

# DATA TO THE KNOWLEDGE OF THE MACROLEPIDOPTERA FAUNA OF THE SĂLAJ-REGION, TRANSYLVANIA, ROMANIA (ARTHROPODA: INSECTA)

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**ABSTRACT.** We provide 984 data of 88 collecting events originating from the Sălaj-region of western Transylvania, Romania. These have been assembled in the period between 22. April, 2014 and 10. September, 2015. Geographical, spatial and temporal records to the knowledge of 98 butterflies (Papilionoidea) and 225 moths (Bombycoidea, Drepanoidea, Geometroidea, Noctuoidea and Sphingoidea) are given representing the families (species numbers in brackets) Hesperidae (8), Lycaenidae (28), Nymphalidae (28), Papilionidae (3), Pieridae (13) Riodinidae (1), Satyridae (17) (Papilionoidea); Arctiidae (11), Ctenuchidae (1), Lymantriidae (1), Noctuidae (119), Nolidae (2), Notodontidae (6) Thyatiridae (4), (Noctuoidea); Drepanidae (3) (Drepanoidea); Geometridae (73) (Geometroidea); Lasiocampidae (2), Saturniidae (1) (Bombycoidea); Sphingidae (2) (Sphingoidea).

According to the most recent catalogue of the Romanian Lepidoptera fauna 31 species proved to be new for the region Sălaj. The following 43 species have faunistical interest, therefore they are briefly annotated: *Agrochola humilis*, *Agrochola laevis*, *Aplocera efformata*, *Aporophila lutulenta*, *Atethmia centrargo*, *Bryoleuca felina*, *Calyptra thalictri*, *Chazara briseis*, *Colias chrysotheme*, *Coscinia cribraria*, *Cupido osiris*, *Cyclophora albipunctata*, *Cymatophorima diluta*, *Drepana curvatula*, *Dryobotodes monochroma*, *Eilema caniola*, *Eilema palliatella*, *Eucarta amethystina*, *Eucarta virgo*, *Euphydryas aurinia*, *Eupithecia inturbata*, *Euxoa cos*, *Euxoa distinguenda*, *Everes alcetas*, *Hemaris tityus*, *Leptidea major*, *Lycaena thersamon*, *Maculinea arion*, *Maculinea teleius*, *Maniola tithonus*, *Meganephria bimaculosa*, *Noctua interjecta*, *Nothocasis sertata*, *Nymphalis xanthomelas*, *Perconia strigillaria*, *Phyllophila oblitterata*, *Plebejides sephirus*, *Pyrgus armoricanus*, *Rhyacia lucipeta*, *Scotochrosta pulla*, *Scotopteryx vicinaria*, *Selidosema plumaria*, *Shargacucullia gozmanyi*.

Amongst them *Euxoa cos*, *Plebejides sephirus* and *Scotopteryx vicinaria* turned to be the most remarkable findings.

**Keywords.** Macrolepidoptera, Romania, region Sălaj, new records, faunistics.

## INTRODUCTION:

Regarding Lepidoptera faunistics the Sălaj-region belongs to the less explored areas of western part of Romania. Although there are far-flung data in various publications (Abafi et al., 1896, Popescu-Gorj, 1964, König, 1975, Căpușe & Kovács, 1987), and also there are accounts or reports briefly dealing the area (eg. Rothschild, 1908, Rothschild & Wertheimstein, 1913), hitherto there is no comprehensive monograph what could satisfactorily show how the fauna looks in general and also in particular. This work has to be done in the future by a team or a person who is able to dedicate considerable effort and energy to achieve the goal.

Present paper has the aim to publish the Lepidoptera data of the expeditions taken by the staff of the Hungarian Natural History Museum during the years 2014-2015 (Gubányi, 2015). Knowing the results it seems that the region has a remarkable position from the view of zoogeography. The chain of the Sălaj forests and steppes most probably serves as a bridge between the biogeographical regions Pannonicum and Campanium, therefore it must have an interestingly mixed fauna. Indeed, this hypothesis is strengthened by the occurrences of several taxa we report on.

## MATERIAL AND METHODS:

The list of collecting events is presented in temporal sequence. First the locality with its official Romanian name (in brackets with Hungarian

equivalents) and then the geographical coordinates are given; after the semicolon the collecting methods are listed (in brackets with collector names). Day-active Lepidoptera were captured by using butterfly net or were simply hand-collected (Figs 1-2). Night active moths were captured by semi-automatic light traps or by hand at light-tower or on sugar rope baits. When the letter „o” is given that means an observation what has been recorded by field note or digital camera.

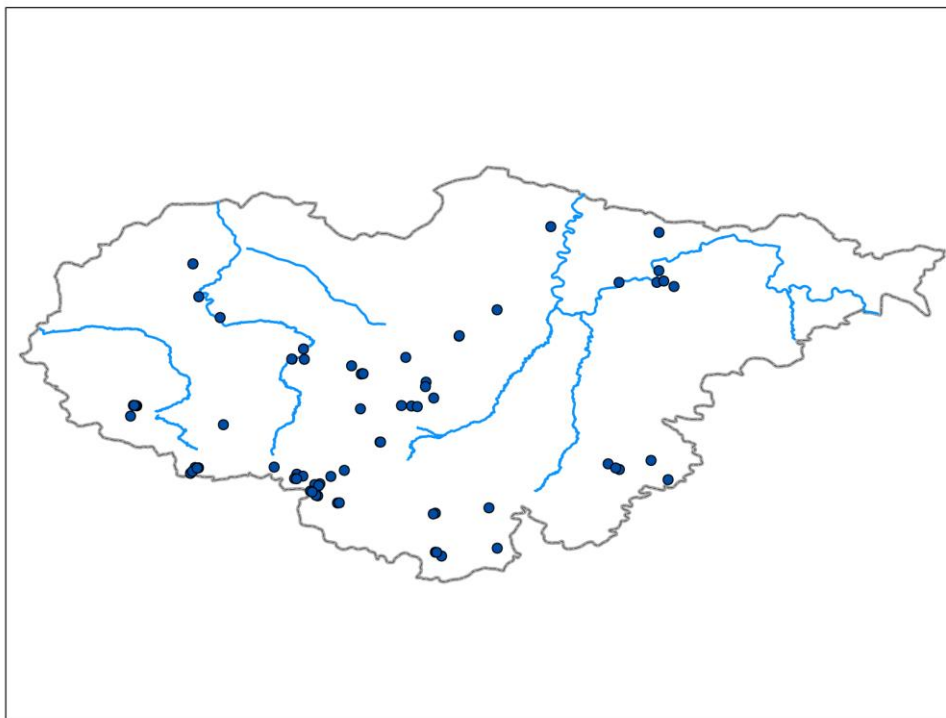
Species are grouped in superfamilies and families according to Lepidoptera systematics (Heppner, 1998), and under the family names they are listed in alphabetic order. Nomenclature is based on the list given by Varga et al. (2004). Every species name is followed by a dash when the reference numbers of the collecting sites are given.

Species with faunistical interest are marked by an asterisk (\*) at the end of their entries.

In the discussion names are listed alphabetically under the parts of superfamilies. The species are annotated in the light of the catalogue Rákósy et al. (2003), and considered as new for the region Sălaj when the occurrence was not indicated for the region Maramureș-Satu-Mare. (Although județul Sălaj was considered belonging to the region Transylvania, in the map provided it was obviously grouped together with the counties Maramureș and Satu-Mare; therefore we follow what has been illustrated; see Rákósy et al., 2003: Fig 1).



**Figs 1-2.** Collecting methods of Lepidoptera. 1: Butterfly collecting and specimen handling, Zs. Bálint and G. Katona, 21. May, 2014, Aghireş; 2: semi-automatic light trap before operation, 21. May, 2014, Huta (photos: Csaba Kutasi).



**Fig. 3.** The overview of Macrolepidoptera collecting sites of the Hungarian Natural History Museum in 2014 and 2015 (by A. Gubányi).

Voucher specimens are deposited in Lepidoptera collections of the Hungarian Natural History Museum. A representative collection of 250 specimens was selected and provided to the University Vasile Goldiș, which will be deposited in the municipal museum of Zalău.

**COLLECTING SITES AND EVENTS** (Fig. 3.)

1 – Dealurile Crasnei (Krasznamenti-dombság), 1.5km NNW of Cehei (Somlyócsehi), Balta Cehei, 22.04.2014, N47.26897° E22.75423°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

3 – Munții Meseșului (Meszes-hegység), Huta (Csákyújfalu), puddle, 23.04.2014, N47.00755° E22.94665°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

4 – Munții Meseșului (Meszes-hegység), Huta (Csákyújfalu), beech forest, 23.04.2014, N46.9942° E22.92844°; collecting, (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

6 – Munții Meseșului (Meszes-hegység), Poic, tyre track, marshy meadow, 23.04.2014, N46.98433° E22.92079°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi). (Fig. 4)

9 – Munții Meseșului (Meszes-hegység), between Poic and Mesteacănu (Almásnyíres), orchard, 23.04.2014, N46.96877° E22.95644°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

10 – Depresiunea Almaș-Agrij (Almás-Egremedence), Sfăraș (Farnas), open and closed swards on gypsum, 23.04.2014, N46.89728° E23.09911°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).



**Fig. 4.** Poic, Satul Hurez, marshy meadow in early spring aspect; habitat of *Euphydryas aurinia* (23. April, 2014; photo: L. Forró)

12 – Dealurile Crasnei (Krasznamenti-dombság), Vârșolț (Varsolc), near Vârșolț Reservoir, 23.04.2014, N47.17822° E22.89021°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

15 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), Mlaștina de la Iaz 2, marsh, 24.04.2014, N47.11082° E22.65911°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

17 – Munții Plopiș (Réz-hegység), Tusa (Tuszatelke), Barcău (Berettyó) springs, 24.04.2014, N47.02001° E22.75373°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

18 – Munții Plopiș (Réz-hegység), Tusa (Tuszatelke), Barcău (Berettyó) springs, 24.04.2014, N47.02035° E22.74876°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

20 – Dealurile Sălajului (Szilágymenti-dombság), Aluniș (Szamoszszéplak), oak forest, 24.04.2014, N47.37114° E23.26748°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

22 – Dealurile Crasnei (Krasznamenti-dombság), Vârșolț (Varsolc), near Vârșolț Reservoir, 24.04.2014, N47.17822° E22.89021°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

25 – Măgura Șimleului (Szilágysomlyói-Magura), Șimleu Silvaniei (Szilágysomlyó), 25.04.2014, N47.23878° E22.785203°; collecting (leg. L. Forró, A. Gubányi, G. Katona & Cs. Kutasi).

27 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), Mlaștina de la Iaz 1, marsh, 19-21.05.2014, N47.11065° E22.66125°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

28 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), Mlaștina de la Iaz 2, puddle, pastures, 19.05.2014, N47.11088° E22.6589°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

29 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), Mlaștina de la Iaz 2, streamside, 20-21.05.2014, N47.11019° E22.66388°, light trap, (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

30 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), Mlaștina de la Iaz 3, oak forest, orchard-oak ecotone, pastures, 20.05.2014, N47.11075° E22.66208°;

collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

32 – Dealurile Crasnei (Krasznamenti-dombság), Aghireș (Egrespatak), dry swards, 20.05.2014, N47.15716° E22.99252°; collecting, light trap (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi). (Fig. 5)



**Fig. 5.** Panorama with Munții Meseșului in the horizon, direction southeast from the site Aghireș where the light trap was operating; in foreground continental steppe with luxuriant vegetation, habitat of the butterfly *Polyommatus thersites*, and many interesting moths; in the valley remnants of formerly extended marshlands now intensively grazed, *Lycaena dispar* was common there (20. May, 2014; photo: G. Katona)

34 – Dealurile Crasnei (Krasznamenti-dombság), Vârșolț (Varsolc), near Vârșolț Reservoir, willows, reed bed, 20.05.2014, N47.17847° E22.88972°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

36 – Munții Meseșului (Meszes-hegység), Huta (Csákyújfalu), clearing, alder groove at stream, wet meadow, 21-23.05.2014, N46.99677° E22.93072°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

37 – Munții Meseșului (Meszes-hegység), Huta (Csákyújfalu), wet meadow, clearing in beech forest, *Calluna* heath, 21-22.05.2014, N46.99569° E22.92313°; light trap, (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

38 – Munții Meseșului (Meszes-hegység), Huta (Csákyújfalu), beech forest, 21-23.05.2014, N46.99394° E22.92883°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

39 – Depresiunea Almaș-Agrij (Almás-Egregy-medence), Sfăraș (Farnas), open and closed swards on gypsum, 21.05.2014, N46.89728° E23.09911°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi). (Fig. 6)

40 – Munții Meseșului (Meszes-hegység), Pria (Perje), Vârful Măgura Priei, clearing in beech forest, alpine pasture, 22.05.2014, N47.010708° E22.897091°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi). (Fig. 7)

41 – Dealurile Huedinului (Kalotaszegi-dombság), Jebucu (Zsobok), open and closed swards on gypsum, 22.05.2014, N46.891507° E23.108121°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).





**Fig. 6.** Continental steppe in Sfăraș, with plant association dominated by *Stipa* spp., habitat of *Chazara briseis*, *Colias chrysotheme*, and *Plebejides sephirus* (21. May, 2014; photo: G. Katona)



**Fig. 7.** Surroundings of Huta in Munții Meseșului with mountain beech forests partly logged and warm and light deciduous forests in the valleys; habitat of *Leptidea major*, *Nymphalis antiopa* and *N. xanthomelas* (22. May, 2014; photo: A. Gubányi)

42 – Dealurile Crasnei (Krasznamenti-dombság), Aghireș (Egrespatak), dry swards, 22-23.05.2014, N47.15716° E22.99252°; light trap, (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

43 – Munții Meseșului (Meszes-hegység), Buciumi (Vármező), pastures, 23.05.2014, N47.057616° E23.018456°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

44 – Depresiunea Almaș-Agrij (Almás-Egregy-medence), Gălășeni (Tóttelke), closed rock swards on limestone, 23.05.2014, N46.903119° E23.189231°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

45 – Munții Meseșului (Meszes-hegység), Poic, alder groove, wet meadow, 22.05.2014, N46.97925° E22.92752°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

48 – Munții Meseșului (Meszes-hegység), Pria (Perje), Vârful Măgura Priei, clearing in beech forest, alpine pasture, 23.05.2014, N47.00438° E22.89388°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

49 – Depresiunea Almaș-Agrij (Almás-Egregy-medence), Adalin, stream valley with alder and willow, 23.05.2014, N47.00283° E23.43822°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

50 – Depresiunea Almaș-Agrij (Almás-Egregy-medence), Adalin, wet habitat with sedge and reed near village, 23.05.2014, N47.03072° E23.41352°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

51 – Depresiunea Almaș-Agrij (Almás-Egregy-medence), Ugruțiu (Ugróc), closed steppe, edge of oak forest, pastures in valley floor, 23.05.2014, N47.017642° E23.367416°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

56 – Dealurile Crasnei (Krasznamenti-dombság), Carastelec (Kárásztelek), wet meadow, 24.05.2014, N47.31694° E22.74572°; collecting (leg. Zs. Bálint, A. Gubányi, G. Katona & Cs. Kutasi).

58 – Dealurile Crasnei (Krasznamenti-dombság), Crasna (Kraszna), Vârșolt (Varsolc) Reservoir, 02.06.2014, N47.178° E22.908°; collecting, light trap (leg. A. Orosz, G. Puskás, Z. Soltész & M. Tóth).

60A – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), 02-03.06.2014, N47.157° E22.992°; collecting, light trap (leg. A. Orosz, G. Puskás, Z. Soltész & M. Tóth).



**Fig. 8.** Vârful Măgura above Pria, in high summer aspect dominated by satyrid butterflies *Brinthesia circe*, *Erebia aethiops*, *Melanargia galathea* and *Minois dryas*, and hilltopping *Papilio machaon*; the butterfly community of the early summer period was characterized by *Erebia medusa* and *Parnassius mnemosyne* (in foreground: A. Orosz collecting Hemiptera; 12. August, 2014; photo: G. Katona).

61E – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), 03.06.2014, N47.11° E22.659°; light trap, (leg. A. Orosz, G. Puskás, Z. Soltész & M. Tóth).

79 – Munții Meseșului (Meszes-hegység), Cizer (Csiszér), 12.08.2014, N47.021° E22.864°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

80 – Munții Meseșului (Meszes-hegység), Pria (Perje), SW slope of Vf. Măgura Priei (Perjei csúcs), 12.08.2014, N47.008° E22.906°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás). (Fig. 8)

82 – Munții Meseșului (Meszes-hegység), 2.5 km SW of Huta (Csákyújfalú), at Poicu Stream,

12.08.2014, N46.986° E22.917°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

83 – Munții Meseșului (Meszes-hegység), 1.5 km SW of Huta (Csákyújfalú), 12.08.2014, N46.994° E22.929°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

85 – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), 12-13.08.2014, N47.157° E22.992°; collecting, light trap (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

86 – Munții Meseșului (Meszes-hegység), 4.5 km W of Mesteacănu (Almásnyíres), 13.08.2014, N46.969° E22.959°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

87 – Depresiunea Almaș-Agrij (Almás-Egremedence), between Băbiu (Bábony) and Almașu (Váralmás), shore of Băbiu Stream, 13.08.2014, N46.954° E23.099°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

88 – Depresiunea Almaș-Agrij (Almás-Egremedence), Sfăraș (Farnas), 13.08.2014, N46.897° E23.101°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

90 – Dealurile Sălajului (Szilágymenti-dombság), Popeni (Szilágypaptelek), 14.08.2014, N47.25° E23.189°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

91 – Culoarul Someșului (Szamos völgye), between Surduc (Szurdok) and Cliț (Csúrfalva), Someș (Szamos) River, 14.08.2014, N47.29° E23.367°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

92 – Culoarul Someșului (Szamos völgye), Cliț (Csúrfalva), 14.08.2014, N47.29° E23.422°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

93 – Culoarul Someșului (Szamos völgye), Cliț (Csúrfalva), 14.08.2014, N47.284° E23.447°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

94 – Culoarul Someșului (Szamos völgye), Cliț (Csúrfalva), 14.08.2014, N47.292° E23.432°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

95 – Culoarul Someșului (Szamos völgye), Cliț (Csúrfalva), 14.08.2014, N47.307° E23.425°; collecting (leg. A. Gubányi, G. Katona, A. Orosz & G. Puskás).

99 – Munții Meseșului (Meszes-hegység), Treznea (Ördögkút), main valley of the Treznea Stream, 29.09.2014, N47.11005° E23.06443°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

100 – Munții Meseșului (Meszes-hegység), Treznea (Ördögkút), upper valley of the Treznea Stream, 29.09.2014, N47.11063° E23.04968°; collecting, light trap (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

102 – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), 30.09.2014, N47.157° E22.992°; light trap, (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

104 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), heavily grazed pastures around the old

spa; 30.09.2014, N47.111° E22.659°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

106 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), valley of the Iaz Stream, 30.09.2014, N47.09521° E22.65478°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

108 – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), 30.09.2014, N47.157° E22.992°; light trap, (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

110 – Munții Meseșului (Meszes-hegység), E of Meseșeni de Sus (Románkecel), 01.10.2014, N47.1059° E22.98988°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

113 – Munții Meseșului (Meszes-hegység), Pria (Perje), SW slope of Vf. Măgura Priei (Perjei csúcs), 01.10.2014, N47.004° E22.8966°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

117 – Depresiunea Almaș-Agrij (Almás-Egremedence), between Băbiu (Bábony) and Almașu (Váralmás), shore of Băbiu Stream, 01.10.2014, N46.95291° E23.09595°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

120 – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), 01.10.2014, N47.16846° E22.97703°; light trap, sugar rope baiting, (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

123 – Munții Plopiș (Réz-hegység), Tusa (Tuszatelke), Ponor, 02.10.2014, N47.01195° E22.7421°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

124 – Munții Plopiș (Réz-hegység), Tusa (Tuszatelke), Ponor, 02.10.2014, N47.0148° E22.74496°; collecting (leg. Zs. Bálint, L. Dányi, G. Katona & D. Murányi).

184 – Munții Meseșului (Meszes-hegység), Poic, wet meadow, 12.05.2015, N46.98° E22.925°; observed Lepidoptera, (leg. A. Grabant, O. Merkl, A. Podlussány, V. Szőke).

207 – Depresiunea Almaș-Agrij (Almás-Egremedence), Ugruțiu (Ugróc), 26-27.05.2015, N47.025783° E23.350829°; light trap, (leg. Zs. Bálint, A. Gubányi & G. Katona).

209 – Depresiunea Almaș-Agrij (Almás-Egremedence), Cuzăplac (Középlak), 26-27.05.2015, N46.96169° E23.177108°; collecting (leg. Zs. Bálint, A. Gubányi & G. Katona).

210 – Munții Meseșului (Meszes-hegység), Buciumi (Vármező), 26-27.05.2015, N47.057448° E23.019276°; collecting (leg. Zs. Bálint, A. Gubányi & G. Katona).

211 – Depresiunea Almaș-Agrij (Almás-Egremedence), Ugruțiu (Ugróc), 27-28.05.2015, N47.025783° E23.350829°; light trap, (leg. Zs. Bálint, A. Gubányi & G. Katona).

212 – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), 27-28.05.2015, N47.156611° E22.990925°, 320m; collecting, light trap (leg. Zs. Bálint, A. Gubányi & G. Katona).

218 – Depresiunea Almaș-Agrij (Almás-Egremedence), Ugruțiu (Ugróc), 28.05.2015, N47.025783° E23.350829°; collecting (leg. Zs. Bálint, A. Gubányi & G. Katona).

219 – Munții Meseșului (Meszes-hegység), Buciumi (Vármező), 28.05.2015, N47.057448° E23.019276°; collecting (leg. Zs. Bálint, A. Gubányi & G. Katona).

220 – Dealurile Crasnei (Krasznamenti-dombság), Ság (Felsőszék), 28.05.2015, N47.082825° E22.790097°; collecting (leg. Zs. Bálint, A. Gubányi & G. Katona).

221 – Dealurile Crasnei (Krasznamenti-dombság), W of Aghireș (Egrespatak), xeromesophile grassland and forest edge, 28-29.05.2015, N47.156611° E22.990925°, 320m; collecting light traps, (leg. Zs. Bálint, A. Gubányi & G. Katona).

222 – Dealurile Crasnei (Krasznamenti-dombság), E of Carastelec (Kárásztelek), 29.05.2015, N47.316999° E22.745639°; collecting (leg. Zs. Bálint, A. Gubányi & G. Katona).

225 – Munții Meseșului (Meszes-hegység), road to Treznea (Ördögkút), beech forest, 14.07.2015, N47.1448° E23.0854°, 598m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

226 – Munții Meseșului (Meszes-hegység), road to Treznea (Ördögkút), beech forest, 14.07.2015, N47.1383° E23.0847°, 565m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

227 – Munții Meseșului (Meszes-hegység), road to Treznea (Ördögkút), rocky roadside with ruderal vegetation, 14.07.2015, N47.1217° E23.0966°, 391m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

228 – Munții Meseșului (Meszes-hegység), Treznea (Ördögkút), alongside creek, wet meadow, 14.07.2015, N47.1091° E23.0728°, 366m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

230 – Munții Meseșului (Meszes-hegység), Huta (Csákyújfalú), wet meadow with stacked beech logs, 14.07.2015, N47.0164° E22.9663°, 446m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

233 – Dealurile Crasnei (Krasznamenti-dombság), Zaláu (Zilah), apartment balcony, 14.07.2015, N47.1807° E23.0559°, 274m; light trap, (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

234 – Dealurile Crasnei (Krasznamenti-dombság), Aghireș (Egrespatak), dry sward with loess wall and abandoned orchard, 15.07.2015, N47.1571° E22.9937°, 330m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

248 – Munții Plopiș (Réz-hegység), Tusa (Tuszatelke), Barcău (Berettyó) springs, wet pasture, 16.07.2015, N47.0196° E22.7519°, 644m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

250 – Munții Plopiș (Réz-hegység), Iaz (Krasznajáz), Mlaștina de la Iaz, mixed vegetation, 16.07.2015, N47.1108° E22.6602°, 320m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

253 – Dealurile Crasnei (Krasznamenti-dombság), Vârșolt (Varsolc), Vârșolt Reservoir, waterside in waterworks territory, 17.07.2015, N47.1931° E22.9069°, 239m; collecting (leg. Z. Eröss, A. Kenéz, P.G. Sulyán, Z. Vas).

258 – Depresiunea Almaș-Agrij (Almás-Egremedence), Ugruțiu (Ugróc), closed steppe, edge of oak forest, pastures in valley floor, 07.09.2015,

N47.019723° E23.361953°; light trap, (leg. A. Gubányi, A. Orosz, L. Ronkay & M. Tóth).

265 – Munții Meseșului (Meszes-hegység), Poic, marshy meadow, 08.09.2015, N46.984893° E22.919635°; light trap, light tower, (leg. A. Gubányi, A. Orosz, L. Ronkay & M. Tóth).

267 – Dealurile Sălajului (Szilágymenti-dombság), Zaláu-Ortelec (Zilah-Vártelek), oak forest on the top of the hill, semi-natural steppe, 09.09.2015, N47.211599° E23.133539°; collecting (leg. A. Gubányi, A. Orosz, L. Ronkay & M. Tóth).

268 – Dealurile Sălajului (Szilágymenti-dombság), Zaláu-Ortelec (Zilah-Vártelek), oak forest on the top of the hill, semi-natural steppe, 09.09.2015, N47.212209° E23.134001°; collecting, light trap (leg. A. Gubányi, A. Orosz, L. Ronkay & M. Tóth).

272 – Dealurile Boiului (Szamoszug), Vălișoara (Dióspatak), limestone hill, 10.09.2015, N47.362717° E23.425185°; light trap, (leg. A. Gubányi, A. Orosz, L. Ronkay & M. Tóth).

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*Agrochola litura* (Linnaeus, 1758) – 108.

*Agrotis cinerea* ([Denis et Schiffermüller], 1775) – 29, 39, 211.

*Agrotis clavis* (Hufnagel, 1766) – 221, 61E.

*Agrotis exclamationis* (Linnaeus, 1758) – 29, 32, 37, 58, 60A, 61E, 85, 211, 221.

*Agrotis ipsilon* (Hufnagel, 1766) – 265.

*Agrotis segetum* ([Denis et Schiffermüller], 1775) – 32, 85, 108, 207(o), 221.

*Allophyes oxyacanthae* (Linnaeus, 1758) – 102.

*Ammoconia caecimacula* ([Denis et Schiffermüller], 1775) – 108.

*Amphipyra berbera* Fletcher, 1971 – 272.

*Apamea anceps* ([Denis et Schiffermüller], 1775) – 32, 42.

*Apamea monoglypha* (Hufnagel, 1766) – 233, 60A.

*Apamea remissa* (Hübner, 1809) – 60A.

*Apamea sordens* (Hufnagel, 1766) – 32, 42, 60A.

*Aporophila lutulenta* ([Denis et Schiffermüller], 1775) – 102, 120.\*

*Atethmia centrigo* (Haworth, 1809) – 268.\*

*Athetis gluteosa* (Treitschke, 1835) – 32, 85, 221.

*Autographa gamma* (Linnaeus, 1758) – 120, 221, 248, 268.

*Axylia putris* (Linnaeus, 1761) – 32, 60A, 61E, 85.

*Blepharita satura* ([Denis et Schiffermüller], 1775) – 268, 272.

*Bryoleuca felina* (Eversmann 1852) – 85.\*

*Calamia tridens* (Hufnagel, 1766) – 258.

*Callistege mi* (Clerck, 1759) – 27, 40.

*Calyptra thalictri* (Borkhausen, 1790) – 60A, 85.\*

*Caradrina (Paradrina) clavipalpis* (Scopoli, 1763) – 32, 85, 221.

*Caradrina morpheus* (Hufnagel, 1766) – 32, 58, 60A, 85.

*Charanyca trigrammica* (Hufnagel, 1766) – 29, 32, 42, 60A, 61E, 211, 221.

*Chloantha hyperici* ([Denis et Schiffermüller], 1775) – 32.

*Colobochyla salicalis* ([Denis et Schiffermüller], 1775) – 61E.

*Colocasia coryli* (Linnaeus, 1758) – 29, 32.

*Conistra erythrocephala* ([Denis et Schiffermüller], 1775) – 108.

*Conistra vaccini* (Linnaeus, 1758) – 102.

*Craniophora ligustri* ([Denis et Schiffermüller], 1775) – 42, 85.

*Cryphia algae* (Fabricius, 1775) – 85, 268.

*Cucullia umbratica* (Linnaeus, 1758) – 32, 42.

*Diachrysis chrysis* (Linnaeus, 1758) – 42, 60A.

*Dryobotodes monochroma* (Esper, 1790) – 120, 258, 268.\*

*Earias chlorana* (Linnaeus, 1761) – 233.

*Elaphria venustula* (Hübner, 1790) – 32, 58, 61E.

*Eucarta amethystina* (Hübner, 1803) – 32, 42, 85.\*

*Eucarta virgo* (Treitschke, 1835) – 61E.\*

*Euclidia glyphica* (Linnaeus, 1758) – 234, 253.

*Eugnorisma (Metagnorisma) depuncta* (Linnaeus, 1761) – 108, 268.

*Euplexia lucipara* (Linnaeus, 1758) – 37, 42.

*Eupsilia transversa* (Hufnagel, 1766) – 102, 108.

*Euxoa cos* (Hübner, [1824]) – 268.\*

*Euxoa distinguenda* (Lederer, 1857) – 268.\*

*Euxoa obelisca* ([Denis et Schiffermüller], 1775) – 268.

*Hada plebeja* (Linnaeus, 1761) – 32, 85.

*Hadena confusa* (Hufnagel, 1766) – 32.

*Helicoverpa armigera* (Hübner, 1803) – 258, 268.

*Heliothis adaucta* Butler, 1878 – 60A.

*Herminia tarsicrinalis* (Knoch, 1782) – 32, 42.

*Herminia tarsipennalis* (Treitschke, 1835) – 85.

*Hoplodrina ambigua* ([Denis & Schiffermüller], 1775) – 32, 42, 58, 60A, 61E, 85, 258, 268.

*Hoplodrina blanda* ([Denis & Schiffermüller], 1775) – 85.

*Hoplodrina octogenaria* (Goeze, 1781) – 60A, 85.

*Hypena obesalis* (Treitschke, 1828) – 32.

*Hypena proboscidalis* (Linnaeus, 1758) – 36, 61E.

*Hypena rostralis* (Linnaeus, 1758) – 268.

*Lacanobia contigua* ([Denis & Schiffermüller], 1775) – 85.

*Lacanobia thalassina* (Hufnagel, 1766) – 32.

*Lacanobia w-latinum* (Hufnagel, 1766) – 32, 42, 60A, 61E, 211.

*Laspeyria flexula* ([Denis et Schiffermüller], 1775) – 258, 268.

*Lithophane ornitopus* (Hufnagel, 1766) – 120.

*Lygephila cracca* ([Denis et Schiffermüller], 1775) – 60A, 258, 268, 272.

*Lygephila pastinum* (Treitschke, 1826) – 42.

*Macdunnoughia confusa* (Stephens, 1850) – 117, 123, 233, 268.  
*Meganephria bimaculosa* (Linnaeus, 1767) – 258, 268.\*  
*Mesapamea secalis/secalella* gr. – 85, 268, 272.  
*Mesogona acetosellae* ([Denis et Schiffermüller], 1775) – 268.  
*Mesoligia furuncula* ([Denis et Schiffermüller], 1775) – 85.  
*Moma alpium* (Osbeck, 1778) – 27.  
*Mythimna albipuncta* ([Denis et Schiffermüller], 1775) – 32, 42, 60A, 61E, 85, 108, 120, 211, 221, 258, 268, 272.  
*Mythimna ferrago* (Fabricius, 1787) – 32, 85, 258, 268.  
*Mythimna l-album* (Linnaeus, 1758) – 61E, 258.  
*Mythimna pallens* (Linnaeus, 1758) – 32, 60A, 61E.  
*Mythimna turca* (Linnaeus, 1758) – 32, 42, 61E.  
*Mythimna vitellina* (Hübner, 1808) – 32, 42, 60A, 258, 265, 268.  
*Noctua comes* Hübner, 1813 – 61E, 258, 268, 272.  
*Noctua fimbriata* (Schreber, 1759) – 258, 268.  
*Noctua interjecta* Hübner, 1813 – 258.\*  
*Noctua interposita* (Hübner, 1790) – 42, 60A, 61E, 85, 221, 265, 268, 272.  
*Noctua janthe* (Borkhausen, 1792) – 85.  
*Noctua orbona* (Hufnagel, 1766) – 29, 42, 102, 108, 258.  
*Noctua pronuba* Linnaeus, 1758 – 32, 42, 60A, 61E, 258, 268.  
*Ochroleura plecta* (Linnaeus, 1761) – 32, 61E, 85, 211.  
*Oligia latruncula* ([Denis et Schiffermüller], 1775) – 42, 61E, 221.  
*Oligia strigilis* (Linnaeus, 1758) – 32, 42, 60A, 61E.  
*Paracolax tristalis* (Fabricius, 1794) – 268.  
*Phlogophora meticulosa* (Linnaeus, 1758) – 265.  
*Phyllophila obliterated* (Rambur, 1833) – 29.\*  
*Phytometra viridaria* (Clerck, 1759) – 85.  
*Polypogon tentacularia* (Linnaeus, 1758) – 32, 42, 85, 221, 258.  
*Pseudeustrotia candidula* ([Denis et Schiffermüller], 1775) – 61E.  
*Pyrrhia umbra* (Hufnagel, 1766) – 32, 42, 60A.  
*Rhyacia lucipeta* ([Denis et Schiffermüller], 1775) – 60A.\*  
*Rivula sericealis* (Scopoli, 1763) – 42, 58, 60A, 61E.  
*Schranksia costaestrigalis* (Stephens, 1834) – 61E.  
*Scotochrosta pulla* ([Denis et Schiffermüller], 1775) – 258, 268.\*  
*Shargacucullia gozmanyi* Ronkay et Ronkay, 1994 – 32, 60A, 61E.\*  
*Sideridis rivularis* (Fabricius, 1775) – 60A.  
*Spaelotis ravidia* ([Denis et Schiffermüller], 1775) – 60A.  
*Spodoptera exigua* (Hübner, 1808) – 268.  
*Thalophila matura* (Hufnagel, 1766) – 85.  
*Tholera cespitis* ([Denis et Schiffermüller], 1775) – 258, 265, 268, 272.  
*Tholera decimalis* (Poda, 1761) – 258, 265, 272.  
*Tiliacea aurago* ([Denis et Schiffermüller], 1775) – 102, 268.  
*Tiliacea sulphurago* (Clerck, 1759) – 120, 268.

*Trachea atriplicis* (Linnaeus, 1758) – 42, 60A, 85.  
*Xestia baja* ([Denis et Schiffermüller], 1775) – 258.  
*Xestia c-nigrum* (Linnaeus, 1758) – 32, 42, 60A, 61E, 85, 108, 211, 258, 268, 272.  
*Xestia rhomboidea* (Esper, 1790) – 32.  
*Xestia xanthographa* ([Denis et Schiffermüller], 1775) – 85, 258, 268, 272.

#### NOLIDAE

*Meganola albula* ([Denis & Schiffermüller], 1775) – 85, 120.  
*Nola aerugula* Hübner, 1793 – 32, 42, 60A, 61E.

#### Notodontidae

*Clostera curtula* (Linnaeus, 1758) – 29.  
*Drymonia ruficornis* (Hufnagel, 1767) – 37.  
*Euchila palpina* (Linnaeus, 1758) – 42, 221.  
*Pheosia gnoma* (Fabricius, 1777) – 37.  
*Spatalia argentina* ([Denis et Schiffermüller], 1775) – 37.  
*Stauropus fagi* (Linnaeus, 1758) – 42, 61E.

### ANNOTATIONS

#### DREPANOIDEA

*Cymatophorima diluta* – A generally Central and eastern Mediterranean species, absent from the Iberian peninsula and the very south of Italy and Greece; the easternmost known localities lie in the central part of Turkey (Kizilcahamam). Its preferred habitats are warm, dry oakwoods and the karstic shrubby forests where locally may be frequent or even common. The species was found in the Sălaj-region in two localities (Tusa and Zalău-Ortelec).

*Drepana curvatula* – A Palaearctic species with disjunct range in Eurasia, the nominotypical ssp. *curvatula* occurs in most parts of Europe while the ssp. *acuta* Butler, 1881 lives in the temperate areas of the Pacific coast of Asia. The species is confined to the *Alnus-Betula* associations, preferring brook- and stream valleys, and humid montane deciduous forests.

#### GEOMETROIDEA

*Aplocera efformata* – A western Palaearctic species, its range extends from Morocco across southern and Central Europe to Asia Minor (Anatolia) to the east and southern Scandinavia to the north. It is an endangered species in Europe, being considerably in decline due to the decrease in preferred habitats, hot and dry grasslands, mainly on calcareous and sandy ground. The caterpillars live on *Hypericum* species, especially *H. perforatum*.

*Cyclophora albipunctata* – A Euro-Siberian species being widespread in Europe and large areas in Central and Eastern Asia; it is rare and local in the southern parts of Europe. The species is endangered due to the decline of its foodplants, the birch species. The main reason of this decline is that the *Betula* species are less preferred softwood species, therefore are often cut out intensively by the forestry. The species was observed during our studies only at Iaz.

*Eupithecia inturbata* – A European species, occurring in large areas of the continent, being more sporadic in the Mediterranean ranges. It inhabits mainly sunny hedge areas, woods and forest edges with the larval host plant, the flowers of *Acer campestre*; the adults are on the wing in September-October. A seldom specimen was found at Zalău-Ortelec.

*Nothocasis sertata* – This western Palaearctic species is distributed very locally in Europe (north to southern Sweden, in the south only locally in the mountains), as far to the east as the Caucasus range. It inhabits humid and cool woodland areas, especially damp mountain forests, brook valleys and deep gorges. The caterpillars feed on *Acer*, primarily on *Acer pseudoplatanus*. New for the fauna of the Sălaj-region; the single record originates from Treznea.

*Perconia strigillaria* – A Euro-Siberian species, occurring locally in many parts of Europe and western Asia. It inhabits heathlands, bushy grasslands and sunny, open forests with broom. The larvae feed mostly on broom, but sometimes also other Fabaceae and further genera like *Calluna*. The moths are on the wing in May-June. New for the fauna of the Sălaj-region; the moths were found in the surrounding areas of Aghireş.

*Scotopteryx vicinaria* (Duponchel, 1830) = *Scotopteryx roesleri* (Vojnits, 1973), *Scotopteryx vicinaria* ssp. *illyriacaria* (Schawerda, 1919) – A generally southern Alpine species, with smaller, disjunct area patches in the northern part of the Balkans (Slovenia, Croatia, Northern Greece) and the southern Carpathians (Hausmann & Viidalepp, 2012); it has never been recorded from Austria [Fauna Europaea, last update 23 July 2012, version 2.5]. Its discovery in the Sălaj-region (Ugruţiu, three specimens) is a really significant result of the present survey; new for the fauna of the Sălaj-region. The specimens externally fit well with the typical populations while the f. *illyriacaria* (type-locality: Croatia, Dalmatia, Zengg) is much paler, usually whitish-grey coloured. The foodplants are *Astragalus* species (Burmans, 1978). (Fig. 9)

*Selidosema plumaria* – Holo-Ponto-Mediterranean species, often confused with *S. brunnearium* (de Villers, 1789). It inhabits dry, most often xeric grasslands, dry rocky slopes, and sometimes sandy dunes; the caterpillars feed on dwarfed shrubs, mainly on Fabaceae. New for the fauna of the Sălaj-region; it was found in a low individual numbers on the steep slopes at Ugruţiu.



**Fig. 9:** *Scotopteryx vicinaria* (Duponchel, 1830) (Geometridae), female: dorsal view and labels (photos: G. Katona)

#### NOCTUOIDEA

*Agrochola humilis* – An eastern Mediterranean species with local populations in Western Europe (Belgium, northern France, NW Germany); its area extends to the east to the Caspian Sea and eastern Turkey. A xerophilous species, inhabiting warm, usually mixed and often shrubby or bushy oakwoods and karstic forests. It is rather widespread and frequent in southern Europe and in Asia Minor, being much more local and scarce in Central Europe and the northern parts of its range. The species was found during our studies twice in Aghireş.

*Agrochola laevis* – An eastern Mediterranean species with relatively strong expansion to the north in Central Europe. It is confined to warm and dry mixed deciduous woodlands where locally can be frequent. It was found in the Sălaj-region only once at Aghireş.

*Aporophyla lutulenta* – An expansive Ponto-Mediterranean species, with rather scattered area in the eastern parts of Central Europe. It inhabits different types of hot and dry, rather lightly wooded lowland and hilly areas; in our survey in the Sălaj-region it was found only at Aghireş.

*Atethmia centrago* – A Holo-Mediterranean-Turkestanian species, its area extending eastwards to the NW Himalayas. An oligophagous species, being strongly associated with *Fraxinus*, therefore it inhabits two rather different habitat types, the dry, xerothermic karstic shrubby forests and the humid gallery forests in marshlands and stream valleys. In the Sălaj-region, it



was found at the edge of a warm, mixed oakwood at Zalău-Ortelec.

*Bryoleuca felina* – A western Palaearctic twin species of the more widespread *Bryoleuca raptricula* ([Denis & Schiffermüller], 1775); its proper distribution is still to be clarified due to the long confusion of the species of the *raptricula* species-group. Actually it is considered to occur in the eastern and south-eastern part of Europe, as far to the east as the Caucasus range. A new, confirmed locality of *B. felina* from the Sălaj-region is Aghireş.

*Calyptra thalictri* – A widespread Trans-Palaearctic species which is absent from the northern part of Central Europe and the entire northern part of the Palaearctic; it is very local in the southern Mediterranean. It prefers the open or lightly wooded areas; it may occur in variably dry and wet biotopes where its foodplants, the *Thalictrum* species, live. New for the fauna of the Sălaj-region; it has been recorded from Aghireş.

*Coscinia cribraria* – A widespread Trans-Palaearctic species. In the central part of Europe it occurs mainly in the more humid, usually meso-montane or montane areas where it may be locally common. New for the fauna of the Sălaj-region, it has been recorded only once, at Buciumi.

*Dryobotodes monochroma* – A Holo-Ponto-Mediterranean species, with small isolated populations in the northern parts of Central Europe. It lives in hot and dry, usually shrubby oakwoods, karstic and rocky forests and their clearings; in the Carpathian area it is everywhere very local but occasionally may be frequent. It has been recorded from Ugruţiu and Zalău-Ortelec; new for the fauna of the Sălaj-region.

*Eilema caniola* – An originally widespread Holo-Ponto-Mediterranean species which shows a rather strong expansion to the north in the last two decades. It has become widespread and locally frequent in Hungary in the last years though the first record of the species was published in 1982 (Fazekas & Ronkay, 1982). New for the fauna of the Sălaj-region; the species was found in Aghireş and at Zalău-Ortelec.

*Eilema palliatella* – A locally distributed Mediterranean-Turkestanian species, being associated with the xerophilous steppe habitats. It prefers the open or partly open rocky and sandy grasslands, mostly on calcareous ground where locally may be common. New for the fauna of the Sălaj-region; a single, worn specimen was found at Zalău-Ortelec.

*Eucarta amethystina* – A widespread Euro-Siberian species with strikingly fluctuating area in Central and Southern Europe. It lives in lightly wooded humid areas, usually in marshy and boggy forests and their clearings. In its expansive periods it can be found frequently in its habitats and often rather far from such places which indicate their strong expansive habit. The

records from Aghireş supposedly refer to a recent migration of the species.

*Eucarta virgo* – The distribution pattern and the periodical invasions to the western Palaearctic is similar to its congener but *E. virgo* is connected stronger to the steppic habitats and ecological conditions.

*Euxoa cos* (= *nagyagensis* Freyer, 1845) – The discovery of this species in the Sălaj-region is one of the most important results of the present survey. Its presence in Transylvania was well-known since the middle of the nineteenth century when Freyer described it as a species distinct from *E. cos* from the famous locality “Nagyág” (Săcărâmb/Grossastdorf), ca 25 km NE of Deva. The species has recently found in the vicinity of Sibiu (Sebes/Alba, Pripoc, 2013, leg. Steiner; Lepiforum, www.lepiforum.de), this was the northernmost known locality of *E. cos* since the discovery the populations occurring at Zalău-Ortelec, a few kilometres NE of Zalău. In Serbia, it occurs in the northern and “Central-west” regions of the country (Stojanovic & Curcic, 2011). New for the fauna of the Sălaj-region; this locality represents the northernmost edge of the known area of *E. cos*. (Fig. 10)



Fig. 10: *Euxoa cos* (Hübner, [1824]) (Noctuidae), male: dorsal view and labels (photos: G. Katona)

*Euxoa distinguenda* – A Holo-Mediterranean-Turkestanian species, with strongly scattered area throughout its range. It is everywhere local, appearing in xerothermic, most often open grassland habitats at various altitudes, from the lowlands to the subalpine

regions. In Central Europe it is generally associated with open, usually rocky hilly slopes on limestone or dolomite, where locally may be frequent. The species is firstly recorded from the Sălaj-region, it was found only once at Zalău-Ortelec.



**Fig. 11.** Flowering *Verbascum phoeniceum*, the larval host of the cuculline moth *Shargacucullia gozmanyi*, in the Magura above Șimleau Silvanei (25. April, 2014, photo: L. Forró)

*Meganephria bimaculosa* – The species is widespread in the southern half of Europe but everywhere local and generally infrequent in the northern parts of its range. Its natural habitats are warm and dry or moderately wet mixed deciduous forest where its foodplants, *Ulmus* species live. New for the fauna of the Sălaj-region; only two specimens were found, in Ugruțiu and Zalău-Ortelec.

*Noctua interjecta* – An Atlanto-Mediterranean species with recent expansion to the more temperate areas of Central Europe. It is still one of the rarest southern migrant noctuids in the Carpathian basin but the number of the records is increasing in the last ten years. A single specimen was found at Ugruțiu in September, 2015.

*Phyllophila obliterata* – A widespread Trans-Palaeartic species, with well-differentiated subspecies in the Pacific region and in SE. Asia. It occurs generally in the southern half of Europe, being everywhere local and scarce in Central Europe. The typical populations of the species prefer hot and dry steppes, rocky slopes and swards, the foodplants are *Artemisia* species. New for the fauna of the Sălaj-region, it has been found only once at Iaz.

*Rhyacia lucipeta* – A species with Holo-Mediterranean-Iranian distribution, it is usually found in Central Europe above the timberline, though scarce records are known from much lower sites, most probably due to the migrating habit of the over-aestivated specimens in the late summer and autumn. A sole specimen was recorded during our survey from Aghireș.

*Scotochrosta pulla* – A Holo-Ponto-Mediterranean species, occurring sparsely everywhere in the southern part of Central Europe. It is a typical member of the karstic oakwood fauna, being local throughout the Carpathian Basin, though in certain localities and years it may be frequent. New for the fauna of the Sălaj-region; it has been found in Ugruțiu and Zalău-Ortelec.

*Shargacucullia gozmanyi* – A rather stenochorous species with a restricted northern Ponto-Mediterranean range. It is everywhere local and the adults are collected generally rarely since the caterpillars are often found in higher numbers on *Verbascum phoeniceum* (occasionally on other *Verbascum* or *Scrophularia* species) (Fig. 11). New for the fauna of the Sălaj-region; three specimens were recorded from Aghireș and Iaz.

#### PAPILIONOIDEA

*Chazara briseis* – Locality: Sfârș. New for the region, but it has been recorded from the regions Banat, Crișana and Transylvania. It was always extremely local in Pannonia having a few lowland records but more distributional data in Mátra region of north-eastern Hungary and Transdanubia (Bálint et al., 2006: 29). Nevertheless in the last decades most of the Pannonian populations disappeared and only very few existing ones remained. These are in continental steppes on calciferous soil, where there are still grazing stocks of sheep or cattle. This is also the situation in the site Sfârș where the hills are extensively grazed. (Fig. 6.) The cause of the several local extinctions of the species is most probably due to the diminishing use of lands, in this case giving up animal breeding.

*Colias chrysotheme* – Localities: Jebucu and Sfârș. New for the region, as it has been recorded only from the regions Banat and Transylvania. In the Pannonian lowland its occurrence is restricted to the Kiskunság area between the rivers Tisza and Danube, but it is more widespread in Transdanubia (Bálint et al., 2006: 31). The old records from the Eastern part of the Pannonian lowlands probably indicate annual westward migration from the colonies existing in the regions Sălaj and Transylvania.

*Cupido osiris* – Localities: Gălășeni and Ugruțiu. New for the region as it was recorded only from Transylvania. In the Pannonian region there is only data for occurrences in the area Matricum (Bálint et al., 2006: 35). Most probably in the region Sălaj it is more widespread on mesophilous hay-fields where the larval-host and main imagine nectar source *Onobrychis*

seed are sown annually by local people for having a better hay-harvest. This kind of land-use typifies also the habitats in Matricum where the species still occurs in Hungary, although rather localised. Where the hay-making is given up natural succession rapidly changes the character of the habitat resulting the disappearance of the species.

*Euphydryas aurinia* – Localities: Poic and Ugruțiu. Recorded from the regions Banat, Transylvania and Maramureș-Satu-Mare. It also occurs in the region Crișana confirmed not only by our record (Poic, which is practically situated on the border), but unpublished data of voucher specimens deposited in the Hungarian Natural History Museum (male: „Honctő [= Gurahont], 1913. V. 12, Diószeghy”; and female „Körösfő [Izvorul Crișului], 2000. VII. 3, Somlai”). Therefore we suggest that the species has a wider range in the western part of Romania as it is known at present. The species was more wide-spread in the 19th century as testified by literature data (Frivaldszky, 1865: 40). According to the most recent observations *E. aurinia* is extending its area in Pannonia (Ábrahám, 2014: 326).

*Everes alcetas* – Locality: Popeni. Recorded from all the regions of western Romania. In Pannonia it is primarily a lowland species with two annual generations restricted to marshlands. It is not easy to separate from the congeneric and look-alike species *E. decoloratus* (Staudinger, 1886) (see Rákósy, 2014). We are of the opinion that all the literature data are in need of critical evaluation. The single female specimen was collected along the brook indicating that the species connected to hygrophilous habitats also in the region Sălaj.

*Leptidea major* – Locality: Huta. Recorded from the regions Banat, Maramureș-Satu-Mare and Transylvania. Our finding confirms that the species, although declining almost everywhere in Europe, still can be found in several western Romanian localities (Gascoigne-Pees et al., 2008). Therefore the conservation of the species in Romania must have not only national but also international importance. The habitat (Fig. 7) where we detected the species was in unusually good condition (semi-natural), unfortunately logging was heavy what suggests that the ecosystem will be broken in the very near future and rapid succession will start, and most probably results the disappearance of species sensitive as *L. major*.

*Lycaena thersamon* – Locality: Treznea. Recorded from all the regions of western Romania, widely distributed also in the Pannonian region (Bálint et al., 2006: 60-62). This species is an annual migrant, the colonies are not stable. In general the first (vernal) brood is rare but later in the season the individual number increases. In certain localities the species can be common in late summer or in early autumn. Its occurrence typifies dry pastures with lean ground and sparse vegetation.

*Maculinea arion* – Localities: Buciumi, Carastelec and Ugruțiu. Recorded from all the regions of western Romania and it is widely distributed also in Hungary, but practically missing from the Pannonian lowland (Bálint 2006: 65-68). Its occurrence indicates a complex ecosystem connected with traditional land-use based on life stock grazing, and avoids habitats showing semiarid characteristics. The species was recorded in relatively high individual numbers in the steppes west from Buciumi and east from Ugruțiu what indicates a high productivity of these habitats.

*Maculinea teleius* – Locality: Treznea. New for the region as the species has been recorded only from the regions Maramureș-Satu-Mare and Transylvania. *M. teleius* is a specialist of *Sanguisorba* marshlands; therefore its occurrence in the collecting site Treznea is curious. The only specimen collected was a female, probably a vagrant individual from a nearby locality or it was pushed out from its habitat by the extremely dry and heat weather conditions typified the period when it was collected. We mention that there are suitable habitats along the reservoir of Vârșolț (no. 34) but the site was not sampled for butterflies in the flight period of the species.

*Maniola tithonus* – Locality: Mlaștina de la Iaz. Recorded from all regions of western Romania, including Sălaj (cf. Rothschild & Wertheimstein 1913: 89). In the middle of the 20th century it was considered as local species in Hungary, with only a few localities in Transdanubia (Gozmány, 1968: 166). Older records indicate that it had a wider distribution in the Carpathian Basin (Abafi-igner et al, 1896: 19). In the least decades it seems that it is spreading in western part of Europe as well as in Pannonia (Bálint Zs, personal observations in Britain, Burgundy and Transdanubia). Our investigations shows that in the region Sălaj the species is still local but we suspect that in reality it has a wider distribution, at least in the regions Transylvania and Crișana as it was repeatedly observed in 2001 and 2012 in the environs of Hâțeg, Ineu and Deva.

*Nymphalis xanthomelas* – Localities: Aghireș, Huta and Vârșolț. The species has been recorded from all the regions of western Romania. In the second half of the 20th century the species completely disappeared from the Carpathian Basin for almost three decades but a rapid recolonization has been recorded (Bálint, 2004, Sáfíán et al., 2008). Nowadays the species inhabits areas with extensive deciduous forest cover in humid or semihumid microclimatic conditions. All the individuals recorded were hibernating adults which sometimes migrating far from their breeding site (Vârșolț) or hilltopping (Aghireș).

*Plebejides sephirus* – Localities: Adalin, Cuzăplac, Gălășeni, Sfăraș and Ugruțiu. New to the region as it has been recorded only from the regions Banat and Transylvania. The species also occurs in the region Crișana (Bálint & Kertész, 1990). *P. sephirus* is one of the most the characteristic elements of the continental



forest-steppe Lepidoptera fauna, and its presence in the region indicates that there is a continuum between the Pannonian and Transylvanian populations. The individuals were always recorded in plant association dominated by *Astragalus monspessulanus* (Fig. 12). Both sexes were recorded to feed on *A. monspessulanus* flowers, males (Fig. 13) were observed perching on stems or leaves and females were repeatedly ovipositing on the various parts of the plant. The presence of two ant species was also characteristic, probably they belong to the ant-hosts of the species: *Camponotus aethiops* (Latreille, 1798) (found on the foliage of the plant used for females to oviposit) and *Lasius paralienus* Seifert, 1992 (found on the ground at the stem of the plant used for females to oviposit).

*Pyrgus armoricanus* – Localities: Iaz, Mlaştina de la Iaz, Sfăraş and Treznea. Recorded from all the regions of western Romania and it is also known from many localities in Hungary, especially in dry steppes or heavily grazed pastures (Gozmány 1968). The second (autumnal) generation is far more numerous in individual numbers. In Hungary the species was very rare in the turn of the 19-20th centuries and locally disappeared from many regions but in the Transylvanian highland it remained always present although local (cf. Székely, 2008: 56). Nowadays the species again widely distributed and practically can be detected almost every locality suitable for the species where the habitat is dry, the vegetation is low and the ground is sparsely covered.



**Fig. 12.** Flowering *Astragalus monspessulanus* stem on gypsum substrate; imago nectar source and larval host of *Plebejides sephirus*. (Sfăraş, 21. May, 2014, photo: G. Katona)

#### SPHINGOIDEA

*Hemaris tityus* – Locality: Sfăraş. Excluding the region Crişana, known from all the regions of western Romania. The species is characteristic for loess-steppes, calciferous grasslands and clearings of warm oak-shrublands. Although in Hungary it can be locally common in the region Sălaj we could observe only a single individual.



**Fig 13.** *Plebejides sephirus* (Frivaldszky, 1835) (Lycaenidae), male: dorsal view, ventral view and labels (photos: G. Katona)

#### SPECIES RECORDED AS NEW FOR THE REGION SĂLAJ

Below we provide the list of the species considered as new for the region of Sălaj based on the checklist of Rákossy et al. (2003). They consist 9,5% of all the species (n= 323) we collected during the period of our investigations. This number suggests that the region is indeed relatively less explored even in the case of the Macrolepidoptera although in not such an extent as we have found in the case of Microlepidoptera (see Szabóky et al., 2015):

*Agrotis cinerea*, *Brenthis hecate*, *Calyptra thalictri*, *Chazara briseis*, *Chloroclysta miata*, *Colias chrysotheme*, *Coscinia cribraria*, *Cupido osiris*, *Dryobotodes monochroma*, *Eilema caniola*, *Eilema palliatella*, *Eugnorisma (Metagnorisma) depuncta*, *Euxoa cos*, *Euxoa distinguenda*, *Euxoa obelisca*, *Horisme vitalbata*, *Idaea deversaria*, *Meganephria*

*bimaculosa*, *Nothocasis sertata*, *Perconia strigillaria*, *Phyllophila obliterata*, *Plebejides sephirus*, *Polyommatus bellargus*, *Polyommatus dorylas*, *Polyommatus thersites*, *Scotochrosta pulla*, *Scotopteryx mucronata*, *Scotopteryx vicinaria*, *Selidosema plumaria*, *Semiothisa glarearia*, *Shargacucullia gozmanyi*.

The occurrence of *Euxoa cos* (Noctuidae), *Scotopteryx vicinaria* (Geometridae) and *Plebejides sephirus* (Lycaenidae) turned to be the most remarkable findings. These species are figured (Figs. 9, 10, 13).

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