

Four species of spiders (Araneae) new to Sweden

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Enoplognatha mordax (Thorell), *Centromerus pabulator* (O. P.-Cambridge), *Hypsosinga heri* (Hahn) and *Cheiracanthium pennyi* O. P.-Cambridge are reported as new to the Swedish spider fauna. Swedish material of the latter species was previously misidentified as *Chiracanthium abbreviatum* Simon. The theridiid *Enoplognatha mordax* seems to belong to the wrack fauna at the south coast of Scania, southernmost Sweden. The linyphiid *Centromerus pabulator* was taken among grass vegetation in edges of woods in southern Scania. The Swedish distribution of the finger-spine spider *Cheiracanthium pennyi* is concentrated to the east coast of Scania, particularly among young pines. In 1970 two specimens of the orb-weaver *Hypsosinga heri* were taken on the island Öland from a fen sedge-mire, now drained. The copulatory organs and some other characteristics of the four species are illustrated.

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Enoplognatha mordax (Thorell, 1875)

Scania: Trelleborg, 30.v. 1942: 1 female (Holm's collection at Zoological Museum of Uppsala), Skanör, 2.vi. 1993: 1 male (my collection).

Holm identified the female as *E. crucifera*. According to van Helsdingen (1978) the valid name should be *E. mordax* (Thorell).

Male. Total length 3.3 mm; carapace 1.58 mm long and 1.24 mm wide. Carapace yellowish brown with dark margins. Abdomen with a median, nearly black band, edged by a white area at the middle. The margins have a folium in dark greyish and white (Fig. 1 from a living specimen). The arrangement of the large teeth on chelicerae (Fig. 2) distinguishes the species from that in other species of the genus. The palpal tibia is of about the same length as the cymbium (Figs. 3, 4); the thin tip of the embolus makes a very wide curve in resting position.

Female. Total length 4.5 mm; carapace 2.11 mm long and 1.65 mm wide. Carapace yellowish brown with greyish brown median line and greyish margins (Fig. 5, from specimen in alcohol). Abdomen with a folium resembling that of a *Zygiella* (Lockett & Millidge 1953). Epigyne with very distinct copulatory opening (Fig. 6).

Merrett & Snazell (1975) found that the narrowing "tongue"-like opening is a good characteristic for the species. Copulatory tubes heavily sclerotized and spermathecae oval (Fig. 7).

Holm collected a female from rock-weed on a seashore, and a male taken by me in common grass-wrack, *Zostera marina* L. on a seashore, where also several juveniles were observed. Wiehle (1937) meant that the species has a predilection for the seashore and its salt plants. According to Maurer & Hänggi (1990) the species has been found on herbaceous plants in extensively used meadows. Adults have been collected in early summer. It has a palearctic distribution.

Centromerus pabulator (O. P. -Cambridge, 1875)

Scania: Hagestad fritidsområde, 22.xi. 1959: 2 males and 3 females, 24.ix. 1976: 1 male and 2 females.

Male. Total length ca 2.4 mm, carapace ca 1.06 mm long, and ca 0.85 mm wide; n=3. Males are distinguished by the slightly forked terminal apophysis of the bulb, the long pointed tegular apophysis (Fig. 8), and by the dorsal hump of the cymbium (Wiehle 1956).

Female. Total length ca 2.5 mm, carapace ca

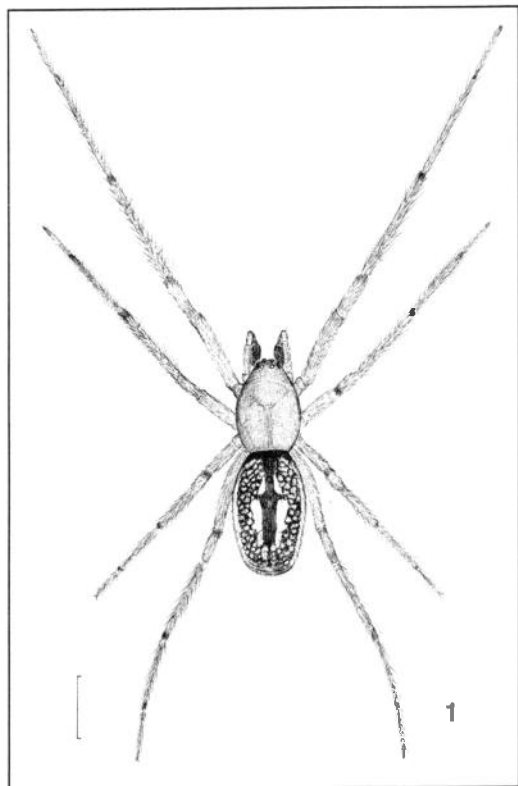


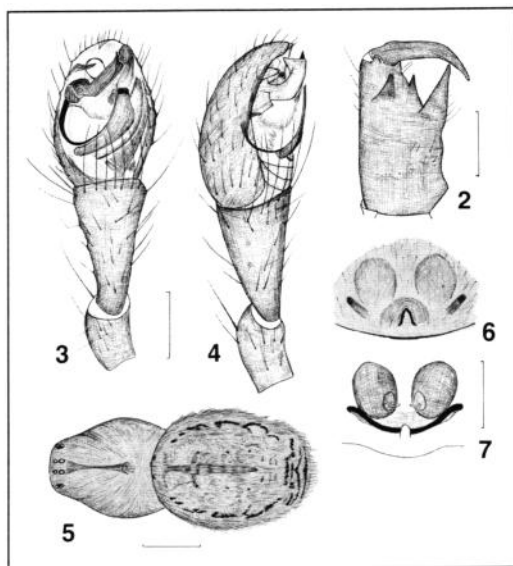
Fig. 1. *Enoplognatha mordax*, male, from living specimen. Scale line: 1 mm.

Klotspindeln *Enoplognatha mordax*, hane, tecknad från levande exemplar. Skallinje 1 mm.

1.06 mm long and ca 0.77 mm wide; n=5. The epigyne has narrow, curved spermathecae (Fig.9).

The specimens were collected in grass at the edge of a pine heath rich in mosses, and in grass at the edge of a dense wood of low-grown oaks. Wiehle (1956) recorded habitats as the ground of coniferous forests, between moss and low plants, e.g. under bilberry. v. Broen & Moritz (1964) reported the species as a dominating one in moss and *Vaccinium* in coniferous forests. According to Maurer & Hänggi (1990) it lives on woodland floor, in stands of *Pinus mugo* in alpine and poor grassland.

Both sexes seem to reach maturity in autumn like many other species of the genus (Kronestedt 1968). The species is distributed in most European countries, but not in Great Britain.



Figs. 2-7 *Enoplognatha mordax*. 2-4. Male. 2. Right chelicerae, posterior view. 3. Right palp, ventral view. 4. Right palp, retrolateral view. 5-7. Female. 5. Carapace and abdomen, dorsal view, from specimen in alcohol. 6. Epigyne. 7. Spermathecae, dorsal view. Scale lines: 0.2 mm, except Fig. 5:1,0 mm.

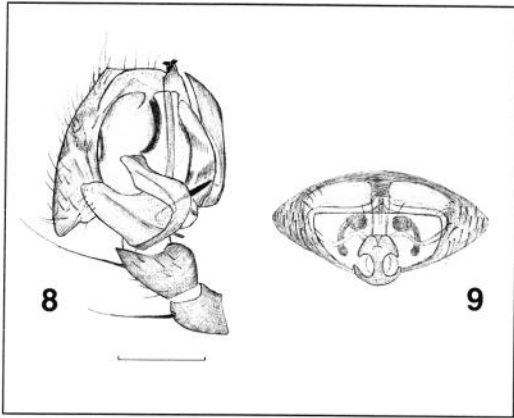
Detaljer av klotspindeln *Enoplognatha mordax*. 2-4. Hane. 2. Höger chelicer, bakifrån. 3. Höger palp, underifrån. 4. Höger palp, yttersidan. 5-7. Hona. 5. Fram- och bakkropp, uppfifrån. 6. Könsfätet. 7. Sperma-behållare ovanifrån. Skallinjer 0.2 mm med und. av fig. 5:1 mm.

Hypsosinga heri (Hahn, 1831)

Öland: Böda, Sjöstorps skogsmyr, 7.vi. 1970:1 male and 1 female.

The specimen from the area of Messaure, Lule Lappmark (Koponen, 1974) named *Singa herii* belongs to another species (Koponen, personal communication).

Male. Total length 2.5 mm; carapace 1.30 mm long, and 1.06 mm wide. Carapace: cephalic division is nearly black, distinctly contrasted with the yellowish brown thoracic region, abdomen dorsally greyish brown with a short whitish median band and three pairs of light muscle attachments (Fig. 10). The whole body is very glossy. Median apophysis of the bulb is curved and pointed (Fig. 11), embolus is long and thin (Fig. 12).



Figs. 8-9. *Centromerus pabulator*. 8. Right palp, retrolateral view. 9. Epigyne. Scale line: 0.2 mm.

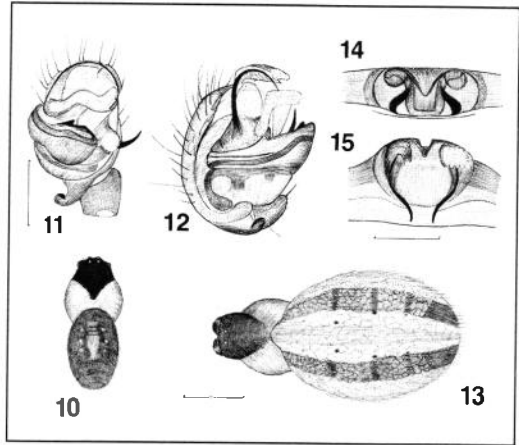
Detaljer av mattvävarspindeln *Centromerus pabulator*. 8. Höger palp, ytersidan. 9. Honans könsfält. Skallinje: 0.2 mm.

Female. Total length 4.3 mm; carapace 1.67 mm long and 1.25 mm wide. Carapace has softer colours compared with those of the male (Fig. 13). Dorsum of abdomen whitish with two dark bands and an indistinct median greyish band. The female is also conspicuously shiny. The epigyne has a wide median septum (Fig. 14), in posterior view a scale is visible on left side (Fig. 15). *Hypsosinga* differs from all other genera of Araneidae in having a large transparent scale attached to the base of the embolus. The scale breaks off during mating and lodges in the epigynum (Levi 1972).

The specimens were found in an open *Cladium mariscus*-mire surrounded by a mixed forest. Several orb-webs were placed close to the water surface. The following year the mire was totally drained by ditching! According to Wiehle (1931) the species prefers the border of stagnant waters where the web is placed among reed, grass and herbs in open conditions. Locket & Millidge (1953) accentuated the fact that *H. heri* lives on low plants near water. In Israel very few specimens were taken from heads of papyrus reed (Levy 1984). Adult in early summer. This rare species has been collected in many European countries.

Cheiracanthium pennyi O. P.-Cambridge, 1873

Scania: Maglehem, Nyagrop, 13.v. 1949: 1 female,



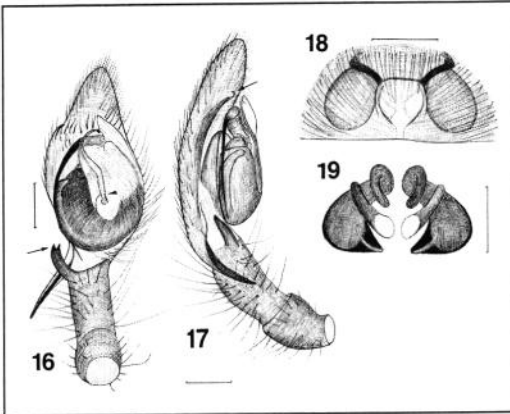
Figs. 10-15. *Hypsosinga heri*. 10-12. Male. 10. Carapace and abdomen, dorsal view, from living specimen. 11. Right palp, ventral view. 12. Höger palp, ytersidan. 13-15. Female. 13. Carapace and abdomen, dorsal view, from living specimen. 14. Epigyne, ventral view. 15. Epigyne, posterior view with scale on left side. Scale lines 0.2 mm, except Figs. 10 and 13: 1.0 mm.

Detaljer av hjulspindeln *Hypsosinga heri*. 10-12. Hane. 10. Fram- och bakkropp, uppfifrån, från levande ex. 11. Höger palp, underifrån. 12. Höger palp, ytersidan. 13-15. Hona. 13. Fram- och bakkropp, uppfifrån, från levande ex. 14. Könsfältet, underifrån. 15. Könsfältet, bakifrån med ett fjäll på vänster sida. Skallinjer 0.2 mm, med und. av fig. 10 och 13: 1.0 mm.

Borby strand, 17.vi. 1949: 1 female, Borby, Mälarhusens strandbad, 18.ix. 1949: 12 males and 5 females, Vitaby, N. Vitemölla 19.ix. 1949: 6 males and 1 female, Ravlunda, Ö. Stigelund, 19.ix. 1949: 2 males, St. Köpinge 24.ix. 1949: 1 male and 7 females (Lohmander's collection at Museum of Natural History, Gothenburg).

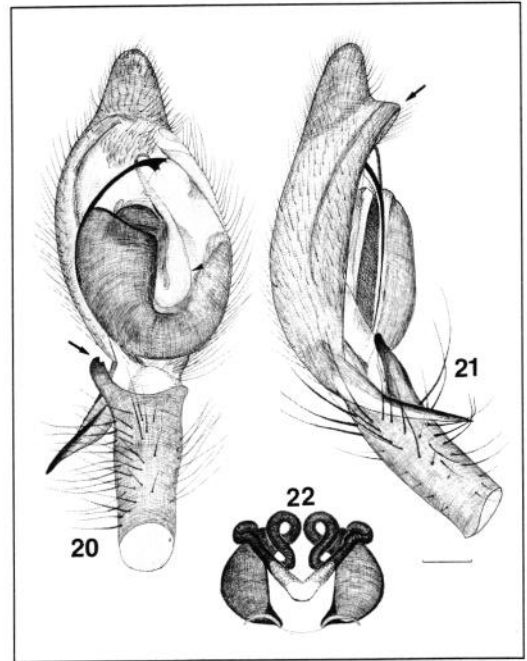
Lohmander (1950) reported this species for the first time from Sweden under the name *Chiracanthium abbreviatum* Simon. At that time the nearest previous finds were from France. Simon (1878) found apparent similarities between *Cheiracanthium erraticum* (Walckenaer) and the female which he named *C. abbreviatum*. Simon (1932) later placed *C. abbreviatum* as a local form of *C. pelasgicum* (C. L. Koch), at the same time treating *C. pennyi* as a distinct species.

Male. Total length 4.5 ± 0.3 mm, range 5.0-4.1;



Figs. 16-19. *Cheiracanthium pennyi*. 16-17. Right palp: 16 ventral view, 17 retrolateral view. 18. Epigyne. 19. Spermathecae, dorsal view. Scale lines: 0.2 mm.

Detaljer av fingertaggspindeln *Cheiracanthium pennyi*. 16-17. Höger palp: 16 underifrån, 17 ytter-sidan. 18 Honans könsfält. 19. Spermabehållare ovanifrån. Skallinjer 0.2 mm.



Figs. 20-22. *Cheiracanthium erraticum*. 20-21. Right palp: 20 ventral view. 21 retrolateral view. 22. Spermathecae, dorsal view. Scale line: 0.2 mm.

Detaljer av fingertaggspindeln *Cheiracanthium erraticum*. 20-21. Höger palp: 20 underifrån, 21 ytter-sidan. 22. Spermabehållare ovanifrån. Skallinje 0.2 mm.

carapace 2.11 ± 0.10 mm long, range 2.35-1.96, and 1.58 ± 0.09 mm wide, range 1.79-1.43; $n=21$. Male palp with slightly protruding part of retrolateral border of cymbium compared with that of *C. erraticum* (Figs. 17 & 21); the hook-shaped tegular apophysis with a thin base against a broad one in *C. erraticum* (Figs. 16 & 20); the apophysis of the palpal tibia ending in two equal pointed teeth, in *C. erraticum* with two unequal teeth (Figs. 16 & 20).

Female. Total length 5.3 ± 0.3 mm, range 5.9-4.6; carapace 2.33 ± 0.13 mm long, range 2.59-2.15, and 1.77 ± 0.10 mm wide, range 1.99-1.64; $n=15$. The outlines of the posterior division of the spermathecae are visible in the epigyne as well as the beginning of the copulatory tubes (Fig. 18). The copulatory opening varies somewhat, but most of the 15 specimens examined have their openings as illustrated.

Locket & Millidge (1951) stated that this species resembles *C. erraticum* closely. Clark & Locket (1964) pointed out that the copulatory ducts are distally more bunched up in *C. pennyi* compared with the condition in *C. erraticum* (cf. Figs. 19 & 22). A critical comparison between *C. pennyi* and *C. erraticum* revealed that the two species can be reliably separated only by the

structure of the copulatory organs (Wolff 1991). It should be noticed here that all Swedish males of *C. pennyi* are smaller than all males of *C. erraticum* ($n=13$) collected by me in the same province (Scania), and that the same relation was found between the females of the two species (19 *C. erraticum* in Scania).

The specimens were collected on a dune heath along the east coast of Scania, two third from young pines and the rest from marram and lyme grass. According to Reimoser (1937) the species lives on grass on open ground. Rather similar informations were given in Heimer & Nentvig (1991). Clark & Jerrard (1972) found the species on heathland covered with ling. Adults in early summer. The species is Eurosiberian and Chinese in distribution (Urones 1987, Platnick 1989).

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Sammanfattning

Två av de som nya för Sverige anmälda arterna anses som sällsynta i sina utbredningsområden. I vårt land har något fynd av hjulspindeln *Hypsosinga heri* inte gjorts sedan 1970. Biotopen som arten tycks föredra, våtmarker med stående vatten i varma områden med höga gräsarter, har decimerats i stor omfattning. Något gynnsammare är situationen för *Enoplognatha mordax*, som hör till familjen klotspindlar. Dess habitat är till synes driftvallar på gräsbevuxna havsstränder.

De två övriga som anmäls, fingertaggspindeln *Cheiracanthium pennyi* och mattvävarspindeln *Centromerus pabulator*, är vanliga i sina centrala utbredningsområden, i torra biotoper i Eurasien resp. i barrskogar i Europa. De mycket smala områden utmed skånska syd- och östkusten där arterna påträffats får anses utgöra ett avsnitt av dessa arters nordgräns.