

***Brommella falcigera* (Balogh, 1935), a rare European spider**

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INTRODUCTION

Six species in the genus *Brommella* are known: *B. bishopi* (Chamberlin *et* Gertsch, 1958), *B. lactea* (Chamberlin *et* Gertsch, 1958) and *B. monticola* (Gertsch *et* Ivie, 1936) from the USA, *B. punctosparsa* (Oi, 1957) from Japan and China, *B. falcigera* (Balogh, 1935) from central Europe, and *B. hellenensis* (Wunderlich, 1994) from Greece.

Brommella falcigera, described for the first time by Balogh in 1935 as *Lathys falcigera* from the Sashegy mountain in Budapest (locus typicus), was subsequently described independently by different authors under different names: *Hahnia fagei* by Dahl (1937), *Lathys incertus* by Miller (1943), *Brommella notabilis* by Tullgren (1948), *Pagomys notabilis* by Chamberlin, Gertsch (1958), and *Lathargenna incerta* by Braun (1963). Present status was proposed by Braun in 1963 and 1964. Additional data on nomenclature and biology of the species were provided by Czajka & Woźny (1970) and Kronstedt (1983). Because of the small number of records the species was treated as rare in Europe, being reported from single localities in Austria, Czech Republic, Germany, Hungary, Italy, Romania, Slovakia, Sweden, and Ukraine, half of them in mountainous areas, at altitudes from 600 to 900 meters above sea level. A full list of distributional data given in Tab. 1 and Map 1. In Poland (Map 2), the species has been found in the Ślęza Massif (Czajka & Woźny 1970), Pieniny Mountains (Staręga 1976) and the Świętokrzyskie Mountains (Staręga 1984).

PHENOLOGY

Adult specimens of *Brommella falcigera* are usually collected from May to July and from September to December, observations in the latter periods (mainly males) took place at the mountainous sites. Phenological analysis indicates that *Brommella falcigera* is an eurychronic species.

ECOLOGICAL REQUIREMENTS

Brommella falcigera specimens occur in the coniferous and deciduous litter, sometimes under stones and in rock fissures. A certain number of records were on well illuminated and dry spots (Staręga 1976, 1984; Kronstedt 1983; Thaler 1986), so some authors have suggested that *B. falcigera* is thermophilic (Buchar 1975; Thaler 1981) and xerothermic (Brown 1964). However, other findings do not support these suggestions, e.g. Dahl (1937) and Martin (1976) found representatives of this species in moss from marshy spots while Czajka and Woźny (1970) found it under wet bark. *B. falcigera* has also been reported from spruce, pine and oak forests (Weiss & Andrei 1989 - *Quercus robur* *Carpinetum*; Esjunin 1993) and oak-beech forests (Czajka & Woźny 1970) at bright illuminated or shaded sites. Hence *B. falcigera* is a species of a wide spectrum of ecological requirements.

Therefore, a question arises if it actually is a rare species. Eurytopy does not foster isolation and consequently cannot be a factor responsible for rarity of occurrence. It is more probable that the representatives of this species have been rarely found because of difficult access to the sites of their occurrence and the relic character of those sites. It may be a species undergoing expansion.

DESCRIPTION OF A NEW LOCALITY IN POLAND

A new site of *B. falcigera* occurrence has been discovered within the Old Polish yew-trees Natural Reserve, named after Leon Wyczółkowski, in Wierzchlas (UTM: CE 03). The reserve is the oldest one in Poland and one of the oldest in Europe, founded in 1827 in order to preserve the natural site of 4,000 specimens of yew trees (*Taxus baccata*), all of them a few hundred years old. The undergrowth is rich in rare plants like: *Cypripedium calceolus*, *Epipactis latifolia*, *Listera ovata*, *Neottia nidus-avis*, *Lilium martagon*, *Daphne mezereum*, *Dentaria bilbifera*, *Melica uniflora*, *Festuca silvatica*. The reserve area is under absolute protection and is inaccessible for tourists (Fig. 1).

A male specimen of *Brommella falcigera* was found on June 12th, 1994 in the litter collected from under a yew tree. From the north and west the site is limited by the lake and from the east by overgrowing peatbog. The layer of trees is occupied mainly by yew trees (*Taxus baccata*), hornbeams (*Carpinus betulus*) and hazel (*Corylus avellana*). The site is on the hill, with a good quality soil and litter of high moisture. *B. falcigera* was accompanied by the following species of spiders: *Clubiona terrestris*, *Lepthyphantes flavipes*, *Microneta viaria*, *Syedra gracilis*, *Abacoproeces saltuum* and *Tapinocyba pallens*.

Tab. 1. A list of *Brommella falcigera* localities.

Country	Locality	Bibliography source
Austria	1. Martinswand 2. Stams 3. Ötztal Bahnhof 4. Kramsach 5. Lienz 6. Ahrnkopf 7. Hehenberg-S-Fuß 8. Ötztal - Brunau 9. Locherboden 10. Klausen - Bad Gleichenberg	Braun 1963; Thaler 1981; Thaler 1986 Braun 1964; Thaler 1981 Palmgren 1973 Palmgren 1973 Palmgren 1973 Thaler 1981; Thaler 1986 Thaler 1981 Thaler 1981 Thaler 1986 Kropf & Horak 1996
Czech Republic	1. Mohelno 2. Hády 3. Skryje 4. Vidnava 5. Vranov nad Dyjí 6. Tetin - Koda	Miller 1971 Miller 1971 Miller 1971 Miller 1971 Buchar - unpublished Buchar 1989
Germany	1. Eschede - Lüneburger Heide 2. Zadlitzbruch - Dübener Heide 3. 'Ostufer der Müritz' 4. Possenberg	Dahl 1937 Martin 1976 Martin 1983 Bauchhenss 1992
Hungary	1. Sashegy mount. (Budapest)	Balogh 1935; Loksa 1966
Italy	1. Trentino - Riva sur Garda	Thaler 1981
Poland	1. Wierzchlas, UTM CE 03 2. Śleza Massif, UTM XS 23 3. Świętokrzyskie Mts., UTM DB 62 4. Pieniny Mts., UTM DV 67	Szymkowiak - here Czajka & Woźny 1970 Staręga 1984 Staręga 1976
Romania	1. Mihai Bravu (Bucharest)	Weiss & Andrei 1989
Slovakia	1. Plastovce 2. Devin (Bratyslava) 3. Cunovo (Bratyslava) 4. Biela Skala - Pieniny Mts.	Miller 1971 Gajdoš 1981 Gajdoš 1994 Svatoň 1990
Sweden	1. Karlstadt 2. Bromma - Uppland Province 3. Tornrör - Öland Province	Braun 1964; Kronstedt 1983 Tullgren 1948 Kronstedt 1983
Ukraine	1. Chernyi Les - Kirovograd 2. Kotovskii Les - Kotovsk 3. Gaidary	Esjunin 1993 Esjunin 1993 Esjunin 1993

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REFERENCES

- Bauchhenss E. 1992. Epigäische Spinnen an unterfränkischen Muschelkalkstandorten. Abh. Naturwiss. Ver. Würzburg, **33**: 51-73.
- Braun R. 1963. Einige neue und einige zweifelhafte Spinnenarten aus Österreich (Arach., Araneae). Senck. biol., **44**(2): 111-128.
- Braun R. 1964. Über einige Spinnen aus Tirol, Österreich (Arach., Araneae). Senck. biol., **45**(2): 151-160.
- Buchar J. 1975. Arachnofauna Böhmens und ihr thermophiler Bestandteil. Věst. Čs. Spol. Zool., **39**: 241-250.
- Buchar J. 1989. The knowledge of the present Bohemian arachnofauna and its improvement to evaluation of development of natural conditions. Diss., Faculty of Sciences, Charles University, Prague, 206 pp.
- Czajka M. & Woźny M. 1970. O kilku nowych i rzadkich dla fauny Polski gatunkach pająków (Araneae). Opol. Tow. Prz. Nauk, Zesz. Przynr., **10**: 91-97.
- Dahl M. 1937. Hahniidae. Tierw. Deutsch., Jena, pp. 100-114.
- Gajdoš P. 1981. Arachnofauna Zobora a Devinskej kobyly. Diplomova praca. Prirodoved. Fakult. Comen. Univ., Bratislava. 95 pp.
- Gajdoš P. 1994. Monitorovací výskum epigeických spoločností pavukov (Araneae) luzných lesov Dunaja. Zborník referatov z konferencie Monitorovanie bioty zaujmovecho uzemia vodneho diela Gabčíkovo. 15-16 XI 1994 v Bratislave, pp. 264- 268.
- Harm M. 1966. Die deutschen Hahniidae (Arach., Araneae). Senck. biol., **47**: 345-370.
- Kronstedt T. 1983. Spindlar på Ölands Stora alvar. Ent. Tidskr., **104**: 183-212.
- Kropf C. & Horak P. 1996. Die Spinnen der Steiermark (Arachnida, Araneae). Mitt. naturwiss. Ver. Steiermark, Sonderheft: pp. 5-112.
- Loksa I. 1966. Die bodenzoozönologischen Verhältnisse der Flaumeichen - Buschwälder Südostmittel-europas. 437 pp.
- Martin D. 1976. Spinnen aus dem Landschaftsschutzgebiet 'Mittelheide' (Bezirk Leipzig) unter Berücksichtigung der Naturschutzgebiete 'Zadlitzbruch' und Wildenhainer Bruch' (Arachnida, Araneae) Faun. Abh. Mus. Tierk., **6**: 17-30.
- Martin D. 1983. Die Spinnenfauna des Naturschutzgebietes 'Ostufer der Müritz'. Zool. Rundbrief Neubrandenburg, **3**: 3-36.
- Miller F. 1943. Neue spinnen aus der serpentinsteppe bei Mohelno in Mahren, Ent. Listy, **6**: 1-19.
- Miller F. 1971. Řád Pavouci – Araneida. Klič zviřeny ČSSR, Prague, **4**: 51-306.
- Palmgren P. 1973. Beiträge zur Kenntnis der Spinnenfauna der Ostalpen. Comment. biol., **71**: 1-52.
- Staręga W. 1984. Fauna Gór Świętokrzyskich. VI. Pająki (Aranei) Gór Świętokrzyskich. Fragm. faun., **31**(12), 359 pp.

- Starega W. 1976. Pajaki (Aranei) Pienin. Fragm. faun., **21**: 233-330.
- Svatoň J. 1990. Pavuky (Araneae) Pieninskeho narodneho parku. Zaverena zprava pre Spravu NP.
- Thaler K. 1981. Bemerkenswerte Spinnenfunde in Nordtirol (Österreich) (Arachnida: Aranei). Veröff. Mus. Ferdinandeum, **61**: 105-150.
- Thaler K. 1986. Über die epigäische Spinnenfauna von Xerothermstandorten des Tiroler Inntales (Österreich) (Arachnida: Aranei). Veröff. Mus. Ferdinandeum, **65**: 81-103.
- Tullgren A. 1948. Zwei bemerkenswerte Vertreter der Familie Dictynidae (Araneae). Ent. Tidskr., **69**: 155-160.
- Wiehle H. 1967. Beiträge zur Kenntnis der deutschen Spinnenfauna, V (Arach., Araneae). Senck. biol., **48**(1): 1-36.
- Wunderlich J. 1994. Beschreibung einer bisher unbekanntten Art der Gattung *Bromella* Tullgren 1948 aus Griechenland (Arachnida: Araneae: Dictynidae). Beitr. Araneol., **4**: 715-718.