

Spiders of the Biebrza National Park - species new and rare to Poland

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ABSTRACT

Some results of long-term project dealing with the spider fauna of the Biebrza National Park are presented. Fourteen species new to Poland and ten rare are discussed. The characters of *Crustulina sticta* (O. P.-C.), *Enoplognatha tecta* (Keys.) and *Theridion conigerum* Sim. are illustrated.

INTRODUCTION

Before the present research begun, the check list of spiders of the Biebrza Valley included 150 species (Kajak 1960; Staręga 1984; Staręga & Nakaziuk 1987). The author's studies have been conducted in the Biebrza National Park (BNP), part of the Biebrza Valley, since 1991. So far 411 species have been found which makes 53 % of the Polish araneofauna.

The following species seem the most interesting:

Crustulina sticta (O. P.-Cambridge, 1861)

(Figs. 1, 2)

Theridion stictum O. P.-Cambridge, 1861: 432.

Crustulina sticta: Locket & Millidge, 1953: 53, fig. 35.

C. sticta: Levi, 1957a: 370, Figs. 1-3, 7.

C. sticta: Roberts, 1985: 179, fig. 79.

C. sticta: Kim, 1985: 17, fig. 1- 5.

C. sticta: Yaginuma, 1986: 47, fig. 26.1.

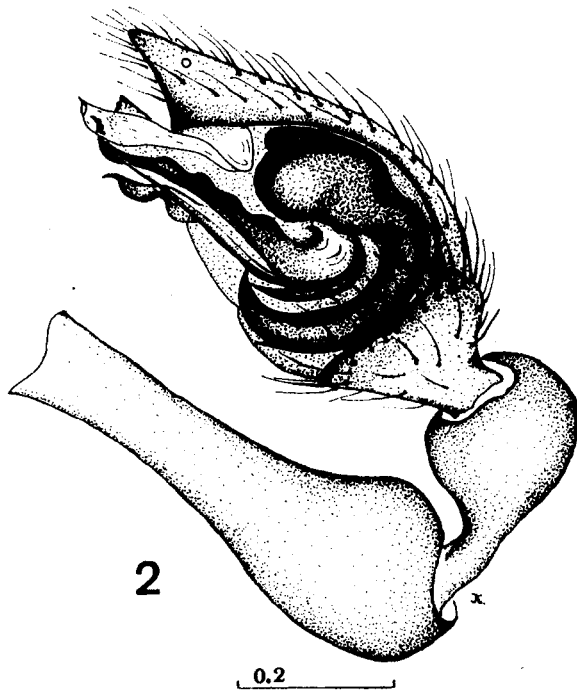
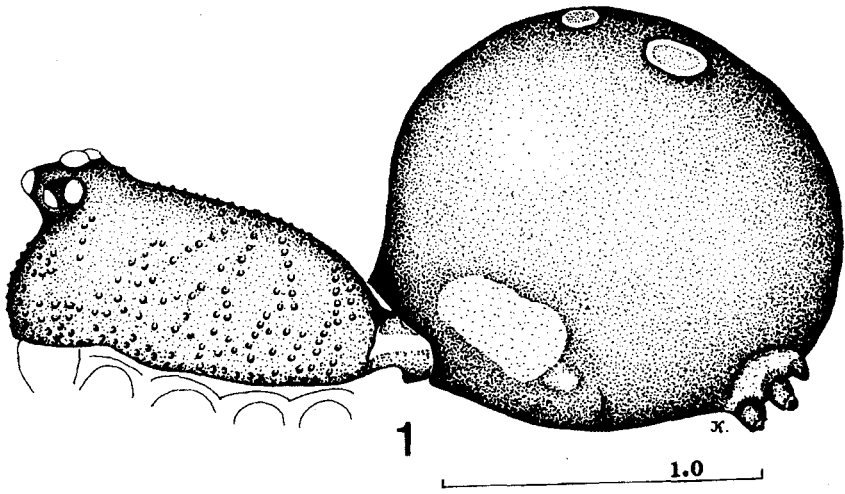
C. sticta: Heimer & Nentwig, 1991: 282, fig. 762.

C. sticta: Roberts, 1995: 273, Plate 22, fig. 4.

C. sticta: Platnick, 1989: 197; Chikuni, 1989b: 31, fig. 10.

Material. BNP: Barwik, sedge-moss marsh, 2M, 25 May 1993, tall sedge marsh, 1M, 22 June 1993; Lipsk, bushes of *Betula humilis*, 1M, 16 June 1994.

Diagnosis. Heimer and Nentwig (1991), Levi (1957a), Locket and Millidge (1953), Roberts (1985, 1995).



Figs. 1-2. *Crustulina sticta* (O. P.-Cambridge, 1861). 1 male, lateral view; 2 left male palpus, lateral view. All scale lines in mm.

Description. Small or tiny spiders, 2.1-2.2 mm long. Carapace length 1.1-1.2 mm, width 1.1 mm. Carapace, sternum and chelicerae brown with tiny warty granulation (Fig. 1). Abdomen dark grey with violet shade, dorsally with 4 pairs of reddish impressed dots in 2 rows, 2 anteriors big and sharply defined (Fig. 1). Legs yellow, femur I 1.1 mm, patella I 0.4, tibia I 0.8, metatarsus 0.7, tarsus 0.5. Palps dark brown, tibia distinctively expanded and curved (Fig. 2).

Distribution and habitat. Recorded in North America (United States to Alaska) (Levi 1957a), Europe (England, France, Germany, Sweden, Finland) (Locket & Millidge 1953; Roberts 1985, 1995; Heimer & Nentwig 1991), Korea (Kim 1985) and Japan (Yaginuma 1986). A species new to Poland, in BNP it lives in wet swampy habitats, usually in sedge-moss marsh (*Peucedano-Caricetum paradoxae*) and tall sedge marsh (*Caricetum hudsoni*). Coexists with: *Ceratinopsis stativa* (Sim.), *Tallusia experta* (O. P.-C.), *Trichopterna thorelli* (Westr.), *Pachygnatha clercki* Sund., *Alopecosa pulverulenta* (Cl.), *Pardosa maisa* Hippa et Manila, *P. prativaga* (L. K.), *P. pullata* (Cl.), *P. sphagnicola* (Dahl), *Pirata tenuitarsis* Sim. and *Oxyptila gertschi* Kurata.

Enoplognatha tecta (Keyserling, 1884)

(Figs. 3 - 6)

Enoplognatha camtschadalis: Kulczyński, 1885 = *E. tecta* (Keyserling, 1884).

E. tecta: Levi, 1957b: 13, Figs. 11, 25, 28-29, 34-37.

E. tecta: Roberts, 1985: 193, fig. 85 d.

E. caricis: Heimer & Nentwig, 1991: 286, 287, Figs. 772.3, 772.4, 772.5.

E. tecta: Komposch, 1995: 731, Fig. 1.

E. tecta: Roberts, 1995: 291, 292.

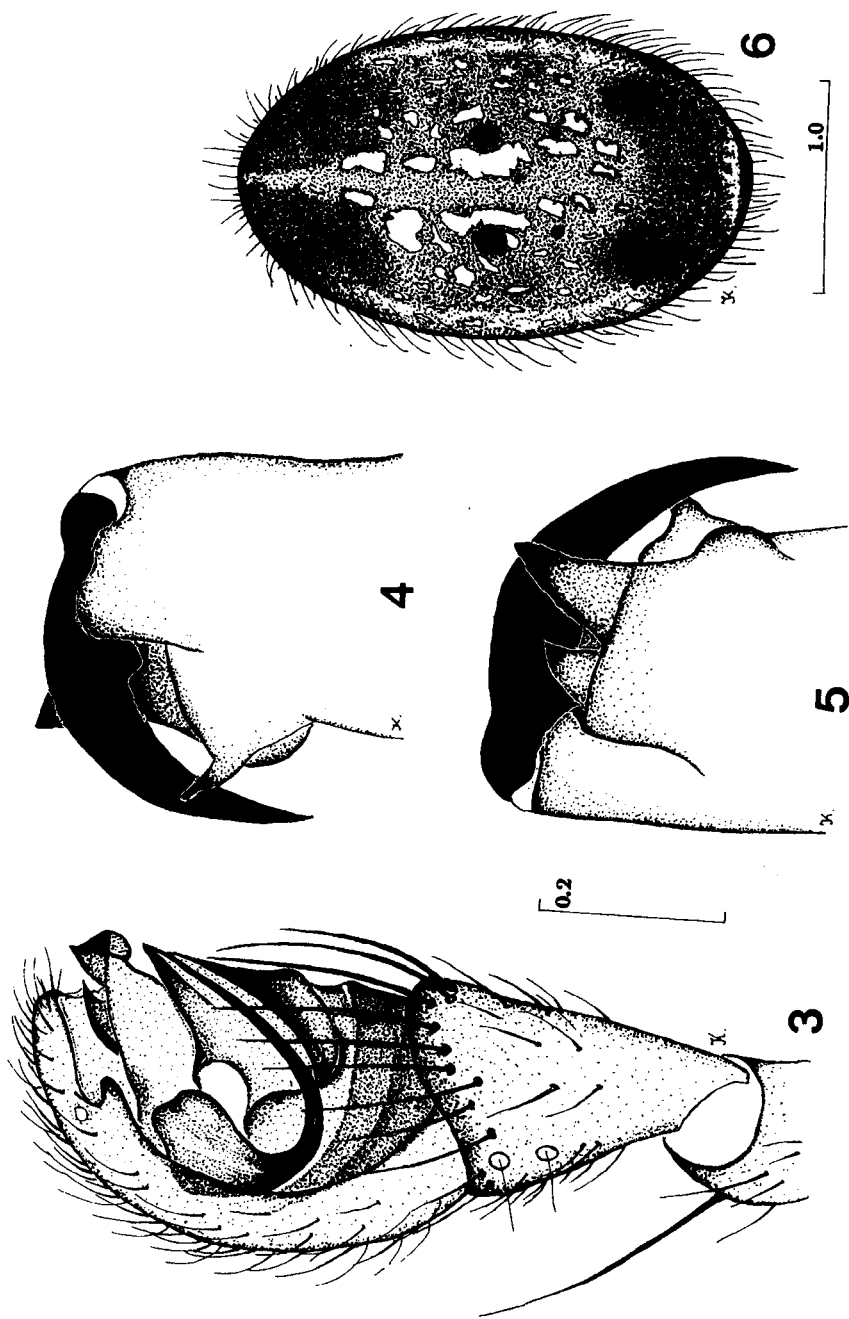
Material. BNP: Wodniczka Nature Reserve, sedge-moss marsh, 1M, 4 June 1992.

Diagnosis. Levi (1957b), Roberts (1985, 1995).

The classification was based on the description and drawings by Roberts (1985, 1995). The chelicerae of this species have two large teeth on anterior margin and one small tooth on posterior margin (Figs. 4, 5). These characters are not mentioned by Roberts (1985, 1995) and the drawings by Levi (1957b) and Heimer and Nentwig (1991) are not detailed enough.

The nomenclature of this species is not clear. Wunderlich (1976) uses *E. caricis sensu* Simon as the synonym of *E. tecta* (Keys.). Similarly, Platen *et al.* (1995) put *E. caricis* as the synonym for *E. tecta*, while Heimer and Nentwig (1991) use only *E. caricis*. Platnick (1993) treats *E. caricis* and *E. tecta* as the names for two distinct species. In my opinion the materials of *E. tecta* and *E. caricis* should be reviewed to eliminate the doubts.

Description. Male. Total length 4.2 mm; carapace 1.9 mm long and 1.4 mm wide. Carapace, sternum and chelicerae yellow brown. Chelicerae with two large teeth on anterior margin and one small tooth on posterior margin (Figs. 4, 5). Fovea distinct. Abdomen grey brown with white spots and numerous hairs (Fig. 6). Legs yellow, femur I 2.0 mm, patella I 0.8, tibia I 1.8, metatarsus 1.8, tarsus 0.9. Palp as shown in Fig. 3.



Figs. 3-6. *Enoplognatha tecta* (Keyserling, 1884). 3 right male palpus, lateral view; 4 male chelicera, mesal view; 5 male chelicera, ventro-lateral view; 6 male abdomen, dorsal view.

Distribution and habitat. North America (Levi 1957b), England, France, Germany (Heimer, Nentwig 1991; Roberts 1985), Austria (Komposch 1995), and Kamchatka (Russia) (Kulczyński 1885). New species to Poland, in BNP lives on leaves of *Carex* in sedge-moss marsh (*Caricetum rostrato-diandrae*). It occurs with *Robertus arundineti* (O. P.-C.), *Paidiscura pallens* (Bl.), *Baryphyma gowerense* (Lock.), *Ceraticelus sibiricus* Eskov, *Maso gallicus* Sim., *Cercidia prominens* (Wst.), *Hypsosinga heri* (H.), *Larinia jeskovi* Marusik and *Singa hamata* (Cl.).

***Theridion conigerum* Simon, 1914**

(Fig. 7)

Achaearanea conigera: Levi & Levi, 1962: 44, 49, fig. 81.

Theridion conigerum: Wunderlich, 1973: 406, Figs. 1-9.

Chryso conigerum: Heimer, 1980: 179, Figs. 1-3.

T. conigerum: Knoflach, 1993: 205-208, Figs. 1-2, 5-12.

Material. BNP: Skieblewo, raised bog, 1 juv., 21 September 1994.

Diagnosis. Abdomen dark-grey with posterior tubercle. White stripe present between the tubercle and spinners (Fig. 7). More details are given by Knoflach (1993) and Wunderlich (1973).

Distribution and habitat. France, Germany, Austria, Sweden (Knoflach 1993; Wunderlich 1973). New to Poland; one juvenile specimen of *T. conigerum* was found on *Ledum palustre* in raised bog (*Sphagnetum magellanici*). It coexists with *Dolomedes fimbriatus* (Cl.), *Pisaura mirabilis* (Cl.), *Oxyopes ramosus* (Panz.), *Ero furcata* (Vill.), *Evarcha arcuata* (Cl.), *Tmarus piger* (Wlk.) and *Misumena vatia* (Cl.).

***Baryphyma gowerense* (Locket, 1965)**

Material. BNP: Barwik, sedge-moss marsh, 7M, 7F, from May to October; Wodniczka Nature Reserve, sedge-moss marsh, 50M, 48F, 21 juv., from May to December; Barwik, tall sedge marsh, 6M, 10F, 3 juv., from April to November; Dobarz, wet meadow, 1M, May.

Distribution and habitat. Great Britain (Roberts 1985). New species for Poland, found on *Carex* and in moss in sedge-moss marsh (*Peucedano-Caricetum paradoxae* and *Caricetum rostrato-diandrae*), tall sedge marsh (*Caricetum hudsonii*) and wet meadow. In epiphyton of sedge-moss marsh is relatively numerous (2 %). In epiphyton coexists with: *Baryphyma trifrons* (O. P.-C.), *Hypomma bituberculatum* (Wid.), *Porrhomma pygmaeum* (Bl.), *Cercidia prominens* (Wst.), *Hypsosinga heri* (H.), *Larinia jeskovi* Marusik and *Tetragnatha extensa* (L.) while in epigeon - with *Walckenaeria kochi* (O. P.-C.), *Pardosa maisa* Hippa et Manila, *P. prativaga* (L. K.), *P. sphagnicola* (Dahl), *Pirata piscatorius* (Cl.), *P. tenuitarsis* Sim. and *Antistea elegans* (Bl.).

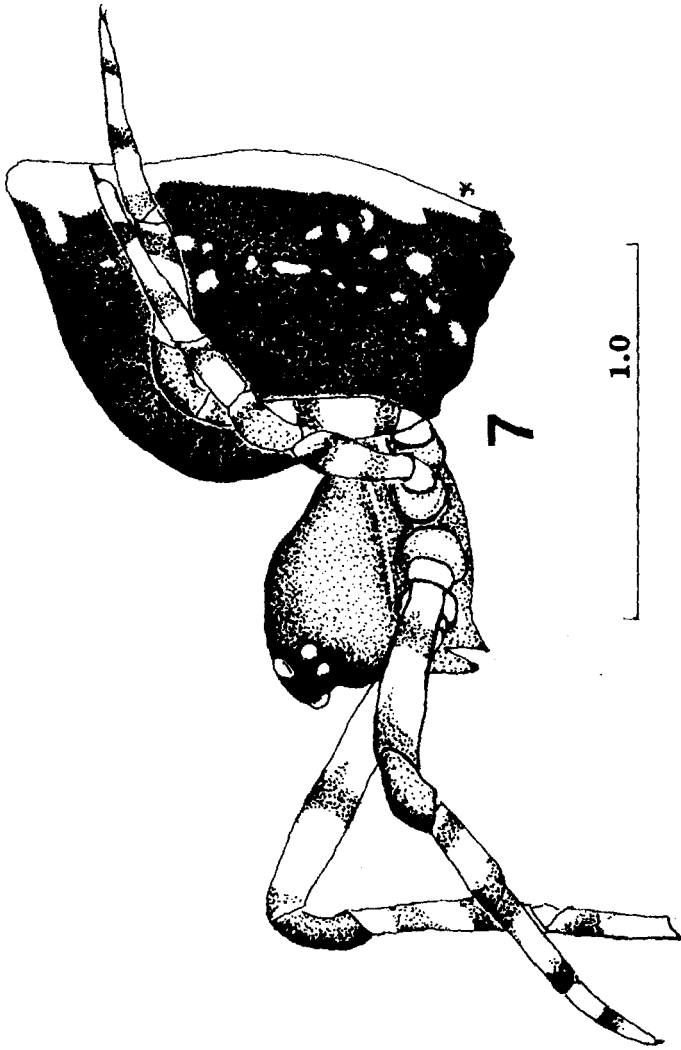


Fig. 7. *Theridion conigerum* Simon, 1914. Juveniles, lateral view.

Baryphyma trifrons (O. P.-Cambridge, 1863)

Material. BNP: Barwik, sedge-moss marsh, 1F, October 1992, 1M, December 1994; Barwik, tall sedge marsh, 1M, 4F, May 1992, 2F, July 1992, 1F 2 juv., May 1993, 1F, July 1993, 3M, August 1993; Wodniczka Nature Reserve, sedge-moss marsh, 1M, 7F, May 1992, 1M, 5F, September 1992, 1 juv., November 1992; Dobarz, wet meadow, 1M, May 1992.

The species firstly reported by Kajak (1960), regarded by Staręga (1983) as misidentified and discarded due to lack of confirmation.

Carorita limnaea (Crosby *et* Bishop, 1927)

Material. BNP: Wodniczka Nature Reserve, sedge-moss marsh, 1M, 17 June 1992.

Distribution and habitat. USA (Colorado and New York State), England (Duffey & Merrett 1963), Germany (Platen *et al.* 1995) and Sweden (Holm 1968). For Poland it is a new species, living in moss in sedge-moss marshes (*Caricetum rostrato-diandrae*).

Ceraticelus sibiricus Eskov, 1987

First record for Poland where the species occurs in all wet habitats. Material, diagnosis, description, phenology, distribution and habitat are given by Kupryjanowicz (1994a).

Entelecara omissa O. P.-Cambridge, 1902

Material. BNP: Barwik, sedge-moss marsh, 2M, June 1992, 2F, July 1992, tall sedge marsh, 2F, June 1993, community with *Stratiotes aloides*, 2M, June 1993.

Distribution and habitat. Great Britain (Roberts 1985), Belgium, Germany (Schikora 1994). New for Poland, in BNP it lives in wet habitats.

Glyphesis cottonae (La Touche, 1945)

Distribution and habitat. Great Britain (Roberts 1985), Germany (Platen *et al.* 1995), Poland (Staręga & Nakaziuk 1987) and Sweden (Holm 1968).

This rare species was firstly reported in Poland by Staręga and Nakaziuk (1987) in Biebrza Region (Werykle). I BNP have caught 20 adults specimens in sedge-moss marshes (*Caricetum rostrato-diandrae*) and raised bog (*Sphagnetum magellanici*). It also found in Mielno Nature Reserve near Konin (Szymkowiak 1993).

Hypselistes jacksoni (O. P.-Cambridge)

Material. BNP: Szuszalewo, sedge-moss marsh, 1M, 21 September 1994.

Distribution and habitat. Great Britain (Roberts 1985), Germany (Platen *et al.* 1995), Poland (first record) and Caucasus (Tanasevitch 1990). It was caught in *Sphagnum* in sedge-moss marsh.

***Maso gallicus* Simon, 1894**

Material. BNP: Bagno Ławki, birch fen wood, 1F, 3 July 1991; Wodniczka Nature Reserve, sedge-moss marsh, 1M, 3F, June 1992, 1M, 8 June 1993.

Distribution and habitat. Great Britain (Roberts 1985), Germany (Platen *et al.* 1995), Poland (first record) and Caucasus (Tanasevitch 1990). In BNP it was caught in sedge-moss marsh (*Caricetum rostrato-diandrae*) and birch fen wood (*Betuletum pubescentis-verrucosae*).

***Meioneta mossica* Schikora, 1993**

Material. BNP: Czerwone Bagno Reserve, border between sedge-moss marsh and raised bog, 1M, 20 May 1996; Skieblewo, raised bog, 1M, 8 May 1994.

Species very similar to *M. saxatilis* (Bl.), known so far from northern England, Germany, Sweden, Kaliningrad region of Russia, north-west Estland and south-west Finland (Schikora 1993, 1995). In Poland (first record) found in similar environment in the Wigry National Park (Stankiewicz pers. comm.).

***Silometopus acutus* Holm, 1977**

Material. BNP: Skieblewo, pine forest, 2M, May-June 1994.

Rare species, recorded only in the northern Sweden (Holm 1977) and the southern Finland (Palmgren 1976). In Poland known so far from Knyszyn Forest and Gdańsk (Staręga 1995).

***Araniella proxima* (Kulczyński, 1885)**

In Poland known so far from Bieszczady Mts. (Czajka, Pilawski & Woźny 1981) and from BNP (Piekielne Wrota near Kuligi, Staręga pers. comm., Konopka leg. and Lisie Nory near Dobosz).

***Larinia jeskovi* Marusik, 1986**

The only locality in Europe (Kupryjanowicz 1995a), possibly the western limit of his range. The species is known from eastern Asia. In BNP it is a dominant (6 %) in the epiphyton of sedge-moss marsh (*Caricetum rostrato-diandrae*).

***Pardosa maisa* Hippha *et* Manila, 1982**

Boreal species, described from Finland, found also in the Czech Republic (Buchar 1993) and Austria. In BNP (first record for Poland) it is a dominant (10 %) in the sedge-moss marsh (*Peucedano-Caricetum paradoxae*).

Material, diagnosis, description, phenology, distribution and habitat are given by Kupryjanowicz (1995c).

***Pirata tenuitarsis* Simon, 1876**

A rare species, firstly reported by Dziabaszeowski (1991) from Poznań. Also known from Knyszyn Forest (Staręga 1995) and Mielno Natur Reserve (Szymkowiak 1993). In BNP it occurs in all wet habitats. In a sedge - moss marsh of epigeon it is an eudominant.

***Titanoeca psammophila* Wunderlich, 1993**

Material, diagnosis, description, distribution and habitat are given by Kupryjanowicz (1996). New species for Poland.

***Agroeca dentigera* Kulczyński, 1913**

In Poland known from Strzeleckie Meadow, Kampinos National Park (Staręga 1974) and from BNP.

***Clubiona rosserae* Locket, 1953**

Material, description, distribution and habitat are given by Kupryjanowicz (1996). New species for Poland.

***Zora armillata* Simon, 1878**

The species is known in Poland from Nowa Brda (Staręga 1974) and from BNP where it is common in a few wet habitats.

***Haplodrassus moderatus* (Kulczyński, 1897)**

Known from Reserve Cyganka, Kampinos National Park (Staręga 1989) and from BNP (Kajak 1960) in all wet habitats.

***Oxyptila gertschi* Kurata, 1944**

A rare species, in Poland known from Mielno Nature Reserve, Augustów, Gołobórz Nature Reserve and BNP (Kupryjanowicz 1994b). Material, diagnosis, description, phenology, distribution and habitat are given by Kupryjanowicz (1994b). A dominant species of epigeon in many wet habitats.

***Talavera westringi* (Simon, 1868)**

The first locality in Poland (Żabka & Kupryjanowicz in press). Recently found near Tomaszów Lubelski (Rozwałka pers. comm.)

CONCLUSIONS

The spider species new to Poland are: *Crustulina sticta* (O. P.-C.), *Enoplognatha tecta* (Keys.), *Theridion conigerum* Sim., *Baryphyma gowerense* (Locket), *Carorita limnaea* (Crosby et Bishop), *Entelecara omissa* O. P.-C., *Hypselistes jacksoni* (O. P.-C.), *Meioneta mossica* Schikora,

Maso gallicus Sim. *Ceraticelus sibiricus* Eskov, *Larinia jeskovi* Marusik, *Pardosa maisa* Hippa et Manila, *Titanoeca psammophila* Wunderlich and *Clubiona rosserae* Locket. *Baryphyma goverense* (Locket), *Larinia jeskovi* Marusik, *Pardosa maisa* Hippa et Manila are numerous in some communities in the Biebrza National Park. *Baryphyma trifrons* (O. P.-C.) hitherto was found in Poland only in the Biebrza National Park (Kupryjanowicz 1994a, 1995a-c, 1996). Other rare species: *Glyphesis cottonae* (La Touche), *Haplodrassus moderatus* (Kulczyński), *Oxyptila gertschi* Kurata and *Talavera westringi* (Simon) are known from some other places in Poland, but for the first time were indicated here (Kajak 1960; Kupryjanowicz 1994b; Staręga & Nakaziuk 1987; Żabka & Kupryjanowicz in press).

High numbers of new and rare species make the Biebrza National Park the most outstanding area from the faunistic point of view.

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