

**First record of *Isophya costata* in Serbia  
(Orthoptera: Phaneropteridae)**

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**Abstract** – The bush cricket *Isophya costata* BRUNNER VON WATTENWYL, 1878, which was known previously only from Eastern Austria, Hungary and Western Romania, is recorded from Serbia for the first time. This Orthoptera species of relatively restricted distribution was found in Northern Vojvodina, in two meadow remnants of the Subotica-Horgos sandy region.

**Key words** – *Isophya costata*, Serbia, new record, distribution.

INTRODUCTION

*Isophya* BRUNNER VON WATTENWYL, 1878 with more than 90 species is one of the most speciose phaneropterid genera occurring in Eurasia (BRAUN 2010, ORCI *et al.* 2010). It is a rather uniform group, the species are morphologically not easy to separate. ADAMOVIĆ (1975) listed five species occurring in Serbia: *I. speciosa* (FRIVALDSZKY, 1867), *I. pyrenaica* (SERVILLE, 1839), *I. modestior* BRUNNER VON WATTENWYL, 1882, *I. modesta* (FRIVALDSZKY, 1867) and *I. obtusa* BRUNNER VON WATTENWYL, 1882. Later PAVICEVIĆ & KARAMAN (2001) omitted from the list *I. pyrenaica* and *I. modesta*. Recently one newly described species (*I. clara* INGRISCH *et* PAVICEVIĆ, 2010) was added to the list of *Isophya* fauna of Serbia (INGRISCH & PAVICEVIĆ 2010).

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## RESULTS AND DISCUSSION

On 26 May 2004 the junior author observed the first *Isophya* specimen in Subotička peščara (Szabadkai homokpuszta) in the Subotica-Horgos sandy region, northern Serbia. Since then, this population could be found every year at the same locality (Subotica Sands Landscape of Outstanding Values, Subotica, North Bačka: Kőrisedő, 46°11'N, 19°42'E, 110 m a.s.l.), in a humid peat meadow, rich in dicotyledonous plants, dominated by *Sanguisorba officinalis*. The specific affiliation of this population proved to be *Isophya costata* BRUNNER VON WATTENWYL, 1878. Another occurrence of this species was found by the same author in Serbia in May 2006 in a similar, small humid peat meadow fragment of the Seleveljske Pustare (Szelevényi puszta) Special Nature Reserve, Horgos, North Banat: Kőlapos, 46° 8'N, 19°55'E, 85 m a.s.l.

*Isophya costata* is considered to be a species endemic to the Carpathian Basin. It is listed in the Appendix II of the Habitats Directive in the European Union. The north-western edge of its distribution reaches the western border of the Vienna Basin (ZUNA-KRATKY *et al.* 2009), while its easternmost observations are known in the southern part of the Transylvanian Basin near Sebes, Romania (KIS & VASILIU 1970). The southernmost populations are located in Southern Transdanubia in the Villány Hills (VADKERTI *et al.* 2003). In Hungary the species is missing from the south-western and north-eastern parts (SZÖVÉNYI *et al.* 2001). Formerly it was known as a species living mainly on hilly and mountainous grasslands of different types from the xeric steppic habitats to mesic hayfields. In the last decades it was found in even further lowland grasslands, such as loess steppe remnants, closed sandy steppe meadows, and marshy and peat meadows in the Great Hungarian Plain. Presently the most numerous populations are known in the Mecsek Mountains, in the Balaton Uplands and in the Kiskunság region.

The extension of the *Isophya costata* populations discovered in Serbia is relatively small, few hectares altogether. Presently these localities represent the southern limit of the species' range between the Danube and Tisza rivers. Here the next known populations are located about 70 kilometers northward in the Central Kiskunság, Hungary. However, to the eastern side of the Tisza the nearest populations can be found between Szeged and Klárafalva, about 25 kilometres eastward from the *Isophya costata* population living near Horgos. By the discovery of this bush cricket in Serbia, the number of *Isophya* species known here is already four.

The recently found Serbian populations of *Isophya costata* show that this species can survive even in very small, isolated patches of suitable habitats. This phenomenon is already known from Hungary, where this species in some cases can be found in small steppic grassland fragments even in intensive agricultural landscapes (BAUER *et al.* 2001, NAGY & SZÖVÉNYI 1999). Thus it cannot be ruled out that further, rather small populations exist in Serbia in the neighbourhood of the recently found ones, or even southward in the Serbian part of the Great Hungarian Plain in Vojvodina.

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