Fig. 1. ***Araneus saevus*****, female (P6A-6385), habitus. Photo: P. Dolejš.**

ing to Miller (1971) and Nentwig et al. (2017). Photos were made using an Olympus SZX16 stereomicroscope equipped with an Infinity 2 camera and a motor focusing CB-ZM. Voucher specimens are deposited in the National Museum, Prague (NMP). The numbers of mapping grid squares follow Buchar (1982). The map was created using the on-line application BioLib (2017).

Results and discussion

Araneus saevus **(L. Koch, 1872) (Figs. 1–4)**

Kvilda, north of the village, 1093 m a.s.l., 49°2‘8“N, 13°34‘38“E (grid square 6947), eastern edge of the spruce forest by the road (at a height of 2 m), 15 August 2016, 1 ♀, leg. Václav Kroc & Kryštof Rückl, hand collecting, coll. NMP (P6A-6385).

Araneus saevus is a Holarctic orb-weaver species occurring in Palaeartic and Nearctic regions.

In Palaearctic region, it is especially known from central Europe, Scandinavia (Farlund 2012, Koponen et al. 2016, Kronestedt 2001), the European part of Russia, Caucasus and other countries of the former USSR (Mikhailov 2013). In central Europe, it was found in Germany (Blick 2011), Poland (Prószyński & Staręga 1971), Slovakia (Miller 1971), Switzerland and Austria (Nentwig et al. 2017).

Among other European countries, Portugal (Cardoso & Morano 2010), Italy (Pantini & Isaia 2017), Serbia (Deltshev et al. 2003), Bosnia and Herzegovina (Komnenov 2009), Bulgaria (Blagoev et al. 2002), Macedonia (Petkovski 2009), Romania (Weiss & István 2000),

Fig. 2. *Araneus saevus*, female (P6A-6385), epigyne (scale bar 0.5 mm). Orig.: P. Dolejš.

Fig. 3. *Araneus saevus*, biotope at the proximity of the Kvilda village. Photo: V. Kroc.

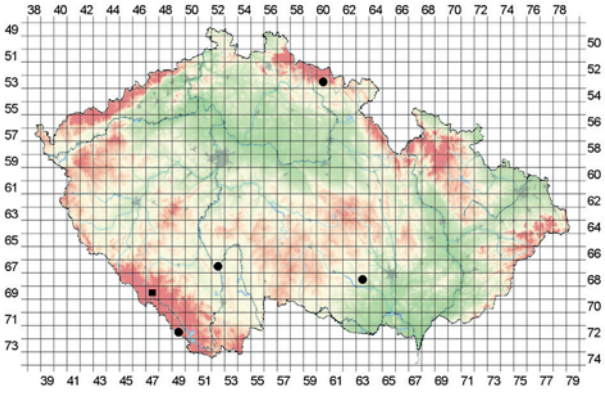

Fig. 4. Distribution map of *Araneus saevus* (square) and *Theridion boesenbergi* (circles) in the Czech Republic.

Albania (Deltshev et al. 2011) and Turkey (Bayram et al. 2008) are also worth being mentioned. In Europe, *A. saevus* probably prefers spruce forests (Prószyński & Staręga 1971).

In the Nearctic region, *A. saevus* occurs from Alaska to New York and Oregon. In contrast to the Palaearctic region, it has different natural habitats there: poplar trees (*Populus* sp.), lodgepole pines (*Pinus contorta*) (Levi 1971), and dense forests with oak and walnut trees (Fitch 1963). In North America, it has been described as *Araneus solitarius*, until it was found to be identical with European *A. saevus* (Levi 1971).

The discovery of this orb-weaver is the second confirmed discovery in the territory of the Czech Republic. The first one dates to 1971, when an adult female was collected by beating on the edge of the spruce forest in a peat bog in Horská Kvilda (Kůrka 1981). The specimen is deposited in the NMP (P6A-4529). The record of the female in 2016 means that the species in not regionally extinct (cf. Řezáč et al. 2015), and we suggest treating it as critically endangered instead. In Slovakia, *A. saevus* has been reported only once. It was a female from František Miller's collection, found near Čierny Balog in 1957, deposited also in the NMP (P6A-776/54) (Kůrka 2004).

Surprisingly, *Araneus saevus* was not found in the Bayerischer Wald National Park in Germany (Weiss 2011). It is probably an overlooked species, because it builds its webs mostly high in the treetops (Kůrka et al. 2015).

Fig. 5. ***Theridion boesenbergi*****, male (P6A-6399), habitus. Photo: P. Dolejš.**

Fig. 6. ***Theridion boesenbergi*****, female (P6A-6398), habitus. Photo: P. Dolejš.**

Fig. 7. *Theridion boesenbergi* , male (P6A-6399), palp (scale bar 0.1 mm). Orig.: P. Dolejš.

Fig. 8. *Theridion boesenbergi*, female (P6A-6398), epigyne (scale bar 0.1 mm). Orig.: P. Dolejš.

***Theridion boesenbergi* Strand, 1904 (Figs. 4–9)**

Horní Planá, south-west of the village, 870 m a.s.l., 48°43‘14“N, 13°58‘22“E (grid square 7249), on the meadow in Úval-Zvonková Natural Monument, 15 June 2016, 1 ♀, leg. Petr Dolejš, beating, coll. NMP (P6A-6398).

Horní Planá, south-west of the village, 870 m a.s.l., 48°43‘14“N, 13°58‘22“E (grid square 7249), spruce in Úval-Zvonková Natural Monument, 15 June 2016, 1 ♂, leg. Petr Dolejš & Michal Tkoč, sweeping, coll. NMP (P6A-6399).

Theridion boesenbergi is a European, extra-Mediterranean cob-web spider (Buchar & Růžička 2002). It has been recorded from Austria, Bulgaria, Czechia, France, Germany, Italy, Romania, Russia, Slovakia, Slovenia, Switzerland and Ukraine (Kůrka & Vaněk 2010 and references therein, Kostanjšek & Kuntner 2015, Pantini & Isaia 2017). The spiders occur mainly on spruce branches, but also on pine branches, less frequently on peat bogs, under stones or among vegetation, up to the elevation of 1800 m a.s.l. (Karasch 2003, Blick & Goßner 2006, Kielhorn 2007, Lemke 2009).

Until now, the species had been found only three times in the Czech Republic. The first time, it was found in 1941 at the Mohelenská hadcová step National Nature Reserve – two males are deposited in the NMP (P6A-771/15 and P6A-771/16) (Kůrka 2003). The second finding came 68 years later, from spruces near a limestone quarry in Lánov in the Krkonoše Mts. (Kůrka & Vaněk 2010) – the collected female is deposited also in the NMP (P6A-5423). For the third time, the species was discovered in the Plziny Nature Park in South Bohemia (Svojanovská 2014) – the voucher specimen is deposited in the collection of Hana Svojanovská. Our finding is the first one in the Šumava Mts., thus increasing the number of spider species known from the Šumava Mts. to 425. In Czechia, it is a critically endangered species (Řezáč et al. 2015).

According to Buchar & Růžička (2002), *T. boesenbergi* was known from only one record from Thermophyticum – the serpentine steppe (Miller 1947). However, recent findings from the mountain ranges (Kůrka & Vaněk 2010, this work) question the relationship between the spider and this phytogeographic district. Recently, one finding is known from Mesophyticum, and two findings from Oreophyticum, but from exposed habitats.

Fig. 9. *Theridion boesenbergi*, biotope of the Úval-Zvonková Natural Monument. Photo: P. Dolejš.

Acknowledgements

We thank Václav Kroc for help with collecting the orb-weavers. Research in the Šumava National Park (NPS) was allowed by the decree "SZ NPS 01912/2016/5 – NPS 03096/2016", and could be performed thanks to the field station of the Natural History Museum in the village of Horská Kvilda. This work was financially supported by Ministry of Culture of the Czech Republic (DKRVO 2017/15, National Museum, 00023272).

References

Bayram A., Kunt K.B. & Danışman T., 2008: The Checklist of the Spiders of Turkey. Version 2017. – http://www.spidersofturkey.info [Accessed on 29 March 2017.]

BioLib, 2017: Nástroj na kreslení síťových map [A tool for creating grid maps]. – http://www.biolib.cz/cz/tooltaxonmap/id1/ [Accessed on 29 March 2017.]

Blagoev G., Deltshev C. & Lazarov S., 2002: The Spiders (Araneae) of Bulgaria. – Institute of Zoology, Bulgarian Academy of Sciences. – http://cl.bas.bg/bulgarianspiders/ [Accessed on 29 March 2017.]

Blick T., 2011: Abundant and rare spiders on tree trunks in German forests (Arachnida, Araneae). – Arachnologische Mitteilungen 40: 5–14.

Blick T. & Goβner M., 2006: Spinnen aus Baumkronen-Klopfproben (Arachnida: Araneae), mit Anmerkungen zu *Cinetata gradata* (Linyphiidae) und *Theridion boesenbergi* (Theridiidae). – Arachnologische Mitteilungen 31: 23–39. https://doi.org/10.5431/aramit3104

Buchar J., 1982: Způsob publikace lokalit živočichů z území Československa. Publication of faunistic data from Czechoslovakia. – Věstník československé Společnosti zoologické 46: 317–318. [In Czech, Russian and English summary.]

Buchar J. & Růžička V., 2002: Catalogue of Spiders of the Czech Republic. – Praha: Peres Publishers, 351 pp.

Cardoso P. & Morano E., 2010: The Iberian spider checklist (Araneae). – Zootaxa 2495: 1-52.

Deltshev C., Vrenosi B., Blagoev G. & Lazarov S., 2011: Spiders of Albania – Faunistic and Zoogeographical Review (Arachnida: Araneae). – Acta zoologica bulgarica 63: 125–144.

Deltshev C.C., Ćurčić B.P.M. & Blagoev G.A., 2003: The Spiders of Serbia. – Institute of zoology, Faculty of Biology, University of Belgrade 7: 832 pp.

Farlund M., 2012: Norwegian Spiders. – https://crocea.wordpress.com/norsk-artsliste/ [Accessed on 29 March 2017.]

Fitch H.S., 1963: Spiders of the University of Kansas Natural History Reservation and Rockefeller Experimental Tract. – University of Kansas Museum of Natural History. Miscellaneous Publication 33: 1–202.

Karasch P., 2003: Beiträge zur Kenntnis der Pilzflora des Fünfseenlandes III. Ökologische Pilzkartierung auf einer Huteweide im Landkreis Weilheim (Oberbayern). Neue

Erkenntnisse aus dem Jahr 2002 und ein Bericht zum Tag der Artenvielfalt. – Zeitschrift für Mykologie 69: 43–86.
Kielhorn K.-H., 2007: Neu- und Wiederfunde von Webspinnen (Araenae) in Berlin und Brandenburg. – Märkische Entomologische Nachrichten 9: 99–108.
Komnenov M., 2009: Checklist of spiders (Araneae) of Bosnia and Herzegovina. – Uzizaž i Biospeld 5: 51–69.
Kostanjšek R. & Kuntner M., 2015: Araneae Sloveniae: a national spider species checklist. – ZooKeys 474: 1–91. https://doi.org/10.3897/zookeys.474.8474
Koponen S., Fritzén N.R. & Pajunen T., 2016: Checklist of spiders in Finland (Araneae), 6th version. University of Turku. – http://biolcoll.utu.fi/arach/checklist_of_spiders_in_Finland.htm [Accessed on 19 July 2017.]
Kronestedt T., 2001: Checklist of Spiders (Araneae) in Sweden. Version 2001-02-15. – http://www2.nrm.se/en/spindlar.html [Accessed on 29 March 2017.]
Kůrka A., 1981: Nález křižáka *Araneus saevus* (L. Koch, 1872) v Čechách (Araneida: Araneidae). The discovery of *Araneus saevus* (L. Koch, 1872) in Bohemia (Araneida: Araneidae). – Časopis Národního Muzea, Řada přírodovědná 150: 55–57. [In Czech, English summary.]
Kůrka A., 1982: Pavouci (Araneida) vrchu Stožec na Šumavě. Spinnen (Araneida) auf dem Stožec im Böhmerwald. – Sborník Národního Muzea v Praze, Series, B 38: 47–78. [In Czech, German summary.]
Kůrka A., 1990: The arachnofauna of Bohemian peat bogs. Spiders (Araneida) of the State Nature Reserve Mrtvý Luh, Šumava Mts. – Sborník Národního Muzea v Praze, Series B 46: 37–77.
Kůrka A., 1992: Historie arachnologického výzkumu Šumavy. History of the arachnological research in the Šumava Mts. (Bohemia). – Časopis Národního Muzea, Řada přírodovědná 159: 12. [In Czech.]
Kůrka A., 1995a: Sto let výzkumů zoologického oddělení Národního muzea na Šumavě. Pavouci [Hundred years of research done by the Department of Zoology of the National Museum in the Šumava Mts. Spiders]. – Šumava 1995: 10, 15 [In Czech.]
Kůrka A., 1995b: The arachnofauna of Bohemian peatbogs. Spiders (Araneida) of two peatbogs in the Šumava Mountains. – Acta Musei Nationalis Pragae, Series B 50: 93–106.
Kůrka A., 1996: Remarks on the peatbog spider fauna in the Šumava Mts. (Araneida). – Silva Gabreta 1: 195–196.
Kůrka A., 1997: The spider fauna of Bohemian peatbogs. Check-list of spider species found in the peatbogs of the Šumava Mts region. – Acta Musei Nationalis Pragae, Series B 53: 11–35.
Kůrka A., 2003: A survey of spider species (Araneida) in Prof. F. Miller's collection (Department of Zoology, Museum of Natural History – National Museum), Part VII: Theridiidae. – Journal of the National Museum, Natural History Series 172: 133–140.
Kůrka A., 2004: A survey of spider species (Araneida) in Prof. F. Miller's collection (Department of Zoology, Museum of Natural History – National Museum), Part VIII: Araneidae. – Journal of the National Museum, Natural History Series 173: 29–34.
Kůrka A. & Hradská I., 2010: Spiders of the Šumava Mts. (Bohemian Forest) – current state of knowledge. – In: Šustr P. (ed.): Aktuality šumavského výzkumu IV. Research Actualities in Bohemian/Bavarian Forest. Abstract Book: 59–60. Vimperk: Správa NP a CHKO Šumava.
Kůrka A., Řezáč M., Macek R. & Dolanský J., 2015: Pavouci České republiky [Spiders of the Czech Republic]. – Praha: Academia, 623 pp. [In Czech.]
Kůrka A. & Vaněk J., 2010: Nález dvou vzácných druhů pavouků (Araneae) *Cinetata gradata* (Simon, 1881) (Linyphiidae) a *Theridion boesenbergi* Strand, 1904 (Theridiidae) v podhůří Krkonoš. Finding of the two rare spider species (Araneae) *Cinetata gradata* (Simon, 1881) (Linyphiidae) and *Theridion boesenbergi* Strand, 1904 (Theridiidae) on the foothills of the Krkonoše Mts. – Opera Corcontica 47: 275–280.
Lemke M., 2009: Nachweis fünf neuer Webspinnenarten (Araneae) für Schleswig-Holstein

und Anmerkungen zu seltenen Arten in Niedersachsen. – Arachnologische Mitteilungen 38: 28–32.
Levi H.W., 1971: The diadematus-group of the orb-weaver genus *Araneus* north of Mexico (Araneae: Araneidae). – Bulletin of the Museum of Comparative Zoology 141: 131–179.
Mikhailov K.G., 2013: The spiders (Arachnida: Aranei) of Russia and adjacent countries: a non-annotated checklist. – Arthropoda Selecta Supplement 3: 1–263.
Miller F., 1947: Pavoučí zvířena hadcových stepí u Mohelna [Spiders of the serpentine rocky steppes near Mohelno]. – Archiv Svazu na výzkum a ochranu přírody i krajiny v zemi Moravskoslezské 7: 128 pp. [In Czech, French summary.]
Miller F., 1971: Řád pavouci – Araneida [Order Spiders – Araneida]. – In: Daniel M. & Černý V. (eds): Klíč zvířeny ČSSR, díl IV [Key to the fauna of Czechoslovakia, Vol. IV]: 51–306. Praha, ČSAV. [In Czech.]
Nentwig W., Blick T., Gloor D., Hänggi A. & Kropf C., 2017: Spiders of Europe. – www.araneae.unibe.ch [Accessed on 29 March 2017.]
Pantini P. & Isaia M., 2017: Checklist of the Italian spiders. Version May 2017. – http://www.museoscienzebergamo.it/web/index.php?option=com_content&view=category&layout=blog&id=96&Itemid=94 [Accessed on 19 July 2017.]
Petkovski S., 2009: National Catalogue (Check List) of Species. – Biodiversity and Protected Areas Consultant (National) within the Project 00058373 "Strenghtenening the Ecological, Institutional and Financial Sustainability of Macedonia's National Protected Areas System", 325 pp.
Prószyński J. & Staręga W., 1971: Pająki – Aranei. – Katalog fauny Polski. Warszawa: Polska akademia nauk, Instytut zoologiczny, 382 pp. [In Polish.]
Řezáč M., Kůrka A., Růžička V. & Heneberg P., 2015: Red List of Czech spiders: 3rd edition, adjusted according to evidence-based national conservation priorities. – Biologia 70: 645–666. https://doi.org/10.1515/biolog-2015-0079
Svojanovská H., 2014: Nález vzácné snovačky *Theridion boesenbergi* Strand, 1904 na okraji PP Plziny u Bechyně [Finding of a rare cob-web spider *Theridion boesenbergi* Strand, 1904 at the margin of the Plziny Nature Park by Bechyně]. – Pavouk 36: 17–18. [In Czech.]
Weiss I., 2011: Spinnen und Weberknechte (Arachnida: Araneae, Opiliones). – Die Arten im Nationalpark Bayerischer Wald, 119–126.
Weiss I. & István U., 2000: Faunenliste der Spinnen Rumäniens (Arachnida: Araneae). – http://www.arachnologie.info/fauna.htm [Accessed on 28 March 2017.]