

NEW RECORDS OF THE CRAMBID MOTH EUCLASTA SPLENDIDALIS (HERRICH- SCHÄFFER, [1848]) (LEPIDOPTERA: CRAMBIDAE) IN CROATIA WITH NOTES ON PYRALOIDEA FAUNA FROM THE NERETVA VALLEY

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Gumhalter, D., Kučinić, M., Vajdić, M., Perović, F., Pelić Fixa, D. & Lukač, G.: New records of the crambid moth *Euclasta splendida* (Herrich-Schäffer, [1848]) (Lepidoptera: Crambidae) in Croatia with notes on Pyraloidea fauna from the Neretva Valley. Nat. Croat., Vol. 27, No. 1, 225-232, 2018, Zagreb.

In the following paper, new information about the occurrence of the pyraloid moth *Euclasta splendida* (Herrich-Schäffer, [1848]) in Croatia is presented. Although this species from the microlepidopterous family Crambidae was presented as a new one in the Croatian fauna in 2012, three specimens were discovered during an examination of a large number of pyraloid moths collected by Mladen Kučinić in the 1990s. These specimens of *Euclasta splendida* were collected during several field trips to the Neretva Valley, south Dalmatia, in August 1996 and 1997 and are the oldest findings of *Euclasta splendida* in Croatia. Also, two specimens were collected during a field investigation in the same area conducted in 2016.

These additional records suggest that this local and rare species has been present in the fauna of Croatia for quite a long time and that it has become permanently present in the fauna of Croatia. They also deepen the knowledge on the distribution of this species within the same area. Furthermore, a list of additionally recorded pyraloid species from the valley of the Neretva River is given.

Key words: Microlepidoptera, Pyraloidea, *Euclasta splendida*, Neretva Valley, Dalmatia

Gumhalter, D. & Kučinić, M., Vajdić, M., Perović, F., Pelić Fixa, D. & Lukač, G.: Novi nalazi livadnog moljca *Euclasta splendida* (Herrich-Schäffer, [1848]) (Lepidoptera: Crambidae) u Hrvatskoj s osvrtom na faunu Pyraloidea iz doline Neretve. Nat. Croat., Vol. 27, No. 1, 225-232, 2018, Zagreb.

U radu iznosimo podatke o novim nalazima vrste livadnog moljca *Euclasta splendida* (Herrich-Schäffer, [1848]) u Hrvatskoj. Iako je ova vrsta mikrolepidoptera iz porodice Crambidae 2012. godine zabilježena kao nova vrsta za faunu Hrvatske, tri su primjerka pronađena pregledavajući zbirku Pyraloidea dr. sc. Mladena Kučinića prikupljenih tijekom 1990-tih godina. Primjerci vrste *Euclasta splendida* su prikupljeni tijekom terenskih istraživanja u dolini Neretve, u južnoj Dalmaciji, u kolovozu 1996. i 1997. godine. Ovi nalazi predstavljaju najstarije nalaze ove vrste s područja Republike Hrvatske. Usto, dva su primjerka ulovljena tijekom terenskih istraživanja koja su izvršena 2016. godine u dolini Neretve.

Ovi dodatni nalazi ukazuju na to da je ta lokalna i rijetka vrsta duže prisutna u fauni Hrvatske, te da je postala stalni element hrvatske faune. Ovi nalazi također proširuju znanje o distribuciji vrste *Euclasta splendidalis* na istome području. Nadalje se u radu daje popis dodatnih vrsta Pyraloidea zabilježenih na području doline Neretve.

Ključne riječi: Microlepidoptera, Pyraloidea, *Euclasta splendidalis*, dolina Neretve, Dalmacija

INTRODUCTION

The superfamily Pyraloidea is the third largest within the Lepidoptera, following Noctuoidea and Geometroidea. It is composed of two families - Pyralidae and Crambidae. The family Crambidae, to which the genus *Euclasta* Lederer, 1855 belongs, currently includes 9,655 described species (VAN NIEUKERKEN *et al.*, 2011). According to the Fauna Europaea Website (NUSS *et al.*, 2011) only two species from this genus are present in Europe: *Euclasta splendidalis* (Herrich-Schäffer, [1848]) distributed in the eastern parts of Europe and *Euclasta varii* Popescu-Gorj & Constantinescu, 1973, known only from Spain and the Balearic Islands (YLLA *et al.*, 2008; PÉREZ DE-GREGORIO & REQUENA MIRET, 2008), and Malta (SAMMUT, 2005). Outside of Europe *Euclasta varii* is widespread on the African continent and in the state of Yemen (SLAMKA, 2013).

Although there is a long tradition of lepidopterological investigation in Croatia, there is still no list of pyraloid moth species for the country. In the past, faunistic studies were conducted only sporadically and did not always cover the microlepidopterous families, and in that case, they covered only specific regions of the country (e.g. MANN, 1867; REBEL, 1889, 1895, 1904; ABAFI-AIGNER *et al.*, 1896; STAUDER, 1932, 1933). Since no systematic research of Microlepidoptera has been conducted, the fauna of pyraloid moths in Croatia is quite unknown.

Euclasta splendidalis is very local on xeric habitats in Southeast Europe (SLAMKA, 2013) and a rather rare species. In Croatia it was so far only recorded in the valley of the Neretva River. Although this area is under a strong anthropogenic impact, specific ecological features and vegetation characteristics do probably occur.

The aims of this paper are to give new localities of the local and rare species *Euclasta splendidalis* in Croatia and to present a list of pyraloid moth species also occurring in the area of the Neretva Valley.

MATERIALS AND METHODS

The second author conducted several field investigations and collected about 600 specimens of pyraloid moths in different localities in South Croatia (Nature Park Biokovo, National Park Mljet, Neretva Valley etc.). All Pyraloidea species were caught with a UV light and the collected specimens were deposited in his collection in the Croatian Natural History Museum in Zagreb (coll. Lepidoptera Kučinić). Here presented specimens originate from the project "Investigation of the entomofauna in the area of the lower course of the Neretva River" which was carried out in the years 1996 and 1997. This project was organized by the Croatian Natural History Museum in Zagreb and the Faculty of Science, University in Zagreb. The results of this research were never published.

In order to give a species list from the Neretva Valley, other Pyraloidea species from the Lepidoptera collection were also identified.

The determination of all species was conducted according to SLAMKA (2013) and the systematic presentation follows Fauna Europaea. The biological features and distribution of the species *Euclasta splendidalis* was provided by KOREN (2012) and SLAMKA (2013).

RESULTS AND DISCUSSION

While this Lepidoptera collection was being analysed, three specimens of *Euclasta splendidalis* were identified (Fig. 1). In addition to the findings from the Lepidoptera collection, this particular species was also recorded in the same area of Croatia, as part of the faunistic investigation of Pyralidae and Crambidae, conducted by the first author of this paper. All specimens were collected from the Neretva Valley (Fig. 2), the area where it was found almost 15 years later by KOREN (2012). In order to give a more detailed overview of the species' distribution in the Neretva Valley those records were aggregated with those from KOREN (2012).



Fig. 1. Adult of *Euclasta splendidalis* recorded in 2016 in Croatia. (Photo: D. Gumhalter)



Fig. 2. Map showing the position of the surveyed area.

A chronologically ordered overview of all records is given below (Fig. 3):

1. Bijeli Vir; bank of Mislina River; 5.VIII.1996 (1 specimen, leg. G. Lukač);
2. Obli Vir- Pižinovac; no coordinates available; 13.VIII.1996 (1 specimen, leg. Mladen Kučinić & Dragan Pelić Fixa);
3. Soline; grassland next to Neretva River; no coordinates available; 11.VIII.1997 (1 specimen, leg. Mladen Kučinić);
4. Kamp Rio, Opuzen; karstic slopes on one side and swampy boggy grassland and marshland on the other; 43.014925, 17.468594; 6.VIII.2012 (3 specimens, leg. Toni Koren) (KOREN, 2012);
5. 500 metres south of Rogotin; karstic slopes on one side and swampy boggy grassland and marshland on the other; 43.039913, 17.476838; 7.VIII.2012 (3 specimens, leg. Toni Koren) (KOREN, 2012);
6. Pižinovac; watered, cultivated slots and wetlands on one side and karstic slopes on the other side (Fig. 4); 42.983337, 17.543993; 4.IX.2016 (2 specimens, leg. Gumhalter).

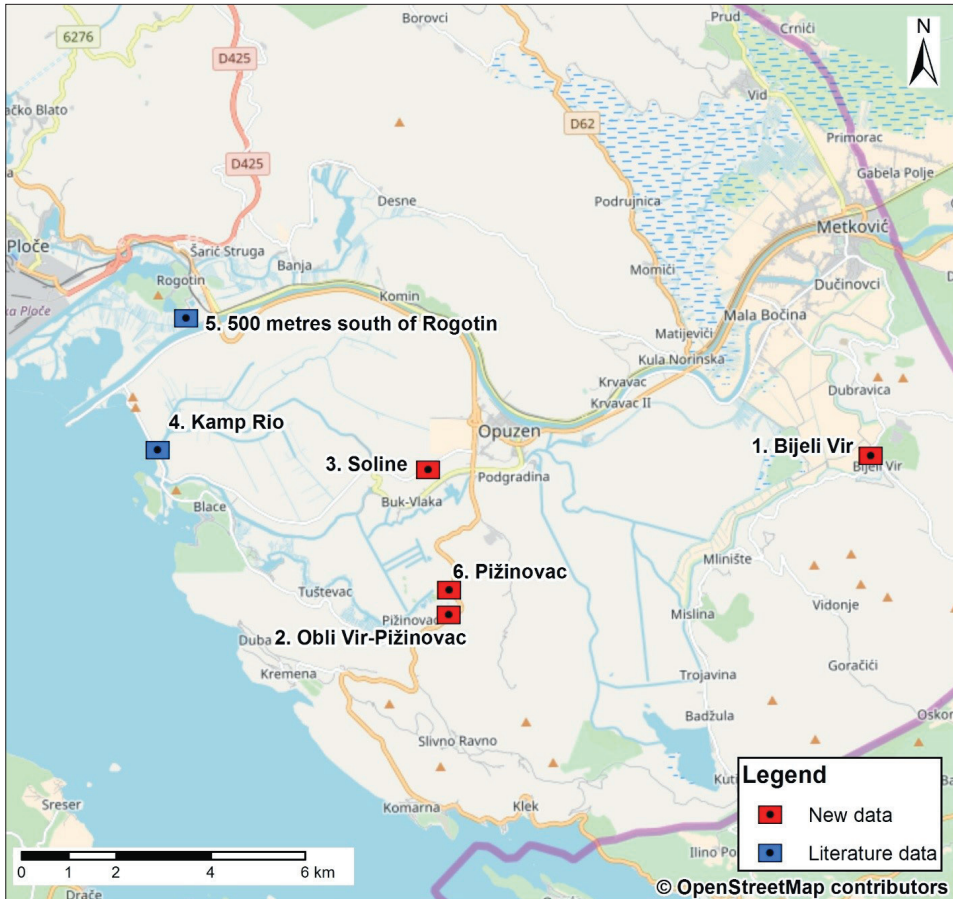


Fig. 3. Distribution of *Euclysta splendidalis* in the area of the lower course of the Neretva River.



Fig. 4. Watered, cultivated slots and karstic slopes of Pižinovac, the location where *Euclasta splendidalis* was recorded in 2016. (Photo: D. Gumhalter)

Additionally, 40 pyraloid moth species were collected in the same area. All these findings originate from the second author's project in the Neretva Valley and the specimens are deposited in his Lepidoptera collection. Species marked with (*) were also collected during the first author's faunistic investigation of Pyralidae and Crambidae in the Neretva River Valley. Species marked with (**) were recorded only from the first author's investigation.

Altogether, 42 moth species were collected from the area:

- Cataclysta lemnata* (Linnaeus, 1758)
- Elophila nymphaeata* (Linnaeus, 1758)
- Nymphula nitidulata* (Hufnagel, 1767)
- Parapopynx stratiotata* (Linnaeus, 1758)
- Agriphila tolli* (Bleszyński, 1952)
- Agriphila tristella* ([Denis & Schiffermüller], 1775)*
- Catoptria falsella* ([Denis & Schiffermüller], 1775)*
- Catoptria pinella* (Linnaeus, 1758)
- Chilo phragmitella* (Hübner, 1805)
- Crambus lathoniellus* (Zincken, 1817)
- Pediasia contaminella* (Hübner, 1796)
- Xanthocrambus saxonellus* (Zincken, 1821)
- Anania verbascalis* ([Denis & Schiffermüller], 1775)
- Ecpyrrhorrhoe diffusalis* (Guenée, 1854)
- Nascia ciliaris* (Hübner, 1796)
- Pyrausta aurata* (Scopoli, 1763)
- Pyrausta castalis* (Treitschke, 1829)**
- Pyrausta despicata* (Scopoli, 1763)
- Pyrausta purpuralis* (Linnaeus, 1758)
- Pyrausta sanguinalis* (Linnaeus, 1767)

Schoenobius gigantella ([Denis & Schiffermüller], 1775)**
Eudonia mercurella (Linnaeus, 1758)
Dolicharthria punctalis ([Denis & Schiffermüller], 1775)*
Metasia carnealis (Treitschke, 1829)
Nomophila noctuella ([Denis & Schiffermüller], 1775)*
Palpita vitrealis (Rossi, 1794)
Pleuroptya balteata (Fabricius, 1798)
Pleuroptya ruralis (Scopoli, 1763)
Udea ferrugalis (Hübner, 1796)
Euchromius superbellus (Zeller, 1849)*
Lamoria anella ([Denis & Schiffermüller], 1775)
Acrobasis obliqua (Zeller, 1847)
Acrobasis suavella (Zincken, 1818)
Acrobasis tumidana ([Denis & Schiffermüller], 1775)
Homoeosoma sinuella (Fabricius, 1794)
Oncocera semirubella (Scopoli, 1763)
Oxybia transversella (Duponchel, 1836)
Pempelia palumbella ([Denis & Schiffermüller], 1775)
Endotricha flammealis ([Denis & Schiffermüller], 1775)*
Hypsopygia costalis (Fabricius, 1775)
Pyralis regalis ([Denis & Schiffermüller], 1775)
Stemmatophora brunnealis (Treitschke, 1829)

A detailed faunistic analysis of Pyraloidea fauna in Croatia is not the aim of this study, and will be presented through a study on biodiversity and biogeographical features of Pyralidae and Crambidae in Croatia, especially in the Mediterranean part of the country.

Euclasta splendidalis was first described from Turkey as *Botys splendidalis* by Herrich-Schäffer in 1848. Nuss *et al.* (2011) state that the species is present in Asia Minor, Turkmenistan, Azerbaijan and Cyprus. The species is local in Bulgaria, Romania, Macedonia (KLIMESCH, 1968) and Greece (WÜST, 1997). According to SLAMKA (2013), it was also recorded from Transcaucasia, Syria, Transcaspia and the north of Iran. In 2015, it was recorded in the south of Italy (ZILLI & PAVESI, 2015).

In Europe, the leaf feeding *Euclasta splendidalis* allegedly occurs only on the Mediterranean species Silk Vine or Greek Liana *Periploca graeca* from the family Asclepiadaceae (POPESCU-GORJ, 1977; SZÉKELY, 2006) and prefers xeric habitats (SZÉKELY, 2006). It is bivoltine, flying from June to July and from August to September.

The species was recorded in 2012 in Croatia and these findings represent the westernmost distribution points of *Euclasta splendidalis* (KOREN, 2012). However, this crambid species had actually been found almost 15 years earlier during faunistic research into the insect fauna of the Neretva Valley. Later in 2016 its occurrence was reconfirmed in the same area. All these findings indicate that *Euclasta splendidalis* is well established in the Croatian moth fauna. It has not been recorded elsewhere in the country, only in the lower course of the Neretva River. Therefore, the species has a small and restricted distribution area in Croatia. Moths are dependent on specific food plants, so obviously

the vegetation composition influences their occurrence and distribution. Therefore, specific ecological features and vegetation characteristics must exist, in spite of the strong anthropogenic impact through intensive agricultural activities in that particular area. Not only the finding of *Euclasta splendida* (Lederer, 1861), but also the finding of other interesting species like *Rhyaparoides metelkana* from the subfamily Arctiinae of the family Erebiidae are proof of this. The Neretva Valley is the only known location of this species in Croatia (KUČINIĆ *et al.*, 2014).

These findings provide more information on the expansion of the species occurrence in this small area, and indicate that *Euclasta splendida* is local and rare in Croatia. In the future, more faunal surveys should be conducted in order to expand the knowledge about its distribution, as well as biological or ecological research of the area. *Euclasta splendida* is obviously a permanent element of the fauna of this area and further research should be carried out in order to define possible measures for habitat and species protection.

Received June 1, 2018

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