ISSN 1211-8788 *Acta Musei Moraviae, Scientiae biologicae* (Brno)
93: 1–6, 2008

The occurrence of *Pterolepis germanica* (Herrich-Schaeffer, 1840) in Slovakia (Orthoptera: Tettigoniidae)

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HOLUŠA J. & KOČÁREK P.: The occurrence of *Pterolepis germanica* (Herrich-Schaeffer, 1840) in Slovakia (Orthoptera: Tettigoniidae). *Acta Musei Moraviae, Scientiae biologicae* (Brno) **93:** 1–6. – *Pterolepis germanica* (Herrich-Schaeffer, 1840) occurs in Slovakia at the northern edge of its range. It is known today from three territories in southern Slovakia at the borders of areas of steppe and deciduous forests. It occurs on high herb vegetation in localities with a very warm and dry microclimate. An older record in north-eastern Slovakia is probably unconformable to modern distibution because of drastic changes in countryside management and the extinction of dry steppe habitats.

Keywords. *Pterolepis germanica*, faunistics, distribution, Slovakia

Introduction

The genus *Pterolepis* Rambur, 1839 is a Palaearctic genus with 46 described species (WILLEMSE & WILLEMSE 2005). Thirty-one species occur in Europe but only *Pterolepis germanica* (Herrich-Schaeffer, 1840) reaches the territory of Slovakia. *P. germanica* is widespread in southern and eastern Europe and Asia Minor, attaining the northern limit of its distribution in Slovakia (KOČÁREK *et al*. 2005). So far only a few authors (CHYZER 1897, PUNGUR 1900, 1918, MAŘAN 1954, GAVLAS 2004) have reported this species from Slovakia. Recently, we have found or confirmed this species in a number of localities.

Pterolepis germanica (Herrich-Schaeffer, 1840)

List of records from Slovakia. Published data. Bardejov (= Bartfa) (6793) (CHYZER 1897, PUNGUR 1900, 1918); Plášťovce (7879), Trakal lgt. (MAŘAN 1954); Súdovce (7779) (GAVLAS 2004); Cerovo (7780) (KRIŠTÍN 2008), Silica (7489) (KRIŠTÍN *et al*. 2008).
Unpublished data. Medovarce (Fig. 2) (7779), 48°14´6.27˝ N, 18°59´46.29˝ E, 26.9.2004, 2♂/3♀, leg., det. et coll. J. Holuša, 1♂/2♀ leg., det. et coll. P. Kočárek; Plášťovce (7879), 48°9´47.96˝ N, 18°59´58.83˝ E; 26.9.2004, 1♂/3♀, leg., det. et coll. J. Holuša, 1/1 leg., det. et coll. P. Kočárek; Plášťovce (7879), 48°9´14.44˝ N, 18°56´53.08˝ E; 2.8.2008, 0♂/1♀, leg., det. et coll. J. Holuša; Belina (7785), 48°14´38.05˝ N, 19°51´30.24˝ E, 3.8.2008, 1♂/1♀, leg., det. et coll. J. Holuša.



Fig. 1. Female of *Pterolepis germanica* in the environs of Medovarce.

Remarks. In general coloration, *P. germanica* is dark brown to reddish brown, dorsal surface paler, posterior part of paranotum pale-rimmed. The species has only brachypterous forms, so it is unable to fly (Kočárek *et al*. 2005). All the specimens collected conform with this general colour description (Fig. 1).

The localities of Pláštovce, Medovarce, Súdovce and Cerovo probably represent only one fragmented distribution area at the base of the Štiavnické vrchy Hills and the Krupinská planina Plateau, being around 5 km apart (Fig. 3). This species has probably occurred for a long time in this area (Mařan 1954), at the edge of the steppe region. It now exists in considerable abundance (dozens of specimens observed in the course of one hour's searching) in the Plášťovce and Medovarce localities, inhabiting taller (ca 30–60 cm) grass vegetation on the steppe and along tracks across the fields. Surprisingly, it was not found in other suitable places in the area, such as the environs of Dudince and Bátovce (Tab. 1). The second area (Belina locality) is also placed at the edge of the steppe region. Around Belina, this bush cricket also occurs in taller vegetation, but *P. germanica* proved very rare there. The third area of occurrence, at the bottom of Slovenský kras Karst (Krištín *et al*. 2008), lies at the sharp border of the steppe region and forms a single distribution area together with the Agteleki National Park (Racz 2001).

The occurrence of *P. germanica* in Slovakia probably appears polydisjunctive because of a lack of investigation in many regions of southern and eastern Slovakia, despite several efforts (Gavlas *et al*. 2007, Krištín 1997, Krištín & Kaňuch 2007, Nagy *et al*. 1998). In contrast, its occurrence in other places, such as the Cerová vrchovina Hills (around Belina) is probable, although it appeared absent from many suitable localities in 2006–2008 (Holuša, unpubl.). The probability that it exists in these hills is supported by its common occurrence in Hungary in localities close to the Cerová vrchovina Hills (Matrafüred, 13.9.2004, 3♂/3♀, leg., det. et coll. J. Holuša). In Hungary, *P. germanica* also has a scattered distribution. It has been found in only 0.076% of the areas studied (Rácz 1998), although it is a relatively common species in some regions, e.g. the Bakony region (Kenyeres 2006). *P. germanica* is characterized as a thamnobiont species, one of the organisms that live in bushes and shrubs (Rácz 1998). The latter author states more precisely that it is typical inhabitant of the karst-shrub forest-mosaic complex of mid-mountain grasslands (Rácz 1998, see also Racz 2001). This corresponds with the Slovak occurrence at the base of hills. *Stenobothrus lineatus* (Panzer, 1796), *S. crassipes* (Charpentier, 1825), *P. germanica* and *Pachytrachis gracilis* (Brunner von Wattenwyl, 1861) are typical species of the karst-shrub forest-mosaic complex (Rácz 1998, see also Racz 2001). In Slovakia, *P. germanica* inhabits slopes surrounded by

Název lokality/Locality name	Bátovce	Belina	Dudince - Očný Prameň	Dudince - Štěpnice	Medovarce	Plášťovce
Mapové pole/Code of map field	**7778**	**7785**	**7879**	**7879**	**7779**	**7879**
Calliptamus italicus (Linnaeus, 1758)		x	x		x	x
Chorthippus biguttulus (Linnaeus, 1758)		x	x		x	x
Chorthippus dorsatus (Zetterstedt, 1821)	x		x			x
Chorthippus mollis (Charpentier, 1825)	x	x	x	x	x	x
Chorthippus parallelus (Zetterstedt, 1821)	x	x				x
Ephippiger ephippiger (Serville, 1831)		x	x		x	x
Gomphocerippus rufus (Linnaeus, 1758)						x
Gryllus campestris Linnaeus, 1758		x	x		x	x
Metrioptera bicolor (Philippi, 1830)	x	x				x
Oecanthus pellucens (Scopoli, 1763)	x			x		x
Oedipoda caerulescens (Linnaeus, 1758)	x	x	x		x	
Omocestus rufipes (Zetterstedt, 1821)	x					x
Omocestus haemorrhoidalis (Charpentier, 1825)		x	x			
Pholidoptera griseoaptera (De Geer, 1773)	x	x				
Platycleis albopunctata grisea (Goeze, 1778)	x	x	x		x	x
Stenobothrus crassipes (Charpentier, 1825)			x	x	x	
Stenobothrus lineatus (Panzer, 1796)	x	x	x		x	x
Tetrix tenuicornis Sahlberg, 1893						x
Tettigonia viridissima Linnaeus, 1758		x	x	x	x	x

Tab. 1. Survey of grasshoppers and crickets in the localities studied.

the shrubs that also appear very often in such localities, but *P. germanica* has only been collected in grass vegetation.

We suggest that the historical occurrence at Bardejov (Chyzer 1897) was reliable because the steppe region extends considerably to the north in eastern Slovakia. *P. germanica* could have spread up the River Ťoplá to Bardejov. Its occurrence there in more modern times has been rendered impossible by drastic changes in countryside management and the extinction of dry steppe habitats near Bardejov

The remainder of the bush crickets and grasshoppers found in the localities studied are xerothermous species. Species of the steppe region of the Euro-Siberian



Fig. 2. Medovarce area with occurrence of *Pterolepis germanica.*

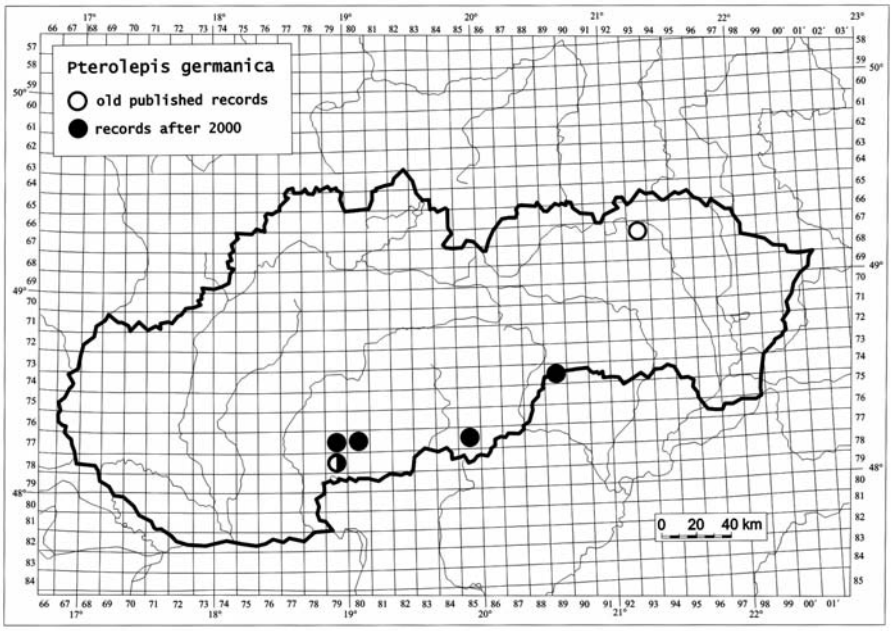

Fig. 3. Distribution of *Pterolepis germanica* in Slovakia.

zoogeographical subregion prevail. Mesophilous or hygrophilous species have been observed only in damp places connected to dry slopes (Tab. 1).

In Slovakia, *P. germanica* lives in taller, dry vegetation, very often of a ruderal character. Adults occur from July (Gavlas 2004) to the end of September (see above). Its occurrence depends on the availability of a very warm and dry microclimate. The recent distribution is probably of a relict character, since the inability to fly eliminates the possibility of swift expansion. The landscape fragmentation probably plays a major role in the polydisjunctive distribution as well.

Acknowledgement

The research was supported by project of the Ministry of Agriculture of the Czech Republic QH 71094 "The use of dendrochronology for reconstruction of fluctuation cycles of nun moth and gypsy moth in Central Europe".

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