

THE FIRST IRISH RECORD OF *PORRHOMMA MICROPHTHALMUM* (O.P.-CAMBRIDGE) *SENSU STRICTO* (ARANEAE: LINYPHIIDAE)

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Abstract

The first verified Irish record of *Porrhomma microphthalmum* (O. P.-Cambridge, 1871) *sensu stricto* was collected in a pitfall trap set in an experimental site of spring oilseed rape (*Brassica napus*). The taxon has appeared previously in Irish publications but all these records have been misidentifications of other species from the genus. *P. microphthalmum* is strongly associated with the broken soils typical of cultivated cereal and arable crop habitats, however it can be found in a range of other environments.

Key words: *Porrhomma microphthalmum*, Linyphiidae, Araneae, spider, new, Ireland, arable crop, cereal crop, spring oilseed rape, *Brassica napus*.

Introduction

At a meeting of entomologists in 2019 co-hosted by The Royal Entomological Society, the National Museum of Ireland and Buglife - The Invertebrate Conservation Trust, and facilitated by the National Museum of Ireland in their main storage premises in Swords, County Dublin, Dr Dara Stanley, then leading a pollinator research group in University College Dublin (U.C.D.) <<https://suspoll.ucd.ie/>> mentioned that pitfall-trapping had been used in a study of arable crop associated invertebrates. Conversing later with Dr Stanley and Alison O'Reilly, a Ph.D. student working on this project, the senior author expressed an interest in potentially examining the spiders collected and subsequently a small amount of funding was found to facilitate the identification of a proportion of the specimens involved. Specimens had been collected and sorted by AOR and preserved in alcohol. MN identified a single male *Porrhomma* as *P. microphthalmum* (O. P.-Cambridge, 1871), a species which he had been expecting to see in Ireland for some time due to its close association with cultivated habitats and dispersal abilities. He was also aware that the taxon had previously appeared in Irish publications and that some

doubt still pertained to its Irish status.

Record

Porrhomma microphthalmum (O. P.-Cambridge, 1871) **New to Ireland**

KILDARE: Lyon's estate, U.C.D. experimental farm. Latitude 53°17'33.4" Longitude 6°31'35.6, Grid Reference N98287 27933. 1♂ collected in pitfall traps set between 27th June and 18th July 2019 at the edge of a plot of spring variety oilseed rape *Brassica napus* sown on 31st March 2019, determined MN. Traps were set as part of a research study examining insect communities (pollinators, pests and natural predators) across oilseed rape sites of various agricultural management intensity, part of a wider study run by Dr Dara Stanley of the Insect Ecology Laboratory, U.C.D. Pitfall traps were set and the catch sorted by AOR. The specimen has been retained in the senior author's collection.

Taxonomy

The most recent appearance of the taxon *Porrhomma microphthalmum* in an Irish context is in Helsdingen's literature survey (Helsdingen, 1996) where he placed a question mark against its Irish status. Helsdingen's statement that "all earlier records of this species subsequently have been referred to other species" is entirely accurate however the matter can be further clarified in order to address the doubt raised by the question mark, on the basis of which, for example, the species is noted as "doubtfully reported for Ireland" in a significant British online resource (Spider Recording Scheme, 2021).

The taxon was first noted from Ireland on basis of specimens collected in Marble Arch and Poulmagullum/Coolarkin caves, County Fermanagh, in July 1895 (Jameson, 1896) and subsequently on Lambay Island, County Dublin, in October, 1906 (Pack-Beresford, 1907) and Fenagh House, County Carlow, in the winter of 1908 (Jackson, 1908). A revision of the genus *Porrhomma* by A. R. Jackson (Jackson, 1913) included a re-examination of the above Irish specimens and showed they all belonged to *P. thorellii* Herman, 1879 which was subsequently shown to be a synonym of *P. convexum* (Westring, 1851). On basis of these corrections Pack-Beresford deleted *P. microphthalmum sensu stricto* from the Irish list (Pack-Beresford, 1920).

However, the name appeared again in 1974 when Hazelton included it in a review and checklist of the Irish hypogean (cave) fauna (Hazelton, 1974a, b, c). Her general survey paper (Hazelton, 1974a) could give the impression that *P. microphthalmum sensu stricto* is an acknowledged element of the Irish cave fauna, however, the list of records of cave invertebrates collected from 1952-1971 (Hazelton, 1974c) confirms that *P. microphthalmum* was not recorded from an Irish cave throughout that period, and thus that there were no Irish records of the taxon subsequent to those noted from 1895 to 1908 above. These older records were collated

in another paper (Hazelton, 1974b). Helsdingen (1996) is probably correct in suggesting that Hazelton was not aware of the taxonomic revisions involved and so overlooked the corrections.

Another synonym, *P. meadii* F. O. Pickard-Cambridge, 1894, was ‘accidentally’ published as Irish in 1909 (Pickard-Cambridge, 1909). The term accidentally is used because *P. meadii* had in fact been synonymised with *P. microphthalmum* (*P. convexum*) in 1895 by the author of *P. meadii* himself (F. O. Pickard-Cambridge, 1895). Carpenter noted the synonymy in his summary paper on Irish spiders (Carpenter, 1898) and Pack-Beresford noted it again in his 1920 paper. A specimen in the collection of the Natural History Museum, Dublin (NMINH) bears the details ‘*Porrhomma Thorelli* Herm / Fenagh *P. Meadii* OPC ARJ’ and has been confirmed by MN as *P. convexum*. Over a period of time, MN has had the opportunity to examine all specimens labelled *Porrhomma* in the NMINH collections and no specimens of *P. microphthalmum sensu stricto* have been seen.

As such it can be asserted unequivocally that all previous appearances in Irish publications of the taxon *P. microphthalmum* (and synonymies thereof) refer to *P. convexum* and that no specimens of *P. microphthalmum sensu stricto* seem to have been previously collected in Ireland.

Preferred environment

The spider seems to prefer open, relatively dry and well-draining habitats (Buchar and Růžička, 2002; Růžička, 2018) and is characteristic of agricultural and managed land-types across its range. It disperses by ballooning (Blandenier and Fürst, 1998), colonising broken and disturbed soils of various kinds, and making use of the semi-troglydytic microsites provided by the aerated interstitial cavities found in these situations. It is known to colonise newly formed polder, across which the spider’s numbers increased substantially over three years, eventually suggesting a preference for lightly vegetated rather than completely bare soils (Meijer, 1973, 1977). In the Czech Republic, it is known to colonise spoil heaps in early successional stages (Buchar and Růžička, 2002), in Slovenia was first recorded from agrarian meadow (Kostanjšek and Gorjan, 2013) and in Britain was not recorded in relatively large numbers until spiders were pitfall-trapped on arable land where it proved to be one of the more numerous linyphiid species collected (Thornhill, 1983; Spider Recording Scheme, 2021). It occurs in small numbers in a wide range of other habitats, appearing not infrequently in some e.g. mixed and deciduous woodlands in Britain (Spider Recording Scheme, 2021).

Distribution

Porrhomma microphthalmum was first described from Britain (O. P.-Cambridge, 1871) and was known to be widespread through southern and eastern England (and reaching into Scotland)

by 1939 (Bristowe, 1939) but was still considered a rare species even some years later (Locket and Millidge, 1953). Now known to be relatively common in some agricultural environments, it is found in Britain most abundantly in south-eastern areas of England, with few records from Wales or Scotland (Spider Recording Scheme, 2021). It occurs throughout a broad band of Europe but is absent from much of the Mediterranean, including Spain, Portugal and much of Greece (Nentwig *et al.*, 2021) and is recorded as far east as China.

In Britain, a maximum of males and females are found in May and June (Spider Recording Scheme, 2021) however across its European range adults can be found, at least in small numbers, at all times of the year (Nentwig *et al.*, 2021; Spider Recording Scheme, 2021). Blandenier and Fürst (1998) record dispersal maxima from July to the middle of August and from late September through to mid-December.

Irish status

We are aware of only two invertebrate publications detailing spiders from surveys of arable or cereal land in Ireland (Curry, 1976; Anderson *et al.*, 2008) and neither of these recorded *Porrhomma microphthalmum*. While it is difficult to know how long the species may have been in Ireland, it is obviously wholly improbable that the specimen noted here represents the only Irish occurrence. Given the availability of its preferred environment, it is likely that the species will be found more widely in Ireland in agricultural contexts and especially where cereal, arable and oil-crop cultivation is most widely practised.

Acknowledgments

Thanks to Martin Cawley for confirming the identification of the specimen of *Porrhomma* and to Nigel Monaghan, Keeper of the Natural History Museum, Dublin, for use of laboratory facilities.

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