

PRELIMINARY DESCRIPTION OF NEW *ISOPHYA* (ORTHOPTERA: TETTIGONIOIDEA: PHANEROPTERIDAE) FROM SERBIA WITH REMARKS ON SOME KNOWN SPECIES

Dragan Pavićević

Institute for Nature Conservation of Serbia, Dr Ivana Ribara 91, 11070 Belgrade, dragan.pavicevic@zzps.rs

Abstract: Out of over 45 species of the genus *Isophya* in Europe, six of them have been recorded in Serbia thus far (Adamović, 1975; Pavićević et al., 2014b). Of these six species, two have been described from Serbia - *Isophya modestior* Brunner von Wattenwyl, 1882 (Niš – Bela Palanka) and *Isophya obtusa* Brunner von Wattenwyl, 1882 (Stara Planina Mt. – Tri Čuke). The species *Isophya miksici* Peshev, 1985 recorded at the Beljanica Mt. in eastern Serbia is new for the fauna of Serbia. This paper presents the preliminary descriptions of three new taxa, *Isophya radmilae* sp. n. from Radan Mt., *Isophya pancici* sp. n. from Tara and Zlatibor Mts. and *Isophya clara orientalis* ssp. n. from Belgrade (Miljakovac and Stepin Lug). The morphology of the new taxa has been analyzed with an overview of the relevant sketches and scans of stridulatory files of males.

Key words: Phaneropteridae, *Isophya*, new taxa, new faunistic data, Serbia.

INTRODUCTION

With 45 species present in Europe, the genus *Isophya* Brunner von Wattenwyl, 1878 is the second most numerous genus of the family Phaneropteridae (Heller et al, 1998). Due to the great morphological similarity among species, it can be said that the genus *Isophya* is, from the taxonomic point of view, very difficult and problematic. This genus has thus far been represented by 6 species in Serbia (Adamović, 1975; Pavićević et al., 2014b). First of them, *Isophya speciosa* (Frivaldszky, 1867) is a subendemic species of the Balkan Peninsula and it is most widespread in Serbia. The second one, *Isophya modestior* Brunner von Wattenwyl, 1882 was described from Serbia based on the specimens collected in forest clearings between

Извод: Од преко 45 врста рода *Isophya* у Европи, у Србији је досад било познато шест (Adamović, 1975; Pavićević et al., 2014b). Од тих шест врста две су описане из Србије, *Isophya modestior* Brunner von Wattenwyl, 1882 (Ниш – Бела Паланка) и *Isophya obtusa* Brunner von Wattenwyl, 1882 (Стара планина – Три Чуке). Као нова врста за фауну Србије наводи се *Isophya miksici* Peshev, 1985 пронађена на планини Бељаници у источној Србији. У раду су дати прелиминарни описи три нова таксона, *Isophya radmilae* sp. n. са планине Радан, *Isophya pancici* sp. n. са планине Таре и Златибора и *Isophya clara orientalis* ssp. n. из Београда (Миљаковац и Степин Луг). Анализирана је морфологија нових таксона уз приказ релевантних цртежа и фотографија стридулационих жилица мужјака.

Кључне речи: Phaneropteridae, *Isophya*, нови таксони, нови фаунистички подаци, Србија.

Niš and Bela Palanka (Brunner von Wattenwyl, 1882) and it is a subendemic species of the Balkan Peninsula relatively common in eastern and central Serbia. The third one, *Isophya obtusa* Brunner von Wattenwyl, 1882 was described on the Stara Planina Mountain (Tri Čuke) based on the specimens collected by the famous Serbian botanist and orthopterologist Josif Pančić who was an associate and friend of the then leading Swiss expert on orthoptera in Europe, Carl Brunner von Wattenwyl who described that species. Exactly 133 years after the description of the aforementioned species, the author again found this species at two sites on the Stara Planina Mountain, Vražja Glava (1860 m) and Stražna Čuka (1750 m) which are very close

to the type site of Tri Čuke (1937 m). This species is also known from central and western Bulgaria (Stara, Lyulin, Vitosha and Plana Mountains) (Chobanov, D. P. et al. 2013). The fourth one, *Isophya clara* Ingrisch & Pavićević, 2010, was described based on the specimens from Montenegro and Serbia (Ingrisch & Pavićević, 2010) and it is relatively common at hilly areas and mountains of western Serbia (Pavićević et al., 2014b). The fifth one, *Isophya bureschi* Peshev, 1959, was described from Bulgaria (the central and southwestern Bulgaria), and has been found in Serbia as well, in mesophilic meadows near Vlasina lake (Pavićević et al., 2014b). The sixth one, *Isophya costata* Brunner von Wattenwyl, 1878, is an endemic species of the Pannonian Basin and has recently been discovered in Selevenj Heath and Subotica Sands (Szövényi & Szekeres, 2011; Pavićević & et al., 2014b). The author found the species *Isophya miksici* Peshev, 1985 at Beljanica Mountain in eastern Serbia which was described from Bulgaria and known only from there. This species is new for the fauna of Serbia.

During the research on the Orthoptera fauna of Serbia in 2014 and 2015, two new species from the genus *Isophya* were discovered. The first one was found in a mesophilic meadow at 1250 m a.s.l. on the Radan Mountain (above the site Đavolja Varoš) in southern Serbia. The second one was found in clearings in coniferous forests on two mountains, Tara (the village of Račanska Šljivovica at 1200 m) and Zlatibor (Partizanske Vode at 1050 m) in western Serbia. One new subspecies of the aforementioned genus was based on specimens previously collected at two sites in Belgrade, Miljakovac and Stepin Lug. The descriptions of the three new taxa are presented in this paper.

MATERIALS AND METHODS

During the orthopterological research of the Radan, Tara and Zlatibor Mountains in 2014 and 2015, the author collected very interesting material from which two new cricket species from the genus *Isophya* stand out as the most important. The material was collected manually and dry pinned at the laboratory of the Institute for Nature Conservation of Serbia. Scans of stridulatory files of males were captured on an electronic microscope (JEOL JSM 6460 LV) at the University Centre for Electron Microscopy – Novi Sad. The following references were used for the determination of species: Ramme (1951), Harz (1969), Heller et al. (2004), Ingrisch & Pavićević (2010) and Chobanov D. P. et al. (2013).

ABBREVIATIONS

INCS – Collection of the Institute for Nature Conservations of Serbia, Belgrade, Serbia.

CDPV – Private Collection of Dragan Pavićević, Belgrade, Serbia.

Isophya radmilae sp. n.

Holotype (male): Serbia: Radan Mt., 1250 m., 05.07.2014, leg. D. Pavićević (INCS).

Paratypes: Serbia: Radan Mt.: 9 ♂, 12 ♀, same data as in holotype, leg. D. Pavićević; 4 ♂, 3 ♀ do., 05.09.2014, leg. D. Pavićević (INCS, CDPV).

Type site: Serbia, Radan Mt., mesophilic meadow at an altitude of 1250 m.

Diagnosis: The new species is similar to *I. modestior* Brunner von Wattenwyl, 1882. It differs from *I. modestior* by a smaller body size, shorter pronotum and tegmen, on average more teeth on stridulatory file. Cerci of male are slender. The ovipositor is shorter, moderately upcurved. The male song consists of syllables with several after-clicks.

Description: A medium-sized species with males measuring 19 – 21 mm, and females measuring 19 – 22 mm. Fastigium verticis (0.37 - 0.41) shallowly to deeply furrowed above, narrower than scapus (0.74 – 0.75).

Male: (Fig. 1. A; Fig. 2. A, C, D; Fig. 3. A, B). Pronotum is saddle-like, 4.22 – 4.51 mm long, constricted at midlength in the transverse sulcus area, with posterior area slightly raised. Tegmina shorter than pronotum, 3.71 - 4.10 mm. Stridulatory file with numerous teeth, 210 – 231. Epiproct transverse, apico-lateral angles rounded. Cerci gradually narrowing toward apex, curved in apical third; apex with a strong median tooth. Subgenital plate narrowing before apex, incised in middle. Postfemur 17.5 – 18 mm.

Female: (Fig. 1. B; Fig. 2. B, E, F). Pronotum 4.89 – 5.21 mm, longer than tegmina, slightly widening posteriorly, lateral and dorsal margins substraight. Tegmina 1.69 – 1.81 mm. Cerci conical, apex subacute to subobtusate. Subgenital plate small, transverse-triangular. Ovipositor 12 – 12.5 mm, sabre-shaped, moderately upcurved, apex dentate. Postfemur 17.5 – 18 mm.

Coloration: Green with poorly pronounced brownish dots. Two white lateral bands on vertex, discus of pronotum and ventral margins of pronotum. Pronotum with two red stripes medial of the white band. Tegmina of male with a brown spot on discus between Media and Cubitus 2. Cerci yellowish.

The male song consist of syllables with five to six after-clicks which brings this new species close to



Figure 1. *Isophya radmilae* sp. n.: A, male habitus, B, female habitus, Photo: D. Vukićević
Слика 1. *Isophya radmilae* sp. n.: A, хабитус мужјака, B, хабитус женке, Фото: Д. Вукићевић

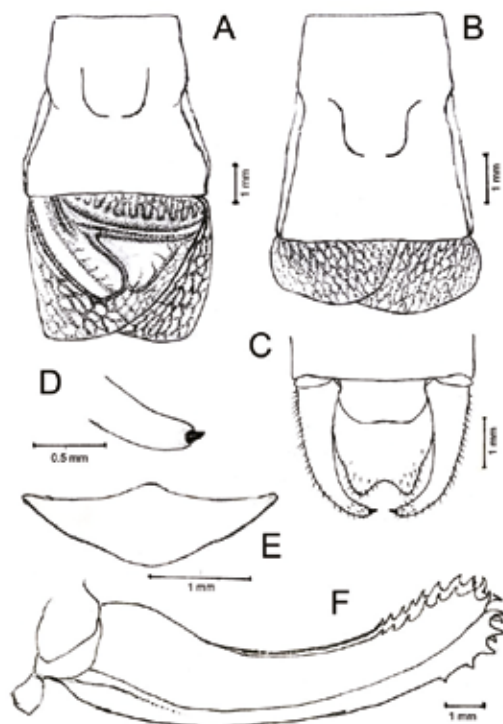


Figure 2. *Isophya radmilae* sp. n. male (A, C, D) and female (B, E, F). A, B, pronotum and tegmina, viewed dorsally; C, abdominal apex of male, viewed dorsally; D, apex of left male cercus; E, subgenital plate of female, viewed ventrally; G, ovipositor.

Слика 2. *Isophya radmilae* sp. n. мужјак (A, C, D) и женка (B, E, F). A, B, пронотум и тегмени, гледано дорзално; C, абдоминални врх мужјака, гледано дорзално; D, врх левог церка мужјака; E, субгенитална плоча женке, гледано вентрално; G, легалица.

the complex “*Isophya andrejevae*” consisting of two species, *Isophya tosevisi* Pavićević, 1983 and *Isophya andrejevae* Peshev, 1981 (Chobanov et al, 2013). The morphology is different from two mentioned species.

Etymology: *Isophya radmilae* sp. n., is dedicated to the memory of my late wife, Radmila Mladenović which was my great support in life and scientific work.

Habitat and distribution: Mesophilic meadows with dense grass and herbaceous vegetation at an altitude of 1250 m. Only known from locus typicus, the Radan Mt. in southern Serbia.

Conservation status: *Isophya radmilae* sp. n. is only known from the Radan Mt. It has been found only at one site, thus can be considered endangered. The Government of Serbia has recently issued the Decree on the designation of the Nature Park “Radan” which has been classified as protected area of the category I of the international and national, or outstanding importance (“Official Gazette of RS” No. 91/2017).

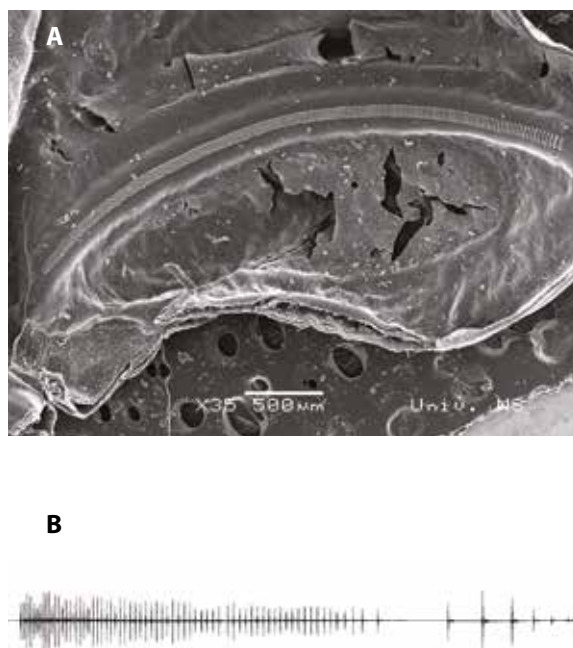


Figure 3. *Isophya radmilae* sp. n. A, a scan of the stridulatory file of male using an electronic microscope; B, oscillogram of single syllable of male.

Слика 3. *Isophya radmilae* sp. n. A, стридуациона жилица мужјака скенирана електронским микроскопом; B, осцилограм једног слога мужјака.

This form of protection largely guarantees the survival of habitats of this rare species and the survival of species itself.

Isophya pancici sp. n.

Holotype (male): Serbia, Tara Mt., Račanska Šljivovica, 1200 m, 14.07.2015, leg. D. Pavićević (INCS).

Paratypes: Serbia: 5 ♂, 11 ♀, same data as in holotype, leg. D. Pavićević.; 3 ♂, 2 ♀, Tara Mt. Spajići, 1200 m., 14.07.2015, leg. D. Pavićević.; 3 ♂, 5 ♀, Zlatibor Mt., Partizanske Vode, 1,200 m, leg. D. Pavićević (INCS, CDPV).

Type site. Serbia, Tara Mt.– Šljivovica, clearings in coniferous forests at an altitude of 1200 m.

Diagnosis: The new species is similar to *I. modestior* Brunner von Wattenwyl, 1882. It differs

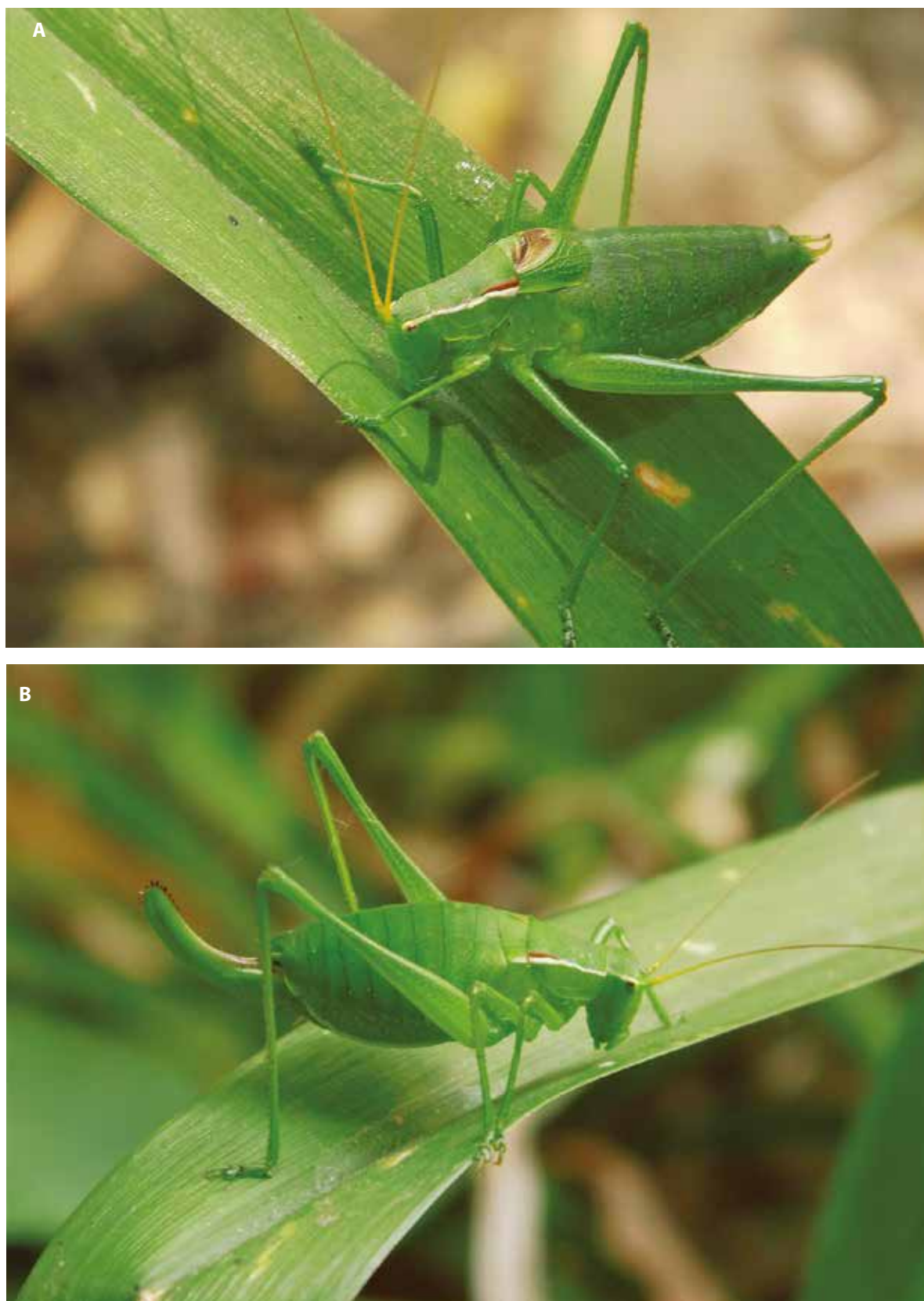


Figure 4. *Isophya pancici* sp. n.: A, male habitus, B, female habitus, Photo: D. Vukićević
Слика 4. *Isophya pancici* sp. n.: A, хабитус мужјака, B, хабитус женке, Фото: Д. Вукићевић

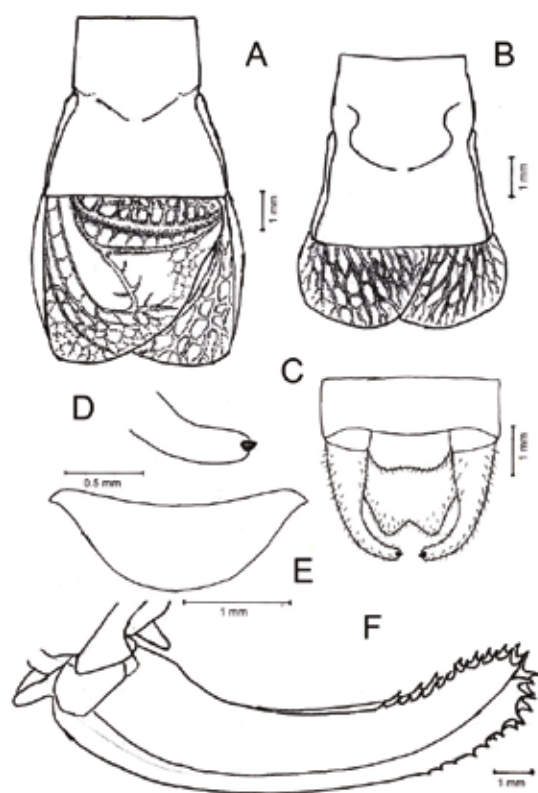


Figure 5. *Isophya pancici* sp. n. male (A, C, D) and female (B, E, F). A, B, pronotum and tegmina, viewed dorsally; C, abdominal apex of male, viewed dorsally; D, apex of left male cercus; E, subgenital plate of female, viewed ventrally; F, ovipositor.

Слика 5. *Isophya pancici* sp. n. мужјак (A, C, D) и женка (B, E, F). A, B, пронодум и тегмени, гледано дорзално; C, абдоминални врх мужјака, гледано дорзално; D, врх левог церка мужјака; E, субгенитална плоча женке, гледано вентрално; F, легалица



Figure 6. *Isophya pancici* sp. n., a scan of the stridulatory file of male using an electronic microscope.

Слика 6. *Isophya pancici* sp. n., стридулациона жилица мужјака скенирана електронским микроскопом

from *I. modestior* by a smaller body size, shorter pronotum but longer tegmen and different apex of cerci. Ovipositor is shorter, moderately curved upside. The male song is unknown.

Description: A medium-sized species, males grow between 22 – 23 mm, females between 22 – 24 mm. Fastigium verticis (0.31 – 0.35 mm) shallowly to deeply furrowed above, narrower than scapus (0.71 – 0.74).

Male: (Fig. 4A; Fig. 5A, C, D; Fig. 6) Pronotum 4.31– 4.41 mm long, saddle-shaped, with lateral carinae nearly parallel in prozone, broken at transverse sulcus, widen and divergent in metazone. Tegmina 4.41 – 4.52 mm, almost equal or longer than pronotum. Stridulatory file with 174 – 190 teeth. Eppiproct transverse, apico-lateral angles rounded. Cerci gradually narrowing toward apex, curved in apical third; apex obtuse, with a more dorsally implanted tooth. Subgenital plate narrowing before apex, incised in middle. Postfemur length 17.5 – 18 mm.

Female: (Fig. 4B, Fig. 5B, E, F). Pronotum 4.6 – 4.8 mm, weakly widening and raised posteriorly, lateral and dorsal margins substraight. Tegmina 1.7 – 2.4 mm. Eppiproct rounded to transversely rounded. Cerci conical, apex subacute to subobtuse. Subgenital plate small, transverse-triangular. Ovipositor 11.5 – 12.5 mm, sabre-shaped, moderately upcurved, apex dentate. Postfemur length 17.5 – 19 mm.

Coloration: Green with light brownish dots. Two white lateral bands on vertex, discus of pronotum and ventral margins of pronotum. Pronotum with two red stripes medial of the white band. Tegmina of male with a brown spot on discus between Media and Cubitus 2. Cerci yellowish.

Etymology: *Isophya pancici* sp. n., is dedicated to the memory of the famous Serbian botanist and orthopterologist, Josif Pančić (1814 – 1888).

Habitat and distribution: Clearings in coniferous forests with dense grass and plants on the Tara and Zlatibor Mts., between 1050 – 1200 m. Until now it has only been recorded on these two mountains.

Conservation status: *Isophya pancici* sp. n. has only been recorded on two mountains in southwestern Serbia, Tara and Zlatibor. It can be said that the prospects for survival of this species are very good because its habitats are for the most part located within the borders of the National Park “Tara” and the recently designated Nature Park “Zlatibor”.

Isophya clara orientalis ssp. n.

Holotype (male): Serbia: Belgrade - Miljakovac, 31.05.1978, leg. D. Pavićević (CDPV).

Paratypes: Serbia: 4 ♂, 5 ♀, Belgrade-Miljakovac, fresh meadow, same data as in holotype, leg. D. Pavićević; 1 ♂, 1 ♀, do., 22.06.1982; 4 ♂, 4 ♀, do., 16.05.1983; 11 ♂, 3 ♀, do., 26.04.1990 e.l.; 8 ♂, 4 ♀, do., 06.05.1990; 1 ♂, 1 ♀, do., 08.05.1992; 2 ♂, do., 12.05.1994; 1 ♂, 1 ♀, do., 29.05.1994; 2 ♂, do., 02.07.1994; 1 ♂, do.,



Figure 7. *Isophya clara orientalis* ssp. n. A, male habitus, B, female habitus, Photo: D. Vukićević
Слика 7. *Isophya clara orientalis* ssp. n. A, хабитус мужјака, B, хабитус женке, Фото: Д. Вукићевић

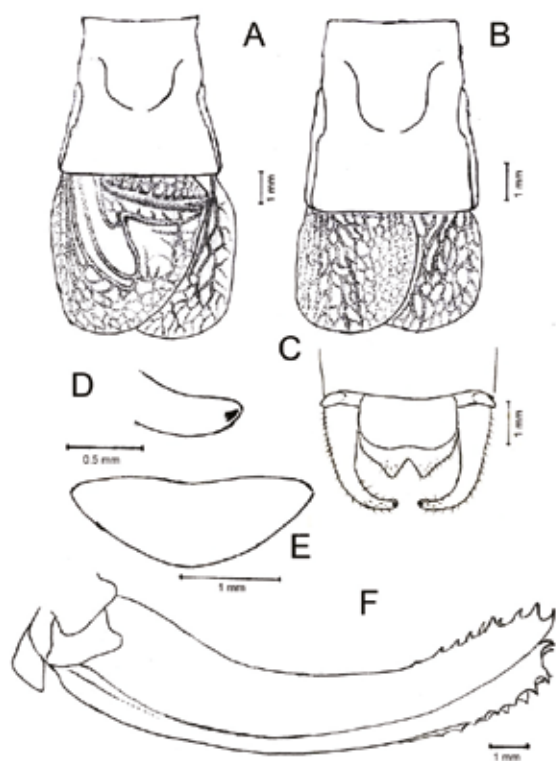


Figure 8. *Isophya clara orientalis* ssp. n. male (A, C, D) and female (B, E, F). A, B, pronotum and tegmina, viewed dorsally; C, abdominal apex of male, viewed dorsally; D, apex of left male cercus; E, subgenital plate of female, viewed ventrally; F, ovipositor.

Слика 8. *Isophya clara orientalis* ssp. n. мужјак (A, C, D) и женка (B, E, F). A, B, пронотум и тегмени, гледано дорзално; C, абдоминални врх мужјака, гледано дорзално; D, врх левог церка мужјака; E, субгенитална плоча женке, гледано вентрално; F, легалица.

07.07.1995; 2 ♂, 1 ♀, do., 31.05.1996; 2 ♂, 1 ♀, do., 14.05.2007; 1 ♂, do., 20.06.2008; 1 ♂, do., 14.06.2009; 2♂, 1♀, do., 02.06.2015; 1 ♂, do., 18.06.2015; 4 ♂, 4 ♀, Belgrade – Stepin Lug, fresh meadow near a pond, 25.05.2007, leg. D. Pavićević (CDPV, INCS).

Type site: Serbia, Belgrade – Miljakovac, mesophilic meadow.

Diagnosis: The new subspecies is very similar to *Isophya clara clara* Ingrisch & Pavićević, 2010 (Ingrisch & Pavićević, 2010). *I. clara orientalis* ssp. n. differs from nominotypical subspecies, *I. clara clara* by, on average, smaller size and longer tegmen with blackish brown spot in male and with fewer teeth on the stridulatory files. Epiproct in male more subquadrate, apico-lateral angles rounded and slightly concave in between. Subgenital plate in male with triangular apical lobes smaller. Cerci of female subobtusate to obtuse. Subgenital plate of female transversely rounded. Ovipositor shorter. The male stridulation is mono-

syllabic with single, uninterrupted pulse series, same as in *I. clara clara* (Ingrisch & Pavićević, 2010).

Description: A medium-sized to large species, males measure 19 – 25 mm, females measure 19 – 27 mm. Fastigium verticis (0.40 – 0.50), shallowly to deeply furrowed above, narrower than scapus (0.70 – 0.80).

Male: (Fig. 7A; Fig. 8A, C, D). Pronotum 4.71 – 5.14 mm widening posteriorly, lateral margins sub-straight to weakly concave, dorsal margin from almost straight to slightly raised before posterior margin. Tegmina longer than pronotum, 4.80 – 5.10 mm. Stridulatory file with 58–72 teeth of increasing size from base to internal margin of wing. Epiproct transverse, apico-lateral angles rounded. Cerci gradually narrowing towards apex, curved in apical third of circa; apex transverse-truncate and with a minute tooth. Subgenital plate narrowing before apex; apex with two triangular lobes. Postfemur 18.5 – 19 mm.

Female: (7B; Fig. 8B, E, F) Pronotum, 5.10 – 5.5 mm slightly widening posteriorly, lateral and dorsal margins substraight. Length of tegmina 2.50 – 3.10 mm. Epiproct rounded to transversely rounded. Cerci conical, apex subacute to subobtusate. Subgenital plate small, transverse-triangular. Ovipositor 12.5 – 13 mm sabre-shaped, slightly curved, apex dentate. Postfemur 20 – 23 mm.

Coloration. Green with blackish brown dots. Two white lateral bands on vertex, discus of pronotum, and ventral margins of pronotum. Pronotum with two red stripes medial of the white band. Tegmina of male with a large medium blackish brown spot on discus between Media and Cubitus 2.

Etymology: The name of the new taxon comes from the distribution area which is the easternmost from the nominotypical subspecies, *I. clara clara*.

Habitat and distribution: Mesophilic meadows in lowland with dense high grass and plants close to creeks or ponds. Until now it has only been recorded at two sites in Belgrade, Miljakovac and Stepin Lug.

Conservation status: *Isophya clara orientalis* ssp. n. has only been recorded at two sites in Belgrade, Miljakovac and Stepin Lug. Both sites are not more than one hectare in size and belong to the same habitat type, mesophilic meadows with dense tall grassland and herbaceous vegetation. This taxon can be considered endangered, thus measures to protect its habitats in Belgrade should be taken as soon as possible.

Crickets species from the genus *Isophya* new for the fauna of Serbia has been discovered upon processing the material collected over previous years.

***Isophya miksici* Peshev, 1985**

This species has until now only been known from northwestern Bulgaria (Chobanov, D. P., et al., 2013). The author found this species on the Beljanica Mountain in eastern Serbia on July 23, 1997, at the site Govedarište (750 – 800 m), as well as on July 27 and 28, 2001, at the sites Đula (750 m) and Straža (1240 m). This species prefers mesophilic mountain meadows with dense grassland and herbaceous vegetation (Đula and Straža) but has also been found in forest clearings at the site Govedarište. This species belongs to the complex “*Isophya modesta*” which includes seven taxa from five species: *I. clara*, *I. miksici*, *I. plevnensis*, *I. longicaudata adamovici*, *I. longicaudata longicaudata*, *I. modesta modesta* and *I. modesta rossica*. The aforementioned species have a stridulatory file with 55 – 160 teeth. In the specimen *I. miksici* from Bulgaria, the stridulatory file contains between 65 – 88 teeth, while the same specimen from the Beljanica Mt. has a stridulatory file with 66 – 70 teeth. This species is a new and subendemic species for the fauna of Serbia.

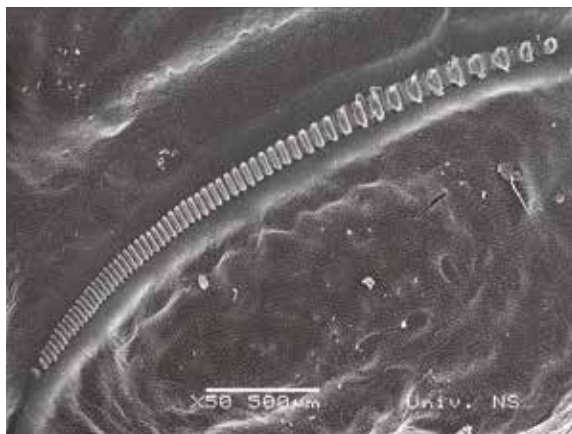


Figure 10. *Isophya miksici*, a scan of the stridulatory file of male using an electronic microscope.

Слика 10. *Isophya miksici*, стридулациона жилица мужјака скенирана електронским микроскопом.

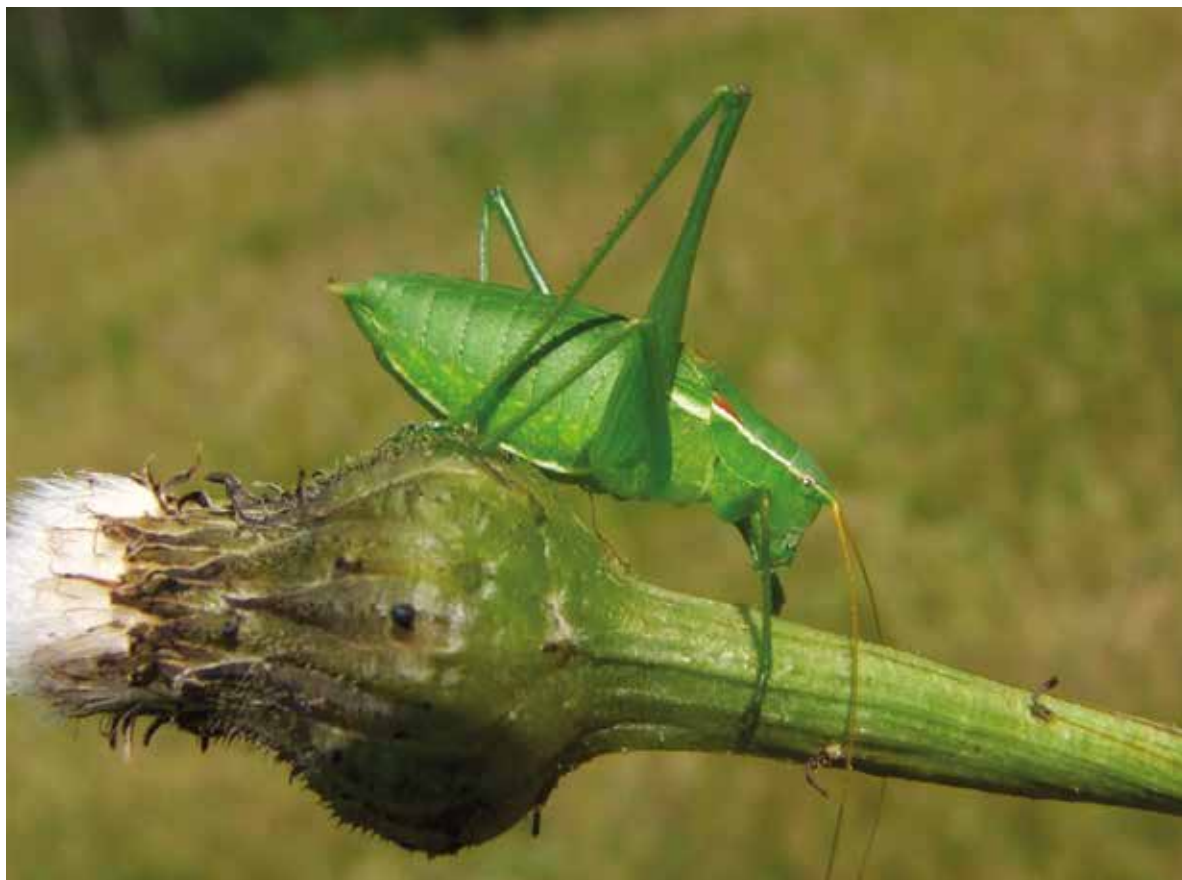


Figure 9. *Isophya miksici*: male habitus, Photo: D. Vukićević

Слика 9. *Isophya miksici*: хабитус мужјака, Фото: Д. Вукићевић

DISCUSSION

The representatives of the genus *Isophya* prefer mesophilic meadows with dense grassland and herbaceous vegetation, well-shaded edges of forests, mesophilic forest clearings, both in lowland and mountainous areas up to 2000 m. Of species inhabiting Serbia, *I. costata* and *I. clara orientalis* are steppicolous species, while *I. obtusa*, *I. bureschi*, *I. miksici*, *I. clara clara*, as well as two new species *I. radmilae* and *I. pancici* are exclusively mountainous species. It can be said that the species *I. speciosa* tolerates various altitudes which is why it can be found both in lowlands and at an altitude of up to 2000 m. The species *I. modestior* which, according to literature data, occurs at a large number of sites in Serbia deserves a separate mention. This species was described from Serbia (Brunner von Wattenwyl, 1882). The specimens were collected by the author himself, Brunner von Wattenwyl in forest clearings between Niš and Bela Palanka ("Ich fand diese Species in einer lichten Waldstelle zwischen Nisch und Ak Palanka in Serbien") and described in his monograph on European Orthoptera ("Prodromus der europäischen Orthopteren") which was published in 1882. In the same work, Brunner described a similar species, *Isophya fusconotata*, based on a specimen from the Rtanj and Suva Planina Mountains, and that species is not mentioned later on in his work "Additamenta zur Monographie der Phaneropteride" from 1891. Famous German orthopterologist Willy Ramme, in his book "Orthopterten von Südost-Europa und Vorderasien" published in 1951 considers the species *I. fusconotata* to be a younger synonym of the species *I. modestior*. A more recent work by a group of authors (Heller et al., 2004) "The *Isophya* species of Central and Western Europe (Orthoptera: Tettigonioidae: Phaneropteridae)" states that the species *Isophya modestior* is "separated by a large gap without findings". They state that the type site, as well as some additional data on this species, is located in Serbia, Macedonia, western Bulgaria and Montenegro, while other data originate from Slovenia, Italy, Austria and Hungary. This group of authors did not examine the type specimen of the species *I. modestior* from the collection of the Natural History Museum in Vienna during the course of writing their work. They designated a male *I. fusconotata* from the Suva Planina Mountain as the lectotype of *I. modestior* described by Brunner and believed *I. fusconotata* to be a younger synonym of the species *I. modestior* (Heller et al. 2004). The author of the work had a chance to visit and orthopterologically research the area of Niš and Bela Palanka on several occasions in 2015, and to find at several sites numerous species

which unequivocally belong to the Brunner's species *I. modestior*, exactly 133 years after its description. The collected specimens morphologically fully correspond to the Brunner's description in 1882. The populations of this species inhabit steppe terrains and forest clearings in hilly areas in the valleys of Niš and Bela Palanka which have a humid continental climate, and partly sub-Mediterranean climate. The species was most numerous in the early and mid-June while it experienced a severe decline in numbers in mid-July. From the site Divna Gorica (1,200 m) at the Suva Planina Mountain which rises above the aforementioned valleys, the author collected only two specimens, a male and a female from the genus *Isophya* which are morphologically and phenologically different from the species *I. modestior*, however, that is not enough data for drawing any conclusions whether they belong to the same species or whether Brunner's *I. fusconotata* is, in fact, an actual species. In this work, the specimens collected at the very same sites where Brunner collected and described the species *I. modestior* were used for the morphological comparison with the new species. It can be said that the new species *I. radmilae* has an uncanny morphological resemblance to the species *I. modestior*, but also differs from it based on the aforementioned description, especially in terms of male song. Similarly, the other new species *I. pancici* has a morphological resemblance to the species *I. modestior*, but while the apical tooth of the cerci has a more dorsal position in the species *I. pancici*, the same tooth has a median position in the species *I. modestior*. Due to low vagility, great mutual morphological resemblance and dependence on a certain type of habitat of the representatives of the genus *Isophya*, the author expresses doubts about the possible existence of vast distribution ranges of certain species, including the species *Isophya modestior*. This position is supported by the fact that many new species of the aforementioned genera hardly recognizable at morphological level have been described, primarily with the help of bioacoustics and molecular genetics.

ACKNOWLEDGMENTS

The author would like to thank his colleagues from the Institute for Nature Conservation of Serbia, Dejan Vukićević, Slobodan Čvrkić and Živorad Nešić for helping him during field work. The author owes a special thanks to his colleagues Miloš Bokorov (Department of Biology and Ecology, Novi Sad) for SEM photographs, Momčilo Popović (Zemun) for providing sketches and Dragan Kalićanin for print preparation.

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ПРЕЛИМИНАРАН ОПИС НОВОГ РОДА *ISOPHYA* (ORTHOPTERA: TETTIGONIOIDEA: PHANOPTERIDAE) ИЗ СРБИЈЕ УЗ НАПОМЕНЕ О НЕКИМ ПОЗНАТИМ ВРСТАМА

Драган Павићевић

Резиме

Род *Isophya* у Европи има преко 45 врста а од тог броја у Србији је до сада било познато 6. То су следеће врсте: *Isophya speciosa*, *I. modestior*, *I. obtusa*, *I. bureschi*, *I. clara* и *I. costata*. Нова врста за фауну Србије је *I. miksici* са планине Бељанице. Са планине Радан описана је *I. radmilae* sp. n., са планина Таре и Златибора је *I. pancici* sp. n. а из Београда *I. clara orientalis* ssp. n. Тиме је укупан број представника рода *Isophya* у Србији повећан на десет таксона, девет врста и једну подврсту. Нова врста са планине Радан, *Isophya radmilae* sp. n., је на основу спољашње морфологије блиска врсти *I. modestior* али се од ње јасно разликује другачијом песмом мужјака. Друга нова врста, *I. pancici* sp. n., са планине Таре и Златибора, такође је блиска врсти *I. modestior*, али се од ње, поред осталог, лако разликује другачијим положајем апикалног

зубића на церку. Песма мужјака ове врсте није снимљена. Трећи таксон, *I. clara orientalis* ssp. n., описан из Београда (Миљаковац и Степин Луг), низом мањих морфолошких одлика разликује се од номинотипске подврсте, *I. clara clara*. Род *Isophya*, због велике морфолошке сличности међу врстама, са таксономске тачке гледишта, представља један од најтежих родова не само у оквиру фамилије Phaneropteridae којој припада, већ уопште међу ортоптерама. С обзиром да се ради о слабо вагилним животињцама, врло је вероватно да се међу врстама са ширим ареалом у ствари крије више различитих, криптичких врста. За што прецизнију детерминацију врста поменутог рода, поред класичне морфологије, данас се све више користи биоакустика и молекуларна генетика.

