female spider (Plate 2). A number of additional specimens were collected from *Ulex* and *Crataegus* along the causeway and others observed. Critical examination, using Bosmans *et al.* (1994) to distinguish the specimens from *T. hemerobium*, confirmed *T. pictum* was the species involved.

RECORDS

***Theridion pictum* (Walckenaer, 1802) New Irish Record**

COUNTY ARMAGH: Craigavon Lakes, Craigavon (ITM 705622 858154) (Irish grid reference J 05680 58140), 21 October 2013, ♂ submature, beaten from *Ulex* on an embankment close to the Eastway road, collected and photographed by Stephen Foster (specimen released); 31 May 2014, circa 10♂♂♀♀ collected from *Ulex* at the same area, most returned, collected and determined Stephen Foster; 26 May 2023, Craigavon Lakes, Craigavon (ITM 705361 857977) (Irish grid reference J 05419 57963), 2♂♂ 5♀♀ (one recently moulted) collected from *Ulex* at the eastern end of a railway embankment separating the northern and southern lakes, 1♀ (recently moulted) 1 small immature (♀?) collected from *Crataegus* at about midpoint along the causeway (ITM 705296 857969) (Irish grid reference J 05354 57955), 1♂ collected from *Ulex* at western end of the causeway (ITM 704821 857702) (Irish grid reference J 04879 57688); additional specimens seen and returned alive; specimens observed, collected and identified Myles Nolan.

COUNTY ANTRIM: Rea's Wood, Lough Neagh shores (J1485), 14 May 2021, Rodney Monteith. This record appears on the NBN Atlas for Northern Ireland (NBN, 2024) and is included here for completeness. We are not certain if a specimen was retained or if the identification was confirmed by a third party.

Preferred habitat, appearance, behaviour and distribution of *Theridion pictum*

The spider is found in a wide variety of habitat types but usually on scrubby marginal/ecotonal habitat – thus in the majority of cases it occurs on *Ulex* scrub, other scrub vegetation and in marginal situations such as ditches and verges. It occurs generally in somewhat damp areas and can also occasionally be found at ground level amongst litter and mosses (Spider Recording Scheme, 2023). A preference for damp habitats is observed also in the Czech Republic where the spider is scarce and found at pond margins and in wet meadows on shrubs and herbaceous vegetation (Buchar and Růžička, 2002).

The spider has a strongly developed pale stripe down the midline of the abdomen which is

produced laterally into a series of points – in some specimens this can resemble a series of triangles joined broadly apex to base (Plate 3a). The opisthosoma has a dark midline stripe that broadens to fully occupy the ocular area, and broadly to narrowly darkened margins; two large pale areas are sandwiched between these bands and behind the ocular area. Legs are strongly annulated and the sternum has a large pale triangle occupying much and sometimes nearly all of its area – this is clearer in females than males. The epigyne is strongly sclerotised and protrudes into a sharp lip posteriorly, the copulatory pore is small and sub-circular with a raised lip immediately anterior and slightly overhanging it (Plates 1b, 3c). The epigastric region in the males is very strongly swollen and elongate.

The webs that MN observed at Craigavon were very similar to those of some other Theridiidae species found in Ireland e.g. *Phylloneta sisypchia* (Clerck, 1757) and *P. impressa* (L. Koch, 1881). These consist of a shallow bell-shaped retreat set underneath a ‘branch’ of *Ulex* (Plate 2a) or other foliage, the spider resting within the bell. This situation is used by the female to set her egg-sac. The retreat is surrounded by a complex tangled scaffold of silk, which can be quite extensive and easily spotted. The retreat is often disguised/decorated with the remnants of its prey or fragments of vegetation. The female produces a greyish brown egg-sac (Nentwig *et al.*, 2023).

In Ireland, *Theridion pictum* almost certainly has an annual life-cycle: mating in early summer, setting eggs soon after, grown hatchlings over-wintering most probably as late instar immatures or possibly subadults and maturation occurring in the following spring/early summer with mating following soon after. This pattern is evidenced to some extent by the above records since two of the females collected at Craigavon in May 2023 were recently moulted. MN did not see any egg-sacs at this time, but three of the females collected had a relatively swollen abdomen suggesting the egg-mass was developing/developed. Males of this species mature earlier than females and none of the males seen had the appearance of having recently moulted. The presence of an immature specimen in May suggests it hatched late in 2022 and overwintered as a very young instar. Whether it would have matured in time to mate in 2023 is a moot point, but if not then it would possibly go through a second winter before mating, as either an adult or a late instar immature. This suggests that a small cohort of specimens might have a two-year life-cycle.

It is of interest to note that no female had the epigyne plugged, a process whereby a secretion produced by both the females and males at the end of the mating process blocks the copulatory pore, a strategy which prevents further mating but which is not always successful. Plug formation is expected in *Theridion* species of the ‘*varians*’ group (Knoflach, 1998) which includes *T. pictum*, and in this species the plug is easily seen as it fills the entire atrium of the epigyne (the darkened ‘triangular’ area posterior to the copulatory pore in Plate 3c). Mate-

guarding is commonly observed in this group of species, whereby a mature male will locate a submature female and remain close to her, mating soon after she goes through her final moult (a behaviour observed in many other spider species). The absence of females with plugs at Craigavon suggests they had not yet mated and mate-guarding was not observed.

Across Europe males of *T. pictum* occur primarily from May to July but can be found in April and August while females occur from April to September most commonly but can persist to December (Spider Recording Scheme, 2023; Nentwig *et al.*, 2023). In Britain, the spider is locally common and widely distributed through England but much less common in the west, north and extreme south of the island. The species has a Palearctic distribution, occurring from Ireland to China and Japan.

Comment

It is intriguing that *Theridion pictum* has not been previously recorded from Ireland. While a wide distribution in England is by no means a guarantee that a spider occurs in Ireland, its preferred environment of scrubby vegetation in dampish situations is available in Ireland in great abundance. The species has long been known from most European countries, and while it is not amongst the commonest of the *Theridion* group of species (*sensu* Roberts, 1993), it does not seem to be especially rare wherever it occurs in Europe. It does not have status other than Least Concern in European national Red Lists (Milano *et al.*, 2020).

There is little reason to think this species is a recent arrival in Ireland and it would seem to have been missed thus far by collectors. Examination of *Ulex* scrub, especially in damp habitats or the vicinity of water should turn up additional records of the spider.

Acknowledgement

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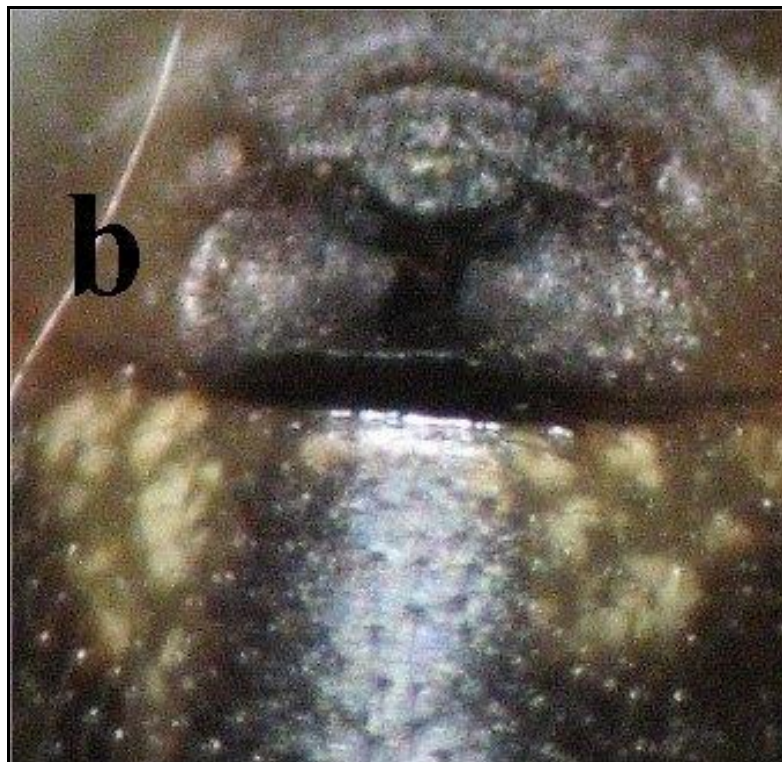


PLATE 1. a: submature male *Theridion pictum* collected at Craigavon Lakes, County Armagh, 21 October 2013; b: epigyne of a female *Theridion pictum* specimen collected at Craigavon Lakes, County Armagh, 31 May 2014. Photographs: Stephen Foster.



PLATE 2. a: female *Theridion pictum* in her retreat on *Ulex* at Craigavon Lakes, County Armagh, 26 May 2023; b: *Ulex* scrub habitat characteristic of *T. pictum* at the same location, 26 May 2023. Photographs: Myles Nolan.

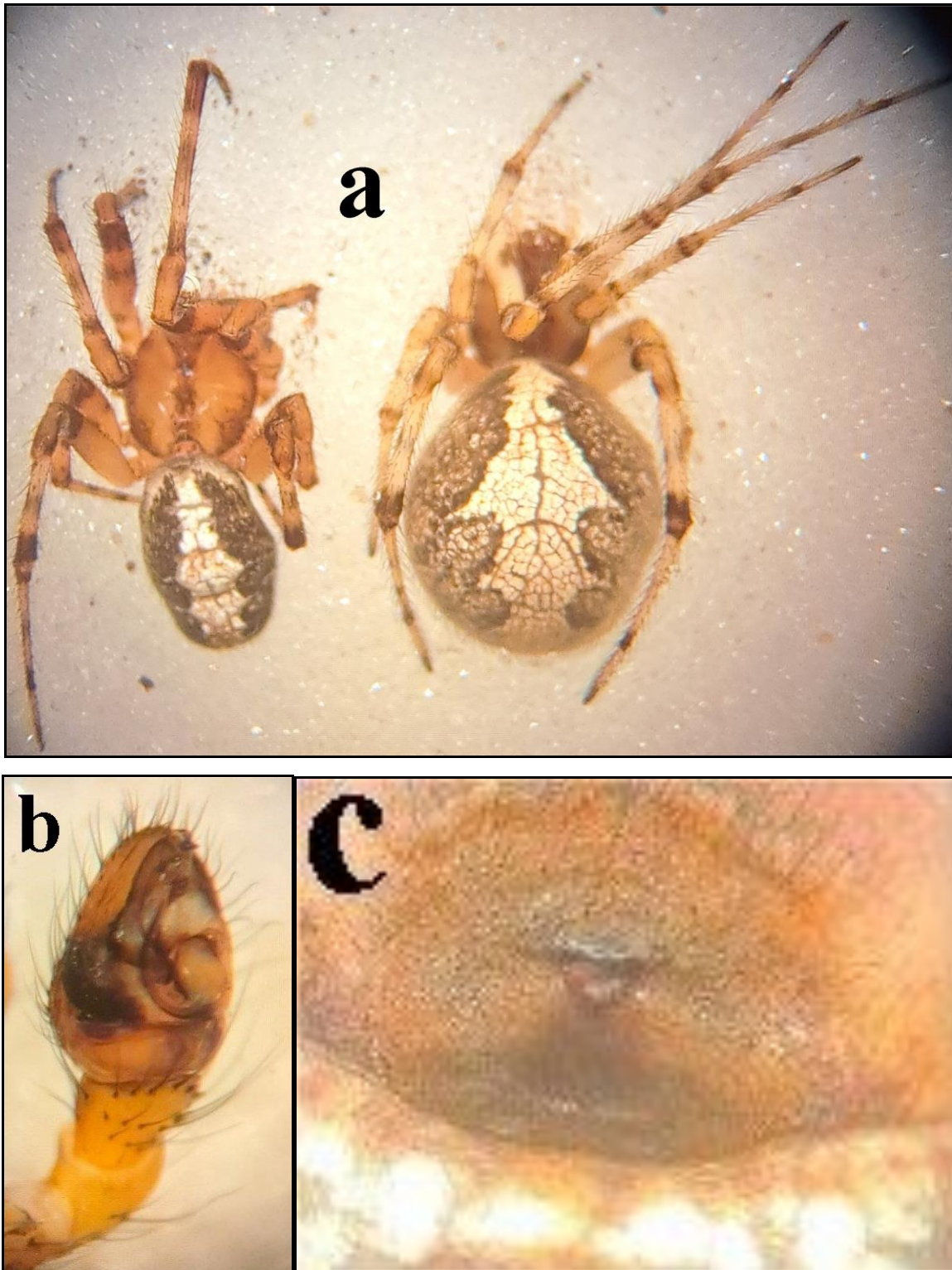


PLATE 3. *Theridion pictum*. a: habitus male (left) and female (right); b: male palp; c: female epigyne, with the copulatory pore (upside down triangle) near the midpoint. All specimens collected at Craigavon Lakes, County Armagh, 26 May 2023. Photographs: Myles Nolan.