

Euphranta toxoneura (Loew) (Diptera, Tephritidae) new to Scotland

GEOFFREY WILKINSON

Scottish Natural Heritage, Russell House, Ayr, KA8 0BD

Summary

Euphranta toxoneura (Loew, 1846) is newly recorded for Scotland and the record extends its northern distribution in Britain.

Introduction

Euphranta toxoneura (Loew) is a distinctive fly that has a scattered distribution across England and north Wales extending north to County Durham (Clemons 2014). In continental Europe, the species is known from Austria, Belarus, Belgium, Czech Republic, Denmark, France, Germany, Hungary, Norway, Poland, Slovakia, Sweden, Switzerland, The Netherlands and Ukraine (Pape and Beuk 2013). It was added to the British list on the basis of a female taken on a window at Sutton Coldfield on 22 May 1897 (Bradley 1901).

The fly is unique among British tephritids of known biology in that the larva is a kleptoparasite of immature sawflies *Pontania* species (Hymenoptera, Tenthredinidae) that develop inside galls on the leaf blades of willows *Salix* species (Salicaceae) (White 1988). The female lays an egg inside the newly formed gall, the larva emerges to feed on the sawfly within and completes its development by feeding on gall tissue. The larva then exits the gall and drops to the ground where it remains in the pupal stage until spring (Kopelke 1984). The adult is on the wing during May and June (White 1988).

Recently, the author discovered a specimen of *E. toxoneura* while identifying samples that had been collected while carrying out Site Condition Monitoring of the notified sawfly (Hymenoptera, Tenthredinidae) feature at Cadder Wilderness Site of Special Scientific Interest (SSSI) (NS598718, V.C. 77), East Dunbartonshire, on 6.vi.2013 as part of a Caledonian Conservation Ltd project under contract to Scottish Natural Heritage (SNH) (Cathrine *et al.* 2015). It was swept from willow *Salix* species (Salicaceae) foliage approximately 1 metre above ground level whilst searching for adult sawflies along the woodland's southern margin. Many of the willow leaves that were swept bore the characteristic galls of sawflies from the genus *Pontania* (Hymenoptera, Tenthredinidae).

Euphranta toxoneura is readily distinguished from other British tephritids in having long pale coloured hairs on the anatergite and a distinctive, species-specific wing pattern (White 1988). The specimen has been deposited in the collections of the National Museums Scotland, Edinburgh.

The Scottish Insects Records Index (SIRI) and the collections at the National Museums Scotland were searched for *E. toxoneura* but yielded no records in addition to those in Clemons (2014). The results from this search indicated that the most northerly British record for *E. toxoneura* was from County Durham in northern England (Clemons 2014). Therefore, the present record extends the known British distribution of the species into central Scotland.

Discussion

Cadder Wilderness SSSI is an old, formerly coppiced plantation that has matured to develop features characteristic of semi-natural woodland. The wood is dominated by birch *Betula* spp., oak *Quercus* spp., and beech *Fagus sylvatica* with the southern margin interspersed with willows

including *Salix fragilis*, *S. caprea*, *S. cinerea* and their hybrids. Many of these willows had leaves which bore the characteristic galls of *Pontania proxima*, on *S. fragilis*, and the galls of *P. bridgmanii* and *P. pedunculi* on *S. caprea* and *S. cinerea* (Redfern and Shirley 2011). Interestingly, the site has long been known for its diverse sawfly assemblage (Malloch 1914) which forms part of the notified invertebrate feature for the SSSI. Rearing records of *E. toxoneura* from Germany suggest the species is strongly associated with the first generation galls of *Pontania proxima* on *S. fragilis* and to a lesser extent with the galls of *P. bridgmanii* and *P. pedunculi* on *S. cinerea* (Kopelke 1984). Therefore, it is likely that *E. toxoneura* is a resident species at Cadder Wilderness SSSI and that the female specimen was possibly captured while it was investigating leaves affected by *Pontania* sawflies.

The most recent conservation assessment of *E. toxoneura* listed it as 'Nationally Notable' and suggested the species was under-recorded due to its specialised life history and the foliage inhabiting nature of the adult (Falk 1991). The apparent rarity may be due to some secretive diurnal habit (Clemons 1994). It is curious that *E. toxoneura* had not been recorded previously in Scotland given how common and widespread the host species are across the country (Benson 1958, Redfern and Shirley 2011). More targeted fieldwork, and in particular the sweeping of willows populated by *Pontania* sawfly galls, would help to provide a better understanding of the Scottish distribution of *E. toxoneura*.

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