

## **FRESHWATER PARASITIC WASPS (HYMENOPTERA: MYMARIDAE & TRICHOGRAMMATIDAE) FROM THE RIVER INNY, COUNTY CAVAN, IRELAND**

James P. O'Connor

*Emeritus Entomologist, National Museum of Ireland – Natural History, Merrion Street, Dublin2, D02 F627, Ireland.*

e-mail: <joconnor@museum.ie>

### **Abstract**

Three species of freshwater parasitic wasps were reared from the eggs of water beetles (*Agabus* and *Ilybius* spp.) collected in the River Inny below the bridge in the village of Finnea, County Cavan, Ireland. These were *Anaphes longicornis* Walker, 1846, *Caraphractus cinctus* Walker, 1846 (both Mymaridae) and *Prestwichia aquatica* Lubbock, 1864 (Trichogrammatidae). *P. aquatica* is new to Ireland.

**Key words:** Ireland, Hymenoptera, Chalcidoidea, Mymaridae, Trichogrammatidae, freshwater, *Anaphes longicornis*, *Caraphractus cinctus*, *Prestwichia aquatica*.

### **Introduction**

From 5-12 September 1995, Dr Victor Fursov of the Institute of Zoology of the National Ukrainian Academy of Sciences, Kiev, Ukraine, stayed with the author at his home in Castleknock, Dublin, Ireland. During this period, they made several joint collecting trips for chalcidoid egg-parasitoids and other microhymenoptera in different localities in eastern Ireland. The eggs of aquatic insect hosts were collected in the leaves and leaf stalks of various aquatic plants with different positions in the water and on the bottom. The plants were either submerged partially or completely under the water (*Sagittaria*), growing over the water surface (*Alisma*) or floating on the water (*Nuphar*). Parasitized eggs inserted in plant tissue were kept in small glass tubes with a part of the leaf stalk and water. The eggs of aquatic beetles were separated using pins from the plant tissue and submerged under the water in the tube. One of the sites visited yielded a species new to Ireland and a definite Irish locality for two others.

### **The site**

The River Inny spans a large catchment area, rising near Oldcastle in County Meath and flowing for 88km *via* Lough Sheelin to its confluence with the River Shannon at Lough Ree. Much of the Inny runs over limestone, making it a productive river. On the 9 September 1995, samples of submerged *Alisma* and *Sagittaria* stems were taken from the river where it is only a few metres wide below the bridge in the village of Finnea, County Cavan (N4081) (Plate 1).

The river was shallow at the time of the visit.

## Results

Three species of aquatic parasitoids were reared from the eggs of water beetles (*Agabus* and *Ilybius* spp.) collected inside the submerged stems of Common Water-plantain (*Alisma plantago-aquatica*) at Finnea. These were *Anaphes longicornis* Walker, 1846, *Caraphractus cinctus* Walker, 1846 (both Mymaridae) and *Prestwichia aquatica* Lubbock, 1864 (Trichogrammatidae). Adults of all three species were found to have emerged on the 25 September 1995. A total of some 100 specimens of *A. longicornis* along with 50 specimens of *C. cinctus* and 300 specimens of *P. aquatica* were reared. The males of *P. aquatica* are wingless but the females occur in two forms i.e. fully-winged (macropterous) and short winged (brachypterous). Only the macropterous form occurred amongst the Irish specimens.

The specimens were identified by Dr Fursov and, at present, voucher material is in his collection but he has promised to send a representative sample to the National Museum of Ireland.

## Discussion

One of the species was named by Dr Fursov as *Patasson leptoceras* (Debauche, 1948). This species is now recognised as a synonym of *Anaphes longicornis* Walker, 1846 by Huber and Thuróczy (2018) who give the type locality as England, almost certainly Southgate vicinity. However in the Checklist of British and Irish Hymenoptera - Chalcidoidea and Mymarommatoidea (Dale-Skey *et al.*, 2016), only Ireland is mentioned. In addition, O'Connor, Nash and Bouček (2000) noted that there is a male paralectotype with a green ticket denoting Irish origin in the Oxford University Museum according to Graham (1982). The Inny record is the first definite Irish locality for the species.

*Caraphractus cinctus* is reclassified as *Eustochus (Caraphractus) cinctus* (Walker, 1846), comb. nov. in Triapitsyn *et al* (2020) who record the species from Palaearctic (Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Ireland, Russia, Sweden, Ukraine, United Kingdom) and Nearctic (Canada, U.S.A.) regions. No details are given for the Irish occurrence. The Inny record appears to be the first definite Irish locality for the species.

*Prestwichia aquatica* is new to Ireland (cf O'Connor, Nash and Broad, 2009). In the checklist of British and Irish Hymenoptera - Chalcidoidea and Mymarommatoidea (Dale-Skey *et al.*, 2016), England is only given for the species.

Fursov (1995) gives a comprehensive review of the European Chalcidoidea parasitizing the eggs of aquatic insects including information on the above three species.

### **Acknowledgements**

The author is very grateful to Dr Victor Fursov for identifying the chalcids. I also wish to thank Dr Hugh Feeley of the Environmental Protection Agency for his kindness in providing the photograph of the River Inny site and Dr Wayne Trodd of the Environmental Protection Agency for his permission to use it.

### **References**

- Dale-Skey, N., Askew, R., Noyes, J., Livermore, L and Broad, G. (2016) Checklist of British and Irish Hymenoptera - Chalcidoidea and Mymarommatoidea. *Biodiversity Data Journal* **4**: e8013. doi: 10.3897/BDJ.4.e8013
- Fursov, V. (1995) A review of European Chalcidoidea (Hymenoptera) parasitizing the eggs of aquatic insects. *Bulletin of the Irish Biogeographical Society* **18**: 2-12.
- Graham, M. W. R. de V. (1982) The Haliday collection of Mymaridae (Insecta, Hymenoptera, Chalcidoidea) with taxonomic notes on some material in other collections. *Proceedings of the Royal Irish Academy* **82B**: 189-243.
- Huber, J. T. and Thuróczy, C. (2018) Review of *Anaphes* Haliday (Hymenoptera: Mymaridae) with key to species in Europe and a world catalogue. *Zootaxa* **4376**: 104 pp.
- O'Connor, J. P., Nash, R. and Bouček, Z. (2000) A catalogue of the Irish Chalcidoidea (Hymenoptera). *Occasional Publication of the Irish Biogeographical Society* **Number 6**. 135pp.
- O'Connor, J. P., Nash, R. and Broad, G. (2009) *An annotated checklist of the Irish Hymenoptera*. The Irish Biogeographical Society in association with The National Museum of Ireland, Dublin. iv + 211pp.
- Triapitsyn, S. V., Koponen, M., Vikberg, V. and Várkonyi, G. (2020) Taxonomy, annotated new records and a checklist of Mymaridae (Hymenoptera) of Finland, with description of a new species of *Eustochus*. *Acta Entomologica Musei Nationalis Pragae* **60**: 565-589.



**PLATE 1.** The collection site on the River Inny below the bridge in the village of Finnea, County Cavan. Photograph: Wayne Trodd. On the 9 September 1995, the water level was lower.