

***Chrysso nordica* (Theridiidae, Araneae) found in Eastern Hungary is a new spider species for Central Europe**

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Abstract

Investigation of the fauna of acidic sandy grasslands in Eastern Hungary in 2001 yielded the collection of specimens of *Chrysso nordica* (Chamberlin et Ivie, 1947), a species hitherto unreported from the region. The publication describes the genitalia of both sexes, the habitats examined and the co-occurring species. Data suggest that mature specimens can be collected in July and August.

Key words: *Chrysso nordica*, Eastern Hungary, acidic sandy grasslands

INTRODUCTION

In 2001 fauna surveys were carried out in the sandy grasslands of Nyírség (Eastern Hungary) using sweep-net sampling from June to October, during which female, male and young specimens of *Chrysso nordica*, formerly unrecorded in Hungary were found. The paper presents the established morphology and biological details of this species for both sexes. The morphology of this species' abdomen differs from other Theridiidae species known from Central Europe.

MATERIAL AND METHODS

Study area and sampling

In 2001, fauna surveys were carried out in the acidic sandy grasslands of Nyírség (Eastern Hungary). The sampling sites were used as pastures with considerable disturbance from treading. Sampling was carried out by sweep-netting at 9 sampling sites in the growth season of 2001. The samples collected from five separate sites (Table 1) yielded 3 females, 1 male and 4 youngs altogether. The specimens

collected are deposited in the author's collection (coll. Csaba Szinetár). In 2002 three further male specimens were found. The species is not recorded in the 'Central European Spiders Determination Key' (Nentwig et al. 2003). The species was identified on the basis of Azheganova's 1968 work (Fig. 1).

RESULTS AND DISCUSSION

Morphology

Female

The cephalothorax is light yellow, exhibiting an eye-catching dark stripe in the middle and on the edge. The sternum is also yellow, its edge is dark, just like its backside. The legs are yellow. The distal end of the tibia of the first leg-pair has a dark brown ring. The basic colour of the abdomen is white. On the back of abdomen, in the central line, an expressed, odd cuneiform protrusion can be seen. In lateral view, the rear third is darker and has two black stripes from the spinnerets to the backside cuneiform protrusion. This pattern is strongly exhibited in the juveniles, while it

Table 1. Sampling sites in Eastern Hungary in 2001 (perturbation scale: 1-5, 1-only little perturbation, 5-very disturbed).

Sampling sites	Altitude (m)	UTM code	Treatment	Perturbation
1. Martinka	130	ET 57	grazing	3
2. Hajdúbagos	115	ET 55	grazing	1
3. Bagamér	125	ET 75	grazing	1
4. Újtanya	125	ET 98	grazing	2
5. Bátori-legelő	145	ET 99	grazing	1
6. Cserepesi-legelő	140	ET 99	grazing	5
7. Rohod	130	EU 81	grazing	4
8. Nyírtura	100	EU 61	grazing	3
9. Nyíregyháza	115	EU 50	grazing	5

may disappear in adults. The length of prosoma is 4 mm. The epigyne has a horseshoe form, its edge is strongly chitinous. The roundish seminal receptacles as well as the conduits can be seen well from the outside (Fig. 2A,B).

Male

The shape, the colours and the patterns exhibited by the males resembles that of the females. The abdomen is elongated. The cuneiform protrusion can be seen here, as well, but it is not so expressed. The length of prosoma is 3.3 mm. The morphology of the palpus is very characteristic. Strong, toothlike parts can be found at the upper edge of the cymbium (Fig. 3A,B). The end - part of the pedipalpus in the males is rather large, showing some resemblance to *Episinus* species.

Phenology

Adult specimens of both sexes were found in July and August. Young specimens were found from July to October.

Habitat

Charitonov (1950) was the first to report the species as a steppe-dwelling spider. Azheganova (1968) regarded this species to be characteristic of the Eurasian steppes and dry, saline areas. Marusik et al. (2000) also reported that it inhabits steppe and dry meadow vegetation. In the bogs near Magadan, in the Siberian taiga the species showed high population density (unpublished data by Marusik 2002). The habitats investigated in Hungary were dry, acidic sandy grasslands. This species does not seem to be sensitive to perturbation, because it occurred in very disturbed sampling

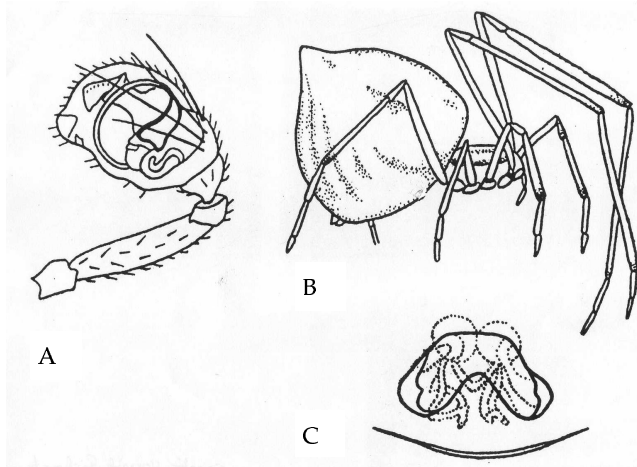


Fig. 1. *Chrysso nordica* (Chamberlain et Ivie, 1947). The palp of the male (A), the body of the female (B) and the epigyne (C) (after Azheganova 1968).

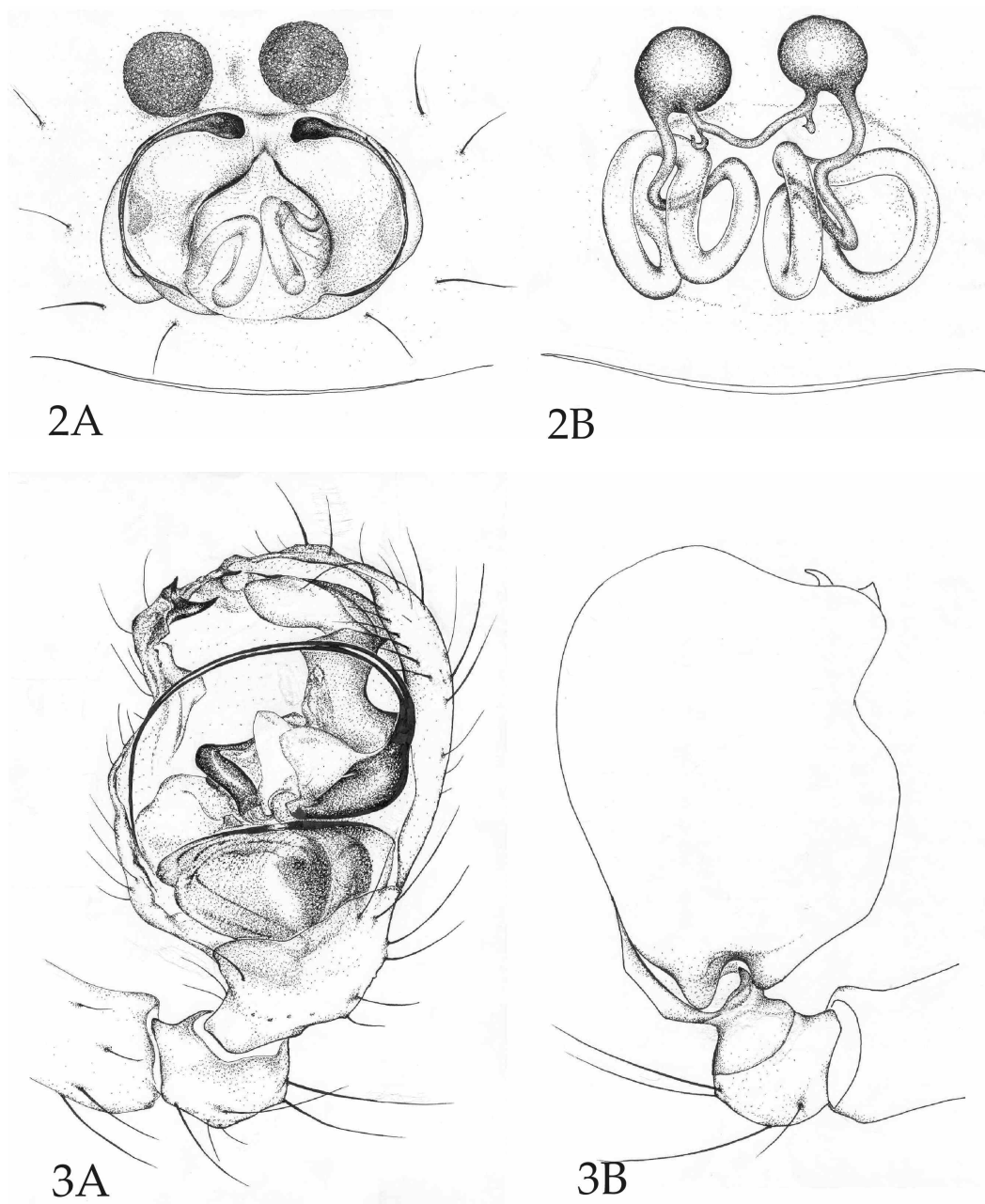


Fig. 2. The epigyne (**A**) and the vulva (**B**) of the female of *Chrysso nordica* (Hajdúbágos, 2001.07.12.).
Fig. 3. The palp of the male of *Chrysso nordica* from inside (**A**) and from outside (**B**).

sites (Cserepesi-legelő). A thorough investigation of the plant associations of the habitats is still ahead.

Distribution

Siberio- West Palearctic range: in the Ukraine, from the South Ural throughout South Siberia to the Magadan Area, southward to Mongolia (Marusik et al. 2000). In the Nearctic known from Alaska to the Northwest Territories south to California and Colorado (Dondale et al. 1997). Mikhailov notes (1997) that the Ukraine is the westernmost boundary of the range of the species. It is of palearctic distribution : Central Asia (Mikhailov 1997), Mongolia (Platnick 2002). In Hungary its distribution seems to be restricted. Several surveys carried out in calciferous sandy grasslands in the western parts of the Great Hungarian Plain (Duna-Tisza köze, Kiskunság) (Loksa 1987; Kerekes 1988) and in acidic sandy grasslands of the Transdanubia (Dunántúl), similar to those in the Nyírség area (Szinetár 2001), failed to produce the species. So far the species could only found in the sandy grasslands in the eastern parts of the Carpathian Basin (Nyírség). This suggest that the habitats of the species range no further to the west than this area.

It seems also evident that the species is known in several regions of the Palearctic: Hungary, the Ukraine, Siberia, Mongolia, China, Magadan; in the Nearctic: Alaska, California, Colorado. Further information is necessary to describe the exact biogeographical situation of the species and its exact range.

Co-occurring species

Among the species found together, we can find the common species of open, grassy habitats as well as some characteristic spiders of the typical sandy lands (*Xysticus sabulosus* (Hahn, 1832), *Oxyopes heterophthalmus* Latreille, 1804, *Yllenus vittatus* Thorell, 1875).

Examined material of *Chrysso nordica*

1 juvenile: 2001. 07. 12. Martinka, the five most abundant additional species in the samples with number of individuals: *Dictyna arundinacea* (Linnaeus, 1758) 6, *Theridion impressum* L. Koch, 1881 3, *Hypsosinga pygmaea* (Sundevall, 1832) 1, *Yllenus vittatus* Thorell, 1875 1.

1 female: 2001. 07. 12. Hajdúbágyos: *Thomisus onustus* Walckenaer, 1806 9, *Theridion impressum* L. Koch, 1881 5, *Oxyopes heterophthalmus* Latreille, 1804 2, *Xysticus sabulosus* (Hahn, 1832) 2, *Heliophanus flavipes* (Hahn, 1832) 2.

1 female: 2001. 07. 12. Cserepesi-legelő: *Neoscona adianta* (Walckenaer, 1802) 5, *Argiope bruennichi* (Scopoli, 1772) 4, *Xysticus sabulosus* (Hahn, 1832) 4, *Theridion impressum* L. Koch, 1881 3, *Oxyopes heterophthalmus* Latreille, 1804 2.

1 female: 2001. 07. 26. Bagamér: *Thomisus onustus* Walckenaer, 1806 5, *Misumena vatia* (Clerck, 1757) 3, *Neoscona adianta* (Walckenaer, 1802) 2, *Xysticus sabulosus* (Hahn, 1832) 1, *Heliophanus flavipes* (Hahn, 1832) 1.

1 juvenile: 2001. 07. 26. Bátori-legelő: *Thomisus onustus* Walckenaer, 1806 22, *Misumena vatia* (Clerck, 1757) 13, *Neoscona adianta* (Walckenaer, 1802) 8, *Argiope bruennichi* (Scopoli, 1772) 7, *Xysticus sabulosus* (Hahn, 1832) 3.

1 male: 2001. 08. 23. Cserepesi-legelő: *Mangora acalypha* (Walckenaer, 1802) 10, *Thomisus onustus* Walckenaer 1806 9, *Theridion impressum* L. Koch, 1881 2, *Diaea pictilis* (Banks, 1896) 1, *Xysticus striatipes* L. Koch, 1870 1.

1 juvenile: 2001. 10. 04. Hajdúbágyos: *Thomisus onustus* Walckenaer, 1806 28, *Mangora acalypha* (Walckenaer, 1802) 7, *Theridion impressum* L. Koch, 1881 2, *Xysticus striatipes* L. Koch, 1870 1, *Yllenus vittatus* Thorell, 1875 1.

1 juvenile: 2001.10. 04. Bátori-legelő: *Thomisus onustus* Walckenaer, 1806 37, *Mangora acalypha* (Walckenaer, 1802) 13, *Xysticus striatipes* L. Koch, 1870 6, *Xysticus acerbus* Thorell, 1872 4, *Yllenus vittatus* Thorell, 1875 3.

The generic placement

The generic placement of this species is treated differently by different authors and is still questioned and comes under dispute. Synonyms of the species according to Platnick (2002): *Achaea* n. (Chamberlin & Ivie 1947); *Theridula ovsjannikovi* (Charitonov 1950); *Theridion ovsjannikovi* (Azheganova 1951); *Arctachaea* n. (Levi 1957); *Theridion ovsjannikovi* (Azheganova 1968); *Theridula ovsjannikovi* (Tyschchenko 1971); *Achaeearanea* n. (Brignoli 1983); *Arctachaea* n. (Coddington 1990); *Achaeearanea* n. (Esyunin & Efimik 1996). The present paper did not wish to evaluate the generic placement, therefore we stucked to Platnick's (2002) nomenclature.

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