Notes on the occurrence of *Sitticus terebratus* (Clerck, 1758) in Poland

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Abstract: *Sitticus terebratus* is a spider species known from a few localities in Poland. The records refer to the south Poland – in the West Beskid and the Orawa-Nowy Targ Basin, as well as in the north-eastern part of the country. The study revealed 13 new localities of this species ranging from the Babia Góra Mts to Bieszczady Mts. All sites of *S. terebratus* are synanthropic but observations indicate that the species is very rare and it may be endangered both in Poland and in Europe.

Key words: *Sitticus terebratus*, Poland, distribution, rare spider, Babia Góra Mts, Bieszczady Mts

INTRODUCTION

The range of *Sitticus terebratus* (Clerck, 1758) covers most of the northern and continental Europe, however this species is not found on the Iberian Peninsula and the Balkan Peninsula (Fuhn & Gherasim 1995, Nentwig et al. 2014, Metzner 2014, Van Helsdingen 2014, Staudt 2014). Besides, it is noted from the Caucasus (Logunov & Guseinov 2001) and from the southern, western and central part of Siberia (Danilov & Logunov 1993, Rakov 1998, Logunov & Marusik 2000).


The new data extend the view on the distribution of *Sitticus terebratus* in Poland.

RESULTS

The following 13 new localities of *Sitticus terebratus* were found in the Babia Góra Mts, Tatra Mts, the Eastern Beskids, and the Bieszczady Mts (Fig. 1):

Babia Góra National Park: Hala Śmietanowa [CV 99], wooden walls of an old forester house (ca. 828 m a.s.l.), 17 Aug 2014, 1♂; leg. R. Rozwałka.

Bieszczady National Park: Tarnawa Niżna [FV 34], wooden walls of a tourist house (ca. 690 m a.s.l.), 2 May 2013, 1 juv.; leg. R. Rozwałka.

Bystre near Ustrzyki Dolne [FV 26], a sunlit wooden walls of an old orthodox catholic church (ca. 600 m a.s.l.), 20 Aug 2012, 1 juv.; leg. R. Rozwałka.

Czarne near Wyszowatka [EV 28], wooden walls of an old shed (ca. 480 m a.s.l.), 13 Jun 2013, 1♂; leg. R. Rozwałka.

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Jasień near Ustrzyki Dolne [FV 17], on a sunlit trunk of a larch (ca. 455 m a.s.l.), 20 Aug 2012, 1♂; leg. R. Rozwalka.

Kotan near Krempna [EV 38] (Fig. 2), heavily sunlit wooden walls of an old orthodox catholic church (ca. 400 m a.s.l.), 30 May 2013, 1♂; and a few specimens observed on 16 Aug 2013; leg. et obs. R. Rozwalka & J. Stachowicz.

Krempna [EV 38], sunlit wooden fence (ca. 370 m a.s.l.), 2 Jun 2013, 1♀; leg. R. Rozwalka.

Królik Polski [EV 58], sunlit wooden walls of an old catholic church (ca. 445 m a.s.l.), 16 Aug 2013, 1♀, Ijuv.; leg. J. Stachowicz.

Magura National Park: Grab near Ozenna [EV 37], wooden walls of an old forester house (ca. 475 m a.s.l.), 17 Aug 2013, 1♂; leg. R. Rozwalka.
Occurrence of Sitticus terebratus in Poland

Rozdziele [EV 29], sunlit wooden walls of an old catholic church (ca. 340 m a.s.l.), 16 Aug 2013, 2♀♂; leg. J. Stachowicz.

Równia near Ustrzyki Dolne [FV 17], sunlit wooden walls of an old belfry (ca. 505 m a.s.l.), 9 Jun 2012, 1♀; leg. R. Rozwałka.

Smolnik near Ustrzyki Dolne [FV 25], sunny wooden walls of an old orthodox catholic church (ca. 580 m a.s.l.), 20 Aug 2012, 1♀, 2♂♂; and a few specimens observed during the courtship; leg. et obs. J. Stachowicz & R. Rozwałka.

Tatra National Park: Polana Kopieniec (Clearing Kopieniec) [DV 25], sunlit wooden walls of an old shepherd's hut (ca. 1240–1250 m a.s.l.), 2 Aug 2013, 1♀, 2♂♂; and a few specimens was observed in the same place; leg. et obs. R. Rozwałka.

Fig. 2. Habitat of Sitticus terebratus in Kotani near Krempna, 30 May 2013. Photo by R. Rozwałka.

The materials are deposited by Robert Rozwałka in Department of Zoology UMCS in Lublin.

The search carried out in central and eastern Poland (Lublin Upland, Roztocze) gave negative results.

DISCUSSION

During the current study, we failed to confirm the presence of S. terebratus in Zakopane and Kościesielsko, where Kulczyński (1881, 1884) found this species, but some specimens of this species was found in the Tatra Mts. The new location in the Tatra National Park shows that the upper limit of Sitticus terebratus occurrence in Poland is not 930–950 m a.s.l. as it has been noted by Kulczyński (1881, 1884), but reaches about 1250 m a.s.l. In addition to the negative searching results in Podhale, Sitticus terebratus was not found in many putative localities in the Beskid Mts and the Bieszczady Mts, where many suitable habitats for it were searched. This indicates that this spider species occurs in Poland in a few scattered localities which are distributed almost exclusively in the north-eastern and southern parts of the country (Appendix 1). In the rest of Poland, it is presumably absent, because there is no evidence in literature (Table 1).

Possible cause of the discontinuity in S. terebratus occurrence is the competition with S. pubescens. Both species live in the same environment – on sunlit walls of the buildings and sunlit tree trunks (Zabka 1997). However, S. pubescens is much less demanding species – it is also found on the brick walls, rock walls, in quarries, etc. (Zabka 1997, Almquist 2006).
Because of the greater ecological tolerance, *S. pubescens* is much more common (Fig. 3), but it occurs rather to the height of about 600 m. a.s.l. (Prószyński & Staręga 1971). Kulczyński (1881) already pointed out that these species competed with each other and that *S. pubescens* was more common in the lowlands and replaced by *S. terebratus* in the mountains.

Majority of *S. terebratus* specimens were found on the walls of the old wooden churches (Fig. 2) and sometimes also on the tree trunks, but always in the vicinity of buildings. None of the recent findings come from the natural habitats, such as sunlit tree trunks on the edges of forests, rock walls, rocky slopes that are listed in the literature as typical for this species (e.g., Miller 1971, Prószyński & Staręga 1971, Zabka 1997, Buchar & Rużicka 2002). The lack of natural stands in Poland what was observed in our research and in the majority of bibliographic data (Appendix 1), indicates that *S. terebratus* occurs in Poland mainly in synanthropic environments.
Occurrence of *Sitticus terebratus* in Poland

Analyzing the bibliographic data, it can be seen, that *S. terebratus* was probably much common species than it is today. Kulczyński (1881, 1884) placed in his publications detailed remarks on the distribution and on the number of collected specimens of rare species. In the case of *S. terebratus* he gave only the number of stands from the southern Poland, with no comment on its frequency. It what suggests that at that time the species was easy to find. The research conducted by authors in 2009–2014 in the Beskid Mts, Tatra Mts, and Bieszczady Mts led to the discovery of 13 new locations of *S. terebratus*. However, the results indicate also that this spider is very rare. The fact that *S. terebratus* was not found in Zakopane and adjacent areas suggests that the spider might have become very rare, or it is even extinct there. The absence of *S. terebratus* in the places of its past findings is probably related to the two factors.

First, the disappearance of wooden buildings, what took place especially in the second half of the twentieth century. Thus, *S. terebratus* lost most of its preferred habitats. Second is likely associated with the expansion of *Leiobunum limbatum* L. Koch. This invasive harvestmen species is widespread in Poland along the whole foothill band now (Rozwałka & Starega 2012, R. Rozwałka unpubl. data). It was observed that *L. limbatum* displaces native opiliones species e.g., *Opilio parietinus* (De Geer), *Mitopus morio* (Fabricius), which until recently were common on the walls of buildings or in the city parks (Rozwałka & Starega 2012, R. Rozwałka unpubl. data). *L. limbatum* often forms "mono-species opiliocenoses", in which there is no place for other opiliones species. The impact of *L. limbatum* on spiders inhabiting the walls of buildings is unknown, but for instance, it was observed that the harvestmen was eating *Steatoda bipunctata* (Linnaeus) (R. Rozwałka unpubl. data). Such an observation suggests that *S. terebratus* may also be a victim of *L. limbatum*.

**ACKNOWLEDGEMENTS**

The authors thank Prof. W. Starega for complementing the information about unpublished locations of *S. pubescens*.

**REFERENCES**


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**Appendix.** Literature data on occurrence of *Sitticus terebratus* in Poland

<table>
<thead>
<tr>
<th>Author</th>
<th>Site</th>
<th>UTM GRID</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taczanowski 1866</td>
<td>Warszawa</td>
<td>EC 08</td>
<td>occurrence unconfirmed following the publication by Krzyżanowska et al. (1981) and W. Staręga (pers. comm.)</td>
</tr>
<tr>
<td>Menge 1876</td>
<td>Gdańsk-Stogi</td>
<td>CF 42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Racza Hala</td>
<td>CV 57</td>
<td></td>
</tr>
<tr>
<td>Kulczyński 1881</td>
<td>Gronik</td>
<td>DV 15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Barania Góra</td>
<td>CV 59</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Racza Hala</td>
<td>CV 57</td>
<td></td>
</tr>
<tr>
<td>Kulczyński 1884</td>
<td>Kościelisko</td>
<td>DV 15</td>
<td>this record probably refers to Gronik that was mentioned in the previous work by Kulczyński (1881)</td>
</tr>
<tr>
<td></td>
<td>Zakopane</td>
<td>DV 26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Klikuszowa</td>
<td>DV 28</td>
<td></td>
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<tr>
<td></td>
<td>Starzawa</td>
<td>FA 42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ustrzyki Dolne</td>
<td>FV 17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serpelice</td>
<td>FC 49</td>
<td>W. Staręga (unpubl. data)</td>
</tr>
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<td></td>
<td>Mierzowice</td>
<td>FD 30</td>
<td>W. Staręga (unpubl. data)</td>
</tr>
<tr>
<td>Próczynski &amp; Staręga 1971</td>
<td>Zwierzyniec</td>
<td>FB 30</td>
<td>W. Staręga (unpubl. data)</td>
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<tr>
<td></td>
<td>Wrocław</td>
<td>XS 46</td>
<td>S. Piłowski (unpubl. data)</td>
</tr>
<tr>
<td>Staręga 1976</td>
<td>Kościelisko</td>
<td>DV 57</td>
<td></td>
</tr>
<tr>
<td>Staręga 1978</td>
<td>Mierzowice</td>
<td>FD 30</td>
<td></td>
</tr>
<tr>
<td>Dziabaszewski 1990</td>
<td>generally „Roztocze”</td>
<td>FB 30?</td>
<td>according to Staręga (2000), these are inaccurate data, that refer to Zwierzyniec</td>
</tr>
<tr>
<td>Staręga 1995</td>
<td>Supraśl</td>
<td>FD 59</td>
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<td>Staręga 1996</td>
<td>Wygorzewo</td>
<td>EF 40</td>
<td></td>
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<tr>
<td>Staręga &amp; Kupryjanowicz 1996</td>
<td>Magurki</td>
<td>DV 49</td>
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<td>Staręga 2003a</td>
<td>Supraśl</td>
<td>FD 59</td>
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<td>Wierchbie</td>
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<td>Janów</td>
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<td>Kiełpiniec</td>
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<td>Gugny</td>
<td>FE 01</td>
<td></td>
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<tr>
<td>Kołowski &amp; Żabka 2006</td>
<td>Tykocin</td>
<td>FB 19</td>
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</table>

1. Without such publications as check-lists, catalogs, etc. that do not contain the original data