Confirmation of Silometopus curtus (Araneae: Linyphiidae) in Hungary

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Confirmation of *Silometopus curtus* (Araneae: Linyphiidae) in Hungary

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Abstract. The presence of *Silometopus curtus* (Simon, 1881) in Hungary is confirmed. Comparative photos of male and female of *S. curtus* and the closely related species *S. ambiguus* (O. Pickard-Cambridge, 1906) are presented. The phenology of *S. curtus* in Hungary is described and its patchy distribution is discussed.

Keywords: faunistics, habitat preference, Kiskunság, salt marsh

Zusammenfassung. Bestätigung von *Silometopus curtus* (Araneae: Linyphiidae) in Ungarn. Das Vorkommen von *Silometopus curtus* (Simon, 1881) in Ungarn wird bestätigt. Es werden vergleichende Fotos von Männchen und Weibchen von *S. curtus* und der nächst verwandten Art *S. ambiguus* (O. Pickard-Cambridge, 1906) gezeigt. Die Phänologie von *S. curtus* in Ungarn wird dargestellt und die zerstreute Verbreitung diskutiert.

Silometopus is a genus of small Erigoninae, presently counting 16 Palaearctic species (World Spider Catalog 2020). They are not easy to identify, especially females. Recently, Vidal et al. (2020) contributed significantly to facilitate species identification of this genus. Three species, *Silometopus ambiguus* (O. Pickard-Cambridge, 1906), *S. curtus* (Simon, 1881) and *S. nitidithorax* (Simon, 1915) were often misidentified in the past. The case of *S. nitidithorax*, a species described from the Ardèche in France is treated in a separate paper (Déjean et al. 2020). Denis' (1950) citations of *S. nitidithorax* in salt marshes in the Camargue based on females appeared to be erroneous and caused much confusion. His specimens appeared to belong to *S. curtus* (Denis 1964). *Silometopus ambiguus* and *S. curtus* also have been confused. This was clarified by Blick (2014) who pointed out that *S. ambiguus* is a species from the temperate region and that all citations from that region are in fact *S. ambiguus*.

The status of *Silometopus curtus* remains to be determined. Females of this species have been illustrated several times, also recently (Denis 1950, Blick 2014, Breitling 2018, 2020). The only older, small pictures of males of *S. curtus* available, are those of Simon (1881, 1926), including the only figure of the male palp. In Hungary, *S. curtus* was included in the bibliographic check list of the Hungarian spider fauna (Samu & Szinetár 1999), but this was based on a doubtful citation of Loksa (1991; Blick 2014). The discovery of new material of *S. curtus* in Hungary allows us to present a new diagnosis and new photos of the genital organs of the species and to confirm its presence in Hungary.

Material and methods

The Hungarian material was collected by suction sampling, at two locations in the area of the Kiskunság National Park: i) in the Fehérszék alkaline salt marshes (46.81083°N, 19.18527°E, 92 m a.s.l., near Fülöpszállás), and ii) in the same habitat type in the nearby area of Kunpeszér (47.05916°N, 19.29222°E, 94 m a.s.l.). Sampling sessions took place monthly between 2001 and 2003. There was no sampling in December and January in either year.

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Spider specimens were examined using a Nikon SMZ1270 stereomicroscope. Photographs were taken with a Moticam 5MP camera attached to a Realux stereoscopic microscope.

Structures of the left palps are depicted. Male palps were detached and transferred to glycerol for examination under the microscope. Female genitalia were excised using sharpened needles. These where then transferred to clove oil for examination under the microscope. Later, palps and epigynes were returned to 70% ethanol.

Results

***Silometopus curtus* (Simon, 1881)** (Figs 1-9, 13-15)
Erigone curta Simon, 1881: 253 (descr. ♂).
Cnephalocotes curtus; Simon 1884: 704, figs 565-566 (descr. ♂).
Silometopus curtus; Simon 1926: 353, 487, fig. 621 (♂).
Silometopus nitidithorax; Denis 1950: 66, figs 5-9 (descr. ♀; misidentification).
Silometopus curtus; Denis 1964: 395, figs 2-3 (♂); Locket, 1964: 265, figs 2A-B, 3D; Blick 2014: 45, figs 2A-B, 3B (♂♀); Breitling 2018: 9, fig. 20 (♀).

Type material

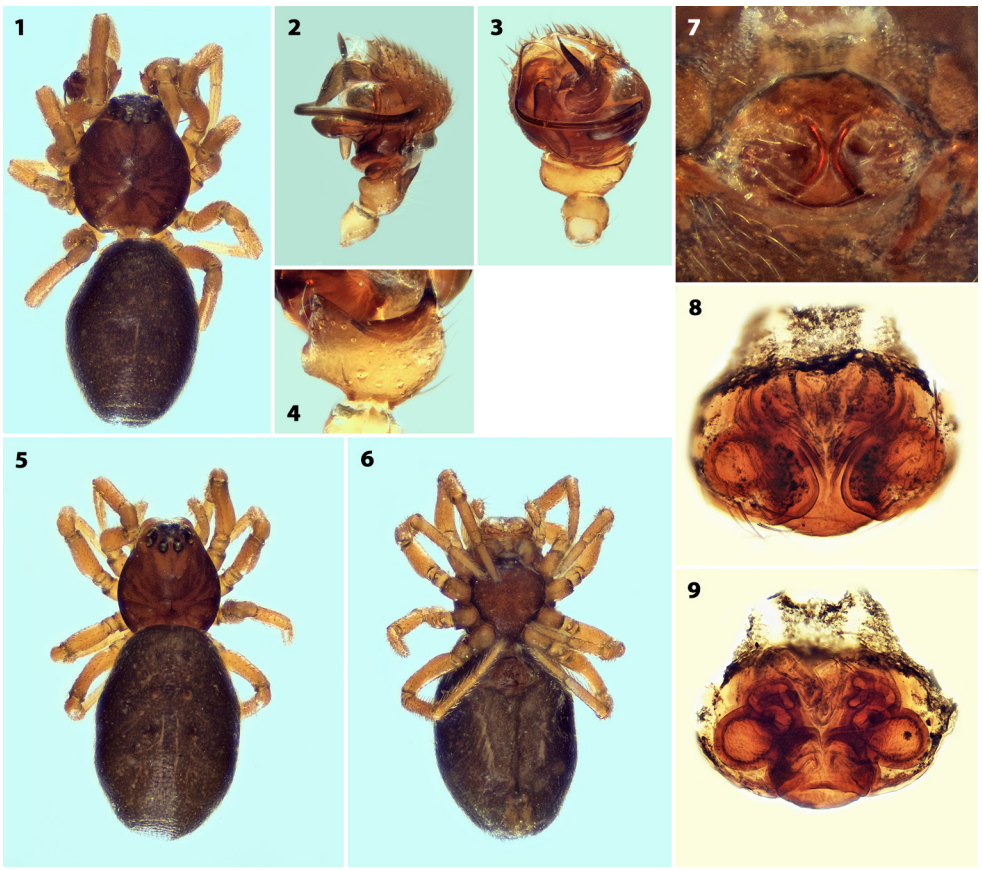
Type series from France, Bouches-du-Rhône, Martigues and from Spain, Catalonia, Arbucias (Muséum National d'Histoire Naturelle de Paris); not examined.

Diagnosis

Males of *S. ambiguus* and *S. curtus* differ from other *Silometopus* species by the absence of a cephalic lobe and differ from each other clearly by the shape of the tibial apophyses in dorsal view (Fig. 10 versus 13). In *S. ambiguus*, the dorsal margin is nearly straight, with one pointed, curved tooth almost in the middle (Fig. 10), in *S. curtus* the dorsal margin is convex, with two larger teeth on both sides (Fig. 13). Females differ by the shape of the median septum in the epigyne. In *S. ambiguus*, there is a median septum (MS) in the shape of a triangle (Figs 11-12), while in *S. curtus* it resembles an hourglass (Figs 14-15).

Material examined

HUNGARY: Kiskunság National Park, Fehérszék (46.81083°N, 19.18527°E, 92 m a.s.l.), alkaline salt marsh, motorised suction sampling, 2 ♂♂, 4 ♀♀, 20. Mar. 2003, F. Samu leg. (part of a total of 1258 specimens collected in a faunistic project, see below).



Figs 1-9: *Silometopus curtus* (Simon, 1881) from Hungary. **1.** Male, dorsal view; **2.** Male palp, retrolateral view; **3.** Idem, ventral view; **4.** Male palpal tibia, dorsal view; **5.** Female, dorsal view; **6.** Idem, ventral view; **7.** Epigyne, ventral view; **8.** Vulva, ventral view; **9.** Idem, dorsal view

Silometopus ambiguus (Figs 10-12): BELGIUM: West-Vlaanderen: Knokke, Zwin Nature Reserve (51.367°N, 3.367°E, 2 m a.s.l.), 2 ♂♂, 6 ♀♀, pitfall traps in salt marsh, 2.–16. Jun. 2014, J. Van Keer leg., R. Bosmans coll.

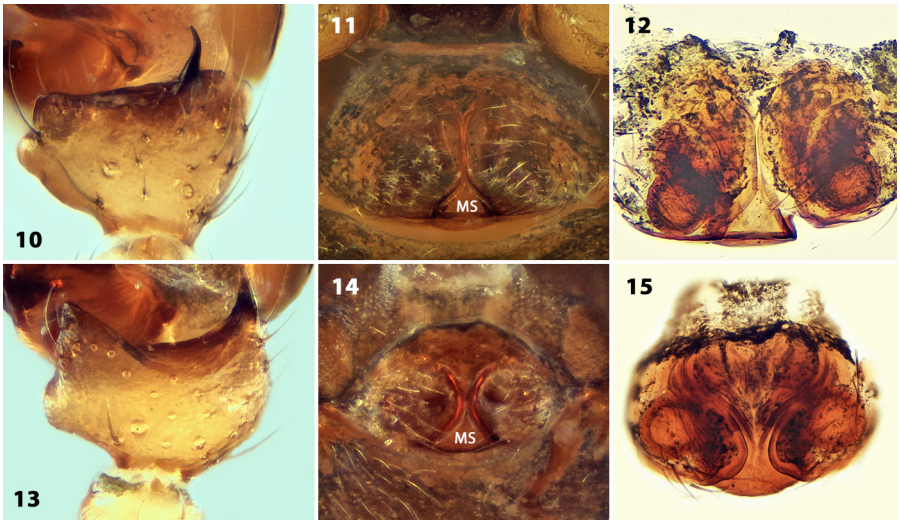
Distribution

Silometopus curtus is, for the time, being known with certainty only from salt marshes in the South of France (Simon 1881, 1926, Breitling 2018, 2020) and from salt marshes in Hungary, which is the most northern locality. The only citation from Spain in Arbucias in Catalonia (Simon 1881) is an inland locality at an altitude of 300 m. This is probably a misidentification. Recently, Barrientos et al. (2020) cited *S. ambiguus* from hollow trees in Spain, qualifying this by saying it could be confused with *S. curtus*. In our opinion it is neither of these two because both species are limited to salt marshes.

Citations from Malta (Kritscher 1996) are from a dry valley and a Karst landscape and not from salt marshes, thus these records are most probably misidentifications. Citations from Egypt, Alexandria in the Nile Delta (Simon 1881) could be correct but need to be confirmed.

Ecology of *Silometopus curtus* in Hungary

During a faunistic project focusing on the Kiskunság region, the middle, dry area of the Hungarian Great Plain, we collected with motorised suction sampling 1258 specimens of *S. curtus* between 2001 and 2003 (Samu et al. 2008; identified as *S. ambiguus*). Seventy percent of the collected specimens were females, 30% males. As for the phenology of the spider, the species is predominantly winter active (Fig. 16), with ⅔ of the catches in February and March, albeit with no sampling performed in December and January. Except for a single specimen in the nearby area of Kunpeszér, all other specimens were caught in the Fehérszék marshes. The species was recorded only from the above-mentioned locations, despite that during the overall project we extensively sampled several locations in the Kiskunság region and over the years had a vast number of samples from similar habitats from all over Hungary (unpublished data and personal information from C. Szinetár). The Fehérszék marshes is a large area, with a mosaic of habitats, laying at an altitude of approximately 100 m a.s.l. (Samu et al. 2008). There is a very fine elevational difference, typically in the range of only a couple of 10 centimetres, between the habitat patches of the area. The lowest areas are wet alkaline salt marshes characterised by *Bolboschoenus maritimus* (L.) Palla vegetation with periodical water cover. We caught 1.5% of *S. curtus* specimens in this habitat. Next higher is a dry alkaline salt marsh with sparse grass cover. These areas have rather low floristic diversity due to high abiotic stresses of the habitat (very wet in spring, dry during summer and the salt concentration is high all over the year). However, its two-layered vegetation with *Puccinellia limosa* (Schur) Holmb. (upper layer) and *Lepidium crassifolium* Waldst. & Kit. (lower layer) provides a notable structure, where an overwhelming majority (94% of the specimens) were captured. Four percent of the specimens were caught in the "highest" elevation steppic grassland patches, characterised by a higher and denser grassland vegetation with diverse dicotyledon flora (Samu et al. 2008). Finally, 0.5% of *S. curtus* (three males and three females) was recovered from nearby wheat and alfalfa fields. While these data indicate a modest ecological flexibility of the species, we have currently no explanation for its unique distribution in the region and in Hungary.



Figs 10-15: Comparison of *Silometopus ambiguus* (10-12) and *S. curtus* (13-15). **10, 13.** Male palpal tibia, dorsal view; **11, 14.** Epigyne, ventral view; **12, 15.** Vulva, ventral view. MS: Median septum

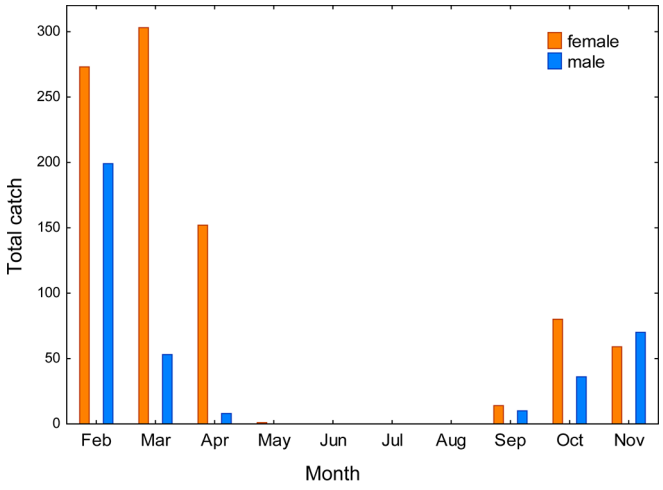


Fig. 16: Phenology of *Silometopus curtus* at Fehérszék, Hungary. Bars show numbers of specimens (n = 1258) over three study years (no samples taken in December and January)

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