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First record of *Euryopsis saukea* Levi, 1951 in Germany (Araneae, Theridiidae)

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Abstract

The first record of the theridiid spider *Euryopsis saukea* Levi, 1951 from Germany is reported. During an investigation of the military training area Oberlausitz (south-east of Weißwasser, Saxony), 18 males of *Euryopsis saukea* were recorded. *Euryopsis saukea* has a wide Holarctic distribution and is known from the Czech Republic, Poland and Slovakia, but has not been recorded on German territory to date. Male palps of *Euryopsis saukea* and the closely related species *Euryopsis laeta* (Westring, 1861) are figured and distinctive features are discussed. In the military training area, *Euryopsis saukea* lives in dry, burnt and unburnt *Calluna* heathland on sandy ground as well as in dry *Corynephorum* grasslands. The recording underlines the importance of the region for rare and spectacular faunal elements.

Zusammenfassung

Erster Nachweis von *Euryopsis saukea* Levi, 1951 in Deutschland (Araneae, Theridiidae) – Wir berichten über den ersten Nachweis der Kugelspinne *Euryopsis saukea* Levi, 1951 aus Deutschland. Im Zuge einer Untersuchung des Truppenübungsplatzes Oberlausitz (südwestlich Weißwasser, Sachsen) wurden 18 Männchen nachgewiesen. *Euryopsis saukea* ist holarktisch verbreitet und bereits aus der Tschechischen Republik, Polen und der Slowakei bekannt, war aber zuvor nie auf deutschem Territorium gefunden worden. Die männlichen Pedipalpen von *Euryopsis saukea* und der nahe verwandten Art *Euryopsis laeta* (Westring, 1861) werden abgebildet und Unterscheidungsmerkmale werden diskutiert. Auf dem Truppenübungsplatz bewohnt *Euryopsis saukea* trockene, gebrannte und ungebrannte *Calluna*-Heiden sowie *Corynephorum*-Silbergrasfluren. Der Nachweis unterstreicht die Bedeutung des Gebiets für seltene und eindrucksvolle Faunenelemente.

1. Introduction

The spider fauna of Central Europe in general and the spider fauna of Upper Lusatia in particular can be regarded as well-studied; the latter having been summarised repeatedly (ZIMMERMANN 1871, KOCH 1875, GRAUL 1969, TOLKE et al. 1995). However, larger pitfall trapping studies are still prone to contain new and remarkable faunal elements. The small theridiid spider *Euryopsis saukea* was already known from Poland (STAREGA 2004), the Czech Republic (BUCHAR et al. 1995) and Slovakia (MILLER 1963), but lacked on the species lists of the German-speaking Central European countries (BLICK et al. 2004). In the course of a large study on management options for the military training areas in Eastern Germany, *Euryopsis saukea* now appeared in the military training area »Oberlausitz«, which means the first record of this species in Germany.

2. Materials and methods

The study was conducted in the eastern and the western part of the military training area »Oberlausitz« (Upper Lusatia, Muskauer Heide, south-east of Weißwasser); however, *Euryopsis saukea* was only collected in the eastern part (coordinates 51°27'N 14°54'E). Large *Corynephorretum* sand grassland and *Calluna* heathland areas dominate the region. The eastern section of the military training area is part of the European Natura 2000 network. WANNER et al. (2004) provide a detailed description of the region and its biological peculiarities.

In the eastern part of the military training area, 13 sites were sampled, these are two *Calluna* heathlands (B2 and B3), three young birch forests (B4 to B6), one *Corynephorus* heath (B7) along with their adjacent unburnt control plots (B2C to B7C); plus one *Corynephorretum* site (A3) without control plot. Except for the birch forests with only one trap row, sites were sampled with three trap lines of five traps each. Traps were half-filled with a preservative solution of ethanol and acetic acid.

In the *Calluna* heathlands B2 and B3 and the *Corynephorretum* A3, traps were exposed in spring 2001, summer 2001, spring 2002, summer 2002 and autumn 2002 for four weeks each, in autumn 2001 for two weeks. The remaining sites were sampled from April to July 2002 and in October. In A3, B2 and B3, two additional formalin traps per row were operating in spring and early summer 2001 (leg. Bischof & Wanner).

3. Results

A total of 18 males of *Euryopsis saukea* were collected in the traps. Formerly, *Euryopsis saukea* had been sometimes confused with *Euryopsis laeta* (see records in ESYUNIN & EFIMIK 1995), a species that occurs in the military training area as well. However, the configuration of the male palp provides several distinctive features. Viewed from outside (Fig. 1), the embolus of the *Euryopsis laeta* palp is slightly bent forward (dorsally) while the embolus of *Euryopsis saukea* palp is slightly bent backward (ventrally). The theridiid tegular apophysis (TTA, AGNARSSON 2004) of *Euryopsis laeta* palp is blunt and straight. By contrast, the TTA of *Euryopsis saukea* is distinctly curved forward (dorsally) and tapering. Additional distinguishing characters are the shape of the cymbium, the colour-

ration of the opisthosoma with a characteristic folium in both species (see MILLER 1963, table II 1 and table III 3) and the leg colour. Legs II, III and IV of the *Euryopsis saukea* male show conspicuous light colour at the femoral base, contrasting with the blackish distal segments of the leg.

Euryopsis saukea was recorded in five of 13 sampling sites in the eastern part of the military training area (Tab. 1). The species was found in sparsely vegetated sand grassland as well as in more dense heath vegetation, regardless whether burnt or unburnt. All individuals were caught during the summer trap exposition periods between 18 June 2001 and 3 July 2001 and between 24 June 2002 and 8 July 2002.

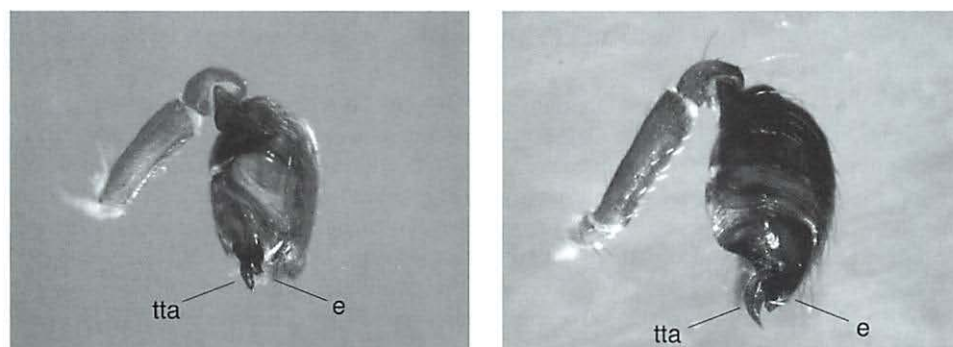


Fig. 1 Right male palps, viewed from outside. Left side: *Euryopsis laeta* (Westring, 1961), specimen from military training area Oberlausitz, eastern part, site B3C, 18 June 2001 to 3 July 2001, leg. Manfred Wanner. Right side: *Euryopsis saukea* Levi, 1951, specimen from military training area Oberlausitz, site B2C, sampling period 18 June 2001 to 3 July 2001, leg. Manfred Wanner. e = embolus, tta = theridiid tegular apophysis. Photography Klaus Peter Zulka.

Tab. 1 Sampling sites with *Euryopsis saukea* in the eastern part of the military training area Oberlausitz.

site	characteristics	caught individuals
A3	hill, aspect NW, entirely covered with <i>Corynephorus canescens</i> and few <i>Calluna</i> , burnt around July 1999	6 ♂
B2	covered with <i>Calluna</i> heather and few pines, aspect W, burnt around June 2000	3 ♂
B2C	adjacent unburnt control plot	6 ♂
B3	hill, aspect SE, entirely covered with <i>Calluna</i> and few (burnt) pine and birch stems	2 ♂
B7	covered with <i>Corynephorus canescens</i> and <i>Rumex acetosa</i> , burnt around June 2001	1 ♂

4. Discussion

The original description of *Euryopis saukea* was based on specimens from Wisconsin (USA, LEVI 1951). In his review of the Czechoslovakian *Euryopis* species, Miller described *Euryopis annulipes* as a new species with occurrence in the Czech Republic, Slovakia and Poland (MILLER 1963). However, later comparison with the paratype of *Euryopis saukea* revealed conspecificity of *E. annulipes* and *E. saukea* (MILLER 1966). Since then, *Euryopis saukea* has been reported from Estonia (VILBASTE 1987), Hungary (SZINETÁR 1998), the Ukraine (POLCHANINOVA 1992) and the Russian Urals (ESYUNIN & EFIMIK 1995). The most recent records come from a region close to the northern hemisphere cold pole Oymyakon, where *Euryopis saukea* was found besides other steppe species (MARUSIK et al. 2004). This wide yet scattered Palaearctic distribution casts some doubt on the interpretation in HEIMER & NENTWIG (1991), who call *Euryopis saukea* an introduced species in Europe of Nearctic origin.

In the military training area Oberlausitz, *Euryopis saukea* inhabits the dry *Corynephorum* habitats. However, the majority of specimens were trapped in the heathland. In these sites, sandy ground is more or less covered with *Calluna* vegetation and a few young pine trees. This corresponds well with the habitat characterisation of the Polish record (»im jungen trockenen lichten Föhrenbestand«, MILLER 1963). In general, *Euryopis saukea* prefers warm and dry steppe-like habitats (MILLER 1963, ESYUNIN & EFIMIK 1995, MARUSIK et al. 2004). MILLER (1963) reports that the males climb low plants while the females stay close to the ground in the vegetation sward. This could explain why 18 males but no females were caught in the traps.

Owing to its rarity, the extinction risk of *Euryopis saukea* appears to be higher than the extinction risk of the closely related species *Euryopis laeta*. In the current German Red List, *E. laeta* is listed under category 2 (»stark gefährdet«, corresponding to the international category »Endangered«), as it is in some regional lists (PLATEN et al. 1996).

The military training area »Oberlausitz« had become famous for the return of a wolf pack into German territory (BETHGE 2001), but interesting faunal elements can be found also among the small theridiid spiders of its heathlands. The occurrence of *Euryopis saukea* is another example of the outstanding biodiversity importance of the region.

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