**ADDITIONS TO THE CRAMBIDAE (INSECTA: LEPIDOPTERA) FAUNA OF CROATIA AND BOSNIA & HERZEGOVINA**Toni KOREN¹ & Dejan KULIJER²

¹Association Hyla, I. Lipovac 7, HR-10000 Zagreb, Croatia,
e-mail: koren.toni1@gmail.com

²National Museum of Bosnia and Herzegovina, Zmaja od Bosne 3, 71000 Sarajevo,
Bosnia and Herzegovina, e-mail: dejan.kulijer@gmail.com

Abstract - During recent surveys of Lepidoptera in southern Croatia and Bosnia & Herzegovina, several Crambidae species that were not previously recorded in those countries were encountered. One species, *Friedlanderia cicatricella* (Hübner, 1824), is recorded for the first time in Croatia while five are recorded for the first time in Bosnia & Herzegovina: *Euclasta splendidalis* (Herrich-Schäffer, [1848]), *Dolicharthria bruguieralis* Zeller, 1847, *Chilo phragmitella* (Hübner, [1810]), *Sclerocona acutella* (Eversman, 1842) and *Duponchelia fovealis* Zeller, 1847. All of the species were recorded in southern Dalmatia & Herzegovina, showing the importance of the area for the Crambidae fauna and the need of further faunistic surveys.

KEY WORDS: grass moth, Hutovo blato, Neretva river delta, wetlands, invasive species

Izvleček – PRISPEVKI K FAVNI DRUŽINE CRAMBIDAE (INSECTA: LEPIDOPTERA) HRVAŠKE TER BOSNE IN HERCEGOVINE

Med nedavnimi raziskavami metuljev na jugu Hrvaške ter v Bosni in Hercegovini je bilo najdenih več vrst družine Crambidae, ki v teh državah prej niso bile zabeležene. Ena vrsta, *Friedlanderia cicatricella* (Hübner, 1824), je bila prvič zabeležena na Hrvaškem, medtem ko je bilo v Bosni in Hercegovini prvič zabeleženih pet vrst: *Euclasta splendidalis* (Herrich-Schäffer, [1848]), *Dolicharthria bruguieralis* Zeller, 1847, *Chilo phragmitella* (Hübner, [1810]), *Sclerocona acutella* (Eversman, 1842) in *Duponchelia fovealis* Zeller, 1847. Vse vrste so bile zabeležene v južni Dalmaciji in Hercegovini, kar kaže na pomen območja za favno družine Crambidae in potrebo po nadaljnjih favnističnih raziskavah.

KLJUČNE BESEDE: travniške vešče, Hutovo blato, delta reke Neretve, močvirja, invazivne vrste

Introduction

The large and diverse superfamily Pyraloidea in Europe contains more than 850 species (Karsholt, & Razowski 1996). In the Balkan peninsula, no less than 569 species are known so far, of which 310 belong to Crambidae and 259 to Pyralidae families (Plant & Jakšić 2018). With recent checklists (Gumhalter 2019a, b) and species' overviews, this superfamily becomes, if not one of the best studied microlepidoptera superfamilies in the Balkan peninsula, the superfamily for which most comprehensive data is available (see Plant & Jakšić 2018). Still, most of the available data is based on literature records (Plant & Jakšić 2018; Gumhalter 2019a) while new data remain scarce. In recent years, many new Crambidae species were recorded for the fauna of Croatia (e.g. Koren 2012, 2020; Gumhalter 2019a) while the data for the Crambidae fauna of Bosnia & Herzegovina are based only on old historical records (Lelo 2004; Plant & Jakšić 2018).

Materials and methods

During recent surveys of Croatia and Bosnia & Herzegovina, Crambidae were collected along with other Lepidoptera families. Moths were surveyed using pyramidal UV light traps in Neretva river delta and Stolac (Fig. 1). Five traps were in operation for 4h after dusk at each locality. In Hutovo blato Nature park and Klek peninsula (Fig. 1) automatic heath traps with UV lights were operated during the whole night. The collected specimens were set, identified and stored in the private collection of the author (Koren, Zagreb). For identification of species, we used Slamka (2006, 2008, 2013) and Leraut (2012).

Results

For each species, the exact locality, coordinates, date and additional notes are provided.

Friedlanderia cicatricella (Hübner, 1824) (Fig. 2)

Material examined: Croatia, Neretva river delta, Pižinovac village, road east of the village surrounded by reeds and maquis, 42.984711° N, 17.544549° E, 16.viii.2020, 5 ex., leg. T. Koren.

Notes: New for the fauna of Croatia. This species is present in the surrounding countries, but has never before been found in Croatia (Slamka 2008; Gumhalter 2019a, b), so the record from Croatia fills its distributional gap in the Balkans. It is a wetland species that inhabits moist meadows and floodplains around rivers and lakes (Slamka 2008). This is in accordance to the habitat in which it was recorded, edge of channels surrounded by reeds. Several males and females were observed and collected on the site, indicating a resident population in the area. This also indicates the importance of the Neretva river delta which has so far not been part of systematic Lepidoptera surveys, and only a limited number of Crambidae species have been recorded in the

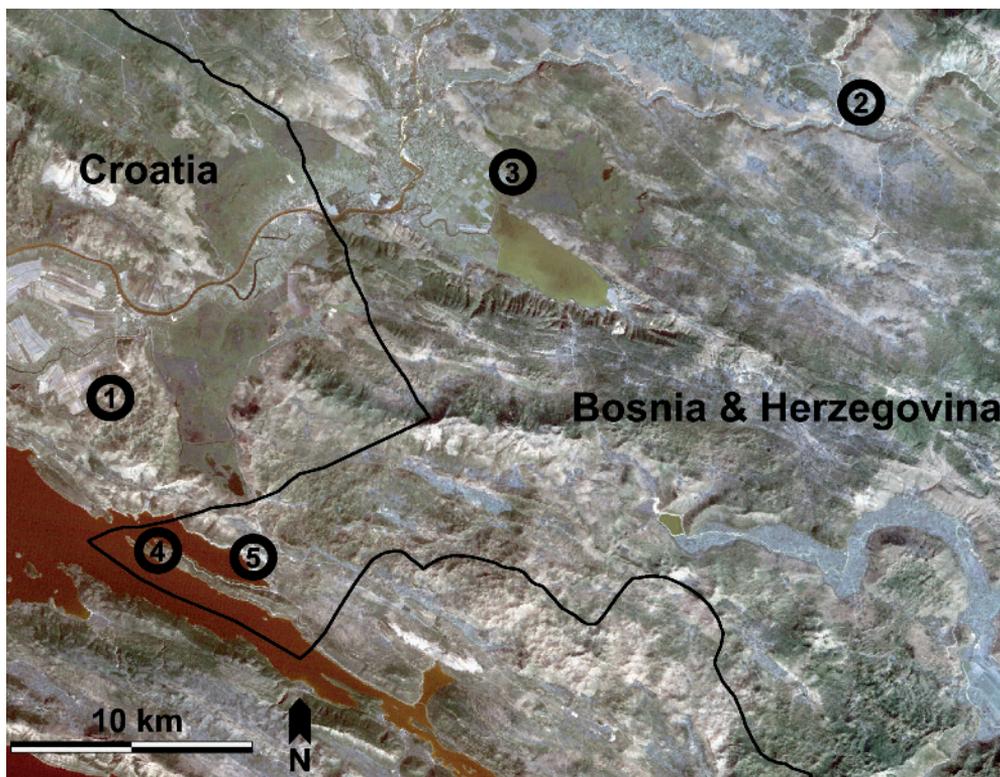


Figure 1. Map of surveyed localities.
Slika 1. Karta raziskanih lokalitet.

area (Gumhalter *et al.* 2018). Further surveys in the delta will probably reveal more localities for this wetland species.

***Chilo phragmitella* (Hübner, [1810])**

Material examined: Bosnia & Herzegovina, Stolac, forest edge NW of the settlement, 43.087647° N, 17.936115° E, 104 m a.s.l., 3.viii.2016, 2 ex., obs. T. Koren.

Notes: New for the fauna of Bosnia & Herzegovina. This is a wetland species widely distributed in Europe but missing from some Balkan countries (Slamka 2008; Plant & Jakšić 2018). It is generally common in the areas where it occurs, and is easily attracted to light traps.

***Euclasta splendida* (Herrich-Schäffer, [1848])**

Material examined: Bosnia & Herzegovina, Hutovo blato Nature Park, Karaotok, bank of a canal surrounded by reeds, bushes and trees, 43.065995° N, 17.754760° E, 5 m a.s.l., 05.ix.2020, 2 ex., leg. D. Kulijer.

Notes: New for the fauna of Bosnia & Herzegovina. This species has only recently been recorded in southern Croatia in the Neretva river delta, which represents the



Figure 2. *Friedlanderia cicatricella* from the Neretva river delta, close to Pižinovac village. Photo by T. Koren.

Slika 2. *Friedlanderia cicatricella* z delte reke Neretve, blizu vasice Pižinovac. Fotografiral T. Koren.

northernmost record in the Balkan peninsula (Koren 2012; Gumhalter *et al.* 2018). The record from Hutovo Blato in Bosnia & Herzegovina was expected as the area is very close to Neretva river delta and it is part of the same wetland system. Two specimens were collected by a heath moth trap in the bank of the canal surrounded by reeds, bushes and trees (Fig. 3). This is in accordance with known habitats in Croatia in the Neretva river delta.

***Dolicharthria bruguieralis* (Duponchel, 1833)**

Material examined: Bosnia & Herzegovina, Neum, Klek peninsula, edge of Opuće village, 42.927041° N, 17.571990° E, 10.ix.2020, 2 ex., leg. D. Kulijer.

Notes: New for the fauna of Bosnia & Herzegovina. This is a Mediterranean species commonly found alongside the Adriatic coast, especially in garrigue habitat. It has been recorded in most of the Balkan states (Plant & Jakšić 2018). Additional records are expected for Herzegovina area in the future.

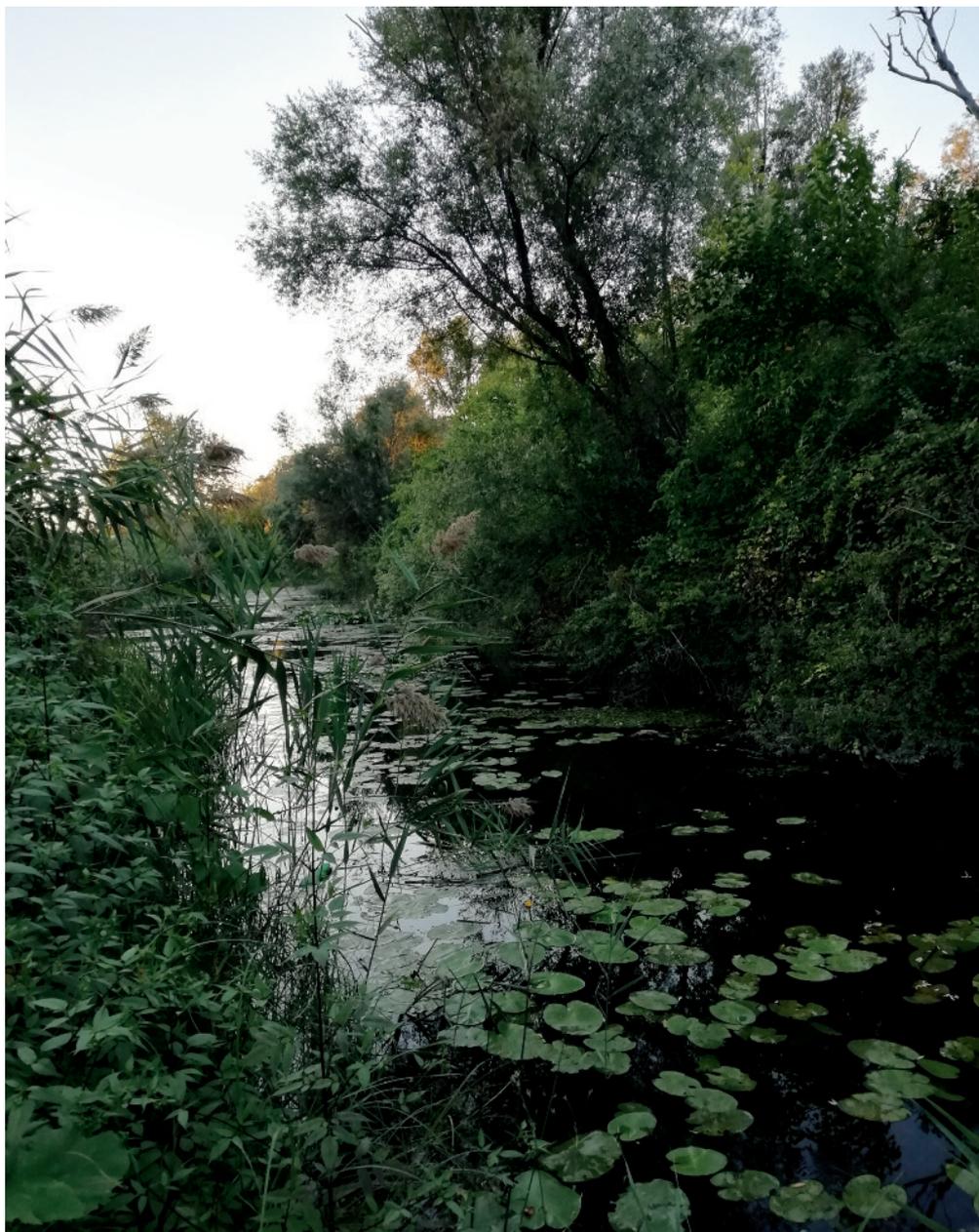


Figure 3. Habitat of *Euclasta splendida* in Hutovo blato Nature park. Photo by D. Kulijer.

Slika 3. Habitat vrste *Euclasta splendida* v Naravnem parku Hutovo blato. Fotografiral D. Kulijer.

***Duponchelia fovealis* Zeller, 1847**

Material examined: Bosnia & Herzegovina, Neum, on the wall of a store, 42.924300° N, 17.616814° E, 10.viii.2012, 2 ex., obs. T.Koren.

Notes: New for the fauna of Bosnia & Herzegovina. This is an invasive pest species attacking strawberry (*Fragaria* spp.) plants. It was firstly recorded in Europe in Italy in 1988 (Bonsignore *et al.* 2008). Afterwards it has quickly spread across most of Europe, Turkey, United States and Canada (Efil *et al.* 2014). In the Balkan peninsula it has so far been recorded in Croatia, Montenegro, Serbia, Macedonia, Albania and Greece (Plant & Jakšić 2018). Additional records are expected for Herzegovina area in the future.

***Sclerocona acutella* (Eversman, 1842)**

Material examined: L 2: Bosnia & Herzegovina, Stolac, forest edge NW of the settlement, 43.087647° N, 17.936115° E, 104 m a.s.l., 3.viii.2016, 2 ex., obs. T. Koren.

Notes: New for the fauna of Bosnia & Herzegovina. This is a rather widespread wetland species, present in most Balkan countries (Plant & Jakšić 2018). Further records are expected from other parts of Bosnia & Herzegovina as well.

Discussion

With this small, initial contribution, the number of recorded Crambidae species for Bosnia & Herzegovina rises from 152 (Plant & Jakšić 2018) to 157. This is still far from the fauna of Croatia which now contains 210 species (Plant & Jakšić 2018; Gumhalter 2019a, b; Koren, 2020). This indicates that the Crambidae moth fauna of Bosnia & Herzegovina is under-recorded in comparison with Croatia and other neighbouring countries. Four out of the six species mentioned here can be regarded as wetland specialists, indicating the importance of such habitats in both countries. Both Hutovo blato in Bosnia & Herzegovina and Neretva river delta in Croatia are parts of the same Neretva river drainage, which is one of the largest wetlands in the region. It is important to additionally protect and preserve such habitat for the long-term survival of its overall biodiversity of flora and fauna. The survey of moth fauna of the Neretva river delta commenced in 2020 (Koren, unpublished); it is highly desirable to start a similar survey in Hutovo blato in order to investigate the lepidopteran fauna to an adequate level to be able to provide advice on the protection of the area. Additional moth surveys of different parts of both countries will, without doubt, generate further new species records and expand knowledge of the distribution of other rare species.

Acknowledgments

We are grateful to the Public Institution for Management of Protected Natural Areas of the Dubrovnik-Neretva Region for financing the moth surveys in the Neretva river delta, Croatia. We are also grateful to the reviewer Colin W. Plant (Bishops Stortford, UK) for linguistic corrections and valuable comments to the manuscript.

References

- Bonsignore C.P., Vacante V. A.**, 2020: New emergency for Strawberry? *Protezione delle Colture*, 3: 40-43.
- Efil L., Özgür O. & Efil F.**, 2014: A new pest, *Duponchelia fovealis* Zeller, on strawberries in Turkey: damage, distribution and parasitoid. *Journal of Entomology and Zoology Studies*, 2: 328-334.
- Gumhalter D.**, 2019a: First checklist of pyraloid moths (Lepidoptera: Pyraloidea) in Croatia. *Zootaxa*, 4604: 59-102.
- Gumhalter D.**, 2019b: A revised checklist of pyraloid moths (Lepidoptera: Pyraloidea) in Croatia. *Natura Croatica*, 28: 271-288.
- Karsholt O. & Razowski J.**, 1996: The Lepidoptera of Europe (A Distributional Checklist). Apollo Books, Stenstrup, 280 pp.
- Koren T.**, 2012: The western most record of *Euclasta splendidalis* (Herrich-Schäffer, 1884) (Lepidoptera: Crambidae) in Europe. *Polish Journal of Entomology*, 81: 331-334.
- Koren T.**, 2020: Three montane grass moths (Lepidoptera: Crambidae) new to the fauna of Croatia. *Acta Entomologica Serbica*, 25: 29-34.
- Koren T. & Zadavec, M.**, 2018: Three grass moths (Lepidoptera: Crambidae) new to the fauna of Croatia. *Natura Croatica*, 27: 239-242.
- Lelo S.**, 2004: Revizija Rebelovog popisa leptira Bosne i Hercegovine. CORON'S d.o.o., Sarajevo.
- Leraut P.**, 2012: Moths of Europe, Volume 3: Zygaenids, Pyralids 1 and Brachodids. Verrieres-le Buisson. NAP Editions, 599 pp.
- Plant C.W. & Jakšić P.**, 2018: A provisional checklist and bibliography of the Pyraloidea of the Balkan Peninsula (Lepidoptera: Pyralidae & Crambidae). *Atalanta*, 49: 219-263.
- Slamka F.**, 2006: Pyraloidea of Europe (Lepidoptera) 1. Pyralinae, Galleriinae, Epipaschiinae, Cathariinae & Odontiinae. Bratislava: František Slamka, 138 pp.
- Slamka F.**, 2008: Pyraloidea of Europe (Lepidoptera) 2. Crambinae & Schoenobiinae. Bratislava: František Slamka, 224 pp.
- Slamka F.**, 2013: Pyraloidea of Europe (Lepidoptera) 3. Pyraustinae & Spilomelinae. Bratislava: František Slamka, 357 pp.

Received / Prejeto: 30. 9. 2020

