

## Revision of the genus *Zodarion* (Araneae: Zodariidae) in the Czech and Slovak Republics

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**Abstract.** More than 1800 individuals of three species of the genus *Zodarion* Walckenaer, 1833 collected in the Czech and Slovak Republics were revised. *Z. germanicum* (C. L. Koch, 1837) was collected in 1870 in the Czech Republic and in 1897 in Slovakia for the first time. Hitherto, this species was recorded from about 50 (Czech Republic) and 80 sites (Slovakia), respectively. This species was most frequently collected from open grassy habitats. *Z. rubidum* Simon, 1914 was first collected in 1981 in the Czech Republic, and in 1983 in Slovakia. Hitherto, this spider was recorded from 7 (Czech Republic), and 8 sites (Slovakia), respectively. This species was collected from open sparsely covered habitats. *Z. italicum* Canestrini, 1868 was found very recently in an abandoned stone pit in the Czech Republic. Maps of the records for the Czech Republic and Slovakia and descriptions of the three species are presented.

**Distribution, description, Araneae, *Zodarion*, Palaearctic region**

### INTRODUCTION

Zodariidae has long been a poorly known spider family. A generic revision of this family was made recently. Based on a cladistic analysis, Jocqué (1991) defined six subfamilies and 47 genera, which include about 500 species worldwide. Representatives of Zodariidae can be distinguished from other spiders by the absence of a gnathocoxal serrula, the presence of anterior spinnerets, which are longer than the other spinnerets, and the lateral implantation of the teeth on the tarsal claws (Jocqué 1991).

The most derived genus of the 47 genera is *Zodarion* Walckenaer, 1833. There are about 50 species of this genus in Europe; 47 species (belonging to six groups) are reported from Western and Central Europe (Bosmans 1993, 1997) and three other species were reported from the Balkans (Deltshev 1987). From the Central Europe only the following four species are so far known: *Zodarion germanicum*, *Z. rubidum*, *Z. hamatum* and *Z. italicum*. Before 1990 only *Z. germanicum* was known to occur in the Czech Republic and Slovakia. This species belongs to the “*Z. germanicum*” species group (Bosmans 1997). In 1991 another species, *Z. rubidum*, of the “*Z. rubidum*” species group, was discovered in south Moravia (Pekár 1994). This species has spread during the last three decades from South to Central Europe including Austria (Wunderlich 1973), Germany (Broen & Moritz 1987), Switzerland (Maurer & Hänggi 1990), Poland (Woźny & Siwek 1995) and Hungary (Samu & Szinetár 1999). Only very recently another species, *Z. italicum* from the “*Z. italicum*” species group, was found in the Czech Republic (Řezáč 2001).

## MATERIAL

During more than a hundred years of arachnological survey in the Czech Republic and Slovakia there were up to 2200 individuals of zodariid spiders collected. Because the widely used identification-key for spiders (Miller 1971) includes only a verbal description of one species (*Z. germanicum*), misidentifications were likely. Therefore, the objective was to revise as many specimens as possible. However, about one-fourth of all the collected material, particularly that from Northern Moravia, was unavailable. Records of these specimens thus remain unverified. In total, I was able to revise 263 records (1844 specimens): 69 records (395 specimens) of *Z. germanicum* from the Czech Republic, 135 records (1134 specimens) of this species from Slovakia, 25 records (112 specimens) of *Z. rubidum* from the Czech Republic, 32 records (196 specimens) of this species from Slovakia, and two records (7 specimens) of *Z. italicum* from the Czech Republic.

Records for the Czech Republic are localised according to phytogeographical units (Anonymus 1987) while the records for Slovakia are localised according to geomorphological units (Anonymus 1980).

The structure of palps and epigynes were examined under a scanning electron microscope (JOEL JSM 6400). The body parts were dried at room temperature, mounted and oriented on stubs and sputtered coated with gold.

### Abbreviations used

LEGS. Cx – coxa, Tr – trochanter, Fe – femur, Pt – patella, Ti – tibia, Mt – metatarsus, Ta – tarsus.

SEXES. M – male, F – female, j – juvenile.

INSTITUTIONS. MHK – Museum of Eastern Bohemia Hradec Králové, NMP – National Museum Praha.

PRIVATE COLLECTIONS. AJC – collection of Aleš Jelínek (Třešť), AKC – collection of Andrej Krajča (Sereď), AUC – collection of Antonín Kůrka (Pardubice), JBC – collection of Jan Buchar (Praha), JDC – collection of Jan Dolanský (Pardubice), JSC – collection of Jaroslav Svatoň (Martin), JZC – collection of Jan Žďárek (Praha), LKC – collection of Lenka Kubcová (Praha), MRC – collection of Milan Řezáč (Sibřina), PGC – collection of Peter Gajdoš (Nitra), PKC – collection of Pavel Kasal (Praha), RPC – collection of Roman Prídavka (Martin), SPC – collection of Stano Pekár (Praha), VRC – collection of Vlastimil Růžička (České Budějovice), VTC – collection of Vladimír Thomka (Humenné).

### *Zodarium germanicum* (C. L. Koch, 1837)

(Figs 1–3, 7, 8, 13, 14, 19, 20)

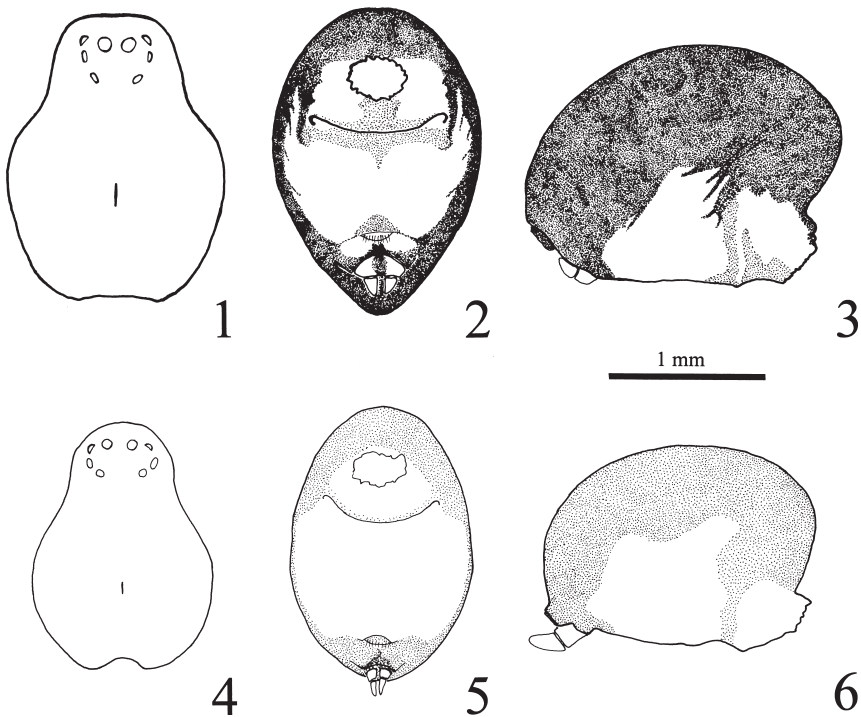
*Enyo germanica*: Barta 1868: 141.

*Zodarium* (-um) *germanicum*: Chyzer & Kulczyński 1897: 148, Schenkel 1929: 23, Miller 1936: 261, Buchar 1961: 97, Bukva 1969: 13, Buchar 1970: 44, Miller 1971: 57, Bílek 1973: 8, Šinková 1973: 28, Miller & Svatoň 1974: 248, Buchar 1975: 246, Thomka 1978: 17, Buchar 1979: 86, Knobloch 1979: 22, Svatoň & Miller 1979: 184, Absolon 1980: 20, Bílek 1981: 199, Buchar 1981: 3, Gajdoš 1981: 12, Hotská 1981: 126, Žitňanská 1981: 9, Pavlík 1982: 21, Buchar 1983: 134, Chalupská 1983: 45, Svatoň 1983: 122, Šmaha 1983a: 128, 1983b: 190, Bílek & Bílková 1984: 78, Hasch 1984: 26, Svatoň 1984: 233, 1985a: 118, 1985b: 111, 1985c: 244, Šmaha 1985: 201, Gajdoš 1986a: 174, 1986b: 137, Pavlík 1986: 25, Gajdoš 1987a: 214, 1987b: 52, Gajdoš & Krumpál 1987: 314, Majkus 1987: 83, Svatoň 1987: 257, Šteflová 1987: 13, Gajdoš 1988: 73, Jedličková 1988: 29, Majkus 1988: 55, Prídavka 1988: 18, Svatoň & Majkus 1988: 225, Žitňanská 1988: 9, Svatoň 1989: 106, 1990: 15, Buchar & Hajer 1990: 37, Gajdoš 1991: 138, Majkus 1991: 30, Buchar 1992: 31, Gajdoš 1992a: 163, 1992b: 118, Kůrka 1992: 15, Buchar 1993: 394, Gajdoš 1993a: 35, 1993b: 159, Mähringová 1993: 31, Pekár 1993: 26, figs 2a–c, 1994: 97, figs 2, 4, Kůrka 1994: 47, Svatoň & Majkus 1994: 150, Buchar et al. 1995: 49, Franc & Hanzelová 1995: 41, Gajdoš 1995: 105, Gajdoš & Sloboda 1995: 89, Majkus 1995: 125, Majkus & Svatoň 1995: 47, Šmelhausová 1995: 9, Thomka 1995: 197, Gajdoš 1996a: 124, 1996b: 51, Růžička et al. 1996: 111, Thomka 1996: 144, Gajdoš 1997: 98, Thomka 1997: 109, Gajdoš 1998: 110, Růžička 1998: 33, Svatoň 1998: 68, Jelínek 1999: 20, Prídavka 1999: 94, Kaulichová 2000: 71, Řezáč 2000: 7, Svatoň et al. (in press).

DESCRIPTION. Prosoma: Dark brown, anterior head margin rather square (Fig. 1). Opisthosoma: dark sepia-brown dorsally, white ventrally (Fig. 2). The white spot on the ventral side extends to the sides and reaches less than half way up the sides of the opisthosoma (Fig. 3). Legs: Cx and Tr pale, Fe dark brown, Pt and Ti brown, Mt and Ta yellow. Male. Total body length 3.2–3.7 mm. Palp: Tegulum strongly protruding, retinaculum L-shaped, embolus stiliform hidden behind tegulum and retinaculum (Fig. 7). The distal end of cymbium bears one claw-like spine on the prolateral side (Fig. 8). Tibial apophysis pointed ventrally (Fig. 13). Female. Total body length 3.9–5.1 mm. Epigyne: with large incision, dorsal and lateral rims excavated forming a pouch (Fig. 14).

**HABITAT.** Collected at various grassy habitats mostly of the steppe character (e. g. Svatoň & Majkus 1988, Gajdoš 1988), but often on rocks (e. g. Růžička et al. 1996, Gajdoš 1991), in meadows (e. g. Gajdoš 1985), pine and oak forest margins (e. g. Buchar 1970, Žitňanská 1981), heath (e. g. Gajdoš 1992), scrub and peat-bog margins (e. g. Bílek 1983).

**DISTRIBUTION.** This species is distributed throughout the Czech Republic and Slovakia. The first record of this species in the Czech Republic comes from Hanušovická vrchovina (Barta 1868). Hitherto, this species was recorded in the following 54 localities dispersed over 49 squares (including unverified records, Fig. 19): Krkonoše (Schenkel 1929, Bílek, unpubl.), Labské středohoří (Buchar 1979, Buchar & Hajer 1990), Rožďalovická tabule (Buchar 1970), Dolní Pojizeří (Šmelhausová 1995, Kubcová, unpubl., Kůrka, unpubl.), Pardubické Polabí (Dolanský, unpubl.), Bydžovská pánev (Bílek 1973, 1981, Bílek & Bílková 1984), Střední Poorličí (Absolon 1980, Kaulichová 2000), Pražská kotlina (Kůrka 1992, Řezáč 2000, unpubl., Buchar, unpubl., Pekár, unpubl.), Dolní Povltaví (Buchar, unpubl.), Střední Povltaví (Chalupská 1983, Bílek, unpubl., Řezáč, unpubl.), Český kras (Buchar 1961, unpubl., Žďárek, unpubl.), Křivoklátsko (Knobloch 1979, Hotská 1981, Šmaha 1983a, b, 1985, Hasch 1984, Růžička, unpubl.), Branžovský hvozď (Buchar, unpubl.), Českokrumlovské Předšumaví (Růžička, unpubl.), Třeboňská pánev (Buchar 1981, Mähringová 1993), Budějovická pánev (Pavlík 1986), Žďárské vrchy (Kasal, unpubl.), Českomoravská vrchovina (Kůrka 1994), Moravské podhůří Vysočiny (Šinková 1973, Kůrka 1994, Růžička et al. 1996, Buchar, unpubl., Jelínek 1999), Dyjsko-



Figs 1–6. 1–3: *Zodarion germanicum* (C. L. Koch, 1837). 1 – prosoma (dorsal view), 2 – opisthosoma (ventral view), 3 – opisthosoma (lateral view). 4–6: *Z. rubidum* Simon, 1914. 4 – prosoma (dorsal view), 5 – opisthosoma (ventral view), 6 – opisthosoma (lateral view).

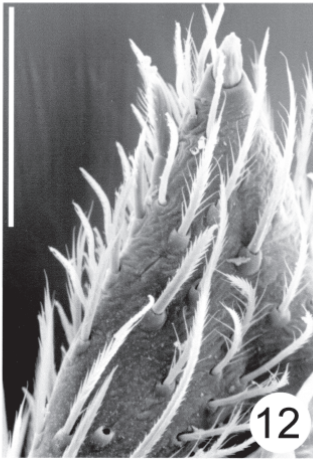
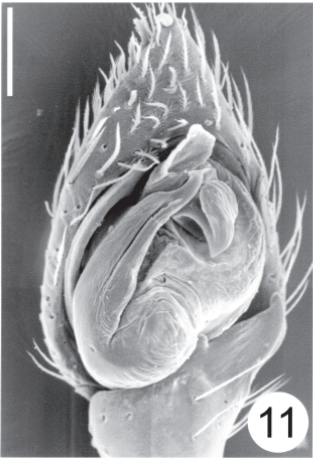
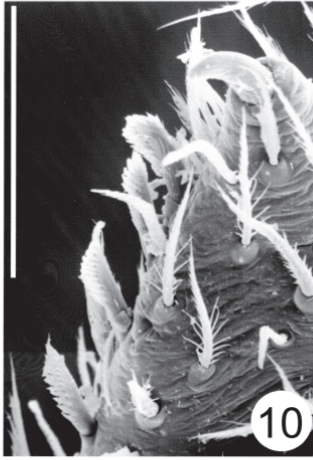
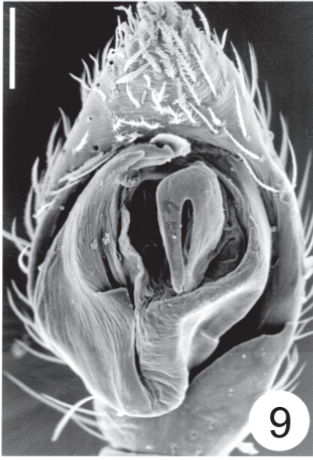
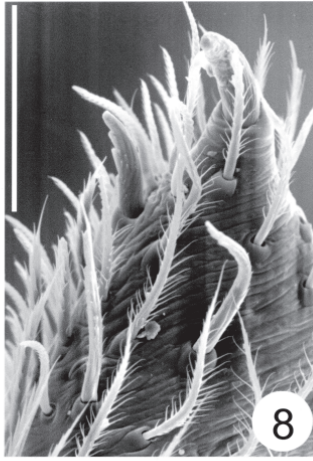
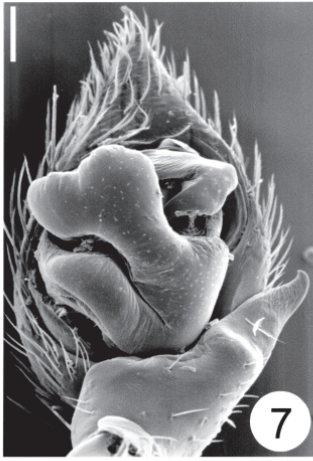
svratecký úval (Kůrka 1994), Znojensko-brněnská pahorkatina (Kůrka 1994), Moravský kras (Majkus 1995, Růžička, unpubl., Řezáč, unpubl.), Opavská pahorkatina (Bryja, unpubl.), Moravská brána (Majkus 1991), Ostravská pánev (Majkus 1987, 1988), Bílé Karpaty (Jelínek, unpubl.), Hanácka pahorkatina (Jelínek, unpubl.), Pavlovské kopce (Bukva 1969, Kůrka 1994, Majkus & Svatoň 1995), Dolnomoravský úval (Růžička 1998), and Hustopečská pahorkatina (Růžička 1998).

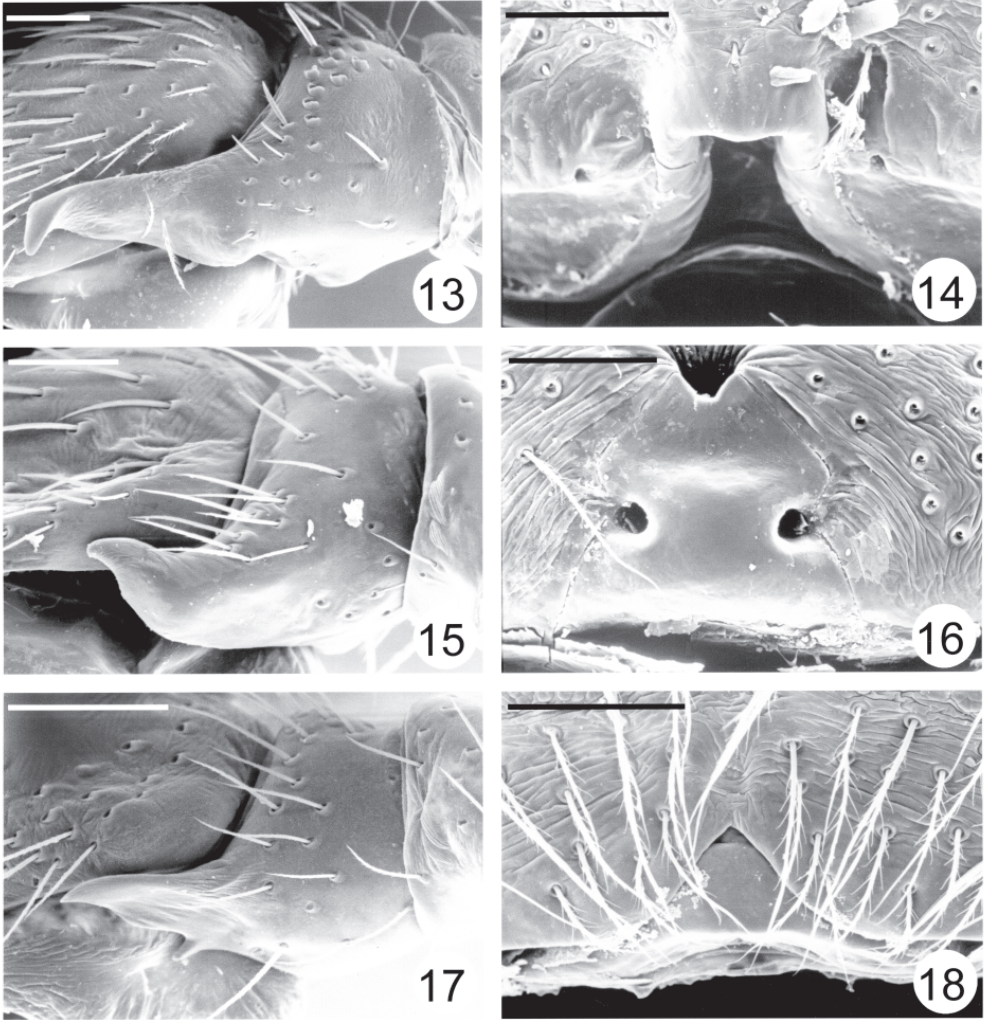
For Slovakia the first record comes from Zemplínske vrchy (Chyzer & Kulczyński 1897). Hitherto, it was collected in the following 78 localities dispersed over 60 squares (including unverified records, Fig. 20): Muránska planina (Svatoň 1985b, Prídavka 1999), Slovenský ráj (Žitňanská 1988), Stolické vrchy (Svatoň 1985b), Revúcka vrchovina (Svatoň, unpubl.), Rožňavská kotlina (Svatoň & Majkus 1988), Slovenský kras (Svatoň & Majkus 1988, 1994, Kůrka 1994, Buchar, unpubl., Prídavka, unpubl., Svatoň, unpubl.), Malé Karpaty (Gajdoš 1981, unpubl.), Trábeč (Gajdoš 1981, 1986b, 1992b, 1996a, 1997, Gajdoš & Krumpál 1987, Gajdoš & Sloboda 1995), Strážovské vrchy (Miller & Svatoň 1974, Pekár 1993, 1994), Žiar (Svatoň 1987b), Malá Fatra (Svatoň & Miller 1979, Svatoň 1984, 1985a, Prídavka 1988, Kůrka 1994, Prídavka, unpubl., Svatoň, unpubl., Krajča, unpubl.), Veľká Fatra (Miller 1936, Svatoň 1983, Kasal, unpubl.), Chočské vrchy (Žitňanská 1981, Svatoň, unpubl.), Západné Tatry (Gajdoš 1993b, unpubl.), Nízke Tatry (Svatoň 1989), Hornonitrianska kotlina (Pekár 1993, 1994), Turčianska kotlina (Svatoň 1987b, Prídavka 1988, unpubl., Kůrka 1994), Liptovská kotlina (Žitňanská 1981), Horehronské podolie (Franc & Hanzelová, unpubl.), Vtáčnik (Gajdoš 1991, 1995, Gajdoš & Sloboda 1995, Pekár 1993, 1994), Pohronský Inovec (Gajdoš 1987b, Gajdoš & Sloboda 1995), Štiavnické vrchy (Gajdoš 1987a), Kremnické vrchy (Thomka 1978), Krupinská planina (Svatoň 1987a, Vachold, unpubl.), Zvolenská kotlina (Pavlík 1982, Svatoň 1985b), Burda (Gajdoš 1988, 1998), Cerová vrchovina (Franc & Hanzelová 1995, unpubl.), Zemplínske vrchy (Chyzer & Kulczyński 1897, Gajdoš, unpubl., Prídavka, unpubl., Zbytek, unpubl.), Biele Krapaty (Gajdoš 1992a, 1993a, Svatoň et al., in press, Prídavka, unpubl.), Považské podolie (Gajdoš 1986a, unpubl., Prídavka, unpubl.), Kysucká vrchovina (Svatoň, unpubl.), Chvojnická pahorkatina (Prídavka, unpubl.), Pieniny (Svatoň 1990), Vihorlatské vrchy (Thomka 1997), Beskydské predhorie (Thomka 1996), Podunajská rovina (Jedličková 1988), and Východoslovenská rovina (Chyzer & Kulczyński 1897).

MATERIAL EXAMINED. **Czech Republic:** Křivoklát, V. Pleš, 14.vi.1993, 1M, leg. V. Růžička (VRC); Zlatá koruna, 16.v.1983, 2M+1F+2j, leg. V. Růžička (VRC); SPR Nezabudice, Velká Buková, 18.v.–11.vi.1996, 1M, leg. V. Růžička (VRC); dtto, 30.vi.–28.vii.1996, 1F, leg. V. Růžička (VRC); Blansko, Skalní mlýn, 27.v.1998, 1F+2j, leg. V. Růžička (VRC); Bílé Karpaty, Lovichovec, 28.vi.1995, 1F, leg. A. Jelínek (AJC); Nevojice, 6.vi.1996, 1M, leg. A. Jelínek (AJC); Vladislav, 21.v.1998, 1M, leg. A. Jelínek (AJC); dtto, 21.viii.1998, 1j, leg. A. Jelínek (AJC); Vysočina, Cikháj, 8.vii.1988, 1M, leg. P. Kasal (PKC); Kokořín, Hluboký důl, 13.ix.1998, 1M, leg. L. Kubcová (LKC); Koda, 1.iv.1961, 2M, leg. J. Buchar (JBC); dtto, 1.vii.1961, 1M, leg. J. Buchar (JBC); dtto, 31.v.1965, 1M, leg. J. Buchar (JBC); Karlštejn, 25.v.1960, 1M+2F, leg. J. Žďárek (JZC); dtto, 1965, 2M+2F, leg. J. Buchar (JBC); dtto, ?, 3M+1F+1j, leg. J. Buchar (JBC); Komárkova lesostep, 28.vi.1960, 8M+4F, leg. J. Buchar (JBC); Brná, 17.vi.1978, 3M, leg. J. Buchar (JBC); Libčice nad Vltavou, 6.vi.–17.vii.1980, 1M, leg. J. Buchar (JBC); Krčský les, 1986, 8M+1F, leg. J. Buchar (JBC); dtto, 1988, 87M+5F+2j, leg. J. Buchar (JBC); Vranov, 1.vii.1975, 1F, leg. J. Buchar (JBC); Bělyšov, Klatovsko, 14.x.1976, 2M, leg. J. Buchar (JBC); Borkovice, ?, 4M+1F, leg. E. Chalupská (JBC); Lovoš, 1968, 8M+2F+2j, leg. J. Buchar (JBC); Kunětická hora, Ráby, 4.v.–18.vi.1997, 1M, leg. J. Dolanský (JDC); dtto, 7.viii.–14.ix.1997, 2F, leg. J. Dolanský (JDC); Klánovický les, Praha 9, 16.v.–4.vi.1998, 1M, leg. M. Řezáč (MRC); dtto, 4.vi.–9.vii.1998, 2M, leg. M. Řezáč (MRC); dtto, 19.iv.–18.v.2000, 1M, leg. M. Řezáč (MRC); dtto, 4.vi.–24.vi.2000, 51M+25F, leg. M. Řezáč (SPC); dtto, 19.iv.–16.v.2000, 3M, leg. M. Řezáč (MRC); dtto, 16.v.–4.vi.2000, 16M+7F, leg. M. Řezáč (SPC); dtto, 24.vi.–24.vii.2000, 10M+10F, leg. M. Řezáč

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Figs 7–12. 7–8: *Zodarion germanicum* (C. L. Koch, 1837). 7 – left male palp (ventral view), 8 – distal end of male palp (ventral view); 9–10: *Z. rubidum* Simon, 1914. 9 – left male palp (ventral view), 10 – distal end of male palp (ventral view); 11–12: *Z. italicum* Canestrini, 1868. 11 – left male palp (ventral view), 12 – distal end of male palp (ventral view) (SEM). Scale lines: 0.05 mm.





Figs 13–18. 13–14: *Zodarion germanicum* (C. L. Koch, 1837). 13 – male palpal tibia (retrolateral view), 14 – epigyne; 15–16: *Z. rubidum* Simon, 1914. 15 – male palpal tibia (retrolateral view), 16 – epigyne; 17–18: *Z. italicum* Canestrini, 1868. 17 – male palpal tibia (retrolateral view), 18 – epigyne (SEM). Scale lines: 0.05 mm.

(MRC); dtto, 24.vii.–8.viii.2000, 5F, leg. M. Řezáč (MRC); dtto, 8.viii.–9.ix.2000, 1F, leg. M. Řezáč (MRC); PR Zvolská homole, Vrané nad Vltavou, 10.v.1997, 1M, leg. M. Řezáč (MRC); Petrov (Praha-západ), 1.x.2000, 1j, leg. M. Řezáč (MRC); Moravský kras, Adamov, 29.iv.1999, 1M, M. Řezáč (MRC); Nový Bydžov-okolí, 1971–1975, 18M+8F, leg. J. Bílek (MHK); Krkonoše, Dívčí lávky, 22.ix.1976, 1F, leg. J. Bílek (MHK); Středočeská pohorkatina, Krašovice, okolí, 1.v.1975, 1M, leg. J. Bílek (MHK); Pouzdřany, 5.v.1968, 1F, leg. F. Miller (NMP); dtto, 15.v.1968, 1M, leg. F. Miller (NMP); dtto, 13.vi.1968, 1M, leg. F. Miller (NMP); dtto, 18.vi.1968, 1M, leg. F. Miller (NMP); dtto, 20.vi.1968, 1M, leg. F. Miller (NMP); dtto, 28.vi.1968, 2M, leg. F. Miller (NMP); dtto, 3.vii.1968, 1M, leg. F. Miller (NMP); dtto, 4.vii.1968, 2M+2F, leg. F. Miller (NMP); dtto, 8.vii.1968, 1F, leg. F. Miller (NMP); Žebětín, 5.v.1976, 1M, leg. F. Miller (NMP); Hády, 20.iv., 1M, leg. F. Miller (NMP); Srbsko, 13.x.1970, 1F, leg. F. Miller (NMP); Pálava, 25.v.1954, 1F, leg. F. Miller (NMP); dtto, 1.vi., 1M, leg. F. Miller (NMP); Čebínka, 10.v., 1M, leg. F. Miller (NMP); Říčky, 3.v.1952, 1M, leg. F. Miller (NMP); dtto, 1.v., 2M, leg. F. Miller (NMP); Ostrovačice, 15.v., 1M, leg. F. Miller (NMP); Velká Bytíška, 1.v., 1M+1F, leg. F. Miller (NMP); ?, 15.v.1958, 1F, leg. F. Miller (NMP); Praha, Tiché údolí, sluneční stráň, 10.vi.1981, 1F, leg. A. Kúrka (AUC); Kokořínsko, skály nad Grobiánem, 12.ix.1997, 1F, leg. A. Kúrka (AUC); Peliny, 1978, 12M+5F+11j, leg. K. Absolon (SPC); Praha, Radotín, 13.vi.2001, 1F, leg. S. Pekár (SPC). **Slovakia:** Hrušov, 13.vii.1985, 1F, leg. J. Buchar (JBC); Domic, 28.v.1959, 1F, leg. J. Buchar (JBC); Velká Fatra, Čierny kameň, 18.vi.1974, 1F, leg. P. Kasal (PKC); Vinné, hrad, 3.vi.–31.vii.1992, 3M, leg. V. Thomka (VTC); dtto, 9.iii.–3.vi.1992, 2M+4F, leg. V. Thomka (VTC); dtto, 24.v.–13.vii.1993, 2M, leg. V. Thomka (VTC); dtto, 2.iv.–24.v.1993, 2j, leg. V. Thomka (VTC); dtto, 22.iv.–24.vi.1994, 2M+2j, leg. V. Thomka (VTC); dtto, 26.ix.1994, 1M+1F+1j, leg. V. Thomka (VTC); Chlmec, ŠPR Sokol, 26.iii.–20.v.1993, 5j, leg. V. Thomka (VTC); dtto, 20.v.–3.viii.1993, 9M+3F, leg. V. Thomka (VTC); dtto, 3.viii.–5.x.1993, 1j, leg. V. Thomka (VTC); Kapušany, ŠPR Kapušanský hradný kopec, 23.iv.–20.vi.1996, 35M+8F+2j, leg. V. Thomka (VTC); dtto, 20.vi.–30.viii.1996, 8M+6F+4j, leg. V. Thomka (VTC); dtto, 30.viii.1996–20.v.1997, 5M+1F, leg. V. Thomka (VTC); dtto, 20.v.–31.vii.1997, 10M+1F, leg. V. Thomka (VTC); dtto, 31.vii.–9.x.1997, 1F, leg. V. Thomka (VTC); Silická planina, Hrušovská lesostep, 6.ix.1984, 2F+1j, leg. J. Svatoň (JSC); dtto, 24.vii.1984, 14M+3F, leg. J. Svatoň (JSC); dtto, 23.viii.1984, 1M, leg. J. Svatoň (JSC); dtto, 28.vi.1984, 26M+5F+7j, leg. J. Svatoň (JSC); Silická planina, Hradište, 28.vi.1984, 10M+2F+2j, leg.

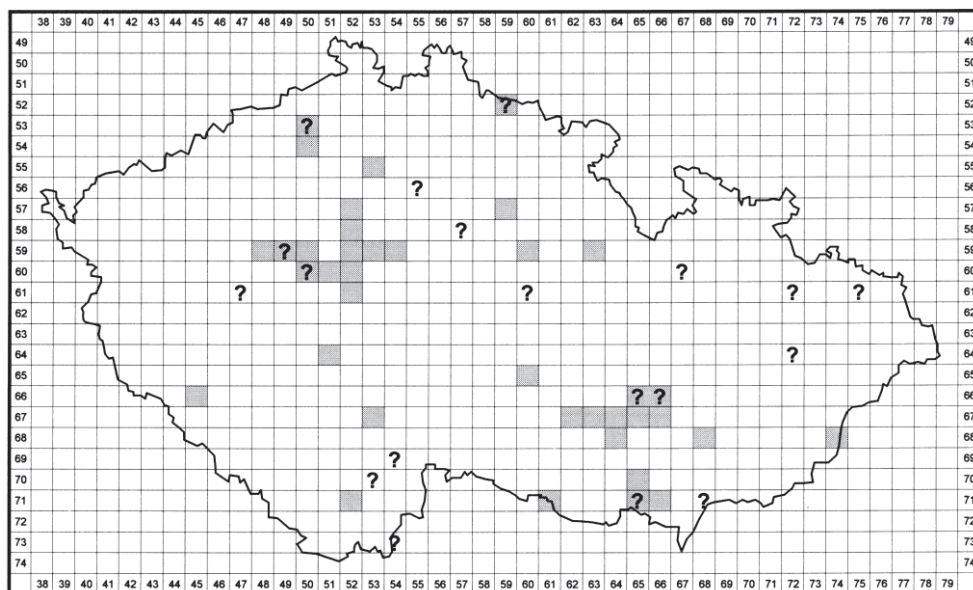


Fig. 19. Map of records of *Zodarion germanicum* (C. L. Koch, 1837) in the Czech Republic. Shaded – verified records, ? – unverified records.

J. Svatoň (JSC); dtto, 23.viii.1984, 1F+2j, leg. J. Svatoň (JSC); dtto, 24.vii.1984, 3M+4F+1j, leg. J. Svatoň (JSC); dtto, 6.ix.1984, 1j, leg. J. Svatoň (JSC); Silická planina, Kečovské škrapy, 24.viii.1982, 1F, leg. J. Svatoň (JSC); Plešivská planina, Veľký vrch, 24.vii.1984, 9M+2F+1j, leg. J. Svatoň (JSC); dtto, 12.vi.1984, 4M, leg. J. Svatoň (JSC); dtto, 25.vi.1984, 4M, leg. J. Svatoň (JSC); dtto, 5.ix.1984, 1F, leg. J. Svatoň (JSC); Plešivská planina, Pod ostrými vrškami, 17.vi.1983, 2M, leg. J. Svatoň (JSC); dtto, 25.vii.1983, 2M+1F+1j, leg. J. Svatoň (JSC); Plešivská planina, Pod Železnými vrátami, 25.vii.1983, 2F+3j, leg. J. Svatoň (JSC); dtto, 15.vi.1983, 3M+2j, leg. J. Svatoň (JSC); dtto, 15.viii.1983, 1F, leg. J. Svatoň (JSC); dtto, 14.ix.1983, 1j, leg. J. Svatoň (JSC); Plešivská planina, Teplá stráň, 22.vii.1983, 1M+3j, leg. J. Svatoň (JSC); dtto, 12.vi.1983, 3M+1j, leg. J. Svatoň (JSC); dtto, 19.viii.1983, 1F, leg. J. Svatoň (JSC); dtto, 15.ix.1983, 1F, leg. J. Svatoň (JSC); Plešivská planina, Lúčka, 11.vi.1983, 1M+1j, leg. J. Svatoň (JSC); Plešivská planina, Veľká stráň, 15.ix.1983, 1F, leg. J. Svatoň (JSC); Plešivská planina, Gerlíská skala, 23.vii.1984, 2j, leg. J. Svatoň (JSC); Plešivská planina, Nad Brzot. jaskyňou, 17.viii.1983, 2M, leg. J. Svatoň (JSC); dtto, 13.ix.1983, 1M, leg. J. Svatoň (JSC); Biele Karpaty, Krasín, suť, iv.–x.1999, 1M+1F+1j, leg. J. Svatoň (JSC); dtto, 2M, leg. J. Svatoň (JSC); Bojnice, Kalvária, 12.vii.1991, 20M+7F+8j, leg. S. Pekár (SPC); dtto 18.ix.1991, 1M+1F+7j, leg. S. Pekár (SPC); Sútovcce, 12.vi.1992, 1M, leg. S. Pekár (SPC); dtto, 20.viii.1992, 1M+1j, leg. S. Pekár (SPC); Opatovce nad Nitrou, 22.vi.1992, 4M+2F+1j, leg. S. Pekár (SPC); dtto, 17.vii.1992, 1F, leg. S. Pekár (SPC); dtto, 19.viii.1992, 1j, leg. S. Pekár (SPC); dtto, 18.ix.1992, 1M+2j, leg. S. Pekár (SPC); Cígeľ, 17.vii.1992, 1M+1F+1j, leg. S. Pekár (SPC); dtto, 19.viii.1992, 1F+2j, leg. S. Pekár (SPC); Sivý vrch, 6.vii.1992, 1M, leg. P. Gajdoš (PGC); Mnich, 12.v.1993, 1F, leg. P. Gajdoš (PGC); ŠPR Solčiansky háj, kameňolom, 2.–29.iv.1986, 15M+6F+26j, leg. P. Gajdoš (PGC); dtto, 9.x.–10.xii.1986, 1j, leg. P. Gajdoš (PGC); dtto, 26.viii.–24.xi.1987, 3M, leg. P. Gajdoš (PGC); dtto, 6.vi.–21.vii.1987, 15M+1F+1j, leg. P. Gajdoš (PGC); dtto, 30.iv.–6.vi.1986, 11M+4j, leg. P. Gajdoš (PGC); ŠPR Solčiansky háj, dubový les, 2.–29.iv.1986, 9M+2F, leg. P. Gajdoš (PGC); dtto, 29.iv.–5.vi.1986, 25M+3F+2j, leg. P. Gajdoš (PGC); dtto, 8.iv.–6.vi.1987, 12M+2F+5j, leg. P. Gajdoš (PGC); dtto, 6.vi.–21.vii.1987, 5M+2F+1j, leg. P. Gajdoš (PGC); dtto, 26.viii.–24.xi.1987, 1M, leg. P. Gajdoš (PGC); dtto, 2M+3F+3j, leg. P. Gajdoš (PGC); dtto, 31.vii.–8.x.1986, 1M+2F+2j, leg. P. Gajdoš (PGC); dtto, 21.vii.–26.viii.1987, 39M+8F+7j, leg. P. Gajdoš (PGC); ŠPR Hrdovická, vresovisko, 7.vi.1986, 1F, leg. P. Gajdoš (PGC); dtto, 6.vi.–2.vii.1987, 1M+2F, leg. P. Gajdoš (PGC); ŠPR Hrdovická, dubový les, 2.vi.–30.vi.1986, 14M+1F+7j, leg. P. Gajdoš (PGC); dtto, 31.vii.–9.x.1987, 4M+2F, leg. P. Gajdoš (PGC); dtto, 30.iv.–6.vi.1986, 17M+4F+1j, leg. P. Gajdoš (PGC); dtto, 6.vi.–31.vii.1986, 6M+2F+3j, leg. P. Gajdoš (PGC); dtto, 6.vi.–26.viii.1987, 4F+4j, leg. P. Gajdoš (PGC); Kovárecká hôrka, 30.iv.–7.vi.1986, 20M+6F, leg.

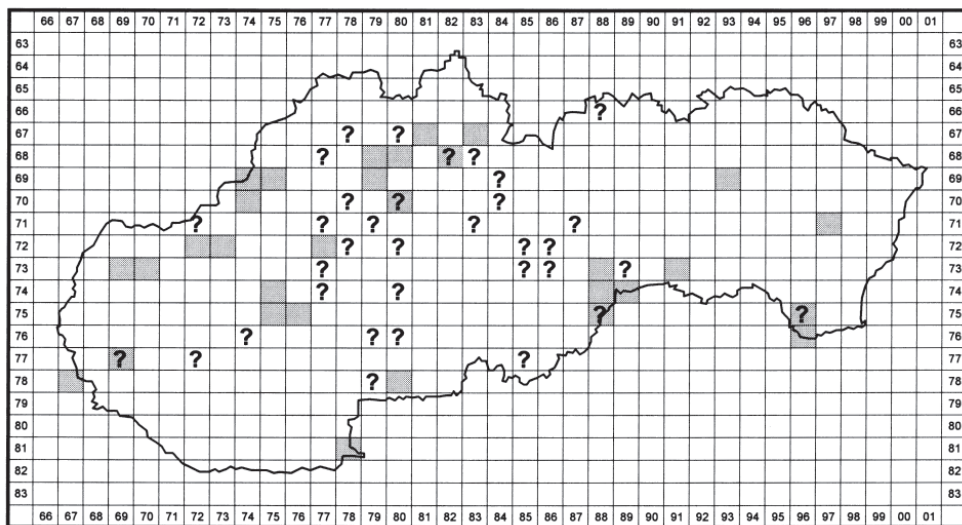


Fig. 20. Map of records of *Zodarion germanicum* (C. L. Koch, 1837) in Slovakia. Shaded – verified records, ? – unverified records.

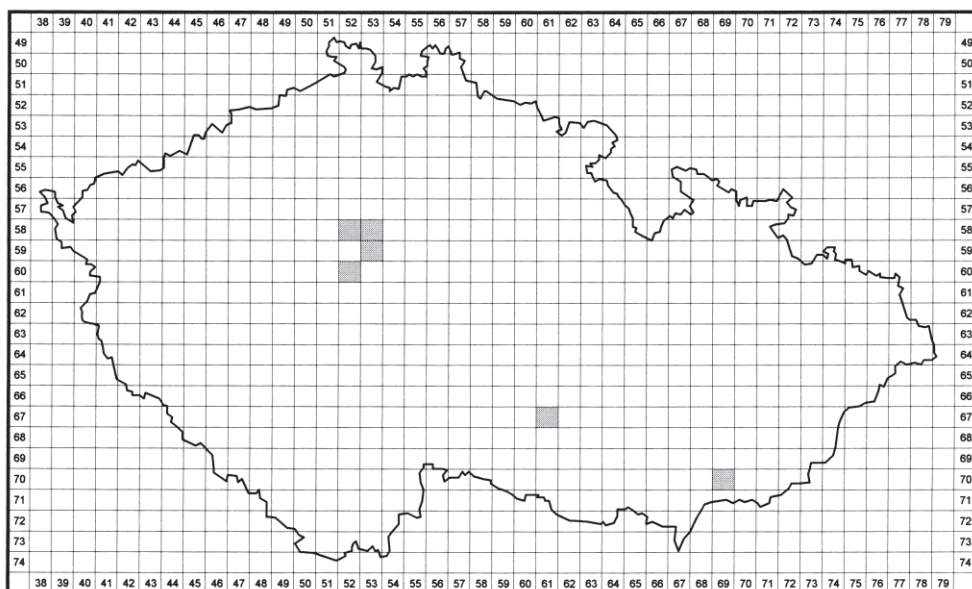


Fig. 21. Map of records of *Zodarion rubidum* Simon, 1914 in the Czech Republic. Shaded – verified records, ? – unverified records.

P. Gajdoš (PGC); Veľká Trňa, Rozhľadné, dubový les, 30.v.1991, 1j, leg. P. Gajdoš (PGC); Veľká Trňa, Rozhľadné, rúbanisko, 30.v.1991, 1F, leg. P. Gajdoš (PGC); Sokolec, dubový les, 1.iv.–15.v.1991, 3M+3F, leg. P. Gajdoš (PGC); dtto, 15.v.–13.vi.1991, 4M+1F+1j, leg. P. Gajdoš (PGC); dtto, 20.vii.–20.viii.1992, 1M+2F+4j, leg. P. Gajdoš (PGC); dtto, 20.viii.–23.ix.1992, 1M, leg. P. Gajdoš (PGC); dtto, 16.vii.–12.ix.1991, 1F, leg. P. Gajdoš (PGC); Vrania skala, 22.iv.–21.vi.1985, 1M, leg. P. Gajdoš (PGC); Veľký Tribeč, rúbanisko, 22.iv.–21.vi.1985, 1M, leg. P. Gajdoš (PGC); Veľký Lysec, 1.iv.–24.vi.1987, 1M+1F, leg. P. Gajdoš (PGC); ŠPR Včelár, lesostep, 31.x.1984–24.i.1985, 1j, leg. P. Gajdoš (PGC); dtto, 18.iii.–15.v.1985, 1M+1F+2j, leg. P. Gajdoš (PGC); ŠPR Devínska Kobyla, okraj stepi, 7.iv.–9.v.1978, 1M, leg. P. Gajdoš (PGC); dtto, 10.v.–8.vi.1979, 1F, leg. P. Gajdoš (PGC); dtto, 10.v.–8.vi.1979, 1M, leg. P. Gajdoš (PGC); dtto, 10.v.–8.vi.1979, 2M, leg. P. Gajdoš (PGC); ŠPR Devínska Kobyla, borovicový porast, 5.vii.–26.ix.1979, 1M, leg. P. Gajdoš (PGC); dtto, 10.v.–8.vi.1979, 1M, leg. P. Gajdoš (PGC); ŠPR Vršatecké bradlá, okraj lesa, 20.v.–31.vii.1987, 16M, leg. P. Gajdoš (PGC); CHN Vršatecké hradné bralo, borovicový les, 8.ix.–11.xi.1987, 8M+1F, leg. P. Gajdoš (PGC); CHN Holík, lesostep, 16.vii.–16.ix.1985, 1j, leg. P. Gajdoš (PGC); ŠPR Turecký vrch, dubový les, 1.v.–16.vii.1985, 1F, leg. P. Gajdoš (PGC); dtto, 1.v.–16.vii.1985, 1F, leg. P. Gajdoš (PGC); CHPV Krasin, hlinitá suť, 1.v.–11.x.1989, 4M+1j, leg. P. Gajdoš (PGC); CHPV Krasin, vrchol, 1.v.–11.x.1989, 2F, leg. P. Gajdoš (PGC); CHN Záhradská, lúka, 1.v.–11.x.1989, 2M, leg. P. Gajdoš (PGC); Chlabá, lesostep, 6.v.–20.vi.1977, 24M+3F+1j, leg. P. Gajdoš (PGC); dtto, 20.vi.–18.vii.1978, 11M+1j, leg. P. Gajdoš (PGC); dtto, 20.vi.–18.vii.1977, 16M+1F+5j, leg. P. Gajdoš (PGC); dtto, 6.v.–1.vi.1977, 13M, leg. P. Gajdoš (PGC); dtto, 1.iii.–12.iv.1977, 6j, leg. P. Gajdoš (PGC); dtto, 12.iv.–6.v.1977, 6M+3j, leg. P. Gajdoš (PGC); dtto, 18.vii.–22.viii.1977, 1M+3F+13j, leg. P. Gajdoš (PGC); Pezinok, pri Chrastine, medza, 24.vi.–17.vii.1994, 1F, leg. P. Gajdoš (PGC); Pezinok, úhor, 17.vii.–15.xii.1994, 8M+7F, leg. P. Gajdoš (PGC); Pezinok, les, 24.vi.–17.vii.1994, 5j, leg. P. Gajdoš (PGC); Trenčín, Zamarovské jamy, lesík, ?, 1F, leg. P. Gajdoš (PGC); Šútovo, 3.vii.1936, 4M+3F+2j, leg. F. Miller (NMP); Silica, 9.v., 1M+2F+2j, leg. F. Miller (NMP); Zádiel, 14.v., 1F, leg. F. Miller (NMP); Hradište pri Zábore, 12.v.–23.vi.1991, 5M, leg. R. Pridavka (RPC); dtto, 23.v.–1.vii.1992, 6M+1F, leg. R. Pridavka (RPC); Turecký vrch, 19.vii.–27.viii.1994, 2M, leg. R. Pridavka (RPC); Viničky, 22.v.1997, 1F, leg. R. Pridavka (RPC); Šajdíkovce Humence, 23.iv.–30.v.1999, 11M+4F, leg. R. Pridavka (RPC); dtto, 1.ix.–20.x.1999, 11M, leg. R. Pridavka (RPC); dtto, 20.vii.–1.ix.1999, 14M+12F, leg. R. Pridavka (RPC); Cerová, 25.viii.–20.x.1999, 15M+3F, leg. R. Pridavka (RPC); dtto, 20.vii.–25.viii.1999,



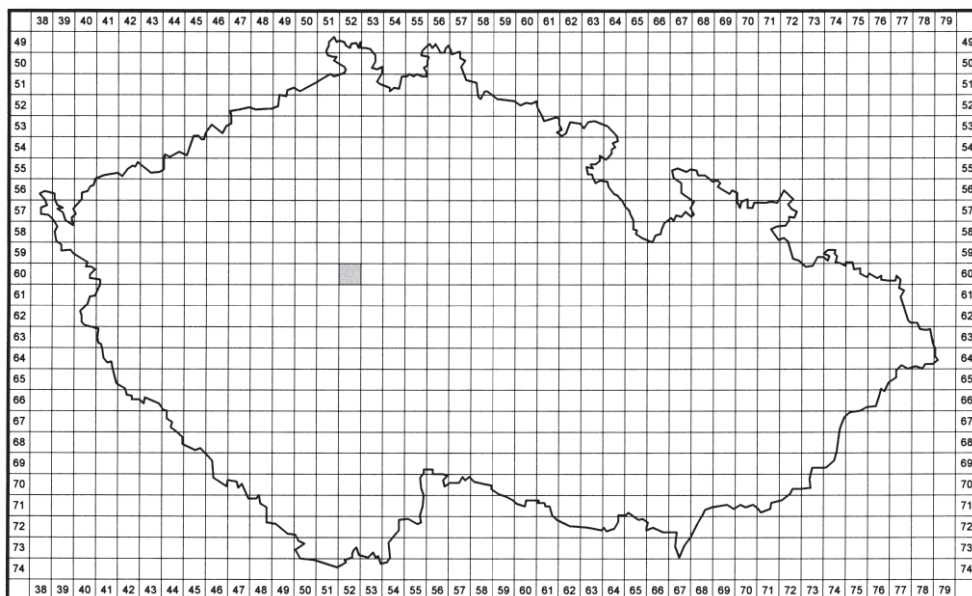


Fig. 23. Map of record of *Zodarion italicum* Canestrini, 1868 in the Czech Republic. Shaded – verified record.

Krumpálová 1998), Malé Karpaty (Gajdoš, unpubl., Prídavka, unpubl.), Považské podolie (Gajdoš, unpubl.), and Borská nížina (Prídavka, unpubl.).

**MATERIAL EXAMINED. Czech Republic:** Praha, ŠPR Baba, 17.iv.1979, 3j, leg. A. Kůrka (AUC); dtto, 10.v.1979, 1j, leg. A. Kůrka (AUC); dtto, 31.v.1979, 1M, leg. A. Kůrka (AUC); dtto, 27.vi.1979, 2M+1j, leg. A. Kůrka (AUC); dtto, 3.vii.1979, 2F, leg. A. Kůrka (AUC); dtto, 19.vii.1979, 1M+7F, leg. A. Kůrka (AUC); dtto, 14.viii.1979, 1F, leg. A. Kůrka (AUC); dtto, 12.ix.1979, 1j, leg. A. Kůrka (AUC); Váté Písky, Bzenec, 10.vii.1991, 2M+1F, leg. K. Absolon (SPC); dtto, 4.vi.1996, 1F, leg. V. Růžička (VRC); dtto, 3.viii.2000, 4j, leg. S. Pekár (SPC); dtto, 15.ix.2000, 10j, leg. S. Pekár (SPC); dtto, 30.ix.2000, 21j, leg. S. Pekár (SPC); Vladislav, 22.vii.1998, 4M+2F, leg. A. Jelínek (AJC); Praha, Chvalský lom, 2.iv.–28.ix.1997, 1M, leg. M. Řezáč (MRC); Praha, Podbabské skály, 23.iii.2000, 3j, leg. M. Řezáč (MRC); Klánovický les, Praha 9, 16.v.–4.vi.2000, 6M+1F, leg. M. Řezáč (SPC); dtto, 4.vi.–24.vi.2000, 6M+6F, leg. M. Řezáč (SPC); dtto, 24.vi.–24.vii.2000, 2M+7F, leg. M. Řezáč (MRC); dtto, 19.iv.–16.v.2000, 1M, leg. M. Řezáč (MRC); Praha, Radotín, 13.vi.2001, 3M+6F, leg. S. Pekár (SPC); dtto, 15.vii.2001, 1M+4F, leg. S. Pekár (SPC). **Slovakia:** Lehota pod Vtáčnikom, halda, 21.iv.1989, 1j, leg. S. Pekár (SPC); Nováky, halda, 4.vii.1989, 1M, leg. S. Pekár (SPC); dtto, 9.vii.1990, 3M, leg. S. Pekár (SPC); dtto, 3.vii.1991, 1M, leg. S. Pekár (SPC); dtto, 3.ix.1991, 1M+1F, leg. S. Pekár (SPC); dtto, 15.x.1991, 7j, leg. S. Pekár (SPC); dtto, 11.xi.1991, 1j, leg. S. Pekár (SPC); dtto, 23.vi.1992, 15M+5F, leg. S. Pekár (SPC); dtto, 17.ix.1992, 4j, leg. S. Pekár (SPC); Nováky, záhrada pri dome, 15.vi.1998, 1M+1F, leg. S. Pekár (SPC); Sereď, halda, 21.v.1994, 6j, leg. A. Krajča (AKC); dtto, 25.vi.1994, 2j, leg. A. Krajča (AKC); dtto, 29.vii.1994, 9j, leg. A. Krajča (AKC); dtto, 4.ix.1994, 2j, leg. A. Krajča (AKC); dtto, 6.ix.1994, 11j, leg. A. Krajča (AKC); dtto, 8.x.1994, 8j, leg. A. Krajča (AKC); 9.x.1994, 46j, leg. A. Krajča (AKC); dtto, 6.xi.1994, 10j, leg. A. Krajča (AKC); dtto, 6.v.1995, 4j, leg. A. Krajča (AKC); dtto, 27.viii.1995, 4j, leg. A. Krajča (AKC); dtto, 30.ix.1995, 5j, leg. A. Krajča (AKC); dtto, 29.x.1995, 5j, leg. A. Krajča (AKC); Trenčín, sídlisko Juh, tehelňa, 19.vi.–24.vii.1998, 2M+7F, leg. P. Gajdoš (PGC); dtto, 19.vi.–24.vii.1998, 1M, leg. P. Gajdoš (PGC); dtto, 24.vii.–18.viii.1998, 4M+6F, leg. P. Gajdoš (PGC); dtto, 18.viii.–18.ix.1998, 1M+4F+3j, leg. P. Gajdoš (PGC); Modrý vrch, Štúrovo,

7.v.1983, 1M, leg. Hejkal (SPC); Šajdkove Humence, 23.iv.–30.v.1999, 6M, leg. R. Prídavka (RPC); Hradište pod Vrátnom, 30.v.–20.vii.1999, 4M+2F, leg. R. Prídavka (RPC); dtto, 20.vii.–26.viii.1999, 1M, leg. R. Prídavka (RPC).

### *Zodarion italicum* Canestrini, 1868

(Figs 11, 12, 17, 18, 23)

DESCRIPTION. Prosoma: yellowish-brown with dark markings, anterior head margin round. Opisthosoma: brown dorsally, white ventrally. The white band on the ventral side extends beyond half way up the sides of the opisthosoma. Legs: Fe yellowish to brown, other segments yellow. Male. Total body length 2.4 mm. Palp: Retinaculum beak-like, embolus distally bent (Fig. 11). Distal end of cymbium with one strong and 3 comb-like spines on the lateral side (Fig. 12). Tibial apophysis pointed with a submedial tooth (Fig. 17). Female. Total body length 3.1 mm. Epigyne with broad triangular median plate (Fig. 18).

HABITAT. This species was found in an abandoned stone pit in an area with sparse cover of vegetation (Řezáč 2001, Pekár, unpubl.).

DISTRIBUTION. In the Czech Republic it is known only from Pražská kotlina (Fig. 23). It is still not recorded from Slovakia.

MATERIAL EXAMINED. **Czech Republic:** Praha-Radotín, Lochkovský profil, 29.v.2000, 1M, leg. M. Řezáč (MRC); dtto, 25.vi.2001, 2F+4j, leg. S. Pekár (SPC). **Switzerland:** Rhonetal, bei Visp, ?, 1M+1F, leg. ? (SPC) (used for SEM).

#### KEY TO JUVENILE SPIDERS

1. Prosoma dark brown, anterior head margin rather square (Fig. 1). The white spot on the ventral side of opisthosoma extends to sides and reaches less than half way up the sides of the opisthosoma (Fig. 3). The distal end of cymbium without a spine on the prolateral side. .... *Z. germanicum* (C. L. Koch, 1837)
- Prosoma pale to yellow, anterior head margin round (Fig. 4). The white spot on the ventral side of opisthosoma extends beyond half way up the sides of the opisthosoma (Fig. 6). The distal end of cymbium with a few modified spines on the prolateral side. .... *Z. rubidum* Simon, 1914

NOTE. Due to lack of immature material of *Z. italicum*, specimens of this species has not been distinguished from the above two species.

#### KEY TO ADULT SPIDERS

1. Male: The distal end of cymbium bears one claw-like spine on the prolateral side (Fig. 8). Tibial apophysis pointed ventrally (Fig. 13), tegulum strongly protruding, retinaculum L-shaped, embolus stiliform covered by tegulum and retinaculum (Fig. 7). Female: The distal end of palpal Ta without a spine. Epigyne with large incision, dorsal and lateral rims excavated forming a pouch (Fig. 14). .... *Z. germanicum* (C. L. Koch, 1837)
- Male: The distal end of cymbium bears 3–5 comb-like spines on the prolateral side (Fig. 10). Female: Epigyne other than in *Z. germanicum*. .... 2
2. Male: Tibial apophysis bluntly pointed (Fig. 15). Retinaculum hooked, embolus pointed (Fig. 11). Female: Epigyne with two median pits (Fig. 16). .... *Z. rubidum* Simon, 1914
- Male: Tibial apophysis pointed with a submedial tooth (Fig. 17), retinaculum beak-like, embolus distally bent (Fig. 11). Female: Epigyne with broad triangular median plate (Fig. 18). .... *Z. italicum* Canestrini, 1868

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