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Microlepidoptera Pannoniae meridionalis, X. Data to the knowledge of micro-moths from Dombóvár, No. 3 (SW Hungary) (Lepidoptera)

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Fazekas, I. & Schreurs, A.: *Microlepidoptera Pannoniae meridionalis, X. Data to the knowledge of micro-moths from Dombóvár, No. 3 (SW Hungary) (Lepidoptera)* .
Abstract: 73 new records of Microlepidoptera is reported with further data of several rare moths from Tolna County. *Phyllonorycter pyrifoliellus* Gerasimov, 1963, *Depressaria ululana* Rossler, 1866, *Elachista agelensis* Traugott-Olsen, 1996, *Phalonidia undana* Guenée, 1845 are recorded firstly for the Hungarian fauna and 19 species is new for the fauna of the Transdanubian Hills.

Keywords: Lepidoptera, Microlepidoptera, new records, faunistic survey, biology, Hungary.

Introduction

The published material was collected by the author between 1982 and 2013 around Dombóvár (Tolna County, SW. Hungary).

Sporadic data on the micro-moths of Dombóvár available in Fazekas 1992, Fazekas Schreurs 2010, 2012. Between 1982 and 2013 the authors collected micro-moths by lamp and light trap at various sites of the investigated area. Biological data and habitats of the species are presented and their distributions are figured on maps. Structure of female genitalia and morphological characteristic of wings are illustrated in colour plates.

Material and methods

The moths were sampled using light trap and manual collecting between 1982 and 2012. The collected specimens are preserved in private collection of Schreurs (Kerkrade, Netherlands) and in the Regiograf Institute (Komló, Hungary). The abdomens of the specimens were cut off and boiled in 10-20% caustic solution. The rigid genitalia were removed from the surrounding tissues and dehydrated with ethanol. Genitalia were mounted on microscope slides using standardized amount of Euparal fixative. Finally, they were photographed using microscope digital camera and processed with Top View 3.7 program.

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Notes in text: Central Europe (according to The World Fact book Encyclopaedia Britannica); Austria, Czech Republic, Germany, Hungary, Liechtenstein, Poland, Slovakia, Slovenia, Switzerland. Balkan Peninsula: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Macedonia, Kosovo, Serbia.

Confirmed and new records for Dombóvár region*

TISCHERIIDAE

Coptotriche gaunacella Duponchel, 1843): Dombóvár, Gunaras, 1♂, 25.07.1998, gen. prep. A. Schreurs, No. 1067; 1♂, 25.07.1998; 2♂, 01.07.1991, leg. et det. I. Fazekas. Widespread in Hungary mainly in the P*runo spinosae-Crataegetum* assotiation known. Usually bivoltine, from May to August.

TINEIDAE

Monopis omichlopis Meyrick, 1928: Dombóvár, Gunaras, 1 ex, 03.08.2008, det. R. Gaedicke. The species is sporadically distributed in Hungary: Bakony Mountains, Vértes Mountains and Velence regions. Not recorded from north and eastern Hungary. New species for the fauna of the Transdanubian Hills.

Monopis weaverella (Scott, 1858): Dombóvár, Gunaras, 1 ex, 5.10.2002, det. R. Gaedicke; 1 ex, 02.08.2008, det. R. Gaedicke. Generally very local and rare in Hungary: Zemplén Mountains and Vértes Mountains. New species for the fauna of the Transdanubian Hills.

Nemmapogon granella (Linnaeus, 1758): Dombóvár, Gunaras, 1 ex, 05.08.2008, det. R. Gaedicke. Widespread in Hungary.

Niditinea fuscella (Linnaeus, 1758): Dombóvár, Gunaras, 1♂, 01.08.2010, gen. prep. A. Schreurs, No.1017; 2 ex, 04.08.2008, det. R. Gaedicke; 1 ex, 17,08.2009, det. R. Gaedicke. Isolated occurrences in Transdanubian Mountains and North Hungarian Mountains; absent from Hungarian plain.

GRACILLARIIDAE

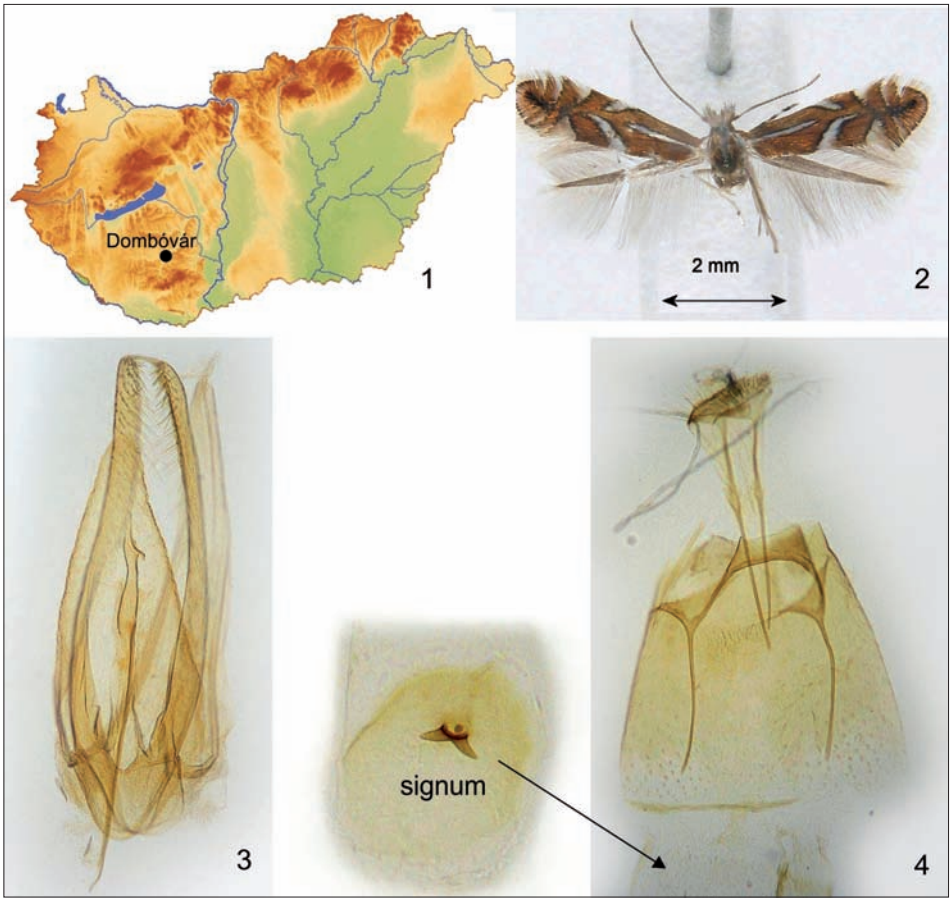
Aspilapteryx limosella (Duponchel, 1843): Dombóvár, Gunaras, 1 ex, 18.07.2012, gen. prep. A. Schreurs, No. 1163, det. E. van Nieukerken. Widely distributed in much of Hungary; the adult flies from May to August, presumably in two generations. New species for the fauna of the Transdanubian Hills.

Phyllonorycter connexella (Zeller, 1846): Dombóvár, Gunaras, 10.09.2009, ex larva, on *Salix alba*; mines found on 20.08.2009 (by A. Schreurs). Food plat in Hungary: *Populus* and *Salix* spp. (SZŐCS 1977). The moth local and not frequent in Transdanubian Mountains, North Hungarian Mountains and very rare in plain (Danube-Tisza Interfluve: Ócsa). New species for the fauna of the Transdanubian Hills.

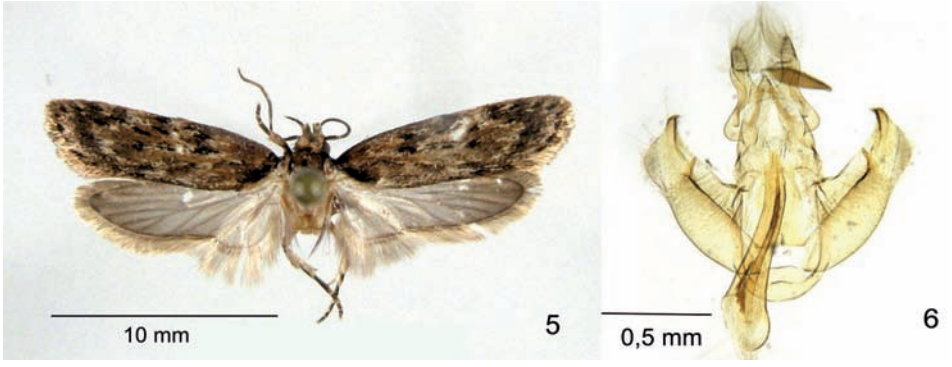
Phyllonorycter apparella (Herrich-Schäffer, 1855): Dombóvár, Gunaras, 1♂, 20.08.2010, gen. prep. A. Schreurs, No. 1058. Larva on *Populus* and *Salix* spp. Localities is very sporadically in Hungary: Transdanubian Mountains, Great Hungarian Plain (only at Szeged). New species for the fauna of the Transdanubian Hills.

Phyllonorycter pyrifoliella (Gerasimov, 1963): Dombóvár, Gunaras, "Mijnen aan appel." 1♂, 10.08.2011, ex larva, gen. prep. A. Schreurs, No. 1043; 2♂, 11.08.2011, ex larva, gen. prep. A. Schreurs, No. 1044 and 1045. UTM: BS84; N 46°24'03", E

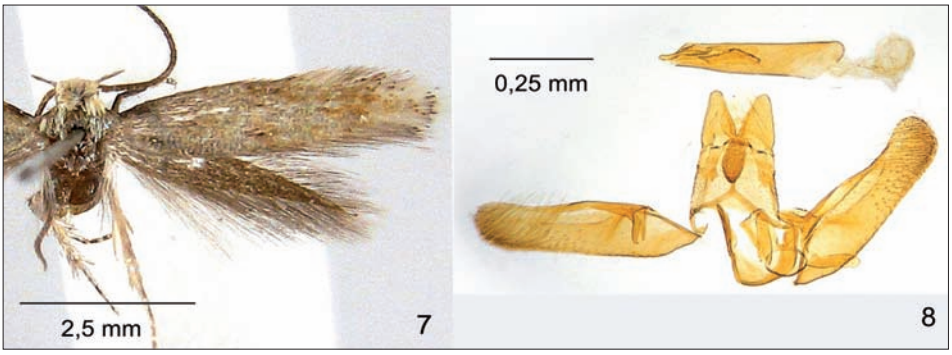
**The species are listed alphabetically within the family.*



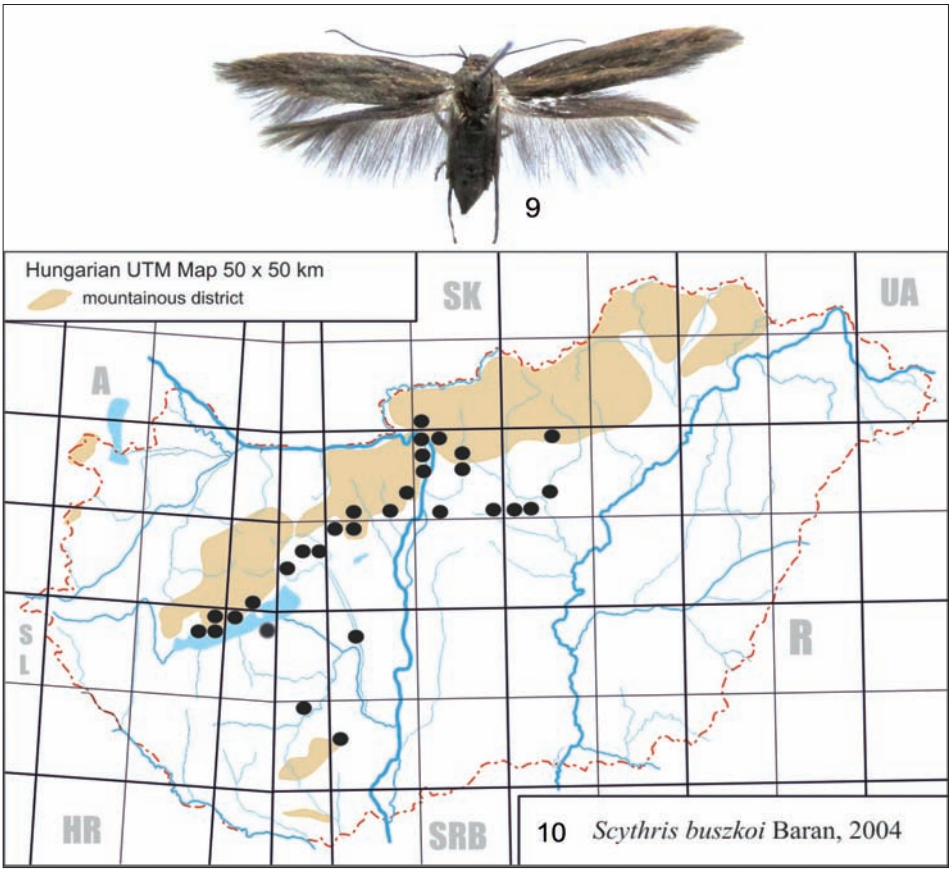
Figs. 1-4: Geographic location of Dombóvár in Hungary (1)
Adult (2), male (3) and female genitalia (4) of *Phyllonorycter pyrifoliella*



Figs. 5-6. Adult (5) and male genitalia (6) of *Depressaria ululana*



Figs. 7-8: Adult (7) and male genitalia (8) of *Elachista agelensis*



Figs. 9-10: Adult (9) and distribution map (10) of *Scythris buszkoi* in Hungary

18°10’24”. This was the first record from Hungary. Typical habitat of the species in Hungary is in arable land with fine soil, often low-intensity agriculture, tree lines and small woods, young forestation with embedded surviving native grassland vegetation. Larva oligophagous on *Malus* and *Pyrus* and hibernation as pupa. According to references the moth flies three generations. Strongly fragmented distribution: Austria, Bosnia, Bulgaria, Czech Republic, Finland, Latvia, Moldova, Russia and Ukraine.

ARGYRESTHIIDAE

Argyresthia albistria (Haworth, 1828): Dombóvár, Gunaras, 1 ex, 25.07.2007. Relatively is widely distributed in the Hungarian mountains areas, known one isolated populations the beside Dráva river.

LYONETIIDAE

Leucoptera malifoliella (O. Costa, 1836): Dombóvár, Gunaras, 1♂, 10.08.2011, ex larva, on apple. Widely distributed in all Hungarian regions.

BLASTOBASIDAE

Hypatopa inunctella (Zeller, 1839): Dombóvár, Gunaras, 1♂, 16.06.2006, gen. prep. A. Schreurs, No. 1054, det. I. Fazekas. It is found in most of Europe (except British Islands, Norway and Portugal). According to GOZMÁNY (1958) widely distributed in Hungary. The adults fly in one generation a year during June and July. This opinion demands a thorough review. There is only minimal research of the species, so only very careful estimations can be made with scientific claim. Known in Transdanubian Mountains and North Hungarian Mountains. New species for the fauna of the Transdanubian Hills.

LYPUSIDAE

Pseudatemelia subochreella (Doubleday, 1859): Dombóvár, Gunaras, 1♂, 16.06.2006, gen. prep. A. Schreurs, No. 1053; 2♀, 17.06.2006. New species for the fauna of the Transdanubian Hills. The determinations of *Pseudatemelia* species is not easy and manage the majority only on an examination of the genital structures. In the males this usually leads to an unambiguous assignment. Only *Pseudatemelia josephinae* (Toll, 1956) and *P. elsae* Svenson, 1982 offer there might be some difficulties. In females, however, also a genitalia prepared does not always allow a hard-and-firm statement. In *Pseudatemelia subochreella* the colouring is more yellow gray and the wings are without markings.

ELACHISTIDAE

Agonopterix ciliella (Stainton, 1849): Dombóvár, Gunaras, 1♂, 10.08.1997, gen. prep. A. Schreurs, No. 1085. Known sporadically in some habitats in the Hungarian mountains at medium altitude and some from the lowlands (for example Jászság, Sárvíz).

Agonopterix cnicella (Treitschke, 1832): Dombóvár, Gunaras, 1♂, 20.07.2007, gen. prep. A. Schreurs, No. 1178. This was the first record from Transdanubian Hills. Not common in Hungary; its preferred habitats are dry open grasslands; dry and semi-dry closed grasslands. The larvae feed on *Eryngium campestre*. The adults are on the wing from July and hibernate through the winter, remerging in spring.

Agonopterix propinquella (Treitschke, 1835): Dombóvár, Gunaras, 1♂, 15.07.2011, gen. prep. A. Schreurs, No. 1087. Widespread in Hungary; the moths emerge in a single generation from July, and hibernate through the winter, remerging in spring. Sporadically in Transdanubian Hills (e.g. Mecsek Mts, Villányi Hills).

Depressaria chaerophylli Zeller, 1839: Dombóvár, Gunaras, 1♂, 10.08.1991, gen. prep. A. Schreurs, No. 1088. Montane and colline species in Hungary. Very local and rare on the Hungarian Plain. Widely distributed in Europe but imperfectly known in the Balkan Peninsula.

Depressaria ululana Rössler, 1866 : Dombóvár, Gunaras, 3 ex, 25.07.2007, gen. prep. A. Schreurs, No. 1176; 17.08.2010; 20.07.2011. This species is new for the Hungarian fauna (FAZEKAS 2013a). The typical habitat of the species in Hungary is in arable land within soil, often low-intensity agriculture, tree lines and small woods, young a forestation mixed with surviving native grassland vegetation. According to references (KAILA 2013), *D. ululana* is found in Portugal, Spain, France, Switzerland, Germany, Romania and the Republic of Macedonia. Is everywhere very local. Chorotype: disjunct European species. The larvae feed on the lowers and unripe seeds of *Bunium persicum* (Boiss.) B. Fedtsch. and *Nigella arvensis*. *Nigella arvensis* is widespread in Hungary on ploughed land and amongst stubble. They live in a web just below the surface of the lowers. They are pale green, almost whitish, with a large black dorsal mark. Full-grown larvae descend to the ground and spin up amongst leaves. The larvae can be found from the end of June to the beginning of July.

Elachista humilis Zeller, 1850: Dombóvár, Gunaras, 2♀, 10.06.2003, gen. prep. A. Schreurs, No. 1138, det. L. Kaila. This was the first record from Transdanubian Hills. Occurrence in Hungary documented only from Budapest (= *perplexella* Stainton, 1859) and Vértes Mountains. Moth it is found in most of Europe, except the Iberian Peninsula and the Balkan Peninsula. Adults are on wing from May to August in two generations. There are two generations per year. Poliphagous: larvae have been recorded on *Agrostis*, *Anthoxanthum*, *Carex*, *Deschampsia*, *Festuca*, *Holcus*, *Phalaris* and *Poa*. The young larvae make a short corridor that is stuffed with crass in spring. After hibernation, they vacate this mine.

Elachista agelensis Traugott-Olsen, 1996: Dombóvár, Gunaras, 1♂, 20.07.2012, gen. prep. A. Schreurs, No. 1161, det. L. Kaila. This was the first record from Hungary. The species is named after Mont Agel in southern France. According to author the species differs from *Elachista collitella* Duponchel in the more contrasted coloration; R2 arises more distally, almost above base of CuA l, whereas in *Elachista collitella*. R2 arises above base of CuA2; R(4+5)+M l arises from apex of cell, lightly distanced from base of R3; in E. collitella R3, R(4+5)+M l arise at apex of cell; in genitalia of *E. agelensis* is apex of uncus-lobes shaper triangular, vinculum less rounded in sacral area; the medial margin of juxta lobe smoothly curving into the less setose apical margin than by E. collitella. Disjunct species in Europe and it is found till now only in France, Italy and the Czech Republic. According to Lepiforum (10.01.2014): „HUEMER (2013) informiert über den Erstfund der Art in Österreich: "*Die submediterran verbreitete E. agelensis wurde von WIESER (2012a) in Südkärnten (Weinitze, 12.8.2010) gefangen und mittels DNA Barcode determiniert*."

Elachista festucicolella (Zeller, 1853): Dombóvár, Gunaras, 1♂, 10.06.2003, gen. prep. A. Schreurs, No. 1162, det. L. Kaila. Known only with older data from Budapest (GOZMÁNY 1955). This data is erroneous. The first specimen of the moth in Hungary was caught by SZABÓKY (2004) near Gyöngyös (Sár hill) in 2002. After this Arnold Schreurs found the moth species in the Dombóvár. Distribution within Europe from Sweden to the central Europe, and from Switzerland to the Bulgaria and Ukraine (Fauna Europaea 2013). Adults from late May till early July. Host plant: *Festuca ovina* and *F. rupicola*. This was the first record from Transdanubian Hills.

Elachista pullicomella Zeller, 1839: Dombóvár, Gunaras, 1 ex, 18.07.2012, gen. prep. A. Schreurs, No. 1172; 2 ex, 17.07.2012. It is found in most of Europe (except Great

Britain, Ireland, the Iberian Peninsula and the Balkan Peninsula), east into Russia. The first specimen of the moth in Hungary near Budapest (GOZMÁNY 1955, SZŐCS 1977). Local in country and mountainous fauna element: Vértes Mountains, Bükk Mountains, Aggteleki National Park. Oligophagous on *Poaceae* spp.: *Arrhenatherum, Avena, Dactylis glomerata, Deschampsia flexuosa, Festuca ovina, Festuca rubra, Holcus lanatus, Phleum, Poa annua, Poa pratensis, Trisetum flavescens*. Known three specimens from Dombóvár and this is new record to the fauna of Transdanubian Hills.

COLEOPHORIDAE

Coleophora pseudociconiella Toll 1952: Dombóvár, Gunaras, 1♂, 10.08.1982, gen. prep. 4939 "W. F", No. 4939, det. H.W.v.d. Wolf. The author wrote the species down from Vienna. Distribution in Palaearctic: China, Central Siberia, Southern Russia, Caucasus, Turkey, Croatia, Italy and Central Europe (BALDIZZONE et al. 2006). Rare and local in Hungary: Bakony Mts. (Pécsely), Mátra Mts. (Sár hill) and Danube-Tisza Interfluve (Jászság; own data: F. Buschmann pers. comm.). Only two specimens from Transdanubian Hills: Komló and Dombóvár.

Coleophora pulmonariella Ragonot, 1875: Dombóvár, Gunaras, 1♀, 15.06.2006, det. et gen. prep. H.W. v.d. Wolf, No. 10838. Known from Altai Mountains to Northern and Western Europe. Hungarian old records are single localities: Tahi settlement is in Pilis Mountains; ex larva, 3 ex, from 1974, leg. J. Szőcs, (in coll. NHM, Budapest) but requiring confirmation (own data: F. Buschmann pers. comm.). Genital examination may be needed to confirm identity. This was the first record from Transdanubian Hills.

MOMPHIDAE

Mompha subbistrigella (Haworth, 1828): Dombóvár, Gunaras, 1♂, 10.06.2003, gen. prep. A. Schreurs, No.1079; 1♀, 10.06.2003. Only very few specimens are known from Hungary. Known in Villányi Hills (Szársomlyó hill, 442 m); the range is made up of limestone; on its southern slopes the climate is submediterranean. The karsts shrub forest of the Szársomlyó hill (*Inulo spiraefoliae-Quercetum pubescentis*) is closed on the ridge and on the north slope and the plant cover is transitional on the south slope. The open plant associations' of the hills are steppe grassland (*Cleistogeni-Festucetum rupicolae*) and rocky grasslands. In Palaearctic this habitat atypical to the species. The other locality is very distant in the North Hungarian Mountains (Bükk Mts; Miskolc), this is one very isolated record. Range: from Central Asia through the regions of Caucasus to Central and North Europe. According to KOSTER and SINEV (2003) the adults can be found throughout the year, but most frequently after hibernation; in late spring and early summer. Larva monophagous on *Epilobium*. Recorded on *Epilobium montanum, E. palustre, E. parviflorum* and *E. tetragonum*.

SCYTHRIDIDAE

Scythris buszkoi Baran, 2004: Dombóvár, Gunaras, 2♂, 20.07.2012, gen. prep. A. Schreurs, No.1112 and 1113, det. I. Fazekas. According to FAZEKAS (2013b) the habitats are areas that are extensively used, lowland-, colline- and submontane areas: thermophilous woodland fringes; dry and semi-dry closed grasslands; semi-natural road verges, embankments and flood-control dams; large parks and botanical gardens with surviving native vegetation; arable land with fine soil, often low-intensity agriculture vegetation; fine soil vineyards and orchards; sand, clay and gravel quarries, bare loess cliffs; former goose grazing land and cemetery. The first generation flies from the end of April until June, the second one from July to the mid-September. According to the observations in the Hungarian and Slovakian populations the adults are the most active in the late morn-

ing hours and early afternoon. In cloudy weather they relax on the underside of the leaves. They come to light in the evening and at night and are also active by day. Distribution: Very local in Ukraine, Poland, Slovakia and Austria, widespread in Hungary (see Fig. 10). The moth absent from southern and western Europe and unknown outside Europe.

Scythris siccella (Zeller, 1839): Dombóvár, Gunaras, 1♂, 20.07.2012, gen. prep. A. Schreurs, No. 1120. This scythridid moth very local and rare in Hungary. Occurrence known only in two localities: Gyón and Vértes Mountains. According to of Hungarian papers (SZŐCS 1977) the larva is polyphagous on *Cerastium*, *Helianthemum*, *Lotus*, *Plantago* and *Thymus*. Adults are on wing from May to June. This was the first record from Transdanubian Hills.

COSMOPTERIGIDAE

Eteobalea serratella (Treitschke, 1833): Dombóvár, Gunaras, 1♂, 17.08.1992, det. et gen. prep. J. C. Koster, No. 3942; 1 ex, 20.07.2012. Distribution: Central and Western Asia, from European Russia to western Europe; absent the Benelux, Great Britain, Ireland, Iceland, Fennoscandia and the Baltic States. Widely ranged in Hungary from May to July in grasslands; the larva on *Linaria genistifolia* and *Antirrhiunum majus.* Preferring habitat is mainly Mecsek Mountains and Villányi Hills known in the South Transdanubian region (FAZEKAS 2002).

GELECHIIDAE

Altenia scriptella (Hübner, 1796): Dombóvár, Gunaras, 1♂, 20.07.2007, gen. prep. A. Schreurs, No. 1142. Widely distributed in much of Hungary but locally spread in Transdanubian Hills. There is a single generation, with adults on the wing in June and July; the larva feeds in a folded leaf of *Acer campestre*.

Anarsia lineatella Zeller, 1839: Dombóvár, Gunaras, 1♂, 10.06.2003 gen. prep. A. Schreurs, No. 910. Widely distributed in much of Hungary but sporadically occurs in Transdanubian Hills.

Aroga velocella (Duponchel, 1838): Dombóvár, Gunaras, 1♂, 20.07.200, gen. prep.A. Schreurs, No.1084.Widely distributed in Hungary but very local in Transdanubian Hills (Mecsek Mts).

Carpatolechia alburnella (Zeller, 1839): Dombóvár, Gunaras, 2 ex, 10.06.2003. Very scattered records from Transdanubia and Danube-Tisza Interfluve known in Hungary: Bakony Mts, Barcs, and Sopron. According to GOZMÁNY and SZABÓKY (1986) known from the birch copses at Peszér (= Kunpeszér; Great Hungarian Plain).

Caryocolum tricolorella (Haworth, 1812): Dombóvár, Gunaras, 1♂, 01.08.2010, gen. prep. A. Schreurs, No. 1089. Mostly montage and colline species in Hungary. Very local and rare on the Hungarian Plain (Jászság region). According to HUEMER and KARSHOLT (2010) preferred habitats are thermophilous deciduous forests, particularly oak forests. The of this nature habitats like this are missing from the Dombóvár area.

Eulamprotes wilkella (Linnaeus, 1758): Dombóvár, Gunaras, 1♂, 18.07.2012, gen. prep. A. Schreurs, No. 1156. Only a single record published from Transdanubian Hills (FAZEKAS 2002): from Villányi Hills, in calcareous open rocky grasslands; otherwise the moth is widely ranged in Hungary from June to August.

Helcystogramma lutatella (Herrich-Schäffer, 1854): Dombóvár, Gunaras, 1 ex, 30.07.2010, gen. prep. A. Schreurs, No.1134. Very scattered records from Hungary regions; rarely observed in Transdanubian Hills; only from Villányi Hills (Szársomlyó hill) and Simontornya is some specimen. The adults fly from June to early September,

and the larvae feed on various grasses (e.g. *Calamagrostis epigeios* and *Agropyron repens*) during the spring and summer.

Metzneriana aestivella (Zeller, 1839): Dombóvár, Gunaras, 1♂, 10.08.1998, gen. prep. A. Schreurs, No. 1096. The only Transdanubian Hills record of the moth is from the surroundings of Nagyharsány (Villányi Hills; Szársomlyó hill, 300 m, calciferous, rocky habitat) from 2000 (SZABÓKY 2000). In Hungary the species not but its habitats became strictly protected. The moth is very rare in Hungary too and its occurrence is restricted only to the Danube-Tisza Intrefluve of country. Distribution abundantly in the entire area. Preferred of habitat: open sand steppes and sand dune. Its food plant is definitely the *Carlina vulgaris*.

Monochroa elongella (Heinemann, 1870): Dombóvár, Gunaras, 1♀, 02.08.2008, gen. prep. A. Schreurs, No. 1091. From lowland (Sárvíz region) to the highland (Mátra and Bükk Mts) occurs in Hungary but very local. According to GOZMÁNY and SZABÓKY (1986) characteristic species of the fens and swampy Danube-Tisza Interfluves regions; recorded also from the cold swamp of the Bátorliget Nature Reservation. Only a single recorded published from Transdanubian Hills (FAZEKAS 2001, GOZMÁNY 1958): near Kaposvár.

Pexicopia malvella (Hübner, 1805): Dombóvár, Gunaras, 1♀, 16.07.2011, gen. prep. A. Schreurs, No. 1139. Widely distributed in much of Hungary. A bivoltine species flying from May to September. The food plants of the larva include: malvaceous plants, *Malva* and *Althaea* spp., medicinal herbs and ornamentals, and also cotton. Only few record in the Transdanubian Hills: e.g. Csarnóta, Pécs and Vokány.

Teleiopsis diffinis (Haworth, 1828): Dombóvár, Gunaras, 2 ex, 20.07.2012, gen. prep. A. Schreurs A., No. 1133. Widely distributed in much of Hungary, but only a single specimen captured at light in Transdanubian Hills (Villányi Hills; Szársomlyó hill, 300 m). The moth has never been recorded in Mecsek Mountains.

URODIDAE

Wockia asperipunctella (Bruand, 1851): Dombóvár, Gunaras, 1♂, 18.07.2012. The moth rare and very local in Hungary. The first population of the moth in Hungary found by PETRICH (1984) during a light-trap on 23th July 1981 on Velence Mountains (Kanca-hill). New recent data are known in Hungary: Aggteleki National Park, Jászság region and Old Juniper Woodland of Barcs (Somogy County). The moth has been recorded from central and northern parts of Europe, but it is absent from the westernmost parts, i.e., the Iberian Peninsula, the British Isles, Belgium, the Netherlands and Denmark. In addition it is present in North America. In Europe the moth flies in one or two generations from the end of May to the beginning of July. In south Europe are locals the two generations populations: April to early June and July to early September. According to literature the larva feeds in July-August on leaves of *Populus tremula, P. nigra* and *Salix elaeagnos*. The pupa hibernates in an open network cocoon on the ground.

TORTRICIDAE

Ancylis unculana (Haworth, 1811): Dombóvár, Gunaras, 1♂, 29.07.2010, det. F. Groenen. A not common but widely distributed species in Hungary.

Aphelia viburnana (Denis & Schiffermüller, 1775): Dombóvár, Gunaras, 1♂, 29.07.2010, det. et gen. prep. F. Groenen, No. 2309. Wide spread in Hungary but local in Transdanubian Hills: e.g. Mecsek Mts and Villányi Hills.

Argyroploce roseomaculana (Herrich-Schäffer, 1851): Dombóvár, Gunaras, 1♂, 18.07.2012. These second localities of the moth in Hungary. The first specimen of the moth in Hungary was caught by I. Fazekas (2002) near Kárász (Mecsek Mts) in 1985.

Distribution in Europe: Scandinavia, Baltic States, Central Europe (except Germany), Italy and Russia.

Cnephasia alticolana (Herrich-Schäffer, 1851): Dombóvár, Gunaras, 1 ex, 10.06.2003, det. F. Groenen. The distribution of the species is restricted in North Hungarian Mountains. Sporadically and rare in Transdanubia (e.g. Mecsek Mountains), Jászság region and Szigetköz area.

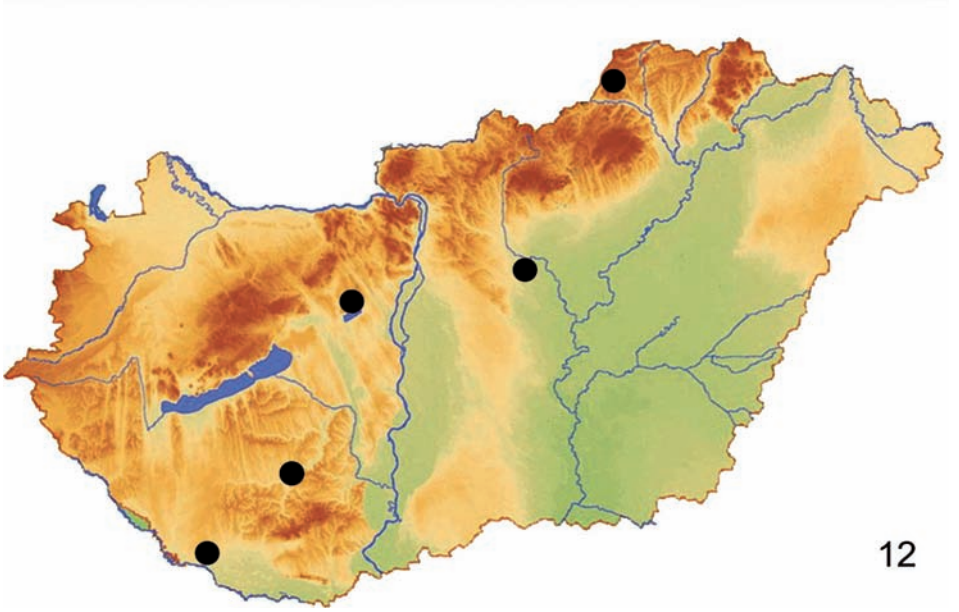
Cnephasia ecullyana Réal, 1951: Dombóvár, Gunaras, 1♂, 15.06.2003, det. et gen. prep. F. Groenen, No. 2400. New species to the Transdanubian Hills fauna. Hungarian old records are two localities (SZIRÁKI 1980): "*We discovered in it terpinyl acetate traps at Törökbálint and Érd-Elvira, and also in "Atralin" traps in Budapest (Budatétény)*". It was collected nowhere in the country in the past decades. According to RAZOWSKI (2002) the early stages is not described. Moths are on the wing form May to August in Europe. According to NÄSSIG and THOMAS (1991) the moth may therefore preliminarily be characterized as a thermophilous European species, which reaches north to central Germany and is widespread in southern and south-eastern Europe. RAZOWSKI (1992) wrote a note to the former study: after the geographical repartition of the species under consideration is probably well described by Nässig and Thomas, but must be confirmed by more accurate determinations. By newest literature (see Fauna Europaea 2014) the distribution of *C. ecullyana* in Europe: Turkey, Balkan Peninsula, Hungary, Austria, Slovakia, Czech Republic, Germany, Switzerland, France, Spain, Portugal, Italy (Sicily, Sardinia).

Cnephasia longana (Haworth, 1811): Dombóvár, Gunaras, 2♂, 20.07. 2012, det. F. Groenen. New species to the Transdanubian Hills fauna. Very local and rare in Hungary; original first record is from Tihany Nature Conservation Area (SZENT-IVÁNY 1943, FAZEKAS 1993). Distribution: Asia Minor to Europe furthermore north-west Africa and the Canary Islands but known in North America. Moths are on the wing in July and August, and come to light, although they can be disturbed easily by day. In both sexes the coloration of the forewing very variable. According to literature the larva feeds on a range of low-growing herbaceous plants, in spun flowers and terminal shoots: *Anthemis, Armeria, Aster, Crysanthemum, Lycnitis, Ranunculus, Selinum, Sempervivum* and *Ligularia*.

Cnephasia stephensiana (Doubleday, 1849): Dombóvár, Gunaras, 8 ex, 12.06.2003; 7ex, 15.06. and 20.06.2006; det. et gen. prep. F. Groenen, No. 2157; 4 ex, 17.06.2013, det. I. Fazekas. Known localities from Hungary: Mecsek Mts, Tihany Peninsula, Vértes Mts, Sárvíz and Szigetköz region, Jászság area and Mátra Mts.

Cochylidia rupicola (Curtis, 1834): Dombóvár, Gunaras, 1♂, 30.07.2010, gen. prep. A. Schreurs, No. 1080. New species to the Transdanubian Hills fauna. This species is known only from two localities in Hungary: Aggteleki National Park and Vértes Mountains. A West Palaearctic fauna element; sporadically recorded from Asia Minor and Europe. The larval food plants is *Eupatorium cannabinum, Lycopus europaeus* and *Chrysocoma linosyris* (RAZOWSKI 2002, 2009); where the flowers and seeds are consumed during August to September, after which the larva builds a cocoon nearby in which it overwinters. The adults fly from June to early August.

Cochylimorpha alternana (Stephens, 1834): Dombóvár, Gunaras, 1 ex, 15.06.2003, det. F. Groenen. The information we have about the moth is very limited, it is minimally researched in Hungary, thus in the possession of the data collected so far we have to be careful when estimating its Hungarian distribution. Know very sporadically only from the Transdanubia in Hungary. No records from North Hungarian Mountains and Great Hungarian Plain. In Palaearctic the moth flies in one generation from July to August; on the Hungary moth in June to August, probably in two generations (e.g. in Mecsek Mountains).



Figs. 11-12: Adult (11) and distribution map (12) of *Wockia asperipunctella* in Hungary

Cydia amplana (Hübner, 1799): Dombóvár, Gunaras, 1 ex, 17.07.2012, det. F. Groenen. This is second localities in Transdanubia Hills (FAZEKAS 2002). Know very sporadically spread in Hungary: Mecsek Mts, Transdanubian Mountains, Mátra Mts, Bükk Mts, Aggteleki National Park and a local population in Great Hungarian Plain (Jászság region).

Cydia fagiglandana (Zeller, 1841): Dombóvár, Gunaras, 3 ex, 17.07.2007; 1 ex, 20.07.2012, det. F. Groenen. Widespread sylvan species in the Hungarian colline and mountainous regions; but sporadically from plain areas.

Cydia inquinatana (Hübner, 1799): Dombóvár, Gunaras, 1♀, 20.06. 2006, det. F.

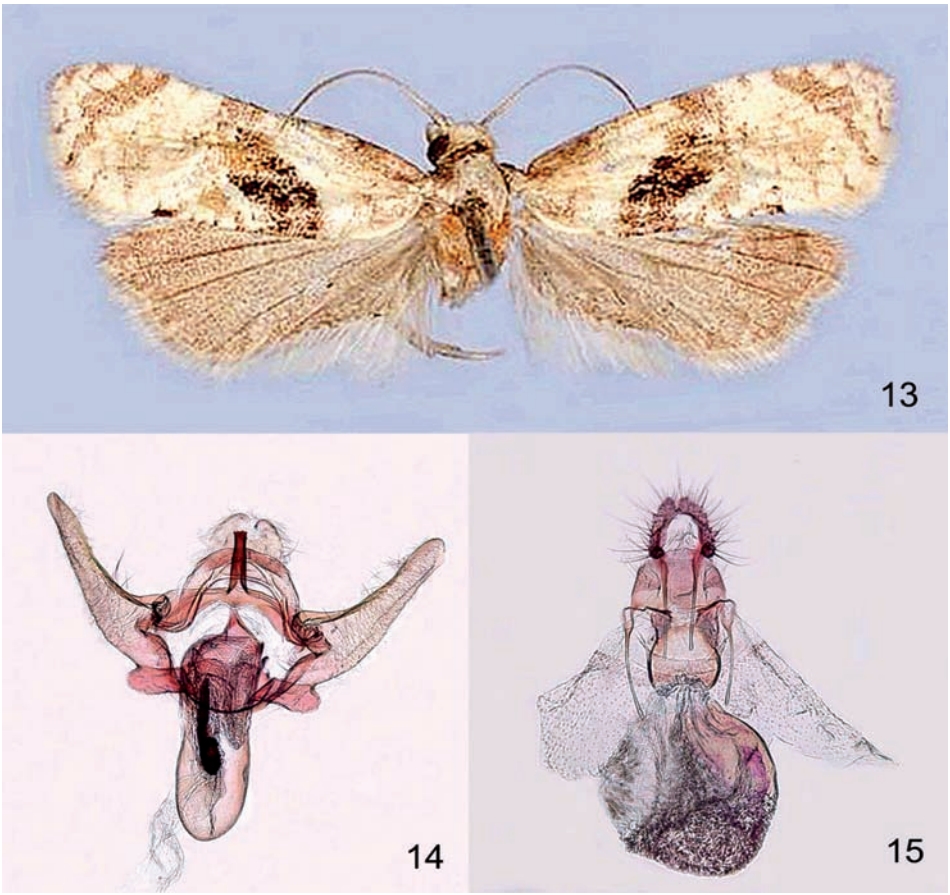


Fig. 13-15: Adult (13) male (14) and female genitalia (15) of *Phalonidia udana.*

Groenen. Known only with older data from Hungary (GOZMÁNY 1968). This is a literature data but not confirmed; genital examination may be needed to confirm identity. It was announced recently from Vértes Mountains (PASTORÁLIS & SZEŐKE 2011).

Cydia medicaginis (Kuznetzov, 1962): Dombóvár, Gunaras, 1♂, 23.07.2007, gen. prep. A. Schreurs, No. 1037, det. F. Groenen. Probably the first specimen of the moth (ex larva on *Medicago sativa*) in this Hungary was caught by Cs. Erdélyi near Kompolt in 1978 (UTM grid DT48A3). We have to wait for the discovery of a new population of the moth to 1993 years: e.g. Aggteleki National Park, Bükk Mts, Jászság area, Mecsek Mts, Vértes Mts and Sárvíz region. Finally, reviewing the whole Hungarian records, we can assert the followings; there are 8-9 places occurrence of the moth known in Hungary till this time.

Enarmonia formosana (Scopoli, 1763): Dombóvár, Gunaras, 1♀, 20.07.2001, det. et gen. prep. F. Groenen, No. 2155. Mostly montane and colline species in Hungary. Very local in Transdanubian Hills: Mecsek Mts.

Endothenia oblongana (Haworth, 1811): Dombóvár, Gunaras, 1 ex, 20.07.2004, det. F. Groenen. Well-known in the Hungarian collin and montaneous regions.

Epinotia ramella (Linnaeus, 1758): Dombóvár, Gunaras, 2 ex, 20.07.2012, det. F. Groenen. This is second localities in Transdanubian Hills. Known sporadically in Hungary: e.g. Old Juniper Woodland of Barcs, Bakony Mts and North Hungarian Mountains.

Endothenia ustulana (Haworth, 1811): Dombóvár, Gunaras, 2 ex, 10.06.2003 and 20.06.2006, det. F. Groenen. The moth was not observed from Transdanubian Hills, this new species in region. Very local and rare in Hungary: Vértes Mts, Bükk Mts and Aggteleki Karstland.

Epiblema similana (Denis & Schiffermüller, 1775): Dombóvár, Gunaras, 5 ex, 20.07.2012, det. F. Groenen. Very local in Transdanubian Hills: Mecsek Mountains and Villányi Hills. Known sporadically on the Hungarian mountains of medium height.

Eudemis porphyrana (Hübner, 1799): Dombóvár, Gunaras, 2 ex, 23.07.2011, det. F. Groenen. The moth was not observed in this Transdanubian Hills region till this time. There is earlier information about the occurrence of the moth in Hungary in the 1968s from literature (GOZMÁNY 1968). Unknown the specimen and the localities. We will be sure of this thing if someone would examine the above-mentioned evidence specimen.

Lobesia bicinctana (Duponchel, 1844): Dombóvár, Gunaras, 1♀, 20.07.2004, det. et gen. prep. F. Groenen, No. 2278. Sporadically spread mostly in the Hungarian collin and mountain regions and very local in Danube-Tisza Interfluve (Jászság area). The latter landscape is extremely varied: eastern continental semi-desert like dune tops, saline lakes dried snow-white in summer. This habitat complex is individual in Pannonian biogeographical region.

Notocelia rosaecolana (Doubleday, 1850): Dombóvár, Gunaras, 1♂ and 1♀, 10.06.2003, det. F. Groenen. These second localities of the moth in Hungary. The first 5 specimens of the moth in Hungary were caught by K. Szeőke from Vértes Mountains in 1999 (SZEŐKE 2006). According to author the habitat requirements meet the conditions of the bushy forest in the places, where its food plants roses are numerous.

Piniphila bifasciana (Haworth, 1811): Dombóvár, Gunaras, 1 ex, 29.07.2008, det. F. Groenen. Known very sporadically in Transdanubia; there is only reliable reference from the Aggteleki National Park; absent in Great Hungarian Palin.

Phalonidia udana Guenée, 1845: Dombóvár, Gunaras, 1♀, 25–31.08.1998, det. et gen. prep. F. Groenen, No. 2403. The species new the fauna of Hungary. According to MUTANEN et al. (2012) *Phalonidia manniana* (Fischer von Röslerstamm, 1839) was found to comprise two genetically distinct clusters. Morphological investigation further supports the existence of two distinct taxa, *P. manniana* and *P. udana* Guenée, 1845, sp. rev. Their biologies also differ, *P. manniana* feeding in stems of *Mentha* and *Lycopus* (Lamiaceae) and *P. udana* feeding in stems of *Lysimachia thyrsiflora* and *L. vulgaris* (Primulaceae). *Phalonidia udana* is valid species and widely distributed in the North Palaearctic, whereas it seems to be rare or missing in large parts of Central Europe. *Phalonidia udana* was described from France. *Phalonidia manniana* is a widely distributed and generally common, though local, species in Europe. It inhabits moist biotopes such as coastal meadows, fens, and reverie habitats and has been reported to feed on *Mentha aquatica* and *Lycopus europaeus* (Lamiaceae). After literature the *Phalonidia manniana* certainly occurs in the British Isles as local lepidopterists have reared it from stems of *Mentha* and *Lycopus* many times. An examination of DNA barcode data of North American material did not reveal any specimens close to *Phalonidia manniana* or *Ph. tolli*. Having a more exact picture of the distributions of both species requires examination of collection material from different countries. Distribution of *Ph. udana:*

Europe (Finland, Norway, Denmark, Germany, Slovakia, Netherland, England) Central Siberia.

PYRALIDAE

Acrobasis glaucella Staudinger, 1859: Dombóvár, Gunaras, 2 ex,15.07.2012, det. J. Asselbergs. Sporadic and isolated localities from Hungary: e.g. Villányi Hills, Mecsek Mts, Vértes Mts, Mátra Mts, Aggteleki Karts area and Jászság region.

Acrobasis legatea (Haworth, 1811): Dombóvár, Gunaras, 1 ex, 12-24. 07. 2004; 3 ex, 14-28. 07.2012. Known sporadically on the Hungarian mountains of medium height and from the collin regions.

Aglossa pinguinalis (Linnaeus, 1758): Dombóvár, Gunaras, 1 ex, 21.07.2012. Widely distributed in Hungary but local in Transdanubian Hills.

Dolicharthria punctalis (Denis & Schiffermüller, 1775): Dombóvár, Gunaras, 1 ex, 15.07.2011; 1 ex, 20.07.2007. Widespread in Hungary; the primary habitat is the meso- and the hygrophilous areas.

Ephestia unicolorella woodiella Richards & Thomson, 1932: Dombóvár, Gunaras, 1♂, 05.09.2002, det. et gen. prep. J. Asselbergs, No. 5779. Wide spread in Hungary.

Eurhodope cirrigerella (Zincken, 1818): Dombóvár, Gunaras, 2 ex, 17.07.2012. The species new the fauna of Transdanubian Hills. The first specimen of the moth in Hungary was caught by Csaba Szabóky near Jósvafő in 1988; North Hungarian Mountains, Aggteleki Karst, "*1988. július 3-án Jósvafőn, a VITUKI kutatóállomáson*" (see SZABÓKY 1990). As a summary we can ascertain that three small-sized habitats of moth were discovered in this region till this time: Szinpetri (Koponya-völgy; 07.07.1989), Szelcepuszta (Nagyoldal, Oltárkő; 05.07.1989).

Evergestis aenealis (Denis & Schiffermüller, 1775): Dombóvár, Gunaras, 12 ex, 14-28.07.2012. Widespread in Hungary; known sporadically in Transdanubian Hills.

Isauria dilucidella (Duponchel, 1836): Dombóvár, Gunaras, 1 ex, 17.07.2012, det. J. Asselbergs. He is known from all of the Hungarian landscapes (FAZEKAS 1996).

Pempeliella dilutella (Denis & Schiffermüller, 1775): Dombóvár, Gunaras, 4 ex,14-28. 07.2012. Known all of the Hungarian landscapes but local in Transdanubian Hills (FAZEKAS 1996, 2002).

Pyrausta ostrinalis (Hübner, 1796): Dombóvár, Gunaras, 1 ex, 01.07.1999; 3 ex, 20.07.2012. Widespread in Hungary but known sporadically in Transdanubian Hills; Mecsek Mts and Villányi Hills.

Stemmatophora brunnealis (Treitschke, 1829): Dombóvár, Gunaras, 2 ex, 03.07.1986; 4 ex, 18.07.2012. This species occurs throughout much of Hungary, but is question in West Hungarian Borderland landscape.

CRAMBIDAE

Ecpyrrhorrhoe diffusalis (Guenée, 1854): Dombóvár, Gunaras, 1♂, 20.07.2007, det. J. Asselbergs, revid. I. Fazekas. Extremely rare and local species in Hungary. Only some specimens are known in country. SZABÓKY (1980, 2000) reported for the first time from Szársomlyó hill: South Hungary, Villányi Hills, 2 ex, 24.07.1979; 20.08.1985; 16.05. and 21.08. 2000, leg. Cs. Szabóky, at light.

The only breeding populations known from the Hungary are in the Villányi Hills and near Dombóvár. Flora, vegetation and fauna of the Villányi Hills are unique in Hungary, as it really is one "oeco-island" in region. The Villányi Hills is situated in southern Hungary, close to the Hungarian-Croatian border (10 km). The hills are very isolated in the lowlands. It is east-west oriented low range, about 27 km long and 2-3 km wide. The localities of *E. diffusalis* is only in 190 m altitude and the habitat is a typically calcareous

open rock grassland, many endemic and relict with plant species (e.g. *Trigonella gladita, Colchicum hungaricum, Medicago orbicularis, Orobanche nana, Sempervivum tectorum*). The characteristic association is identified correctly in Triassic, Jurassic limestone: *Sedo sopianae-Festucetum dalmaticae* Simon, 1964. The Hungarian Red Data Book not mentions *Ecpyrrhorrhoe diffusalis* not endangered taxon, and despite its rarity it is not protected by law. According to first author the *Ecpyrrhorrhoe diffusalis* is a regressive postglacial relict element, and unknown the possibility of recent expansion in Europe. Substantial phenotypically and habitat differences among the geographically isolated populations were not measured within the species in Europe.

Conclusions

As a summary we can ascertain that we known relative many records from this Dombóvár region. Four species are reported from Hungary for the first time: *Phyllonorycter pyrifoliellus* Gerasimov, 1963, *Depressaria ululana* Rossler, 1866, *Elachista agelensis* Traugott-Olsen. 1996, *Phalonidia undana* Guenée, 1845. 19 species is new for the fauna of the Transdanubian Hills: *Agonopterix cnicella* (Treitschke, 1832), *Aspilapteryx limosella* (Duponchel, 1843), *Cnephasia longana* (Haworth, 1811), *Cnephasia ecullyana* Réal, 1951, *Cochylidia rupicola* (Curtis, 1834), *Coleophora pulmonariella* Ragonot, 1875, *Elachista festucicolella* (Zeller, 1853), *Elachista pullicomella* Zeller, 1839, *Elachista humilis* Zeller, 1850, *Endothenia ustulana* (Haworth, 1811), *Eudemis porphyrana* (Hübner, 1799), *Eurhodope cirrigerella* (Zincken, 1818), *Hypatopa inunctella* (Zeller, 1839), *Monopis omichlopis* Meyrick, 1928, *Monopis weaverella* (Scott, 1858), *Phyllonorycter apparella* (Herrich-Schäffer, 1855), *Phyllonorycter connexella* (Zeller, 1846), *Pseudatemelia subochreella* (Doubleday, 1859), *Scythris siccella* (Zeller, 1839).

None of the localities of the moth is Natura 2000 site and none of them is protected area. On the basis of these data we can unambiguously assert that conservation of this rare moth is not solved in these areas and further researches are needed.

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