Clubiona frutetorum L. Koch, 1867 (Araneae: Clubionidae) in Ireland

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Summary

The clubionid spider *Clubiona frutetorum* L. Koch, 1867 is described and illustrated on the basis of specimens collected in Ireland. This is the first record of the species from Ireland or Britain.

Introduction

Specimens of a clubionid spider unknown from Ireland or Britain were found at a site in Co. Galway, Ireland by MC (Cawley & Nolan, 2007). While the first females seen somewhat resembled *C. pseudoneglecta* Wunderlich, 1994, a species found in Britain but as yet unknown from Ireland, they were finally identified as *C. frutetorum* L. Koch, 1867 using Almquist (2006) and illustrations by various authors in Nentwig *et al.* (2003). Specimens were forwarded to Peter Merrett for confirmation. John Murphy's opinion was sought in turn by Merrett and both agreed that *C. frutetorum* was the species involved. The species is described here on the basis of the specimens collected in Ireland. Voucher specimens have been deposited in the collection of the Natural History Museum, Dublin (NMINH: 2009. 24). All measurements are in mm. Hairs have been omitted from illustrations of both sexes for purposes of clarity. Illustrations were made with the palp and epigyne immersed in clove oil which cleared the structures significantly; specimens immersed in alcohol for identification may not display all the detail illustrated.

Description

Clubiona frutetorum L. Koch, 1867 (Figs. 1–4)

Clubiona frutetorum L. Koch, 1867: 344, pl. 14, figs. 224–226 (D♂♀).
C. incompta Ohlert, 1867: 100 (D♀).
C. frutetorum: Chyzer & Kulczyński, 1897: 226, pl. 9, figs. 19, 28, 39 (♂♀); Simon, 1932: 913, 919, 966, figs. 1386, 1396 (♂♀); Reimoser, 1937: 66, figs. 21, 31 (♂♀); Tullgren, 1946: 20, fig. 5E, pl. 3, figs. 33–37 (♂♀); Wiehle, 1965: 482, figs. 52–55 (♂♀); Azheganova, 1968: 132, figs. 300, 320 (♂♀); Helsdingen, 1979: 298, figs. 2–3 (♂); Heimer & Nentwig, 1991: 406, fig. 1057 (♂♀); Roberts, 1998: 138, figs. (♂♀); Almquist, 2006: 377, figs. 326a–g (♂♀).

Material examined: IRELAND: Co. Galway, Castlequarter, M425022: 2♀, 26 June 2006; 1♀, 26 July 2006; 2♀, 17 May 2007; 1♂, 31 July 2007.

Female: Total length 5.15–5.72. Carapace length 2.25–2.72, width 1.57–1.82. Patella+tibia I length 1.97–2.12. Coloration: abdomen dark reddish-brown with slight cardiac mark and hint of darker line extending length of abdomen; prosoma and legs pale brown, head darkening slightly anteriorly; chelicerae more robust than in male, dark reddish-brown as abdomen. Epigyne and vulva (Figs. 3–4): Paired seminal receptacles situated anteriorly; copulatory ducts lead from base of receptacles to median area, then widen via single tight turn into broader tract of duct; duct turns briefly ecto-anteriorly, then curves posteriorly to copulatory opening anterior to sclerotised epigyne lip; dark, ovate shadows of secondary receptacles seen in median area between broadly parallel posterior sections of ducts; epigyne lip with distinctly darkened, sclerotised lobe on either side of fairly deeply recessed median area; form, colour and length of lobes variable.

Male: Total length 4.90. Carapace length 2.17, width 1.57. Patella+tibia I length 2.42. Coloration: reddish-brown abdomen with slight cardiac mark; prosoma and legs pale brown; chelicerae darker than prosoma, reddish-brown as abdomen. Palp (Figs. 1–2): Very distinctive in ectal and ventral views. Palpal tibia strongly bilobed, lobes of roughly similar dimensions in ectal view; ventral lobe somewhat intermediate between "hatchet" form (Helsdingen, 1979) and more gradually widening form Helsdingen observed in Wiehle (1965); in ectal view embolus protrudes almost at right angle from cymbial pocket near tip of palp; in ventral view thick, mesal section of embolus narrows abruptly quite close to palpal tip, forming distinct ridge bearing large number of very small teeth; conductor (*sensu* Almquist, 2006) seen as large, pale, almost white structure; conductor on left palp of Irish specimen collapsed after immersion in lactic acid forming wrinkled, indistinct structure — hence may not appear in some specimens as illustrated here.

Diagnosis: This species belongs to the *terrestris* group (*sensu* Roberts, 1985; including *C. pseudoneglecta* Wunderlich, 1994) within *Clubiona* Latreille, 1804. Separation of this species from other *Clubiona* species in Ireland and Britain should present no problem. One clear difference between females of *C. frutetorum* and *C. pseudoneglecta/neglecta* O. P.-Cambridge (Merrett, 2001) is in the position of the loops of the copulatory ducts; in the last two species these are situated between the seminal receptacles, whereas in *C. frutetorum* they are posterior to them. The posterior lateral lobes of *C. frutetorum* are also distinctive. In males the embolus protrudes in ectal view in a manner similar to those of *C. lutescens* Westring and *C. terrestris* Westring, but other palpal features easily differentiate the three species. The intermediate form of the ventral lobe of the palpal tibia in ectal view (see above) supports Helsdingen's observation that the form of the lobe varies across the species' range.

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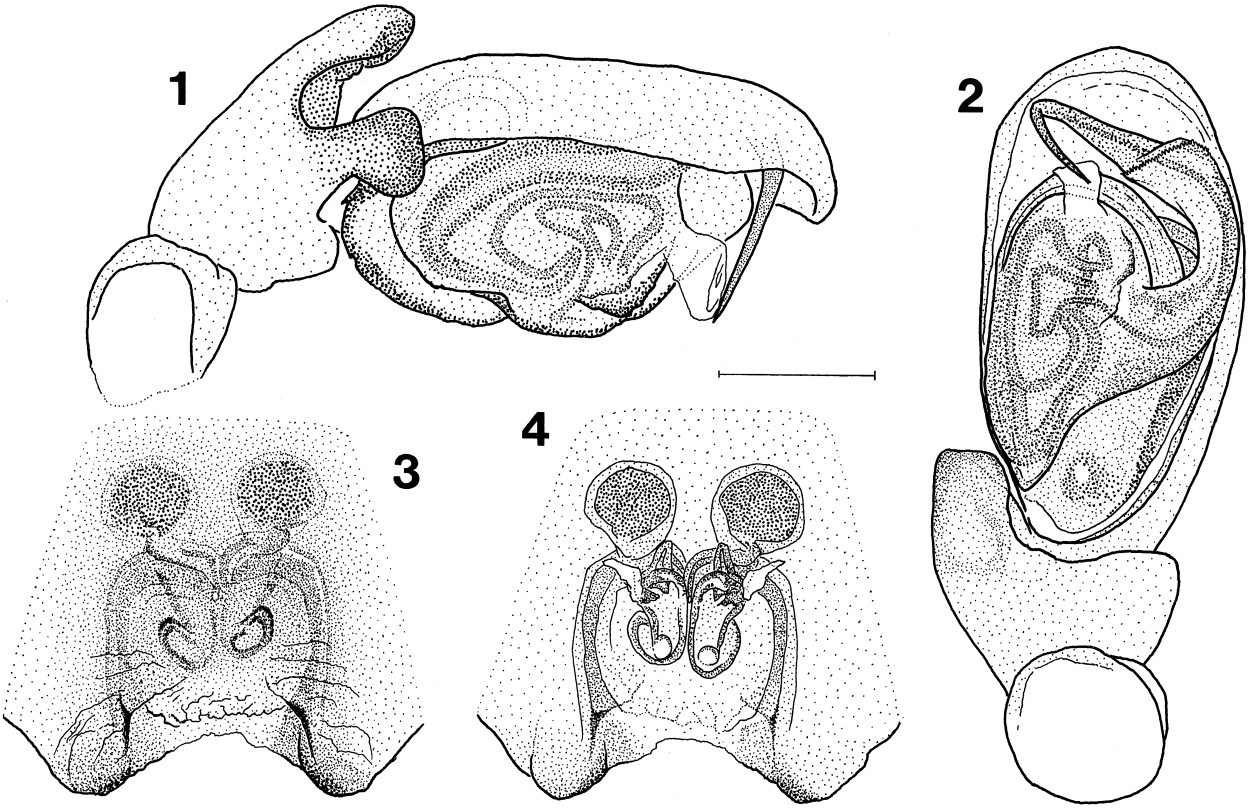
Habitat and distribution

The site at Castlequarter, Co. Galway where the specimens were collected is an area of limestone pavement lying at the eastern edge of the Burren, an extensive area of limestone-dominated habitat found in counties Clare and Galway. Specimens of *C. frutetorum* were found both south and north of a road bisecting the area. On the northern side of the road and within 1 km of the sites where the specimens were collected there is the Coole/Garryland SPA (Special Protection Area) and Nature Reserve. This area consists of a number of turloughs, semi-natural woodland and limestone pavement. Another turlough is found on the southern side of the road. Turloughs are seasonally flooding lakes highly characteristic of some areas of limestone karst in Ireland and are largely unknown from elsewhere in Europe (Sheehy Skeffington *et al*., 2006).

The Burren is renowned for a number of reasons, but principally for its vegetation — the mix of plants being representative of an unusually wide range of climatic zones and habitat types. Also, a significant number of uncommon plants may be seen in greater abundance there than elsewhere in Ireland or Britain, and some of these, e.g. Spring gentian *Gentiana verna* L., are more typically Alpine in distribution. As was mentioned in an earlier note introducing this record (Cawley & Nolan, 2007), the local vegetation at Castlequarter consisted of a number of plant species characteristic of this habitat, including Juniper *Juniperus communis* L., Dropwort *Filipendula vulgaris* Moench, Salad burnet *Sanguisorba minor* Scop., Bloody crane's-bill *Geranium sanguineum* L., and Squinancy wort *Asperula cynanchica* L.

Clubiona frutetorum is found in Europe in association with a somewhat varied range of habitats, though the following brief account is not comprehensive. Heath and tall vegetation, *Calluna*/*Erica*/*Molinia*/*Myrica*, in association with wet, peat habitats: bog (*Sphagnum* and degraded) and fen (*Alnus*/*Salix*; natural oligotrophic) (Hänggi *et al*., 1995; Almquist, 2006 — Sweden; Andersen *et al*., 1980 — Norway; Helsdingen, 1976, 1999 — Netherlands; NERI, 2007 — Denmark). Well-drained habitats (some poorly vegetated) with bare stone/sandy substrates, e.g. limestone pavement with *Juniperus* vegetation (Cawley & Nolan, 2006 — Ireland); coastal *Ammophila* dune (Helsdingen, 1999); semi-dry grassland — again often with heath vegetation, e.g. *Juniperus*/*Myrica gale* (Main *et al*., 2002; Kreuels & Platen, 1999 — both Germany); littoral situations (Hänggi *et al*., 1995; Helsdingen, 1999; Almquist, 2006). There are a few records from wet woodland, e.g. damp *Alnus* or moist, deciduous type (Hänggi *et al*., 1995; Almquist, 2006). Blick & Scheidler (1996) recorded one specimen from woodland above 900 m in Bavaria, in which state it is rarely found. The species is also known from ruderal situations, including mined soil surface (Hänggi *et al*., 1995; Kreuels & Platen, 1999) — perhaps echoing the species' use of well-drained, poorly vegetated natural habitats.

Clubiona frutetorum makes use of all strata: ground level under stones and debris, medium-high herb-layer vegetation, shrubs, and even the trunks and lower branches of trees (Main *et al*., 2002). It has been



Figs. 1–4: *Clubiona frutetorum*. **1** Right palp, ectal; **2** Right palp, ventral; **3** Epigyne, ventral; **4** Vulva, dorsal. Both specimens from Castlequarter, Co. Galway, Ireland; ♀ 26 July 2006, ♂ 31 July 2007. Scale line = 0.25 mm.

caught in Malaise traps in the Netherlands (P. J. van Helsdingen, pers. comm.). It is described as a stenotopic, xerophilic species in Germany (Kreuels & Platen, 1999; Main *et al*., 2002 respectively), but it is clearly not a strict xerophile in all areas of Europe. Helsdingen (1978) remarks that the spider avoids damp places, and it may be the case that the species makes use of tall, drier components of very wet habitats, occurring with greater frequency at or near ground level in drier types.

An interesting east/west division is observed in the Netherlands (P. J. van Helsdingen, pers. comm.): in the east and southeast it is found in fen and raised bog while in the west it occurs on dune habitats in dense and humid *Ammophila* vegetation. One area of duneland from which it is known, Zwanenwater, has fen-lake developing on part of the dune-system.

Males are found in Sweden from May to August with females appearing all year round. The abdomen of one female taken in Ireland (17 May 2007) ruptured during examination revealing the presence of well-developed eggs, suggesting that egg-laying would have occurred soon. Another female seen by MC on the same date was in a brood cell with about 50 spiderlings.

Clubiona frutetorum is found throughout continental Europe (though not apparently occurring on the major Mediterranean islands), extending east to central Asia (Helsdingen, 2009; Platnick, 2008), though it does not seem to be a particularly common species. On the basis of its distribution in continental Europe, its occurrence in Ireland and its favoured habitats it may reasonably be expected to occur in Great Britain, though Ireland has long been known to support a small number of invertebrate and plant species, presumed native, which are unknown from Britain.

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