

***Gnaphosa nigerrima* L. Koch (Araneae: Gnaphosidae), a spider new to Britain**

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**Summary**

*Gnaphosa nigerrima* L. Koch is described as new to Britain, and its habitat and distribution are discussed.

**Introduction**

One hundred and fifty-one adult and immature *Gnaphosa* specimens were caught in pitfall traps on the *Sphagnum* lawn at Wybunbury Moss National Nature Reserve, Cheshire (Grid ref. SJ 697503), during a Liverpool Museum investigation into the status of the linyphiid spider *Carorita limnaea* (Crosby & Bishop) (Liverpool Museum, 1994). These were initially thought to be *Gnaphosa leporina* (L. Koch) — a widespread but local heathland species in Britain which had previously been recorded at the site (English Nature, 1991).

On closer examination, however, the specimens were clearly different from *G. leporina* and the other two British *Gnaphosa* species, i.e. *G. lugubris* (C. L. Koch), a British Notable A, southern species, and *G. occidentalis* (Simon), which was last recorded in 1935 from its only known British sites in south-west Cornwall (Merrett, 1991). They were subsequently identified using Grimm (1985) as *G. nigerrima* L. Koch.

Other gnaphosids occurring on the lawn were *Drassodes cupreus* (Blackwall), *Haplodrassus signifer* (C. L. Koch) and *Zelotes latreillei* (Simon). *Gnaphosa leporina* was not found during the survey.

***Gnaphosa nigerrima* L. Koch (Figs. 1–3)**

*Gnaphosa nigerrima* L. Koch, 1877: 185, fig. 11; Grimm, 1985: 77, figs. 50, 52, 53; Heimer & Nentwig, 1991: 422, figs. 1120.1–4; Ovtsharenko, Platnick & Song, 1992: 80, figs. 285, 286, 293–296.

**Diagnosis:** *Gnaphosa nigerrima* is smaller than *G. lugubris* and *G. occidentalis*, more resembling *G. leporina* in size (Table 1). It can easily be distinguished from this species by the short, epigynal scape in the female (Fig. 1) and in the male by the very short tibial apophysis of the male palp (Fig. 2). *Gnaphosa nigerrima* is dark brown to black whereas *lugubris* and *leporina* are a lighter

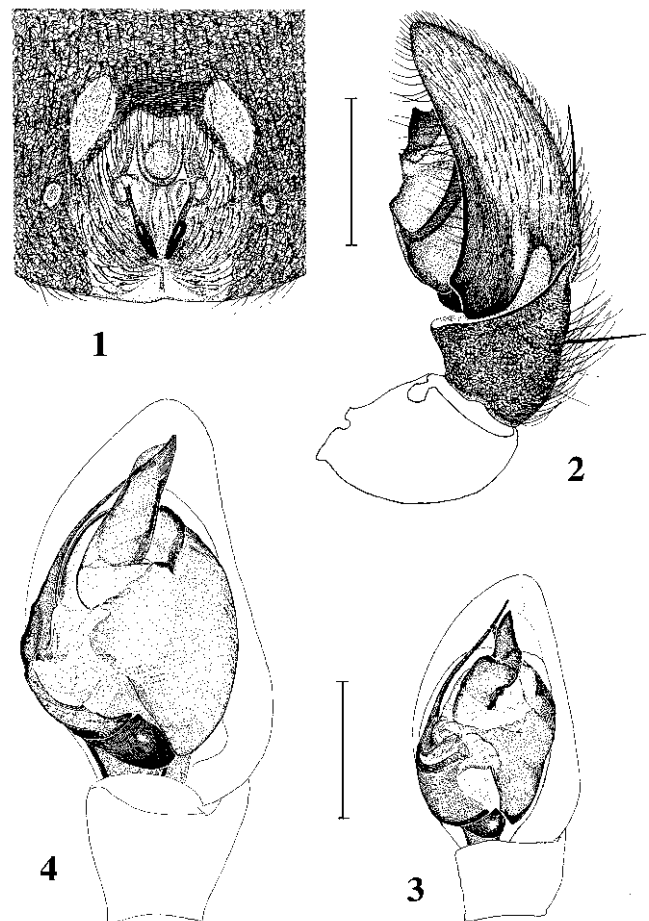
brownish-grey colour. The median apophysis of the male palp is curved and moderately bifid in *nigerrima* (Fig. 3) but straight and pointed in *lugubris* (Fig. 4) and *occidentalis* (Locket, Millidge & Merrett, 1974: fig. 4D). The epigyne of *nigerrima* (Fig. 1) is distinguished from that of *lugubris* by the triangular plate which covers the atrium. The epigyne of *occidentalis* is considerably broader (Locket & Millidge, 1951: fig. 61B).

*Gnaphosa nigerrima* is a characteristic wet peatland species, unlike *lugubris* which inhabits drier habitats, particularly heathland.

**Description:** A full description of *G. nigerrima* is given by Grimm (1985) who keyed and described 17 Middle-European *Gnaphosa* species.

**Length:** Table 1. **Colour:** Both sexes are similarly marked and immatures are paler. Carapace glossy dark brown with blackish striae radiating from fovea and with black spine-like hairs. Abdomen with uniform matt black pubescence with longer black hairs. Sternum and legs glossy dark brown. Femora, tibiae and ventral side of coxae with paler, variable longitudinal patches. Tarsi and sometimes metatarsi dull yellow. Tibiae and metatarsi III-IV with dorsal, ventral and lateral rows of spines. **Epigyne:** Fig. 1. **Male palp:** Figs. 2–3.

**Distribution:** In Europe *G. nigerrima* is locally distributed in Switzerland, Austria, Germany, Slovakia,



Figs. 1–3: *Gnaphosa nigerrima* L. Koch. 1 Epigyne, ventral view; 2 Male palp, retrolateral view; 3 Male palp, ventral view.

Fig. 4: *Gnaphosa lugubris* (C. L. Koch). Male palp, ventral view. Scale lines=0.5 mm.

	<i>nigerrima</i>	<i>leporina</i>	<i>lugubris</i>	<i>occidentalis</i>
Male	6.1–7.0	5.4–6.7	7.5–10.7	9.0–11
Female	6.7–9.1	4.7–8.4	8.3–10.5	10.0–12

Table 1: Total length (in mm) of *Gnaphosa* species occurring in Britain. Measurements from Grimm (1985) except for *G. occidentalis* which are from Roberts (1985).

western Russia, Poland, Denmark, southern Sweden and southern Finland (Grimm, 1985). It also occurs right across Siberia (Ovtsharenko *et al.*, 1992: map 26). Remarkably, it and *Carorita limnaea*, which was first discovered in Britain by Duffey & Merrett (1963), appear to be restricted in Britain to Wybunbury Moss. Specimens were not located during a nationwide search of personal and museum collections, nor were any collected during a search for *C. limnaea* at ten other schwingmoor sites in the west Midlands and north-east Wales. Most of these sites, such as Abbots Moss, Cheshire, have been thoroughly worked by araneologists, so it is almost inconceivable that such a large spider as *G. nigerrima* would have been missed. Furthermore, an intensive pitfall programme at Chartley Moss, structurally the most similar site to Wybunbury Moss, by Procter (1988) also failed to find it.

**Biology:** *Gnaphosa nigerrima* is characteristic of active *Sphagnum* mosses in middle and north-west Europe. Adults were collected between 16 June and 8 September 1994 at Wybunbury Moss and were restricted to the *Sphagnum* lawn. The majority of specimens were collected in two pitfall grids on the south and east margins of the lawn. It was not collected by sweep-netting, hand-searching or sieving.

Adults of *Gnaphosa leporina* and *G. lugubris* show peak numbers in pitfall traps from late May to early July (Merrett, 1967). *Gnaphosa nigerrima* probably also peaks before early July, as 84% of all adults were trapped at Wybunbury between 16 June and 14 July 1994. Unfortunately, traps were not set before these dates to determine the full phenology of this species.

A detailed description of the ecology of Wybunbury Moss is given by Poore & Walker (1958) and Green & Pearson (1968, 1977). The schwingmoor at Wybunbury moss is an exceptional habitat for spiders in Britain. This, and the methodology and results of the Liverpool Museum survey are the subject of a separate paper (Felton & Judd, 1997).

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