

DIVERSITY OF MACROHETEROCERA (EXCEPT FAM. NOCTUIDAE [SENSU NOVO] AND FAM. GEOMETRIDAE) OF CENTRAL ISTRIA, CROATIA

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In this paper we present the results of a many-year survey of moths (Insecta: Lepidoptera: Heterocera) in Pazin and Vela Traba (Central Istria, Croatia). During the thirteen years of research we recorded a total of 131 species belonging to 10 different families. The most interesting species is *Eriogaster catax* (Linnaeus, 1758) (Lepidoptera, Lasiocampidae), which is listed in the Appendix II of the Habitats Directive (ANONYMOUS, 1992). 20 species are new for the Croatian part of Istria.

Key words: Pazin, Vela Traba, Macroheterocera, diversity

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U ovom radu predstavljamo rezultate višegodišnjeg sakupljanja noćnih leptira (Insecta: Lepidoptera: Heterocera) na području Pazina i Vele Trabe. Ovim istraživanjem utvrđena je prisutnost 131 vrste koje spadaju u 10 porodica. Najzanimljiviji je nalaz vrste *Eriogaster catax* (Linnaeus, 1758), (Lepidoptera, Lasiocampidae) koja se nalazi na II. dodatku Direktive o staništima (ANONYMOUS, 1992). 20 vrsta je po prvi puta zabilježeno za hrvatski dio Istre.

Ključne riječi: Pazin, Vela Traba, Macroheterocera, raznolikost

INTRODUCTION

This paper is the continuation of faunistic research into Lepidoptera in central Istria, especially Pazin and Vela Traba, in which the butterfly diversity of the surveyed area in central Istria was presented (KOREN & LADAVAC, 2010). Only a few long-term moth surveys had been made in Croatian by this date (e.g. STAUDER, 1919-1933; MLADINOV, 1977, 1978, 1980, 1983; KRANJČEV, 1983; WITT, 1987; HABELER, 2007), and none of them in central Istria.

Istria is the largest peninsula in Croatia, located in the western part of the country. The peninsula is nowadays divided between three countries: Italy, Slovenia and Croatia, but only a small part of the northern peninsula belongs to Italy and Slovenia, while the rest lies in the territory of Croatia. The geographic border of the peninsula goes from Muggia and S. Dorligo della Valle in Italy, across Slovenia and northern edge of Čićarija, toward Klana, Kastav, and Preluka bay near Volosko in Croatia (ISTRAPEDIJA, 2012). Istria has a mild Mediterranean climate, with warm and dry summers and usually mild winters (FILIPČIĆ, 1992). This paper deals only with the Croatian part of the peninsula.

Many entomologists visited the Mediterranean part of Croatia in the past, but they mostly targeted Dalmatia due to the large number of endemic and oriental species that reach their northern distribution there (for examples of such distribution, see the maps in LERAUT, 2006). All the data about the butterflies and moths of the Adriatic part of Croatia, as well as of Istria published until the second decade of 20th century were unified by Stauder in his work: »Die Schmetterlingsfauna der Illyro-Adriatischen Festland- und Inselzone« (STAUDER, 1919–1933). In his work Stauder reports his own as well as literature records for all Macrolepidoptera, but only 4 records of the group Macroheterocera originate from Pazin. Aside from Stauder's work, there are only a few other papers dealing with the moths of Istria (GALVAGNI, 1909; REBEL, 1910, 1912, 1913, 1924; SCHAWERDA, 1920; DANIEL, 1971; NÄSSIG, 1983; WITT, 1987). No recent papers dealing with moths of the Croatian part of the peninsula were published in the last 25 years, so the fauna of moths of Istria is still considered poorly known.

The aim of this paper is to present the results of a long term faunistic survey of the moths in central Istria at two main localities, around the city Pazin and village Vela Traba.

MATERIALS AND METHODS

This study of moths of Pazin was started by the second author in 1981 and lasted until 1986. In 1999 both authors continued the survey of Pazin, and expanded it to an additional locality, Vela Traba. Between 1999 and 2007 the collecting of moths was sporadic and due to the bad conditions of the entomological storage boxes, a lot of material from that time was lost. A more intensified research programme started in 2007 at both locations and included daily visits to the location in Vela Traba and a few visits per month to the location in Pazin. This kind of research continued until 2011. A few species were collected in the nearby village, Sveti Petar u Šumi, and those data are also presented.

Diurnal moths were collected during daytime by an entomological net on meadows around Pazin and Vela Traba. Nocturnal moths were collected in two ways. The first method is a light trap consisting of a strong mercury vapor light (230 watts) on a wooden construction placed on a window that faced meadows and



Fig. 1. Light trap used for attracting moths

forests in Pazin (Fig. 1). The same location was researched into between 1981–1986 and 1999–2011.

The second method included visiting three 150 watts mercury vapor street lights positioned at three different locations and collecting moths attracted to those lights. Systematics follows KRISTENSEN (1999) and ZAHIRI *et al.* (2012), while the nomenclature follows FAUNA EUROPAEA (2011) and the determination was done using MACEK *et al.* (2008) and LERAUT (2006) and by consulting the Central Collection of Lepidoptera in the Croatian Natural History Museum in Zagreb. For some species genital slides were made, and the determination of genitals followed LERAUT (2006). Only voucher specimens necessary for species determination were collected and they are held in the Koren & Ladavac private butterfly collection in Pazin. During this survey all Macroheterocera were collected, but the records for the members of families Geometridae and Noctuidae, as well Microlepidoptera will not be presented here. This will be the aim of some future papers..

To give a complete picture about Lepidoptera fauna of Istria, literature records from different localities in the peninsula are also given, as well as the foreign names of all localities (Tab. 1).

Tab. 1. List of historically researched localities in central Istria with three recent localities

| | Croatian name | Foreign name | X | Y | UTM |
|-----|-------------------|------------------|---------|---------|------|
| 1. | Limski Kanal | Canale di Lema | 5394629 | 4999544 | UK99 |
| 2. | Rovinj | Rovigno | 5393472 | 4994041 | UK99 |
| 3. | Rovinjско Selo | Villa di Rovigno | 5399140 | 4996888 | UK99 |
| 4. | Umag | Umago | 5384906 | 5033185 | UL83 |
| 5. | Poreč | Parenzo | 5390371 | 5010512 | UL91 |
| 6. | Pula | Pola | 5409333 | 4970327 | VK07 |
| 7. | Bale | Bale | 5404529 | 4989034 | VK08 |
| 8. | Kanfanar | Canfanaro | 5408914 | 4998426 | VK09 |
| 9. | Mirna valley | Quietotal | 5405686 | 5023412 | VL02 |
| 10. | Motovun | Montona | 5408558 | 5022192 | VL02 |
| 11. | Buzet | Pinguente | 5418979 | 5029715 | VL12 |
| 12. | Roč | Rozzo | 5425524 | 5028305 | VL22 |
| 13. | Ćićarija | Tschitschenboden | 5425143 | 5033465 | VL23 |
| 14. | Žbevnica | Sbevnica | 5423059 | 5035955 | VL23 |
| 15. | Polje Čepić | Čepić Polje | 5432565 | 5007589 | VL30 |
| 16. | Učka | Monte Maggiore | 5436937 | 5016028 | VL31 |
| 17. | Lupoglav | Lupoglava | 5430201 | 5023348 | VL32 |
| 18. | Učka, peak Planik | Planik | 5436937 | 5024543 | VL32 |
| 19. | Lovran | Lovrana | 5443393 | 5016994 | VL41 |
| 20. | Lovranska Draga | Draga di Lovrana | 5440648 | 5014986 | VL41 |
| 21. | Medveja | Medvea | 5442605 | 5014122 | VL41 |
| 22. | Kastav | Castua | 5448934 | 5025636 | VL42 |

| | | | | | |
|---------------------------------------|--------------------|---------------------|---------|---------|------|
| 23. | Matulji | Mattuglie | 5447282 | 5024645 | VL42 |
| 24. | Opatija | Abbazia | 5445960 | 5022154 | VL42 |
| 25. | Veprinac | Veprinaz | 5443418 | 5021671 | VL42 |
| 26. | Volosko | Volosca | 5446748 | 5023501 | VL42 |
| Recently researched localities | | | | | |
| 1. | Pazin | Pisino | 5417479 | 5010632 | VL11 |
| 2. | Sveti Petar u Šumi | San Pietro in Selva | 5410718 | 5004679 | VL10 |
| 3. | Vela Traba | Traba Grande | 5411485 | 5012008 | VL11 |

RESULTS AND DISCUSSION

During the research we recorded a total of 131 species of Macroheterocera belonging to 16 families (Tab. 2). In Pazin we recorded 92 species and in Vela Traba 110 species. Only three species were collected in Sveti Petar u Šumi but one of them is interesting because it was not recorded in the other two localities. Due to the large number of observed specimens in the field, the dates of only the collected specimens are given. For each species, literature records for the territory of the Croatian part of Istria are also given. Underlined species are the first records for Istria (Appendix).

Tab. 2. Systematic list of recorded species in central Istria

| Species | Vela Traba | Pazin | Sv. Petar u Šumi |
|-----------------------------------------------------------|------------|-------|------------------|
| Macroheterocera | | | |
| <u>Drepanoid/Geometrid Assemblage</u> | | | |
| Drepanidae | | | |
| <i>Thyatira batis</i> (Linnaeus, 1758) | + | + | – |
| <i>Habrosyne pyritoides</i> (Hufnagel, 1766) | + | + | – |
| <i>Tethea ocularis</i> (Linnaeus, 1767) | + | + | – |
| <i>Tethea or</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Polyploca ridens</i> (Fabricius, 1787) | + | – | – |
| <i>Ashpalia ruficollis</i> (Denis & Schiffermüller, 1775) | + | – | – |
| <i>Achlya flavicornis</i> (Linnaeus, 1758) | + | – | – |
| <i>Watsonalla binaria</i> (Hufnagel, 1767) | + | + | – |
| <i>Cilix glaucata</i> (Scopoli, 1763) | + | + | – |
| Bombycoidea | | | |
| Lasiocampidae | | | |
| <i>Poecilocampa populi</i> (Linnaeus, 1758) | + | – | – |
| <i>Trichiura crataegi</i> (Linnaeus, 1758) | + | – | – |
| <i>Eriogaster lanestris</i> (Linnaeus, 1758) | + | – | – |
| <i>Eriogaster catax</i> (Linnaeus, 1758) | + | – | – |
| <i>Malacosoma castrense</i> (Linnaeus, 1758) | + | – | – |

| | | | |
|-----------------------------------------------------------|---|---|---|
| <i>Malacosoma franconica</i> (Esper, 1784) | + | - | - |
| <i>Lasiocampa trifolii</i> (Denis & Schiffermüller, 1775) | + | + | - |
| <i>Lasiocampa quercus</i> (Linnaeus, 1758) | + | + | - |
| <i>Macrothylacia rubi</i> (Linnaeus, 1758) | + | + | - |
| <i>Gastropacha quercifolia</i> (Linnaeus, 1758) | + | - | - |
| <i>Odonestis pruni</i> (Linnaeus, 1758) | + | - | - |
| Lemoniidae | | | |
| <i>Lemonia taraxaci</i> (Denis & Schiffermüller, 1775) | + | + | - |
| Endromidae | | | |
| <i>Endromis versicolora</i> (Linnaeus, 1758) | - | - | + |
| Saturnidae | | | |
| <i>Aglia tau</i> (Linnaeus, 1758) | + | - | - |
| <i>Saturnia pyri</i> (Denis & Schiffermüller, 1775) | + | + | - |
| <i>Saturnia pavoniella</i> Scopoli, 1763 | + | + | - |
| Sphingidae | | | |
| <i>Marumba quercus</i> (Denis & Schiffermüller, 1775) | + | + | - |
| <i>Mimas tiliae</i> (Linnaeus, 1758) | + | + | - |
| <i>Smerinthus ocellatus</i> (Linnaeus, 1758) | + | - | - |
| <i>Laothoe populi</i> (Linnaeus, 1758) | + | - | - |
| <i>Agrius convolvuli</i> (Linnaeus, 1758) | + | - | - |
| <i>Acherontia atropos</i> (Linnaeus, 1758) | + | + | - |
| <i>Sphinx ligustri</i> (Linnaeus, 1758) | + | + | - |
| <i>Hyloicus pinastri</i> Linnaeus, 1758 | + | - | - |
| <i>Hemaris tityus</i> (Linnaeus, 1758) | + | - | - |
| <i>Hemaris fuciformis</i> (Linnaeus, 1758) | + | - | - |
| <i>Macroglossum stellatarum</i> (Linnaeus, 1758) | + | + | - |
| <i>Hyles euphorbiae</i> (Linnaeus, 1758) | + | + | - |
| <i>Hyles livornica</i> (Esper, 1779) | + | - | - |
| <i>Deilephila elpenor</i> (Linnaeus, 1758) | + | - | - |
| <i>Deilephila porcellus</i> (Linnaeus, 1758) | + | + | - |
| Quadrifid Noctuoidea | | | |
| Erebidae | | | |
| Arctiinae | | | |
| <i>Nudaria mundana</i> (Linnaeus, 1761) | + | - | - |
| <i>Miltochrista miniata</i> (Forster, 1771) | - | + | - |
| <i>Cybosia mesomella</i> (Linnaeus, 1758) | + | + | - |
| <i>Lithosia quadra</i> (Linnaeus, 1758) | + | + | - |
| <i>Eilema depressa</i> (Esper, 1787) | - | + | - |
| <i>Eilema lurideola</i> (Zincken, 1817) | + | + | - |
| <i>Eilema complana</i> (Linnaeus, 1758) | + | + | - |

| | | | |
|--------------------------------------------------------------|---|---|---|
| <i>Eilema sororcula</i> (Hufnagel, 1766) | + | – | – |
| <i>Eilema caniola</i> (Hübner, 1831) | + | + | – |
| <i>Amata phegea</i> (Linnaeus, 1758) | + | + | – |
| <i>Amata kruegeri</i> (Ragusa, 1904) | + | – | – |
| <i>Dysauxes ancilla</i> (Linnaeus, 1767) | + | + | – |
| <i>Dysauxes famula</i> (Freyer, 1836) | – | + | – |
| <i>Spiris striata</i> (Linnaeus, 1758) | + | + | – |
| <i>Chelis maculosa</i> (Gerning, 1780) | + | – | – |
| <i>Phragmatobia fuliginosa</i> (Linnaeus, 1758) | + | + | – |
| <i>Phragmatobia luctifera</i> (Denis & Schiffermüller, 1775) | – | + | + |
| <i>Spilosoma lubricipeda</i> (Linnaeus, 1758) | + | + | – |
| <i>Diaphora mendica</i> (Clerck, 1759) | – | + | – |
| <i>Cynicia luctuosa</i> (Hübner, 1831) | + | – | – |
| <i>Rhyparia purpurata</i> (Linnaeus, 1758) | + | + | – |
| <i>Diacrisia sannio</i> (Linnaeus, 1758) | + | + | – |
| <i>Arctia villica</i> (Linnaeus, 1758) | + | + | – |
| <i>Euplagia quadripunctaria</i> (Poda, 1761) | + | + | – |
| <i>Tyria jacobaeae</i> (Linnaeus, 1758) | + | + | – |
| Aventiinae | | | |
| <i>Laspeyria flexula</i> (Denis & Schiffermüller, 1775) | + | + | – |
| Calpinae | | | |
| <i>Calyptra thalictri</i> (Borkhausen, 1790) | + | + | – |
| Erebiinae | | | |
| <i>Catocala conjuncta</i> (Esper, 1787) | – | + | – |
| <i>Catocala dilecta</i> (Hübner, 1813) | + | – | – |
| <i>Catocala diversa</i> (Geyer, 1828) | + | – | – |
| <i>Catocala electa</i> (Vieweg, 1790) | + | + | – |
| <i>Catocala elocata</i> (Esper, 1787) | – | + | – |
| <i>Catocala fraxini</i> (Linnaeus, 1758) | + | – | – |
| <i>Catocala nupta</i> (Linnaeus, 1767) | + | + | – |
| <i>Catocala nymphagoga</i> (Esper, 1787) | + | + | – |
| <i>Catocala promissa</i> (Denis & Schiffermüller, 1775) | + | – | – |
| <i>Euclidia glyphica</i> (Linnaeus, 1758) | + | + | – |
| <i>Euclidia mi</i> (Clerck, 1759) | + | + | – |
| <i>Catephia alchymista</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Dysgonia algira</i> (Linnaeus, 1767) | + | + | – |
| <i>Minucia lunaris</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Apopestes spectrum</i> (Esper, 1787) | – | + | – |
| <i>Lygephila cracca</i> (Denis & Schiffermüller, 1775) | + | + | – |

| | | | |
|----------------------------------------------------------|---|---|---|
| Eublemininae | | | |
| <i>Eublemma purpurina</i> (Denis & Schiffermüller, 1775) | + | – | – |
| <i>Odice suava</i> (Hübner, 1813) | + | – | – |
| Hermiinae | | | |
| <i>Idia calvaria</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Paracolax tristalis</i> (Fabricius, 1794) | + | + | – |
| <i>Herminia tarsicrinalis</i> (Knoch, 1782) | + | – | – |
| <i>Herminia grisealis</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Polypogon plumigeralis</i> (Hübner, 1825) | + | + | – |
| Hypeninae | | | |
| <i>Rhynchodontodes antiqualis</i> (Hübner, 1809) | – | + | – |
| <i>Hypena proboscidalis</i> (Linnaeus, 1758) | + | + | – |
| <i>Hypena rostralis</i> (Linnaeus, 1758) | + | – | – |
| <i>Hypena obesalis</i> Treitschke, 1829 | – | + | – |
| <i>Hypena lividalis</i> (Hübner, 1796) | + | – | – |
| Lymantriinae | | | |
| <i>Lymantria dispar</i> (Linnaeus, 1758) | + | + | – |
| <i>Ocneria rubea</i> (Denis & Schiffermüller, 1775) | – | + | – |
| <i>Calliteara pudibunda</i> (Linnaeus, 1758) | + | + | – |
| <i>Arctornis l-nigrum</i> (Müller, 1764) | + | – | – |
| Phytometrinae | | | |
| <i>Phytometra viridaria</i> (Clerck, 1759) | + | + | – |
| Rivulinae | | | |
| <i>Rivula sericealis</i> (Scopoli, 1763) | – | + | – |
| <i>Zebeeba falsalis</i> (Herrich-Schäffer, 1839) | + | – | – |
| Scoliopteryginae | | | |
| <i>Scoliopteryx libatrix</i> (Linnaeus, 1758) | + | + | – |
| Euteliidae | | | |
| Euteliinae | | | |
| <i>Eutelia adalatrix</i> (Hübner, 1813) | + | + | – |
| Nolidae | | | |
| Chloephorinae | | | |
| <i>Bena bicolorana</i> (Fuessly, 1775) | + | + | – |
| <i>Pseudoips prasinana</i> (Linnaeus, 1758) | – | + | – |
| <i>Earias clorana</i> (Linnaeus, 1761) | – | + | – |
| <i>Earias vernana</i> (Fabricius, 1787) | + | + | – |
| <i>Nycteola asiatica</i> (Krulikovsky, 1904) | + | + | – |
| Nolinae | | | |
| <i>Meganola albula</i> (Denis & Schiffermüller, 1775) | – | + | – |

| Trifid Noctuoidea | | | |
|------------------------------------------------------------|-----|----|---|
| Notodontidae | | | |
| <i>Thaumetopoea processionea</i> (Linnaeus, 1758) | + | + | – |
| <i>Thaumetopoea pityocampa</i> (Treitschke, 1834) | + | + | – |
| <i>Clostera curtula</i> (Linnaeus, 1758) | + | + | – |
| <i>Clostera pigra</i> (Hufnagel, 1766) | – | + | – |
| <i>Cerura vinula</i> (Linnaeus, 1758) | – | + | – |
| <i>Furcula bifida</i> (Brahm, 1787) | + | + | – |
| <i>Notodonta dromedarius</i> (Linnaeus, 1767) | – | + | – |
| <i>Notodonta tritophus</i> (Denis & Schiffermüller, 1775) | – | + | – |
| <i>Notodonta ziczac</i> (Linnaeus, 1758) | – | + | – |
| <i>Drymonia dodonaea</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Drymonia ruficornis</i> (Hufnagel, 1766) | + | – | – |
| <i>Drymonia querna</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Pheosia tremula</i> (Clerck, 1759) | + | – | – |
| <i>Pterostoma palpina</i> (Clerck, 1759) | + | + | – |
| <i>Ptilophora plumigera</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Ptilodon cucullina</i> (Denis & Schiffermüller, 1775) | + | + | – |
| <i>Phalera bucephaloides</i> (Ochsenheimer, 1810) | + | + | – |
| <i>Peridea anceps</i> (Goeze, 1781) | + | + | – |
| <i>Stauropus fagi</i> (Linnaeus, 1758) | + | + | – |
| <i>Harpyia milhauseri</i> (Fabricius, 1775) | + | + | – |
| <i>Spatalia argentina</i> (Denis & Schiffermüller, 1775) | + | + | – |
| Number of species counted (of total 131): | 110 | 92 | 2 |

During this survey we reconfirmed all five species of moths that STAUDER (1919–1933) recorded in Pazin: *Triodia sylvina* (Linnaeus, 1761), *Lasiocampa trifolii* (Denis & Schiffermüller, 1775), *Saturnia pyri* (Denis & Schiffermüller, 1775), *Chelis maculosa* (Gerning, 1780) and *Eutelia adulatrix* (Hübner, 1813). From 131 recorded species, only two of them are protected on the European level. The first protected moth is *Euplagia quadripunctaria* (Poda, 1761) (Erebidae, Arctiinae) which is listed in Appendix II of the Habitats Directive (ANONYMOUS, 1992). It is a diurnal species, which can often be seen on bushes and leaves resting and flying away when disturbed. It can also be attracted to street lights, but in small numbers and even late at night. This moth was very common during the whole of the survey at both locations. The other protected moth is *Eriogaster catax* (Linnaeus, 1758), also listed in Appendix II of the Habitats Directive (ANONYMOUS, 1992). The habitats for this species are dry and warm bushy habitats that contain its larval host plants, *Prunus spinosa* L. and *Crataegus monogyna* Jacq., which are both common in the vicinity of Vela Traba. The first record of this moth in the Croatian part of Istria was made in Vela Traba. There it was moderately common between 1999 and 2008, with a large number of observed specimens. However, not a single specimen was recorded during the last three years (from 2009–2011). In the last few years (from 2009–2011) the catching

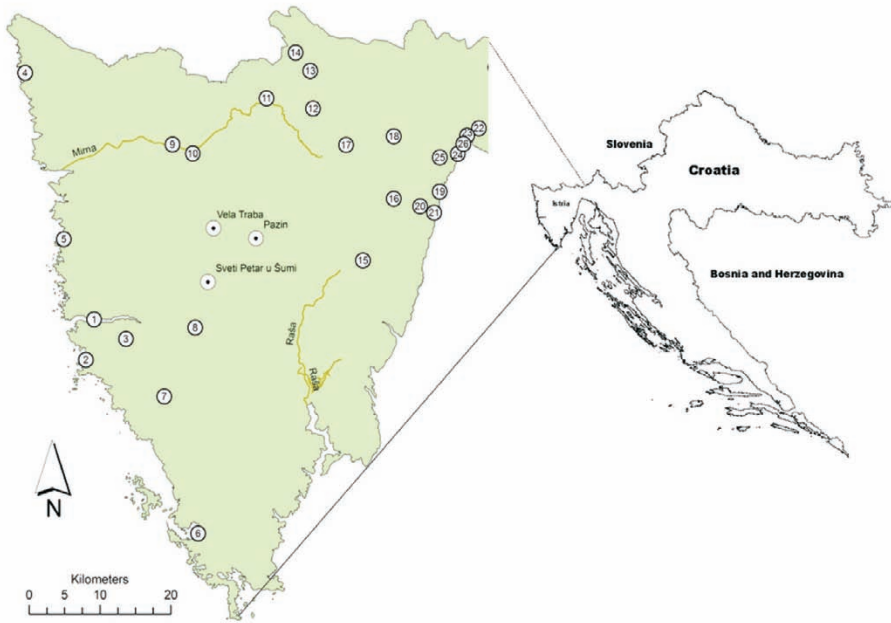


Fig. 2. List of historically researched localities in Istria*

effort increased in the sense that there were more regular visits to the same street lights that had attracted the species in the past years; however not a single specimen was recorded during that period.

Another interesting example is *Lasiocampa trifolli* (Denis & Schiffermüller, 1775). This species was moderately common in Pazin in the first research period (1981–1986), as well in Vela Traba between 1999 and 2001. But afterwards not a single specimen was recorded at either location.

A similar example is *Aglia tau* (Linnaeus, 1758), which was found only twice in the 15-year period, once in Sveti Petar u Šumi, once in Vela Traba. This species is probably rare in central Istria, since only a single record exists from Mt Učka (REBEL, 1924). This can partially be assigned to the daily flight period for this species, but it still does not explain such a low finding rate. Further studies are suggested to estimate species abundance or other population parameters.

Twenty species recorded during this survey are the first records for the Croatian part of Istria: *Hemaris tityus* (Linnaeus, 1758), *Hemaris fuciformis* (Linnaeus, 1758), *Tethea* or (Denis & Schiffermüller, 1775), *Eriogaster lanestris* (Linnaeus, 1758), *Eriogaster catax* (Linnaeus, 1758), *Laspeyria flexula* (Denis & Schiffermüller, 1775), *Catocala conjuncta* (Esper, 1787), *Catocala fraxini* (Linnaeus, 1758), *Catocala nupta* (Linnaeus, 1767), *Hypena proboscidalis* (Linnaeus, 1758), *Hypena rostralis* (Linnaeus, 1758), *Hypena obesalis* Treitsch-

*For locality names see Tab 1.

ke, 1829, *Bena bicolorana* (Fuessly, 1775), *Earias clorana* (Linnaeus, 1761), *Earias vernana* (Fabricius, 1787), *Nycteola asiatica* (Krulikovsky, 1904), *Meganola albula* (Denis & Schiffermüller, 1775), *Notodonta dromedarius* (Linnaeus, 1767), *Notodonta tritophus* (Denis & Schiffermüller, 1775) and *Drymonia querna* (Denis & Schiffermüller, 1775).

This paper is a contribution to the knowledge of the butterfly fauna of central Istria. Because this research lasted more than 15 years, no further very significant increase in diversity of moths is expected. Future studies are aimed at monitoring moth fauna change in central Istria, as well at additions to the known fauna.

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SAŽETAK

Raznolikost Macroheterocera (osim fam. Noctuidae [sensu novo] i fam. Geometridae) središnje Istre, Hrvatska

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Ovaj rad je prvi nastavak faunističkog istraživanja središnje Istre, točnije Pazina i Vele Trabe. Rezultati istraživanja danjih leptira (Rhopalocera) su već objavljeni (KOREN & LADAVAC, 2010), a podatci za porodice Noctuidae i Geometridae te skupinu Microlepidoptera će biti publicirani naknadno. Iako su noćni relativno dobro istraženi u nekim dijelovima Hrvatske (KOČA, 1900, 1901, 1925, 1925a; MLADINOV, 1977, 1978, 1980, 1983; HABELER, 2007), u Istri to nažalost nije slučaj. Sva istraživanja na području Istre, ali i cijele jadranske obale ujediniio je Stauder na početku stoljeća (STAUDER, 1919-1933). Nakon tog perioda publicirano je još samo nekoliko radova o noćnim leptirima Istre, no niti jedan o centralnome dijelu poluotoka. Ovaj rad je doprinos poznavanju faune noćnih leptira Istre, a time i Hrvatske. Samo istraživanje vršeno je na dva lokaliteta, Pazinu i Veljoj Trabi. Pazin je bio prvi istraživani lokalitet, a prva etapa istraživanja trajala je od 1981. godine pa sve do 1986. godine, a druga etapa istraživanja od 1999. godine pa do 2011. godine. Drugom etapom istraživanja obuhvatili smo još jedan lokalitet, selo Vela Traba smješteno nekoliko kilometara od Pazina. Ukupno smo na oba lokaliteta pronašli 131 vrstu koje spadaju u 10 porodica. Najzanimljiviji nalaz je kvočka *Eriogaster catax* (Linnaeus, 1758) (Lepidoptera, Lasiocampidae), koja se smatra ugroženom vrstom u Europi i nalazi se na Drugom dodatku Bernske konvencije (ANONYMOUS, 1992). Ova vrsta je tokom prvih nekoliko godina istraživanja bila prisutna u Veljoj Trabi s relativno velikim brojem primjeraka, dok u zadnje tri godine nije opažen niti jedan primjerak. 20 vrsta je zabilježeno po prvi puta za hrvatski dio Istre.

APPENDIX

Systematic list of recorded species allong with the localities, first dates of observation and literature citations for Istrian peninsula (underlined species names are the first records for Istria).

Drepanoid/Geometrid Assemblage**Drepanoidea****Drepanidae*****Thyatira batis* (Linnaeus, 1758)**

New records: Pazin, July 27th, 1985; July 21st, 2009; Vela Traba, May 2nd, 2008; July 12th, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1927), Opatija (REBEL, 1912; STAUDER, 1927), Rovinj (WITT, 1987)

***Habrosyne pyritoides* (Hufnagel, 1766)**

New records: Pazin, August 17th, 1985, Vela Traba, 2002.

Literature records: Matulji (REBEL, 1912; STAUDER, 1927), Opatija (REBEL, 1912; STAUDER, 1927)

***Tethea ocularis* (Linnaeus, 1767)**

New records: Pazin, June 8th, 1984; July 27th, 1985; Vela Traba, June 2nd, 2008.

Literature records: Rovinj (WITT, 1987)

***Tethea or* (Denis & Schiffermüller, 1775)**

New records: Pazin May 21th, 1986; Vela Traba, May 10th, 2008.

***Polyploca ridens* (Fabricius, 1787)**

New records: Pazin, March 28th, 2008; April 4th, 2008; Vela Traba, March 16th, 2008; March 28th, 2008; April 3rd, 2008.

Literature records: Matulji (REBEL, 1913; STAUDER, 1927), Lovran (REBEL, 1913), Opatija (REBEL, 1913; Stauder, 1927), Rovinj (WITT, 1987), Veprinac (REBEL, 1913; STAUDER, 1927)

***Asphalia ruficollis* (Denis & Schiffermüller, 1775)**

New records: Vela Traba, March 16th, 2008; March 28th, 2008.

Literature records: Matulji (REBEL, 1913; STAUDER, 1927), Rovinj (WITT, 1987)

***Watsonalla binaria* (Hufnagel, 1767)**

New records: Pazin, September 10th, 2008; Vela Traba, May 10th, 2008; July 5th, 2008.

Literature records: Bale (WITT, 1987), Matulji (STAUDER, 1923), Rovinjsko Selo (WITT, 1987), Učka (STAUDER, 1923)

Remarks: The specimens were identified by external morphology according to LERAUT (2006).

***Cilix glaucata* (Scopoli, 1763)**

New records: Pazin, May 1st, 1986; September 10th, 2008; Vela Traba, April 20th, 2008.

Literature records: Lovran (REBEL, 1912, STAUDER, 1923), Matulji (REBEL, 1912), Opatija (STAUDER, 1923), Rovinj (WITT, 1987)

Bombycoidea**Lasiocampoidea****Lasiocampidae*****Poecilocampa populi* (Linnaeus, 1758)**

New records: Vela Traba, March 23th, 2007; October 23th, 2007; October 25th, 2008; November 3rd, 2008; November 16th, 2008.

Literature records: Matulji (REBEL, 1912 STAUDER, 1923)

***Trichiura crataegi* (Linnaeus, 1758)**

New records: Vela Traba, October 5th, 2008; November 11th, 2008.

Literature records: Matulji (REBEL, 1913; STAUDER, 1923), Rovinj (WITT, 1987)

***Eriogaster lanestris* (Linnaeus, 1758)**

New records: Vela Traba, March 15th, 2008; March 15th, 2009.

***Eriogaster catax* (Linnaeus, 1758)**

New records: Vela Traba, October 10th, 1999; Motovun, October 23th, 2008.

***Malacosoma castrensis* (Linnaeus, 1758)**

New records: Vela Traba, June 16th, 2008; July 12th, 2008.

Literature records: Polje Čepić (REBEL, 1924)

***Malacosoma franconica* (Esper, 1784)**

New records: Vela Traba, 2002.

Literature records: Rovinj (WITT, 1987)

***Lasiocampa trifolii* (Denis & Schiffermüller, 1775)**

New records: Pazin, August 24th, 1984; Vela Traba, August 12th, 2002.

Literature records: Buzet (STAUDER, 1923), Matulji (REBEL, 1912, 1913), Kanfanar (STAUDER, 1923), Pazin (STAUDER, 1923), Pula (STAUDER, 1923), Rovinj (WITT, 1987), Veprinac (REBEL, 1913).

***Lasiocampa quercus* (Linnaeus, 1758)**

New records: Pazin August 20th, 1983; Vela Traba, August, 2002; July 30th, 2008.

Literature records: Buzet (STAUDER, 1923), Limski Kanal (STAUDER, 1923), Matulji (REBEL, 1912; STAUDER, 1923), Medveja (BIRKETT, 1964), Opatija (Rebel, 1912; STAUDER, 1923), Poreč (STAUDER, 1923), Učka, Planik (STAUDER, 1923), Rovinjsko Selo (STAUDER, 1923)

***Macrothylacia rubi* (Linnaeus, 1758)**

New records: Pazin, 21th, 1984; Vela Traba, April 21st, 2007; April 20th, 2009.

Literature records: Buzet (STAUDER, 1923), Matulji (REBEL, 1912; STAUDER, 1923)

***Gastropacha quercifolia* (Linnaeus, 1758)**

New records: Pazin, July 21st, 2009; Vela Traba, June 27th, 2008; December 1th, 2007; July 21st, 2009.

Literature records: LOVTAN (SCHAWERDA, 1920), Matulji (REBEL, 1912, 1913; STAUDER, 1923), Pula (GALVAGNI, 1909; STAUDER, 1923), Rovinj (WITT, 1987)

***Odonestis pruni* (Linnaeus, 1758)**

New records: Vela Traba, August, 2002; September 11th, 2008; May 21st, 2009.

Literature records: Matulji (REBEL, 1912, 1913; STAUDER, 1923), Kastav (STAUDER, 1923), Opatija (STAUDER, 1923), Rovinj (WITT, 1987)

Lemoniidae***Lemonia taraxaci* (Denis & Schiffermüller, 1775)**

New records: Pazin, September, 1985, 2 males recorded at the light; Vela Traba, September 21st, 2008, 2 males recorded at the light.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923), Rovinj (WITT, 1987)

Endromidae***Endromis versicolora* (Linnaeus, 1758)**

New records: Sveti Petar u Šumi, May 5th, 2002, 1 female recorded at light.

Literature records: Matulji (REBEL, 1913; STAUDER, 1923),

Saturniidae***Aglia tau* (Linnaeus, 1758)**

New records: Vela Traba, April 15th, 2002, 1 male, recorded at daytime; Sveti Petar u Šumi, April 15th, 2002, 1 female recorded at the light.

Literature records: Učka (REBEL, 1924; STAUDER, 1923)

***Saturnia pyri* (Denis & Schiffermüller, 1775)**

New records: Pazin, April 15th, 1985; Vela Traba, April 15th, 2000; April 20th, 2009.

Literature records: Buzet (STAUDER, 1923), Matulji (STAUDER, 1923), Kanfanar (STAUDER, 1923), Opatija (REBEL, 1912, 1913; STAUDER, 1923), Pazin (STAUDER, 1923), Pula (STAUDER, 1923), Rovinj (STAUDER, 1923; WITT, 1987), Žbevnica (STAUDER, 1923)

***Saturnia pavoniella* Scopoli, 1763**

New records: Pazin, May 2nd, 1986, 2 females recorded at the light; Vela Traba, April, 2000; April 20th, 2009, 1 male recorded during the daytime.

Literature records: Matulji (STAUDER, 1923), Pula (GALVAGNI, 1909), Roč (STAUDER, 1923), Rovinj (WITT, 1987), Veprinac (REBEL, 1913; STAUDER, 1923)

Sphingidae***Marumba quercus* (Denis & Schiffermüller, 1775)**

New records: Pazin, July 2nd, 1986; Vela Traba, June 4th, 2000, June 24th, 2008; August 6th, 2008; June 26th, 2009.

Literature records: Lovtan (REBEL, 1913; STAUDER, 1923), Opatija (REBEL, 1913; STAUDER, 1923), Pula (STAUDER, 1923), Rovinj (WITT, 1987)

***Mimas tiliae* (Linnaeus, 1758)**

New records: Pazin, May 2nd, 1986; Vela Traba, August 4th, 2008; July 21st, 2009.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923), Rovinj (WITT, 1987)

***Smerinthus ocellatus* (Linnaeus, 1758)**

New records: Vela Traba, July 21st, 2003; June 26th, 2009.

Literature records: Matulji (REBEL, 1913; STAUDER, 1923); Rovinj (WITT, 1987)

***Laothoe populi* (Linnaeus, 1758)**

New records: Vela Traba, 2002.

Literature records: Mirna valley, near Buzet (STAUDER, 1923), Matulji (STAUDER, 1923), Opatija (REBEL, 1913; STAUDER, 1923)

***Agrius convolvuli* (Linnaeus, 1758)**

New records: Pazin, June 5th, 2009; Vela Traba, June 6th, 2002; June 26th, 2009; August 15th, 2009.

Literature records: Lovtan (SCHAWERDA, 1920), Matulji (STAUDER, 1923), Rovinj (DANIEL, 1971; WITT, 1987), Volosca (REBEL, 1912; STAUDER, 1923)

***Acherontia atropos* (Linnaeus, 1758)**

New records: Pazin, August 2nd, 1986; Vela Traba, August 8th, 2002; June 15th, 2009.

Literature records: Kanfanar (STAUDER, 1923), Matulji (REBEL, 1912; STAUDER, 1923), Pula (STAUDER, 1923), Rovinj (DANIEL, 1971)

***Sphinx ligustri* (Linnaeus, 1758)**

New records: Vela Traba, July 20th, 2002; July 15th, 2008.

Literature records: Opatija (REBEL, 1913, STAUDER, 1923), Rovinj (WITT, 1987)

***Hyloicus pinastri* Linnaeus, 1758**

New records: Vela Traba, June 3rd, 2002.

Literature records: Rovinj (WITT, 1987)

***Hemaris tityus* (Linnaeus, 1758)**

New records: Vela Traba, July 2nd, 2009.

***Hemaris fuciformis* (Linnaeus, 1758)**

New records: Vela Traba, July 12th, 2009.

***Macroglossum stellatarum* (Linnaeus, 1758)**

New records: Pazin, August 17th, 1985; Vela Traba, June 16th, 2008; July 12th, 2009.

Literature records: Matulji (REBEL, 1912), Učka (REBEL, 1910), Rovinj (DANIEL, 1971; WITT, 1987)

***Hyles euphorbiae* (Linnaeus, 1758)**

New records: Pazin, August 17th, 1985; Vela Traba, July 30th, 2008.

Literature records: Buzet (STAUDER, 1923), Ćićarija (STADER, 1923), Kanfanar (STAUDER, 1923), Linski Kanal (STAUDER, 1923), Rovinj (WITT, 1987), Učka (REBEL, 1913; STAUDER, 1923), Žbevnica (STAUDER, 1923)

***Hyles livornica* (Esper, 1779)**

New records: Vela Traba, July, 2002; May 24th, 2009.

Literature records: Matulji (REBEL, 1912), Rovinj (DANIEL, 1971; WITT, 1987)

***Deilephila elpenor* (Linnaeus, 1758)**

New records: Pazin, June 5th, 1984; Vela Traba, 2002; June 26th, 2009.

Literature records: Matulji (REBEL, 1912, STAUDER, 1923), Rovinj (WITT, 1987)

***Deilephila porcellus* (Linnaeus, 1758)**

New records: Pazin, May 5th, 1984; Vela Traba, August 11th, 2008.

Literature records: Buzet (STAUDER, 1923), Matulji (REBEL, 1912; STAUDER, 1923), Volosko (MANN, 1857; STAUDER, 1923)

Quadrifid Noctuoidea**Erebidae****Arctiinae*****Nudaria mundana* (Linnaeus, 1761)**

New records: Vela Traba, June 13th, 2009.

Literature records: Rovinj (WITT, 1987), Učka (REBEL, 1924)

***Miltochrista miniata* (Forster, 1771)**

New records: Pazin, 1986.

Literature records: Opatija (REBEL, 1912, STAUDER, 1913)

***Cybosia mesomella* (Linnaeus, 1758)**

New records: Pazin, 1986; Vela Traba, May 19th, 2004.

Literature records: Rovinj (WITT, 1987), Učka, Planik (WITT, 1987)

***Lithosia quadra* (Linnaeus, 1758)**

New records: Pazin, July 1st, 1984; Vela Traba, June 25th, 2008; October 14th, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1930), Klana (MANN, 1957, STAUDER, 1930), Opatija (STAUDER, 1930), Rovinj (WITT, 1987),

***Eilema depressa* (Esper, 1787)**

New records: Pazin, September 10th, 2008.

Literature records: Rovinj (WITT, 1987)

***Eilema lurideola* (Zincken, 1817)**

New records: Pazin, September 2nd, 2009; Vela Traba, July 11th, 2008.

Literature records: Opatija (REBEL, 1913; STAUDER, 1930)

***Eilema complana* (Linnaeus, 1758)**

New records: Pazin, September 2nd, 2009; Vela Traba, July 11th, 2008, August 7th, 2008; September 22th, 2008.

Literature records: Rovinj (WITT, 1987), Opatija (REBEL, 1912; STAUDER, 1930), Učka (REBEL, 1912; STAUDER, 1930), Veprinac (REBEL, 1912; STAUDER, 1930)

***Eilema sororcula* (Hufnagel, 1766)**

New records: Vela Traba, May 2nd, 2008; June 3rd, 2008.

Literature records: Rovinj (STAUDER, 1930; WITT, 1987)

***Eilema caniola* (Hübner, 1831)**

New records: Pazin, July 6th, 2008; Vela Traba, September 5th, 2008; May 31st, 2009.

Literature records: Matulji (REBEL, 1912, 1913; STAUDER, 1930), Kanfanar (STAUDER, 1930), Lovtvan (REBEL, 1912; STAUDER, 1930), Rovinj (WITT, 1987), Opatija (REBEL, 1912; STAUDER, 1930)

***Amata phegea* (Linnaeus, 1758)**

New records: Pazin, August 12th, 1982; August 17th, 2009; Vela Traba, June 16th, 2004.

Literature records: Buzet (STAUDER, 1930), Linski Kanal (STAUDER, 1930), Lovtvan (REBEL, 1913; SCHAWERDA, 1920; STAUDER, 1930), Opatija (REBEL, 1912), Pula (GALVAGNI, 1909; STAUDER, 1930), Rovinj (WITT, 1987), Učka (REBEL, 1913; SCHAWERDA, 1920).

***Amata kruegeri* (Ragusa, 1904)**

New records: Vela Traba, June 5th, 2004.

Literature records: Pula (STAUDER, 1930), Rovinj (WITT, 1987)

***Dysauxes ancilla* (Linnaeus, 1767)**

New records: Pazin, July 19th, 1984; Vela Traba, July 23th, 2008.

Literature records: Lovtvan (REBEL, 1913, STAUDER, 1930), Opatija (REBEL, 1913, STAUDER, 1930), Rovinj (WITT, 1987), Učka (REBEL, 1912)

***Dysauxes famula* (Freyer, 1836)**

New records: Pazin, July 22nd, 1984.

Literature records: Učka (REBEL, 1910; STAUDER, 1930), Rovinj (WITT, 1987)

***Coscinia striata* (Linnaeus, 1758)**

New records: Pazin, 1986; Vela Traba, August 27th, 2008.

Literature records: Čičarija (STAUDER, 1930), Buzet (STAUDER, 1930), Kanfanar (STAUDER, 1930), Labin (STAUDER, 1930), Linski Kanal (STAUDER, 1930), Pula (GALVAGNI, 1909; STAUDER, 1930), Rovinj (STAUDER, 1930; WITT, 1987), Rovinj, Villa di Rovigno (STAUDER, 1930)

***Chelis maculosa* (Gerning, 1780)**

New records: Vela Traba, 2002.

Literature records: Pazin (STAUDER, 1930)

***Phragmatobia fuliginosa* (Linnaeus, 1758)**

New records: Pazin, September 2nd, 2009; July 21st, 2009; Vela Traba, April 12th, 2008; September 5th, 2008; July 21st, 2009; August 17th, 2009.

Literature records: Matulji (REBEL, 1912), Lovtvan (SCHAWERDA, 1920), Opatija (REBEL, 1912), Pula (GALVAGNI, 1909; STAUDER, 1930), Rovinj (WITT, 1987)

***Phragmatobia luctifera* (Denis & Schiffermüller, 1775)**

New records: Pazin, 1986; Sveti Petar u Šumi, 1986.

Literature records: Matulji (REBEL, 1912; STAUDER, 1930)

***Spilosoma lubricipeda* (Linnaeus, 1758)**

New records: Pazin, 1986; Vela Traba, 2002.

Literature records: Matulji (REBEL, 1912), Opatija (REBEL, 1912), Volosko (STAUDER, 1930)

***Diaphora mendica* (Clerck, 1759)**

New records: Pazin, 1986.

Literature records: Matulji (REBEL, 1913), Opatija (REBEL, 1912, 1913), Rovinj (WITT, 1987)

***Diaphora luctuosa* (Hübner, 1831)**

New records: Vela Traba, May 4th, 2008; May 15th, 2008.

Literature records: Medveja (REBEL, 1913; STAUDER, 1930), Opatija (REBEL, 1912; STAUDER, 1930)

***Rhyparia purpurata* (Linnaeus, 1758)**

New records: Pazin, 1986; Vela Traba, July, 2001; June 23th, 2008.

Literature records: Rovinj (WITT, 1987)

***Diacrisia sannio* (Linnaeus, 1758)**

New records: Pazin, September 2nd, 2009; Vela Traba, June 25th, 2008; August 23th, 2008.

Literature records: Buzet (STAUDER, 1930), Učka (MANN, 1857)

***Arctia villica* (Linnaeus, 1758)**

New records: Pazin, 1986, Vela Traba, 2002; May 2nd, 2008; May 4th, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1930), Opatija (REBEL, 1912), Rovinj (WITT, 1987)

***Euplagia quadripunctaria* (Poda, 1761)**

New records: Pazin, August 2nd, 1984; Vela Traba, June 4th, 2002; August 17th, 2009.

Literature records: Bale (WITT, 1987), Buzet (STAUDER, 1930), Kastav (MANN, 1857), Lovtan (REBEL, 1912, 1913; SCHAWERDA, 1920; STAUDER, 1930), Opatija (STAUDER, 1930), Pula (GALVAGNI, 1909; STAUDER, 1930), Rovinj (STAUDER, 1930; WITT, 1987)

***Tyria jacobaeae* (Linnaeus, 1758)**

New records: Pazin, April 4th, 1982; Vela Traba, April 14th, 2001.

Literature records: Lovtan (REBEL, 1913; STAUDER, 1930)

Aventiinae***Laspeyria flexula* (Denis & Schiffermüller, 1775)**

New records: Pazin, June 9th, 1982; Vela Traba, May 2nd, 2008.

Calpinae***Calyptra thalictri* (Borkhausen, 1790)**

New records: Pazin, August 16th, 1983, June 12th, 2008; Vela Traba, July 20th, 2007.

Literature records: Volosko, Opatija (REBEL, 1910, 1912; STAUDER, 1927)

Erebiinae***Catocala conjuncta* (Esper, 1787)**

New records: Pazin, July 19th, 1985.

***Catocala dilecta* (Hübner, 1813)**

New records: Vela Traba, August 15th, 2002.

Literature records: Matulji (REBEL, 1913; STAUDER, 1927), Pula (GALVAGNI, 1909; STAUDER, 1927)

***Catocala diversa* (Geyer, 1828)**

New records: Vela Traba, August 30th, 2008.

Literature records: Matulji (REBEL, 1913; STAUDER, 1927), Lovtan (REBEL, 1913; STAUDER, 1927)

***Catocala electa* (Vieweg, 1790)**

New records: Pazin, September 2nd, 2007; Vela Traba, August 15th, 2002.

Literature records: Matulji (STAUDER, 1927), Pula (STAUDER, 1927)

***Catocala elocata* (Esper, 1787)**

New records: Pazin, July 20th, 1985.

Literature records: Matulji (REBEL, 1912), Pula (GALVAGNI, 1909)

***Catocala fraxini* (Linnaeus, 1758)**

New records: Vela Traba, August 17th, 2008.

***Catocala nupta* (Linnaeus, 1767)**

New records: Pazin, July 20th, 1985, September 24th, 2009; Vela Traba, August 30th, 2008.

***Catocala nymphagoga* (Esper, 1787)**

New records: Pazin, July 29th, 1984; Vela Traba, August 30th, 2008.

Literature records: Matulji (REBEL, 1913; STAUDER, 1927), Pula (STAUDER, 1927)

***Catocala promissa* (Denis & Schiffermüller, 1775)**

New records: Vela Traba, August 1st, 2008.

Literature records: Roč (STAUDER, 1927)

***Euclidia glyphica* (Linnaeus, 1758)**

New records: Pazin, June 8th, 1982; Vela Traba, July 9th, 2008.

Literature records: Lovran (SCHAWERDA, 1920; STAUDER, 1927), Učka (REBEL, 1910), Opatija (STAUDER, 1927)

***Euclidia mi* (Clerck, 1759)**

New records: Pazin, June 17th, 1982; Vela Traba June 2nd, 2008.

Literature records: Učka (REBEL, 1910), Opatija (STAUDER, 1927)

***Catephia alchymista* (Denis & Schiffermüller, 1775)**

New records: Pazin, June 20th, 1982; Vela Traba, May 15th, 2008.

Literature records: Matulji (REBEL 1912, 1913a; STAUDER, 1927), Opatija (STAUDER, 1927)

***Dysgonia algira* (Linnaeus, 1767)**

New records: Pazin, July 1st, 1984; Vela Traba, June 24th, 2008.

Literature records: Buzet (STAUDER, 1927), Kanfanar, Draga (STAUDER, 1927), Lovran (REBEL, 1912; SCHAWERDA, 1920; STAUDER, 1927), Matulji (REBEL, 1912; STAUDER, 1927), Opatija (REBEL, 1912; STAUDER, 1927), Rovinj (STAUDER, 1927), Učka (REBEL, 1910)

***Minucia lunaris* (Denis & Schiffermüller, 1775)**

New records: Pazin, July 29th, 1984; Vela Traba, April 10th, 2008.

Literature records: Pula (GALVAGNI, 1909; STAUDER, 1927), Učka (REBEL, 1924)

***Apopestes spectrum* (Esper, 1787)**

New records: Pazin, July 29th, 1984.

Literature records: Lovran (REBEL, 1913; STAUDER, 1927), Matulji (REBEL, 1912; STAUDER, 1927), Rovinj (STAUDER, 1927)

***Lygephila craccae* (Denis & Schiffermüller, 1775)**

New records: Pazin, August 19th, 1985; Vela Traba, June 28th, 2008.

Literature records: Lovran (SCHAWERDA, 1920; STAUDER, 1927), Matulji (1913a; STAUDER, 1927), Opatija (STAUDER, 1927), Učka (REBEL, 1910)

Eubleminae

Eublemma purpurina (Denis & Schiffermüller, 1775)

New records: Pazin, July 1st, 1984; Vela Traba, June 28th, 2008.

Literature records: Limski Kanal (STAUDER, 1927)

Odice suava (Hübner, 1813)

New records: Vela Traba, July 7th, 2008.

Literature records: Učka (REBEL, 1910), Opatija (STAUDER, 1927)

Herminiinae

Idia calvaria (Denis & Schiffermüller, 1775)

New records: Pazin, August 24th, 1986; Vela Traba, October 10th, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1927)

Paracolax tristalis (Fabricius, 1794)

New records: Pazin, July 27th, 1985; Vela Traba June 24th, 2008.

Literature records: Opatija (REBEL, 1912; STAUDER, 1927)

Herminia tarsicrinalis (Knoch, 1782)

New records: Vela Traba, August 2nd, 2009.

Literature records: REBEL (1924)

Herminia grisealis (Denis & Schiffermüller, 1775)

New records: Pazin, August 8th, 2008; Vela Traba May 10th, 2008.

Literature records: Opatija (STAUDER, 1927), Učka (REBEL, 1910)

Polypogon plumigeralis (Hübner, 1825)

New records: Pazin, June 23rd, 1984; Vela Traba, August 9th, 2008.

Literature records: Matulji (REBEL, 1913), Opatija (REBEL, 1913), Učka (REBEL, 1924)

Hypeninae

Rhynchodontodes antiqualis (Hübner, 1809)

New records: Pazin, July 1st, 1985.

Literature records: Lovtan (SCHAWERDA, 1920; STAUDER, 1927), Matulji (REBEL, 1912; STAUDER, 1927), Opatija (STAUDER, 1927), Učka (REBEL, 1910)

Hypena proboscidalis (Linnaeus, 1758)

New records: Pazin, July 28th, 1985, August 10th, 2008; Vela Traba, July 19th, 2008.

Hypena rostralis (Linnaeus, 1758)

New records: Vela Traba, June 19th, 2008.

Hypena obesalis Treitschke, 1829

New records: Pazin, July 2nd, 1984, September 10th, 2008.

Hypena lividalis (Hübner, 1796)

New records: Vela Traba, October 11th, 2008.

Literature records: Medveja (SCHAWERDA, 1920; STAUDER, 1927)

Lymantriinae

Lymantria dispar (Linnaeus, 1758)

New records: Pazin, July 19th, 1985; July 7th, 2002; Vela Traba, July 12th, 2001; July 19th, 2008.

Literature records: Buzet (MARGALETIĆ *et al.*, 2007), Rovinj (WITT, 1987), Veprinac (REBEL, 1913)

***Ocneria rubea* (Denis & Schiffermüller, 1775)**

New records: Pazin, July 21st, 1986.

Literature records: Lovran (REBEL, 1913), Matulji (REBEL, 1913), Rovinj (WITT, 1987)

***Calliteara pudibunda* (Linnaeus, 1758)**

New records: Pazin, June 20th, 1984; Vela Traba, May 25th, 2008, June 2nd, 2008; March 24th, 2009; April 24th, 2009.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923)

***Arctornis l-nigrum* (Müller, 1764)**

New records: Vela Traba, June 2nd, 2008; June 8th, 2008.

Literature records: Bale (WITT, 1987), Matulji (STAUDER, 1923), Rovinj (WITT, 1987), Rovinjsko Selo (WITT, 1987)

Phytometrinae***Phytometra viridaria* (Clerck, 1759)**

New records: Pazin, August 17th, 1986; Vela Traba, June 24th, 2008.

Literature records: Lovran (REBEL, 1912; SCHAWERDA, 1920; STAUDER, 1927), Matulji (REBEL, 1910), Opatija (REBEL, 1910; STAUDER, 1927), Učka (REBEL, 1910)

Rivulinae***Rivula sericealis* (Scopoli, 1763)**

New records: Pazin, June 23rd, 1984:

Literature records: Učka (REBEL, 1924)

***Zebeeba falsalis* (Herrich-Schäffer, 1839)**

New records: Vela Traba, August 10th, 2008.

Literature records: Buzet (STAUDER, 1930), Lovran (REBEL, 1913; STAUDER, 1930), Matulji (REBEL, 1912; STAUDER, 1930), Pula (STAUDER, 1930)

Scoliopteryginae***Scoliopteryx libatrix* (Linnaeus, 1758)**

New records: Pazin, July 1st, 1985; Vela Traba, July 10th, 2008.

Literature records: Buzet (STAUDER, 1927), Lovran (SCHAWERDA, 1920), Matulji (REBEL, 1912; 1913a; STAUDER, 1927)

Euteliidae**Euteliinae*****Eutelia adulatrix* (Hübner, 1813)**

New records: Pazin, August 22nd, 1985; Vela Traba, August, 27th, 2008.

Literature records: Buzet (STAUDER, 1927), Čepić polje (REBEL, 1924), Opatija (REBEL, 1912; STAUDER, 1927), Pazin (STAUDER, 1927), Pula (GALVAGNI, 1909; STAUDER, 1927)

Nolidae**Chloephorinae*****Bena bicolorana* (Fuessly, 1775)**

New records: Pazin, July 20th, 1984; Vela Traba, June 18th, 2008.

***Pseudoips prasinana* (Linnaeus, 1758)**

New records: Pazin, July 27th, 1985.

Literature records: Kastav (MANN, 1857; STAUDER, 1930), Volosko, Opatija (MANN, 1857; STAUDER, 1930), Učka (REBEL, 1913; STAUDER, 1930)

Earias clorana (Linnaeus, 1761)

New records: Pazin, July 31st, 1984.

Earias vernana (Fabricius, 1787)

New records: Pazin, June 9th, 1985; Vela Traba, August, 19th, 2008.

Nycteola asiatica (Krulikovskiy, 1904)

New records: Pazin, July 1st, 1985; Vela Traba, August, 24th, 2009.

Nolinae**Meganola albula (Denis & Schiffermüller, 1775)**

New records: Pazin, July 1st, 1984.

Trifid Noctuoidea**Notodontidae****Thaumetopoea processionea (Linnaeus, 1758)**

New records: Pazin, July 12th, 2008; Vela Traba, May 2nd, 2008; August 27th, 2008; September 2nd, 2009.

Literature records: Matulji (REBEL, 1913; STAUDER, 1923)

Thaumetopoea pityocampa (Treitschke, 1834)

New records: Pazin, July 12th, 2008; Vela Traba, July 12th, 2008; August 6th, 2008.

Literature records: Rovinj (WITT, 1987)

Clostera curtula (Linnaeus, 1758)

New records: Pazin, May 2nd, 1986; Vela Traba, May 10th, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923), Rovinj (WITT, 1987)

Clostera pigra (Hufnagel, 1766)

New records: Pazin, July 7th, 1985.

Literature records: Matulji (REBEL, 1913)

Cerura vinula (Linnaeus, 1758)

New records: Pazin, July 21st, 1986.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923), Rovinj (WITT, 1987)

Furcula bifida (Brahm, 1787)

New records: Pazin, August 28th, 2008; Vela Traba, May 2nd, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923), Opatija (STAUDER, 1923)

Notodonta dromedarius (Linnaeus, 1767)

New records: Pazin, July 21st, 1986.

Notodonta tritophus (Denis & Schiffermüller, 1775)

New records: Pazin, July 21st, 1986.

Notodonta ziczac (Linnaeus, 1758)

New records: Pazin, August 25th, 1986.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923)

Drymonia dodonaea (Denis & Schiffermüller, 1775)

New records: Pazin, July 21st, 1986; Vela Traba, May 2nd, 2008, July 29th, 2008.

Literature records: Rovinj (WITT, 1987)

***Drymonia ruficornis* (Hufnagel, 1766)**

New records: Pazin, April 19th, 2008; April 12th, 2009; Vela Traba, 12.4.2008; July 12th, 2008; July 27th, 2008; April 5th, 2009; April 20th, 2009.

Literature records: Buzet (STAUDER, 1923), Matulji (REBEL, 1912; STAUDER, 1923), Rovinj (WITT, 1987)

***Drymonia querna* (Denis & Schiffermüller, 1775)**

New records: Pazin, July 27th, 1985; Vela Traba, July, 2001; August 9th, 2008.

***Pheosia tremula* (Clerck, 1759)**

New records: Vela Traba, September 1st, 2009.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923)

***Pterostoma palpina* (Clerck, 1759)**

New records: Pazin, July 21st, 1986; Vela Traba, May 29th, 2008; August 7th, 2008; May 20th, 2009.

Literature records: Matulji (REBEL, 1912), Rovinj (WITT, 1987)

***Ptilophora plumigera* (Denis & Schiffermüller, 1775)**

New records: Pazin, September 2nd, 2008; Vela Traba, January 28th, 2007; November 16th, 2008; March 1st, 2009.

Literature records: Matulji (REBEL, 1912, 1913; STAUDER, 1923)

***Ptilodon cucullina* (Denis & Schiffermüller, 1775)**

New records: Pazin, August 24th, 1984; Vela Traba, July 11th, 2008; August 6th, 2008.

Literature records: Rovinj (WITT, 1987)

***Phalera bucephaloides* (Ochsenheimer, 1810)**

New records: Pazin, July 20th, 1985; Vela Traba, 2002; May 4th, 2008; July 25th, 2008.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923)

***Peridea anceps* (Goeze, 1781)**

New records: Pazin, May 2nd, 1986; May 26th, 2009; Vela Traba, March 29th, 2008; March 30th, 2008; April 4th, 2008; May 1st, 2008.

Literature records: Bale (WITT, 1987), Matulji (REBEL, 1913, STAUDER, 1923), Opatija (STAUDER, 1923)

***Stauropus fagi* (Linnaeus, 1758)**

New records: Pazin, August 13th, 2008; August 21st, 2008; Vela Traba, May 4th, 2008; July 11th, 2008; August 12th, 2008; August 22nd, 2008.

Literature records: Matulji (REBEL, 1913, STAUDER, 1923), Opatija (STAUDER, 1923), Rovinj (WITT, 1987)

***Harpyia milhauseri* (Fabricius, 1775)**

New records: Pazin; July 23rd, 2008; April 20th, 2009; Vela Traba, July 18th, 2008; July 19th, 2008; July 29th, 2008; April 20th, 2009.

Literature records: Lovran (STAUDER, 1923), Matulji (REBEL, 1912, 1913, STAUDER, 1923), Pula (GALVAGNI, 1909; STAUDER, 1923), Rovinj (WITT, 1987), Učka, Planik (STAUDER, 1923)

***Spatalia argentina* (Denis & Schiffermüller, 1775)**

New records: Vela Traba, July 12th, 2008; August 22th, 2008; May 24th, 2009.

Literature records: Matulji (REBEL, 1912; STAUDER, 1923), Rovinj (WITT, 1987)