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Isophya (Orthoptera) fauna of South-Baranya-Hills (South-Hungary, Transdanubian region)

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E. VADKERTI: *Isophya (Orthoptera) fauna of South-Baranya-Hills (South-Hungary, Transdanubian region)*
Abstract: In the South-Baranya-Hills two *Isophya* species were found: *I. costata* and *I. modestior*. *I. costata* under special legal protection occurred in 16 locations from 6 different grassland habitats: meadows with false oat-grassland, marshy meadows in hilly regions, marshy meadows in plain regions, high weed associations along brooks and marshes, weedy, dry grasslands of hilly areas, weedy, moist grasslands of hilly areas. The protected *I. modestior* occurred in 2 locations from 2 different bushy habitats: in forested areas with spontaneous bushy growth and in moist forest edge.

Keywords: *Isophya* fauna, South-Baranya-Hills, habitat, SW-Hungary.

Introduction

There are 4 *Isophya* species occurring in Mecsek Hills and Villányi Hills (VADKERTI *et al.* 2003): *I. costata, which* is endemic to the Carpathian basin and is under special legal protection, whereas *I. brevipennis, I. modesta* and *I. modestior* are protected. They were found in forest clearings, forest ecotone habitats, bushy and grassland habitats (VADKERTI *et al.* 2003). The aim of our research was to study the *Isophya* fauna of South-Baranya-Hills, witch is bordered with Mecsek Hills and Villányi Hills. There is no published *Isophya* data from the studied area.

Material and methods

Only 11.5 % of South-Baranya-Hills are covered with forest (predominantly locust tree forest). The percentage of plough-lands is 77,7 % but reaches 100 % in two areas: one is located South, Southwest from Villányi Hills, the other is between Pécsi watercourse and Bükkösdi watercourse (MAROSI and SOMOGYI 1990). The percentage of grassland habitats is maximum 1%. Since the proportion of forest habitats and semi-natural habitats are low in South-Baranya-Hills it was expected that at the eastern part of the studied area, where there is less cultivated area, more localities of *Isophya* species would be found.

Samplings were done by sweeping-net, by searching after individuals, or by acoustic detection between 9 am and 6 pm in 2001 and 2002. During the sampling period it was mostly sunny, warm weather, temperature often rising above 30°C in the afternoon. Therefore in the morning the sweeping-net method could be applied effectively unlike during the afternoon the searching after individuals was useful together with acoustic detection. The sampling was not productive during midday hours.

Habitats of the various species were categorised according to the Hungarian General Habitat Classification System (HGHCS) (FEKETE *et al.* 1997); E1: meadows of hills, with false oat-grassland, D3: marshy meadows in hills, D4: marshy meadows in plain, D5: high herbaceous habitat along brooks and marshes, O7: weedy, arid grasslands in hills, O8: weedy, moist grasslands in hills, P2: woodlands spontaneously under growing with shrub. It has been necessary to establish one new category; M9: moist forest edge, which is used as a true coenological category in the Red Data Book by BORHIDI and SÁNTA (1999).

Results

Faunistical data of *Isophya*

Species name is followed by collection site (Fig. 1.), abbreviation of HGHCS category, date of collection (yyyy-mm-dd). S: detection by sound.

Isophya costata Brunner v. Wattenwyl, 1878 — Máriakéménd, D3, 2001. 05. 30.; Pécs-Hird, O7, 2001. 06. 09. S; Szellő, E1, 2002. 05. 14.; Székelyszabar 1, O8, 2002. 05. 15. S; Székelyszabar 2, D3, 2002. 05. 15. S; Székelyszabar 3, E1, 2002. 05. 15.; Keszű, D4, D5, 2002. 05. 16.; Nagyárpád, D3, 2002. 05. 16.; Túrony, O8, 2002. 05. 20., S, Erzsébet 1, O7, 2002. 05. 24.; Erzsébet 2, D3,D4, 2002. 05. 24.; Kékesd, O7, 2002. 05. 24.; Apátvarasd, O7, 2002. 05. 28.; Vokány, O7, 2002. 06. 04., S; Szalánta, 2002. 06. 09., S; Pusztakisfalu, O7,O8, 2002. 06. 13. S.

Isophya modestior Brunner v. Wattenwyl, 1882 — Nagyárpád, P2, 2002. 05. 16., S; Pusztakisfalu, M9, 2002. 06. 13. S.

Discussion

There are four *Isophya* species in Mecsek Hills and Villányi Hills (VADKERTI *et al.* 2003) two of them, *I. costata* and *I. modestior* occurring in South-Baranya-Hills.

I. costata was found also in grassland habitats but in less habitat categories then in Mecsek Hills and Villányi Hills where the species occurred in closed xeric and meso-xeric grasslands, in semi-natural vegetation of embankments, in abandoned wine yards and orchards and in forested areas with spontaneous bushy growth. In addition *I. costata* was found in the South-Baranya-Hills in marshy meadows in plain habitat, and high herbaceous habitat along brooks and marshes.

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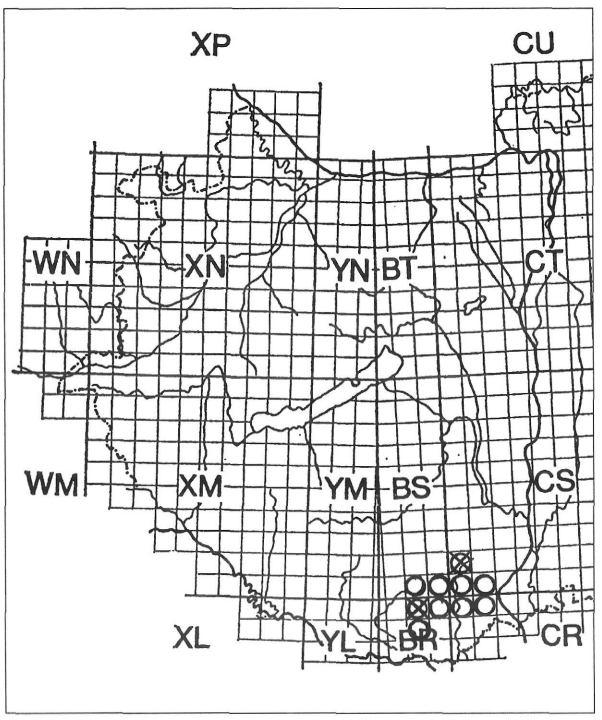

*Fig. 1. Location of Isophya costata (**O**) and I. modestior (**X**) on UTM grid map of South-Baranya-Hills (South-Hungary, Transdanubian region).*

I. modestior was found in two habitats: in moist forest edges and in forested areas with spontaneous bushy growth. In Mecsek Hills and Villányi Hills there are no incidences of the species in these habitats (VADKERTI *et al.* 2003), but there were in the next seven habitats: meadows with false oat-grassland in mountains and hilly regions, grassy steppe slopes and wooded steppe meadows, stabilized meso-xeric clearing meadows, grassland and dry high weed associations, warm and xeric forest edge, weedy, moist grasslands of mountains and hilly areas, semi-natural vegetation of embankments, abandoned wine yards and orchards.

It seems that the Isophya fauna of Mecsek Hills and Villány Hills are different in many aspects from South-Baranya-Hills, which is located between them. On the one hand, only two species were found from the expected four. On the other hand, there are variances in the habitats of the species. Probably the differences originate primarily from the divergence of the relief, climate and the vegetation.

VADKERTI *et al.* (2003) found *I. modestior* and *I. modesta* in 72.3% of habitats Mecsek Hills and Villány Hills witch are characteristic in this area but are absent from the studied area. *I. brevipennis* was found in Mecsek Hills and Villány Hills in moist, mesic grasslands and forest edge ecotones. This category of habitat occurred in the studied area but in grassland the sweeping-net method was not effective and it is not useable in bushy habitats. Due to the nocturnal activity of *Isophya* species (SZÖVÉNYI *et al.* 2001), acoustic detection could not be successful during daytime, so the conditions of sampling could have influenced the results.

As the result of the research it can be claimed that the Mecsek Hills, Villány Hills and South-Baranya-Hills is the region with the greatest number of localities of *Isophya* species in Hungary.

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A Dél-Baranyai-dombság Isophya faunája (Orthoptera)

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A Dél-Baranyai-Dombság területén 2001-ben és 2002-ben potenciális tarsza (*Orthoptera*: *Isophya*) élőhelyeket kerestem fel faunisztikai kutatás céljából. A fokozottan védett magyar tarszát (*Isophya costata*) 16 lokalitásból, 6 különböző típusú élőhelyről sikerült kimutatni: franciaperjés domb- és hegyvidéki rét, dombvidéki mocsárrét, alföldi mocsárrét, patakparti- és lápi magaskórós, domb- és hegyvidéki gyomos száraz gyep, domb- és hegyvidéki gyomos üde gyep. A védett illír tarszát (*Isophya modestior*) 2 lokalitás, 2 különböző bokros élőhelyén találtam: spontán cserjésedő erdős terület, erdőszegély. A kutatás eredményeképpen kijelenthetjük, hogy Magyarország legtöbb ismert *Isophya* lelőhelye a Mecsek — Dél-Baranyai-Dombság — Villányi-hegység térségben található.