

Neon robustus* Lohmander (Araneae: Salticidae), a fennoscandian spider found in Scotland and Ireland*R. Snazell**

Institute of Terrestrial Ecology,
Furzebrook Research Station,
Wareham, Dorset, BH20 5AS

L. J. Jonsson

MNA, University of Kristianstad,
291 88 Kristianstad, Sweden

and

J. A. Stewart

109 Greenbank Crescent,
Edinburgh, EH10 5TA

Summary

The salticid spider *Neon robustus* Lohmander, 1945, known previously only from Sweden and Finland, is described from British and Irish material. The presence of the species in Denmark is recorded for the first time. Its distribution and ecology are also described. It is suggested that the species may be more widespread in Britain and Ireland as, although *N. robustus* is usually larger, it is possible that it may previously have been misidentified as *N. reticulatus* (Blackwall) which it closely resembles. Comparative drawings of the palp and epigyne of *N. robustus* and *N. reticulatus* are provided.

Introduction

While attending the 17th European Colloquium of Arachnology at the University of Edinburgh during July 1997, L.J.J. collected some spiders from sites close to the Pollock Halls Campus. Among these was a female of a small salticid spider, *Neon robustus* Lohmander, which had not previously been recorded from Britain but with which he was familiar, it being present in the Swedish fauna. The news of this discovery prompted J.A.S. to re-examine specimens of *Neon* which he had taken in southern Scotland and R.S. to look again at some specimens taken in Co. Wicklow, Eire in 1981. Specimens of *N. robustus* were identified from two Scottish sites and from the Wicklow site. Both male and female are described from the Irish material.

Description***Neon robustus* Lohmander, 1945 (Figs. 1–4)**

Neon robustus Lohmander, 1945: 48, figs. 47–56 (♂♀).

N. robustus: Tullgren, 1946: 130; Heimer & Nentwig, 1991: 510.

Material examined: EIRE: County Wicklow, Great Sugarloaf (O/24-37-), among boulders on SW side, 2♂ 1♀, 5 June 1981 (R.S.). SCOTLAND: Peeblesshire, Pirn Craig nr. Innerleithen (Grid ref. NT336372), amongst scree, 1♂ 1♀, 17 May 1982 (J.A.S.); Edinburgh, Holyrood Park (Grid ref. NT268735), under scree, 3♂ 3♀, 7 June 1991 (J.A.S.); same locality, in scree, 1♀, 14

June 1997 (L.J.J.). SWEDEN: Skåne, Vitaby, 2♀, 28 June 1925 (H. Lohmander); Öland, Köping, 2♂ 1♀, 25 May 1928 (H. Lohmander); Gotland, Hagvar, south-west of Ireviken, 2♀, 20 July 1938 (H. Lohmander); Göteborg, Slottsskogen, 1♂, 23 May 1942 (H. Lohmander); Närke, Kil, Ullaviklint, 1♂ 1♀, 14 June 1944 (H. Lohmander); Blekinge, Mjällby, Listershovud, among lichens in a stony heap, 2♀, 11 June 1988 (L.J.J.); Östergötland, Malexander, among lichens in scree, 2♀, 21 June 1989 (L.J.J.). DENMARK: “Dania”, 1♀ (Braendegaard). Lohmander’s specimens are all from the type series and are deposited in the Museum of Natural History, Gothenburg, Sweden, the Braendegaard specimen in the Zoological Museum, Copenhagen, Denmark, and the rest in the respective authors’ collections.

Male: Total length 2.5–2.8 mm. Carapace length 1.20–1.34 mm, width 0.80–1.06 mm. Carapace: yellow-brown with thin, darkened margin and darker radiating striae in thoracic area. Slight darkening around AME, greater darkening round other eyes. Some sparse pale hairs round eyes, otherwise lacking hairs. Eyes: OQ broader than long and parallel sided. Chelicerae: small, yellow with slightly darker longitudinal striae. Two teeth on anterior edge of fang guide, distal small, proximal tiny; one larger tooth on posterior edge. Sternum: scutiform, yellow-brown with darker margin; some sparse, pale hairs present. Legs: 4132. Yellow, darkening to pale brown on femora, tibiae and metatarsi I and II, pale striae dorsally on tibia I; all tarsi very pale yellow. Metatarsi I and II with two pairs of strong ventral spines, tibia I with three pairs of strong ventral spines, tibia II with two single ventral spines. Abdomen: dorsally yellow-brown with chevrons of pale dots, ventrally dark brown with rows of pale dots. Spinnerets: pale yellow. Palp (Figs. 1, 2): cymbium yellow-brown with white tip. Embolus long and slender, particularly distal part; spiculate lobe small.

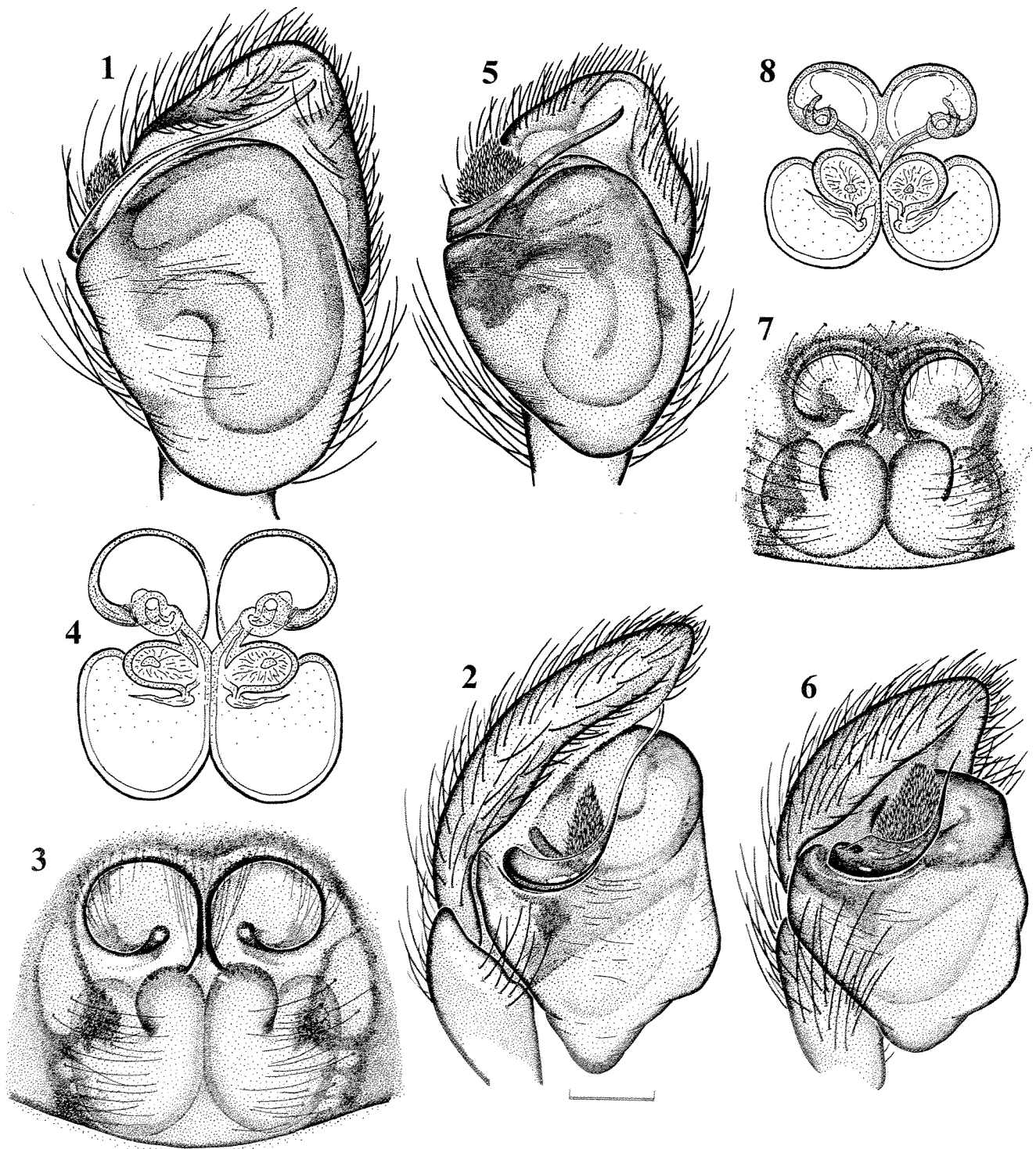
Female: Total length 2.5–3.2 mm. Carapace length 1.15–1.38 mm, width 0.80–1.06 mm. As male except: chelicerae slightly larger, abdomen slightly paler. Epigyne (Fig. 3): median septum narrow, atria large. Vulva: Fig. 4.

Carapace length	<i>N. robustus</i>		<i>N. reticulatus</i>	
	♀	♂	♀	♂
0.90			1	2
0.95				2
1.00			1	2
1.05			2	9
1.10			4	14
1.15		1	25	41
1.20	2	5	2	6
1.25	3	9		
1.30	6	13		1
1.35	3	15		
1.40	5	8		
1.45	1	1		

Table 1: Numbers of specimens in 12 classes of carapace length (from Lohmander, 1945 with additional measurements from specimens examined for this study). Measurements in mm.

Diagnosis: *N. robustus* is most closely related to the much more widespread *N. reticulatus*. The most obvious difference between the species is that *N. robustus* is, with very little overlap, larger than *N. reticulatus* (Table 1). In *N. robustus*, males and females are very similar in coloration, while in *N. reticulatus* females are usually much paler than males. Females of *N. reticulatus* also tend to be paler than females of *N. robustus*. In males, the abdomen of *N. robustus* is less hairy and the ground colour a darker brown than in *N. reticulatus*. In the

female of *N. robustus* the median septum of the epigyne is usually much narrower than in *N. reticulatus*, the atria are larger, more circular and the copulatory openings broader. In *N. reticulatus* there is a hook-shaped projection of the vulva which is clearly visible in the centre of the atria; this is not seen in *N. robustus*. There is also a band of sclerotisation round the anterior edges of the atria which is much shorter and wider in *N. reticulatus* than in *N. robustus* (Figs. 3-4, cf. Figs. 7-8). In the male palp, the embolus of *N. robustus* is longer and that part



Figs. 1-8: 1-4 *Neon robustus* Lohmander (from Gt. Sugarloaf, Co. Wicklow, Eire). 1 Male palp, ventral view; 2 Ditto, mesal view; 3 Epigyne, ventral view; 4 Vulva, dorsal view. 5-8 *Neon reticulatus* (Blackwall) (from Etchinghill Escarpment, Folkstone, Kent). 5 Male palp, ventral view; 6 Ditto, mesal view; 7 Epigyne, ventral view; 8 Vulva, dorsal view. Scale line=0.1 mm.

beyond the spiculate lobe is thinner. Also, the spiculate lobe of *N. robustus* is smaller than that of *N. reticulatus* (Figs. 1–2, cf. Figs. 5–6).

Occurrence

Although previously recorded from Sweden and Finland, *N. robustus* is relatively common only in southern Sweden, where it has been recorded from about 130 localities and in nearly all provinces south of 60°N. More than half of the records are from the province of Småland in the south-east of Sweden (Lohmander, 1953, 1954), but it has also been recorded from the provinces of Skåne (Lohmander, 1945, 1950; Holm, 1977), Blekinge (Jonsson, unpubl.; Holm, unpubl.), Halland, Öland, Västergötland, Gotland, Närke, Dalsland (Lohmander, 1945), Östergötland (Lohmander, 1948, 1952), Värmland (Lohmander, 1949), Södermanland (Lohmander, 1955) and Uppland (Holm, unpubl.). It is also known from the south-west of Finland (Lehtinen, 1964; Lehtinen *et al.*, 1979; Logunov, 1998). A single female of *N. robustus* was found in the collection of the Zoological Museum in Copenhagen, in a tube labelled “*Neon reticulatus*, Dania, Braendegaard.” Unfortunately the location “Dania” (=Denmark) is not specific but nevertheless this specimen must be regarded as the first record of the species from Denmark. The known range of *N. robustus* (Map 1) has therefore been considerably increased by this record and the new records from Edinburgh and Peeblesshire in Scotland, and from the Great Sugarloaf in Co. Wicklow, south of Dublin, in the Republic of Ireland.

Ecology

N. robustus is a stenotopic, thermophilous species that is often associated with sunny, south and south-west facing rocky slopes, screes and cliffs which have a little leaf litter, moss or lichen. However, in southern Sweden it has been found most frequently on stone walls and other similar anthropogenic habitats, especially in Småland and other parts of south-east Sweden (Lohmander, 1945, 1954). In most cases these sites are further protected by surrounding broad-leaved trees and shrubs. The scree at the Holyrood Park site is protected by bushes.

N. robustus has seldom been found near conifers (Lohmander, 1955; Lehtinen *et al.*, 1979). *Neon* species are often described as typical residents of the litter in various types of forest (Logunov, 1998). In Sweden, *N. reticulatus* is regarded as a eurytopic forest species and is rarely found in the same biotopes as *N. robustus*. However, in Britain, Roberts (1995) describes *N. reticulatus* as occurring in two distinct habitats: in leaf-litter (often quite dry) in woodland, and among moss in open, damp, boggy habitats, while *N. valentulus* Falconer is recorded from grass and moss in fens. In southern Sweden, *N. robustus* is often replaced in the most exposed, sunny sites by *N. levis* (Simon). The Scottish and Irish sites are typical south-west facing rocky slopes with quite sparse vegetation.



Map 1: Distribution of *Neon robustus* Lohmander in northern Europe. Filled circles=known locations, unfilled circle=undetermined location.

Males of *N. robustus* have been found in May and June, females from April to October. Adults of both sexes of *N. reticulatus* can be found throughout the year.

Acknowledgements

We would like to thank Søren Langemark (Zoological Museum, Copenhagen) and Ted von Proschwitz (Museum of Natural History, Gothenburg) for giving us access to the collections at those museums.

References

- HEIMER, S. & NENTWIG, W. 1991: *Spinnen Mitteleuropas: ein Bestimmungsbuch*. Paul Parey, Berlin.
- HOLM, Å. 1977: Kullabergs spindlar. *Kullabergs Natur* **15**: 1–29.
- LEHTINEN, P. T. 1964: Additions to the spider fauna of southern and central Finland. *Annls zool. fenn.* **1**: 303–305.
- LEHTINEN, P. T., KOPONEN, S. & SAARISTO, M. 1979: Studies on the spider fauna of the southwestern archipelago of Finland II. The Åland mainland and the island of Eckerö. *Memo. Soc. Fauna Flora fenn.* **55**: 33–52.
- LOGUNOV, D. V. 1998: The spider genus *Neon* Simon, 1876 (Araneae, Salticidae) in SE Asia, with notes on the genitalia and skin pore structures. *Bull. Br. arachnol. Soc.* **11** (1): 15–22.
- LOHMANDER, H. 1945: Arachnologische Fragmente. 3. Die Salticiden-Gattung *Neon* Simon in Südschweden. *Göteborgs K. Vetensk.-o. vitterhSamh. Handl. (Ser. B)* **3** (9): 31–75.
- LOHMANDER, H. 1948: Berättelse för år 1946. *Årstr. Göteborgs naturhisto. Mus.* **1947**: 11–17.
- LOHMANDER, H. 1949: Faunistiskt fältarbete sommaren 1947 i sydvästra Värmland. *Årstr. Göteborgs naturhisto. Mus.* **1948**: 12–21.

- LOHMANDER, H. 1950: Faunistiskt fältarbete 1949 (östra Skåne). *Årstr. Göteborgs naturhisto. Mus.* **1949–1950**: 148–160.
- LOHMANDER, H. 1952: Faunistiskt Fältarbete 1948 och 1950 (öster och väster om Vätterns södra del). *Årstr. Göteborgs naturhisto. Mus.* **1954**: 27–50.
- LOHMANDER, H. 1953: Faunistiskt fältarbete 1951 och 1952 (södra Småland, östra och mellersta delen). *Årstr. Göteborgs naturhisto. Mus.* **1953**: 31–83.
- LOHMANDER, H. 1954: Faunistiskt fältarbete 1953 (västra Småland). *Årstr. Göteborgs naturhisto. Mus.* **1954**: 27–50.
- LOHMANDER, H. 1955: Faunistiskt fältarbete 1954 (utmed Göta-lands nordgräns, östra hälften). *Årstr. Göteborgs naturhisto. Mus.* **1955**: 30–97.
- ROBERTS, M. J. 1995: *Collins field guide: Spiders of Britain & Northern Europe*. HarperCollins, London.
- TULLGREN, A. 1946: Fam. 5–7. Clubionidae, Zoridae och Gnaphosidae. *Svensk Spindelfauna* **3**: 1–141. Entomologiska Foreningen, Stockholm.
-