

Agroeca dentigera Kulczyński, 1913, a liocranid spider new to Britain (Araneae, Liocranidae)

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Summary

The liocranid spider *Agroeca dentigera* Kulczyński, 1913 is described and illustrated as new to Britain, and its habitat and distribution are discussed.

Introduction

In 1989, a single female of what was then believed to be the endangered *British Red Data Book* liocranid spider *Agroeca lusatica* (L. Koch) was taken in a pitfall trap at Ynyslas Dunes, part of the Dyfi National Nature Reserve, Ceredigion, West Wales, among a sample of 100 specimens of *Agroeca proxima* (O. P.-Cambridge) from fixed dune habitat (Fowles, 1994). *Agroeca lusatica* is a widely distributed species in continental Europe, but it is known in Britain only from Sandwich Dunes, Kent,

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where it was first found in 1938 and is known to be well established (Merrett, 1991).

The area at Ynyslas Dunes was visited again in 2001 and 2002, in an attempt to find further specimens. A total of 75 man-hours were spent searching, by C. Felton, S. Judd and G. Knight, at 20 potentially suitable locations across the 97 ha dune system, on 31 October and 1 November 2001 and on five separate days between 11 September–11 October 2002. Seven grids of five pitfall traps each were also set between 12–25 September and between 25 September–10 October 2002. Very little is known about the biology of *A. lusatica* in Britain (Merrett, 1991), so recording effort was guided by a note on the occurrence of that species on a Danish dune system (Bøggild, 1975), where it was collected from a very dense area of 6–8 m² of marram grass, *Ammophila arenaria* (L.), at the south foot of a high hill of wind-blown sand.

Five specimens of *Agroeca* (4♀ and 1♂), distinguished in the field by their dark brown appearance, as opposed to the more orange tone of the common *A. proxima*, were found by C. Felton on 10 October 2002, in a sheltered, south-facing hollow on the side of an east-west fixed dune, situated at a right angle to the coast. Initially, these were assumed to be *A. lusatica*. However, the pronounced longitudinal dark markings on the carapace and the form of the genitalia closely fitted descriptions of *Agroeca dentigera* Kulczyński, and this identification was later confirmed by P. Merrett. Subsequent examination of the original female taken in 1989 showed that this was also *A. dentigera*, so the record

for *A. lusatica* in west Wales shown in Harvey *et al.* (2002) is therefore incorrect. These are the first British records for *A. dentigera*, and it is described and illustrated here from the British material. All measurements are in mm.

Description

Agroeca dentigera Kulczyński, 1913 (Figs. 1–4)

Agroeca dentigera Kulczyński, 1913: 26, pl. 1, fig. 10 (descr. ♀).

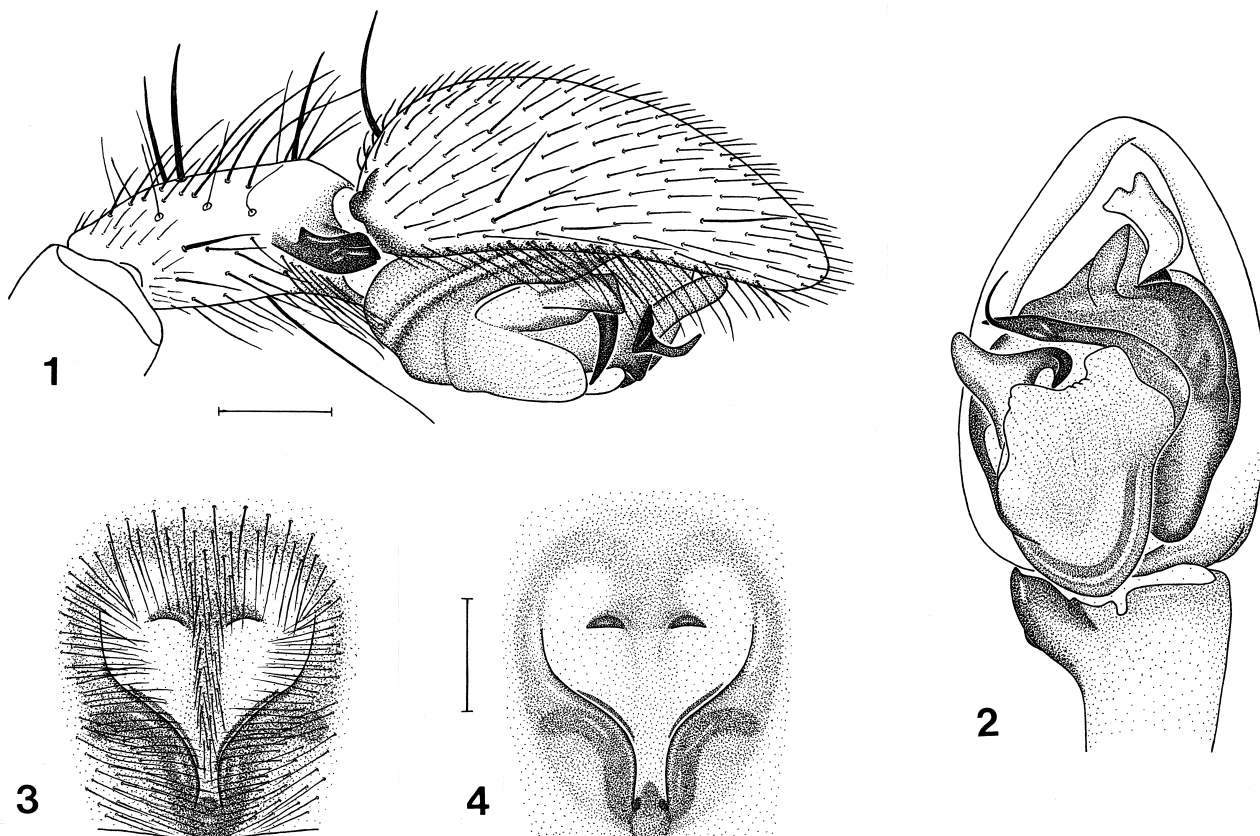
Agroeca dentigera: Braun, 1967: 179, figs. 1–2 (♀); Wunderlich, 1975: 44, figs. 6–10 (♀, descr. ♂); Jocqué, 1977: 80, figs. 1–4 (♀♂); Grimm, 1986: 28, figs. 28–29 (♀♂); Heimer & Nentwig, 1991: 388, fig. 1013 (♀); Roberts, 1998: 147, figs. (♀♂).

Material examined: GREAT BRITAIN: Ceredigion, Ynyslas Dunes (part of Dyfi National Nature Reserve), grid ref. SN 607936, pitfall trap on flat fixed dune, 1♀, 1 October 1989, leg. A. Fowles, coll. S. Dobson; same locality, SN 606934, sloping, south-facing fixed dune, 4♀ 1♂, 10 October 2002, leg. and coll. C. Felton, det. P. Merrett, deposited in Liverpool Museum (National Museums Liverpool).

Female/male: Total length 5.45–5.90/4.5. Carapace length 2.45–2.75/2.3. Abdomen length 3.0–3.45/2.4. Coloration similar to *A. brunnea* (Blackwall), but pattern and ground colour somewhat lighter. Carapace with thin dark borderline. Abdomen with central dorsal stripe not well defined; with irregular pattern of dark bars and blotches. Legs sometimes with very faint annulations on tibiae. Eyes: AME slightly smaller than

ALE, but equal in size to PME. AME slightly closer together than to ALE, posteriors almost equidistant, but position variable. Anterior eye row approximately straight, posterior row procurved. Legs: All femora usually with 3 dorsal spines, femur I with 1 prolateral spine, femur III usually with 2 prolateral and 1 retrolateral spine. All tibiae usually with 2 pairs of ventral spines and all metatarsi with 3 pairs of ventral spines, but some variation (tibiae III and IV sometimes with 3 pairs). Male palp (Figs. 1–2): Tibial apophysis broad and truncated. Bulbus with large, proximally curved, tegular apophysis, and embolic division with smaller, thin, distally curved process, which appears very fine in ventral view but thicker and curved dorsally in lateral view. Epigyne (Figs. 3–4): Fairly close to that of *A. lusatica*, but central atrium broader anteriorly and rather heart-shaped. With pair of dark, eyelid-like sockets, or “retinacula”, either side of midline.

Diagnosis: The male is easily distinguished by the shape of the tibial apophysis of the palp in lateral view; it is closest to that of *A. proxima* but clearly distinct, and the palpal bulb is very different. The bulb is closest to that of *A. brunnea*, but the thin, distally curved process on the embolic division is distinctive. The epigyne is closest to that of *A. lusatica*, but the central atrium is broader and more heart-shaped in *A. dentigera*, and the prominent eye-lid like sockets either side of the midline are distinctive. The general form of the epigyne is also like that of *A. brunnea*, but in *A. brunnea* the posterior “cleft” in the epigyne is much longer, and the anterior broad atrium is much shorter.



Figs. 1–4: *Agroeca dentigera* Kulczyński. **1** Right male palp, retrolateral view; **2** Ditto, hairs omitted, ventral view; **3** Epigyne, ventral view, 2002 specimen; **4** Epigyne, ventral view, hairs omitted, 1989 specimen. Scale lines=0.2 mm.

Distribution and habitat

Agroeca dentigera was originally described by Kulczyński (1913) from a single female from the region of Valuyki (Belgorod region) in southern Russia. A second female was described by Braun (1967) from *Sphagnum* near Bremen in north-west Germany, collected on 12 October 1962. Oltean (1973) found a third female in a reedbed in the Danube delta in Romania. The male was described for the first time by Wunderlich (1975), who reported on a collection of 48 males and 10 females obtained by pitfall trapping in the region of Berlin, on a *Carex* moor partially invaded by *Alnus*, and in association with *Typha* and *Phragmites*. Jocqué (1977) described 4 males and 3 females which were taken in pitfall traps in Kalmthout, Belgium, among *Calluna* and *Molinia*. Other more recent records have come from The Netherlands, Sweden, Finland, Lithuania, Poland, Ukraine, and the southern Urals.

The species therefore appears to be widespread in central and eastern Europe, but is rare with very few records. It has been collected mainly in the autumn and winter months, from October onwards, like most other *Agroeca* species. The available information on habitats is rather limited, but some degree of dampness is a common feature of most of the records.

At Ynyslas Dunes, *A. dentigera* was collected only on fixed dune habitat, in a south-facing hollow on an east-west oriented dune. *Ammophila arenaria* is dominant at the site, with other grasses, mostly *Festuca* sp., which is abundant in a rank sward together with moss and little bare ground. In addition to evening primrose, *Oenothera biennis* L., and other herbs there is some encroachment by burnet rose, *Rosa pimpinellifolia* L., which forms dense patches nearby. The spiders were found on sloping ground, running on litter under the vegetation. *Agroeca dentigera* would appear to be very restricted and uncommon at Ynyslas Dunes. Considerable effort was devoted to searching for it over two years at 20 different places on the site, yet it was found at only one location. Interestingly, this was less than 200 m from where the original specimen was found in 1989. The occurrence of the species on the west coast of Wales and nowhere else in Britain is remarkable. From its continental distribution, it might be expected to occur in south-east England, if anywhere in Britain.

Ynyslas Dunes support an important assemblage of 121 spider species (Judd *et al.*, 2003) and, in addition to *A. dentigera*, which presumably will receive *RDB* status, six nationally scarce species have been recorded: *Philodromus fallax* Sundevall (Philodromidae), *Marpissa*

nivoyi (Lucas) (Salticidae), *Diplocephalus inornatus* (O. P.-Cambridge) (Theridiidae), *Maso gallicus* Simon, *Mecopisthes peusi* Wunderlich and *Ceratinopsis romana* (O. P.-Cambridge) (Linyphiidae). *Agroeca proxima* is widely distributed across the dune system, and the related and nationally scarce *Agraecina striata* (Kulczyński) has been recorded from adjacent habitat at Cors Fochno and upper saltmarsh of the Dyfi estuary (M. Bailey, pers. comm.).

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