

## **A THIRD COUNTY RECORD OF THE CADDISFLY *HAGENELLA CLATHRATA* (KOLENATI) (PHRYGANEIDAE: TRICHOPTERA) FROM IRELAND**

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### **Abstract**

Two females of the caddisfly *Hagenella clathrata* (Kolenati, 1848) were beaten from *Pinus* and *Ulex* in wet woodland marginal to Killaun Bog, County Offaly in 2021. The species was first recorded from Ireland only in 2016 and is now known from three Irish counties including the present one. The habitat where the specimens were found accords well with current understanding of the species' environmental preferences. A map shows the species' known Irish distribution.

**Key words:** *Hagenella clathrata*, Phryganeidae, Trichoptera, Window winged sedge, caddisfly, Ireland, Offaly, raised bog, marginal habitat, wet woodland.

### **Introduction**

In late 2020 the author carried out a brief survey of spiders on Killaun Bog on foot of funding from Offaly County Council. A number of species of interest were recorded from the wet woodland that now dominates the lagg margin and it was recommended that this habitat should be examined more closely should a more extensive survey of the Killaun Bog be possible. Funding was found for 2021 to continue the survey work and an examination of uncut high bog, revegetating turbary, cutaway bog and the marginal lagg zone was carried out in the summer of 2021.

While other areas of the bog were examined using pitfall traps, these were deemed too difficult to set readily in some areas of the wet woodland (see below) so a range of other collecting techniques were utilised, primarily sweep-netting, hand-collecting and beating of canopy and scrub vegetation onto a ground-sheet.

A wide range of invertebrates other than spiders were collected by these methods, and having previously collected and identified some caddisflies, when a small number fell onto the ground sheet they were retained. Two specimens in particular were noted to have very distinctively and strongly marked wings and on closer examination were easily identified as *Hagenella clathrata* (Kolenati, 1848).

## **Record**

### ***Hagenella clathrata* (Kolenati, 1848) New to County Offaly**

**OFFALY:** Killaun Bog, Birr. Grid Reference N1086 0507. 2♀♀ collected on 24 June 2021. Both specimens were beaten from vegetation onto a ground-sheet, one from common gorse *Ulex europaeus*, the other from the lower canopy of Scots pine *Pinus sylvestris*. Another specimen was seen but it roused from the sheet very rapidly and flew away - the strongly patterned wings were however clearly visible.

Specimens were collected by the author and identified using Barnard and Ross (2012) including examination of the genitalia. The very strong fore-wing pattern – which gives the species its common name, the Window winged sedge – differed considerably from the photograph featured in Barnard and Ross (*op. cit.*), and somewhat between the two specimens collected (Plates 1 and 2) so genitalia should be checked in case of doubt. The known Irish distribution is shown (Fig. 1). Specimens have been retained in the author’s collection.

## **Discussion**

Gammell *et al.* (2018) and Wallace (2011) between them provide a considerable amount of information on the species’ occurrence and habitat preferences in Britain and across Europe and repeating this information at any length here would be redundant. Wallace (2011) notes the considerable rarity of the species in the U.K. – the principal factor leading to it receiving BAP status. While this is only the third Irish hectad (10km<sup>2</sup>) for the species, Gammell *et al.* (2018) note that raised bog and associated habitats in Ireland have been relatively little investigated for their Trichoptera fauna. The first Irish specimens were collected from Counties Galway (three sites within the same hectad) and Laois (Gammell *et al.*, 2018; O’Connor, 2021), the locations consisting of a mosaic of bog habitats which, despite having been compromised anthropogenically, nevertheless, some degree of habitat continuity seems to have been preserved.

The species’ ecology and favoured environment are characterised by Wallace (2011) as “the edges of lowland raised bogs, the edge of schwingmoors (quaking bogs), and wet heaths.” The presence of wet pools is vital, sometimes only inches across, and these are usually shallow and sometimes drying to sogginess in later summer. However, preferred pools are usually heavily shaded and the presence of grass tussocks, and especially *Molinia*, is important as the overhanging vegetation provides the requisite shaded conditions. Wallace notes that *Molinia* dominated wetlands and peatlands occur with some frequency in Britain and the rarity of the animal is thus something of a puzzle.

Wallace’s characterisation (2011) of the preferred habitat matches very closely with some areas of habitat seen at Killaun Bog and it is of interest to consider whether the bog will

maintain populations of *Hagenella clathrata* into the future, in view of the extent to which the site has been managed for peat-harvesting. The greater area of the bog would currently almost certainly not facilitate the species as most of its surface consists of bare peat, the consequence of industrial harvesting. The remaining areas of re-vegetating bog were hand-harvested for peat up to c. 50 years ago and a 1.5-2m high face-bank marks the point at which cutting ceased. Turbary areas have been recolonised by a vegetation typical of raised bog i.e. *Calluna*, *Erica*, *Narthecium*, *Drosera* etc. The area that I surveyed in 2020 and 2021 lies at the southern end of the bog and splits relatively neatly into four zones, tiering north to south in the following order; unvegetated cutaway peat, high bog (uncut, though heavily drained), turbary and, wet woodland/lagg margin. The wet woodland envelopes the turbary area on its south, east and west margins. The ditch that separates the high bog from cutaway extends along an east-west axis, is relatively shallow, retains a small amount of water, and is as yet largely free of vegetation.

Deep pools at the base of the face-bank have almost completely infilled with *Sphagnum* mosses and areas of open water are small. The uncut high bog is, across most of its area, extremely dry. A number of shallow drainage ditches running across it are still evident. Throughout both the revegetating and uncut areas occasional small moist *Sphagnum* filled hollows can be found, though patches of actually open water are practically non-existent. It seems unlikely the few wet pools in these areas would be sufficient to facilitate the caddis.

The area where the specimens were found is a mosaic of wet woodland, *Ulex* and *Calluna* scrub and swampy *Molinia*; obviously closer to Wallace's description. The area is easily accessed by a walkway, and a new one was installed through 2021 to replace its decrepit wooden predecessor. Some areas of swampy *Molinia* grow adjacent to the walkway and these were inundated in autumn 2020 but largely dry – enough not to need wellies or waders – in the summer of 2021. A little further from the walkway are a relatively large number of pools of varying size and depth, the flooded remnants of peat-excitation holes. These can be a couple of metres across and a metre or more deep, though the water level remained, during the summer anyway, below ground-level. Some had emergent vegetation growing e.g. *Carex* species and Bulrush *Scirpus*. The edges of most were well shaded, sometimes completely hidden by grasses or *Calluna* and some had treacherously vertical walls. It was in this area that the specimens were collected. The combination of tall grasses and forb, scrub, trees and pools made negotiating this area quite difficult and the footing very unpredictable.

This area of the bog then accords very well with Wallace's description of *H. clathrata*'s preferred habitat. While the greater area of Killaun Bog will undoubtedly continue to drain of water and further desiccate it has been suggested that the southern areas of the bog, including the wet woodland described here, have a much better chance of continuing wet (John Feehan, pers. comm.). It is important to note that this area of the bog was acquired from Bord na Móna

by St Brendan's Community School, Birr some thirty years ago and is now managed for biodiversity and educational purposes and as such the general condition of the location will hopefully be monitored over time.

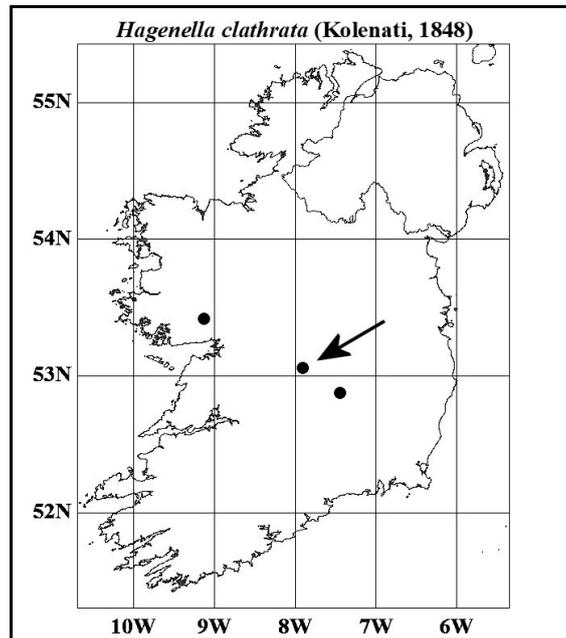
The presence of gravid females relatively high on vegetation growing beside the deepest, largest pools might suggest they were roosting prior to laying eggs locally. Wallace's account would suggest that the areas of soggy *Molinia* would be preferred for oviposition and larval stages than the deeper pools. The habitat, time of year and perhaps most especially the method of collection may assist in finding additional specimens at other sites.

### **Acknowledgements**

Thanks to: Amanda Pedlow, Heritage Officer, Offaly County Council who funded the investigations of Killaun Bog in 2020 and 2021 through the National Biodiversity Action Plan Fund; John Feehan for information regarding the history of the site, a guided tour of the bog in 2021 and for reading this note in an earlier draft; Nigel Monaghan, Keeper of the Natural History Museum, Dublin for use of laboratory facilities. James P. O'Connor very kindly supplied a current distribution map.

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**FIGURE 1.** The known Irish distribution of *Hagenella clathrata* (Kolenati, 1848). The County Offaly record is indicated by an arrow.



**PLATE 1.** *Hagenella clathrata* ♀ from Killaun Bog, County Offaly, collected 24 June 2021 from common gorse *Ulex europaeus*. Photograph: Myles Nolan.



**PLATE 2.** *Hagenella clathrata* ♀ from Killaun Bog, County Offaly, collected 24 June 2021 from Scots pine *Pinus sylvestris*. Photograph: Myles Nolan.