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NEW RECORDS OF AQUATIC DANCE FLIES (EMPIDIDAE: CLINOCERINAE AND HEMERODROMIINAE) FROM BOSNIA AND HERZEGOVINA

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Adult aquatic dance flies (Empididae) were collected during April 2006, October 2007 and July 2012 in Bosnia and Herzegovina using sweep nets and by aspirator. Sampling was done on six sampling sites. From 15 species recorded in this study, 5 are new to the fauna of Bosnia and Herzegovina: *Roederiodes macedonicus* Wagner & Horvat, *Wiedemannia (Philolutra) queyrasiana* Vaillant, *Wiedemannia* sp. A, *Chelifera flavella* (Zetterstedt) and *Chelifera siveci* Wagner. Overall 40 species are presently known from Bosnia and Herzegovina, belonging to 9 genera. This study represents a contribution to the knowledge of aquatic dance flies and especially of endemic species of the Dinarides and Balkan Peninsula and their present distribution.

Key words: endemics, distribution, Dinarides, Balkan, new species

Ivković, M., Vojvoda Zeljko, T. & Previšić, A.: Novi podaci o vodenim muhama plesačicama (Empididae: Clinocerinae i Hemerodromiinae) iz Bosne i Hercegovine. *Nat. Croat.*, Vol. 23, No. 2, 401–406, 2014, Zagreb.

Vodene muhe plesačice su sakupljane entomološkom mrežicom i aspiratorom tijekom travnja 2006., listopada 2007. i srpnja 2012. godine. Uzorkovanje je provedeno na šest lokacija. Od 15 sakupljenih vrsta u ovom istraživanju, 5 vrsta su novi nalazi za faunu Bosne i Hercegovine: *Roederiodes macedonicus* Wagner & Horvat, *Wiedemannia (Philolutra) queyrasiana* Vaillant, *Wiedemannia* sp. nov., *Chelifera flavella* (Zetterstedt) i *Chelifera siveci* Wagner. Do sada je zabilježeno 40 vrste iz 9 rodova. Ovo istraživanje pridonijet će boljem poznavanju faune vodenih muha plesačica, a osobito endema Dinarida i Balkanskog poluotoka te njihove rasprostranjenosti.

Ključne riječi: endemi, rasprostranjenost, Dinaridi, Balkan, nova vrsta

INTRODUCTION

Sporadic research into aquatic dance fly (Empididae: Clinocerinae and Hemerodromiinae) fauna of Bosnia and Herzegovina started with STROBL (1900), BEZZI (1904), ENGEL (1940) and WAGNER (1981). More detailed studies were conducted by HORVAT (1990, 1993), who recorded altogether 33 species for Bosnia and Herzegovina. Two additional species of Clinocerinae were given by WAGNER (1995) and IVKOVIĆ *et al.* (2012), so overall 35 species have been recorded. During the three collecting trips to Bosnia and Herzegovina in April 2006, October 2007 and July 2012 a few additional species were recorded and further records on the distribution of already known species were added.

MATERIAL AND METHODS

Altogether 157 aquatic dance flies (76♂♂, 81♀♀) were examined. Names of the taxa, present in this preliminary checklist reflect current nomenclature and classifications (SINCLAIR, 1995; WAGNER & HORVAT, 1993; YANG *et al.*, 2007). Locality records are listed for each species. A list of locality names including latitude, longitude, altitude and number codes (site ID) are presented in Tab. 1 and a map showing all these sites is also provided (Fig. 1). Specimens were collected using sweep nets and by aspirator. All the collected aquatic dance flies are preserved in 80% ethanol. Male genitalia were macerated in hot 85% lactic acid and afterwards examined under a Zeiss Semi 2000-C microscope. Taxonomic diversity is considered at the level of subfamily, genus and species.

Tab. 1. List of sampling sites in Bosnia and Herzegovina. The sampling points are marked with black circles and numbers.

Site ID	Site name	Longitude	Latitude	Altitude (m)
1	Spring Ribnik	E 16° 48' 02"	N 44° 24' 08"	308
2	Mokračka Miljacka	E 18° 36' 18"	N 43° 53' 51"	1115
3	Konjic Stream	E 17° 58' 25"	N 43° 38' 19"	290
4	Tjentište, Sutjeska NP	E 18° 41' 27"	N 43° 21' 24"	555
5	Jabučica Stream, Sutjeska NP	E 18° 37' 02"	N 43° 17' 24"	767
6	Spring by the road, Sutjeska NP	E 18° 35' 34"	N 43° 15' 54"	1114



Fig. 1. Sampling sites of aquatic dance flies recorded in this study from Bosnia and Herzegovina.

RESULTS AND DISCUSSION

Faunistic records (Empididae: Clinocerinae and Hemerodromiinae)

The following list records all the species collected during our survey. The following format is used for the distributional data: "Records: name of the site and site ID in parentheses, sampling date, and the number and sex of sampled specimens". All the sites and their ID numbers are listed in Tab. 1.

Subfamily Clinocerinae

Kowarzia barbatula (Mik, 1880)

New record: Spring by the road, Sutjeska National Park (6), 4.vii.2012, 1♂, 3♀♀.

Roederiodes macedonicus Wagner & Horvat, 1993

First record: Spring by the road, Sutjeska National Park (6), 4.vii.2012, 1♂.

Wiedemannia (Chamaedipsia) wachtli (Mik, 1880)

New record: Tjentište, Sutjeska National Park (4), 4.vii.2012, 2♂♂, 3♀♀.

Wiedemannia (Philolutra) fallaciosa (Loew, 1873)

New record: Jabučica Stream, Sutjeska National Park (5), 4.vii.2012, 4♂♂, 10♀♀.

Wiedemannia (Philolutra) kacanskae Horvat, 1993

New record: Ribnik Spring (1), 24.iv.2006, 17♂♂, 13♀♀.

Wiedemannia (Philolutra) queyrasiana Vaillant, 1956

First record: Spring by the road, Sutjeska National Park (6), 4.vii.2012, 10♂♂, 10♀♀.

Wiedemannia (Pseudowiedemannia) microstigma (Bezzi, 1904)

New records: Tjentište, Sutjeska National Park(4), 4.vii.2012, 1♂, 1♀; Jabučica Stream, NP Sutjeska (5), 4.vii.2012, 9♂♂, 13♀♀.

Wiedemannia (Wiedemannia) balkanica Wagner, 1981

New record: Mokračka Miljacka (2), 3.vii.2012, 6♂♂, 20♀♀.

Wiedemannia (Wiedemannia) dinarica Engel, 1940

New record: Konjic Stream (2), 7.x.2007, 3♂♂, 3♀♀.

Wiedemannia artemisa Ivković & Plant, 2012

New record: Jabučica Stream, Sutjeska National Park (5), 4.vii.2012, 2♂♂, 2♀♀.

Wiedemannia sp. A

First record: Mokračka Miljacka (2), 3.vii.2012, 12♂♂, 3♀♀.

Subfamily Hemerodromiinae

Chelifera flavella (Zetterstedt, 1838)

First record: Spring by the road, Sutjeska National Park (6), 4.vii.2012, 2♂♂.

Chelifera precabunda Collin, 1961

New record: Spring by the road, Sutjeska National Park (6), 4.vii.2012, 1♂.

Chelifera siveci Wagner, 1984

First record: Spring Ribnik (1), 24.iv.2006, 1♂.

Chelifera stigmatica (Schiner, 1862)

New records: Mokračka Miljacka (2), 3.vii.2012, 2♂♂; Jabučica Stream, Sutjeska National Park (5), 4.vii.2012, 2♂♂.

Aquatic dance flies of Bosnia and Herzegovina (Empididae: Clinocerinae and Hemerodromiinae) – new records and species richness

Prior to the present study, 35 species of aquatic dance flies were known from Bosnia and Herzegovina (HORVAT, 1993; WAGNER, 1995; IVKOVIĆ *et al.*, 2012). In the present paper there are 17 new distributional records for the 15 aquatic dance fly species collected. Five of these species are new to the Bosnia and Herzegovina fauna: *Roederiodes macedonicus*, *Wiedemannia (Philolutra) queyrasiana*, *Wiedemannia* sp. A, *Chelifera flavella* and *Chelifera siveci*. Altogether 40 aquatic dance flies are known now from Bosnia and Herzegovina and more species are likely to be discovered. The subfamily Clinocerinae is represented by 29 species in five genera: *Clinocera* Meigen (4 species), *Dolichocephala* Macquart (2 species), *Kowarzia* Mik (4 species), *Roederiodes* Coquillett (1 species) and *Wiedemannia* Zetterstedt (18 species). The subfamily Hemerodromiinae is represented with 11 species in four genera: *Chelifera* Macquart (7 species), *Chelipoda* Macquart (2 species), *Hemerodromia* Meigen (1 species) and *Phyllodromia* Zetterstedt (1 species). The Clinocerinae genus *Wiedemannia* is the most species-rich (45% of all the species), followed by the Hemerodromiinae genus *Chelifera* (17.5%) (Fig. 2).

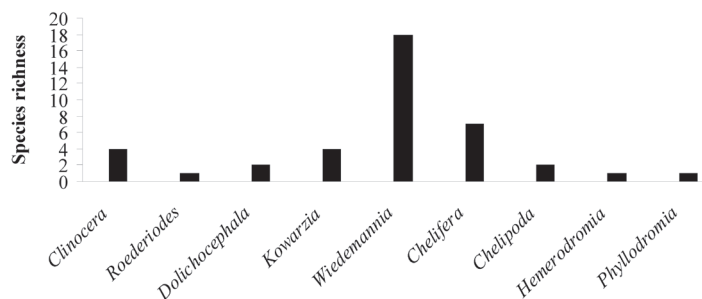


Fig. 2. Species richness of Bosnia and Herzegovina aquatic dance flies genera.

The majority of species collected are also present in most of Europe (PAPE & BEUK, 2012), but there are also some Dinarides and Balkan endemics, such as *Chelifera siveci*, *Roederiodes macedonicus*, *Wiedemannia kacanskae*, *W. microstigma*, *W. balkanica*, *W. dinarica* and the new, yet undescribed species, *Wiedemannia* sp. A.

This study adds to the overall knowledge of the dance fly fauna of Bosnia and Herzegovina by expanding the number of recorded species, as well as with new distributional data. In the future, more specialised studies are likely to result in additional species being known. This work contributes to our understanding of the distribution of aquatic dance flies and especially the endemic species of the Balkan Peninsula.

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SAŽETAK

Novi podaci o vodenim muhama plesačicama (Empididae: Clinocerinae i Hemerodromiinae) iz Bosne i Hercegovine

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Istraživanje vodenih muha plesačica u Bosni i Hercegovini provedeno je od strane neko-licine entomologa tijekom zadnjeg desetljeća 20. stoljeća te je u tim istraživanjima zabilježeno 35 vrsta muha plesačica. Vodene muhe plesačice su sakupljane entomološkom mrežicom i aspiratorom tijekom travnja 2006., listopada 2007. i srpnja 2012. godine. Uzorkovanje je provedeno na šest lokacija. Od 15 zabilježenih vrsta u ovom istraživanju, pet vrsta predstavljaju nove nalaze za faunu Bosne i Hercegovine: *Roederiodes macedonicus* Wagner & Horvat, *Wiedemannia (Philolutra) queyrasiana* Vaillant, *Wiedemannia* sp. A, *Chelifera flavella* (Zetterstedt) i *Chelifera sivoci* Wagner. Ukupno je do sada za Bosnu i Hercegovinu zabilježeno 40 vrsta iz 9 rodova. Najviše vrsta je zabilježeno za rod *Wiedemannia* i to 18 vrsta, a odmah iza njega je rod *Chelifera* sa 7 vrsta. Veliki broj endema Dinarida i Balkanskog poluotoka je opisan s područja Bosne i Hercegovine, a kao što se može vidjeti iz ovoga rada još se uvijek pronalaze nove vrste za znanost, osobito iz roda *Wiedemannia*. Ovo istraživanje pridonijet će boljem poznavanju faune vodenih muha plesačica Bosne i Hercegovine, ali i poznavanju njihove rasprostranjenosti na Balkanskom poluotoku.