



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

Robert ROZWALKA* and Jadwiga STACHOWICZ**

*Department of Zoology, University of Maria Curie-Skłodowska, Akademicka 19, 20-033 Lublin, Poland;
e-mail: arachnologia@wp.pl

**Department of Chemistry, University of Life Sciences in Lublin, Akademicka 15, 20-950, Lublin, Poland

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 spide, 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).

It is rather a rare spider in the rest of Europe and known from not many locations (Harm 1973, Fuhn & Gherasim 1995, Gajdoš & Svatoň 1993, Gajdoš et al. 1999, Buchar & Růžička 2002, Nentwig et al. 2014, Metzner 2014, Staudt 2014). In Poland, *Sitticus terebratus* is considered as a rare species, collected mainly in the southern and north-eastern part of the country (Prószyński & Staręga 1971, Staręga 1976, 1996, 2003a, 2003b, Kupryjanowcz 2005) (Table 1). According the literature data, the typical habitat of *S. terebratus* are sunny rock walls, tree trunks, walls of buildings, fences, etc. (Prószyński & Staręga 1971, Żabka 1997, Almquist 2006, Nentwig et al. 2014).

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.

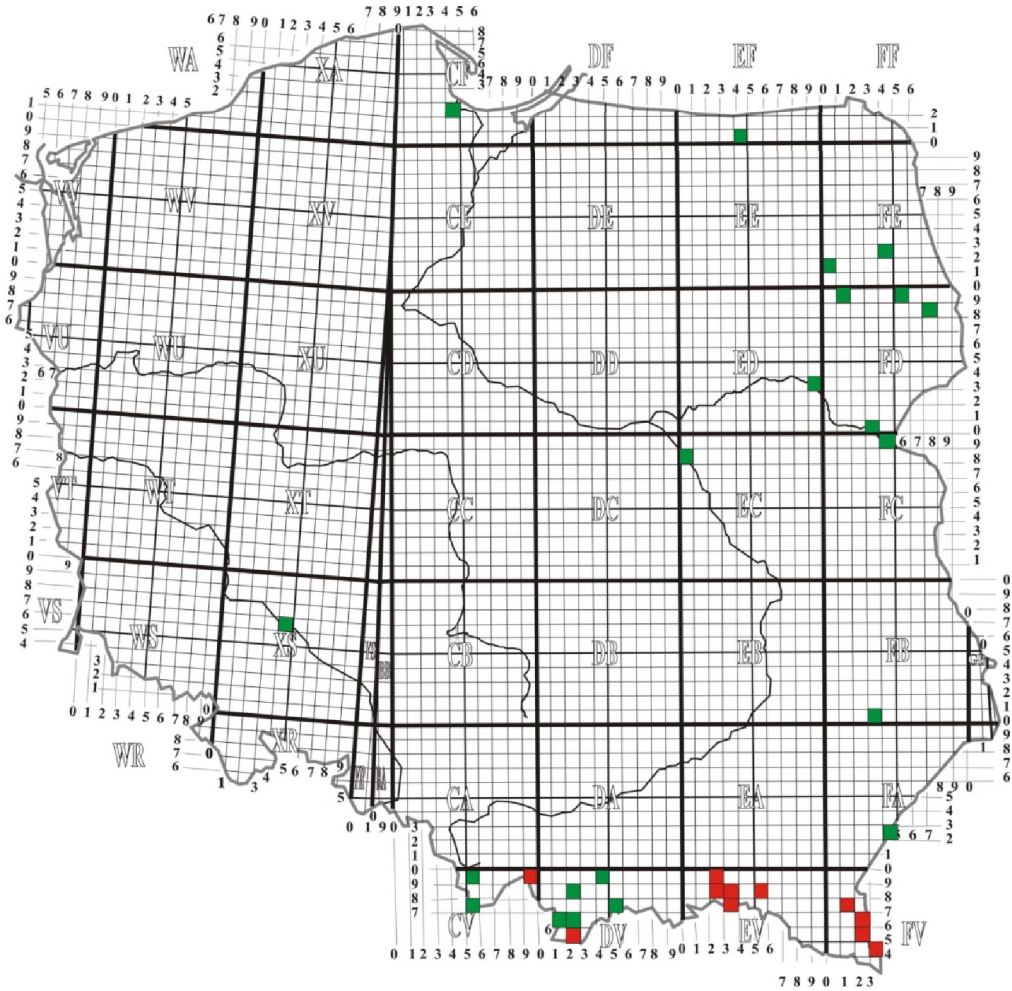


Figure. 1. Distribution of *Sitticus terebratus* in Poland: green square – quoted literature data (details in Appendix); red square – new data.

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. Rozwałka.

Kotań 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. Rozwałka & J. Stachowicz.

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

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

Magura National Park: Grab near Ożenna [EV 37], wooden walls of an old forester house (ca. 475 m a.s.l.), 17 Aug 2013, 1♂; leg. R. Rozwałka.

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. Rozwalka.

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. Rozwalka.

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. Rozwalka.



Fig. 2. Habitat of *Sitticus terebratus* in Kotań near Krempana, 30 May 2013. Photo by R. Rozwalka.

The materials are deposited by Robert Rozwalka 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 Kościelisko, 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 (Żabka 1997). However, *S. pubescens* is much less demanding species – it is also found on the brick walls, rock walls, in quarries, etc. (Żabka 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.

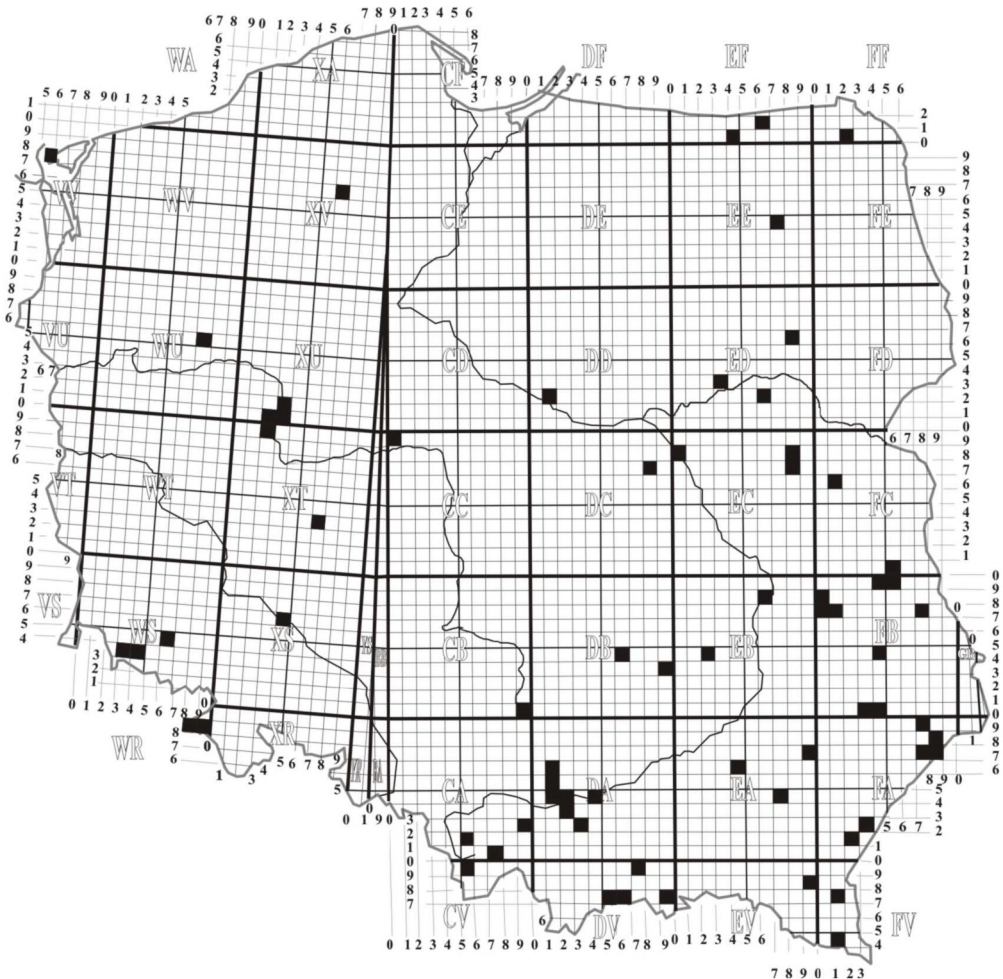


Figure 2. Distribution of *Sitticus pubescens* in Poland according unpublished data of W. Staręga (pers. comm.: DD 12 – Płock, ED 86 – Długobórz, EC 87 – Siedlce, FF 20 – Jeleniewo, WS 64 – Miłek Mts. Reserve), R. Rozwałka & J. Stachowicz (FA 88 – Jarczów) and R. Rozwałka (EA 46 – Hucina, EA 97 – Kolacznia, FA 32 – Bolestraszyce FB 40 Zwierzyniec, FB 59 Urszulín, FC 50 Pieszowola).

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, Żabka 1997, Buchar & Růžička 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.

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 formes “mono-species opiliones”, 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

- ALMQUIST S. 2006. Swedish Araneae. Part 2. The families Dictynidae to Salticidae. *Entomologica Scandinavica*, Supplement 63, 320 pp.
- BUCHAR J. & RŮŽIČKA V. 2002. Catalogue of spiders of the Czech Republic. Peres, Praha, 351 pp.
- DANILOV S.N. & LOGUNOV D.V. 1993. Faunistic review of the jumping spiders of Transbaikalia (Aranei Salticidae). *Arthropoda Selecta* 2: 25–39.
- DZIABASZEWSKI A. 1990. Fauna Roztocza: zasoby, przemiany, ochrona. Materiały z sympozjum, Zwierzyniec, 25–27 września 1990. Instytut Zoologii PAN, Warszawa, 53 pp.
- FUHN I.E. & GHERASIM V.F. 1995. Fauna României: Arachnida. Vol. 5. Familia Salticidae. Academiei Române, Bucuresti, 301 pp.
- GAJDOŠ P., SVATOŇ J. & SLOBODA K. 1999. Catalogue of Slovakian spiders. Bratislava, 337 pp.
- GAJDOŠ P. & SVATOŇ J. 1993. The red list of spiders of Slovakia. *Bollettino dell'Accademia Gioenia di Scienze Naturali* 26: 115–133.
- HARM M. 1973. Zur Spinnenfauna Deutschlands, XIV. Revision der Gattung *Sitticus* Simon (Arachnida: Araneae: Salticidae). *Senckenbergiana biologica* 54: 369–403.
- HELSDINGEN P.J. VAN. 2014. Fauna Europaea: Arachnida: Araneae. Fauna Europaea version 2.6.2. Available at <http://www.faunaeur.org>.
- KOZŁOWSKI M. & ŻABKA M. 2006. Nuptial feeding in *Sitticus terebratus* (Clerck, 1757) (Araneae: Salticidae)? *Newsletter of the British Arachnological Society* 105: 6–7.
- KRZYŻANOWSKA E., DZIABASZEWSKI A., JACKOWSKA B. & STAREGA W. 1981. Spiders (Arachnoidea, Aranei) of Warsaw and Mazovia. *Memorabilia Zoologica* 34: 87–110.
- KULCZYŃSKI W. 1881. Wykaz pajaków z Tatr, Babiej Góry i Karpat szlązkich z uwzględnieniem pionowego rozsiadlenia pajaków żyjących w Galicji zachodniej. *Sprawozdania Komisji Fizyograficznej* 15: 1–75.
- KULCZYŃSKI W. 1884. Przegląd krytyczny pajaków z rodziny *Attoidea* żyjących w Galicji. *Rozprawy i Sprawozdania Wydziału Matematyczno-Przyrodniczego Akademii Umiejętności* 12: 136–232.

- KUPRYJANOWICZ J. 2005. Pająki (Araneae) Biebrzańskiego Parku Narodowego. In: DYRCZ A. & WERPACHOWSKI C. (eds), Przyroda Biebrzańskiego Parku Narodowego, pp. 275–299. Biebrzański Park Narodowy, Osowiec-Twierdza, 440 pp.
- LOGUNOV D.V. & GUSEINOV E.F. 2001. Faunistic review of the jumping spiders of Azerbaijan (Aranei: Salticidae), with additional faunistic records from neighboring Caucasian countries. *Arthropoda Selecta* 10: 243–260.
- LOGUNOV D.V. & MARUSIK Y.M. 2000. Catalogue of the jumping spiders of northern Asia (Arachnida, Araneae, Salticidae). KMK Scientific Press Ltd, Moscow, 299 pp.
- MENGE A. 1876. Preussische Spinnen. IX. Fortsetzung. *Schriften der Naturforschende Gesellschaft in Danzig* (N. F.), 4: 455–494.
- METZNER H. 2014. Worldwide database of jumping spiders (Arachnida, Araneae, Salticidae). Available at <http://www.jumping-spiders.com/> (Dec 2014).
- MILLER F. 1971. Řád Pavouci – Araneida. In: DANIEL M. & ČERNÝ V. (eds), Klíč zviřeny ČSSR IV. Praha, 51–306.
- NENTWIG W., BLICK T., GLOOR D., HÄNGGI A. & KROPF C. 2014. Spiders of Europe. Available at www.araneae.unibe.ch (Dec 2014).
- PRÓSZYŃSKI J. & STAREGA W. 1971. Pająki – Aranei. *Katalog Fauny Polski*, Warszawa, 33: 382 pp.
- RAKOV S.Y. 1998. On the fauna of jumping spiders of the southern part of West Siberia (Aranei: Salticidae). *Arthropoda Selecta* 7: 305–311.
- ROZWALKA R. & STAREGA W. 2012. Distribution of *Leiobunum limbatum* L. KOCH, 1861 (Opiliones: Sclerosomatidae) in Poland. *Fragmenta Faunistica* 55: 177–183.
- STAREGA W. 1976. Pająki (Aranei) Pienin. In: RIEDEL A. & STAREGA W. (eds), *Fauna Pienin. I*. Warszawa, 370 pp. *Fragmenta Faunistica* 21: 233–330.
- STAREGA W. 1978. Materiały do znajomości rozmieszczenia pajaków (Aranei) w Polsce, III–VII. *Fragmenta Faunistica* 23: 259–302.
- STAREGA W. 1995. Pająki Puszczy Knyszyńskiej. In: CZERWINSKI A. (ed.), *Puszcza Knyszyńska. Monografia przyrodnicza*, pp. 279–298. Zespół Parków Krajobrazowych, Supraśl, 510 pp.
- STAREGA W. 1996. Spinnen (Araneae) aus der Borkenheide und anderen Lokalitäten der Masurischen Seenplatte. *Fragmenta Faunistica* 39: 287–311.
- STAREGA W. 2000. Spinnen aus Roztocze und anliegenden Gebieten. *Fragmenta Faunistica* 43: 59–89.
- STAREGA W. 2003a. Pająki (Araneae) Puszczy Knyszyńskiej. *Nowy Pamiętnik fizjograficzny* 1: 95–206.
- STAREGA W. 2003b. Pająki z Nadbużańskiego Parku Krajobrazowego. *Parki Narodowe i Rezerwaty Przyrody* 22: 531–541.
- STAREGA W. & KUPRYJANOWICZ J. 1996. Beitrag zur Kenntnis der Spinnen (Araneae) des Gorce-Gebirges. *Fragmenta Faunistica* 39: 313–328.
- STAUDT A. 2014. Nachweiskarten der Spinnentiere Deutschlands. (Arachnida: Araneae, Opiliones, Pseudoscorpiones). Available at <http://www.spiderling.de/arages/> (Dec 2014).
- TACZANOWSKI W. 1866. Spis pajaków zebranych w okolicach Warszawy w ciągu roku 1865. *Wykaz Szkoły Głównej Warszawskiej*, Warszawa, 5: 1–14.
- ŻABKA M. 1997. Salticidae – Pająki skaczące (Arachnida: Araneae). *Fauna Polski*, 19, Warszawa, 189 pp.

STRESZCZENIE

[Uwagi o występowaniu *Sitticus terebratus* (CLERCK, 1758) w Polsce]

Sitticus terebratus jest w Polsce pajakiem rzadkim, znanym z nielicznych stanowisk zlokalizowanych głównie w Beskidzie Zachodnim i Kotlinie Orawsko-Nowotarskiej, oraz w północno-wschodniej Polsce. Przeprowadzone badania przyniosły informacje o 13 nowych stanowiskach, rozproszonych od Babiej Góry po Bieszczady, ale zebrane obserwacje wskazują, że jest to pająk bardzo rzadki i nieliczny. Wszystkie stanowiska *S. terebratus* miały charakter synantropijny, nie udało się odszukać tego gatunku w biotopach naturalnych. Autorzy przypuszczają, że *S. terebratus* na terenie Polski – a możliwe, że i w Europie – jest gatunkiem ginącym. Sugerują też, że przyczyną zanikania *S. terebratus* jest ubywanie preferowanych środowisk, jakimi są silnie nasłonecznione ściany drewnianych zabudowań, a ponadto konkurencja i drapieżnictwo ze strony inwazyjnego kosarza – *Leiobunum limbatum*.

Accepted: 11 December 2014

Appendix. Literature data on occurrence of *Sitticus terebratus* in Poland¹

Author	Site	UTM GRID	Notes
Taczanowski 1866	Warszawa	EC 08	occurrence unconfirmed following the publication by Krzyżanowska et al. (1981) and W. Staręga (pers. comm.)
Menge 1876	Gdańsk-Stogi	CF 42	
Kulczyński 1881	Racza Hala	CV 57	
	Barania Góra	CV 59	
	Gronik	DV 15	
	Zakopane	DV 26	
	Barania Góra	CV 59	
Kulczyński 1884	Racza Hala	CV 57	
	Kościelisko	DV 15	this record probably refers to Gronik that was mentioned in the previous work by Kulczyński (1881)
	Zakopane	DV 26	
	Klikuszowa	DV 28	
	Starzawa	FA 42	
Prószyński & Staręga 1971	Ustrzyki Dolne	FV 17	
	Serpelice	FC 49	W. Staręga (unpubl. data)
	Mierzvice	FD 30	W. Staręga (unpubl. data)
	Zwierzyniec	FB 30	W. Staręga (unpubl. data)
	Wrocław	XS 46	S. Pilawski (unpubl. data)
Staręga 1976	Krościenko	DV 57	
Staręga 1978	Mierzvice	FD 30	
Dziabaszewski 1990	generally „Roztocze”	FB 30?	according to Staręga (2000), these are inaccurate data, that refer to Zwierzyniec
Staręga 1995	Supraśl	FD 59	
Staręga 1996	Węgorzewo	EF 40	
Staręga & Kupryjanowicz 1996	Magurki	DV 49	
	Supraśl	FD 59	
Staręga 2003a	Wierobie	FD 88	
	Janów	FE 42	
Staręga 2003b	Kiełpiniec	ED 93	
Kupryjanowicz 2005	Gugny	FE 01	
Kozłowski & Żabka 2006	Tykocin	FB 19	

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