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Interessante waarnemingen van Lepidoptera in België in 2002 (Lepidoptera)

Willy De Prins

Abstract. Interesting records of Lepidoptera in Belgium in 2002 (Lepidoptera)

Three new Lepidoptera species are recorded for Belgium: *Phyllonorycter medicaginella* (Gerasimow, 1830), *Scrobipalpa nitentella* (Fuchs, 1902), and *Pechipogo plumigeralis* (Hübner, [1825]). Furthermore, some new province records and interesting observations are mentioned.

Résumé. Observations intéressantes de Lépidoptères en Belgique en 2002 (Lepidoptera)

Trois nouvelles espèces de Lépidoptères ont été observées en Belgique: *Phyllonorycter medicaginella* (Gerasimow, 1830), *Scrobipalpa nitentella* (Fuchs, 1902) et *Pechipogo plumigeralis* (Hübner, [1825]). Plusieurs données faunistiques nouvelles par province sont également mentionnées, ainsi que quelques observations intéressantes.

Key words: **Lepidoptera** – *Phyllonorycter medicaginella* – *Scrobipalpa nitentella* – *Pechipogo plumigeralis* – faunistics.

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Eriocraniidae

Eriocrania sparrmanella (Bosc, 1791): Haaltert, 22.V.1993 (leg. B. Vanholder). Nieuw voor de provincie Oost-Vlaanderen.

Gracillariidae

Parornix torquillella (Zeller, 1850): Turnhout, Dombergheide 17.V.2002 (leg. J. & W. De Prins). Nieuw voor de provincie Antwerpen.



Figuren 1–3: *Phyllonorycter robiniella* (Clemens, 1859), pas uitgekomen exemplaren, e.l. *Robinia pseudoacacia* L., oktober 2002, Mol (België, provincie Antwerpen), leg. en coll. H. Henderickx (foto's: H. Henderickx).

Phyllonorycter robiniella (Clemens, 1859): Mol-Postel, 26.IX.2002, 6 bladmine op *Robinia pseudoacacia* (leg. H. Henderickx), Dessel, Mol-Sluis, Retie, 29.IX.2002, talrijke bladmine op *R. pseudoacacia* en één adult (leg. W. De Prins). De eerste vlindertjes ontpopten reeds op 30.IX.2002. Nieuw voor de provincie Antwerpen. Tijdens het uitkweken werd vastgesteld dat de motjes haast steeds rond het middaguur en tijdens de vroege namiddag ontpopten. Zoals gewoonlijk bij immigrerende soorten werden er slechts weinig parasitoïden aangetroffen. De enkele exemplaren die toch werden uitgekweekt verschenen op het einde van de kweek toen de meeste vlindertjes reeds waren ontpopt, dit in tegenstelling tot de situatie bij de meeste andere inlandse *Phyllonorycter*-soorten waar de parasitoïden zich tot adult ontwikkelen vóór de eerste adulte

Lepidoptera verschijnen. De twee soorten parasitoïden die werden uitgekweekt zijn Hymenoptera die gewoonlijk andere *Phyllonorycter*-soorten parasiteren.

Phyllonorycter medicaginata (Gerasimov, 1930): vermeld als nieuw voor de Belgische fauna (Kuchlein, Kuchlein-Nijsten & De Prins 2002: 89–94); Opkanne (Limburg), bladmijnen op *Melilotus alba* en *Medicago lupulinus*, leg. C. M. Kuchlein-Nijsten.

Yponomeutidae

Yponomeuta rorrella (Hübner, 1796): Diepenbeek, 03.VIII.1995 (leg. R. Spronck). Nieuw voor de provincie Limburg.

Argyresthia trifasciata Staudinger, 1871: Haaltert, 08.V.2000 (leg. B. Vanholder). Nieuw voor de provincie Oost-Vlaanderen.

Ypsolophidae

Ypsolopa lucella (Fabricius, 1775): Biron, 24.VI.2001 (leg. R. Spronck). Nieuw voor de provincie Luxemburg.

Elachistidae

Elachista chrysodesmella Zeller, 1850: Wonck, 09.VI.2002 (leg. R. Spronck). Nieuw voor de provincie Luik.

Momphidae

Mompha locupletella ([Denis & Schiffermüller], 1775): Baraque de Fraiture, 26.VI.2001 (leg. R. Spronck). Nieuw voor de provincie Luxemburg.

Gelechiidae

Scrobipalpa nitentella (Fuchs, 1902): vermeld als nieuw voor de Belgische fauna (Jansen 2002: 192); jonge bladmijnen op *Atriplex prostrata* en één adult te Nieuwpoort (West-Vlaanderen) op 14.VIII.2001, leg. M. G. M. Jansen.

Tortricidae

Acleris cristana ([Denis & Schiffermüller], 1775): Maaseik, 16.III.2002 (leg. B. Vanholder). Nieuw voor de provincie Limburg.

Acleris literana (Linnaeus, 1758): Maaseik, 16.III.2002 (leg. B. Vanholder), Warsage, 15.II.1964, 08.IV.1965, 24.II.1967 (leg. R. Spronck). Nieuw voor de provincies Limburg en Luik.

Metendothenia atropunctana (Zetterstedt, [1839]): Aywaille, 10.VIII.2002 (leg. R. Spronck). Nieuw voor de provincie Luik.

Pseudohermenias abietana (Fabricius, 1787): Haaltert, 01.VI.1994 (leg. B. Vanholder). Nieuw voor de provincie Oost-Vlaanderen.

Ancylis diminutana (Haworth, 1811): Baraque de Fraiture, 22.VI.2001 (leg. R. Spronck). Nieuw voor de provincie Luxemburg.

Cydia fagiglandana (Zeller, 1841): Diepenbeek, 13.VIII.2002 (leg. R. Spronck). Nieuw voor de provincie Limburg.

Pammene amygdalana (Duponchel, 1843): Haaltert, 02.VII.1994 (leg. B. Vanholder). Nieuw voor de provincie Oost-Vlaanderen.

Epermeniidae

Epermenia falciformis (Haworth, 1828): Visé, 16.VI.2002 (leg. R. Spronck). Nieuw voor de provincie Luik.

Pyralidae

Pempelia obductella Zeller, 1839: Lanaye, begin VIII.1996, Eben-Emael, begin VIII.1997, Wonck, 16.VIII.1996, einde VII.2001, begin VIII.2002 (leg. R. Spronck). Nieuw voor de provincie Luik.

Nephoteryx augustella (Hübner, 1796): deze soort werd voor het eerst uit België vermeld in 1998 (De Prins 1998: 69), maar heeft zich nu goed gevestigd in de kuststreek. Rupsen werden in 2001 en 2002 talrijk aangetroffen in de vruchten van kardinaalsmuts (*Evonymus europaeus* L.) te Wenduine (B. Kindts).

Conobathra tumidana ([Denis & Schiffermüller], 1775): Aywaille, 10.VIII.2002 (leg. R. Spronck). Nieuw voor de provincie Luik.

Duponchelia fovealis (Zeller, 1847): Visé, 14.VI.2001 (leg. R. Spronck), derde exemplaar waargenomen in België. Nieuw voor de provincie Luik.

Noctuidae

Pechipogo plumigeralis (Hübner, [1825]): vermeld als nieuw voor de Belgische fauna (zie Vanholder & Bolland 2002: 81–83); Westende (West-Vlaanderen), op 20 en 21 juli 2000 telkens één ♀, leg. F. Bolland.

Dankwoord

Mijn dank gaat uit naar de verschillende mensen die mij hun gegevens ter beschikking stelden om dit overzicht zo actueel mogelijk te houden: B. Maes, R. Spronck en B. Vanholder. Verder dank ik H. Henderickx voor de foto's van de figuren 1–3.

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Sesia melanocephala, a new species to the Belgian fauna (Lepidoptera: Sesiidae)

Theo Garrevoet & Walter Garrevoet

Abstract. *Sesia melanocephala*, a new species to the Belgian fauna (Lepidoptera: Sesiidae). The presence of several specimens of *Sesia melanocephala* Dalman, 1816 was demonstrated in three Belgian provinces: Luxembourg, Liège et Namur. All specimens were collected as larva or pupa in *Populus tremula* trees between 4 April and 23 June, 2001. This is the first record of this species from Belgium. The distribution in Europe and the biology of the species are briefly discussed.

Samenvatting. *Sesia melanocephala*, een nieuwe soort voor de Belgische fauna (Lepidoptera: Sesiidae)

De aanwezigheid van verscheidene exemplaren van *Sesia melanocephala* Dalman, 1816 werd aangetoond in drie Belgische provinces: Luxembourg, Liège en Namur. Alle exemplaren werden als larve of als pop verzameld in *Populus tremula* tussen 4 april 2001 en 23 juni 2001. Dit is de eerste waarneming van deze soort voor België. De verspreiding in Europa en de biologie van de soort worden kort besproken.

Résumé. *Sesia melanocephala*, une espèce nouvelle pour la faune belge (Lepidoptera: Sesiidae)

La présence de plusieurs exemplaires de *Sesia melanocephala* Dalman, 1816 était établie dans trois provinces belges: Luxembourg, Liège et Namur. Tous les exemplaires furent récoltés comme chenille ou comme chrysalide dans des *Populus tremula* entre 4 avril 2001 et 23 juin 2001. Il s'agit de la première mention de cette espèce en Belgique. La distribution en Europe et la biologie de cette espèce sont brièvement discutées.

Key words: Sesiidae – *Sesia melanocephala* – faunistics – Belgium – distribution.

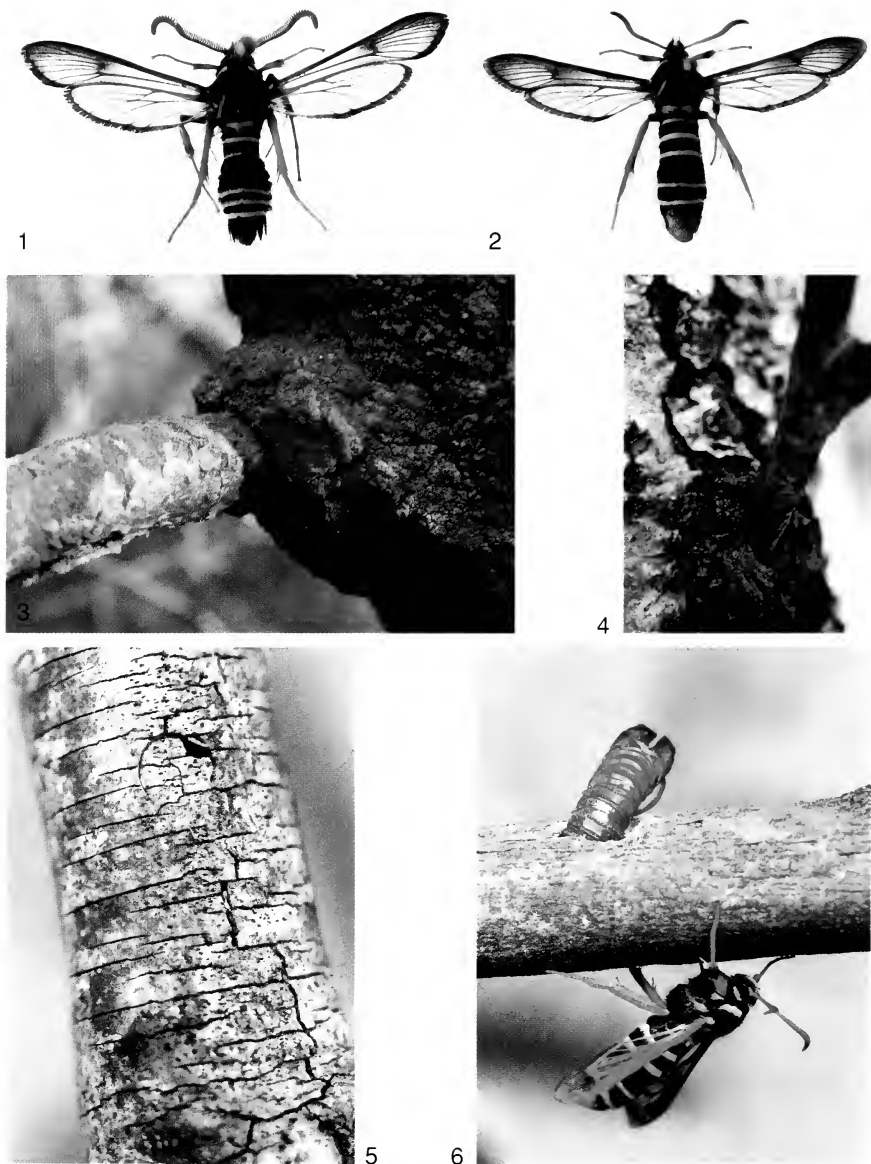
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Introduction

During several visits during the past five years to the southern part of Belgium, with special attention being paid to the climatologically privileged region “La Gaume”, the authors were looking for the presence of Sesiidae both adults and immature stages, depending on the time of the season. With regard to *Sesia melanocephala*, all encountered *Populus tremula* trees were checked for signs of caterpillars, but the result remained negative although the species was found in the nearby Grand Duchy of Luxemburg on the occasion of a joint expedition by some entomologists (Cungs 1998).

On one of these trips on 5 May 1999 near Meix-devant-Virton (Luxembourg), the senior author discovered a group of old *P. tremula* trees, where, on a dead branch at a height of 6 to 7 meters, there seemed to be an exit hole of *S. melanocephala*. Not being able to get a closer view at that time, the authors returned a few weeks later with binoculars and discovered, besides the already mentioned exit hole three further holes, definitely caused by the species sought after. Unfortunately, all the holes were in branches which were too high to reach, and anyway, the season was already too advanced to look for the species itself.



Figs. 1–6. *Sesia melanocephala* Dalman, 1816. 1.– ♀: Latour (Luxembourg, Belgium), larva: 09-06-2001; 2.– ♂: Sart-Tilman (Liège, Belgium), larva: 26-05-2001; 3.– Typical swelling around a dead branch on *Populus tremula*; 4.– Branch infested with a young larva, protruding "frass"; 5.– Future exit hole just before emergence of the moth. Observe the thin remaining layer of bark; 6.– A freshly emerged female.

Therefore, the plan was made to return in year 2000, but circumstances prevented a visit to the area that year.

In early spring 2001, the senior author revisited the same area, paying special attention to open groups of sun-exposed *P. tremula* trees where the chance that lower branches would be infected was more probable. The exact co-ordinates of these biotopes were noted in order to return at the right time to look for the caterpillars.

On 4 April 2001, the senior author and a friend entomologist returned, first to the locality in Meix-devant-Virton with a ladder. At last, almost two years after its discovery, the branch with the first found exit hole of *S. melanocephala* could be collected. A systematic inspection of other suitable branches resulted in the observation of two small caterpillars of 0.4 cm and 1.5 cm. Considering the three year life cycle of this species, these young caterpillars were left in place. Suddenly worsening weather conditions prevented an inspection of the other noted localities.

On 19 May 2001, armed with a ladder, we visited again the area and were able to collect three last instar larvae of *S. melanocephala* in the vicinity of Etalle (Luxembourg). Also a first-year and a second-year larva were observed. And on 24 May 2001, the senior author found one more mature larva of *S. melanocephala* in Chenois (Luxembourg).

During a visit to a good friend entomologist in Liège, we visited a xerothermic biotope in Sart-Tilman (Liège), looking for Sesiidae in general but we soon noticed some nice groups of *P. tremula*. A quick inspection quickly revealed that *S. melanocephala* was present here too! A continued search resulted in 1 pupa and one last-instar larva. Thus, the presence of *S. melanocephala* was also established for the province of Liège.

Again in "La Gaume", an additional pupa of this species was found in Latour (Luxembourg) on 9 June 2001.

Finally, another pupa was collected in Blaimont (Namur) on 23 June 2001, adding the province of Namur to the Belgian distribution list of localities for *S. melanocephala*.

Since it is the first time *S. melanocephala* has been recorded for Belgium, the species has to be added to the "Catalogue of the Lepidoptera of Belgium" (De Prins 1998: 83) after *Sesia bembeciformis* (Hübner, 1806).

The adult is easy to recognise by the relatively large size as compared to other Sesiidae. On the other hand, it is the smallest Western-Palaeartic member of the genus *Sesia*. The forewing is almost completely transparent with brownish scales along the veins, the costal and anal margins, the discal spot and at the apical area. These scales are more apparent in the females. The abdomen is black dorsally with distinctive narrow yellow rings on the anterior margins of segments 2-4 and the posterior margins of segments 5-7. The anal tuft is

strongly mixed with yellow scales, a feature which is more prominent in the females. The antennae are yellowish brown.

Geographical distribution

S. melanocephala has a Eurasiatic distribution (Laštůvka & Laštůvka 2001) but its distribution centre appears to be in Central Europe. The southern distribution border is poorly known and the species has never been recorded from the British Isles (Špatenka, Gorbunov, Laštůvka, Toševski & Arita 1999). The northern distribution border reaches as far north as the Scandinavian isles (Norway, Sweden, Finland and Denmark). *S. melanocephala* has been recorded also from Spain, France, Italy, Grand Duchy of Luxemburg, Germany, Switzerland, Austria, Poland, Czech Republic, Slovakia, Hungary, Romania, Slovenia, Croatia, Ukraine, Russia (European part), Belarus, Lithuania, Latvia and Estonia. Belgium can now be added to this list.

Biology

S. melanocephala occurs mainly in open forests or open groups of *Populus tremula* trees (Salicaceae) often along roadsides or fields. The female presumably deposits her eggs separately at the base of a sun-exposed dead branch, directly protruding from the trunk. A necessary condition is that the tree had already formed a swelling around the dead branch. The young larva lives and feeds in this swelling. In the second year, prior to the second hibernation, the caterpillar starts the construction of a tunnel both into the interior of the trunk itself and in the dead branch. At this time, the tunnel has a typical oval cross-section. Considering the relatively short tunnels in the swelling and the wood of the trunk, the caterpillar is apparently a sap-feeder.

After the third and last hibernation, the caterpillar continues to enlarge the tunnel and constructs the future exit hole. A thin layer of bark, strengthened with silk, conceals it from the outside. This exit hole is usually situated on the upper side of the dead branch, thus preventing the pupa from falling down during the emergence process. The cross-section of the tunnel is now circular. During warm days, the caterpillar lies in the branch, while cooler days it usually remains down in the trunk. In late springtime, the caterpillar pupates in the tunnel without the formation of a cocoon. The pupa is very mobile and, like the larva, is able to retreat into the safety of the trunk at an amazing speed. Predation, for instance by woodpeckers, is, if existent, negligible. Both larvae and pupae can be found in dead branches ranging from a diameter hardly wider than that of the animal to those of 10 cm in diameter or more.

Conclusion

Although the presence of *S. melanocephala* in Belgium could have been expected, considering the situation in the neighbouring countries, it is amazing this moth has not been discovered until now, especially since it appears to be widespread at least in the southern half of Belgium. It is not improbable it will

be detected in additional provinces where the food plant occurs. Unfortunately, at present there is no artificial pheromone available with the necessary efficacy to investigate the presence of the species in suitable biotopes.

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Acleris rhombana (Lepidoptera: Tortricidae) nieuw voor de Belgische provincie Limburg

Frans Groenen

Abstract. *Acleris rhombana* (Lepidoptera: Tortricidae) new record for the Belgian province of Limburg

On 8 September 2002 a single specimen of *Acleris rhombana* ([Denis & Schiffermüller], 1775) was beaten from *Quercus* sp. near Teuven (Belgium, Province of Limburg).

Résumé. *Acleris rhombana* (Lepidoptera: Tortricidae) espèce nouvelle pour la province de Limbourg belge

Le 8 septembre 2002 un exemplaire de *Acleris rhombana* ([Denis & Schiffermüller], 1775) fut délogé d'un *Quercus* sp., près de Teuven (Belgique, Limbourg).

Key words: *Acleris rhombana* – faunistics – Belgium.

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Op 8 september 2002 heb ik in de omgeving van Teuven, tijdens een wandeling door het Gulpdal in het grensgebied van Belgisch en Nederlands Limburg, *Acleris rhombana* ([Denis & Schiffermüller], 1775) geklopt uit een eik (*Quercus* sp.). De soort is nieuw voor Belgisch Limburg (De Prins 1998). De vindplaats Teuven sluit aan bij de Nederlandse vindplaatsen in Zuid-Limburg (Kuchlein 1993). *A. rhombana* is gemakkelijk herkenbaar aan de lichtgele grondkleur van de voorvleugel met een roestkleurig rasterwerk en een spitse apex. De achtervleugel is wit van kleur (Bentinck & Diakonoff 1968).

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Cochylimorpha salinarida sp. n. (Lepidoptera, Tortricidae: Tortricinae), a new Cochylid moth from Spain

Frans Groenen & Knud Larsen

Summary. A new Tortricid moth, *Cochylimorpha salinarida* sp. n., from Spain is described. Adult and male genitalia structures are figured. The female is unknown.

Samenvatting. *Cochylimorpha salinarida* sp. n. (Lepidoptera, Tortricidae: Tortricinae), een nieuwe Cochylidae uit Spanje

Een nieuwe soort Tortricidae word beschreven uit Spanje, *Cochylimorpha salinarida* sp. n. Het imago en de mannelijke genitaalstructuren worden afgebeeld. Het wijfje is onbekend.

Résumé. *Cochylimorpha salinarida* sp. n. (Lepidoptera, Tortricidae: Tortricinae), un Cochylidae nouveau d'Espagne

Une espèce nouvelle de Tortricidae est décrite en provenance d'Espagne: *Cochylimorpha salinarida* sp. n. L'adulte et les genitalia mâles sont figurés. La femelle demeure inconnue.

Zusammenfassung. *Cochylimorpha salinarida* sp. n. (Lepidoptera, Tortricidae: Tortricinae), eine neue Cochylidae aus Spanien

Eine neue Tortriciden art, *Cochylimorpha salinarida* sp. n., aus Spanien wird beschrieben. Imago und männliche Genitalstrukturen werden abgebildet. Das Weibchen ist unbekannt.

Key words: *Cochylimorpha salinarida* – new species – Spain.

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Introduction

In the winter 2001/2002 the first author studied the Tortricidae collected by Mr. J. Wolschrijn (Twello, Netherlands). J. Wolschrijn has collected moths and butterflies in several European countries. Among the specimens collected in Spain there was one Cochylini, which obviously would belong to an undescribed species. Both the imago and the genitalia are very different from all known species. In 2002 Mr. Wolschrijn collected two more males at the same locality. These two specimens are mentioned here as paratypes.

Cochylimorpha salinarida sp. n.

Material examined. Holotype ♂, Spain: España-Alicante, La Marina, Platje el Pinet, 16.IX.2001, leg. J. B. Wolschrijn, genital slide FG0880, deposited in the Zoological Museum of Amsterdam (ZMA). Paratypes: 1 ♂, Spain: España-Alicante, La Marina (Urbanis), Sierra La Horna, 21.IX.2002, leg. J. B. Wolschrijn, genitalia slide FG0936, in ZMA; 1 ♂, same data as first paratype but 22.IX.2002, in Museo Nacional de Ciencias Naturales de Madrid.

Diagnosis. – Adult (Fig. 1.). Wingspan 21 mm. Head: Frons white, brownish with white tipped scales between the eyes; vertex similar; antenna half-length of the forewing, flagellum brown with dark brown underside, segments prismatic with white cilia.



Fig. 1. *Cochylimorpha salinarida* n. sp. Holotype ♂, Spain, Alicante, La Marina, Platje el Pinet, 16.IX.2002, leg. Wolschrijn, coll. Zoological Museum of Amsterdam (Photo: J. De Prins).

Labial palpus: inner side white with scattered brown scales, outside the white is slightly brownish and with scattered brown scales.

Thorax: white with some brown scales, more grey in the middle; tegulae: white, tinged light brown basally, greyish in the middle and white at the top.

Forewing: rather broad and straight, slightly concave towards the apex and termen weakly convex. Ground colour whitish and drawings dark brown with some mixture of grey and black scales; basal and sub basal fascia confluent with the outer edge angulated above the middle of the wing; irregularly overlaid with white and grey especially at the costa. Between the sub basal and median fascia is a white band divided by two irregular brownish striae. Median fascia brown, with some black and grey scales, at the costa grey with white tipped scales. Irregular formed and connected with the post median fascia enclosing a white band in the dorsal part of the forewing. The apical part of the forewing is irregular banded. The pre-apical spot and the pre-tornal marking are irregular connected with greyish brown bands and with dark grey blocks in the termen. Cilia: white with some yellowish admixture and blocked with five grey striae.

Hind wing: whitish grey, darker apically and with an indistinct slightly darker basal band.

Male genitalia (Fig. 2). – Socii small and narrow; transtilla broad, spined; vinculum ventrally closed; tegumen pointed. Valvae broad basically, equally narrowing apically; sacculus short. Aedeagus broad with one long, strong and pointed cornutus.

The shape of socii, tegumen and sacculus plus the spined transtilla easily separates *C. salinarida* sp.n. from the related *C. perturbatana* (Kennel, 1900).

Female. – Unknown.

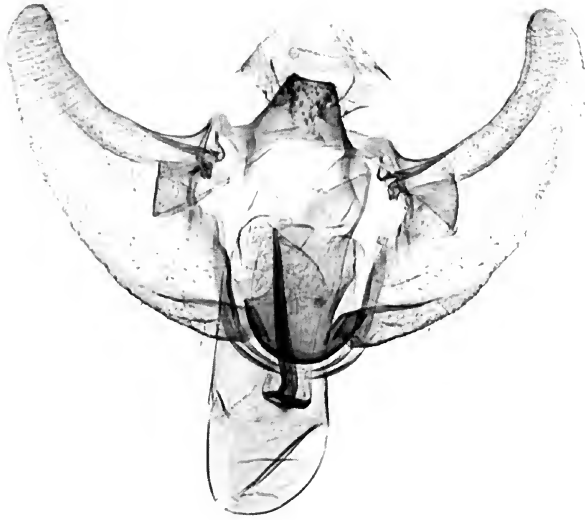


Fig. 2. *Cochylimorpha salinarida* n. sp. male genitalia. Holotype. Slide nr. FG0880 ♂. (Photo: J. De Prins).

Similar species.- The size and the general appearance of the species is rather unique. The forewing markings of the related *Cochylimorpha perturbatana* (Kennel, 1900) are somewhat similar but the markings are much less whitish and more regular. The hind wings are darker grey and the labial palpus is much longer. *C. perturbatana* (Kennel, 1900) is figured in Razowski (1970: plate 8 fig. 80) and in Kennel (1921: plate 14 fig. 55).

C. perturbatana (Kennel, 1900) has a central Asian distribution, and occurs in South Ural: Uralsk, Guberli, Orenburg, Zatonolsk; Central Asia: Tien Shan, Ili district, East Tannuola, Ala Tau up to 2500 meters above sealevel; Kazakhstan and Mongolia (Kennel 1921, Kuznetsov 1989, Razowski 1970).

Distribution. – Only known from the type locality: Spain, La Marina, Platje el Pinet, 35 km South of Alicante on the south-east coast of Spain.

Biology. – Host plant unknown. The locality is a dry place on the border of a salt marsh. The specimen was taken in a light trap.

Etymology. – The moth is named after the two possible locality types: salt marshes – “salinas” – and more dryer rocky areas – “aridas” – in combination.

Remarks. – *Cochylimorpha salinarida* n. sp. is most closely related to *C. perturbatana* (Kennel, 1900), because of the shape of the tegumen, transtilla and the valvae and the external appearance.

Systematically it is placed between *Cochylimorpha perfusana* (Guenée, 1845) and *Cochylimorpha perturbatana* (Kennel, 1900) number 4234 and 4235

in Karsholt & Razowski (1996: 131). The total number of *Cochylimorpha* species in Europe is now 32.

Acknowledgements

We wish to express our gratitude to Mr. J. Wolschrijn, Twello, Netherlands for providing the material, and to Jurate De Prins for making the photographs of both figures.

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First record of *Muschampia cribrellum* in Bulgaria, with a review of the recorded distribution of genus *Muschampia* in the country (Lepidoptera: Hesperiiidae)

Zdravko Kolev

Summary. *Muschampia cribrellum* (Eversmann, 1841) is reported as new to Bulgaria on the basis of two misidentified males in the collection of the Museum of Natural History – Burgas. In addition the distribution of the other two *Muschampia* species reported from Bulgaria is reviewed.

Резюме. *Muschampia cribrellum* (Eversmann, 1841) се съобщава за пръв път от България по два погрешно определени мъжки екземпляра от колекцията на Бургаския Природонаучен Музей. Обобщават се и данните за срещането на другите два вида от род *Muschampia* в България.

Samenvatting. Eerste vermelding van *Muschampia cribrellum* in Bulgarije, met een overzicht van de vermelde waarnemingen van het genus *Muschampia* in dat land (Lepidoptera: Hesperiiidae)

Muschampia cribrellum (Eversmann, 1841) wordt als nieuwe soort voor de Bulgaarse fauna vermeld op grond van twee verkeerd gedetermineerde mannetjes in de verzameling van het Museum of Natural History te Burgas. Verder wordt de verspreiding besproken van de andere twee *Muschampia*-soorten vermeld uit Bulgarije.

Résumé. Première mention de *Muschampia cribrellum* en Bulgarie, avec révision de la distribution des deux autres espèces de *Muschampia* citées de Bulgarie (Lepidoptera: Hesperiiidae)

Muschampia cribrellum (Eversmann, 1841) est mentionné ici pour la première fois en Bulgarie, d'après deux mâles fautivelement identifiés dans la collection du Musée d'Histoire naturelle à Burgas. Aussi, la distribution des deux autres espèces bulgares de *Muschampia* est-elle discutée.

Key words: Lepidoptera – Hesperiiidae – *Muschampia* – *tessellum* – *cribrellum* – *proto* – Bulgaria – Balkan Peninsula.

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Introduction

In Europe, the Spinose Skipper *Muschampia cribrellum* (Eversmann, 1841) is a very local species with a distribution restricted only to the eastern parts of the continent. Its westernmost localities are found in E Hungary (Tolman & Lewington 1997; Tolman 2001), W Romania: several localities in Transylvania (e.g. Lorković 1983; Tolman & Lewington 1997; Kudrna 2002), and Republic of Macedonia: Suva Planina SW of Skopje (Lorković 1983; Schaidler & Jakšić 1989) and the gorge of Treska river W of Mt. Jakupica (Schaidler & Jakšić 1989). These, within all probability relict, localities are widely separated from each other as well as from the main range of the species, which comprises the steppe zone of Eurasia from Ukraine and European Russia to the basin of Amur river (Korshunov & Gorbunov 1995; Gorbunov 2001).

First Bulgarian record of *Muschampia cribrellum*

Already in 1992, while examining the small Lepidoptera collection of the Museum of Natural History – Burgas (hereafter MNHB), the present author discovered three specimens labeled as "*Pyrgus armoricanus* Obth." which bore identical labels "Бургас, 10.8.74, С. Загорчинов" [Burgas, 10.8.[19]74, S[evar]. Zagorchinov [leg.]]. In reality one of these was a male of *Pyrgus cinarae* (Rambur, [1839]), while the remaining two males clearly belonged to a species of *Muschampia*. As there are old records of a similar species, *Muschampia tessellum* (Hübner, [1803]), from two localities in Burgas (Tschorbadjiew 1915; see below), these two specimens were considered to belong to this species. A note was nevertheless made of their unusually small size (forewing length 14–15 mm) compared to *tessellum* (typically 16–19 mm), which prompted a further study of this material. This I carried out in August 2002, as part of an inventory of the butterfly materials in MNHB.

Closer inspection of the two *Muschampia* specimens surprisingly revealed that they exhibit, apart from the smaller size and the more narrow and pointed wings, two further characters (Figs. 1 & 2) which separate them from *tessellum* and identify them beyond any doubt as belonging to the species *Muschampia cribrellum* (Eversmann, 1841). The first character, which is in fact unique to *cribrellum*, is the presence of two postdiscal pairs of elongated white spots in space 1b on the forewing upperside (cf. Lorković 1983), though occasionally the lower spot of the distal pair may be much reduced or absent; *tessellum* and related taxa only have one pair of postdiscal spots in this space. The other character is the absence in *cribrellum* of a transverse white discal bar on the forewing upperside; such is present in *tessellum* (Korshunov & Gorbunov 1995).

This first Bulgarian record of *M. cribrellum* is separated by about 500 km from the nearest known localities of this species, in Republic of Macedonia and Romania. Thus it represents a very important extension to the range of this poorly known species in Europe and the Balkans.

It must be noted that the label data on these specimens are not without ambiguity. The date "10.8." and the very fresh condition of the specimens appear to contradict each other, considering that *cribrellum* is univoltine (Gorbunov 2001) and flies from mid-May to mid-August (Korshunov & Gorbunov 1995), and that at sea level (Burgas) its flight should be expected to begin very early indeed. The same contradiction concerns the male *Pyrgus cinarae* (which is also a fresh specimen in excellent condition) with the same label data as the two *cribrellum*. This too is a univoltine species which in Bulgaria flies from mid-June till mid-August (pers. observ.). In the nearest locality to Burgas from which it is known (the vicinity of Sliven), even at its upper distributional limit (1000 m), only very worn females are still on the wing in the first half of August (pers. observ.). It is unlikely that these species can produce a second generation in Bulgaria and I have found no record of either of them doing so elsewhere. Delayed emergence does not appear probable either.

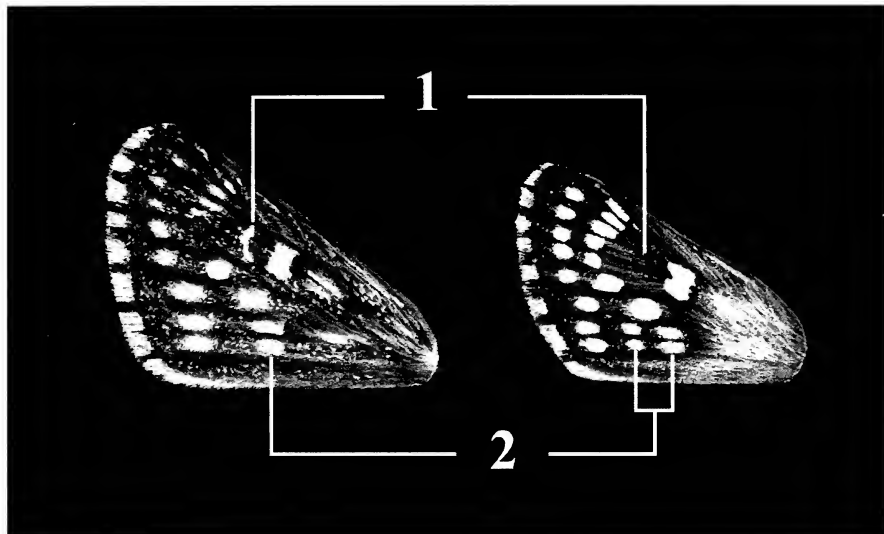


Fig. 1. Differentiating characters on the forewing upperside in *Muschampia tessellum* (left) and *M. cribrellum* (right). 1.– Presence vs. absence of white bar at end of cell. 2.– One pair vs. two pairs (but see text) of postdiscal spots in space 1b.

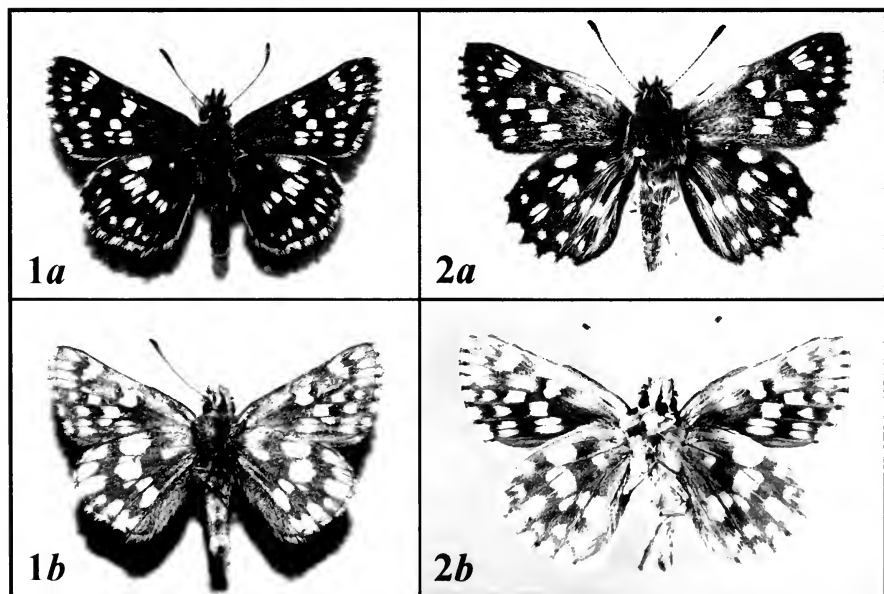


Fig. 2. 1.– *Muschampia cribrellum* ♂: "Burgas, 10.8.[19]74, S[avar], Zagorchimov [leg.]", in coll. MNHB. 2.– *Muschampia tessellum* ♂: "[SW Bulgaria, Mt. Belasitsa,] h. Belasiza ["Belasitsa" chalet], 26–29.VI.1981, leg. Al. Slivov", in coll. IZS (a): upperside, b: underside).

Judging from the condition of the specimens of *M. cribrellum* and *P. cinarae* and assuming that they have been collected on the same occasion, it appears most likely that these have been collected in the second half of June or the first half of July.

Despite this, there is no reason to doubt the locality itself, although its rather vague wording is to be regretted as it is unlikely to be of much help in an eventual future search for *cribrellum*. I was kindly informed by the staff at MNHB that the late S. Zagorichinov had collected on many occasions in the first half of the 1970's in or near Burgas specifically at the Museum's request in order to assemble a representative regional collection of Lepidoptera for the Museum's permanent exhibition and its fund. Therefore, it is to be hoped that new search for this species and its congener *tessellum* be undertaken as soon as possible. As both species have similar ecological preferences and occur together over much of their range in the steppes of temperate Eurasia (Korshunov & Gorbunov 1995; Gorbunov 2001), they are likely to be found in the same habitats in the surroundings of Burgas as well.

Other species of genus *Muschampia* reported from Bulgaria

Muschampia tessellum (Hübner, [1803]) (Fig. 3). The first Bulgarian localities to be discovered were on the northern outskirts of Burgas, where a single male was caught by P. Chorbadzhiev in 1910 on the narrow, sandy coastal strip between the Atanasovsko Ezero lake and the Black Sea; in 1911 he reportedly collected "numerous specimens" therein and "single" in a second coastal locality to the south of Burgas, known as Chengene Skelya (Tschorbadjiew 1915). Buresch & Tuleschkow (1930) reported that there were 15 specimens in the collection of the Royal Entomological Station – Sofia, collected on 1–19.VI.1911 by Chorbadzhiev in the surroundings of Burgas. Despite its reported abundance, the population on the coastal strip appears now to be extinct due to a complete degradation of the habitat (see below); to my knowledge, so far there has been no attempt to ascertain the fate of the population of Chengene Skelya.

On 16.VI.1929, during an expedition of the Royal Entomological Station – Sofia to Mt. Alibotush in SW Bulgaria, K. Tuleschkov captured a single completely fresh specimen of *tessellum* in the northern foothills of Chengene Kale ridge near Petrovo village (Tuleschkow 1929). I am not aware of any attempt to rediscover this population ever since.

Further material of *tessellum* exists in the collection of A. Slivov kept in the Institute of Zoology – Sofia (IZS). There is a single male with label data "[Kresna gorge in SW Bulgaria,] sp. St. Kresna [the railway stop "Stara Kresna"]", 04.06.1988 [A. Slivov leg.], and two males with label data "[SW Bulgaria, Mt. Belasitsa] h. Belasitsa ["Belasitsa" chalet], 26-29-VI.1981, leg. Al. Slivov" (Fig. 2). These previously unpublished localities are fully plausible but require confirmation on account of the numerous cases of clear mislabellings in the materials of A. Slivov (cf. Kolev 2002).

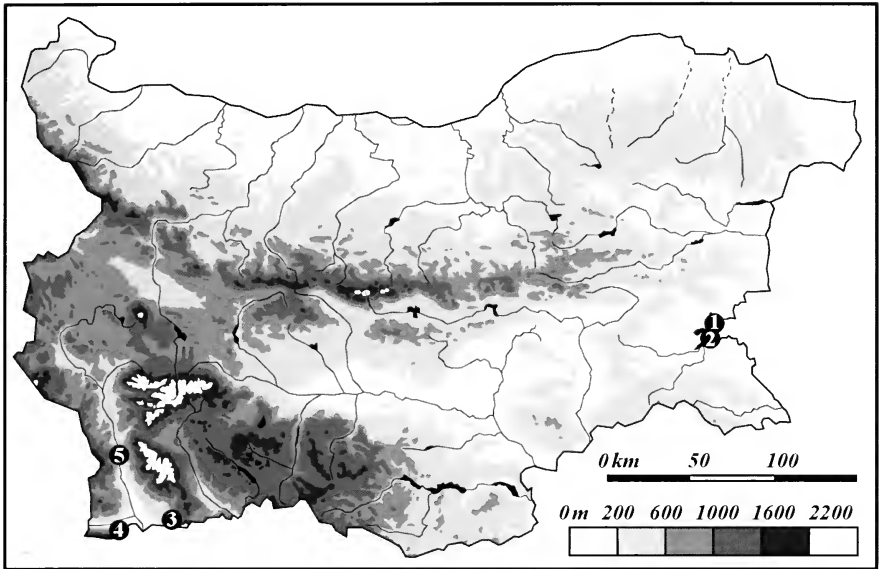


Fig. 3: Records of *Muschampia tessellum* in Bulgaria. 1.– the northern outskirts of Burgas, the coastal strip between Atanasovsko Ezero lake and the Black Sea (Tschorbadziejew 1915); 2.– the southern outskirts of Burgas, the coastal locality "Chengene Skelya" (Tschorbadziejew 1915); 3.– "[In the northern foothills of Chengene Kale [ridge near Petrovo village] by Bistritsa river, 16.06.[1929], one completely fresh specimen]" (Tuleschkow 1929); 4.– 2♂: "[Mt.] Belasica [near "Belasitsa" chalet], 26-29.VI.1981 [A. Slivov leg.]", in need of confirmation; 5.– 1♂: "sp. St. Kresna [the railway stop "Stara Kresna"]", 04.06.1988 [A. Slivov leg.]", in need of confirmation.

Muschampia proto (Ochsenheimer, [1808]) (Fig. 4). There is only a single, recently published record from Bulgaria (Abadjiev 2001), which is based on a single male in coll. IZS with label data "[SW Bulgaria, Mt.] Belasica [near "Belasitsa" chalet – A. Slivov, pers. comm.], 15.04.1975, leg. A. Slivov". This record is doubtful and requires confirmation for reasons detailed by Kolev (2002).

Conclusion

The surprising discovery of *Muschampia cribrellum* as new to Bulgaria should, and hopefully will, once again attract attention to the rich and unusual butterfly fauna in the surroundings of Burgas, unjustly neglected in recent decades by lepidopterists. Apart from the skippers *Muschampia tessellum* and *M. cribrellum* this fauna includes other species that are rare and very local in Bulgaria, most notably *Coenonympha oedippus* (Fabricius, 1787) (the only locality in the country!), *Melitaea arduinna* (Esper, [1783]) and *M. britomartis* Assmann, 1847. These three species were all collected by P. Chorbadzhiev in the early XX century, and more recent observations are lacking.

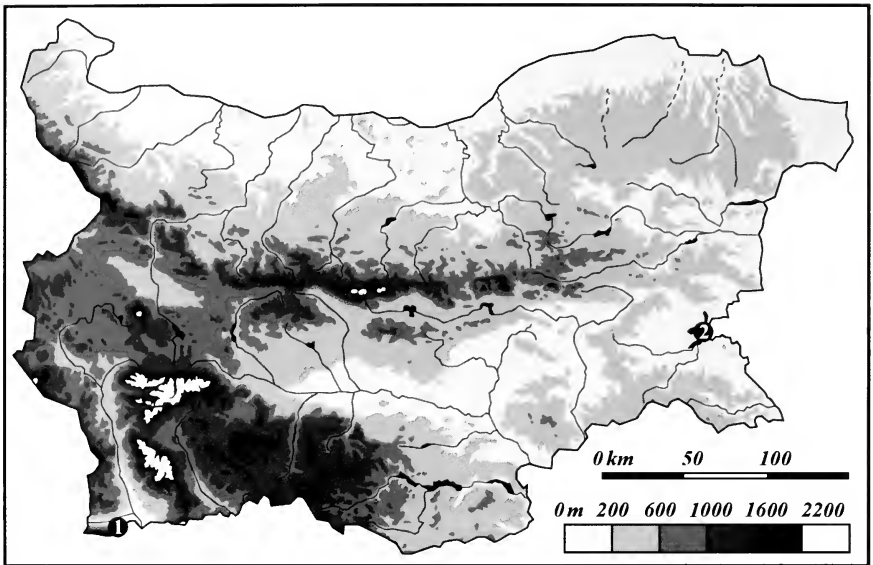


Fig. 4. Records of *Muschampia proto* and *M. cribrellum* in Bulgaria. 1.– *M. proto*: [Mt.] Belasica [near "Belasitsa" chalet – A. Slivov, pers. comm.], 15.04.1975, leg. Al. Slivov" (Abadjiev 2001); in need of confirmation; 2.– *M. cribrellum*: "Burgas, 10.8.[19]74, S[ever], Zagorichinov [leg.]"; the dot is plotted, due to lack of fuller data, so as to correspond to the city of Burgas.

New search for all these species and their habitats is urgently needed in order to establish whether they still occur in the environs of Burgas and if so, to gather data on their ecological preferences and conservation status. The latter objective is particularly important because Burgas is an expanding and heavily industrialized city, and loss of species-rich habitats is certain to occur without proper ecological data and conservation efforts to prevent it. For example, in June 1999 I visited the narrow strip of land between Atanasovsko lake and the sea (where, as was said above, Chorbadzhiev found *M. tessellum* in 1910 and 1911) with the specific purpose to establish whether this species might still occur there. However, any habitats that have existed there in the early XX century are long gone: the southern end of the strip is partly beach and partly in small-scale agricultural use while the rest is occupied by a salt extraction plant, with the concurrent physical degradation of its near surroundings. What little of the accessible area (outside the perimeter of the plant) was left outside human use was overgrown by a species-poor ruderal vegetation which, not surprisingly, hosted a very poor butterfly fauna consisting of generalist and migrant species.

With regard to genus *Muschampia* in Bulgaria, it stands out as being perhaps the most poorly known genus of diurnal Lepidoptera in the country. Its three species are known only from sporadic and, in several cases, doubtful records, and there are practically no data regarding even the precise nature of their

habitats let alone their biology. Research focused specifically upon these species is most desirable.

Acknowledgements

I am grateful to the staff of Museum of Natural History – Burgas and Mr. Alexander Slivov (Sofia) for their kind permission to study their respective collections and for the relevant information.

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Quelques ajouts à la distribution géographique des Hétérocères de Belgique (Lepidoptera)

R. H. Nyst

Abstract. Some additional information on the geographical distribution of Heterocera in Belgium (Lepidoptera)

The author mentions some Lepidoptera species which are new for the provinces of Brabant-Wallon and Liège. A complete list of all published Belgian records of *Mythimna vitellina* (Hübner, [1808]) is given.

Samenvatting. Enkele bijkomende gegevens over de geografische verspreiding van Heterocera in België (Lepidoptera)

De auteur vermeldt enkele soorten Lepidoptera die nieuw zijn voor de provincies Waals-Brabant en Luik. Tevens wordt een volledige lijst gegeven van alle gepubliceerde waarnemingen in België van *Mythimna vitellina* (Hübner, [1808]).

Key words: Heterocera – Lepidoptera – faunistics – Belgium.

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Il ne me paraît pas utile de laisser passer le temps, même si notre climat inquiétant ne m'a permis de recueillir que peu de données en ce 2002! Tandis que ma santé n'améliorait pas les choses! Dans la petite liste ci-dessous j'ai fait référence à la pagination du précieux catalogue de W. De Prins (1998). Les espèces signalées sans autre indication complètent mes précédents relevés de la faune d'Ottignies (Nyst 1993, 2001). Si, de plus, elles ne sont pas signalées du Brabant postérieurement à 1980, je les ai fait suivre du ●.

Phyllonorycter geniculella (Ragonot, 1874) (p. 42)

Ypsolopha parenthesella (Linnaeus, 1761) (p. 46) ●

Acleris kochiella (Goeze, 1783) (p. 89) ●

Epagoge grotiana (Fabricius, 1781) (p. 90)

Pandemis cinnamomeana (Treitschke, 1830) (p. 91) ●

Gypsonoma dealbana (Frölich, 1828) (p. 97) ●

Notocelia cynosbatella (Linnaeus, 1758) (p. 98) ●

Rhyacionia pinicolana (Doubleday, 1849) (p. 98) ●

Pammene regiana (Zeller, 1849) (p. 100)

Eudonia mercurella (Linnaeus, 1758) (p. 115)

Sitochroa palealis (Denis & Schiffermüller, 1775) (p. 119)

Idaea seriata (Schrank, 1802) (p. 149)

Plemyria rubiginata (Denis & Schiffermüller, 1775) (p. 152)

Acronica auricoma (Denis & Schiffermüller, 1775) (p. 162) ●

Trisateles emortualis (Denis & Schiffermüller, 1775) (p. 166)

Nola confusalis (Herrich-Schäffer, 1847) (p. 183)

Toujours en rapport avec le Brabant je note une nouvelle capture en mai 2002 d'un exemplaire de *Pareulype berberata* (Denis & Schiffermüller, 1775).

Ceci pour confirmer les relevés de M. Taymans (2001) et de moi-même (Nyst 2001a).

Par ailleurs, le hasard aimant la fantaisie a permis à ma petite-fille de prendre *Cryphia muralis* (Forster, 1771) à Vierset ce qui permet de lui mettre un ● dans la colonne Liège.

Je garde pour la bonne bouche la capture exceptionnelle que ma jeune entomologiste a pu faire au même endroit, le 22 août 2002, d'un exemplaire de *Mythimna vitellina* (Hübner, [1808]). Je remercie particulièrement M. Willy De Prins d'avoir consacré son temps à rechercher dans les archives les très rares captures signalées de ce migrateur en Belgique. Je me permets de reproduire ici la liste complète qu'il a bien voulu me communiquer. Il s'agit des 27 exemplaires suivants:

Buysinghen (Brabant), ancienne observation, 1 ex., leg. J. Van Schepdael (Hackray & Sarlet 1977: 208).

Torgny (Luxembourg), ancienne observation, 1 ex., leg. J. Van Schepdael (Hackray & Sarlet 1977: 208).

Liège (Liège), 1935, 1 ex., leg. A. Wéry (Hackray & Sarlet 1977: 208).

Marcinelle (Hainaut), 1938, 6 ex., leg. Fontaine (Hackray & Sarlet 1977: 208).

Fays-Pollleur (Liège), 1938, 5 ex., leg. Dasse & J. Hackray (Hackray & Sarlet 1977: 208).

Petit Han (Luxembourg), 1975, 1 ex., leg. Poncin (Hackray & Sarlet 1977: 208).

Cognelée (Namur), 1975, 2 ex., leg. Lecomte (Hackray & Sarlet 1977: 208).

Schilde (Anvers), 23.IX.1987, 1♀, leg. G. De Prins (Vermandel 1988: 70, Vanholder *et al.* 1995: 50).

Maasmechelen (Limbourg), 07.IX.1991, 1 ex., leg. G. Thone (Vermandel & Vanholder 1994: 44, Vanholder *et al.* 1995: 50).

Haaltert (Flandre orientale), 14.IX.1992, 1♂, leg. B. Vanholder (Vermandel 1993: 35, Vanholder *et al.* 1995: 50).

Biron (Luxembourg), 15.IX.1992, 1 ex., leg. T. Sierens (Vermandel 1993: 35, Vanholder *et al.* 1995: 50).

Beerse (Anvers), 21.IX.1992, 1 ex., leg. L. Dufraing (Vermandel 1993: 35, Vanholder *et al.* 1995: 50).

Sint-Margriete (Flandre orientale), 30.IX.1992, 1 ex., leg. M. Van Opstaele (Vermandel 1993: 35, Vanholder *et al.* 1995: 50).

Zomergem (Flandre orientale), 25.IX.1993, 1 ex., leg. T. Sierens (Vermandel & Vanholder 1994: 44, De Prins 1994: 121, Vanholder *et al.* 1995: 50).

Esneux (Liège), 24.X.1996, 1 ex., leg. P. Cluck (Vanholder 1997: 51).

Wenduine (Flandre occidentale), 07.X.2000, 1 ex., leg. A. De Turck (Vanholder 2001: 52).

Vierset (Liège), 22.VIII.2002, 1 ex., leg. Capucine Nyst (présent article).

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New species of African Platygastriinae (Hymenoptera: Platygasteridae)

Peter Neerup Buhl

Samenvatting. Nieuwe soorten Afrikaanse Platygastriinae (Hymenoptera: Platygasteridae)
Zeven nieuwe soorten Platygasteridae worden beschreven uit Afrika: *Leptacis graciliventris*, *L. luboi*, *L. microcera*, *Platygaster flagellata*, *P. matuschanskavaskyi*, *P. natalensis* en *P. setosa*.

Résumé. Espèces nouvelles de Platygastriinae Africain (Hymenoptera: Platygasteridae)
Sept espèces nouvelles de Platygastriinae sont décrites en provenance d'Afrique: *Leptacis graciliventris*, *L. luboi*, *L. microcera*, *Platygaster flagellata*, *P. matuschanskavaskyi*, *P. natalensis* et *P. setosa*.

Key words: Hymenoptera – Platygasteridae – *Leptacis* – *Platygaster* – Africa – new species.

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All the 7 new species (types and paratypes) described below are preserved in the Museum of Zoology, Lund University (Sweden). They were part of a loan of platygasterids by courtesy of curator Roy Danielsson.

Leptacis graciliventris sp. nov. (fig. 1)

Material examined. Holotype ♀: Republic of South Africa, Cape Province, Tsitsikama, Forest Park, Stormsrivier (33°58'S 23°54'E) 14–16.X.1994 (R. Danielsson).

Description. ♀: Colour brownish black, T1 lighter; A1–A6 and legs yellowish; mandibles, A7–A10 and last segment of tarsi brown. Head smooth, from above 1.8× as wide as long, 1.1× as wide as thorax; occipital carina distinct, vertex distinctly elevated medially. Lateral ocelli separated from eye by their diameter. Head from front 1.05× as wide as high. A1 hardly 0.9× as long as height of head. A2 one-third as long as A1, twice as long as A3 which is hardly twice as long as wide. A4 1.4× as long as A3, 2.5× as long as wide. A5 about half as long as A4. A7 1.4× as long as wide, A8–A9 wider, each 1.2× as long as wide. A10 hardly 1.7× as long as A9. Mesosoma 1.7× as long as wide, 1.2× as high as wide. Sides of pronotum smooth. Mesoscutum smooth, faintly sculptured anteriorly, uniformly and rather densely hairy, without notauli; hind margin hardly convex. Mesopleura smooth. Scutellum (fig. 1) smooth and hairy as mesoscutum, spine and lamella hardly present. Metapleura smooth, with whitish pilosity posteriorly. Propodeal carinae rather low, brownish, slightly curved. Fore wing hardly as long as body (22:23), 2.9× as long as wide, whitish, with fine dense hairs; marginal cilia hardly 0.15 width of wing. Hind wing 7.8× as long as wide; marginal cilia 0.6 width of wing. Metasoma longer than head and mesosoma combined (25:23), as wide as thorax, 2.5× as long as wide. T1 about 1.2× as long as wide, with almost parallel sides, shiny, with some faint carinae. T2 1.4× as long as wide, with pilosity in small basal foveae, rest smooth and bare. T3–T6 combined half as long as T2, smooth except for scattered traces of reticulation, with a few rather superficially implanted hairs; T6 pointed, 1.75× as wide as long.

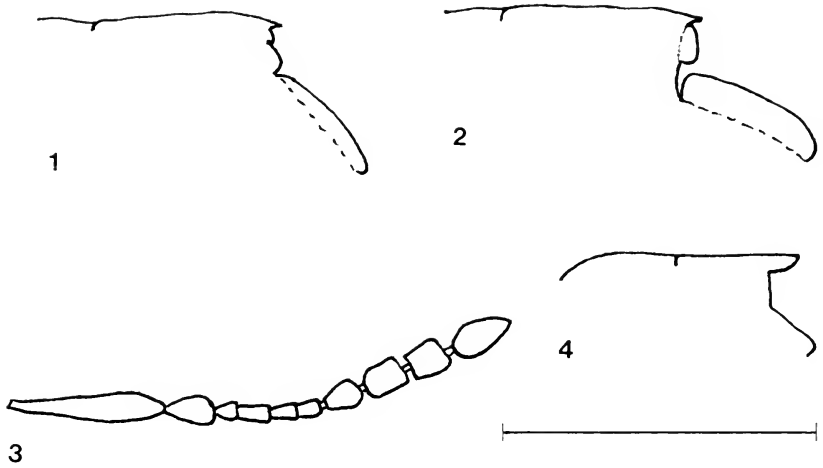


Fig. 1: *Leptacis graciliventris* sp. nov., female scutellum.

Fig. 2: *Leptacis luboi* sp. nov., female scutellum.

Figs. 3–4: *Leptacis microcera* sp. nov., female – 3. Antenna; 4. Scutellum. Scale bar = 0.25 mm.

Comments. Runs to *L. risbeci* Masner, 1960 in Masner's (1960) key to African *Leptacis*, but this species has A3 and A4 of nearly equal length.

***Leptacis luboi* sp. nov.** (fig. 2)

Material examined. Holotype ♀: Republic of South Africa, Cape Province, Nature's Valley, at Groot Rivier (33°58'S 23°33'E) 15–17.X.1994 (R. Danielsson). Paratype: 1 ♀ same data.

Description. ♀: Length 1.05 mm. Colour blackish; antennae, mandibles and legs light brown, A8–A10 darker. Head from above 1.8× as wide as long, very slightly wider than thorax; occiput smooth, with a few faint transverse wrinkles and a high carina; vertex and frons finely reticulate, frons smooth medially; lateral ocelli separated from eye by slightly less than their diameter. Head from front fully 1.1× as wide as high. A1 hardly shorter than height of head. A2 0.25× as long as A1. A3 hardly 0.5× as long as A2, 1.4× as long as wide. A4 1.8× as long as A3, 2.5× as long as wide. A5 about half as long as A4, hardly longer than wide. A7–A10 forming club, A7 hardly transverse, A8–A9 each 1.25× as wide as long, A10 1.75× as long as A9. Mesosoma 1.6× as long as wide, fully 1.1× as high as wide. Sides of pronotum smooth, finely reticulate in upper anterior corner. Mesoscutum smooth, rather densely and uniformly hairy, without notauli; hind margin almost straight. Mesopleura smooth. Scutellum (fig. 2) sculptured and hairy as mesoscutum, with a very small spine and a small semitransparent lamella below. Metapleura smooth and bare except posteriorly. Propodeal carinae high and semitransparent, slightly curved. Fore wing fully 1.1× as long as body, 2.8× as long as wide, with faint yellowish tint and dense hairs on disc; marginal cilia almost 0.3 width of wing. Hind wing about 10× as

long as wide; marginal cilia fully 1.1 width of wing. Metasoma as long as head and mesosoma combined, very slightly wider than thorax. T1 hardly as long as wide, densely pubescent laterally, with a couple of weak carinae and an even weaker medial one. T2 with hairy basal foveae, 1.2× as long as wide. T3–T6 combined hardly 0.4× as long as T2, smooth, with several rather deeply implanted hairs.

Comments. Named after Dr. Lubomir ("Lubo") Masner, Ottawa. In scutellar spine most similar to *L. celisi* (Risbec, 1958), *L. risbeci* Masner, 1960, and *L. graciliventris* sp. nov., but it differs from all these most readily in antennal structure, cf. Masner (1960) and above.

***Leptacis microcera* sp. nov.** (figs. 3–4)

Material examined. Holotype ♀: Sierra Leone, S. of Freetown, close to Sussex (8°20'N 13°11'W) 30.XI.1993 (Lund University Sierra Leone Expedition 1993 - L. Cederholm, R. Danielsson, R. Hall).

Description. ♀: Length 0.6 mm. Colour dark brown; A1–A4 and legs yellowish. Head from above hardly 2.0× as wide as long, 1.3× as wide as thorax. Occiput distinctly transversely reticulate-coriaceous, with a complete carina; vertex and frons almost smooth. Lateral ocelli separated from eye by slightly less than their diameter. Head from front 1.3× as wide as high. Antenna (fig. 3) with A1 0.9× as long as height of head. A4 hardly longer than A5, hardly twice as long as wide. A8–A9 each very slightly longer than wide. Flagellar pubescence distinct. Mesosoma 1.7× as long as wide, 1.25× as high as wide. Sides of pronotum smooth except for reticulation in anterior corner. Mesoscutum finely reticulate-coriaceous, with scattered hairs and without notauli, hind margin straight. Mesopleura smooth. Scutellum (Fig. 4) at level of mesoscutum, with a straight spine which reaches about middle of propodeum, with a lamella below. Metapleura smooth, with pubescence along hind margin. Propodeal carinae low, straight, not semitransparent. Fore wing with scattered long hairs on disc, almost clear; marginal cilia fully 0.4 width of wing. Hind wing with marginal cilia slightly longer than width of wing. Metasoma 1.1× as long as mesosoma, narrower than this (11:12). T1 hardly as long as wide, with a few hairs. T2 smooth, with small basal foveae and a few hairs. T3–T6 short, combined about 0.4× as long as T2, with fine microsculpture.

Comments. Runs to *L. kivuensis* (Risbec, 1958) in Masner's (1960) key to females of African *Leptacis*, but *kivuensis* and *microcera* have very different antennal structure. *L. microcera* is also somewhat similar to *L. pumilio* Masner, 1960 (only male known), but this species has no occipital carina, cf. Masner (1960).

***Platygaster flagellata* sp. nov.** (figs. 5–7)

Material examined. Holotype ♀: Republic of South Africa, Cape Province, Plattenbergbaai (34°03'S 23°22'E) 17.X.1994 (R. Danielsson).

Description. Female: Length 1.1 mm. Colour shiny black; antennae and legs dark brown; both ends of tibiae, and segments 1–4 of all tarsi, light brown. Head from above (fig. 5) 1.8× as wide as long, fully 1.1× as wide as thorax. Occiput rather finely but densely transversely striated; vertex finely transversely

reticulate; frons smooth, with numerous wrinkles around antennal insertions. Head from front wider than high (25:22). Antenna (fig. 6) with A1 shorter than height of head (9:11). Mesosoma 1.4× as long as wide, very slightly higher than wide. Sides of pronotum smooth, with scattered hairs. Mesoscutum with sparse hairs, longitudinally reticulate-coriaceous, smooth laterally and posteriorly; notauli absent; mid lobe distinctly prolonged to base of scutellum; scuto-scutellar grooves covered by distinct hairs. Mesopleura smooth. Scutellum evenly convex, above mesoscutum, smooth, with scattered hairs, slightly transverse. Metapleura with whitish pilosity all over. Propodeal carinae short and dark, area between them smooth and shiny, distinctly transverse. Fore wing reaching apex of metasoma, almost clear, densely hairy but in basal third almost bare, 2.4× as long as wide; marginal cilia hardly 0.1 width of wing. Hind wing 4.6× as long as wide, with two frenal hooks; marginal cilia slightly more than 0.2 width of wing. Metasoma (fig. 7) longer than head and mesosoma combined (24:21), hardly 0.9× as wide as thorax, 1.5× as wide as high. T1 evenly crenulated. T2 with a few striae in weak basal foveae to 0.4 of length, with a few very short wrinkles medially. T3–T6 smooth, T3–T5 each with a medially interrupted transverse row of rather superficially implanted hairs, T6 with hairs laterally.

Comments. Differs from the *Platygaster*-species described from South Africa by Sundholm (1970) in having flagellar segments much more slender.

***Platygaster matuschanskavaskyi* sp. nov.** (fig. 8)

Material examined. Holotype ♀: Swaziland, 3 km N Simunye (26°11'S 31°57'E) 27.X.1994 (R. Danielsson). Paratypes: 2♀, Republic of South Africa, Cape Province, Koomplanskloof, 10 km S Citrusdal, 200–270 m (32°40'S 19°01'E) 4–6.X.1994 (R. Danielsson).

Description. ♀: Length 1.3–1.4 mm. Colour black, antennae and legs dark brown, apex of A2 and entire A3 lighter (in holotype only); apex of fore femur, basal half and apex of all tibiae, and segments 1–4 of all tarsi light brown. Head from above 1.9× as wide as long, 1.2× as wide as thorax, strongly narrowed behind eyes; occiput densely and rather strongly transversely striated; vertex reticulate, with fine irregular rugosity and with transverse wrinkles; frons fan-like striated, transversely striated above antennae, in upper half also with fine irregular rugosity. Lateral ocelli separated from eye by 1.2 their diameter; OOL:POL:LOL = 8:21:10. Head from front 1.3× as wide as high. Antenna with A1 shorter than height of head (10:13); A2 1.2× as long as A3–A4 combined, almost 3× as long as wide; A3 hardly 0.6× as long as A4; A4 1.7× as long as wide, fully 1.1× as long as A5 which is 1.5× as long as wide; A7–A9 each about 1.2× as long as wide; A10 1.6× as long as A9. Mesosoma 1.5× as long as wide, hardly 1.1× as high as wide. Sides of pronotum smooth, with scattered hair-implantations. Mesoscutum almost smooth, with faint traces of longitudinal microsculpture, with scattered hairs; notauli very faintly indicated throughout, mid lobe slightly prolonged but hardly reaching base of scutellum; scuto-scutellar grooves rather wide, with few hairs. Mesopleura smooth. Scutellum evenly convex, slightly above mesoscutum and somewhat denser hairy than this, smooth. Metapleura with whitish pilosity all over, but not dense. Propodeal

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carinae short, dark, smooth area between them much transverse. Fore wing reaching base of T6, clear, bare in basal half, 2.4× as long as wide; marginal cilia very short. Hind wing 4.6× as long as wide, with two frenal hooks; marginal cilia 0.2 width of wing. Metasoma (fig. 8) very slightly longer than head and mesosoma combined (58:55), hardly narrower than thorax, 1.9× as wide as high. T1 strongly and evenly crenulated. T2 striated in basal foveae to hardly 0.5 of length, between foveae with a couple of striae to one-seventh of length. T3–T6 smooth, T3–T5 each with a complete transverse row of distinct hair-implantations, T6 with hairs laterally. Sternite 2 very slightly produced anteriorly.

Comments. Named in memory of Mr. Walter Matuschanskavasky (Matthau), USA (1920–2000). The holotype is somewhat brighter coloured than the paratypes which are also weaker sculptured on head and stronger sculptured on mesoscutum than holotype. The species differs from the *Platygaster*-species described by Sundholm (1970) most readily in the distinctly sculptured frons.

***Platygaster natalensis* sp. nov.** (figs. 9–11)

Material examined. Holotype ♀: Republic of South Africa, Natal, Richards Bay (28°46'S 32°04'E) 24.X.1994 (R. Danielsson).

Description. ♀: Length 1.15 mm. Colour black, antennae dark brown, basal half of A1 lighter; fore leg light brown except darkened coxa, femur only slightly darkened; mid leg light brown except darkened coxa and basal half of femur; hind leg dark brown except slightly lighter tibia and tarsus. Head from above (fig. 9) 1.8× as wide as long, nearly 1.2× as wide as thorax; occiput rounded, bare, shiny, evenly and slightly transversely reticulate-coriaceous; vertex with a few fine punctures and evenly reticulate-coriaceous, with smaller meshes than on occiput; frons faintly and evenly reticulate-coriaceous, with weak transverse wrinkles above antennal insertions. Head from front 1.2× as wide as high. Antenna with A1 0.8× as long as height of head; A2 2.3× as long as wide, about as long as A3–A4 combined; A3 1.3× as long as wide; A4 fully 1.5× as long as A3, 1.3× as wide as this, 1.5× as long as wide; A5 hardly shorter than A4, 1.25× as wide as this; A6–A9 about equal, 1.25× as wide as A5, each 1.1× as wide as long; A10 1.6× as long as A9. Mesosoma nearly 1.6× as long as wide, very slightly higher than wide. Sides of pronotum finely reticulate-coriaceous with broad smooth hind margin. Mesoscutum with few hairs; mid lobe finely reticulate-coriaceous in anterior half, smooth in posterior half; lateral lobes smooth; notauli complete, mid lobe rather broad posteriorly, very slightly prolonged; scuto-scutellar grooves narrow, hardly hairy. Mesopleura smooth. Scutellum (fig. 10) finely and evenly reticulate-coriaceous except anteriorly, sparsely hairy. Metapleura with dense whitish pilosity all over. Propodeal carinae nearly parallel, area between them smooth, about as long as wide. Fore wing 0.8× as long as body, 2.5× as long as wide, with weak yellowish tint, rather densely hairy except at extreme base; marginal cilia at their longest 0.1 width of wing. Hind wing 6.0× as long as wide, with two frenal hooks; marginal cilia one-third the width of wing. Metasoma (fig. 11) hardly as long as head and

mesosoma combined (24:25), about as wide as thorax, 1.4× as wide as high. T1 with two widely separated longitudinal carinae, area between them smooth except for a few short crenulae along anterior margin, T1 laterally distinctly hairy. T2 with deep and smooth but hairy basal foveae which are 1.3× as long as T1, area between foveae with a few short striae to hardly 0.2 the length of tergite, rest of T2 smooth. T3–T5 smooth, T3 with a few hairs laterally, T4–T5 each with a complete transverse row of superficially implanted hairs; T6 with scattered hairs and traces of reticulation.

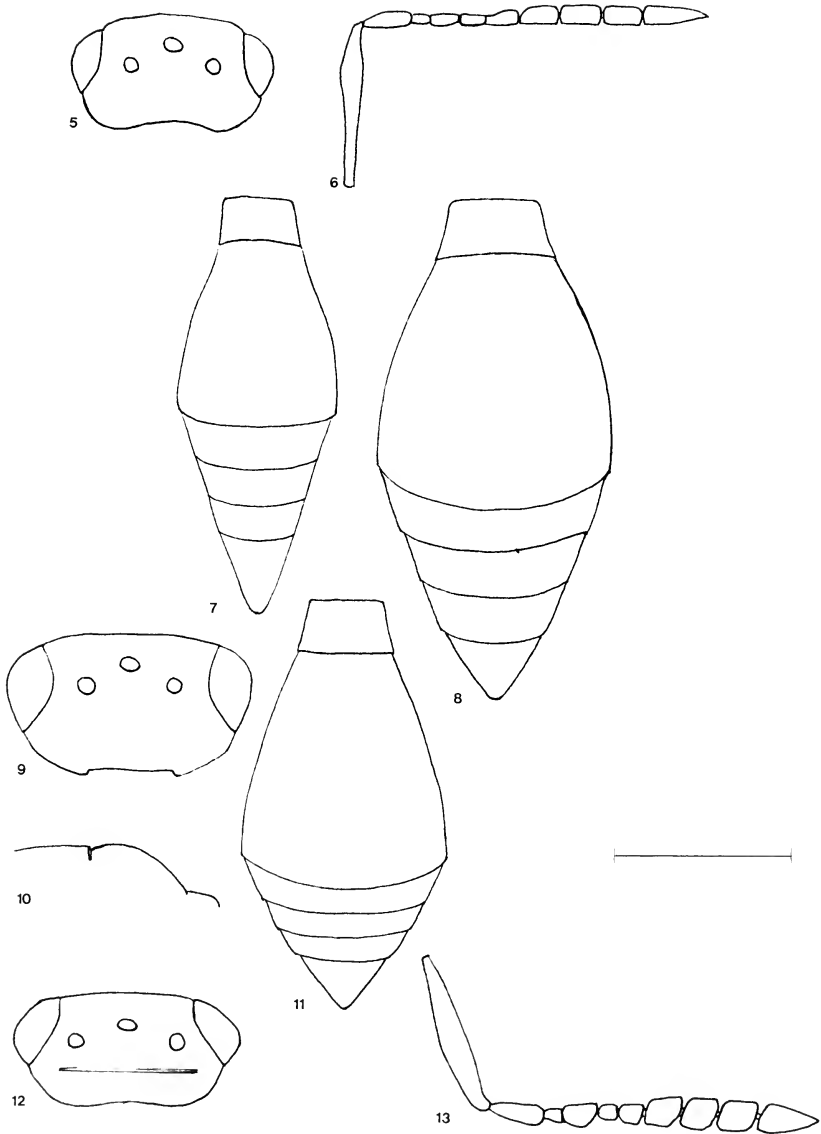
Comments. Differs distinctly from the other known *Platygaster*-species of the Afrotropical region by having occiput rounded, without striae, and notauli complete.

***Platygaster setosa* sp. nov.** (figs. 12–13)

Material examined. Holotype ♂: Republic of South Africa, Cape Province, Tsitsikama, Forest Park, Stormsrivier (33°58'S 23°54'E) 14–16.X.1994 (R. Danielsson). Paratype: 1♀, Stormsrivier Pass (33°59'S 23°55'E) 19.X.1994 (R. Danielsson).

Description. ♂: Length 1.0 mm. Colour blackish, A1–A2 and legs brownish yellow, A3–A10 brown. Head from above (fig. 12) 2.0× as wide as long, fully 1.1× as wide as thorax. Occiput with numerous hairs, smooth medially, reticulate-coriaceous laterally, with strong carina; vertex reticulate-coriaceous laterally and between ocelli, rest smooth; frons smooth. Head from front wider than high (13:11). Antenna (fig. 13) with A1 longer than height of head (19:18), hairs of flagellum very short. Mesosoma 1.5× as long as wide, hardly as high as wide (22:23). Sides of pronotum with dense hair-implantations and some weak reticulation. Mesoscutum uniformly and rather densely hairy, finely reticulate-coriaceous anteriorly, rest smooth; notauli complete; midlobe slightly prolonged, scuto-scutellar grooves narrow, triangular, with a few hairs. Mesopleura smooth. Scutellum hardly convex, at level of mesoscutum, hairy as this, almost smooth, in dorsal view transverse, with margined sides. Metapleura with distinct whitish pilosity all over. Propodeal carinae dark, low, parallel; area between them smooth, about as long as wide. Fore wing 1.1× as long as body, with yellowish tint but clear in basal 0.25 with imaginary subcostal and basal veins darker, rather densely hairy all over; marginal cilia slightly more than 0.1 width of wing. Hind wing 5.8× as long as wide, with two frenal hooks; marginal cilia one-third the width of wing. Metasoma as long as head and mesosoma combined, fully as wide as thorax (24:23). T1 1.8× as wide as long, medially smooth, bare and with three longitudinal carinae close together, laterally with numerous hairs. T2 with long and distinct basal foveae, without striae but with a few hairs, tergite also hairy laterally. T3–T7 combined 0.4× as long as T2, smooth, with a few rather superficially implanted hairs.

Female: Much damaged but head and mesosoma essentially as male. Flagellar segments distinctly longer than wide. Metasoma fully as long as head and mesosoma combined.



Figs. 5–7: *Platygaster flagellata* **sp. nov.** female – 5. Head from above; 6. Antenna; 7. Metasoma.

Fig. 8: *Platygaster matuschanskavaskyi* **sp. nov.**, female metasoma.

Figs. 9–11: *Platygaster natalensis* **sp. nov.** female – 9. Head from above; 10. Scutellum; 11. Metasoma.

Figs. 12–13: *Platygaster setosa* **sp. nov.** male – 12. Head from above; 13. Antenna.

Scale bar = 0.25 mm.

Comments. A most characteristic *Platygaster*-species on account of generally hairy body, margined occiput, imaginary wing nervature indicated by coloration, and mesoscutum with deep notauli and low scutellum (thoracic structure much as in NW-European *P. gracilipes* Huggert, 1975).

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More about *Euphydryas maturna* in Bulgaria (Lepidoptera: Nymphalidae, Nymphalinae)

Stanislav Abadjiev & Stoyan Beshkov

Samenvatting. Meer over *Euphydryas maturna* in Bulgarije (Lepidoptera: Nymphalidae: Nymphalinae)

Het voorkomen van *Euphydryas maturna* (Linnaeus, 1758) in Bulgarije wordt besproken. De gekende vindplaatsen in dat land worden opgesomd. De taxonomie en de bionomie van deze soort komen kort aan bod.

Résumé. Informations additionnelles sur *Euphydryas maturna* en Bulgarie (Lepidoptera: Nymphalidae: Nymphalinae)

La présence de *Euphydryas maturna* (Linnaeus, 1758) en Bulgarie est discutée. Les localités connues sont énumérées. La taxonomie et la bionomie de cette espèce sont brièvement communiquées.

Key words: *Euphydryas maturna* – taxonomy – distribution – bionomics – Bulgaria

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Introduction

Until recently (Abadjiev 1995: 74–75) Bulgarian specimens of *Euphydryas maturna* (Linnaeus, 1758) were considered a great rarity in collections and the species was known from only two published localities. Because of the lack of material and field observations it was impossible to make a clear review of the taxonomic status, distribution and bionomics of the species in Bulgaria. In recent years more material and data have been accumulated (from collecting, field observations and museum specimens) and, as a result, some valuable additions to the knowledge of the species in Bulgaria can be made.

Euphydryas maturna maturna (Linnaeus, 1758)

- “*Maturna*. 136. *P.[apilio] N.[ymphalis]*” Linnaeus, C., 1758 (Systema Naturae... (Ed. 10) 1: 480).
Melitaea maturna L.: Rebel 1903: 167, footnote 1; Markowitsch 1909: 9; Buresch & Tuleschkow 1929: 162, 197; Buresch 1930: 222, footnote 1.
Euphydryas maturna partiensis Varga & Sántha, 1973; Varga & Sántha 1973: 215, fig. 2; 216, fig. 3.
Hypodryas maturna L.: Higgins & Riley 1984: 126; Ganey 1985a: 116; Ganey 1985b: 118; Higgins & Hargreaves 1985: 135; Whalley 1987: 80; Tolman 1997: 180.
Euphydryas maturna L.: Kudrna 1986: 242.
Euphydryas (Hypodryas) maturna maturna L.: Abadjiev 1995: 11, 16, 74–75, pl. XXX, figs. 1, 2, 127.

Taxonomy

The Bulgarian *maturna* was attributed in 1973 by Varga & Sántha (1972–1973: 215; Abb. 2; 216: Abb. 3) to the subspecies *partienis* Varga & Sántha, 1973, described after material from Hungary, Romania and Ukraine. It should be noted that this statement was not supported with examined material.

Subsequently, Abadjiev (1995: 74) suggested that Bulgarian populations belong to nominotypical *maturna*.

The additional material (21♂, 1♀) available from Bulgaria now supports the latter view. Most of our specimens do not display the taxonomic characters of *partiensis* (e. g. well developed discal and postdiscal patterns, etc.) (see also Figs. 2–3). Apart from this, it should be pointed out that there are no substantial geographical or other environmental barriers between the respective ranges of nominotypical *maturna* and ssp. *partiensis* in SE Europe which raises the possibility that *partiensis* may be consubspecific with nominotypical *maturna*.

Distribution

The species occurs at low and moderate altitude in the eastern part of the country: the regions of Dobrudzha, Ludogorie, E Stara Planina Range and Black Sea Coast (Fig. 1).

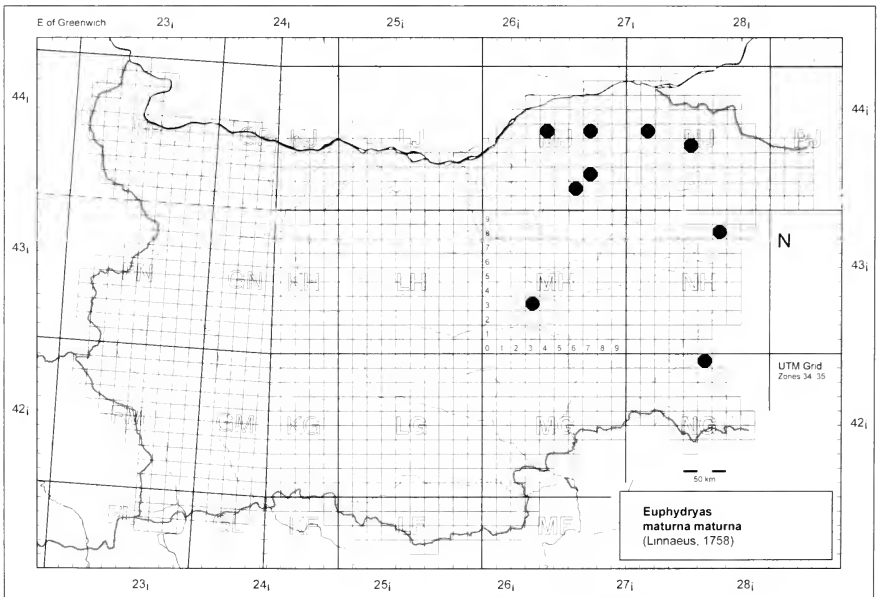


Fig. 1. UTM map of Bulgaria showing the distribution of *Euphydryas maturna maturna* (Linnaeus, 1758).

Localities and material examined:

Dobrudzha

NJ15: Cherkovna: 7.VI.1999 – 1♂: S. Abadjiev & M. Langourov obs. •
NJ44: Dryanovets: 6.VI.1999 – 7♂, 1♀: S. Abadjiev leg. et coll. (3♂ in National Museum of Natural History, Sofia (NMNHS) coll.); 10♂: S. Beshkov leg. et coll. (1♂ in Z. Kolev coll.).

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Figs. 2–3. Males of *Euphydryas maturna maturna* (Linnaeus, 1758), Dobrudzha: Suha Reka: vicinity of Dryanovets: 6.VI.1999 (Photo S. Beshkov).

Fig. 4. Habitat of *Euphydryas maturna maturna* (Linnaeus, 1758), Dobrudzha: Suha Reka: vicinity of Dryanovets: 6.VI.1999 (Photo S. Beshkov).

Ludogorie

MJ45: Kubrat: Seslav game reserve: 2–3.VI.1976 – 1 ♂: A. Slivov leg.: Institute of Zoology, Sofia (IZS) coll. • MJ61: Razgrad: V.1908 (Markowitsch, 1909: 9; Buresch & Tuleschkow, 1929: 162, 197; Buresch, 1930: 222; footnote 1); (Varga & Sántha, 1973: 215; Fig. 2; 216; Fig. 3; Abadjiev, 1995: 75) • MJ72: 3 km N Samuil: 8.VI.1999 – 1 ♂: S. Abadjiev leg.: NMNHS coll. • MJ75: Sushevo: 28.VI.1992 – 1 ♂: I. Stoychev leg. et coll. (Abadjiev, 1995: 75; Pl. XXX: Figs 1, 2; 127).

E Stara Planina

MH33: Cherkovnata Koriya locality N Sliven: Haberhauer (Rebel, 1903: 167: footnote 1); (Buresch & Tuleschkow, 1929: 197). Record requires confirmation; recent extensive collecting in Stara Planina N of Sliven has failed to turn up *maturna* there (Z. Kolev, pers. comm.).

Black Sea Coast

NG59: Veselie Camping: 26.V.1984 – 1♂: A. Slivov leg.: IZS coll. Record requires confirmation in view of the numerous cases of doubtful or plainly erroneous data in A. Slivov's materials (Kolev 2002) and the fact that *maturna* is not known from any other place in S Bulgaria. • NH68: Dobrogled village WNW Varna, 200–250 m, 19.VI.1988 – 2♂: N. Shtinkov leg., Z. Kolev coll.

Bionomics

Euphydryas maturna is univoltine and flies from the end of May (26.V.1984, Veselie) till the end of June (28.VI.1992, Sushevo) (Abadjiev 1995: 75). Near Dryanovets it was located along the fringes of the nearby mixed deciduous forest (consisting mainly of *Fraxinus*, *Quercus*, *Acer* spp.) (Fig. 4), and near Samuil in a forest clearing (with predominance of *Tilia* spp.). Specimens were frequently observed feeding on the salts in moist ground or animal droppings and also resting on the foliage of low bushes. The habitat near Dobrogled is a small, steep-sided gorge in calcareous rock (Z. Kolev, pers. observ.); the two specimens were collected on flowers in a small glade inside a grove of various deciduous tree species near the bottom of the gorge. Despite intensive searches following this discovery, no further specimens have been collected there since (N. Shtinkov, pers. comm. to Z. Kolev). Natural hostplants and early stages still remain unrecorded in Bulgaria.

Acknowledgements

We are grateful to Mr. Zdravko Kolev (Helsinki, Finland) for the contribution of data in his possession and his critical comments on the manuscript.

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A new record for the Canary Islands (Coleoptera: Aphodiidae, Aphodiinae)

Paul Schoolmeesters & Roger Van den Heuvel

Samenvatting. Een nieuwe soort voor de Canarische Eilanden (Coleoptera: Aphodiidae, Aphodiinae)

Aphodius (Plagiogonus) nanus Fairmaire, 1860 wordt hier voor het eerst uit de Canarische Eilanden vermeld.

Résumé. Une espèce nouvelle pour les Iles Canaries (Coleoptera: Aphodiidae, Aphodiinae)

Aphodius (Plagiogonus) nanus Fairmaire, 1860 est mentionné ici pour la première fois des Iles Canaries.

Keywords. Coleoptera - Aphodiidae - Canary Islands - new record

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One specimen of *Aphodius (Plagiogonus) nanus* Fairmaire, 1860 was collected on Gran Canaria, San Bartholomé de Tirajana, 22.X.2002, leg. R. Van den Heuvel. This species has not been mentioned from the Canary Islands before (Machado & Oromi 2000: 50).

Distribution: *Aphodius (Plagiogonus) nanus* Fairmaire, 1860 is known from North Africa and Asia minor.

We wish to express our gratitude for the identification to Dr. Giovannii and Dr. Marco Dellacasa.

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Interessante vondst van *Lithophane semibrunnea* (Lepidoptera: Noctuidae)

B. Kindts

Abstract. Interesting record of *Lithophane semibrunnea* (Lepidoptera: Noctuidae)

A specimen of *Lithophane semibrunnea* (Haworth, 1809) was bred from a caterpillar found on 7 July 2002 on *Fraxinus excelsior* L. at Wenduine (Province of West-Flanders). The adult emerged on 10 September 2002. This species is known from all Belgian provinces but it is observed only sporadically.

Résumé. Capture intéressante de *Lithophane semibrunnea* (Lepidoptera: Noctuidae)

Le 7 juillet 2002 une chenille de *Lithophane semibrunnea* (Haworth, 1809) fut trouvée sur *Fraxinus excelsior* L. à Wenduine (Flandre occidentale). L'adulte apparut le 10 septembre 2002. Cette espèce est connue de toutes les provinces belges mais elle est rarement observée.

Key words: *Lithophane semibrunnea* – faunistics – Belgium.

Kindts, B.: Patersstraat 48, B-9900 Eeklo.

Op 7 juli 2002 vond ik in de duinbossen te Wenduine (West-Vlaanderen op een lage, aan de grond ontspringende zijtak van een es (*Fraxinus excelsior* L.) een volgroeide, groene rups die duidelijk tot de Noctuidae behoorde. Op het eerste gezicht leek ze op de overal voorkomende *Orthosia incerta* (Hufnagel, 1766), die polyfaag op zeer veel verschillende struiken en loofbomen leeft en kan gevonden worden van eind april tot eind juni en uitzonderlijk zelfs tot midden juli. Omdat ik *O. incerta* nog nooit op es had verzameld, leek het me interessant om deze rups uit te kweken. De rups verpopte en *Orthosia* overwintert in dit popstadium. Het imago kon dus ten vroegste in maart 2003 verwacht worden.



Fig. 1: *Lithophane semibrunnea* e.l. *Fraxinus excelsior* 10.IX.2002, België, West-Vlaanderen, Wenduine, leg. et coll. B. Kindts.

Groot was dan ook mijn verbazing toen reeds op 10 september 2002 een imago in de container zat, temeer omdat het een mannelijk exemplaar van *Lithophane semibrunnea* (Haworth, 1809) bleek te zijn (fig. 1), een soort die uit alle Belgische provincies bekend is maar die slechts zeer sporadisch wordt waargenomen.

Volgens De Prins (1998: 171) is *L. semibrunnea* wel bekend uit West-Vlaanderen, maar er niet meer waargenomen na 1980. Deze waarneming bevestigt dus het voorkomen van de soort aan de kust als standvlinder.

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Trekvlinders in 2001, achttiende jaarverslag (Lepidoptera)



Bart Vanholder

Résumé. Lépidoptères migrants en 2001 dix-huitième rapport (Lepidoptera)

Rapport sur les migrants observés en Belgique en 2001. Nous donnons un tableau avec information sur les migrants par décade.

Abstract. Migrant Lepidoptera in 2001 eighteenth annual report (Lepidoptera)

Report on migrants observed in Belgium in 2001. A summarising table with all information on Belgian migrants and vagrants per decade is given at the end.

Key words: Migrating Lepidoptera – Belgium.

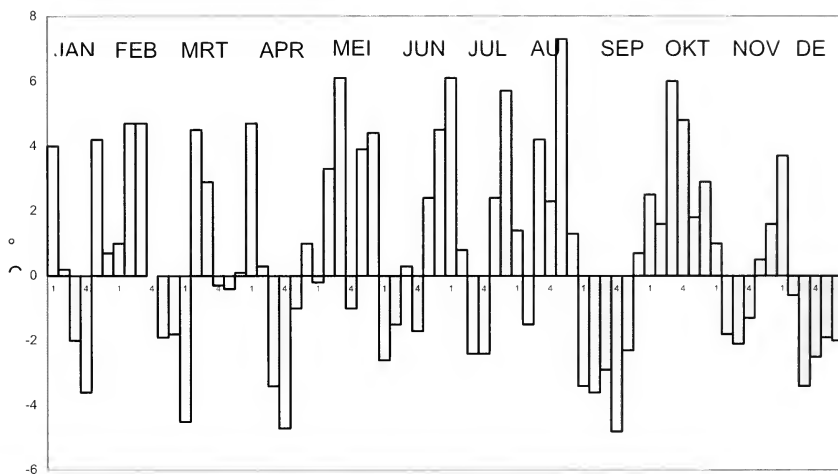
Vanholder, B.: Hoogstraat 50, B-9450 Haaltert. E-mail: bvholder@bigfoot.com.
<http://www.trekvlinders.members.easyspace.com>

Inleiding

In 2001 beleefden we de vierde natste lente ooit, met in haar maand april een absoluut neerslagrecord. Daarna gingen we door de vierde natste herfst ooit, met daarin de natste september ooit: we kunnen stellen dat 2001 niet erg veelbelovend kon zijn op trekvlindergebied. De juist belangrijke maanden april en september speelden daarbij een hoofdrol. Het enig lichtpuntje was de warmste maand oktober ooit. Het jaar werd afgesloten als het natste sinds het begin van de metingen te Ukkel! Er dienden 122 personen gegevens in, het aantal vaste medewerkers hieronder bedroeg 94. In totaal 44 mensen stuurden eveneens gegevens over nachtvlinders in, dit is een lichte verbetering tegen het voorgaande jaar, ondanks het eerder magere jaar voor de trekvlinders zelf. Ik verwerkte enkel nog buitenlandse gegevens in het verslag wanneer ze maximum 20 km buiten de Belgische grens liggen. Deze data zijn fenologisch nog verwant met onze fauna. Voor de systematiek en nomenclatuur van de besproken

trekvlindersoorten en zwervers werd De Prins (1998) gevolgd. Als aanduiding voor het voorkomen van vlinders wordt volgende richtlijn gevolgd:

- Regelmatig (jaarlijks voorkomend, uitzonderlijk ontbrekend gedurende 1 jaar).
- Onregelmatig (1 keer per 2 jaren, in regel niet jaarlijks voorkomend).
- Zeldzaam (max. 1 keer per 5 jaren waargenomen).
- Zeer zeldzaam (max. 1 keer per 10 jaren).
- Uitzonderlijk (1 keer per 20 jaren).



Figuur 1: Afwijking van de gemiddelde temperatuur per pentade te Ukkel t.o.v. de normale temperatuur. Normale afwijking = 0°C.

Klimatologisch overzicht van 2001

Zoals hierboven gesteld kenden we een zeer natte lente en herfst met erin nog eens twee maanden die een absoluut neerslagrecord betekenden, met name april en september. In januari hadden reeds twee trekvlinders hun aanwezigheid verraden: *Vanessa atalanta* en *Macroglossum stellatarum*. Voor beide soorten werden aanwijzingen gevonden dat het om pogingen tot overwintering ging. In februari werd dit nog duidelijker voor de atalanta met verdere waarnemingen op de warmere dagen. Meer merkwaardig was dat er eveneens een *Vanessa cardui* in februari gevonden werd, een soort die niet dadelijk als mogelijke overwinteraar bij ons bekend staat. Er is in februari ook nooit echt gunstig migratieweer opgetekend, maar wel waren de temperaturen hoger dan normaal tijdens de maritieme stromingen bij het begin van de maand. De winter werd zacht maar nat afgesloten met enkel in maart vijf vorstdagen, 3 minder dan het

normale. Het is dan ook niet verwonderlijk dat er nog slechts één atalanta werd gezien gedurende de hele maand maart die zeer somber was. Het neerslagrecord van april volgde de natte maand maart op en dus was er voor vlinders niet veel ruimte. Enkel de atalanta en de meekrapvlinder (*M. stellatarum*), maakten van regenweer geen punt. De aantallen waren wel laag voor de lentemaand. Enkel naar het einde van de maand werden trekvlinders opgemerkt, er heersten toen zachtere, maritieme stromingen uit het zuiden. De maand mei moest met haar warme temperaturen veel goed maken, maar echt tropische stromingen die de meer "exotische" trekvlinders naar hier kunnen halen, bleven uit. We begonnen echter toch aan de normale trekvlindersoorten zoals *Autographa gamma* en *Agrotis ipsilon* en vooral een vroege *Nomophila noctuella* was opmerkelijk. In juni werden deze aantallen verder opgebouwd en vooral de *M. stellatarum* kende een gunstig verloop. Het aantal soorten trekvlinders was eerder zeer laag voor de maand juni. Er kwamen slechts twee dagen voor met tropische stroming, namelijk op de 23^{ste} en de 24^{ste}, zodat dat wellicht de verklaring was waarom enkel de regelmatige trekvlinders hier gezien werden. We moesten op de warme julimaand wachten om andere, vertrouwde trekvlinders te zien zoals: *Plutella xylostella*, *Udea ferrugalis*, *Agrius convolvuli* en *Mythimna unipuncta*. De afwezigheid van tropische of subtropische stromingen was ervoor verantwoordelijk dat het steeds om zeer lage aantallen ging van verschillende regelmatige trekvlinders; *A. convolvuli*, *U. ferrugalis*, *N. noctuella* haalden het dieptepunt sinds een decennium. Van volgende regelmatige trekvlinders zijn er zelfs geen Belgische waarnemingen bekend uit 2001: *Diasemia reticularis*, *Colias hyale*, *Helicoverpa armigera* en *Heliothis peltigera*. Bij de dwaalgasten ontbraken: *Rheumaptera cervinalis*, *Catocala fraxini* en *Mythimna l-album*.

Medewerkers aan het verslag 2001

Artoisenet A, Bastiaens Hubert, Bauduin Mathieu, Beckaert L, Beernaert Richard, Berckmoes L, Biard Eric, Bolland François, C.Born , Cappendijck, Castelyn H, Casier P, Chanteux Bernard, Chapelle J, Cluck Pierre, Cromar Nicky, D'Haluin P, D'Hert D, D'Hondt R, De Bakker J, De Block Roland, De Boer A , De Decker Herwig, De Kesel Toon, De Turck Aubin, De Vreese Alain, De Witte Thierry, Declercq Frans, Develter Chris, Doucet Jean , Dupont Sylvain, Durinck Paul, Evrard Ghislain, Faquaet Marcel, Fauville E, Fransaeer Frans, Fregat Christian, Galoppin Roger, Garrevoot Theo, Georges, Ghesquière R, Gillard Marcel, Goossens Claire, Gryffroy Dries, Guinez Remi, Hecq J, Herfs, M, Hooft Godelieve, Hoste I, Houuez Marcel, Janssens Karel, Janssens Kjell, Jonckheere Filip, Kinders Hans, Kindts Boudewijn, Lamard Laurent, Lambert Marc, Lambrechts Jorg, Leeb Frédéric, Lefeber V, Leurquin J, Leveque Antoine, Litt René, Lorge Noel, Maertens, T, Maes Boudewijn , Meert Ruben, Merveillie Luc, Meuris Eric, Migeot R, Misonne Bernard, Naessens G, Nagel Harry, Nyst R.H., Nicolas J, Opendaeker Miel, Pauwels Jan, Pletinck René, Prang G, Rappé G, Renneson Jean Luc, Reumkens Hub , Rose Louis, Sauvage Alain, Siereus Tom, Smessaert P, Soors Jan, Soyze B, Spronck René, Spruytte Stef, Stassart Eric, Taelman Ed, Taymans Charles, Thoné Gerard, Troukens Willy, De Keere Diégo, Van De Kerckhove Omer, Van Den Berghe Jean Marie, Van Gele P, Van Holder Bert, Van Hoorebeke Gino, Van Moerkerke Roger, Van Moerkerke M, Van Opstaële Marc, Van Steenwinkel Carina, Vandemaële Willy, Vandenbossche Filip, Vandenbossche Odette, Vanholder Bart, Vanpoucke D, Verboven André, Verloove V, Vermandel Eddy, Vermersch Hubert, Verroken Luc, Verschoore Koen, Verstraeten K, Virlet P, Voet Paul, Walraevens E, Walterus F., Wieme Gabriel, Wullaert Steve, Yde Alain.

Trekvlinders

Plutella xylostella (Linnaeus, 1758)

Het koolmotje had een opvallend mager jaar: slechts dertig waarnemingen; dit is al jaren niet meer voorgekomen. Mensen die ze anders elk jaar in aantal zagen, hebben er in 2001 slechts heel weinig kunnen rapporteren. Het feit dat het trekvlinderwee ongunstig was in 2001 laat vermoeden dat we hier toch met een echte trekvlindersoort te doen hebben. De eerste vlinders zijn pas in juli opgemerkt. Op 7 juli zag A. Verboven een koolmotje in zijn Heath-val. De volgende dagen joeg W. Vandemaele in Deerlijk ze overdag uit de vegetatie van de groentetuin op. De koolmotjes zijn nog spaarzaam opgetekend tot in oktober; op 12 oktober door M. Faquaet te Koksijde en op 25 oktober door E. Taelman te Saeftinge. We hebben wel een nieuw record gevestigd met de erg late datum van 27 december: toen zag A. Verboven in Heverlee het laatste koolmotje, weliswaar binnenshuis op licht.

Vindplaatsen: **Ant.(1)**: Antwerpen; **Bra.(11)**: Anderlecht, Heverlee; **Nam.(1)**: Presgoux; **O.VI.(5)**: Haaltert, Wachtebeke; **W.VI.(9)**: Deerlijk, Koksijde, Wenduine. **Z.VI.(3)**: Saeftinge.

Udea ferrugalis (Hübner, 1796)

Met 2 waarnemingen voor deze soort was 2001 eveneens geen gunstig migratiejaar. Marcel Gillard zag hem op 17 juli te Presgoux op HPL-licht. K. Janssens zag hem op 3 november nog te Antwerpen. Het vrij laat op het jaar voorkomen is typisch voor deze regelmatige trekvlinder. Hij is meestal een van de laatste soorten die nog waargenomen wordt.

Vindplaatsen: **Ant.(1)**: Antwerpen; **Nam. (1)**: Presgoux.

Duponchelia fovealis (Zeller, 1847)

Het meest merkwaardige feit aan deze soort is dat ze nu reeds het derde jaar op rij werd gezien sinds de eerste vangst voor België in 1999 (Vanholder, 2001). In 2001 was het de eer aan R. Spronck om de derde waarneming in België op 14 juni op te tekenen bij een lichtvangst te Visé. De soort kent twee generaties en het feit dat de vindplaatsen zeer uiteen liggen, duidt in de richting van een trekvlinder. We delen de soort dus voorlopig bij de echte trekvlinders in tot hier meer duidelijkheid over komt.

Vindplaats: **Luik(1)**: Visé.

Margaritia sticticalis (Linnaeus, 1761)

Er zijn slechts twee vermeldingen bekend, beide komen uit het kustgebied. E. Taelman zag deze soort te De Clinge op 20 september. Twee dagen later zag P. Durinck hem te Koksijde.

Vindplaatsen: **W.VI.(1)**: Koksijde; **Z.VI. (1)**: De Clinge.

Nomophila noctuella ([Denis & Schiffermüller], 1775)

Er zijn slechts 40 exemplaren van dit regelmatige trekvlindertje opgemerkt, wat in vergelijking met voorgaande jaren een pover resultaat is. Ondanks dit lage aantal

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rapporteerde Steve Wullaert reeds vroeg acht vlinders, nl. op 30 mei te Hautes-Rivières. Dit kan op een migratiefenomeen wijzen. We hoopten dus reeds op een goed jaar, zoals in 1996 het geval was toen ook vlinders in april en mei gezien waren. Op 6 juli was de vlinder alweer present; K Verstraeten meldde hem te Essen. Maar de enige andere vlinder gedurende die maand was deze die M. Gillard te Presgaux zag op de 23^{ste}. In augustus volgden slechts twee waarnemingen. Een kleine serie waarnemingen startte nog op 20 september; er werden die week op verscheidene plaatsen in totaal een twintigtal vlinders gemeld van de tweede generatie. *N. noctuella* komt voornamelijk in het najaar voor in België en dat werd benadrukt met de laatste vangst op 26 oktober in de lichtval van W. Troukens te Dilbeek.

Vindplaatsen: **Ant.(1)**: Essen; **Bra.(3)**: Dilbeek, Heverlee; **Nam.(2)**: Presgaux; **O.VI.(1)**: Eksaarde; **W.VI.(7)**: Deerlijk, Koksijde; **Z.VI.(18)**: De Clinge, Heikant, Saeftinge, St.-Jansteen; **Fra.(8)**: Hautes-Rivières.

Agrius convolvuli (Linnaeus, 1758)

Slechts 8 waarnemingen wat het dieptepunt betekent voor het laatste decennium. S. Dupont kon de eerste windepijlstaart optekenen op 31 juli, nectar zuigend aan siertabak te Anhée. Op 3 augustus zag W. Vandemaele te Deerlijk op dezelfde bloemensoort een vlinder foerageren in de avondschemering. In augustus waren er slechts drie: op 14 augustus te Vogelwaarde (Ed Taelman), op 15 augustus te Berlaar (K. Janssens) en op 28 augustus te Sluis (Ed Taelman). In september enkel de vlinder die E. Taelman te Vogelwaarde zag op de 5^{de}. H Kinders zag te Buggenhout de enige rups kruipen, langs de Schelde op 26 september. Alweer E. Taelman kon het jaar voor de windepijlstaart sluiten in Zuiddorpe op 12 oktober. Het was dus zeker geen gunstig migratiejaar voor deze soort.

Vindplaatsen: **Ant.(1)**: Berlaar; **Nam.(1)**: Anhée; **O.VI.(1)**: Buggenhout; **W.VI.(1)**: Deerlijk; **Z.VI.(4)**: Sluis, Vogelwaarde, Zuiddorpe.

Acherontia atropos (Linnaeus, 1758)

De enige doodshoofdvlinder werd ons gemeld door L. Verroken op 6 oktober te Knokke. Uit Duitsland waren verschillende rupsenvondsten bekend tijdens de zomer en eveneens vlinders in oktober. Het gaat dus ook bij ons wellicht om een hier opgegroeid exemplaar.

Vindplaats: **W.VI.(1)**: Knokke.

Macroglossum stellatarum (Linnaeus, 1758)

De eerste meekrapvlinder werd al erg vroeg opgemerkt door J. Vervaeke op 6 januari in Wevelgem. Dit laat ons toe te vermoeden dat het om een overwinteraar ging. Enkel in 1992 hebben we nog vroeger een kolibrievlinder kunnen optekenen, met name op 4 januari. Daarmee kan deze pijlstaart bij ons bijna het gehele jaar door aangetroffen worden. Op 6 april zag T. De Witte hem alweer te Petite-Chapelle en op 29 april was het de beurt aan E. Taelman te Terneuzen. Vervolgens was het wachten tot 31 mei toen W. Vandemaele de

vlinder zag foerageren op zijn geraniums te Deerlijk. Daarop volgden dagelijks nieuwe waarnemingen zodat we echt konden spreken van een regelmatige generatie, met een hoogtepunt in de vierde pentade van juni. Het is niet duidelijk of dit reeds afstammelingen kunnen zijn van de vlinders eerder in april gezien, maar het lijkt vrij vroeg om daarvan reeds een generatie te voltooien gezien het eerder koude weer in april. Daarentegen was het in mei wel warm, maar zelfs in de zomer heeft de soort meer dan anderhalve maand nodig om de cyclus te voltooien. Het vervolg van het histogram (zie fig. 1) is evenmin duidelijk over de verdere generaties. Doorgaans zijn er twee zeer duidelijk te onderscheiden generaties van de kolibrievlinder maar in 2001 zijn er bijna steeds evenveel kolibrievlinders aanwezig over de gehele zomer gespreid. De enige rups werd op 19 augustus door T. de Witte te Olloy gemeld. Ze was bijna volgroeid. Misschien kunnen we na midden augustus dus nog van een bescheiden tweede generatie spreken die doorvliegt tot in de warme maand oktober, die toch nog 24 vlinders telde! In september zorgde het regenweer voor te lage aantallen met betrekking tot de eerste generatie. De laatste *M. stellatarum* vloog op 25 oktober te Anhée volgens de waarneming van S. Dupont. Opmerkelijk was dat de meekrapvlinder in 2001 volledig ontbrak in de Kempen. Met 197 vlinders toch eerder een matig jaar in vergelijking met de jaarlijkse aantallen die we sinds 1994 gewoon zijn. Enkel 1997 deed slechter met slechts 51 vlinders.

Vindplaatsen: **Bra.(1)**: Merchtem; **Hen.(1)**: Cordes; **Luik(6)**: Petit-Rechain, Spa, Visé; **Lux.(1)**: Marbehan; **Nam.(20 + 1 rups)**: Anhée, Ham-sur-Sambre, Hamois, Mariembourg, Namur, Olloy, Petigny, Petite-Chapelle, Viroinval; **O.Vl.(15)**: Daknam, Hamme, Hamme-St.-Anna, Heurne, Kaprijke, Sinaai, Wetteren; **W.Vl.(113)**: Deerlijk, Harelbeke, Kortrijk, Nieuwerkerke-Heuvelland, Poperinge, St.-Denijs, Westende, Wevelgem; **Z.Vl.(37)**: Groede, Heikant, Hulst, Lamswaarde, Sluiskil, Terneuzen; **Fra.(1)**: Thilay.

***Colias croceus* (Fourcroy, 1785)**

Na het zeer mooie jaar 2000 kenden we dit keer een echt dieptepunt: slechts 8 vlinders wat aantoonde dat de soort verdwenen leek in ons land. We moeten teruggaan tot 1995 om een slechter resultaat te vinden, een jaar dat volgde op een zeer geslaagd 1994. Tussen 1996 en 2000 haalden we elk jaar meer dan 100 vlinders. Misschien kunnen we stellen dat de winter 2000–2001 niet echt gunstig was om de overwintering mogelijk te maken en moeten we weer wachten op nieuwe immigranten die het hier vervolgens enkele jaren kunnen uithouden. In Duitsland wordt, na Engeland, eveneens gewag gemaakt van mogelijke overwintering in onze contreien. Meer en meer komen er aanwijzingen dat deze trekvlinder het enkele jaren na elkaar hier kan uithouden. De rups zou zelfs enkele weken in een soort diapauze kunnen gaan om de moeilijkste tijd in de winter door te komen. Belangrijk schijnt vooral de aanwezigheid van voedselplant in de winter en niet zodanig de temperatuur om overwintering van de rups mogelijk te maken (Hensle 2002). De vlinders in 2001 zijn enkel in augustus waargenomen, de eerste op de 11^{de} te Evere (E. Fauville). Op 18 augustus zag J. Nicolas de oranje luzernevlinder te Petigny vliegen. Alle andere vlinders zijn door E. Taelman en zijn werkgroep in Zeeuws-Vlaanderen gemeld: te Hulst op 24 en 25 augustus, respectievelijk vier en twee vlinders. Het is

merkwaardig dat er zo weinig vlinders bij ons voorkwamen terwijl men op 3 november op één enkele dag in Frankrijk nog actieve remigratie registreerde van acht vlinders richting zuiden bij het "Lac du Der" in het departement Marne. Dit zijn evenveel vlinders als bij ons gedurende het gehele jaar opgetekend werden!

Vindplaatsen: **Bra.(1)**: Evere; **Nam.(1)**: Petigny; **Z.Vl.(6)**: Hulst.

***Vanessa atalanta* (Linnaeus, 1758)**

Naar goede gewoonte van de laatste jaren liet de eerste atalanta zich weer in januari zien: op de 28^{ste} te Roksem. In februari werden vier vlinders gezien die mogelijk ook bij de migratiegolf van de distelvlinder in te delen zijn: op de 10^{de} te Lebbeke (R. Meert) op de 13^{de} en de 15^{de} te Hulst (E. Taelman) en op de 15^{de} te Ensival (J. Chapelle). De enige vlinder in maart werd door S. Spruytte op de 6^{de} opgetekend te Nieuwkerke-Heuvelland. Ook in de natte aprilmaand waren slechts weinig atalanta's te bespeuren. In mei konden we de voorzichtige start van een generatie zien met een hoogtepunt in de vijfde pentade (zie fig. 2). Deze vlinders konden een generatie nakomelingen voortbrengen met als top de vijfde pentade van juni. Zo ving ik op de 20^{ste} juni een wijfje dat eitjes afzette. Op 28 juni vond B. Kindts te Eeklo een rups op brandnetel. In juli werd eveneens in de vijfde pentade een grote piek behaald; het waren veelal verse exemplaren die hier dus opgegroeid zijn. Op 13 augustus vond B. Kindts alweer een rups, deze keer te Adegem. Dit betekent dat er nog een generatie te verwachten was in het najaar. Er werden opmerkelijk wat vlinders gezien als remigranten; de eerste hiervan werd op 26 augustus gemeld door A. Verboven te Leefdaal. In september en oktober werden dikwijls vlinders in actieve remigratie gezien. S. Dupont meldde zo maar liefst 25 vlinders te Maillen op 5 oktober, ze vlogen alle richting zuidoost. J. Lambrechts zag een 40-tal vlinders in een zuidwaartse richting tijdens zijn vogeltrekwaarnemingen op 13 oktober te Neerpelt. Op dezelfde dagen merkte M. Gillard eveneens remigratie op tijdens zijn reis tussen Praag en Brno. De laatste remigrant werd op 2 november te Houthalen door J. Lambrechts gezien. De laatste atalanta voor 2001 werd op 6 december te Evergem door K. Janssens opgetekend. Met 10220 behalen we een gemiddeld jaar.

Verdeling per provincie: Ant.(105), Bra.(445), Hen.(67), Lim.(394), Luik(307), Lux.(84), Nam.(431), O.Vl.(2946), W.Vl.(3226), Z.Vl.(2220), Fra.(7).

***Vanessa cardui* (Linnaeus, 1758)**

De eerste distelvlinder liet zich opmerken op 15 februari te Wondelgem. Dit is op zijn minst een zeer merkwaardige waarneming van M. Zwertvaeger. Nog nooit voorheen hebben we een distelvlinder gezien in februari ! Het is zelfs zeer zeldzaam dat vlinders reeds in maart gezien worden, zoals bijvoorbeeld in 1988 en 1998 het geval was. In Engeland startte een serie waarnemingen van de distelvlinder vanaf 13 februari. Er werden daar toen ook andere migranten waargenomen: *E. ocella*, *A. ipsilon*, *M. stellatarum* en *A. gamma*. De vlinder van M. Zwertvaeger moet dus deel uit gemaakt hebben van een zeer vroege migratiegolf. De oorsprong van deze dieren moet gezien de periode bijna zeker in Afrika gezocht worden! Tussen de 12de en de 22ste waren er anticyclonen boven Centraal-Europa en West-Frankrijk. Ervoor

lagen depressies tot 11 februari boven IJsland en het Verenigd Koninkrijk. Op 21 april werden twee vlinders gezien te Beermem (G. Wieme) en te Waarschoot (F. Verloove), een nieuwe migratiegolf kondigde zich aan. In mei werd de distelvlinder gezien op de 2^{de} te Nafraiture door R. D'Hont en de 6^{de} te Heikant. Vanaf 9 mei zag E. Taelman dagelijks vlinders in de streek van Hulst. Van de derde pentade van juli tot het einde van deze maand (zie fig. 3) kwam een generatie vlinders voor die hier opgroeide. Het hoogste dagtotaal werd daarin behaald op 16 juli met 50 vlinders. Daarna is het bestaan van een nieuwe generatie niet helemaal duidelijk. Op 22 augustus nam M. Gillard twee vlinders in copula waar op zijn vlinderstruik te Presgaux. Hij had dit nooit waargenomen zo laat in het jaar. Het is de vraag of deze generatie hier nog kon opgroeien, er werden wel nog laat in het jaar vlinders gezien. De laatste vlinder vloog op 3 november te Merchtem. Het gebeurt niet elk jaar dat we in november nog vlinders zien! Het was dus geen slecht jaar voor de distelvlinder met een aantal van 1032 en deze kende een lange vliegperiode mede dankzij het warme oktoberweer. Enkel A. Verboven maakte melding van een vlinder in actieve remigratie, nl. op 28 september te Leefdaal.

Verdeling per provincie: Ant.(8), Bra.(41), Hen.(12), Lim.(47), Luik(15), Lux.(32), Nam.(38), O.Vl.(212), W.Vl.(345), Z.Vl.(280), Fra.(2).

***Orthonama obstipata* (Fabricius, 1794)**

Eén van de weinige hoogtepunten in 2001 was de vondst van twee exemplaren van deze onregelmatige trekvlinder. Dit jaar kwamen de vondsten laat in het jaar voor: op 19 oktober te Anhée (S. Dupont) en op 4 november te Presgaux (M. Gillard). Het kan dus gaan om nakomelingen van migranten.

Vindplaatsen: **Nam.(2)**: Anhée, Presgaux.

***Cyclophora pupillaria* (Hübner, 1799), nieuwe soort voor de provincie Namur.**

Dit was ongetwijfeld de meest in het oog springende trekvlinder in ons verslag van 2001. Het betreft hier een uitzonderlijke trekvlinder voor ons land en het was sinds 1968 geleden dat deze er nog werd waargenomen. M. Gillard ontdekte een zeer vers exemplaar van deze typische spanner in zijn lichtval te Presgaux op 22 oktober. Het is slechts de zesde keer dat deze soort uit ons land vermeld wordt en ze is nieuw voor de provincie Namur.

Vindplaats: **Nam.(1)**: Presgaux.

***Autographa gamma* (Linnaeus, 1758)**

De eerste gamma-uiltjes verschenen pas eind mei toen enkele andere trekvlinders eveneens in beeld kwamen. Op 24 mei zag E. Taelman de eerste te Hulst. De volgende dag merkte W. Vandemaele de gamma-uil ook te Deerlijk op. Vanaf begin juni werd de uil dagelijks gezien. Er werd een top genoteerd gedurende de 4^{de} pentade van juni. In de zomer is het beeld niet echt duidelijk wellicht betreft het overlappende generaties. Het hoogste dagtotaal werd op 14 augustus genoteerd met 576 uiltjes. De top van die generatie lag in de 4^{de} pentade van augustus (fig. 4). Op 20 november ontpopte nog een gamma-uil bij

E. Meuris, hij had de pop in de tweede helft van oktober te Gentbrugge gevonden tussen stengels van violier. K. Janssens sprak nog van een zeer verse vlinder die hij op 5 december aantrof op de straatverlichting te Kalmthout. Net als bij de atalanta ging het om een matig jaar, met hier 7329 vlinders.

Verdeling per provincie: Ant.(38), Bra.(276), Hen.(63), Lim.(261), Luik(211), Lux.(34), Nam.(367), O.Vl.(142), W.Vl.(3992), Z.Vl.(1883), Fra.(63).

***Spodoptera exigua* (Hübner, [1808])**

Deze zeldzame migrant werd net zoals in 2000 weer in België vermeld. M. Gillard ving hem te Presgaux op 29 augustus. Normaal komt de uil lang niet elk jaar voor in ons land. In dezelfde periode –met name eind augustus– werden nog enkele andere migrerende soorten waargenomen.

Vindplaats: **Nam.(1)**: Presgaux.

***Mythimna vitellina* (Hübner, [1808])**

Het voorkomen van deze zeldzame trekvlinder vertoonde in 2001 parallellen met de vorige soort: slechts éénmaal opgemerkt door M. Gillard te Presgaux, dit keer tijdens een lichtvangst op 8 augustus. Het ging om een vers exemplaar. De soort was eveneens in 2000 opgemerkt, maar daarvoor was het geleden van 1996.

Vindplaats: **Nam.(1)**: Presgaux.

***Mythimna unipuncta* (Haworth, 1809)**

M. Gillard is ook hier de enige die deze grasuil optekende. Het wordt haast een traditie want dit is zijn derde opeenvolgende jaar te Presgaux. Hij zag er zijn eerste vlinder op 15 juli. Het andere exemplaar zag hij tijdens een inventarisatie te Dailly op 14 augustus. Het lijkt er dus op dat we recent deze trekvlindersoort in de regio als regelmatig kunnen bestempelen.

Vindplaatsen: **Nam.(2)**: Dailly, Presgaux.

***Peridroma saucia* (Hübner, [1808])**

De vangsten van deze vlinder op smeer te Wenduine door A. De Turck beginnen een jaarlijks weerkerend fenomeen te worden. In 2001 startte hij op 28 september met drie vlinders op smeer. Hij zag ze verder nog op 5 en 7 oktober en de laatste op 2 november.

Vindplaats: **W.Vl.(6)**: Wenduine.

***Agrotis ipsilon* (Hufnagel, 1766)**

2001 leverde weerom een normaal aantal op voor de ipsilon-uil die voor het eerst werd opgemerkt door G. Glabeke in St.-Denijs op 20 mei. In die periode waren nog een schaars aantal ander migranten aanwezig: *Nomophila noctuella* evenals *M. stellatarum* duiden op een beperkte migratie. Op 5 juni zag K. Verstraeten de volgende in Essen en in dezelfde maand zag G. Glabeke nog twee vlinders. In juli waren er slechts 2 waarnemingen: deze van B. Maes te Wachtebeke op de 4^{de} en deze van M. Gillard te Presgaux op de 17^{de}. Vanaf 8 augustus startten de regelmatig waarnemingen, toen G. Glabeke twee ipsilon-uilten zag. Dagelijks was de vlinder op

licht te vinden en deze periode liep door tot 6 september. Op het einde van die maand volgde een nieuwe serie waarnemingen vanaf de 21^{ste}, ditmaal werden vele vlinders gelokt op smeer, een entomologische bezigheid typisch voor die tijd van het jaar. Gedurende de gehele maand oktober werden 10 vlinders geregistreerd en op 28 oktober sloot J. Galoppin het jaar af te Stembert. Met 93 stuks was 2001 een normaal jaar (fig. 5).

Vindplaatsen: **Ant.(1)**: Essen; **Bra.(22)**: Anderlecht, Dilbeek, Heverlee, Vorst; **Hen.(1)**: Selognes; **Luik(1)**: Stembert; **Lux.(2)**: Marbehan; **Nam.(12)**: Anhée, Presgaux; **O.VI.(7)**: Assenede, Haaltert, Hamme, Lokeren, Wachtebeke; **W.VI.(33)**: Deerlijk, Koksijde, St-Denijs, Wenduine; **Fra(14)**: Thilay.

Chrysodeixis chalcites (Esper, 1789)

H. Kinders was de enige persoon die deze uil optekende. Hij zag de soort op licht te Hamme op 23 augustus en te Lokeren op 25 augustus. Het lijkt merkwaardig dat de uil recent enkel nog in Oost-Vlaanderen opduikt. Van de grotere aantallen, zoals die vroeger werden opgetekend, is momenteel zeker geen sprake meer.

Vindplaatsen: **O.VI.(2)**: Hamme, Lokeren.

Dwaalgasten en zwervers

Lozotaeniodes formosana (Geyer, [1830])

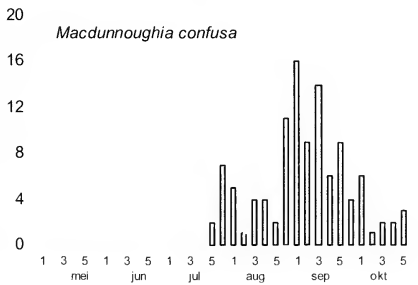
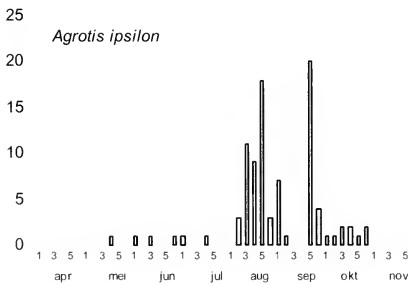
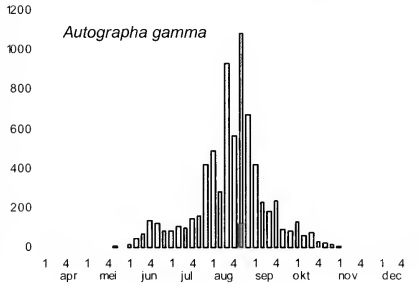
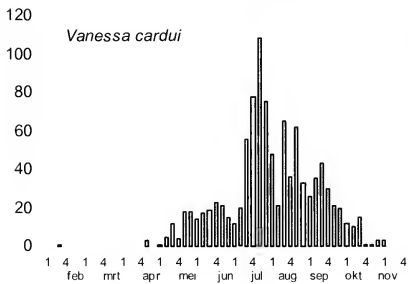
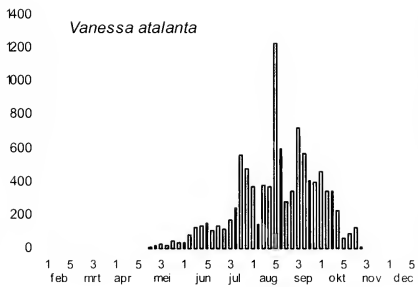
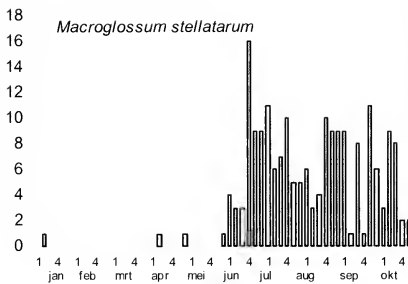
Deze bladroller was uitgesproken aanwezig, vooral in het centrum van het land, met name Oost-Vlaanderen en Brabant. Meer dan de helft werden er op 24 juni te Lokeren gezien; zowel H. Kinders als B. Maes tekenden er zes op tijdens nachtvangsten. Op 30 juni had A. Verboven er nog één op de lamp te Heverlee. Gedurende de maand juli merkten H. Kinders en B. Maes de vlinder verschillende keren op, respectievelijk te Hamme en te Lokeren. Te Vorst werd de vlinder gezien op 8 juli en 4 augustus door R. Guinez. De vliegperiode was dus erg uitgebreid in 2001.

Vindplaatsen: **Bra.(3)**: Heverlee, Vorst; **O.VI.(18)**: Hamme, Lokeren.

Hemaris fuciformis (Linnaeus, 1758)

Het valt jaar na jaar op dat deze toch algemene dagactieve vlinder zo weinig wordt opgemerkt. Zo ook verliep het in 2001 waar slechts vier personen melding maakten van de glasvleugelpijlstaart. Op 12 mei reeds zag R. D'Hont deze te Vresse-sur-Semois, waar de vlinder inheems is. Op 30 mei werd te Biron in het Luikse de tweede vlinder opgetekend door J. Chapelle. Te Biron zag R. Litt op dezelfde dag een pijlstaartje foerageren op kamperfoelie. Alle waargenomen vlinders behoorden tot de eerste generatie, zo ook de laatste waarneming op 29 juni te Vresse-sur-Semois. De enige twee rupsen zag ik zelf op 2 juli in Meix-devant-Virton op kamperfoelie, het betrof rupsen in het tweede stadium.

Vindplaatsen: **Luik(1)**: Sohan; **Lux.(2 + 2 rupsen)**: Biron, Meix-devant-Virton; **Nam.(4)**: Vresse-sur-Semois.

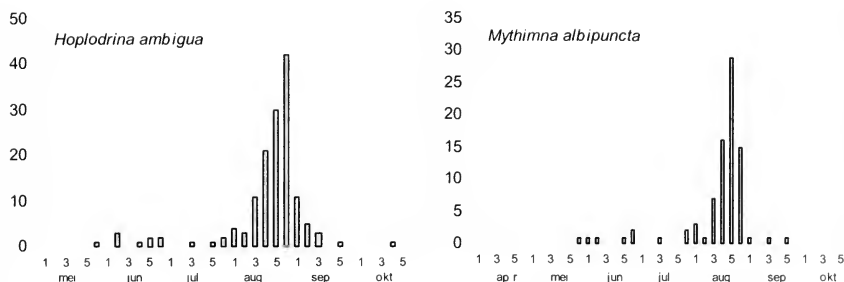


Figuren 2–7: Histogrammen per pentade van *Macroglossum stellatarum*, *Vanessa atalanta*, *Vanessa cardui*, *Autographa gamma*, *Agrotis ipsilon* en *Macdunnoughia confusa*.

***Hyles gallii* (Rottemburg, 1775)**

Op de biotopen waar de soort een tiental jaren geleden nog floreerde, worden hoe langer hoe minder rupsen aangetroffen. Zo werden ook in dit jaar slechts 6 rupsen gevonden, na lang zoeken op eerder kleine wilgenroosjes die solitair staan. Ze werden door R. Galoppin en M. Herfs gezocht op 7 augustus te Xhoffray en waren verpopingsklaar. Verleden jaar hadden we de soort nog nieuw voor de provincie Oost-Vlaanderen (Vanholder 2000). Dit illustreert het gedrag van de soort; ze is algemeen op pioniersvegetatie, maar verdwijnt er na enkele jaren om elders nieuwe kolonies te stichten.

Vindplaats: **Luik(6 rupsen)**: Xhoffray.



Figuren 8-9: Histogrammen per pentade van *Hoplodrina ambigua* en *Mythimna albipuncta*.

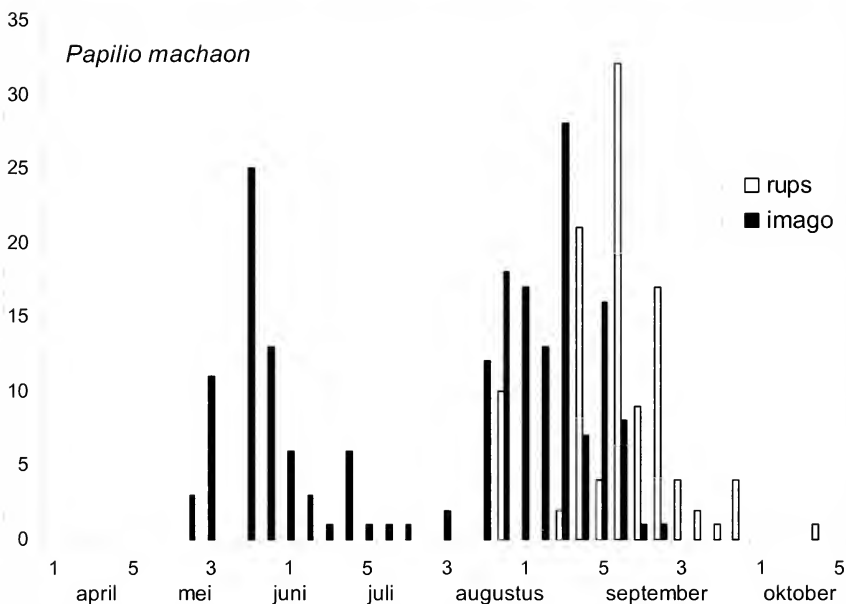
Iphiclides podalirius (Linnaeus, 1758)

Van de koningspage kregen we enkel nieuws uit de gekende biotopen. Op 23 juni werd een rups aangetroffen en op 1 juli een vlinder. Er werd nog een vrij laat exemplaar, mogelijk een tweede generatie, gezien op 23 augustus.

Papilio machaon (Linnaeus, 1758)

De eerste koninginnepage verscheen volgens H. Reumkens op 7 mei op de Bemelerberg te Maastricht. De volgende dag zag ook G. Glabeke de vlinder te St.-Denijs en de dag erna P. Durinck te Daknam. Vanaf 12 mei volgde een mooi gelukke, eerste generatie vlinders die tot begin juni doorvloog. De tweede generatie startte rond midden juli (zie fig. 6) met de vlinders die C. Taymans zag in Hotte-Fauvillers en G. Glabeke in St.-Denijs. Rupsen werden reeds op het einde van deze maand aangetroffen door R. Spronck die in St.-Jean-Sart 12 stuks vond op wortelloof. De generatie was wederom goed geslaagd en vloog goed tot begin september. In september werden vervolgens voornamelijk rupsen aangetroffen en de laatste vlinder vloog nog op de 26^{ste}. Op 20 oktober trof P. Casier te Wetteren de laatste rups aan. Er zijn 322 waarnemingen waaronder 115 rupsenvondsten bekend, wat een goede score is. Opvallend is dat in West-Vlaanderen en ook in Zeeuws-Vlaanderen de vlinder lang niet algemeen was. Dit toont aan dat de verspreidingsgrens fluctueert naargelang de jaren. In 2000 hadden we nog een flink aantal vlinders voor West-Vlaanderen.

Vindplaatsen: **Ant.(6)**: Essen; **Bra.(55)**: Aarschot, Averbode, Bertem, Boutersem, Dilbeek, Evere, Grez, Heverlee, Hotte-Fauvillers, Langdorp, Meise, Merchtem, Neerijse, Scherpenheuvel, Vorst; **Hen.(11)**: Seloignes; **Lim.(3)**: Kessenich, Remersdaal; **Luik(53)**: Ensival, Hermalle-sur-Argenteau, Ninane, Remouchamps, St.-Jean-Sart, Stembert, Theux, Verviers, Visé, Waremme, Wonck; **Lux.(14)**: Aubange, Biron, Marbehan, Musson, Ste.-Marie-sur-Semois, Torgny; **Nam.(82)**: Bièvre, Hamois, Han-sur-Lesse, Namur, Nismes, Petigny, Pregaux, St.-Sevais, Tamines, Walcourt; **O.Vl.(74)**: Aalter, Daknam, Doornzele, Drogen, Eeklo, Elversele, Erembodegem, Evergem, Haaltert, Hansbeke, Maldegem, Nevele, Schellebelle, Sinaai, Ursel, Waarschoot, Waasmunster, Watervliet, Wetteren, Zwalm; **W.Vl.(20)**: Beernem, Deerlijk, Harelbeke, Nieuwkerke-Heuvelland, St.-Denijs, Wippelgem.



Figuur 10: Histogram per pentade van *Papilio machaon*.

Aporia crataegi (Linnaeus, 1758)

Van het groot geaderd witje waren rupsenvondsten bekend in het voorjaar: C. Goossens zag een rups op 12 mei en J. L. Renneson vond er negen op *Prunus* sp. op 12 juni te Habay. De eerste vlinder werd reeds de volgende dag gezien door T. De Witte in Petite-Chapelle. Op 24 juni zag J. L. Renneson zijn eerste drie vlinders vliegen in Ste.-Marie-sur-Semois. Op die dag was de vlinder alom aanwezig in Merles-sur-Loison, waar ik zowel mannetjes als vrouwtjes zag. De laatste vlinders zijn alle door E. Walraevens gezien in juli; op de eerste, de derde en de negende. De vlinder is nergens buiten de normale biotoop aangetroffen.

Vindplaatsen: **Lux.**(3+ 9 rupsen): Habay, Ste.-Marie-sur-Semois; **Nam.**(6 + 1 rups): Heure, Matagne-la-Petite, Nismes, Petite-Chapelle, Sart-en-Fagne; **Fra**(5): Merles-sur-Loison.

Polyommatus coridon (Poda, 1761)

Dit blauwtje werd enkel gemeld op de kalkhelling van Torgny, waar sinds lang een populatie voorkomt: 3 exemplaren op 12 augustus (J. L. Renneson).

Vindplaatsen: **Lux.**(3): Torgny.

Argynnis paphia (Linnaeus, 1758)

Zoals we dat van hem gewoon geraken volgde R. D'Hont weer stipt de keizersmantel te Bièvre. De aantallen waren wel geringer dan in het voorgaande jaar. Hij noteerde de eerste vlinder op 5 juli. Doorlopend werden regelmatig keizersmantels opgemerkt gedurende de 2 vakantiemaanden. Rond midden juli

en vooral vanaf midden augustus waren er dagelijks vlinders te zien. Een opmerkelijke waarneming is deze van C. Taymans die de vlinder te Hotte-Fauvillers zag, de enige uit de provincie Brabant. Alle andere waarnemingen liggen in gebieden waar de vlinder inheems kan beschouwd worden. Op 29 augustus sloot het jaar af te Bièvre; in totaal zijn 27 vlinders gezien.

Vindplaatsen: **Bra.(1)**: Hotte-Fauvillers; **Lux.(4)**: Frahan, Orchimont; **Nam.(22)**: Bièvre, Heure, Petigny, Petite-Chapelle.

***Issoria lathonia* (Linnaeus, 1758)**

Weerom een soort met zeer weinig waarnemingen in 2001. We zijn wel verheugd vast te stellen dat ze nog steeds voorkomt in het natuurreservaat "De Westhoek" te de Panne, waar S. Spruytte twee vlinders zag op 23 augustus. Op dezelfde dag vermeldde R. D'Hont twee vlinders te Bièvre. Op 30 september vertelde J. Chapelle dat hij er die dag het vlindertje zag te Prayon.

Vindplaatsen: **Luik(1)**: Prayon; **Nam.(2)**: Bièvre; **W.Vl.(2)**: De Panne.

***Nymphalis antiopa* (Linnaeus, 1758)**

De enige rouwmantel werd op 20 mei te Petit-Fays gezien door R. D'Hont. Het wordt stilaan duidelijk dat er van de migratie uit 1995 niet veel relicten meer overblijven. In het noorden van het land werd de laatste daarvan nog in 2000 gezien.

Vindplaats: **Nam.(1)**: Petit-Fays.

***Nymphalis polychloros* (Linnaeus, 1758)**

Met slechts één waarneming doorgegeven aan het BTO, dienen we te concluderen dat er niet naar uitgekeken werd. De grote vos is in onze Ardennen algemeen. De enige vlinder in 2001 werd te Frahan opgetekend op 1 april door R. D'Hont.

Vindplaats: **Nam.(1)**: Frahan.

***Stegania trimaculata* (De Villers, 1789)**

Het gekende biotoop in de Brusselse westrand blijft elk jaar vlinders opleveren. De beide generaties waren aanwezig: op 17 mei zag W. Troukens te Dilbeek een wijfje. A. De Turck bevestigde het bestaan van een populatie te St.-Jans-Molenbeek op 6 juni. Te Vorst is de spanner door R. Guinez gezien in beide generaties: op 13 juni en op 26 augustus.

Vindplaatsen: **Bra.(4)**: Dilbeek, St.-Jans-Molenbeek, Vorst.

***Siona lineata* (Scopoli, 1763)**

Er werd in 2001 slechts spaarzaam uitgekeken naar deze overdag vliegende spanner. Het vals witje werd vooreerst opgemerkt op 9 juni te Ste.-Marie-sur-Semois door J. L. Renneson. De volgende dag zag ik een tiental vlinders overdag te Jametz. Op 24 juni zag J. L. Renneson 15 vlinders te Les Bulles. De enige vlinder uit de provincie Luik was deze van J. Michalowski op 3 juli te Ferrière.

Vindplaatsen: **Lux.(20)**: Les Bulles, Ste.-Marie-sur-Semois; **Luik(1)**: Ferrière; **Fra.(10)**: Jametz.

***Cryphia algae* (Fabricius, 1775)**

Slechts vier meldingen betekent een echt pover resultaat. De enige die oog had voor deze soort was M. Gillard. Hij identificeerde op 30 juli tijdens een inventarisatie te Fléron vier vlinders als *C. algae*.

Vindplaats: **Luik(4)**: Fléron.

***Catocala sponsa* (Linnaeus, 1758)**

De enige vlinders werden gesignaleerd uit Frankrijk: te Merles-sur-Loison, waar de vlinder overigens algemeen voorkomt, werden door F. Leeb twee van deze uilen met smeer gelokt op 1 september.

Vindplaats: **Fra(2)**: Merles-sur-Loison.

***Macdunnoughia confusa* (Stephens, 1850)**

Vooraf dank zij de volgehouden inspanning van W. Vandemaele konden we de vliegtijd van deze soort goed volgen. Hij noteerde dagelijks de aantallen tijdens inspectie van zijn bloementuin bij valavond. De vlinders foerageerden voornamelijk rond *Verbena bonariensis* en *Buddleja davidii*. Pas op 23 juli zag hij de eerste te Deerlijk. Er kon een eerste generatie afgescheiden worden met een top eind juli. Bijna dagelijks liet de uil zich bewonderen tot midden september. B. Kindts trof te Boekhoute tweemaal rupsen aan op kamperfoelie, dit gebeurde op 30 juli (ontpopte op 24 augustus) en 24 augustus (ontpopte op 18 september). De top van de volgende generatie lag begin september (zie fig. 7). Eind september tot midden oktober volgden de waarnemingen elkaar met grotere tussenpozen op. Het laatste exemplaar werd door W. Vandemaele te Deerlijk op 23 oktober gezien. Met ruim driekwart van de waarnemingen op het totaal van 114 bewees Willy dat de soort wel degelijk goed aanwezig was als je er maar naar uitkeek.

Vindplaatsen: **Ant.(1)**: Essen; **Bra.(3)**: Dilbeek; **Nam.(1)**: Ham-sur-Sambre; **O.Vl.(16)**: Boekhoute, Daknam, Deinze, Lokeren, Sinaai, Wachtebeke, Zwalm; **W.Vl.(87)**: Deerlijk, Ooigem, St.-Denijs; **Z.Vl.(3)**: Heikant; **Fra.(3)**: Merles-sur-Loison, Thilay.

***Hoplodrina ambigua* ([Denis & Schiffermüller], 1775)**

Deze vlinder was prominent aanwezig en de beide generaties waren mooi afgetekend (zie fig. 8) met een kleinere eerste generatie die startte op 27 mei met de uil die K. Janssens te Mortsel optekende. De volgende zag A. De Turck op 6 juni in St.-Jans-Molenbeek. W. Troukens stelde met behulp van zijn kleine draagbare lichtval een mooi aantal van beide generaties vast te Dilbeek en Anderlecht. Aan hem danken we voornamelijk een grote serie waarnemingen waardoor we in staat waren een mooi histogram samen te stellen van de vliegtijd. De top van de eerste generatie lag in de tweede pentade van juni. De zomergeneratie was veel uitgebreider en startte in de vijfde pentade van juli om een top te bereiken in de laatste pentade van augustus. De uil vloog nog tot ver in september en eindigde vervolgens met een nieuwe uiterste datum op 19

oktober te Vorst. Nog nooit voorheen zagen we de vlinder zo laat op het jaar als R. Guinez.

Vindplaatsen: **Ant.(4)**: Essen, Morsel; **Bra.(118)**: Anderlecht, Braine-l'Alleud, Dilbeek, Heverlee, Ottignies, St.-Jans-Molenbeek, Vorst; **O.VI.(3)**: Deinze, Gentbrugge; **W.VI.(29)**: Deerlijk, St.-Denijs, Wenduine.

***Chloantha hyperici* ([Denis & Schiffermüller], 1775)**

De biotoop te Vorst blijft bestaan. R. Guinez zag er de vlinder in beide generaties: één op 11 mei en één op 18 augustus. Het waren de enige waarnemingen van het jaar.

Vindplaats: **Bra.(2)**: Vorst.

***Lithophane leautieri* (Boisduval, [1829]) nieuw voor de provincie Brabant.**

Deze recente soort voor onze fauna (Vanholder & Bolland 2001) bracht ons ook in 2001 goed nieuws. De beide populaties aan onze kust werden bevestigd: A. De Turck ving *leautieri* op licht te Wenduine op 6 en 14 oktober. F. Bolland ving op 16 oktober één exemplaar te Westende, de plaats van de eerste vondst in België. Het meest opmerkelijk was echter een vlinder die door W. Troukens op 31 oktober te Dilbeek in zijn kleine Heath-lichtval gevangen werd. Daarmee kan hij deze uil als nieuw voor deze provincie toevoegen. De nieuwe vindplaats ligt op ruim 100 km van de kust, wat duidelijk de zwerfneiging illustreert. In ons vorig verslag (Vanholder 2001) stipuleerden we reeds dat we verwachtten dat *leautieri* een snelle uitbreiding zou nemen. Het laatste exemplaar werd weerom door A. De Turck gezien op 2 november, meteen de uiterste datum voor ons land. In Nederland gaat de normale vliegtijd tot 5 november maar er werd ooit nog één exemplaar in december gezien (Baaijens 2001).

Vindplaatsen: **Bra.(1)**: Dilbeek; **W.VI.(5)**: Wenduine, Westende.

***Mythimna albipuncta* ([Denis & Schiffermüller], 1775)**

De eerste generatie was erg beperkt, ze vloog tussen 30 mei (W. Troukens te Dilbeek) en 26 juni (S. Wullaert te Deinze). Er zijn slechts 5 vlinders gerapporteerd. De tweede generatie was uitgebreider en startte op 15 juli (A. Verboven te Heverlee). De volgende vlinders zag M. Gillard tijdens een inventarisatie en demonstratienachtvangst te Fléron op 30 juli. Daarna kwamen dagelijks waarnemingen binnen met als hoogtepunt de tweede decade van augustus (zie fig. 9). Een groot aantal waarnemingen kwam uit de provincie Brabant. De aantallen slonken na augustus al vlug. Op 1 september vond A. De Turck nog een vlinder te Wenduine op smear en A. Verboven op 12 september te Heverlee in zijn lichtvalletje. K. Verstraeten beëindigde het jaar op 24 september te Essen. Met 87 vlinders haalden we toch een behoorlijk aantal.

Vindplaatsen: **Ant.(2)**: Essen, Zwijndrecht; **Bra.(48)**: Anderlecht, Braine-l'Alleud, Dilbeek, Heverlee, Ottignies, St.-Jans-Molenbeek, Winksele; **Luik(17)**: Fléron; **Nam.(1)**: Preasgaux; **O.VI.(8)**: Assenede, Deinze, Hamme, Lokeren; **W.VI.(4)**: Koksijde, St.-Denijs, Wenduine; **Fra.(7)**: Allondrelle, Thilay.

***Eurois occulta* (Linnaeus, 1758)**

Het is zeer opmerkelijk dat deze uil –met een eerder noordelijke verspreiding– nu het tweede opeenvolgende jaar in ons land werd gemeld. De recentere waarnemingen kwamen veelal uit het noorden van het land, wat duidelijk kan wijzen op migratie met noordelijke oorsprong. Dit jaar werd *E. occulta* echter in het uiterste zuiden gezien –met name te Marbehan– waar J. Renneson op 2 juli een vlinder waarnam. Enkele decennia geleden werden de vlinders in België bijna uitsluitend in de Hoge Venen waargenomen.

Vindplaats: **Lux.(1)**: Marbehan.

Dankwoord

Aan M. Gillard voor zijn coördinatiewerk t.a.v. de Franstalige medewerkers. Aan alle medewerkers van het BTO voor het nauwkeurig noteren en doorsturen van hun gegevens en het betalen van een bijdrage. Vooral de nachtvlinderspecialisten die zich de moeite getroostten om hun waarnemingen op te tekenen verdienen een speciale vermelding. Verder dank ik het voltallige sectiebestuur van het BTO voor hun inbreng en discussie. Bijzonder woord van dank aan de Uyttenboogaert-Eliassenstichting, de Vlaamse Vereniging voor Entomologie en Entomologie-speciaalzaak Vermandel voor het verstrekken van subsidies, aan B. Misonne voor het klimatologisch overzicht van 2001. W. De Prins en T. Garrevoet wil ik danken voor het nalezen van het manuscript. Tot slot een oproep aan alle vlinderliefhebbers om zich aan te melden als medewerker. U ontvangt dan de benodigde formulieren en de laatste nieuwsbrief.

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Boekbespreking

Tshikolovets, V. V., Bidzilya, O. V. & Golovoskin, M. I. *The Butterflies of Transbaikal Siberia*. 21 × 30 cm, 320 p., 48 kleurenplaten, verspreidingskaartjes, Published by V. V. Tshikolovets, te bestellen bij W. De Prins, Nieuwe Donk, B-2100 Antwerpen, willy.deprins@antwerpen.be of bij de auteur V. V. Tshikolovets, Zoological Museum, National Academy of Sciences of Ukraine, B. Khmelnsky str. 15, UA-01601 Kiev, MSP, Ukraine, vadimchik@profit.net.ua, gebonden met stofomslag, 2002, 75,- Euro excl. postage (ISBN 966-02-1520-7).

Dit boek is het derde in de reeks "*The Butterflies of Palaearctic Asia*", na de delen over de dagvlinders van Turkmenistan en Uzbekistan. Nadien zullen nog twee delen volgen over de dagvlinders van Tadjikistan en Ladak. Het behandelde gebied strekt zich uit ten oosten van het Baikal-meer en omvat de Republiek Buriatia en de Chita oblast, plus een klein deel van de Irkoetsk oblast. Dit gebied bestaat hoofdzakelijk uit steppen al zijn er ook stukken taiga en montane biotopen. Er heerst een continentaal klimaat wat zich uit in warme zomers en erg koude winters die tot 8 maanden lang kunnen duren.

In de inleiding wordt dit gebied gekarakteriseerd en worden de vier natuurlijke zones besproken. Nadien wordt een overzicht gegeven van de reeds gedane lepidopterologische studies in deze streek en wordt het eigen onderzoek van de drie auteurs geschetst. Een lijst van de vermelde vindplaatsen, van de gebruikte afkortingen en een checklist in systematische volgorde van de vermelde taxa sluiten dit inleidend deel af.

Het hoofddeel van dit boek bestaat uit een systematische opsomming van alle waargenomen soorten in het gebied ten oosten van het Baikalmeer. Na de volledige naam, met opgave van de referentie naar de originele beschrijving en eventuele synoniemen en ondersoorten, volgt een lijstje van de gepubliceerde waarnemingen. Daarna geven de auteurs hun eigen waarnemingen. Tot slot wordt de mondiale verspreiding van de soort aangegeven, de vliegtijd, de biotoop en eventuele bemerkningen. Telkens wordt op een stippenkaart de verspreiding in het behandelde gebied aangegeven.

Achteraan worden op 25 kleurenplaten alle behandelde soorten op ware grootte afgebeeld. Meestal worden per soort verschillende exemplaren getoond en dikwijls boven- en onderzijde. Daarna volgen twee kleurenplaten met biotoopopnamen en één kleurenplaat met typemateriaal dat erg verkleind wordt weergegeven. Dat is wel jammer want precies deze exemplaren zijn belangrijker dan de gewone exemplaren. Alle kleurenplaten zijn van zeer goede kwaliteit. De vlinders worden op lichtgrijze achtergrond afgedrukt. Op aparte lijsten wordt telkens vermeld waar de afgebeelde dieren vandaan komen.

Een uitgebreide literatuurlijst en een alfabetische index sluiten het boek af. Zoals de overige delen in deze reeks is ook dit boek bijzonder verzorgd uitgegeven en het verdient een plaats in de boekenkast van iedereen die zich met Palaarctische dagvlinders bezig houdt. Men krijgt, zoals steeds in deze reeks boeken, een heleboel vlindersoorten te zien die men gewoonlijk alleen van naam kent.

W. De Prins

Contribution to the knowledge of the Noctuidae from Spain. Observations and collecting trips from September 1986 till December 2001 (Lepidoptera: Noctuidae)

Maurits De Vrieze

Samenvatting: Bijdrage tot de kennis van de Noctuidae van Spanje. Waarnemingen en verzamelreizen van september 1986 tot december 2001 (Lepidoptera: Noctuidae)

Gedurende een periode van 16 jaar (herfst 1986 tot einde december 2001) werden Noctuidae verzameld, vooral in de provincie Alicante, maar ook in de provincies Gerona, Huesca, Zaragoza, Teruel, Cuenca, Madrid, Segovia, Valencia, Murcia en Granada. De gegevens van deze reizen werden gebundeld in dit artikel. 259 Noctuidae-soorten worden vermeld, waarvan vele voor het eerst uit de provincie Alicante werden gemeld. Een lijst van de waargenomen soorten wordt opgenomen en de meest interessante soorten worden kort becommentarieerd.

Résumé: Contribution à la connaissance des noctuelles d'Espagne. Observations et expéditions entre septembre 1986 et décembre 2001 (Lepidoptera: Noctuidae)

Entre septembre de 1986 et décembre de 2001, de nombreuses noctuelles ont été récoltées, spécialement dans la province d'Alicante, mais aussi dans les provinces de Gerona, Huesca, Zaragoza, Teruel, Cuenca, Madrid, Segovia, Valencia, Murcia et Granada. Les résultats de ces expéditions sont réunis dans l'article présent. 259 espèces de noctuelles sont mentionnées, dont beaucoup pour la première fois pour la province d'Alicante. Une liste des espèces observées est présentée et les espèces les plus intéressantes sont brièvement discutées.

Key words: Faunistics – Noctuidae – Spain.

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Short description of the most important sampling sites

Albarracín (Teruel): on the 3rd of September 1991, my wife and I drove for the first time to Albarracín in the Province of Teruel, a very nice place, approximately 200 km from the eastern coast of Spain. This locality belongs to the “Reserva Nacional de los Montes Universales”, a nature reserve situated between 1100 and 1200 m above sea level. The temperature is moderate because of the altitude and at night the temperature drops usually below 10°C, even in July. The place where we did most of our observations is called Valdevécar: a valley with multicoloured rocks and slopes with low-growing and herbaceous plants. Also much *Thymus* sp. and other Labiatae. Many shrubs, *Juniperus*, *Erica* and *Calluna*. It is a splendid place and especially in the morning, there are many insect-eating birds and everywhere hangs a smell of thyme. The only visitors are a local shepherd or other entomologists or mineralogists. On the 15th of July 1992, we met Michael Fibiger in Valdevécar and we made some observations together. Except for Jávea, we did most of our observations in this place.

Ayora (Valencia): Ayora is a small town, about 50 km to the south of Valencia and only 50 km as the crow flies from the Mediterranean coast. Between Ayora and Enguera, there is a hilly country, practically uninhabited. You can drive for 20 kilometres without seeing one house! Low-growing plants,

Juniperus and *Pinus*, small groves and woods with open clearings. Here, we collected some specimens of *Mythimna punctosa*.

Belmonte de Tajo (Madrid): another splendid area at an average altitude of 700 m in the centre of Spain. Departing from Chinchón, there is a small village: Belmonte de Tajo. Between this village and Villamanrique de Tajo, there is an extensive area of unpopulated sandy, semi-desert-like plains with low-growing and herbaceous plants and small groves. This is the only place, where we collected *Metopoceras albarracina!*

Bujaraloz (Zaragoza): semi-desert and dry plains with low-growing plants, belongs to the Monegros-plains. There are small lagoons and salt-lakes, usually with a specific microclimate. There are many kinds of singing-birds, particularly many skylark-species, hoopoes and magnificent colourful bee-eaters. In the months of May and June, the plains are full of flowers, especially poppys (*Papaver* sp.) and *Artemisia herba-alba*.

Fraga (Huesca): another very good locality at an altitude of 150 m. There are thermophilous hills with rocks and low-growing plants and shrubs, *Pinus* and everywhere grows *Artemisia herba-alba* and *Thymus serpyllum*. The temperature in the evening and at night stays remarkably constant and is usually around 18–20°C.

Jávea (Alicante): this locality is situated at the extreme eastern point of the Mediterranean coast. Some miles from the coast, there are dry and hot hilly slopes, rocky grasslands and Mediterranean forests with open clearings. Some urbanization is constructed in this area and my brother-in-law lives here and from this place on, most of the observations were done. Every evening, a small light trap (TL-blacklight of 6 Watt) was placed on a table until the following morning. We made also observations with a 125 Watt Hg lamp. To the east, one can see the sea and to the northwest there is a mountain of 800 m, the Mongo. The mountain and the slopes are a National Park. In Jávea, there are observations from the first day of January to the last day of December.

Monachil (Granada): on the Sierra Nevada in the surroundings of the Parador, which is situated at 2.550 m! Above the tree line and very cold at night. Because of the bad weather and the omnipresent Policía in this Natural Park-Area, we did only one observation with a small lighttrap: *Standfussiana dalmata* and *Hadena clara* were collected here. In the early morning, when I get the lighttrap, the temperature was below 0°C in July 1992!

San Ildefonso (Segovia): a hilly country at an altitude of 1200 m at the foot of the Sierra de Guadarrama in the centre of Spain. A very good climate because of the altitude. The nights, however, are cold and usually there is a cold wind from the Sierra de Guadarrama. Biotopes with low-growing and herbaceous plants with many rare moth species: *Hadena sancta*, *Cleonymia baetica*, *Amephana anarhinei* and many others.

Uña (Cuenca): an area with very little population, belonging to the "Reserva Nacional de la Serranía de Cuenca". At an altitude of 1200 m, there are steep canyon-like rocks with capricious forms and beautiful valleys. There are many vultures, nesting in the rocks. Between the canyons, there are basins with small

roads and a small river: the Río Júcar, which banks are luxuriant green and full of water plants and even shrubs and trees (*Populus* sp., *Salix* sp.). During the day it can be hot but at nightfall, the temperature drops usually under 10°C! A very good place for observations!

Vidrerres (Gerona): a small town in the northeast of Spain, only 10 km from the coast as the crow flies. Inward of the coast, there are Mediterranean forests with many *Quercus* sp. (*Quercus ilex*, *Quercus robur*), *Pinus* sp., *Arbutus unedo* and low-growing plants with many *Erica* and *Calluna* sp. and many species of bracken. The temperature at night is usually between 15 and 20°C.

Results and remarks

For systematics and nomenclature, I have followed Karsholt & Razowski (1996).

Oxicesta serratae Zerny, 1927: 1 in Uña (Cuenca) on 4.VII.1992, 1 in Fraga (Huesca) on 5.VI.1993 and 10 in San Martín del Río (Teruel) on 24.V.1993.

Moma alpium (Osbeck, 1778): 1 in Vidrerres (Gerona) on 7.VI.1993.

Acrionicta tridens ([Denis & Schiffermüller], 1775): Few specimens in San Martín del Río (Teruel) on 24.V.1993. Regularly in Jávea (Alicante), especially in IX. Last seen in IX.1996.

Acrionicta psi (Linnaeus, 1758): Few specimens in Vidrerres (Gerona) on 7.VI.1993.

Acrionicta aceris (Linnaeus, 1758): 1 in Uña (Cuenca) on 4.VII.1992.

Acrionicta megacephala ([Denis & Schiffermüller], 1775): Regularly in Jávea (Alicante) during IX.1986 – IX.1995.

Acrionicta auricoma ([Denis & Schiffermüller], 1775): 1 in Albarracín (Teruel) on 8.IX.1991 and 1 in Vidrerres (Gerona) on 7.VI.1993.

Acrionicta euphorbiae ([Denis & Schiffermüller], 1775): 1 in San Ildefonso (Segovia) on 2.VI.1993.

Acrionicta rumicis (Linnaeus, 1758): 1 in Albarracín (Teruel) on 12.X.1994.

Craniophora ligustri ([Denis & Schiffermüller], 1775): 3 in Vidrerres (Gerona) on 7.VI.1993.

Cryphia pallida (Bethune-Baker, 1894): Abundant in Jávea. Alicante each year in IX–X from 1986 till 2001 and also in Cornellia del Terri (Gerona) on 24.IX.1994.

Cryphia ravula (Hübner, [1813]): 2 in Puerto Lumbreras (Murcia) on 11.VII.1992 and 1 in IV.2001. Few specimens in Jávea (Alicante) in III–IV.

Cryphia vandalusiae (Duponchel, 1842): From time to time only in Jávea (Alicante): 2 in IX–X.1997, 1 in XI.2000, and 3 in IX.1999. Identification by J. L. Yela.

Cryphia gea (Schawerda, 1934): 2 in Albarracín (Teruel) on 3.IX.1991 and 1.X.1994.

Cryphia domestica (Hufnagel, 1766): 1 in Albarracín (Teruel) on 3.IX.1991.

Cryphia muralis (Forster, 1771): Abundant in Jávea (Alicante) from VII–VIII.1990 to IX–X.2000.

Bryonicta pineti (Staudinger, 1859): Abundant in Jávea (Alicante) from II–III.1987 to IX–XII.2001. Also 1 in Fraga (Huesca) on 5.VI.1993 and in Cornellia del Terri (Gerona) on 24.IX.1994 in few numbers.

Raphia hybris (Hübner, [1813]): 5 in San Martín del Río (Teruel) on 24.V.1993. Caterpillar as *Populus* sp.

Nodaria nodosalis (Herrich-Schäffer, 1851): Abundant in Jávea (Alicante) from IX.1986 to XII.2001. Also 1 in Lloret de Mar (Gerona) on 7.X.1994.

Herminia tarsicrinalis (Knoch, 1782): Few specimens in Vidreres (Gerona) on 7.VI.1993.

Pechipogo plumigeralis (Hübner, 1825): 1 in Jávea (Alicante) in IV.1995.

Catocala elocata (Esper, 1787): 1 during the day, resting on a wall in Noguera (Teruel) on 4.IX.1991. Also 3 in Fraga (Huesca) on 27.IX.1994.

Catocala conjuncta (Esper, 1787): 1 in Albarracín (Teruel) on 3.IX.1991.

Catocala conversa (Esper, 1783): Abundant in Albarracín (Teruel) on 13–15.VII.1992.

Clytie illunaris (Hübner, 1793): 2 specimens in Zuera (Zaragoza) on 22.V.1993. Foodplant: *Tamarix gallica*.

Ophiusa tirhaca (Cramer, 1773): Regularly in Jávea (Alicante) from IX–X.1994 to IV.2000 and in practically all the months of the year.

Dysgonia algira (Linnaeus, 1767): Abundant in Jávea (Alicante) and in Vidreres (Gerona) on 7.VI.1993. Also in Cornellia del Terri (Gerona) on 24.IX.1994.

Dysgonia torrida (Guenée, 1852): A very rare species for Spain, only along the Mediterranean coast. In 16 years, only one specimen in July 1990 in Jávea (Alicante). Caterpillars on *Rubus* sp., *Salix* sp., *Genista*, etc.

Prodotis stolidia (Fabricius, 1775): 2 in Fraga (Huesca), 1 on 5.VI.1993 and 1 on 27.IX.1994.

Drasteria cailino (Lefèbvre, 1827): 4 in Uña (Cuenca) on 4.VII.1992.

Lygephila craccae ([Denis & Schiffermüller], 1775): Abundant in Jávea (Alicante) from IX–XII.1987 to IX–X.2000 and also many in Fraga (Huesca) on 5.VI.1993 and 4.X.1994.

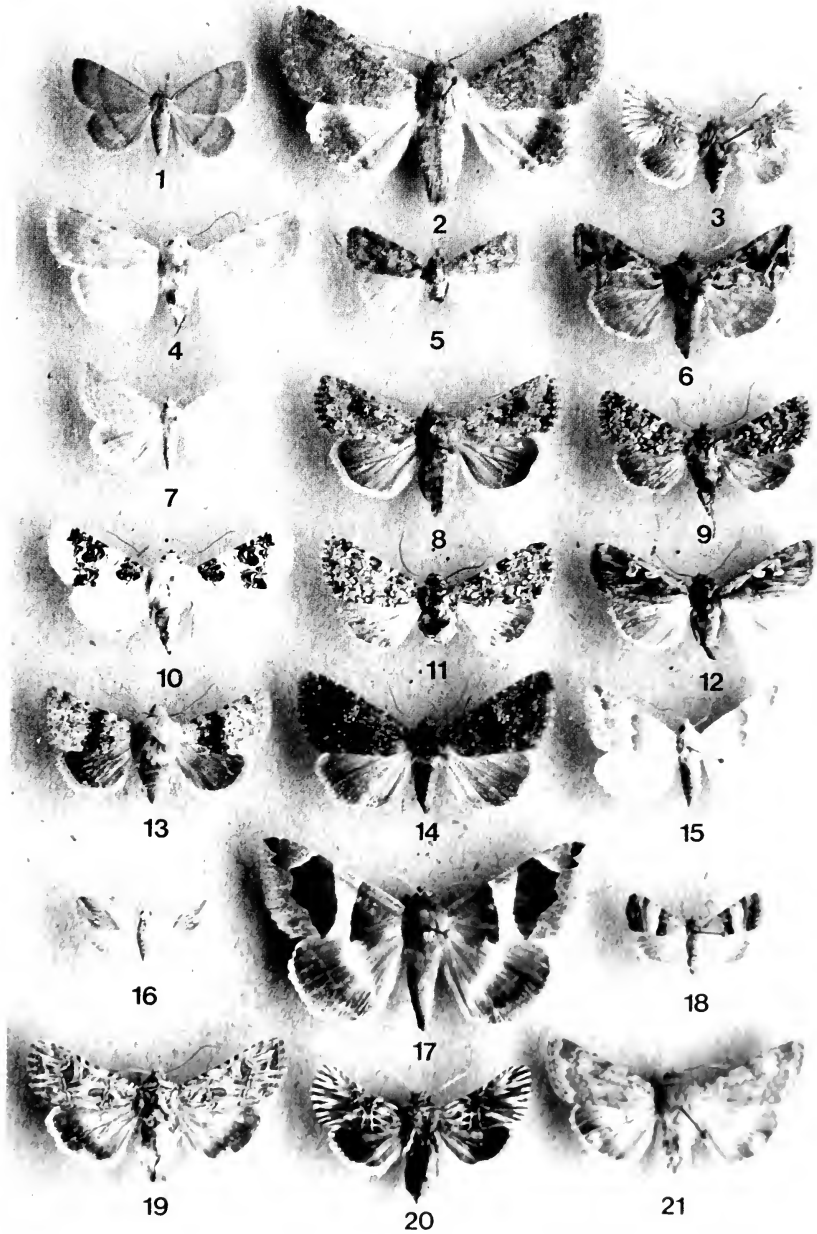
Autophila dilucida (Hübner, 1793): 1 in Albarracín (Teruel) on 16.VII.1992.

Catephia alchymista ([Denis & Schiffermüller], 1775): 5 in Vidreres (Gerona) on 7.VI.1993.

Aedia leucomelas (Linnaeus, 1758): 1 in Jalon (Alicante) on 10.IX.1991. Regularly in Jávea (Alicante) in IV.1990, VII–VIII.1990 and IX–X.1992. 1 in Albarracín (Teruel) on 2.X.1994.

Legend of Plate 1: 1.– *Phytometra sanctiflorentis* 2.– *Pandema robusta* 3.– *Amephana anarrhini* 4.– *Eremodrina ibeasi* 5.– *Cryphia vandalusiae* 6.– *Ctenoplusia accentifera* 7.– *Rhypagla lacernaria* 8.– *Mythimna languida* 9.– *Hadena orihuela* 10.– *Hadena laudeti* 11.– *Hadena exspectata* 12.– *Euxoa wagneri* 13.– *Metopoceras albarracina* 14.– *Hadjina wichti* 15.– *Eublemma amoena* 16.– *Eublemma cochylionides* 17.– *Dysgonia torrida* 18.– *Pseudozarba bipartita* 19.– *Discestra dianthi* 20.– *Omphalophana serrata* 21.– *Heliothis nubigera*.

Plate 1



Pandesma robusta (Walker, 1858): Only in Jávea (Alicante). New for Alicante. (Munoz & Tormo 1995). The first 2 in IX.1995. A subtropical species, especially known from the Canary Islands and Northern Africa. Caterpillars are feeding on *Acacia* sp. and *Prosopis*. For Europe, the moth is rarely observed. From 1996 until 2001: every year in a few numbers: already 30 specimens!

Tyta luctuosa ([Denis & Schiffermüller], 1775): Fraga (Huesca) on 5.VI.1993, abundant.

Callistegia mi (Clerck, 1759): A few specimens in Fraga (Huesca) on 5.VI.1993.

Euclidia glyphica (Linnaeus, 1758): 1 in Jávea (Alicante) in VI.1989.

Laspeyria flexula ([Denis & Schiffermüller], 1775): 1 in Vidreres (Gerona) on 7.VI.1993.

Hypena rostralis (Linnaeus, 1758): 3 in Cornellia del Terri (Gerona) on 24.IX.1994.

Hypena obsitalis (Hübner, [1813]): 2 in Jávea (Alicante) in XI–XII.1996.

Hypena lividalis (Hübner, 1796): 3 in Cornellia del Terri (Gerona) on 24.IX.1994. Regularly in Jávea (Alicante) in II–III.1996 and in XI–XII.1995.

Phytometra sanctiflorentis (Boisduval, 1834): 6 in Fraga (Huesca) on 4–5.VI.1993, 2 in Peñalba (Huesca) on 28.VI.1992, 2 in Belmonte de Tajo (Madrid) on 20.V.1993. Local and endemic in the Iberian Peninsula.

Phytometra viridaria (Clerck, 1759): Abundant in Albarracín (Teruel) on 13–16.VII.1992. In Jávea (Alicante) regularly from IV.1991 to IX.2000.

Raparna conicephala (Staudinger, 1870): Few specimens in Fraga (Huesca) on 4.VI.1993. Some specimens in Zuera (Zaragoza) on 22.V.1993.

Parascotia nissenii (Turati, 1905): 1 in Vidreres (Gerona) on 7.VI.1993.

Zebeeba falsalis (Herrich-Schäffer, 1839): 1 in Gata (Alicante) on 2.IX.1991, 2 in Jávea (Alicante) in IV.1997 and in IV.1999.

Eutelia adularix (Hübner, [1813]): Several in Jalón (Alicante) on 10.IX.1991. Each year from 1986 to 2001 in Jávea (Alicante) in two generations in III–IV and in IX–X.

Macdunnoughia confusa (Stephens, 1850): Few specimens in Fraga (Huesca) on 26.IX.1994. Some specimens in Zuera (Zaragoza) on 22.V.1993.

Autographa gamma (Linnaeus, 1758): Abundant in Jávea (Alicante) from I.1987 to XII.2001 and in Fraga (Huesca) on 26.IX.1994.

Thysanoplusia orichalcea (Fabricius, 1787): Single specimens in I–II, IV, XI–XII from 1986 to 2001 in Jávea (Alicante).

Thysanoplusia daubei (Boisduval, 1840): 1 in Fraga (Huesca) on: 4.X.1994. Regularly seen in small numbers in several generations from V to X in Jávea (Alicante) from IX.1987 to X–XII.2001. Larva on *Sonchus* sp., *Chondrilla* sp., *Chicorium*, etc.

Trichoplusia ni (Hübner, 1803): Few in Fraga (Huesca) on 4.X.1994. Abundant in Jávea (Alicante) from IV.1986 to XII.2001.

Ctenoplusia accentifera (Lefèbvre, 1827): Only two specimens in Jávea (Alicante): 1 in XI–XII.1994 and 1 in II–III.1995. Not mentioned from Alicante before (Munoz & Tormo 1995). This tropical and subtropical species is seen

rarely along the Mediterranean coast. Caterpillar on *Mentha* sp. and *Cichorium* sp.

Chrysodeixis chalcites (Esper, 1789) Abundant in Jávea (Alicante) from 1986 to 2001 and in Lloret de Mar (Gerona) on 6.X.1994.

Emmelia trabealis (Scopoli, 1763): Abundant in Zuera (Zaragoza) on 22.V.1993.

Acontia lucida (Hufnagel, 1766): Few specimens in Fraga (Huesca) on 4.VI.1993.

Pseudozarba bipartita (Herrich-Schäffer, 1850): Rare and local, especially along the southern Mediterranean coast: 2 in Gata (Alicante) on 2.IX.1991 and 1 in Jávea (Alicante): IX–X.1997. New for Alicante (Munoz & Tormo 1995).

Alvaradoia numerica (Boisduval, 1840): Abundant in Albarracín (Teruel) on 16.VII.1992. Also many in Zuera (Zaragoza) on 22.V.1993.

Coccidiphaga scitula Rambur, 1833: 1 in Jávea (Alicante): IX.1997. A cosmopolite subtropical species. The larva eats eggs of *Saissetia* sp. (Homoptera, Coccidae).

Odice arcuinna (Hübner, 1790): 1 in Albarracín (Teruel) 15.VII.1992.

Odice jucunda (Hübner, [1813]): 4 in Gata (Alicante) on 2.IX.1991, 5 in Zuera (Zaragoza) on 22.V.1993, 3 in Fraga (Huesca) on 27.IX.1994, 3 in Belmonte de Tajo (Madrid) on 31.V.1993.

Eublemma candidana (Fabricius, 1794): Abundant in Albarracín (Teruel) on 13–15.VII.1992. Few specimens in Fraga (Huesca) on 4.VI.1993.

Eublemma cochylioides (Guenée, 1852): 3 in Puerto Lumbreras (Murcia) on 11.VII.1992. In Jávea (Alicante): every year a few specimens from II.1993–XII.2001.

Eublemma ostrina (Hübner, 1808): 2 in Fraga (Huesca) on 26.IX.1994, 1 in Vidreres (Gerona) on 6.VI.1993. Regularly in a few specimens every year in Jávea (Alicante): from II.1989–X.2001.

Eublemma parva (Hübner, 1808): 2 in Puerto Lumbreras (Murcia) on 11.VII.1992. Regularly in a few specimens every year in Jávea (Alicante): from IV.1990–IX.2001.

Eublemma amoena (Hübner, 1803): 10 in Bujaraloz (Zaragoza) on 21.V.1993. Larva on *Onopardum acanthium*.

Eublemma purpurina ([Denis & Schiffermüller], 1775): 3 in Albarracín (Teruel) on 4.IX.1991 (small specimens from the second generation) and 2 on 1.VII.1992. Also 1 in Vidreres (Gerona) on 7.VI.1993. New for Alicante: 2 specimens in Jávea in IV.1996 and IV.2001. Although this is a Noctuid from the warmer parts of Europe, there are a few specimens captured in Finland (Skou 1991: 57).

Eublemma pura (Hübner, [1813]): Abundant in Albarracín (Teruel) on 15.VII.1992.

Glossodice polygramma (Duponchel, 1842): Abundant in Albarracín (Teruel) during 30.VI–1.VII.1992 and 14–16.VII.1992.

Rhyagla lacernaria (Hübner, [1813]): 10 in Albarracín (Teruel), 3 smaller specimens from the second generation on 4–6.IX.1991, and 7 from the first

generation on 30.VI–2.VII.1992. Few specimens in Fraga (Huesca) and in Zuera (Zaragoza). Local and in small numbers.

Metachrostis velox (Hübner, [1813]): 4 in Jávea (Alicante): 3 in IX–X.1997 and 1 in IX.2001. Only in Jávea.

Xanthodes albago (Fabricius, 1794): 5 in Jávea (Alicante): 1 in IX–X.1997. 2 in IX–X.1998, 1 in IX–X.1999, and 1 in XI.2000. Another subtropical species, sporadically and rarely seen along the southern Mediterranean coast. The larva lives on *Malva* sp.

Cucullia bubaceki Kitt. 1925: 1 in Bujaraloz (Zaragoza) on 21.V.1993. 5 in Fraga (Huesca) on 4–5.VI.1993. Endemic to Central-Spain, a splendid species, typical for semidesert-like habitats and thermophilous hills: only seen in Bujaraloz and Fraga, where the foodplant is abundant: *Artemisia herba-alba*.

Cucullia santolinae Rambur, 1834: 7 in Jávea (Alicante) between XII.1994 and XII.2000: 6 in XII and 1 in IV.1999. A xerophilous species, always very sparse in the southern parts of its distribution area. There is certainly a "winter" brood as also mentioned by Ronkay (Ronkay & Ronkay 1994: 87). The caterpillars are living on *Artemisia arborea* and *Artemisia campestris* and on *Santolinae* sp.

Cucullia calendulae Treitschke, 1835: In Jávea (Alicante), a univoltine species, flying in the winter from IX–I. Abundant all the years.

Shargacucullia lychnitis (Rambur, 1833): Jávea (Alicante), 1 in IV.1999.

Shargacucullia erythrocephala (Wagner, 1914): 5 in San Martín del Río (Teruel) on 24.V.1993. Identification by J. L. Yela.

Shargacucullia thapsiphaga (Treitschke, 1826): Vidreres (Gerona), 1 on 6.VI.1993. Identification by J. L. Yela.

Shargacucullia reisseri (Boursin, 1933) (det. J. L. Yela): Just one male in San Martín del Río (Teruel) on 24.V.1993.

Calophasia platyptera (Esper, 1790): Only in Jávea (Alicante), 1 in II–III.1994, 2 in IV.1996, 4 in IV.1998, 1 in IX.1999, and 1 in IV.2001.

Omphalophana serrata (Treitschke, 1835): Always rare and local, only collected in Belmonte de Tajo (Madrid), 2 on 31.V.1993 and in Jávea (Alicante) in small numbers every year from III to V from 1990 to 2000. The larva feeds on the flowers and seeds of *Scabiosa* sp.

Lophoterges millieri (Staudinger, 1871): Only 1 specimen in Albarracín (Teruel) on 15.VII.1992.

Epimecia ustula (Freyer, 1835): 2 specimens in Albarracín (Teruel), 1 on 15.VII.1992 and 1 on 28.V.1993. Another specimen in San Martín del Río (Teruel) on 24.V.1993.

Cleonymia baetica (Rambur, 1837): 4 in Albarracín (Teruel) on 13–15.VII.1992 and 1 in San Ildefonso (Segovia) on 2.VI.1993.

Cleonymia yvanii (Duponchel, 1833): Abundant in Albarracín (Teruel) on 26.V–4.VI.1993 and on 13–15.VII.1992. Also in Fraga (Huesca) on 4.VI.1993.

Amephana anarrhini (Duponchel, 1840): A rare species, inhabiting strongly insolated rocky places: only one specimen in Albarracín (Teruel) on 30.VI.1992 and one specimen in San Ildefonso (Segovia) on 2.VI.1993.

Amephana aurita (Fabricius, 1787): Each year in IV in small numbers in Jávea (Alicante) and 1 in Fraga (Huesca) on: 5.VI.1993.

Recoropha canteneri (Duponchel, 1833): Abundant in Jávea (Alicante) from II–III to IX–X and also abundant in Fraga (Huesca) on 4.VI.1993. Many in Lloret de Mar (Gerona) on 6.X.1994.

Metopoceras felicina (Donzel, 1844): 2 in Fraga (Huesca) on 4.VI.1993, 2 in Belmonte de Tajo (Madrid), 1 in Bujaraloz (Zaragoza) on 21.V.1993 and in Jávea (Alicante): 1 in IV.2000 and 1 in IV.2001.

Metopoceras albarracina Hampson, 1918: A typical species for semi-arid habitats, endemic to Spain. Only in Belmonte de Tajo (Madrid): 30 specimens from 28–31.V.1993. Larva polyphagous on herbaceous plants (Ronkay & Ronkay 1995: 117).

Allophytes alfaroi Agenjo, 1951: Endemic in the Iberian Peninsula. In Albarracín (Teruel) 3 specimens on 30.IX–3.X.1994 and in Jávea (Alicante) during IX–XII 1993–2001. New for Alicante (Tormo & Rietz 1998: 13).

Stilbia andalusiaca Staudinger, 1892: Only in Albarracín (Teruel) 3 specimens on 3.IX–6.IX.1991.

Stilbia philopalís Graslin, 1852: Abundant in Fraga (Huesca) on 28.IX.1994 and regularly in few numbers in Jávea (Alicante) during IX.1994–IX.2001.

Xylocampa areola (Esper, 1789): Very abundant in Jávea (Alicante) from 1987 till 2001, especially in I–II and X–XI–XII during the winter (Ronkay, Yela & Hreblay 2001).

Pyrois effusa (Boisduval, 1828): Only in Jávea (Alicante), few specimens in IV.1990, 2 in XI–XII.1999 and 1 in IV.2000.

Diloba caeruleocephala (Linnaeus, 1758): Regularly in Jávea (Alicante) in IX–XI from 1990 – XII.2001.

Condica viscosa (Freyer, 1831): Abundant in Jávea (Alicante) in IV–V and especially in IX–XII each year. In Puerto Lumbreras (Murcia) on 11.VII.1992, many specimens.

Synthymia fixa (Fabricius, 1787): 1 in IV.1997 in Jávea (Alicante).

Heliothis viriplaca (Hufnagel, 1766): few specimens in Belmonte de Tajo (Madrid) on 28–31.V.1993. Abundant in San Idefonso (Segovia) on 2.VI.1993. Abundant in San Martín del Río (Teruel) on 24.V.1993 and abundant in Zuera (Zaragoza) on 22.V.1993.

Heliothis peltigera ([Denis & Schiffermüller], 1775): Peñalba (Huesca) on 28.VI.1992: abundant and regularly in IV–V and in IX–XI each year in Jávea (Alicante).

Heliothis nubigera Herrich-Schäffer, 1851: Very rare, just one specimen in Jávea (Alicante). This is an eastern Mediterranean, subtropical species. New for the Province of Alicante and not mentioned in the Guide of Alicante (Munoz & Tormo 1995: 78).

Helicoverpa armigera (Hübner, [1808]): Very abundant in Jávea (Alicante) from IV–XII all the years and in Fraga (Huesca) on 28.IX.1994.

Periphanes delphinii (Linnaeus, 1758): just 3 specimens in Albarracín (Teruel): 1 on 30.VI.1992, 1 on 1.VII.1992 and 1 on 14.VII.1992.

Chazarria incarnata (Freyer, 1838): An Asiatico-mediterranean species. Only 3 specimens, one in Bujaraloz (Zaragoza) on 21.V.1993, one in Uña (Cuenca) on 2.VII.1992 and one in San Ildefonso (Segovia) on 2.VI.1993. Also in the eastern part of its range, it is rare everywhere (Poltavsky 2000: 131).

Elaphria venustula (Hübner, 1790): Abundant in Vidreres, Gerona and in Santa Coloma de Farners (Gerona) on 6–8.VI.1993.

Caradrina morpheus (Hufnagel, 1766): Only in Albarracín (Teruel) one specimen on 30.VI.1992.

Platyperigea aspersa (Rambur, 1834): Only in Albarracín (Teruel) 13–14.VII.1992, abundant here.

Platyperigea kadenii (Freyer, 1836): One specimen in IV.1999 and one in IV.2000 in Jávea (Alicante). New for the Province of Alicante and not mentioned in the last "Suplemento Revista Saturnia" from 1998.

Platyperigea proxima (Rambur, 1837): Just 1 in San Martín del Río (Teruel) on 24.V.1993.

Platyperigea germainii (Duponchel, 1835): Regularly in IX from 1997–2000 in few numbers in Jávea (Alicante).

Paradrina clavipalpis (Scopoli, 1763): Very abundant in Jávea (Alicante) in II–IV and especially in IX–X for the whole period of observations. Abundant also in Belmonte de Tajo (Madrid) on 27–31.V.1993.

Paradrina noctivaga (Bellier, 1863): Regularly in Jávea (Alicante), univoltine in II–V for the whole period of observations. Also in Belmonte de Tajo (Madrid) on 27–31.V.1993. Few specimens in Albarracín (Teruel) on 26.V.1993 and in San Martín del Río (Teruel) on 24.V.1993.

Paradrina flavirena (Guenée, 1852): Two-brooded sister-species of *P. noctivaga*: abundant in Jávea (Alicante) during IV.1994, IV.1997 and especially in IX–X. Also in Albarracín (Teruel) on 26.V.1993 and abundant in Belmonte de Tajo (Madrid) on 27–31.V.1993.

Eremodrina ibeasi (Fernández, [1918]): Very rare in Spain, just one specimen in Jávea (Alicante) in IX 1998.

Eremodrina armeniaca (Boursin, 1936): 1 in Jávea (Alicante) in X.1994.

Hoplodrina ambigua ([Denis & Schiffmüller], 1775): Very abundant in Jávea (Alicante) from IV–XII for the whole period of observations. Also some specimens in Belmonte de Tajo (Madrid) on 27–31.V.1993.

Charanyca trigrammica (Hufnagel, 1766): 1 in Vidreres (Gerona) on 7.VI.1993.

Atypha pulmonaris (Esper, 1790): 1 in Santa Coloma de Farners (Gerona) on 8.VI.1993. Very rare in Spain in the Pirineos and in the Cordillera Cantábrica. (Calle 1982: 136).

Spodoptera exigua (Hübner, [1808]): Very abundant in Jávea (Alicante) from IV–XII. Also in Vidreres (Gerona) on 7.VI.1993.

Spodoptera cilium (Guenée, 1852): Very abundant in Jávea (Alicante) from IV–XII.

Spodoptera littoralis (Boisduval, 1833): Abundant in Jávea (Alicante) especially in IX–XII.

Sesamia nonagrioides (Lefèbvre, 1827): In Jávea (Alicante) in IV.1997 and in IX.1996 in a few specimens. Also abundant in Cornellia del Terri (Gerona) on 24.IX.1994.

Hadjina wichti (Hirschke, 1904): Endemic in Spain and one of the rarest species of Noctuidae in Europe! Calle (1982: 140) writes: "Con gran rareza". Hirschke described in 1904 a new Spanish species, that was captured by Wicht in Algezares (Murcia). There are only a few observations of this species, e. g. in 1978: F. Bolland at Rincon de Loix (Alicante), and there are only few references about this species (Agenjo 1983) but everywhere is mentioned that the moth is flying in one generation from III to V. By making nearly daily observations over all the months of the year and this for many years, we could take a few specimens also in IX. This means that there is a second generation too, at least a partial one (De Vrieze 1996: 152). Only in Jávea (Alicante).

Proxenus hospes (Freyer, 1831): Abundant in Jávea (Alicante) from IV–XII during the whole period of observations.

Rusina ferruginea (Esper, 1785): Few specimens in Santa Coloma de Farners (Gerona) on 8.VI.1993.

Polyphaenis sericata (Esper, 1787): 1 in Albarracín (Teruel) on 16.VII.1992.

Polyphaenis xanthochloris Boisduval, 1840: Always very local, 2 in Ayora (Valencia) on 8.IX.1991 and 3 in Albarracín (Teruel) on 4–6.IX.1991.

Thalophila vitalba (Freyer, 1834): Abundant in Albarracín (Teruel) on 4–6.IX.1991, and 1 in Cornellia del Terri (Gerona) on 24.IX.1994.

Euplexia luciparia (Linnaeus, 1758): Many in Santa Coloma de Farners (Gerona) on 8.VI.1993.

Phlogophora meticulosa (Linnaeus, 1758): Some specimens in Jávea (Alicante) in IV.1994.

Chloantha hyperici ([Denis & Schiffermüller], 1775): Jávea (Alicante), abundant in II–V and in IX–X every year.

Callopietria juvenina (Stoll, 1782): Just in Vidreres (Gerona) 3 specimens on 6–7.VI.1993.

Methorasa latreillei (Duponchel, 1827): 2 in Jávea (Alicante) in IX–X.1993 and 1 in Albarracín (Teruel) on 15.VII.1992.

Pseudenargia ulicis (Staudinger, 1859): Always local and rare. Only seen in Fraga (Huesca) on 27–28.IX.1994 and 4.X.1994, and in Albarracín (Teruel) during 30.IX–2.X.1994. Short flying period: from the end of IX until mid-X. Caterpillar on various low-growing plants.

Apamea monoglypha (Hufnagel, 1766): Abundant in Uña (Cuenca) on 2–5.VII.1992.

Apamea arabs (Oberthür, 1881): Just 1 in San Martín del Río (Teruel) on 24.V.1993 and 1 in San Ildefonso (Segovia) on 1.VI.1993.

Apamea anceps ([Denis & Schiffermüller], 1775): 1 in Albarracín (Teruel) on 30.VI.1992 and 1 in Zuera (Zaragoza) on 22.V.1993.

Apamea alpigena (Boisduval, 1837): Rare in Albarracín (Teruel) 2 specimens on 30.VI.1992 and 1 on 26.V.1993, furthermore 1 in San Martín del Río (Teruel) on 24.V.1993.

Oligia versicolor (Borkhausen, 1792): 1 in Santa Coloma de Farners (Gerona) on 8.VI.1993.

Mesapamea secalis (Linnaeus, 1758): 1 in Jávea (Alicante) in IX.2000.

Eremobia ochroleuca ([Denis & Schiffermüller], 1775): Just 1 in Peñalba (Huesca) on 28.VI.1992.

Luperina testacea ([Denis & Schiffermüller], 1775): Some specimens in Albarracín (Teruel) on 4.IX.1991 and 2 in Fraga (Huesca) on 4.X.1994.

Luperina nickerlii (Freyer, 1845): 2 in Fraga (Huesca) on 4.X.1994.

Rhizodra lutosa (Hübner, 1803): 1 in Albarracín (Teruel) on 3.X.1994.

Gortyna xanthenes (Germar, 1842): From IX.1997–IX.2001: few specimens in Jávea (Alicante).

Oria musculosa (Hübner, [1808]): Just 1 in Uña (Cuenca) on 4.VII.1992.

Discestra trifolii (Hufnagel, 1766): Abundant in Jávea (Alicante) from IV–XII during the whole period of observations. Also in Zuera (Zaragoza) 22.V.1993 and in Fraga (Huesca) on 28.IX.1994 and on 4.X.1994.

Discestra pugnax (Hübner, 1824): 1 in Albarracín (Teruel) 13.VII.1992. Regularly in Jávea (Alicante) 2 in II–III.1993 and a few specimens in IX–XII.

Discestra dianthi (Tauscher, 1809): This Noctuid is only known in Spain from the Northeast and captured only in Peñalba (Huesca) 2 on 28.VI.1992 and 2 in Bujaraloz (Zaragoza) on 21.V.1993. It is also known in other subspecies in Morocco, Asia, and in Central-Europe: Slovakia, Austria, Russia, Hungary and South-Ukraine, but always very local. The larva feeds on *Aster trifolium*, *Lactuca* sp., *Polygonum* sp. and *Taraxacum* sp. (Nowacki 1998: 35).

Discestra sodae (Rambur, 1829): Many in Bujaraloz (Zaragoza) 21.V.1993. Some specimens in Zuera (Zaragoza) 23.V.1993 and some specimens in Fraga (Huesca) on 28.IX.1994. Identification by J. L. Yela.

Discestra sociabilis (Graslin, 1850): Many specimens in Bujaraloz (Zaragoza) 21.V.1993. Many in Zuera (Zaragoza) 23.V.1993 and many in Fraga (Huesca) 4–5.VI.1993, 28.IX.1994 and 4.X.1994. Identification by J. L. Yela.

Anarta myrtilli (Linnaeus, 1761): Just 1 in Vidreres (Gerona) 6.VI.1993.

Lacanobia w-latinum (Hufnagel, 1766): Abundant in Albarracín (Teruel) on 30.VI.1992. Abundant in Uña (Cuenca) on 4.VII.1992.

Lacanobia contigua ([Denis & Schiffermüller], 1775): 2 in Uña (Cuenca) on 4.VII.1992.

Hada plebeja (Linnaeus, 1761): Only 2 in Capilleira (Granada) on 8.VII.1992.

Aetheria dysodea ([Denis & Schiffermüller], 1775): Regularly in IV–V and in VIII–X in Jávea (Alicante), also in few numbers in Fraga (Huesca) on 5.VI.1993.

Aetheria weissi (Draudt, 1934): Abundant in Fraga (Huesca) on 5.VI.1993. Also many in Zuera (Zaragoza) on 22.V.1993 and in San Ildefonso (Segovia) on 1.VI.1993.

Hadena bicurris (Hufnagel, 1766): 1 in Santa Coloma de Farners (Gerona) on 8.VI.1993 and regularly in Jávea (Alicante) in IV–V and in IX–X.

Hadena andalusica (Staudinger, 1859): Abundant in Bujaraloz (Zaragoza) on 21.V.1993 and also abundant in Albarracín (Teruel) on 13.VII.1992.

Hadena compta ([Denis & Schiffermüller], 1775): Few specimens in San Martín del Río (Teruel) on 24.V.1993.

Hadena confusa (Hufnagel, 1766): Abundant in San Martín del Río (Teruel) on 24.V.1993. Also, every year in many specimens in Jávea (Alicante) in IV–V.

Hadena magnolii (Boisduval, 1829): Many in Albarracín (Teruel) on 13.VII.1992.

Hadena filigrana (Esper, 1788): Just one in Albarracín (Teruel) on 30.VI.1992.

Hadena clara (Staudinger, 1901): 1 in Monachil (Granada) on 10.VII.1992.

Hadena expectata Hacker, 1996: 1 in Albarracín (Teruel) on 13.VII.1992. A xero-montane species endemic in Central Spain, formerly considered a ssp. of *H. vulcanica* (Turati, 1907), but recently given specific rank (Yela 2002). In Albarracín it is a rather scarce noctuid. Identification by J. L. Yela.

Hadena orihuela Hacker, 1996: Just 1 specimen in Uña (Cuenca) on 3.VII.1992. Externally, quite indistinguishable from the relatively common *Hadena wehrlii* (Draudt, 1934), but slightly larger and with longer ovipositor. Identification by J. L. Yela.

Hadena perplexa ([Denis & Schiffermüller], 1775): 1 in Belmonte de Tajo (Madrid) on 28.V.1993. 2 in Jávea (Alicante): 1 in IV.1996 and 1 in IV.2001.

Hadena sancta (Staudinger, 1859): Abundant in San Ildefonso (Segovia) on 2.VI.1993. Also single specimens in Jávea (Alicante): 1 in IV.1996, 1 in IV.1999 and 1 in IV.1998. Very local, only in San Ildefonso (Segovia) and in Jávea (Alicante).

Hadena laudeti (Boisduval, 1840): Just one specimen on 5.VI.1993 in Fraga (Huesca). "Sumamente rara y escasa": extremely rare and seldom for Spain. (Calle 1982: 69). Also in the Alps, it is a rare moth (Forster & Wohlfahrt 1980: 82, Faquaet 1987).

Saragossa seeboldi Staudinger, 1900: Always local and rare. Only 2 in Albarracín (Teruel) on 3–6.IX.1991, also 2 in Fraga (Huesca) on 27.IX.1994. The caterpillar feeds on various low-growing herbaceous plants.

Mythimna ferrago (Fabricius, 1787): Abundant in Albarracín (Teruel) on 3–6.IX.1991.

Mythimna albipuncta ([Denis & Schiffermüller], 1775): Many in Santa Coloma de Farners (Gerona) on 8.VI.1993, also abundant in San Martín del Río (Teruel) on 24.V.1993.

Mythimna vitellina (Hübner, [1808]): Very abundant in Albarracín (Teruel) on 3–6.IX.1991, also abundant in Belmonte de Tajo (Madrid) on 28–31.V.1993. Many specimens in Zuera (Zaragoza) on 22.V.1993, many in Fraga (Huesca) on 5.VI.1993, some in Santa Coloma de Farners (Gerona) on 8.VI.1993.

Mythimna obsoleta (Hübner, 1803): Just 1 in San Martín del Río (Teruel) on 24.V.1993.

Mythimna zaeae (Duponchel, 1827): Only 2 specimens in Jávea (Alicante): 1 in IV.1994 and 1 on 12.IX.1991.

Mythimna putrescens (Hübner, 1824): Very abundant in Albarracín (Teruel) on 3–6.IX.1991. Also very abundant in Jávea (Alicante), especially in IX–XII.

Mythimna punctosa (Treitschke, 1825): In Ayora (Valencia) 3 specimens on 6.IX.1991 and 1 in Albarracín (Teruel) on 2.X.1994, rare everywhere.

Mythimna languida (Walker, 1858): 1 in Jávea (Alicante) on 24.XI.2001. Together with another specimen, captured in Almuñecar (Granada) (leg. J. L. Yela) on 18.IX.2001, these are the first specimens from Spain (Yela & De Vrieze 2002).

Mythimna l-album (Linnaeus, 1767): Abundant in Jávea (Alicante) from II–XII in different generations. Also many in Albarracín (Teruel) in VII.1992 and few specimens in Cornellia del Terri (Gerona) on 24.IX.1994.

*Mythimna umbriger*a (Saalmüller, 1891): Ethiopian species, very rare along the Mediterranean coast, just one specimen in Jávea (Alicante) in IV.1994.

Mythimna scirpi (Duponchel, 1836): Abundant in Jávea (Alicante) from II–X in different generations. Also many in Albarracín (Teruel) on 26.V.1993 and in San Ildefonso (Segovia) on 2.VI.1993.

Mythimna prominens (Walker, 1856): Rare along the Mediterranean coast in VIII–IX.1992. Only in Jávea (Alicante), 1 in VIII.1992, 3 in IX–X.1997, 1 in X.1999, and 2 in IX.2001.

Mythimna riparia (Rambur, 1829): Regularly in a few specimens in Jávea (Alicante) in IV–V.2000 and in Fraga (Huesca) on 4.VI.1993.

Mythimna loreyi (Duponchel, 1827): Abundant in Jávea (Alicante) from II–XII in several generations. Also many in Albarracín (Teruel) on 1.X.1994 and in Lloret de Mar (Gerona) on 6.IX.1994.

Mythimna unipuncta (Haworth, 1809): Abundant in Jávea (Alicante) from II–XII in several generations.

Panolis flammea ([Denis & Schiffermüller], 1775): Very abundant in Jávea (Alicante) from XII until II.

Orthosia cerasi (Fabricius, 1775): Abundant in Jávea (Alicante) in I–II.

Xanthia icteritia (Hufnagel, 1766): Abundant in Albarracín (Teruel) during 29.IX–3.X.1994.

Xanthia austauti Oberthür, 1881: The moth is a sister-species of *Xanthia gilvago* ([Denis & Schiffermüller], 1775) (Ronkay, Yela & Hreblay 2001: 66). We have collected four specimens in Jávea (Alicante): 2 in IX.2000 and 2 in IX.2001. The species is not mentioned in the last Catalogue of Alicante (Tormo & Rietz 1998: 13).

Xanthia ocellaris (Borkhausen, 1792): 4 in Albarracín (Teruel) during 29.IX–3.X.1994. 1 in Jávea (Alicante) in XI.1997.

Agrochola lychnidis ([Denis & Schiffermüller], 1775): Very abundant in Jávea (Alicante) in IX–XI each year.

Spudaea ruticilla (Esper, 1791): Regularly in a few numbers: 1 specimen in II–III.1994, 4 specimens in II–III.1997, and 4 specimens in II–III.1999.

Omphaloscelis lunosa (Haworth, 1809): Abundant in Albarracín (Teruel) during 29.IX–3.X.1994.

Lithophane leautieri (Boisduval, 1829) Always rare in Spain (Calle 1982: 90). New for Alicante (Tormo 1997: 13). In Jávea, however, the moth is regularly seen most in XII and in I in a few numbers, but in XI–XII 2000: 35 specimens!

Xylena exsoleta (Linnaeus, 1758): Only in Jávea (Alicante). In the northern and central European countries, the moth appears in IX and after hibernation in III–IV (Skinner 1984: 112). We collected in 16 years 8 specimens, but all the moths were captured in XI–XII. 1 male on 24.XI.2001 and 2 females and 7 other males, all in XII.

Dryobota labecula (Esper, 1788): Single specimens in XII in 1990, 1993, 1994 and 1 I.1993, only in Jávea (Alicante).

Dryobotodes monochroma (Esper, 1790): Sporadic in Jávea (Alicante) and new for this province (Tormo & Rietz 1998: 13); 2 in IX–X.1998. Also 1 in Ayora (Valencia) on 6.IX.1991 and 1 in Albarracín (Teruel) on 3–6.IX.1991.

Dryobotodes roboris (Boisduval, 1828): Just 1 in Jávea (Alicante) in X.2000.

Ammopolia witzemannii (Standfuss, 1890): Very abundant during X–XII each year in Jávea (Alicante).

Trigonophora flammea (Esper, 1785): Very abundant during X–XII each year in Jávea (Alicante).

Trigonophora crassicornis (Oberthür, 1918): Very abundant in Albarracín (Teruel) during 29.IX–3.X.1994.

Trigonophora jodea (Herrich-Schäffer, 1850): Very abundant in Albarracín (Teruel) during 29.IX–3.X.1994.

Trigonophora haasi Staudinger, 1892: Very local, only in Albarracín (Teruel) in a few specimens during 29.IX–3.X.1994. Known from the Iberian Peninsula and from southern France.

Aporophyla nigra (Haworth, 1809): Very abundant during X–XII each year in Jávea (Alicante). Also 1 in Fraga (Huesca) on 4.X.1994.

Aporophyla canescens (Duponchel, 1826): 1 specimen in Albarracín (Teruel) on 30.IX.1994. Abundant during X–XII each year in Jávea (Alicante).

Dasytopia templi (Thunberg, 1792): In Spain, only known from Burgos (Calle 1982: 88). I captured one specimen in Albarracín (Teruel) on 2.X.1994. New for this part of Spain.

Polymixis lichenea (Hübner, [1813]): Only in Albarracín (Teruel), 8 specimens during 29.IX–3.X.1994.

Polymixis xanthomista (Hübner, 1819): Only in Albarracín (Teruel), 3 specimens during 29.IX–3.X.1994.

Polymixis argillaceo (Hübner, 1822): Many in Albarracín (Teruel) during 29.IX–3.X.1994.

Polymixis flavicincta ([Denis & Schiffermüller], 1775): Very abundant during X–XI each year in Jávea (Alicante).

Polymixis dubia (Duponchel, 1836): Abundant in Albarracín (Teruel) during 3–5.IX.1991 and 29.IX–3.X.1994. Also abundant in Fraga (Huesca) on 26.IX.1994.

Mniotype spinosa (Chrétien, 1910): Very abundant during IX–XII each year in Jávea (Alicante). Also abundant in Lloret de Mar (Gerona) on 6.X.1994.

Episema grueneri (Boisduval, 1837): 5 in Albarracín (Teruel) during 29.IX–3.X.1994 and 6 in Fraga (Huesca) on 4.X.1994. One single specimen in Jávea (Alicante) in IX.2001.

Leucochaena oditis (Hübner, 1822): Abundant in Fraga (Huesca) on 4.X.1994 and on 26–27.IX.1994. Only one specimen in Albarracín (Teruel) on 1.X.1994.

Axylia putris (Linnaeus, 1761): Just 1 in Vidreres (Gerona) on 6–7.VI.1993.

Ochropleura flammatra ([Denis & Schiffermüller], 1775): Always in few specimens: 1 in Cazorla (Jaén), 1 in Albarracín (Teruel) on 15.VII.1992, 3 in Bujaraloz (Zaragoza) on 21.V.1993 and 2 in Zuera (Zaragoza) on 23.V.1993.

Ochropleura plecta (Linnaeus, 1761): Few specimens in Jávea (Alicante) in IX.

Ochropleura leucogaster (Freyer, 1831): Some specimens in Jávea (Alicante): 3 during II–III and 4 during X–XI.

Noctua pronuba (Linnaeus, 1758): Abundant in Jávea (Alicante) every year from I–XII.

Noctua orbona (Hufnagel, 1766): 5 in Albarracín (Teruel) on 13–16.VII.1992, 2 in Bujaraloz (Zaragoza) on 21.V.1993, and 2 in Uña (Cuenca) on 2–4.VII.1992.

Noctua comes Hübner, [1813]: Many in Albarracín (Teruel) on 13–16.VII.1992, abundant in Jávea (Alicante). Single-brooded, but the adults aestivate and fly again in autumn.

Noctua fimbriata (Schreber, 1759): Only 1 in Vidreres (Gerona) on 6–7.VI.1993.

Noctua janthina ([Denis & Schiffermüller], 1775): Some specimens in Puerto Lumbreras (Murcia) on 11.VII.1992.

Noctua janthe (Borkhausen, 1792): 1 in Vidreres (Gerona) on 6–7.VI.1993.

Noctua interjecta Hübner, 1803: some in Albarracín (Teruel) on 13–16.VII.1992.

Epilecta linogrisea ([Denis & Schiffermüller], 1775): One in Albarracín (Teruel) on 14.VII.1992.

Lycophotia erythrina (Herrich-Schäffer, 1852): Only 5 specimens in Vidreres (Gerona) on 6–7.VI.1993 and 2 in Santa Coloma de Farners (Gerona) on 8.VI.1993.

Chersotis multangula (Hübner, 1803): Only 3 specimens in Albarracín (Teruel) on 13–16.VII.1992.

Chersotis margaritacea (Villers, 1789): Abundant in Albarracín (Teruel) on 3–6.IX.1991.

Standfussiana dalmata (Staudinger, 1901): In the Sierra Nevada at 2500 m, not rare. Everywhere else in Spain, it is always a rare and very local species: 2 specimens in Albarracín (Teruel) on 15.VII.1992. The Spanish specimens belong to subspecies *occidentalis*. Unknown outside Europe (Fibiger 1990: 157).

- Paradiarsia glareosa* (Esper, 1788): Many in Albarracín (Teruel) on 3–6.IX.1991.
- Xestia c-nigrum* (Linnaeus, 1758): Abundant in Jávea (Alicante) in several generations each year.
- Xestia castanea* (Esper, 1798): 2 in Lloret de Mar (Gerona) on 7.X.1994 and 3 in Cornellia del Terri (Gerona) on 25.IX.1994.
- Xestia xanthographa* ([Denis & Schiffermüller], 1775): Abundant in Jávea (Alicante) in IX–X and many in Albarracín (Teruel) on 3–6.IX.1991.
- Xestia kermesina* (Mabille, 1869): 7 specimens in Albarracín (Teruel) on 3–6.IX.1991 and 5 specimens in Fraga (Huesca) on 27.IX.1994 and 4.X.1994. Outside Europe, only known from Morocco, Algeria, Tunisia and Libya (Fibiger 1993: 178).
- Xestia agathina* (Duponchel, 1827): Many in Lloret de Mar (Gerona) on 7.X.1994 and each year in IX–X in Jávea (Alicante).
- Cerastis faceta* (Treitschke, 1835): Very abundant each year during IX–XII in Jávea (Alicante).
- Peridroma saucia* (Hübner, [1808]): Abundant in Jávea (Alicante), especially in II–III and in XI–XII.
- Euxoa cos* (Hübner, 1824): Only in Albarracín (Teruel), 6 specimens on 3–5.IX.1991.
- Euxoa wagneri* Corti, 1926: Only in some localities in the central area. Very rare, just one specimen in Albarracín (Teruel) on 4.IX.1991. Outside Europe, also in Morocco and Algeria.
- Euxoa mendelis* (Fernández, 1915): Endemic in the Iberian Peninsula. 5 specimens in Albarracín (Teruel). Larva feeding on *Centaurea calcitrapa* and *Eryngium campestre*s.
- Euxoa temera* (Hübner, [1808]): Most of the specimens are collected in Fraga (Huesca) on 28.IX.1994 and on 4.X.1994. Also some in Albarracín (Teruel) on 3–5.IX.1991 and 3.X.1994. Regularly in few numbers in Jávea (Alicante) during IX–X.
- Euxoa tritici* (Linnaeus, 1761): Just one specimen in Albarracín (Teruel) on 15.VII.1992.
- Euxoa obelisca* ([Denis & Schiffermüller], 1775): 2 in Albarracín (Teruel) on 3–5.IX.1991.
- Euxoa conspicua* (Hübner, 1824): Rare, just two specimens in Fraga (Huesca) on 4.X.1994.
- Dichagyris renigera* (Hübner, [1808]): 2 in Albarracín (Teruel) on 30.VI.1992 and 2 in Uña (Cuenca) on 2.VII.1992.
- Dichagyris constanti* (Millière, 1860): Rare and local, only 10 specimens in Albarracín (Teruel) and one specimen in Fraga (Huesca). Larva feeding on various herbaceous plants.
- Yigoga forcipula* ([Denis & Schiffermüller], 1775): Many specimens in Albarracín (Teruel) from 13–16.VII.1992 and 1 on 30.VI.1992. Also several specimens in Uña (Cuenca) on 2–4.VII.1992.

Cladocerotis optabilis (Boisduval, 1834): 6 in Fraga (Huesca) on 4.X.1994. In Jávea (Alicante) during IX–X: 2 in 1999, 1 in 2000 and 4 in 2001.

Agrotis obesa (Boisduval, 1829): 5 specimens in Albarracín (Teruel) on 3–5.IX.1991. 5 in Fraga (Huesca) on 4.X.1994 and 1 in Albarracín (Teruel) on 30.IX.1994.

Agrotis lata Treitschke, 1835: Rare and only captured in Jávea (Alicante) on 1 IX.1993 and 10 during IX–X.2000. The larva is known to feed on grasses.

Agrotis crassa (Hübner, 1803): 1 in Albarracín (Teruel) on 4.IX.1991. Abundant in Ayora (Valencia) on 8.IX.1991.

Agrotis puta (Hübner, 1803): Very abundant in Jávea (Alicante), especially during III–IV and IX–XI each year.

Agrotis ipsilon (Hufnagel, 1766): Very abundant in Jávea (Alicante) in practically all the months of each year.

Agrotis trux (Hübner, 1824): Very abundant in Ayora (Valencia) on 8.IX.1991. Also abundant in Fraga (Huesca) on 28.IX.1994 and in Albarracín (Teruel) on 30.IX.1994.

Agrotis exclamatoris (Linnaeus, 1758): 2 in Capilleira (Granada) on 8.VII.1992. Many in Jávea (Alicante) especially in IV.

Agrotis segetum ([Denis & Schiffermüller], 1775): Very abundant in Jávea (Alicante) in practically all the months of each year.

Agrotis spinifera (Hübner, [1808]): Regularly in few numbers in Jávea (Alicante) especially during II–IV and IX–XI from 1994 until 2001.

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In the first place to my wife, who has always accompanied me and certainly collected as much specimens as I did, during the 36 nocturnal observations we organised together in Spain! Great thanks to my brother-in-law Jos Baert, who carried out, with an unsurpassed perseverance, nocturnal observations in Jávea for many years and collected thousands of Noctuids which enabled me to make a unique inventory of the Noctuidae of the Province of Alicante. We collected many species of Noctuidae, which were not mentioned in the existing catalogues for that province. Thanks also to Michael Fibiger, who has also observed Noctuidae in Valdevejar in Albarracín in July 1992. We collected and observed together two nights and he gave me much information for my later trips in Spain. He examined later (16 April 2001) the genitalia of a Noctuid species, difficult to identify, confirming its true identity: *Eremodrina ibeasi*. Furthermore, thanks to J. L. Yela, who gave me much information and help: he identified some of the more difficult species by examining their genitalia. And thanks to François Bolland, who gave me much information about some interesting sampling sites like San Martín del Río, Teruel and Fraga, Huesca. Finally, thanks to Willy De Prins for his supervision and his many advises.

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Boekbespreking

Rötschke, H. & Huber, K.: *The Noctuidae Moths (Noctuidae) of Central Europe.*

An interactive identification guide on CD-ROM, Verlag für interaktive Medien GbR, Orchideenweg 12, D-76571 Gaggenau, postmaster@vim.de, 2002, (ISBN 3-9805985-5-1).

Deze CD is de eerste in een reeks "The Moths and Butterflies of the World" en kwam, naast de hoofdauteurs, tot stand met de medewerking van o.a. Axel Steiner. Op deze interactieve CD worden 723 Noctuidae-soorten besproken en afgebeeld op meer dan 1200 foto's van geprepareerde exemplaren op helderblauwe achtergrond. De CD bevat verder nog talrijke afbeeldingen van morfologische details (o.a. genitalia, koppen, antennen) die de determinatie kunnen vergemakkelijken. Bij een heleboel soorten wordt ook een tekst geleverd met informatie over de meest recente taxonomische ingrepen.

Het geografisch gebied omvat België, Denemarken, Duitsland, Hongarije, Luxemburg, Nederland, Noord-Italië (het Alpengebied), Oostenrijk, Polen, Slowakije, Tsjechië en Zwitserland. Uiteraard zou het beter geweest zijn om de Noctuidae uit het hele West-Palearctische gebied, of minstens uit heel Europa, op CD te hebben, maar het bijeenbrengen van zoveel foto's is een hele opgave en vereist waarschijnlijk de samenwerking van nog meer auteurs.

Dat het een interactieve CD betreft, merkt men al spoedig als men kan kiezen tussen verschillende naamgevingen: Ebert (1994, 1997, 1998), Forster & Wohlfahrt (1971), Heath & Emmet (1979, 1983), Karsholt & Razowski (1996) of Koch (1984). Men kan verder filteren op een van de hoger vermelde landen, op een vliegperiode, of op een bepaald genus. De vlinders kunnen afgebeeld worden op relatieve, natuurlijke grootte of allemaal op dezelfde grootte. Men kan zelf platen samenstellen van soorten die men dikwijls verwacht, zodat nadien snel kan teruggegrepen worden naar slechts die ene plaat om al de betreffende soorten te zien. Als een soort in beeld is, kan het programma zelf gelijkende soorten opgeven, uit heel Centraal-Europa of enkel uit het gebied waarop men filtert.

De foto's zijn van zeer goede kwaliteit en de gebruikte software maakt deze CD inderdaad interactief. Al wie geïnteresseerd is in Noctuidae en een goede computer bezit (systeemvereisten: minstens 64 MB RAM, IE5 of hoger, Netscape Navigator wordt ook ondersteund, maar men verliest enkele functionaliteiten), zal aan deze CD veel plezier beleven. Uiteraard ontbreekt een determineerquiz niet. De CD is in het Engels uitgegeven maar ook leverbaar in het Duits. Verdere informatie vindt men op www.vim.de.

W. De Prins

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Aanvullende gegevens betreffende de families Melittidae en Megachilidae in België (Hymenoptera: Aculeata)

Karel Janssens

Abstract. Additional data concerning the families Melittidae and Megachilidae in Belgium (Hymenoptera: Aculeata)

The author reports on records of Melittidae and Megachilidae in Belgium from various sources. Most of the records are from the province of Antwerp, from which many species are mentioned here for the first time.

Résumé. Notes additionnelles concernant les familles de Melittidae et Megachilidae en Belgique (Hymenoptera: Aculeata)

L'auteur donne une liste de Melittidae et Megachilidae de Belgique originaire de diverses sources. La plupart des observations sont faites dans la province d'Anvers, en mentionnant plusieurs espèces nouvelles pour cette province.

Key words: Melittidae – Megachilidae – faunistics – Belgium – Antwerpen.

Janssens, K.: Korte Leemstraat 15A, B-2000 Antwerpen.

Als aanvulling op mijn eerder gepubliceerde lijst waarnemingen van Hymenoptera (Janssens 1981) volgt hier een verdere lijst in tabelvorm van de Melittidae en Megachilidae uit België. De meeste waargenomen soorten zijn vrij algemeen tot algemeen verspreid in België (Enckels *s.a.*, Leclercq 1971, 1982). Toch zijn enkele soorten, voor zover ik kon nagaan, nog niet eerder vermeld uit de provincie Antwerpen, nl.: *Anthidium manicatum*, *Stelis breviuscula*, *Stelis phaeoptera*, *Chelostoma campanularum*, *Osmia adunca*, *Osmia fulviventris*, *Megachile ericetorum*, *Megachile ligniseca* en *Coelioxys inermis*.

In de tabellen zijn de waarnemingen chronologisch gerangschikt. De systematiek en nomenclatuur zijn volgens Fitton *et al.* (1978).

Melittidae

Dasygaster hirtipes Fabricius, 1793

Merksem	Antwerpen	06.06.1954	1 ♀	leg. M. Claes.
Antwerpen	"	24.08.1961	2 ♀	"Wilrijkse Plein".
Bevel	"	07.07.1963	2 ♀	Bij nesten in zandgroeve.
Bevel	"	08.08.1963	1 ♀	Bij nesten in zandgroeve.
Bevel	"	23.07.1964	1 ♀	Bij nesten in zandgroeve.
Villers-Tortrue	Luxemburg	26.07.1966	1 ♀	leg. C. Segers.
Antwerpen	Antwerpen	01.08.1970	1 ♀	In stadstuintje.
Kessel	"	19.07.1975	2 ♀	"Kesselse Heide".
Antwerpen	"	25.06.1976	1 ♀	In stadstuintje.
Zwijndrecht	"	02.08.1985	1 ♀	leg. B. Maes.

Macropis labiata Fabricius, 1804

Peerdsbos	Antwerpen	04.08.1917	1 ♀	leg. F. Bastin.
Kessel	Antwerpen	01.08.1970	1 ♀	Bij nest tussen mos.
Kessel	"	05.08.1970	1 ♀	Bij nest tussen mos.
Berlaar	"	23.07.1972	1 ♀	In tuin.
Linkeroever	"	31.08.1979	1 ♀	Op <i>Aster tripolium</i> .
Berlaar	"	19.08.1977	1 ♀	Op <i>Cirsium arvense</i> .
Peerdsbos	"	16.08.1984	3 ♀	Verzameld in een vochtig weiland op <i>Lysimachia vulgaris</i> , in totaal 40 ex. waargenomen (Koen Janssens).
Peerdsbos	"	29.08.1984	1 ♀	Idem
Ethe	Luxemburg	23.08.1984	1 ♀	leg. C. Segers.
Berlaar	Antwerpen	12.07.1987	1 ♀	In tuin.

Megachilidae

Anthidium manicatum Linnaeus, 1758

Merksem	Antwerpen	06.06.1954	1 ♀	leg. M. Claes.
Mussy-la-Ville	Luxemburg	05.08.1965	1 ♀	leg. C. Segers.
Rochefort	Namen	08.07.1973	1 ♀	leg. C. Segers.
Mussy-la-Ville	Luxemburg	10.07.1976	1 ♀	leg. C. Segers.
Mussy-la-Ville	"	19.07.1977	1 ♀	leg. C. Segers.
Berlaar	Antwerpen	11.07.1979	2 ♀	
Mussy-la-Ville	Luxemburg	27.07.1983	1 ♀	leg. C. Segers.
Berlaar	Antwerpen	29.07.1984	1 ♀	
Mussy-la-Ville	Luxemburg	01.08.1984	1 ♀	leg. C. Segers.
Berlaar	Antwerpen	14.07.1985	6 ♀	
Mussy-la-Ville	Luxemburg	04.07.1987	1 ♀	leg. C. Segers.
Mussy-la-Ville	"	24.07.1987	1 ♀	leg. C. Segers.

***Anthidium oblongatum* Illiger, 1806**

Mussy-la-Ville	Luxemburg	30.07.1970	1 ♀	leg. C. Segers.
Mussy-la-Ville	"	08.07.1977	1 ♀	leg. C. Segers.
Ethe	"	26.07.1977	1 ♀	leg. C. Segers.
Mussy-la-Ville	"	17.07.1978	1 ♀	leg. C. Segers.
Mussy-la-Ville	"	24.07.1978	1 ♂ 1 ♀	leg. C. Segers.
Mussy-la-Ville	"	05.07.1979	1 ♂	leg. C. Segers.
Ethe	"	27.07.1980	1 ♂	leg. C. Segers.
Mussy-la-Ville	"	10.07.1985	1 ♂	leg. C. Segers.

***Anthidium strigatum* Panzer, 1805**

Ethe (Rabais)	Luxemburg	17.08.1969	1 ♀	leg. C. Segers.
Hodister	"	03.08.1977	1 ♀	

***Stelis breviscula* Nylander, 1848**

Berlaar	Antwerpen	21.07.1972	1 ♀	
Hodister	Luxemburg	03.08.1977	2 ♀	

***Stelis phaeoptera* Kirby, 1802**

Berlaar	Antwerpen	23.07.1972	1 ♀	
Berlaar	"	19.07.1981	1 ♀	

***Heriades truncorum* Linnaeus, 1758**

Algemene soort. Waargenomen op *Chrysanthemum leucanthemum* en *Campanula* te Berlaar, Mortsel, Sint-Job-in't-Goor, Wechelderzande (Antwerpen), Hamme (Oost-Vlaanderen) en Laplaigne (Henegouwen), mannetjes van 14 juni tot 15 augustus en wijfjes van 18 juni tot 19 augustus.

***Chelostoma campanularum* Kirby, 1802**

Mortsel	Antwerpen	28.07.1981	2 ♀	Op <i>Campanula</i> in tuin.
Mortsel	"	17.07.1985	4 ♀	Op <i>Campanula</i> in tuin.
Mortsel	"	21.07.1986	4 ♀	Op <i>Campanula</i> in tuin.
Mortsel	Antwerpen	21.07.1987	1 ♀	
Hamme	O.-Vlaanderen	29.06.1993	1 ♀	leg. M. Claes.
Antwerpen	Antwerpen	01.07.1997	1 ♂	In stadstuin.

***Chelostoma florissome* Linnaeus, 1758**

Hamerenne	Namen	07.06.1970	1 ♀	leg. F. Verbeelen.
Olmen	Antwerpen	02.06.1974	1 ♀	
Ekeren	"	12.06.1984	1 ♀	leg. Joris Janssens.

***Chelostoma rapunculi* Lapeletier, 1841 (= *Eriades fuliginosum* Panzer, 1798)**

Gestel	Antwerpen	29.07.1962	1 ♂ 1 ♀	
Ekeren	"	29.07.1966	1 ♀	
Mortsel	"	15.06.1969	1 ♂	
Mussy-la-Ville	Luxemburg	12.07.1970	1 ♀	leg. C. Segers.

Berlaar	Antwerpen	07.07.1974	1	
Mortsel	"	14.07.1974	1	
Mortsel	"	28.07.1981	1	Op <i>Campanula</i> .
Mortsel	"	17.07.1985	1	
Berlaar	"	21.06.1986	1	
Berlaar	"	12.07.1987	1	
Mortsel	"	21.07.1987	1	
<i>Osmia adunca</i> Panzer, 1798				
Oorderen	Antwerpen	08.07.1982	1	Natuurreservaat "De Kuifeend". leg. Joris Janssens.
<i>Osmia aurulenta</i> Panzer, 1799				
Godinne	Namen	19.05.1963	1	
<i>Osmia bicolor</i> Schrank, 1781				
Hamerenne	Namen	07.06.1970	1	Nest in slakkenhuisje. leg. F. Verbeelen.
<i>Osmia coerulea</i> Linnaeus, 1758				
Sint-Job-in't-Goor	Antwerpen	01.05.1971	1	
Berlaar	"	02.05.1971	3	
Berlaar	"	13.06.1971	2	
Berlaar	"	04.07.1971	1	Op <i>Lobelia</i> .
Berlaar	"	07.07.1974	2	
Mussy-la-Ville	Luxemburg	08307.1977	1	leg. C. Segers.
Mussy-la-Ville	"	23.07.1983	1	leg. C. Segers.
Berlaar	Antwerpen	14.07.1985	1	
<i>Osmia cornuta</i> Latreille, 1805				
Deurne	Antwerpen	09.04.1952	1	"Ter Rivierenhof".
Berchem	"	08.04.1954	1	
Antwerpen	"	28.04.1954	1	
Beveren	O.-Vlaanderen	06.04.1976	1	leg. B. Maes.
Westerlo	Antwerpen	07.04.1978	1	leg. R. De Jonghe.
Berlaar	"	06.04.1980	2	Op <i>Ribes</i> .
Ekeren	"	13.04.1984	1	"Oude Landen". op <i>Salix</i> . leg. Joris Janssens.
Ekeren	"	14.04.1984	3	Idem
Berlaar	"	15.04.1984	1	
Berlaar	"	16.05.1985	1	Bij nest in muurholte.
Berlaar	"	03.04.1988	1	
Antwerpen	"	23.03.1991	1	Op <i>Muscari</i> .
Treignes	Namen	14.04.1992	1	leg. I. Büscher.
Mechelen	Antwerpen	15.03.1993	6	Op <i>Calluna</i> .
Linkeroever	"	15.03.1993	1	leg. J. Bruers.

Antwerpen " 22.03.1997 1♀ Op *Muscari* in stadstuinje.

***Osmia fulviventris* Panzer, 1798**

Berlaar Antwerpen 07.07.1968 1♀
 Mortsel " 31.07.1972 1♀
 Neuville-en-Condroz Luik 10.06.1978 1♂
 Berlaar Antwerpen 17.06.1984 1♀

***Osmia rufa* Linnaeus, 1758**

Zeer algemeen. Waargenomen te Antwerpen, Antwerpen-Linkeroever, Beerse, Berlaar, Bevel, Borgerhout, Deurne, Ekeren, Geel, Haasdonk, Herentals, Mechelen, Merkssem, Mortsel, Ranst, Stabroek, Westerlo, Wilrijk, Zwijndrecht (Antwerpen), Anseremme (Namen), Mussy-la-Ville (Luxemburg), Sinaai-Waas (Oost-Vlaanderen) en Vlamertinge (West-Vlaanderen). Mannetjes van 17 maart tot 30 mei, vrouwtjes van 30 maart tot 31 mei, vliegend op *Chelidonium*, *Crataegus*, *Muscari*, *Prunus*, *Ribes*, *Rosa* en *Tussilago*.

***Megachile ericetorum* Lepelletier, 1841**

Berlaar Antwerpen 25.07.1968 1♀
 Mortsel " 01.07.1973 1♂
 Berlaar " 24.07.1973 1♂
 Berlaar " 07.07.1974 1♂
 Berlaar " 12.07.1975 2♀
 Berlaar " 12.07.1987 2♂ Op *Glycine*.

***Megachile centuncularis* Linnaeus, 1758**

Algemeen. Waargenomen te Berlaar, Hoboken, Mortsel (Antwerpen), Godinne (Namen), Mussy-la-Ville (Luxemburg).

***Megachile circumcincta* Kirby, 1802**

Brasschaat Antwerpen 20.05.1971 1♀

***Megachile ligniseca* Kirby, 1802**

Mortsel Antwerpen 12.08.1973 1♀ "Hof Savelkoel".
 Mortsel " 29.06.1975 2♂ "Hof Savelkoel".

***Megachile willoughbiella* Kirby, 1802**

Antwerpen Antwerpen 01.07.1953 1♀
 Hoboken " 20.05.1959 1♂ "Hobokense Polder". leg. L. Peeters.
 Antwerpen " 11.06.1966 1♀
 Antwerpen " 15.06.1969 2♂ "Wilrijkse Plein".
 Berlaar " 07.07.1975 1♀
 Antwerpen " 14.07.1995 1♀ Stadstuinje, op *Campanula*.
 Antwerpen " 15.07.1995 1♀ Stadstuinje, op *Campanula*.
 Antwerpen " 19.07.1995 1♀ Stadstuinje, op *Campanula*.
 Antwerpen " 16.05.1997 1♂ Stadstuinje, op *Campanula*.

***Coelioxys aurolobata* Förster, 1853**

Mussy-la-Ville	Luxemburg	15.08.1964	1 ♀	leg. C. Segers.
Mussy-la-Ville	"	14.07.1985	1 ♀	leg. C. Segers.

***Coelioxys inermis* Kirby, 1802**

Mussy-la-Ville	Luxemburg	07.07.1970	1 ♀	leg. C. Segers.
Mortsel	Antwerpen	06.07.1975	1 ♀	"Hof Savelkoel".
Berlaar	"	15.08.1976	2 ♀	

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Four new species for the Belgian fauna (Lepidoptera: Lyonetiidae, Coleophoridae, Pterophoridae)

Willy De Prins

Samenvatting. Enkele nieuwe soorten voor de Belgische fauna (Lepidoptera: Lyonetiidae, Coleophoridae, Pterophoridae)

De auteur vermeldt vier nieuwe soorten voor de Belgische fauna: *Lyonetia prunifoliella*, *Coleophora milvipennis* Zeller, 1839, *C. fuscocuprella* Herrich-Schäffer, 1855 en *Pselnophorus heterodactylus* (Müller, 1764).

Résumé. Quelques nouvelles espèces pour la faune belge (Lepidoptera: Lyonetiidae, Coleophoridae, Pterophoridae)

L'auteur mentionne quatre espèces nouvelles pour la faune belge: *Lyonetia prunifoliella*, *Coleophora milvipennis* Zeller, 1839, *C. fuscocuprella* Herrich-Schäffer, 1855 et *Pselnophorus heterodactylus* (Müller, 1764).

Keywords: Belgium – faunistics – *Lyonetia prunifoliella* – *Coleophora milvipennis* – *Coleophora fuscocuprella* – *Pselnophorus heterodactyla* – new records.

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Lyonetia prunifoliella (Hübner, 1796)

One specimen was caught by sweeping lower vegetation and bushes of *Crataegus monogyna* Jacq. and *Prunus spinosa* L. at Lessive (province of Namur, Belgium) on 01 June 1997, leg. & coll. W. De Prins. This is the first confirmed record of this species from Belgium. It should be included in the "Catalogue of the Lepidoptera of Belgium" (De Prins 1998) just after *Lyonetia clerkella* (p. 52). The adults are at once distinguishable from the much more common *Lyonetia clerkella* (Linnaeus, 1758) by the oblique fascia on the inner margin of the forewings (see figs. 1 and 2).

The Palaearctic species occurs throughout Europe and Asia Minor and reaches Japan (Emmet 1985: 224). Baraniak (1996: 63) mentions 20 European countries, among which Belgium. The source of that record could not be traced. The species has not been recorded from the Netherlands or from Luxembourg. In Germany, it is mentioned from 7 Bundesländer, but only in Saarland and Brandenburg it has been found after 1980 (Gaedike & Heinicke 1999: 59). In France, the species has been recorded from 15 departments, mainly in the central area of the country (Lhomme 1946–1963: 1071). It is a very local species in Great Britain but not observed there anymore since about 1900 (Emmet 1985: 224).

The caterpillar lives on the leaf underside of several Rosaceae, including *Prunus spinosa*, *Crataegus* sp., *Malus* sp., *Cotoneaster* sp., *Sorbus* sp., *Cydonia* sp., and *Mespilus* sp., and additionally it has been found on *Betula* sp. (Betulaceae) (Lhomme 1946–1963: 1072, Emmet 1985: 224).

***Coleophora milvipennis* Zeller, 1839**

One specimen was caught on light on 19.VII.2002 in the nature domain Dombergheide (province of Antwerpen, Belgium), leg. J. & W. De Prins (det. H. W. van der Wolf) (fig. 3). This is the first record for the Belgian fauna. The species should be included in the Belgian Catalogue (De Prins 1998) on p. 65 just after *Coleophora flavipennella* (Duponchel, 1843).

This Palaearctic species occurs in Europe, Turkey, Asia Minor till Japan (Emmet *et al.* 1996: 220). In Europe, it is recorded from 22 countries (Baldizzone 1996: 85). Kuchlein (1993: 212) mentions the species from 10 Dutch provinces. In France, *C. milvipennis* has not been observed frequently. Lhomme (1946–1963: 890) mentions it from 7 departments. In Germany, it is known from all Bundesländer (Gaedike & Heinicke 1999: 68). In Great Britain, the species is widespread in England northwards to Yorkshire, North Wales, central Schotland and the Highlands (Emmet *et al.* 1996: 220).

Probably the species has been confused with *Coleophora alnifoliae* Barasch, 1934, which has been mentioned from the provinces of Antwerpen and Hainaut and of which the larvae feeds on *Alnus* sp. The caterpillar of *C. milvipennis* lives on *Betula* sp. (Emmet *et al.* 1996: 220); it may occasionally also occurs on *Carpinus betulus* L. (Emmet *et al.* 1996: 220) and *Myrica gale* L. (Lhomme 1946–1963: 890). A re-examination of the available material in the collections is needed to establish the occurrence of both species in Belgium.

***Coleophora fuscocuprella* Herrich-Schäffer, 1855**

One specimen was caught on 27.V.1999 at Olloy-sur-Viroin (province of Namur, Belgium), leg. and det. H. W. van der Wolf, coll. W. De Prins (fig. 4). The species is recorded here for the first time from Belgium. It should be included in the Belgian Catalogue (De Prins 1998) on p. 65 just after *Coleophora cornutella* Herrich-Schäffer, 1861.

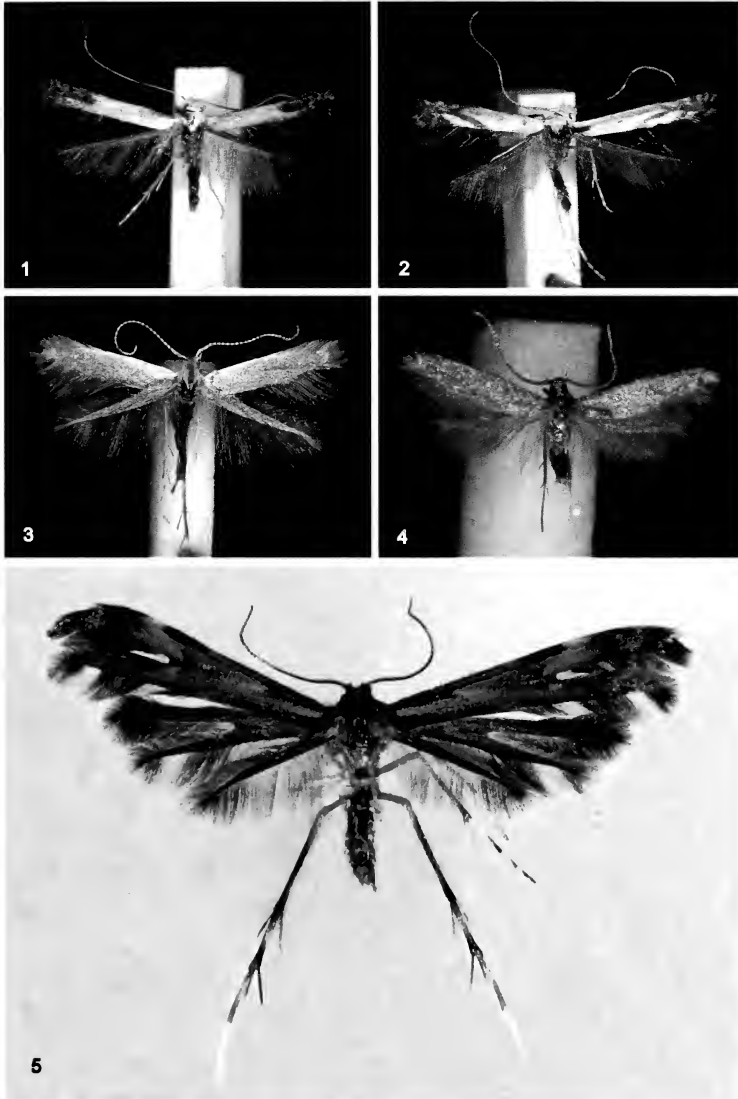
The species has probably been overlooked in the past as it is not very rare in the adjacent countries. Kuchlein (1993: 213) mentions it from 4 Dutch provinces. Lhomme (1946–1963: 880) writes that it is rarely observed, and mentions 4 departments: Cher, Gironde, Seine-et-Loise, and Vosges. In Germany, it is known from all Bundesländer, except from Rheinland-Pfalz (Gaedike & Heinicke 1999: 69). In Great Britain, the species is known from the southern counties, from Hampshire to Kent, and from Wales (Emmet *et al.* 1996: 228).

The caterpillar feeds mainly on *Corylus avellana* L., a very common species in Belgium, and it is also mentioned from *Betula* sp., especially saplings of *B. pubescens* Ehrh. and *Carpinus betulus* L. (Kuchlein 1993: 213, Emmet *et al.* 1996: 228).

***Pselnophorus heterodactyla* (Müller, 1764)**

A caterpillar of *Pselnophorus heterodactyla* was found pupating on the trunk of *Pinus sylvestris* L. at Chantemelle (province of Luxemburg, Belgium) on 17.V.2000. The adult emerged on 27.V.2000, leg. et coll. W. De Prins (fig. 5).

Plate 1



Figs. 1–5: 1.– *Lyonetia clerkella* (Linnaeus, 1758). Belgium, Province of Antwerpen, Tongerlo, mine 19.V.1998, e.l. *Malus sylvestris* L., 02.VI.1998, leg. W. De Prins; 2.– *Lyonetia prunifoliella* (Hübner, 1796). Belgium, Province of Namur, Lessive, 01.VI.1997, leg. W. De Prins; 3.– *Coleophora milvipennis* Zeller, 1839. Belgium, Province of Antwerpen, Turnhout, Domborgheide, 19.VII.2003, leg. J. & W. De Prins; 4.– *Coleophora fuscocuprella* Herrich-Schäffer, 1855. Belgium, Province of Namur, Olloy-sur-Viroin, 27.V.1999, leg. H. W. van der Wolf; 5.– *Psephenophorus heterodactyla* (Müller, 1764). Belgium, Province of Luxemburg, Chantemelle, larva 17.V.2000, imago 27.V.2000, leg. W. De Prins. (Photographs: Jurate De Prins).

The species has been mentioned from Belgium before without any locality (De Prins 1983: 25) due to a misinterpretation of the record of "*O. heterodactylus* Villiers (1789)" in Lhomme (1935–1946: 179). It was not included in de "*Catalogue of the Lepidoptera of Belgium*" (De Prins 1998: 109), because no Belgian specimens could be found in collections. This is therefore the first confirmed record of the species from Belgium. It should be in the catalogue just after *Merrifieldia baliodactylus* (Zeller, 1841) on p. 108.

It is widespread in Europe (24 countries are listed), eastwards till Ukraine and Kazakhstan (Gielis 1996: 88, 2003: 72). In the Netherlands only two old records are known from Zuid-Holland and Gelderland (Kuchlein 1993: 235). In Germany the species is recorded from 9 Bundesländer (Gaedike & Heinicke 1999: 235). In France it is mainly known from mountainous regions (Lhomme 1935–1946: 189). In Great Britain it is "an exceedingly local species", recorded from Gloucestershire, Norfolk, Perthshire, Cumberland, and Aberdeen (Beirne 1954: 181).

The caterpillar lives on *Mycelis muralis* L., *Prenanthes purpurea* L. and *Lapsana communis* L. (Gielis 1996: 88).

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Definition of subgenera and a reassessment of species groups of *Torymus* Dalman (Hymenoptera: Torymidae), based on Palaearctic material

A. Zavada

Abstract. Five subgenera, *Callimomus* Thomson, *Lioterphus* Thomson, *Arctorymus* subgen. n., *Arctorymus* subgen. nov., and *Torymus* s. str. are recognized for Palaearctic species of the genus *Torymus* Dalman. Concepts of *Callimomus* and *Lioterphus* are revised and extended against previously adopted concepts of these taxa as separate genera. Several uncertain placements of recently described species in Graham's species groups are corrected. These groups are reassessed and those preserved are provided with updated descriptions. A key is given to subgenera and species groups. One species (*T. drewseni* Zavada) is synonymized.

Samenvatting. Definitie van subgenera en vaststelling van soortengroepen in *Torymus* (Hymenoptera: Torymidae), gebaseerd op Palaearctisch materiaal
In het genus *Torymus* Dalman worden vijf subgenera onderscheiden voor de Palaearctische soorten: *Callimomus* Thomson, *Lioterphus* Thomson, *Arctorymus* subgen. n., *Arctorymus* subgen. nov., en *Torymus* s. str. Opvattingen over *Callimomus* en *Lioterphus* worden herbekeken en uitgebreid tegenover eerder aangekomen concepten van deze taxa als afzonderlijke genera. Verschillende onzekere plaatsingen van recent beschreven soorten in de soortengroepen volgens Graham worden verbeterd. Deze groepen worden opnieuw ingedeeld en de behouden groepen worden herbeschreven. Een determinersleutel wordt gegeven voor de subgenera en de soortengroepen. Eén soort (*T. drewseni* Zavada) wordt gesynonymiseerd.

Résumé. Définition des sous-genres et définition des groupes d'espèces de *Torymus* (Hymenoptera: Torymidae), basé sur du matériel paléarctique
Dans le genre *Torymus* Dalman, cinq sous-genres pour les espèces paléarctiques sont acceptés: *Callimomus* Thomson, *Lioterphus* Thomson, *Arctorymus* subgen. n., *Arctorymus* subgen. nov., et *Torymus* s. str. Les concepts de *Callimomus* et *Lioterphus* sont révisés et changés contre des concepts auparavant acceptés pour ces taxa comme genres séparés. Le placement de plusieurs espèces, mises avec incertitude dans les groupes d'espèces de Graham, est corrigé. Ces groupes sont révisés et les groupes préservés sont décrits à nouveau. Une clé de détermination est donnée pour les sous-genres et les groupes d'espèces. Une espèce (*T. drewseni* Zavada) est mise en synonymie.

Keywords: *Torymus* – subgenera – new subgenera – species groups – Palaearctic – key.

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Preface

In the present paper, the species groups as defined (in part) in Graham (1994) and understood in Graham & Gijswijt (1998) are reassessed for the same scope of species, and essential implications of this reassessment are drawn to prepare definitions of subgenera of this large Holarctic genus.

This work does not meet in full the aims suggested by the title. Nearctic one-fourth of the specific diversity of the genus being inaccessible to me, nor is it concerned with aspects of specific biology, host-relationship, and distribution. Although the characters selected, so far as the reading of Grissell's (1976) revision afforded, have been checked for consistency against Nearctic species groups, an extension of subgeneric concepts proposed here could not be

confidently made so as to include Nearctic fauna. However, Palearctic material does provide enough distinct species to establish several subgenera. Two of them retain generic names of former allied genera, *i.e.*, *Callimomus* and *Lioterphus*, of which neither has purely Nearctic species.

The genus *Torymus* Dalman is recognized as the single Palearctic genus in the tribe Torymini, following Grissell's (1995) definition of the tribe as having sinuate metapleural suture, this character being the single autapomorphy of the genus.

Previous attempts at subgeneric classification of *Torymus*

Graham & Gijswijt (1998) have proposed 13 species groups and 5 species solae in their revision of Palearctic species of *Torymus* Dalman. This revision came as the result of a more than thirty-year-long study and, apart from the final achievement of nomenclatural order (as many as 67 names have been synonymized in addition to almost as many introduced by Eady (1959)) and the long-anticipated synonymy of *Diomorus* with *Torymus*, it was the first time that a new subdivision of the Palearctic species of the genus had been attempted.

Graham and Gijswijt, nevertheless, did not find it necessary to recognize former genera as subgenera, which in part was justified by the deficiency of current concepts for some of them (notably for *Syntomaspis*). By that time, also, several new species have been described (*e.g.* *T. austriacus* Graham) whose morphologies required a revised character set to be used in definitions of whatever subgenera there may be. A cautious view on subgeneric limits was only proper at that stage.

Many chalcidologists have been content with unsettled subgeneric classification of *Torymus*. The names of four former genera have been readily referred to as provisional substitution names of subgenera, when a need should arise, or, alternatively, the names of Graham's species groups have been used, for example, to identify the relationship of a newly described species.

Papers dealing with *Torymus* are reviewed in detail in Graham & Gijswijt (1998). A brief discussion of some recent publications, with special regard to the genus *Diomorus* Walker, follows.

Graham (1992) was the last publication where *Diomorus* is recognized as a separate genus: the author gave a key to distinguish the two genera, but he had already been at a loss for a single, principal character that all species of *Diomorus* possessed and none species of *Torymus* did. He had to recourse to characters of sculpture (such as rugosity on vertex and punctures along interstitial suture) to preserve *Diomorus*, and it was clear that a good generic conception for *Diomorus* cannot rest on differences in sculpture. Graham also split the three species of *Diomorus* in two species groups.

Bouček published (1996) an important paper with the descriptions of (only) two species of *Torymus*. One of them, *T. pulcher* Bouček, has a conspicuous, though small, tooth on hind femur, although it runs to *Torymus* in Graham's key. Zerova & Seryogina (1991) had earlier described (in Russian) this species under

a different name (*kononovae*), but that paper apparently remained unknown to Bouček. Their synonymy followed up in Zerova, Seryogina, Zavada (2000).

Grissell (1995) did not alter taxonomic status of *Diomorus*, stating that *Diomorus* is close to *Torymus* and that *Lioterphus* and *Syntomaspis* have long been regarded as subgenera by the European authors (Bouček & Graham, 1978a, b). Identification labels of Graham's and Gijswijt's suggest the same.

Geographic coverage

The material studied includes about 2,000 specimens of 102 species (of 168 known) from Western Europe, European part of Russia, Ukraine, Caucasus, Central Asia, and Far East of Russia.

Under the titles of each subgenus or species group below, I have listed the materials examined. The depositories are stated except where they are not certainly known to me on the date of the present paper's submission (their label data are transcribed from my earlier notes).

Glimpses of material from Central Asia suggest an endemic fauna with peculiar forms that do not fit into species groups established on European material. Further studies of Mongolian material (available in European museums, so far as I know, from the Hungarian Natural History Museum, Budapest) as well as material from other localities extralimital to Europe may help produce clearer concepts of the subgenera and of the genus itself.

Depositories

- NNML Nationaal Natuurhistorisch Museum Leiden, The Netherlands
SIZK Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine, Kiev, Ukraine
ZMAN Zoölogisch Museum Amsterdam, afdeling Entomologie, The Netherlands
ZMUC Zoological Museum, University of Copenhagen, Denmark

Key to subgenera and species groups of *Torymus* Dalman, based on Palaearctic material

The text in brackets is additional characters, not necessarily exclusive to the taxon referred. These characters are included to aid recognition only, and are not matched in the corresponding alternative part of couplet.

1. Scutellum with concentric costulae that spread continuously onto distinctly delimited frenum. Stigma small and sessile (fig. 11); PM is distinctly narrower than M near juncture of ST. Metepisternal callus smooth, not differing in sculpture from propodeum. [Venation pale; disc very sparsely pilose. All legs except tips of tibiae and tarsi, with metallic sheen, concolorous with the body.]subgenus *Arctorymus* subgen. n.
— Scutellum without such concentric costulae. Stigma petiolate; M and PM subequal in breadth near juncture of ST. Metepisternal callus rough, or more rough than propodeum. [Frenum delimited or not.] 2
2. Mandibles with 2 teeth (figs. 4–5). Anterior margin of hind coxa angulate in lateral view (figs. 1–3). Propodeum forms a low angle (30–40°) to longitudinal axis of body, coriaceous to

- finely reticulate. Base of scutellum pointed. Ocelli smaller: OOL more than 1.3 times OD. Hind femur with lower outer margin carinate and more or less conspicuously deviating outward in distal 0.6–0.9 of its length and edentate (fig. 6). [Hind basitarsus about or more than 2.5 times shorter than hind tibia. ST oblique, expanding. Mesepimeron as high as broad.] 3 (subgenus *Callinotus* Thomson)
- Mandibles with 3 teeth. Anterior margin of hind coxa straight or very slightly angulate or evenly curved in profile. Propodeum more steep. If sculpture of propodeum as strong as above (*T. fastuosus* Boheman) then frenal line distinct. Base of scutellum narrowly to broadly truncate. If ocelli as small and close as above (*T. iacchos* Zavada) then base of scutellum not pointed and mesepimeron almost twice as high as broad and pointed apically. If hind femur swollen then it bears a strong tooth. 4
3. Scutellum with sculpture obsolescent toward apex. F1 elongate, at least 1.5 times as long as broad. Anterior margin of mesepimeron not straight. **austricus-group**
- Scutellum with distinct sculpture throughout. F1 shorter than above. Anterior margin of mesepimeron straight, converging with its posterior margin. **laetus-group**
4. Hind femur with a weak to strong tooth on lower outer margin in distal part. [Pedicellus very short, subquadrate. Sensilla very short and dense.] 5
- Hind femur edentate. 8
5. M less than half the length of costal cell. Propodeum with robust, roughly symmetrical, areolate-rugose sculpture. subgenus *Arctorynus* subgen. n.
- M subequal in length to costal cell. Propodeum not with strong raised sculpture, either finely reticulate or smooth; in latter case, with or without longitudinal striae and submedian lines. 6
6. Propodeum with submedian carinae. *T. aruatus* Boheman (species sola)
- Propodeum without submedian carinae. 7
7. Propodeum smooth. *T. kouonovae* (Zerova & Seryogina) (species sola)
- Propodeum finely reticulate. *T. fastuosus* Boheman (species sola)
8. Shorter hind tibial spur reduced, about half the length of longer spur with the latter not more than apical breadth of tibia, or absent. Hind coxa slender (figs. 9–10); more than 3.5 times as long as broad, with posterior margin virtually straight and parallel to anterior margin. [Occipital carina barely discernible on postgenae. Sculpture on scutellum obsolescent at apex. Frenal line not traceable.] subgenus *Lioterphus* Thomson
- Shorter spur present; if about 1/2 the length of longer spur, then (*T. laupros* Graham, *T. pulchellus* Boheman and *T. microcerus* (Walker) of *chloromerus*-group) hind coxa about twice as long as broad, or (*T. flavipes* (Walker) and *T. longicalcar* Graham of *chloromerus*-group) longer spur about or more than twice apical breadth of hind tibia. Hind coxa stouter; its posterior margin curved. 9
9. Propodeal foramen high (fig. 12). [Frenal line distinct.] **variaus-group**
- Propodeal foramen low. If intermediate (*T. aruudinis* (Walker) of *chloromerus*-group), then scutellum without frenal line. 10
10. Posterior margin of gastral tergite 4 entire. Submedian propodeal carinae distinct. **cyaneus-group**
- Posterior margin of gastral tergite 4 incised. Propodeum without traceable submedian carinae. 11
11. Ocelli small: in ♀ POL 1.3–1.6 times OOL, OOL 1.3–1.5 times OD, in ♂ POL 0.8–0.9 times OOL, OOL 2.1–2.2 times OD. Mesepimeron pointed apically. [Sculpture on vertex extremely fine.] **iacchos-group**¹
- Ocelli larger and more distanced from each other than above. Mesepimeron with apex truncate. ... 12

¹ Mongolian *T. amularius* Szelényi, 1973 most probably belongs together with *T. iacchos* Zavada. Due to the inadequately brief description of Szelényi's species, a comprehensive diagnosis could not be drawn for the *iacchos*-group. The condition of the ocelli of *amularius*, in particular, is unknown to me; therefore, this character as it appears in the key may need to be replaced.

12. Propodeum with fine reticulation under which longitudinal striation is invisible. [Body with strong coppery sheen.] *T. fastuosus* Boheman (species sola)
 – Propodeum without reticulation, smooth or weakly striate longitudinally.13
13. Frenal line distinct, though weak. Propodeum weakly striate..... *affinis*-group
 – Frenal line not traceable. Propodeum without striae, occasionally (and at most) alutaceous medially.....14
14. F1 elongate: more than 1.5 times as long as broad. Hind coxa more than 2.5 times as long as broad. [Temples not more than 0.2 times apparent length of eye.].....*hederae*-group
 – F1 shorter. Hind coxa shorter. *chloromerus*-group

Characters selected for definitions of subgenera

Many characters that clearly admit of gradation, although found to show no intermediate states in the 102 species studied, are used intentionally. Among these the least reliable are characters expressed by ratios (e.g., short M in relation to breadth of wing, high propodeal foramen). However, the arrangement proposed here, supplemented by auxiliary characters such as coloration and host preferences, appears more coherent than if I had chosen to discard ratios completely.

For each of selected characters in the list below the state indicated as 'normal' (or that given first) is assumed to be plesiomorphic as that in which the character is represented in the "chloromerine" morphological type. The evidence that species group of *chloromerus* is a primitive one is given in the Comments section under its title below.

A special attention and weight have been given to characters of sculpture. Comparative studies reveal strong stability of certain types of sculpture within groups whose common derivation is supported by other characters (for example, apical obsolescence of sculpture in species of subgenus *Lioterphus*).

However, several other sculptural patterns, as large and deep piliferous punctures, reappear in obviously distant groups, and therefore are excluded from the main list.

As not all of these supplementary characters are mentioned in the following discussion, the reader will have to consult the papers mentioned above, and is generally supposed to have some knowledge of the species morphology prior to estimating the weight of each character.

Number of teeth on mandibles (mt): three teeth/two teeth (figs. 4-5).

Stigma (st): petiolate if M and PM are equal in breadth at the juncture of petiolus with M and PM • sessile if M is broader than PM and the length of ST cannot be measured (fig. 11). An extreme state typifying "petiolate" is shown in fig. 13.

Scutellum: concentric costulae (sc): absent • present. The concentric costulae extending over the distinctly delimited frenum are observed in *Arctorymus* subgen. n. and in Nearctic *T. koebeleji* (Huber) and related species. Note that in this pattern, the direction of lineations is longitudinal, thus being different from the transversely running striation sometimes observed in other

subgenera, and that costulae in *Arctorymus* form a loop anteriorly, approximately in the middle of scutellum.

Fore wing: M (M): normal if length of M is subequal to breadth of wing and more than half the length of costal cell ▪ short if it is about to, or less than, half the breadth of wing and less than 1/3 the length of costal cell.

Fore wing: PM (PM): normal if PM is 1/4 or less times as long as distance from ST to apex of wing ▪ long if it reaches (approximately) a point midway between ST and apex of wing.

Metepisternal callus (c): rough if differing in sculpture (that is, more coarsely sculptured) from propodeum and bearing numerous hairs ▪ smooth if hairs are few and the sculpture is as weak as that on propodeum.

Parastigma² (pst): normal if equal in breadth with SC ▪ swollen if distinctly broader than (and often darker than) it (fig. 7). This measurement must be done accurately. In some species (notably in *T. fagineus* Graham) the parastigma, if the wing is observed in dorso-posterior view, appears swollen. This is due to an inflection of SC at its juncture with cubital vein, proximally to which SC is, from this angle of view, turned aslant to the eye, and thus not showing its true breadth.

Shorter hind tibial spur (shts): present or reduced ▪ absent. I have not completely overcome doubts if the shorter spur is indeed absent in *nitidulus* (Walker) and *fiscicornis* (Walker): in these species the shorter spur may be just as short as apical setae on hind tibia. But that it is reduced is beyond doubt.

Hind coxa (hc): normal if less than 3.3 times as long as broad (usually 2–2.5 times) ▪ elongate if more than 3.5 times longer than broad and the dorsal and ventral margins of the coxa run in parallel for more than half its length.

4th gastral tergite: posterior margin (gs4): emarginate (or incised) ▪ entire, on female gaster.

Propodeal foramen (pf): low if the ratio of the length of propodeum measured in the middle to that measured half way laterad to the propodeal spiracle is 0.8–1.0 ▪ high if this ratio is 0.6 or less (fig. 12). This character in the modified state is accompanied by the angle of propodeum being 60–65°.

Propodeum: submedian carinae (psmc): absent ▪ present. Represented as straight and parallel grooves. This character is best expressed in *T. armatus* Boheman and in species of *cyaneus*-group.

Propodeum: median carina (pmc): absent ▪ present. Found, quite weakly expressed, only in *T. fastuosus* Boheman. However, quite few characters in *Torymus* are expressed stronger.

Anterior margin of hind coxa (ham): not angulate (straight or evenly curved) ▪ angulate (figs. 1–3). Although based and relying largely on the observer's perception, this character fitly complements the isolated position of the subgenus *Callinomus* Thomson.

² Two terms of similar spelling, pr(a)estigma and parastigma, have been concurrently used to refer to the same structure. Fortunately, these terms are fully interchangeable.

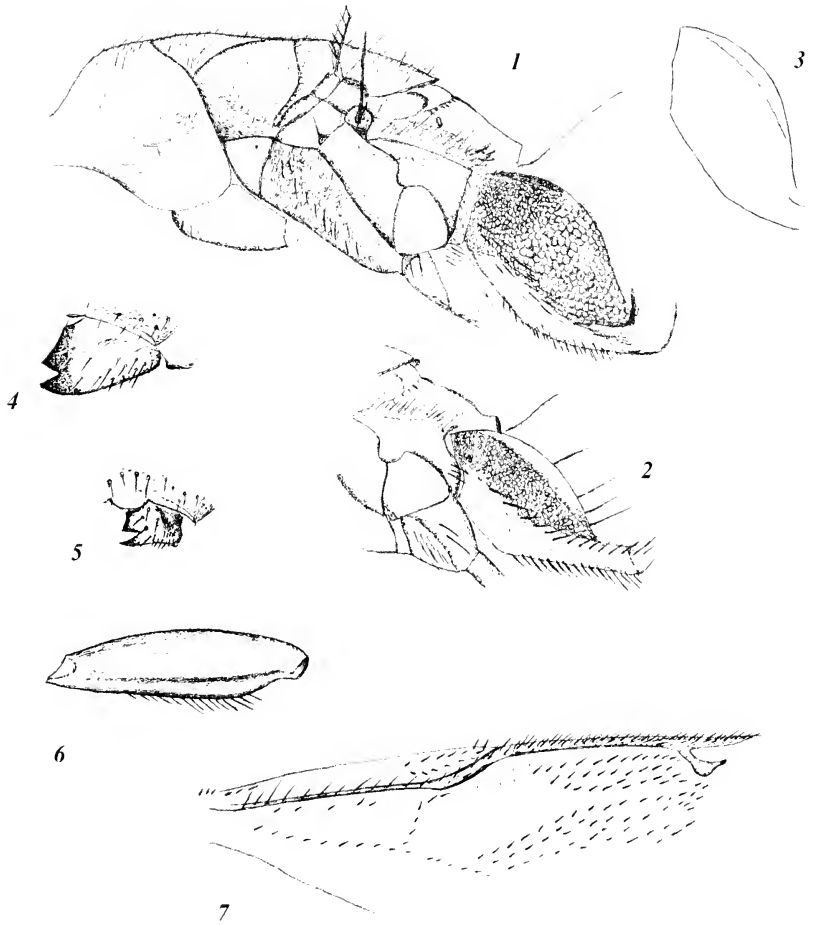


Fig. 1.— *T. igniceps* Mayr ♂, mesosoma in lateral view; fig. 2.— *T. laetus* (Walker) ♂, posterior part of mesosoma in lateral view showing angulate hind coxa; fig. 3.— *T. nemorum* Bouček ♂, outline of hind coxa in lateral view; fig. 4.— *T. igniceps* Mayr ♂, left mandible and lower margin of face in antero-lateral view; fig. 5.— *T. austriacus* Graham, the same; fig. 6.— *T. laetus* (Walker) ♂, hind femur from inside, showing deviating lower margin; fig. 7.— *T. ventralis* (Fonscolombe) ♂, fore wing.

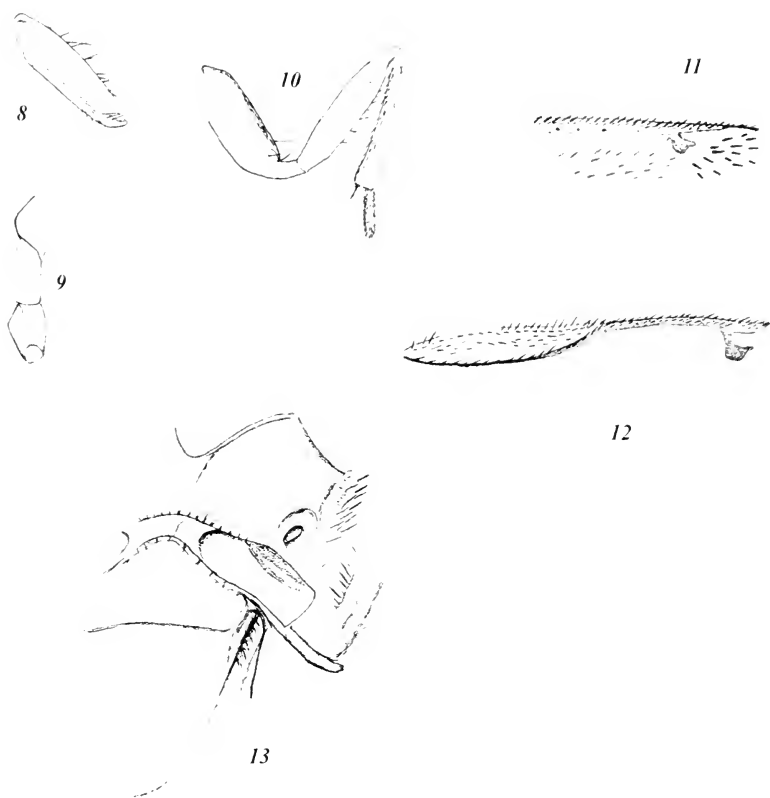


Fig. 8.– *T. azureus* Boheman ♂, hind coxa; fig. 9.– *T. azureus* Boheman ♂, mesepimeron; fig. 10.– *T. nitidulus* (Walker) ♂, hind leg; fig. 11.– *T. tataricae* Zavada ♂, stigma; fig. 12.– *T. druparum* Boheman ♂, propodeum in postero-dorso-lateral view; fig. 13.– *T. notatus* (Walker) ♂, fore wing venation.

Ocelli (o): normal if POL:OOL is 1.7–2.2 and OOL:OD is 0.8–1.3 ▪ small if POL:OOL is less than 1.5 and OOL:OD is more than 1.3. An incomplete, or alternative, state is observed in *nitidulus* (Walker) and *fuscicornis* (Walker), which have ocelli remarkably small, though not so closely set as is here understood by the "smallness" of ocelli. However, this is probably an aberration of "normal" state caused by the small size of these species.

1st funicular segment (F1): normal if F1 not more than 1.2 times as long as F2 and less than 1.5 times as long as broad ▪ elongate if longer than this. This character was used chiefly to preserve *hederae*-group. A 'reduced' state, of which the condition of proximal funicular segments in *nitidulus* (Walker) and *fuscicornis* (Walker) is strongly suggestive, is regarded differently from the "normal/elongate" opposition.

Table 1. Species groups and species solae of Graham & Gijswijt (1998)

	mt	st	sec	M	PM	e	pst	shs	hc	gs4	pf	pmc	psmc	ham	o	F1	p	hdc	fl	hft
<i>nitidulus</i> -group	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
<i>laetis</i> -group ³	+	-	-	-	-	-	+	-	-	-	-	-	-	+	i	-	-	-	-	-
<i>T. armatus</i> Boheman (sp. sola)	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	+	-	+	+
<i>cupreus</i> -group	-	-	-	+	-	-	i	-	-	-	-	-	-	-	-	-	+	+	+	+
<i>T. kononovae</i> (Zer. & Ser.) (incertae sedis)	-	-	-	-	+	-	-	-	-	?	-	-	-	-	-	-	+	-	+	+
<i>austriacus</i> -group	+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-
<i>T. azureus</i> Boheman (sp. sola)	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
<i>hansysi</i> -group	-	+	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	?	+	-
<i>cyaneus</i> -group	-	-	-	-	-	-	-	-	-	m	-	m	m	-	-	-	+	+	+	m
<i>varians</i> -group	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
<i>ericarum</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. nemorum</i> Bouček (incertae sedis)	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-
<i>hederae</i> -group	-	-	-	-	-	-	i	-	-	-	-	-	-	-	-	+	-	-	-	-
<i>flavipes</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>pulchellus</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. arundinis</i> (Walker) (sp. sola)	-	-	-	-	-	-	-	-	-	-	i	-	-	-	-	-	-	-	-	-
<i>T. javardi</i> Steffan (sp. sola)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>cingulatus</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. apiomyiae</i> Bouček & Mihajlovic (sp. sola)	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
<i>bedeguaris</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Question mark (?) is placed where data are missing.

(i) marks an intermediate state.

(m) indicates that mixed species are included in that group, (i.e., species in the group vary in that character).

³Except *T. cypriatus* Graham & Gijswijt.

Table 2. Subgenera and species groups with characters: resulting concepts

	mt	st	scc	M	PM	e	pst	shts	hc	gs4	pf	pnc	psmc	ham	o	F1	p	hdc	fl	hft
subgenus <i>Arctorymus</i>	-	+	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	?	-	-
subgenus <i>Callimomus</i> :																				
<i>austriacus</i> - group	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>lactus</i> -group	+	-	-	-	-	-	a	-	-	-	-	-	-	-	i	-	-	-	-	-
subgenus <i>Lioterphus</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
subgenus <i>Arctorymus</i>	-	-	-	-	-	-	a	-	-	-	-	-	-	-	-	-	+	+	-	-
subgenus <i>Torymus</i> s. str.:																				
Boheman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
<i>T. kononovae</i> (Zerova & Seryogina)	-	-	-	-	-	-	-	-	-	?	-	-	-	-	-	-	-	+	-	-
<i>T. fastuosus</i> Boheman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
<i>cyaneus</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-
<i>variatus</i> -group	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
<i>affinis</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>iachos</i> -group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>hederae</i> -group	-	-	-	-	-	-	a	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>chloromerus</i> - group	-	-	-	-	-	-	-	-	-	-	b	-	-	-	-	-	-	-	-	-

(a) Intermediate; the final interpretation of the character's state is not decisive.

(b) Intermediate in *T. arundinis* (Walker).

Question mark (?) is placed where data are missing.

(i) marks an intermediate state.

T. apiomyiae Bouček & Mihajlovič (sp. sola) is excluded as unknown to me.

Pedicellus (p): short if subquadrate and distinctly shorter than F1 ▪ normal if longer than this.

Hind coxa: dorsal carina (hdc): absent ▪ present. sometimes displaced on lateral surface of coxa.

Frenal line (fl): present ▪ absent. This is evidently a highly homoplastic character, being a synapomorphy of several species groups.

Hind femur: tooth (hft): absent ▪ present. As the condition of this traditionally important character in *fastuosus* Boheman can hardly be determined. I included it the last, and regard it nearly a species character, if not unusable at all at a higher level for its homoplasticity.

Discussion

In table 1 Graham's species groups are each tested with the set of characters listed above. Species placed putatively in groups in Graham & Gijswijt (1998) are listed here separately and marked as *incertae sedis*.

Represented in table 2 are "natural" groups that include species with unvarying characters, and those species which stand apart from any such group.

Names of these groups are those of Graham & Gijswijt (1998), except that *chloromerus*- is used as an alias for *bedeguaris*-group. The following entities of the cited paper are included in *chloromerus*-group: *flavipes*-group, *pulchellus*-group, *erucarum*-group, *cingulatus*-group, and *T. arundinis* (Walker) and *T. favardi* Steffan (species *solae* in that paper). For these entities established by Graham I could not find any structural characters, as identical rows of zeros in Table 1 above show, in which they should differ from *chloromerus*-group.

T. azureus Boheman (also species *sola* in that revision) is here included together with *nitidulus*-group in the subgenus *Lioterphus*.

Definition of subgenera and species groups

In this section, the subgenera are provided with diagnoses and type-species; preserved species groups are only described and discussed.

Subgenus *Arctorymus* subgen. n.

Type-species: *Torymus baudysi* Bouček.

Diagnosis.— Stigma sessile; scutellum with concentric costulae; metepisternal callus smooth [as indicated in Grissell (1976)].

Description.— Mandible with three teeth; stigma sessile; scutellum with concentric costulae; M and PM normal; metepisternal callus smooth; parastigma not swollen; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of 4th gastral tergite entire; propodeal foramen low; median and submedian carinae not traceable on propodeum; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus normal; frenal line distinct; hind femur without tooth.

Venation pale, parastigma concolorous with proximal abscissa of SC; disc of fore wing very sparsely pilose.

Biology.— Parasitic on Eurytomidae in grasses.

Comments.— The principal defining character of this subgenus is concentric costulae on scutellum which spread onto the distinctly delimited frenal area without weakening (a good SEM picture of scutellum representing this character, in *T. koebelei* (Huber), is plate 4b in Grissell (1976)). Notwithstanding its superficial location, the absence of this pattern of sculpture in any other Palearctic species of *Torymus* is a conclusive evidence of the monophyly of the species included in this subgenus. Further, supporting characters, the sessile stigma and smooth metepisternal callus, are as well unique in the genus.

Composition.— *baudysi* Bouček, *tatiana*e Zavada. Some (not all) species from Nearctic *tubicola*-group of Grissell (1976) belong in this subgenus (*koebeleri* (Huber) and related species).

Materials Examined.— *T. baudysi* Bouček: 1 ♂, RUSSIA, Leningrad, Pargolovo, *Calamagrostis epigeios* coll. 2.iv.1972 em., v.72 (Zerova); 1 ♂, RUSSIA, Astrakhansky res., Damchansky area, *Agropyrum repens*, em. 20.v.1976 (Zerova); 1 ♂, UKRAINE, Danube delta, Isl. Parokhodnaya Kosa, 10.vii.1997 (Kotenko); 1 ♂, UKRAINE, Dunaiskie Plavni res., Kordon Bystry, 20.vii.1997 (Kotenko); 1 ♂, UKRAINE, Odessa obl., Dunaiskie Plavni res., Isl. Kubanu, 15.viii.1996 (Simutnik); 1 ♂, UKRAINE, Kiev, Theophania, ex *Tetramesa eximia* in stalks of *Calamagrostis* coll. and em. v.1966 (NN); 2 ♂, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, 20.vi.1970 (Zerova) (all in SIZK).

*T. tatiana*e Zavada: Holotype ♂, UKRAINE, Kherson obl., Chernomorsky Res., Soleno-Ozerny area, oak birch grove, 6.v.1982 (Kotenko) (SIZK); 1 ♂, paratype, UKRAINE, Lougansk obl., Streltsovskaya Steppe [Reserve], 10 km S v. Melovoe, 25.v.1979, swept on *Caragana frutex* (Perepechaenko) (ZMAN).

Subgenus *Callimomus* Thomson⁴

Callimomus Thomson, 1876:60, 77. Type-species *Callimomus scapopus* Thomson. Designated by Ashmead 1904: 241.

Diagnosis.— Mandible with two teeth; anterior margin of hind coxa angulate.

Description.— Mandible with two teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma swollen; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 emarginate; propodeal foramen low; median and submedian carinae not traceable on propodeum; anterior margin of hind coxa angulate; ocelli small or intermediate; F1 elongate or not; pedicellus normal; hind coxa without dorsal carina; frenal line not traceable; hind femur without tooth.

Parastigma darker than SC. Propodeum sloping at a low angle, coriaceous to finely reticulate, occasionally with lines of rather strong rugosity in the form of high arches abutting on posterior margin of propodeum (not identifiable as submedian carinae, the latter being straight and parallel). Base of scutellum pointed; middle part of dorsum of thorax that includes base of mesoscutum and scutellum, with notably low relief across sutures (as compared to species of *chloromeris*-group). Mesepimeron with anterior and posterior margins strongly converging upwards, or with anterior margin converging only in upper part. Hind basitarsus short, more than 2.5 times shorter than hind tibia; (notably hind) femora swollen, hind femur carinate along lower outer margin; the latter deviating outward from even curvature in distal 0.6–0.9. ST strongly oblique.

BIOLOGY.— Parasitic on various Diptera in *Carex* species (Graham & Gijswijt, 1998). Unknown for *austriacus*-group.

COMMENTS.— This subgenus consists of the species of Graham's *laetus*- and *austriacus*-groups. The main character for this subgenus is large, two-toothed mandibles (fig. 4-5); additional supporting character is the angulate anterior

⁴ According to Grissell (pers. comm.), *Callimomus* was apparently synonymized by Schmiedeknecht (1914), who was the first to place it under *Torymus*, not stating, however, that it was a new synonym.

margin of hind coxa. Swollen parastigma is quite distinct in the species of *Callinomus*, although several other species (e.g., *T. armatus* Boheman, *T. fagineus* Graham) have been found to present a state somewhat approaching it.

There are two subdivisions inside this subgenus which I distinguish as species groups:

(1) *austriacus*-group: *austriacus* Graham (and possibly *imperatrix* Graham & Gijswijt; I have not seen this species);

(2) *laetus*-group: all the rest.

Graham & Gijswijt (1998) include in their *laetus*-group also *cyprianus* Graham & Gijswijt, *fischeri* Ruschka and *grahami* Bouček, which species I have not had an opportunity to examine. However, the following statement in the description of *cyprianus* (p. 87) is indicative of its improper placement in *laetus*-group: "Scutellum [with] base rounded ...", as well as the figure of scutellum. The other two species, according to figures and host records, may be placed in this group with good confidence.

There are good reasons to suppose that *austriacus*-group is derived from *laetus*-group as having: (a) accomplished small ocelli; (b) smoothed frenum; (c) stronger sculpture on lateral surface of hind coxa.

COMPOSITION.— *arcticus* Thomson, *austriacus* Graham, *chrysocephalus* Boheman, *fischeri* Ruschka, *grahami* Bouček, *igniceps* Mayr, *laetus* (Walker), *nemorum* Bouček, *regalis* (Walker), *scaposus* (Thomson), and *ventralis* (Fonscolombe).

The Nearctic genus *Allotorymus* Huber may, in anticipation of its synonymy with *Torymus* Dalman, supply its species to this subgenus (or vice versa), in view of the relevant remark in Graham & Gijswijt (1998: 11):

"The Nearctic genus *Allotorymus* Huber, 1927 comes very near to *Torymus*. Its type-species, *Syntomaspis splendens* Provancher, 1887 differs from *Torymus* species mainly in its long, virtually parallel-sided pronotum. Its mandibles have the form seen in the *laetus*-group of *Torymus*; the ocelli are very small; the forewing has an extremely narrow costal cell; its frenum is more or less offset and the scutellar base is pointed. These characters are partly shared by the *laetus*- and *austriacus*- groups of *Torymus*."

MATERIALS EXAMINED.— *T. arcticus* Thomson; 1 ♂, RUSSIA Far East, Kunashir Isl., N. part of Yu-Kurilsk, Golovina Bay, 145°51.50' E 40°02.50' N, boggy meadow along Bolotnyi Ck, boggy meadow, 4.ix.1977 (Marusik) (SIZK).

T. austriacus Graham; 2 ♂, UKRAINE, Kiev, Novoselki, sweeping in grass under oaks, 16.vi.1984 (Kotenko) (SIZK); 2 ♂, UKRAINE, Kiev, Lysa Hora, 30.v.1995 (Kotenko) (SIZK); 5 ♂, 2 ♀, 1 gynandromorph, UKRAINE, Ternopol obl., Gusiatin distr., Medobory res., 27.v.1994 (Siniavskaya) (SIZK); 2 ♂, UKRAINE, Askania Nova res., 8.viii.1985 (NN) (SIZK); 21 ♂, RUSSIA, Stavropolsky Krai, Mirny, forest hedge between fields, 14.v.1972 (Zerova) (SIZK); 3 ♂, 1 ♀, same data (ZMAN); 1 ♂, MOLDAVIA, Kishinev, botanical garden, fluorescent grass along road, 5.vi.1967 (NN) (SIZK).

T. chrysocephalus Boheman; 1 ♂, UKRAINE, Vinnitsa obl., Frostianets distr., Sobolevsky forest stat., fluorescent grass, Bug riv., 20.vi.1966 (Zerova) (SIZK); 2 ♂, Lvov obl., Yavorov distr., Rostochie res., Zalivki, flooded meadows, forest, 21.vii.1996 (Gumovsky) (SIZK); 1 ♂, Lvov obl., Yavorov distr., Rostochie res., road from greater bay of pond Yanovsky to riv. Stavchanka, 19–21.vii.1996 (Gumovsky) (ZMAN).

T. igniceps Mayr: 1 ♂, 2 ♀, UKRAINE, Irpen riv., sweeping in grass, 20.vi.1958 (NN) (SIZK); 1 ♀, HUNGARY, Apatistvanfalvi, 30.vi.1994 (Fursov) (SIZK); 1 ♂, NETHERLANDS, 't Harde, 22.x.1977 (van Aartsen) (ZMAN).

T. lactus (Walker): 1 ♂, UKRAINE, Kiev, Nemeshaevo, ex galls *Biorhiza pallida*⁵, 13.vii.1974 (Zerova) (SIZK); 1 ♂, RUSSIA Far East, Sakhalin, Novoalexandrovsk, 7-27.viii.1986 (Nesterov) (SIZK); 1 ♂, 1 ♀, Lvov obl., Yavorov distr., Rostochie res., road from greater bay of pond Yanovsky to riv. Stavchanka, 19-21.vii.1996 (Gumovsky) (ZMAN); 1 ♂, NETHERLANDS, Kunrade 5.vii.1992 (van Aartsen) (ZMAN); 1 ♀, FRANCE, Le Muy, 10.x.1985 (Gijswijt) (ZMAN).

T. nemorum Bouček: 1 ♂, MOLDAVIA, Derbetny v., 9.vi.1974 (Kononova) (SIZK); 1 ♂, UKRAINE, Zaporozhie obl., Melitopol distr., "Kamennaya Mogila", 12.vi.1983 (Kotenko) (SIZK); 1 ♂, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., road from greater bay of pond Yanovsky to riv. Stavchanka, sweeping in riparian meadow 21.vii.1996 (Gumovsky) (ZMAN).

T. regalis (Walker): 23 ♂, UKRAINE, Khmel'nitsky obl., Slavut. distr., near lake Sviatoe, boggy forest, 20.vi.1999 (Kotenko) (SIZK); 21 ♂, same data (ZMAN); 1 ♀, UKRAINE, Kiev, Lysaya Gora, 1.vii.1999 (Zavada) (ZMAN).

T. scapopus (Thomson): 1 ♀, UKRAINE, Volyn obl., Kovel distr., nr. lake Lubche, 6.vi.2000 (Kotenko) (ZMAN).

T. ventralis (Fonscolombe): 1 ♂, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., border of reserve and Stachchansky forest station, 22.vii.1996 (Gumovsky) (ZMAN); 1 ♂, HUNGARY, Drávapalkonya, 4.x.1973 (Heller) (SIZK); 1 ♀, ROMANIA, nr. Tulcha, clearing in forest, 18.v.1996 (Kotenko) (SIZK); 1 ♂, UKRAINE, Zakarpatskaya obl., Vinogradov distr., nr. v. Hetyna, riparian meadow on riv. Tisa, 4.viii.1999 (Zavada) (SIZK); 1 ♂, Transcarpathians, Tiachev, plains along Tisa riv., 24.vii.1995 (Kotenko) (SIZK); 1 ♂, Carpathians, Chernogorie, forest st., 6.viii.1994 (Simutnik) (SIZK); 1 ♂, 2 ♀, Vinnitsa obl., Trostianets distr., Sobolevsky forest stat., florescent grass, Bug riv., 20.vi.1966 (NN) (SIZK); 1 ♂, 1 ♀, RUSSIA, Moscow obl., Nogin distr., v. Chernogolovka, 6.08.1992 (Kotenko) (SIZK); 1 ♀, Tsentralny Chernozem Reserve, Yamskoy area, 13.vii.1981 (NN) (SIZK); 1 ♂, RUSSIA, Dagestan, Karadakh, 4.vi.1972 (Zerova) (SIZK).

Subgenus *Lioterphus* Thomson

Lioterphus Thomson, 1876:60, 99. Type-species: *Torymus pallidicornis* Boheman (now *T. nitidulus* (Walker)). Designated by Ashmead 1904:241.

Torymus Dalman (in part): Grissell, 1976 (synonymy).

DIAGNOSIS.— Shorter hind tibial spurs absent or reduced; hind coxa elongate (figs. 8, 10).

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma not swollen; shorter hind tibial spur reduced or absent; hind coxa elongate; posterior margin of gastral tergite 4 emarginate; propodeal foramen low; median and submedian carinae not traceable; anterior margin of hind coxa straight; ocelli small⁶; F1 not elongate (see remarks below); pedicellus normal; hind coxa without dorsal carina; frenal line not traceable; hind femur without tooth.

Teguments of the body weakly sclerotized and soft (though dark, not testaceous); mounted specimens often have head collapsed and rest of body distorted. Hind coxa notably slender: more than 3.5 times as long as broad, with weak, coriaceous sculpture on lateral surface which is devoid of punctures.

⁵ Apparently wrong.

⁶ Although wide apart, which does not allow to identify this state with that designated as "normal" in the character list.

Propodeum sloping at a high angle, with very small and scarcely visible foveolae along anterior margin. Base of scutellum broadly truncate. Mesepimeron about twice as high as broad; scutellum with sculpture obsolescent toward apex. Occipital carina barely discernible laterally.

In *T. nitidulus* (Walker) and *fuscicornis* (Walker), anterior margin of male scape is strongly produced forward, so the scape is strongly oblong in midsection, and proximal antennal segments reduced in size, anelliform.

BIOLOGY.— Parasitic on Diptera Cecidomyiidae in catkins of *Betula* (*nitidulus* (Walker) and *fuscicornis* (Walker)) and in *Picea* cones (*azureus* Boheman).

COMMENTS.— This subgenus unites *T. azureus* Boheman and species of Graham's *nitidulus*-group as sharing the following characters: (1) exceedingly elongate and virtually parallel-sided hind coxa; (2) reduced/absent shorter hind tibial spur; and (3) virtual absence of occipital carina on postgenae. The shorter hind tibial spur in *azureus* Boheman is notably and disproportionately reduced (barely longer than the apical setae on outer side of the tibia), and I regard this condition as nearer to that seen in the other two species than to the plesiomorphic state. An additional argument is in the evidence that the three species have Holarctic distribution, whereas very few species of *Torymus* occur in both regions.

COMPOSITION.— *azureus* Boheman, *fuscicornis* (Walker), and *nitidulus* (Walker).

MATERIALS EXAMINED.— *T. azureus* Boheman: 5 ♂, UKRAINE, Carpathian res., Kostylevka, 22.vii.1995 (Simutnik) (SIZK); 8 ♂, 2 ♀, UKRAINE, Chernigov obl., d/p Trostianets, ex *Picea* cones, coll. 3.iv.1969, em. 18.iv.1970 (Smetanin) (SIZK); 2 ♂, 1 ♀, Bot. garden of Acad. Sci., ex *Picea* cones, 25.vi.1965 (Zemkova) (SIZK); 5 ±, 6 ♀, LATVIA, Dundarsky Leskhoz, *Picea* cones, 15.vii.1966 (Saxon) (SIZK); 1 ♂, same data (ZMAN); 1 ♂, LITHUANIA, Plunge, ex *Picea* cones, coll. 3.i.1971, em. 10.i.1972 (Milishauskas) (SIZK); 3 ♂, LITHUANIA, riv. Shilute, ex *Picea* cones, 1972 (Milishauskas) (SIZK); 2 ♂, 1 ♀, MOLDAVIA, Kapriany, garden, ex *Picea* cones (*Cydia strobilifera*), 12–13.v.1971 (Plugaru) (SIZK); 44 ♂, 57 ♀, RUSSIA, Perm obl., v. Nijny Likh, Ural fir, coll. 12.xi.1966, em. 15.xii.1966–15.i.1967 (Tsybul'sky) (SIZK); 1 ♂, NETHERLANDS, Westervelde (Dr), 20.v.1970, (van Aartsen) (ZMAN); 1 ♂, NETHERLANDS, VELD (G) 21.v.1991 (Grijpma) (ZMAN).

T. fuscicornis (Walker): 1 ♂, NETHERLANDS, Hilversum kalkterrein, 3.vi.1971 (Gijswijt) (ZMAN); 1 ♂, NETHERLANDS, Hilversum kalkterrein, 13.v.1971 (Gijswijt) (ZMAN); 1 ♂, UKRAINE, Kiev, Hydropark, 4.v.1999 (Gumovsky) (SIZK); 2 ♂, 2 ♀, UKRAINE, Kiev, Theophania, iv.1968 (Zerova) (SIZK); 6 ♂, 13 ♀, UKRAINE, Kiev, Bot. garden of Acad. Sci. of UkrSSR, ex birch seeds, 1966–1968 (Zerova) (SIZK); 13 ♂, 1 ♀, UKRAINE, Chernomorsky Biosphere Reserve, Ivano-Rybalchansky area, 24–25.v.1991 (NN) (SIZK).

T. nitidulus (Walker): 4 ♂, 6 ♀, UKRAINE, Kiev obl., Obukhov distr., v. Pluty, 25.iii.1968 (Zerova); 2 ♂, UKRAINE, Kiev, Theophania, iv.1968 (Zerova); 1 ♂, 9 ♀, UKRAINE, Kiev, Bot. garden of Acad. Sci., coll. viii.1967, em. xii.1967–19.iii.1968 (Zerova); 2 ♂, ibid., birch seeds, 27.x.1973 (Zemkova); 8 ♂, 2 ♀, ibid., seeds of *Betula exilis*, coll. 9.x.1966 (Zerova) (all in SIZK).

Subgenus *Aretorymus* subgen. n.

Type-species: *T. calcaratus* Nees.

DIAGNOSIS.— M short; propodeum with robust, nearly symmetrical areolate-rugose sculpture.

DESCRIPTION.— Mandible with three teeth: stigma petiolate; scutellum without concentric costulae; M short; PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 broadly emarginate; propodeal foramen low; median and submedian carinae not traceable on propodeum (see remarks below); anterior margin of hind coxa not angulate (broadly rounded); ocelli normal; F1 not elongate; pedicellus short; hind coxa carinate dorsally; frenal line distinct; hind femur with a strong tooth.

Body all over in large and close piliferous punctures (such punctures mark, in particular, the intermesepisternal suture); hind femur expanded with lower outer margin carinate, and bearing a strong tooth. Funicular segments with short and very dense sensilla. Propodeum with robust, nearly symmetrical areolate-rugose sculpture (so submedian carinae cannot form themselves as straight narrow grooves over the strongly rugged surface). Lower face with a row of what seems fused punctures running parallel to the lower margin of face at a short distance from it. Mesepimeron high (or rather, narrow); horizontal abscissa of metapleural suture stretches far beyond the point where anterior margin of mesepimeron meets it.

BIOLOGY.— Parasitic on Sphecidae and Apidae in hollow stems of *Rubus*, also in vacated cynipid galls on *Quercus* and, most probably, in other cavities appropriate for host nests.

COMMENTS.— This subgenus comprises two species of *Diomorus* of authors. The invention of a new name to supersede the traditional "Diomorus" was unavoidable because the type-species of *Diomorus* (*Diomorus nobilis* Walker, now *T. armatus* Boheman) falls outside of *Aretorymus* subgen. n., thus preoccupying "Diomorus" for the name of a taxon of its own.

COMPOSITION.— *calcaratus* Nees and *cupreus* (Spinola).

MATERIALS EXAMINED.— *T. calcaratus* Nees: 1 ♂, UKRAINE, Kiev, gardens, 18.vi.1972 (Marinchenko) (SIZK); 1 ♀, ARMENIA, pr. Eriwan, Mus. Armen. №11–24 (Schelkovnikov) (SIZK); 1 ♂, MOLDAVIA, Kishinev, 10.vi.1960 (V. Talitzky) (SIZK); 1 ♂, FRANCE, Fontaine de Vaucluse, 19.vi.1981, (Tschorsnig) (SIZK); 1 ♂, NETHERLANDS, St. Pietersberg, 13.vii.1995 (v. Aartsen) (ZMAN); 1 ♀, FRANCE, Dept. Vaucluse, Malaucene 1.viii.1973 (Gijswijt) (ZMAN).

T. cupreus (Spinola): 1 ♂, RUSSIA, Rostov obl., Aksaysky distr., v. Rassvet, 2.viii.1979 (Artokhin) (SIZK); 1 ♀, same data except 13.viii.1979 (SIZK); 1 ♂, UKRAINE, Donetsk obl., Slaviansky distr., v. Bogorodichnoe, 17.vii.1984 (Kotenko) (SIZK).

Subgenus *Torymus* Dalman s. str.

Callimome Spinola, 1811: 146-148. Type-species: *Ichneumon bedeguaris* Linnaeus. Designated by Curtis, 1835:552.

Misocampe Latreille, 1818: 213. Type-species: *Ichneumon bedeguaris* Linnaeus. Designated by Gahan & Fagan, 1923:91.

Torymus Dalman, 1820: 135; 178. Type-species: *Ichneumon bedeguaris* Linnaeus. Designated by Ashmead, 1904:242.

Misocampus Stephens, 1829: 395 [misspelling].

Syntomaspis Foerster, 1856: 43-44. Type-species: *Torymus ewynotus* Foerster (now *T. cyaneus* (Walker)). Designated by Gahan & Fagan 1923: 139.

T. armatus Boheman (species sola)

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M normal; PM long, tapering to a vanishing point midway from junction of ST to apex of wing; metepisternal callus rough; parastigma intermediate; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 incised and broadly and shallowly emarginate; propodeal foramen low; median propodeal carina absent, submedian carinae distinct; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa in males not carinate, in females with a weak and short dorsal carina shifted onto lateral surface; frenal line distinct; hind femur with a strong tooth.

Hind femur swollen, ecarinate, bearing a strong tooth. The nitid dorsal area of hind coxa delimited laterally by the dorsal carina (when present, in other species) is spreading a short distance on lateral surface of coxa in females. Funicular segments with short and very dense sensilla. Hind wing with a very weak remnant of cv.

BIOLOGY.— As in subgenus *Aretorymus*.

MATERIALS EXAMINED.— *T. armatus* Boheman: 1♂, UKRAINE, Carpathians, Chernogory, forest, stat., 6.viii.1994 (Simutnik) (SIZK); 1♀, UKRAINE, Volyn obl., road in forest N to v. Nevir, 17.viii.1998 (Kotenko) (SIZK); 1♀, UKRAINE, Kiev, Novoselki, 6.ix.1984 (Kotenko) (SIZK); 2♂, UKRAINE, Donetsk obl., Slaviansky distr., v. Bogorodichnoe, 17.vii.1984 (Kotenko) (SIZK); 1♀, UKRAINE, Odessa obl., Dunaiskie Plavni res., 14.viii.1996 (Kotenko) (SIZK); 2♂, RUSSIA Far East, Primorie, v. Kievka, ex cocoons *Osmia taurus*, 15.iv.1982 (Romankova) (SIZK); 1♀, 1♂, RUSSIA Far East, Primorie, v. Sokolovka, 25.iii.1982 (Romankova) (SIZK); 4♂, 2♂, RUSSIA Far East, Primorie, v. Benevskoye, 20.vi.1981 (Romankova) (SIZK); 1♀, 1♂, RUSSIA Far East, Yuzhnosakhalinsk, nr v. Lugovoe, 20.iii.1986 (Nesterov) (SIZK); 3♂, 1♂, RUSSIA Far East, Sakhalin Isl., nr v. Novoalexandrovsk, nest of *Crossocerus* sp. in stem of *Rubus* ex larvae, iii.1974 (Nesterov) (SIZK); 2♂, *ibid.*, 20.iii.1986 (Nesterov) (SIZK); 1♀, *ibid.*, 2.vii.1975 (Nesterov) (SIZK); 1♂, 1♂, *ibid.*, 19.vii.1987 (Nesterov) (SIZK); 1♀, 1♂, *ibid.*, 27.viii.1986 (Nesterov) (SIZK); 1♀, NETHERLANDS, Pietersberg, 21.vi.1990 (van Aartsen) (ZMAN); 1♂, NETHERLANDS, Nunspeet, 22.vi.1975 (van Aartsen) (ZMAN).

T. kononovae (Zerova & Seryogina) (species sola)

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M normal; PM intermediate, tapering to a vanishing point at about 1/3 the distance from junction of ST to apex of wing; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; propodeal foramen low; propodeum without median or submedian carinae; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa not carinate dorsally; frenal line distinct; hind femur with a moderate tooth.

Hind coxa nitid dorsally in basal part, much like the state seen in *T. armatus* Boheman. Funicular segments with short and very dense sensilla. Disc of fore wing with infumate area expanding from stigma posterad.

BIOLOGY unknown. Associated with calcareous grounds. Site records are: Czech Republic, Bohemia Velky Vrestov (type locality of *T. pulcher* Bouček, a junior synonym of *T. kononovae* (Zerova & Seryogina)), Southern and Eastern Ukraine (steppe zone), and Kazakhstan (type locality).

COMMENTS.— This species might be united with *T. armatus* Boheman in one species group, both having the long and tapering PM and similarly sculptured hind coxa. However, *T. kononovae* (Zerova & Seryogina) has propodeum smooth and devoid of grooves or longitudinal striation, which prevents this grouping.

MATERIALS EXAMINED.— *T. kononovae* (Zerova & Seryogina): Holotype ♂, KAZAKHSTAN, nr Kokchetav, steppe with calcareous denudations, 21.vii.1987 (Kononova) (SIZK); 1 ♀, UKRAINE, Lougansk obl., Streltsovskaya Steppe res., 27.vi.1983 (Kotenko) (SIZK); 1 ♀, UKRAINE, Donetsk obl., Kamennye Mogily res., 14.vi.1983 (Kotenko) (SIZK).

***T. fastuosus* Boheman** (species sola)

DESCRIPTION.— Mandibles with three teeth; stigma petiolate, scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma not swollen; shorter hind tibial spur not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 narrowly incised; propodeal foramen low; median propodeal carina traceable as raised line; submedian carinae not traceable; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa without dorsal carina; frenal line distinct; hind femur occasionally with a very small tooth.

Propodeum finely reticulate. Sensilla on funicular segments extremely dense and short; flagellum notably stout, in males broadest at F2-F3.

BIOLOGY.— Parasitic on Cynipidae in *Quercus*.

MATERIALS EXAMINED.— *T. fastuosus* Boheman: 6 ♀, GEORGIA, Khodjori, coll. 2.ix.1974, em. 28.vii.1975 ex *Quercus* (Khodjewanishvili) (SIZK); 2 ♀, 1 ♂, same data (ZMAN).

Species group of *varians*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 emarginate and incised; propodeal foramen high (fig. 12); median and submedian propodeal carinae absent; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus normal; hind coxa not carinate dorsally; frenal line distinct; hind femur without tooth.

BIOLOGY.— Phytophagous in seeds of Rosaceae; for some species (Nearctic *T. aea* (Walker) and *T. enrytomae* (Puzanova-Malysheva)) mixed feeding has been shown (Grissell 1976).

COMMENTS.— This species group is defined by the high position of propodeal foramen, additional supporting characters being circular shape of head, protruding parascrobal areas, and prevailing phytophagy.

I examined a series of *T. enrytomae* (Puzanova-Malysheva) in SIZK. They appear like large specimens of *T. druparum* Boheman or *T. varians* (Walker); I could not find any reliable differences between the three species except the host records.

COMPOSITION.— (Palearctic species only) *aucupariae* (Rodzianko), *druparum* Boheman, *enrytomae* (Puzanova-Malysheva), *gracilior* Graham & Phegaa 31 (3) (1.IX.2003): 108

Gijswijt, *terentianus* Zavada. *varians* (Walker). *T. interruptus* Gijswijt may belong here.

MATERIALS EXAMINED.— *T. aucupariae* (Rodzianko): 1♀, UKRAINE, Poltava, ex rowan seeds, 15.vii.1899 (Rodzianko) (SIZK).

T. druparum Boheman: 1♀, MOLDAVIA, Kishinev, 30.v.1976 (V. & N. Talitskys) (SIZK); 4♀, 4♂, ibid., apple seeds, autumn 1958, (V. Talitsky) (SIZK); 1♀, ibid., 19.vii.1959 (V. Talitsky) (SIZK); 1♀, ibid., garden, 28.v.1958, (V. Talitsky) (SIZK); 1♂, MOLDAVIA, Rybnitsa, nr v. Belochi, open ravine slopes in deciduous forest, 13.vi.1967 (NN) (SIZK); 1♀, UKRAINE, Kiev, on windowsill, 4.iii.1986 (Zerova) (SIZK); 1♀, UKRAINE, Kiev, Teremki, 9.iv.1974 (Petrenko) (SIZK); 11♀, 3♂, UKRAINE, Kiev, Ukr. inst. for experimental horticulture, ?1959 (Zerova) (SIZK); 1♀, UKRAINE, Kiev, Goloseevo, 26.v.2000 (Zavada) (ZMAN).

T. gracilior Graham: 1♀, RUSSIA Far East, Sakhalin, Novoalexandrovsk, 7–27.viii.1986 (Nesterov) (SIZK); 1♀ paratype, FRANCE, Dépt. Gard, Crespion, langs Doulibre in struiken, 8.vi.1982 (Gijswijt) (ZMAN); 1♀, ITALY – Abr., Prov l'Aquila, Gran Sasso d'Italia, S.E. slope, 1400 m, 17.vi.1993 (Gijswijt) (ZMAN).

T. varians (Walker): 2♀, GERMANY, Schleswig, 18.vii.1961 (NN) (SIZK); 1♀, UKRAINE, Kharkov obl., 2 km down riv. Oskol, right bank of riv. Sev. Donets, forest, 12.vii.1982 (Kotenko) (SIZK); 1♀, UKRAINE Crimea, Luchistoe, pear, 3.vi.1989 (Shvedov & Lazarenko) (SIZK).

T. terentianus Zavada: 9♀ (entire type series), KAZAKHSTAN, Akmolinskaya obl., Shchuchinsk, ex seeds of *Cotonaster melanocarpa* Lodd., 1997 (Gninenko) (SIZK).

Species group of *cyaneus*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 entire; propodeal foramen low; median propodeal carina absent; submedian carinae distinct; anterior margin of hind coxa straight; ocelli normal; F1 normal; pedicellus short; hind coxa carinate dorsally; frenal line distinct; hind femur without tooth.

Body all over in large and dense piliferous punctures (although less close than in *cupreus*-group and not present at the suture dividing mesepisterna). Funicular segments with short and very dense sensilla. Propodeum with prepiracular carinae as shallow grooves.

COMMENTS.— No character may be selected as diagnostic for this group; such character might be the entire posterior margin of gastral tergite 4, but it is also observed in *Arctorymus* subgen. n.

BIOLOGY.— Parasitic on Cynipidae in *Quercus* (Graham & Gijswijt, 1998) and in *Rosa*.

COMPOSITION.— *brevicoxa* Zavada, *cyaneus* Walker, and *macrurus* (Förster). *T. montanus* (Zerova) may belong here (at the time I examined this species, I was not considering the present work).

MATERIALS EXAMINED.— *T. brevicoxa* Zavada: holotype ♂ and paratype ♀, TADJIKISTAN, Kondara, 24.iv.1980, em. 12.v.1980 ex galls of *Diptolepis* sp. on *Rosa* (Pljushch) (ZMAN)⁷.

T. cyaneus Walker: 2♂, MOLDAVIA, Kotovsk distr., v. Rezeny, div. 432, 15.vi.1962 (Plugaru) (SIZK); 1♂, 4♀, RUSSIA, Leningrad obl., Tolmachevo, ex *Cynips divisa* on oak, 1.x.1960 (NN) (SIZK); 1♀, 2♂, MOLDAVIA, Kalfa, 26.v.1971 (Plugaru) (SIZK); 1♂, UKRAINE, Puscha Voditsa,

⁷ Indication of its depository in Zavada (2001b) is incorrect.

2.♀, xi.1968 (Logvin) (SIZK); 1 ♀, 2 ♂, UKRAINE, Kiev, Darnitsa, ex galls *Cynips quercusfolii*, 24.iv-24.v.1974 (Rayevsky) (SIZK); 21 ♀, 10 ♂, RUSSIA, Prioksko-Terrnsny res., *Cynips longiventris*, leaves, coll. iv.1982, em. 20-30.v.82 (Zerova) (SIZK); 2 ♂, UKRAINE, suburbs of Kiev, ex *Cynips quercusfolii* on oak, 4.vi.1955 (Zerova) (SIZK); 1 ♀, UKRAINE, Rakhov, meadow over gorge, 15.vii.1993 (Simutnik) (ZMAN); 1 ♀, NETHERLANDS, 's Graveland, gal *Cyn. longiv.*, 23.v.1963 (Gijswijt) (ZMAN); 1 ♀, NETHERLANDS, 's Graveland, galls *Diptolepis divisa*, 26.iii.1957 (Gijswijt) (ZMAN).

T. macrurus (Förster): 1 ♀, 1 ♂, MOLDAVIA, Durlleshty, garden 859, ex galls *Cynips quercusfolii*, v.1963 (Plugaru) (SIZK); 1 ♀, UKRAINE, Kiev, Darnitsa forest stat., oak forest, galls *Cynips quercusfolii*, 10.xi.1973 (Rayevsky) (SIZK); 6 ♀, UKRAINE, Kiev obl., Irpen, coll., 10.v.1974 (Diakonchuk) (SIZK).

Species group of *affinis*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 incised; propodeal foramen low; median propodeal carina absent; submedian carinae indistinguishable amidst weak longitudinal striation on propodeum; anterior margin of hind coxa straight; ocelli normal; F1 not elongate; pedicellus short; hind coxa weakly carinate dorsally; frenal line distinct, though weak; hind femur without tooth.

M and SM broadening towards juncture of ST (fig. 13).

COMMENTS.— This group is close to the preceding one. Its incised gastral tergite 4 prevents merging of the two. I am not quite confident in separating this species group.

BIOLOGY.— As in *cyaneus*-group.

COMPOSITION.— *affinis* (Fonscolombe), *notatus* (Walker), and *cerri* (Mayr).

MATERIALS EXAMINED.— *T. affinis* (Fonscolombe): 1 ♀, UKRAINE, Uzhgorod (nr airport), coll. 24.x.91, em. iv.1991 ex galls *Biorhiza pallida* on *Q. robur* (Diakonchuk) (SIZK); 9 ♀, 20 ♂, UKRAINE, Kiev, Theophania, galls of *Biorhiza pallida*, 19.v.1974 (Zerova) (SIZK); 1 ♀, UKRAINE, Kiev, Novoselki, 4.v.1984 (Kotenko) (SIZK); 4 ♀, 2 ♂, UKRAINE, Kiev, Puscha Voditsa, ex galls of *Biorhiza pallida* coll. 10.vi.1984, em. 17.vi.84 (Zerova) (SIZK); 4 ♀, 3 ♂, UKRAINE, Kanev, iv.1954 (Zerova) (SIZK); 5 ♀, 12 ♂, *ibid.*, 1.vi.1976 (Zerova) (SIZK); 20 ♀, 8 ♂, UKRAINE, Chernomorsky res., Solenoozerny area, *Biorhiza pallida*, em. 5.v.1974 (Zerova) (SIZK); 18 ♀, 8 ♂, UKRAINE, Chernomorsky res., Iv.-Rybalchansky area, 21.vi.1970 (Zerova) (SIZK); 1 ♀, 3 ♂, MOLDAVIA, Lozovo, garden, *Biorhiza pallida*, v.1972 (Plugaru) (SIZK); 1 ♀, MOLDAVIA, Golerkany, forest, 25.iv.1968 (Plugaru) (SIZK); 6 ♀, GEORGIA, Khodjori, oak, em. 28.vii.1975 (Khodjevanishvili) (SIZK); 1 ♀, AZERBAIJAN, v. Sarybash, 1,700 m, oak, galls of *Biorhiza pallida*, coll. 5.vii.1973, em. iii.1974 (Zerova) (SIZK); 1 ♀, NETHERLANDS, Vijlen (erbos) Lbg, galls *Bior. pallida* 19.ii.1993 (Gijswijt) (ZMAN); 1 ♂, NETHERLANDS, Overveen, 15.v.1970 (van Aartsen) (ZMAN).

T. notatus (Walker): 5 ♀, 3 ♂, UKRAINE, Kiev, Theophania, galls of *Andricus curvator*, 20.v-17.vi.1974 (Zerova) (SIZK); 2 ♀, UKRAINE, Kanev, reserve, oak, 1.vii.1976 (Zerova); 1 ♂, UKRAINE, Kiev, Theophania, ex galls of *Andricus curvator*, 20.v.1974 (Zerova) (SIZK); 1 ♀, same data (ZMAN).

Species group of *hederae*

DESCRIPTION.— Mandible with three teeth; stigma petiolate, ST strongly oblique; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma intermediate; shorter hind tibial spur present and not
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reduced; hind coxa not elongate (not so much, and not of the shape, as in *Lioterphus* species); posterior margin of gastral tergite 4 minutely incised; propodeal foramen low; median or submedian propodeal carinae not traceable; anterior margin of hind coxa straight; ocelli normal; F1 elongate; pedicellus normal; hind coxa carinate dorsally; frenal line absent; hind femur without tooth.

Base of scutellum very narrowly truncate, but not pointed; base of gaster more or less extensively testaceous; temples (length in dorsal view) extremely short; scape reaching well above anterior ocellus.

COMMENTS.— Although defined by a combination of characters, this group is good and does not have manifest synapomorphies except narrowed base of scutellum, somewhat swollen parastigma, and oblique and expanding ST which it shares with *Callimomus*.

BIOLOGY.— Parasitic on Cecidomyiidae on *Fagus*.

COMPOSITION.— *fagi* (Hoffmeyer)⁸, *fagineus* Graham, *hederae* (Walker) and *speciosus* Boheman.

MATERIALS EXAMINED.— *T. fagineus* Graham: 2 ♀, UKRAINE, Transcarpathians, Carpathian Biosphere res., 1–11.viii.1994 (Simutnik) (ZMAN); 1 ♀, UKRAINE, Carpathians, Chernogory, forest stat., 6.viii.1994 (Simutnik) (ZMAN); 1 ♀, 1 ♂, FRANCE, Drôme, Lachau (1,200 m), 8 km E. Séderon, 15.ix.1989 (Gijswijt) (ZMAN).

T. hederae (Walker): 1 ♀, UKRAINE, Carpathian res., Malaya Ugolka, 27.vii.1995 (Simutnik) (SIZK); 2 ♀, Carpathians, Maramorosh, 11.viii.1994 (Simutnik) (SIZK); 1 ♀, Carpathians, Chernogory forest stat., Bily, 9.viii.1994 (Simutnik) (SIZK); 1 ♀, UKRAINE, Carpathian res., Burkut, nr office, 500–600 m 19.?x.1994 (Simutnik) (ZMAN).

T. speciosus Boheman: 1 ♀, MOLDAVIA (SIZK).

Species group of *iacchos*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate (3–3.2 times as long as broad); posterior margin of gastral tergite 4 emarginate and incised; propodeal foramen low; median or submedian propodeal carinae not traceable; anterior margin of hind coxa straight; ocelli small and close to each other; F1 not elongate; pedicellus normal; hind coxa not carinate dorsally; frenal line not traceable; hind femur without tooth.

Anellus notably elongate and stout, approaching F1 in shape. Mesepimeron pointed apically.

COMMENTS.— This species is distinguished by its small and closely set ocelli.

T. amularius Szelényi, as far as can be inferred from its description, may fall together with *iacchos* Zavada in one species group. The following statements in Szelényi's description suggest their affinity: long anellus, coppery vertex, fine sculpture on face, gaster being (conspicuously) longer than thorax. Szelényi does

⁸ According to Graham & Gijswijt's (1998) notes on this species, it may be conspecific with *T. speciosus* Boheman.

not refer to ocelli in *amularius* nor to its mesepimeron. At present I place *T. amularius* Szélnyi together with *iacchos* with moderate confidence.

BIOLOGY.— Reared from galls of *Nipporhodites magna* Vyrzhikovskaya (Cynipidae) on *Rosa* sp.

MATERIALS EXAMINED.— *T. iacchos* Zavada: Holotype ♂: south-eastern KAZAKHSTAN, northern Tien Shan, Zailiysky Alatau, Pravy Talgar, 1,500–1,750 m, ex galls of *Nipporhodites magna* Vyrzhikovskaya on *Rosa* sp., 26.iii–19.iv.1973 (Antziferova & Mozolevskaya) (SIZK); 7♂, 2♀ paratypes, same data as holotype (SIZK); 1♂, 1 {m} paratypes, same data as holotype (ZMAN); 9♀ paratypes, locality, date and collector the same as of holotype but ex galls of *Diplolepis rosae* (L.) (SIZK); 4♂ paratypes, same locality but without host specification and 25.iv.1978, em. 25.v–1.vi.1978 (Pljushch) (SIZK); 14♂, 14♀ paratypes, same data except 2,300 m, ex galls of *Diplolepis rosae* (L.), 1973 (Lastochkin) (SIZK); 6♂, 4♀, same data as holotype (SIZK); 25♂, 10♀, same data as holotype but ex galls of *Diplolepis rosae* (L.) (SIZK); 5♂, 1♀, KYRGHYZSTAN, Tien Shan, Kyrgyz Alatau, 1,200 m, ex galls of *Nipporhodites* sp., 7.4.1974 (Ionov) (SIZK); 2♂, TADJIKISTAN, Kondara, ex galls of *Diplolepis* sp. on *Rosa canina* L., coll. 25.iii.1981, em. autumn 1981 (Zerova) (SIZK); 33♂, 19♀, same locality as holotype but 1,700 m, on *Rosa* sp., 8.v.1980 (Ermolenko) (SIZK); 3♂, 6♀, S-E KAZAKHSTAN, Alma-Ata reserve, *Rosa* sp., coll. 1.v.1978, em. 14–16.v.1978 (Pljushch) (SIZK); 4♂, 3♀, same data (ZMAN); 14♂, 20♀, KYRGHYZSTAN, canyon of Alamedin riv., 1,500 m, 13.iv.1980 (Eremchenko) (SIZK).

T. apiomyia Bouček & Mihajlovič (species sola)

(I have not seen this species.)

Species group of *chloromerus*

DESCRIPTION.— Mandible with three teeth; stigma petiolate; scutellum without concentric costulae; M and PM normal; metepisternal callus rough; parastigma normal; shorter hind tibial spur present and not reduced; hind coxa not elongate; posterior margin of gastral tergite 4 (sometimes deeply) emarginate; propodeal foramen low except for intermediate in *arundinis* (Walker); median or submedian carinae not traceable on propodeum; anterior margin of hind coxa straight; ocelli normal; F1 not elongate, sometimes short, approaching the condition of *Lioterplus* species; pedicellus normal; hind coxa not carinate dorsally; frenal line not traceable; hind femur without tooth.

COMMENTS.— The question whether any direct descendancy from this group may be asserted for any of the preserved groups and subgenera remains largely open. A cladistic analysis attempted on the data presented in Table 2 could not produce satisfactory results (most characters are parsimonially uninformative).

Another question, concerning the plesiomorphy of character states in *chloromerus*-species, finds more convincing answers in the evidences that the 'chloromerine' type is fairly similar to that of *Pseudotorymus* Masi, which genus is regarded as primitive in Torymoidini (see Grissell, 1995, p. 98 ff.).

Some species groups and species solae of Graham's are here included together with the 'core' *chloromerus*-species. Their morphological differences have been found to substantiate no consistently different concepts of a rank comparable to the preserved species groups. Reasons for each case are as follows.

arundinis.— The presence of hairs posterad to cv on underside of fore wing correlates well with ample overall pilosity of wing disc. Whatever its weighing, *Phagea* 31 (3) (1.IX.2003): 112

it is not this that may support *arundinis* as a species sola. This species has fairly elongate hind coxa with weak sculpture, a state of propodeal foramen intermediate between normal and high, and hind tibial spurs (both) shorter than in the majority of *chloromerus*-species. It has also a peculiar host; all morphological differences of *arundinis* appear to be small homoplasies, and therefore this species should better be placed in *chloromerus*-group.

flavipes.— Two species, *flavipes* (Walker) and *longicalcar* Graham, have singularly long hind tibial spur. Apart from this, these species do not share any other character with each other; moreover, they appear quite dissimilar (*longicalcar* might be grouped with *stemus* Graham with as much confidence), which suggests an independent development of the long spurs and that these two species are probably paraphyletic.

nobilis.— Graham's group includes three species, *nobilis* Boheman, *roboris* (Walker), and *erucarum* (Schrank), all sharing the same hosts. The first two have pronounced deep violet tinge on body parts, which is the only remarkable difference they have among 'chloromerine' species. So long as coloration itself is a very unreliable character, this group of Graham's merges with *chloromerus*-group "by default".

pulchellus.— There are many species in *chloromerus*-group which more or less uniformly depart from the chloromerine morphological type in connection with their parasitizing hosts on *Salix*. Some (not all) of the most derived species are: (a) *lampros* Graham, *pulchellus* Thomson; (b) *curticanda* Graham & Gijswijt; (c) *giraudianus* (Hoffmeyer); (d) *impar* Rondani, *narvikensis* Graham & Gijswijt. All these have perceptible differences, between themselves as well as from the rest of *chloromerus*-species, but these differences scarcely yield objective characters. As Graham's *microcerus*-group is not more distinguished than *giraudianus* and allied species, their placement in *chloromerus*-group seems to be a quite satisfactory decision.

cingulatus.— The isolated position of this group is grounded largely on the character of pilosity of hind coxa, which in these species is bare. The instability of that character in several species (e.g., *phillyreae* Ruschka) and within higher groups (as in *igniceps* Mayr and *laetus* (Walker), which have hind coxa, respectively, pilose and bare) suggests that it cannot be safely used at a higher than specific level.

COMPOSITION.— *aceris* Bouček, *amurensis* (Walker), *anastativorus* Fahringer, *angelicae* (Walker), *anthobiae* Ruschka, *arcadins* Graham & Gijswijt, *arcella* Graham & Gijswijt, *argei* Bouček, *artemisiae* Ruschka, *arundinis* (Walker), *auratus* (Müller), *basalis* (Walker), *bedegnaris* (L.), *boops* Graham, *borealis* Thomson, *bonceki* Graham & Gijswijt, *brachyurus* Boheman, *breviscapus* Graham & Gijswijt, *caledonicus* Graham & Gijswijt, *canariensis* Hedqvist, *capitanis* Graham & Gijswijt, *caudatus* Graham & Gijswijt, *caudatus* Boheman, *centor* Graham & Gijswijt, *chlorocopes* Boheman, *chloromerus* (Walker), *cingulatus* Nees, *confinis* (Walker), *corni* Mayr, *crassiceps* Graham & Gijswijt, *cretaceus* Graham & Gijswijt, *cultratus* Graham & Gijswijt, *cultriventris* Ratzeburg, *cupratus* Boheman, *curticanda* Graham &

Gijswijt. curtisi Graham & Gijswijt. *curvatulus* Graham & Gijswijt. *cyprianus* Graham & Gijswijt. *eadyi* Graham & Gijswijt. *eglanteriae* Mayr. *epilobii* Graham & Gijswijt. *erucarum* (Schrank). *favardi* Steffan. *filipendulae* Graham & Gijswijt. *flavipes* (Walker). *flavovariegatus* Gijswijt. *formosus* (Walker). *fractiosus* Graham & Gijswijt. *frater* Thomson. *fuscipes* Boheman. *galeobdolonis* Graham & Gijswijt. *galii* Boheman. *genisticola* Ruschka. *geranii* (Walker). *giraudianus* (Hoffmeyer). *gloriosus* Graham & Gijswijt. *halimi* Graham & Gijswijt. *helveticus* Graham & Gijswijt. *heterobiae* Graham & Gijswijt. *heyeri* Wachtl. *hornigi* Ruschka. *hylesini* Graham. *impar* Rondani. *janetiellae* Graham & Gijswijt. *juniperi* (L.). *lampros* Graham. *lapsantae* (Hoffmeyer). *laricis* Bouček. *lathyr* Graham & Gijswijt. *lini* Mayr. *longicalcar* Graham. *luridus* Zavada. *lythri* Bouček. *microcerus* (Walker). *microstigma* (Walker). *micrurus* Bouček. *millefolii* Ruschka. *monticola* Graham & Gijswijt. *narvikensis* Graham. *nigritarsus* (Walker). *nobilis* Boheman. *novitzkyi* Graham. *orobi* Mayr. *paludum* Graham & Gijswijt. *partitus* Graham & Gijswijt. *pasuorum* Bouček. *pastinacae* Graham & Gijswijt. *persicariae* Mayr. *phillyreae* Ruschka. *poae* (Hoffmeyer). *problematicus* Graham & Gijswijt. *pulchellus* Thomson. *purpureae* Graham & Gijswijt. *putoniellae* Graham & Gijswijt. *pygmaeus* Mayr. *quadriceps* Graham & Gijswijt. *quercinus* Boheman. *ramicola* Ruschka. *rhamni* Bouček. *roboris* (Walker). *rosariae* Graham & Gijswijt. *rubi* (Schrank). *ruschkai*. *salicis* Graham. *scandicus* Graham & Gijswijt. *schizothecae* Ruschka. *scutellaris* (Walker). *seminum* (Hoffmeyer). *silenus* Zavada. *socius* Mayr. *spai* Bouček. *spherocephalus* Graham & Gijswijt. *spilopterus* Boheman. *stenus* Graham. *tanaceticola* Ruschka. *thymi* Ruschka. *tipulariarum* Zetterstedt. *ulmariae* Ruschka. *valerii* Graham & Gijswijt. *verbasci* Ruschka. *veronicae* Ruschka. *wachtliellae* Graham & Gijswijt.

The following Mongolian species most probably belong to this group: *cuprigaster* Szelenyi, *subigneus* Szelenyi.

MATERIALS EXAMINED.— *T. aceris* Bouček: 1 ♀. FRANCE – 13. Jouques. 14.v.1996 (Gijswijt) (ZMAN).

T. arcello Graham & Gijswijt: 1 ♀. UKRAINE. Danube delta. Isl. Stambulsky. 7.vii.1997 (Kotenko) (SIZK); 5 ♀. UKRAINE. Chernomorsky res., Ivano-Rybalchansky area, wormwood. 26.iv.1997 (Zerova) (SIZK); 3 ♀, same data (ZMAN).

T. artemisiae Ruschka: 2 ♀. TURKMENISTAN, Annau. galls on wormwood, em. 21.iv.1980 (Zerova); 1 ♀, 4 ♂. RUSSIA. Astrakhan obl., Elton. galls on wormwood, em. 6.viii.1979 (Zerova); 8 ♀. UKRAINE. Kiev obl., Obukhov distr., v. Stepki. galls on *Artemisia* sp., coll. 5.v.1979 (Pljuschch); 5 ♀, 3 ♂. UKRAINE. Crimea. Karadag. galls on *Artemisia* sp. (Dolin); 3 ♀, 3 ♂. UKRAINE. Chernomorsky res., Ivano-Rybalchansky area. galls on wormwood. 26.iv.1974 (Zerova) (all in SIZK).

T. arundinis (Walker): tens of specimens from Ukraine and Moldavia (SIZK); 1 ♀, 1 ♂. NETHERLANDS. Ankeveen. Bergse Pad (Z) 23.v.1971 (Gijswijt) (ZMAN); 1 ♀. Kyrkslätt. Reuter. 1931. (Hoffmeyer) (destroyed in shipping from ZMUC).

T. auratus (Müller): 249 specimens (119 ♀, 130 ♂) from many parts of Ukraine and from Georgia (SIZK).

T. basalis (Walker): 1 ♀. FRANCE - 84. Mt. Ventoux (Combe Brune). 30.viii.1996 (Gijswijt) (ZMAN).

- T. bedeguaris* (L.): More than 200 specimens from Ukraine, European USSR, Central Asia, Caucasus, and Russian Far East (SIZK).
- T. canariensis* Hedqvist: 127 ♀, UKRAINE Crimea, Karabi Yaila, clearing in beech forest, 4.vi.1961 (Ermolenko) (SIZK); 3 ♀, same data (ZMAN); 1 ♀, UKRAINE Crimea, reserve, 6.vi.1976 (Kotenko) (SIZK); 1 ♀, ARMENIA, Megrinsky distr., v. Lichk, oak forest in mountains, 1,800-1,900 m, 23.vi.1981 (Kotenko); 1 ♀, SPAIN, prov. Almeria, Carboneras, ex galls *Ptochilaspis tavaresiana*, 10.v.1994 (Gijswijt) (ZMAN); 1 ♂, same place, host unspecified, 21.iv.1990 (Gijswijt) (ZMAN).
- T. caudatus* Boheman: 1 ♂, RUSSIA, Perm obl., v. Nizhny Likh, coll. 12.xi.1966, em. 15.xii.66–15.i.67 (NN) (SIZK); 2 ♀, LATVIA, Dundarsky leskhoz, 15.vii.1966 (Saxon) (SIZK); 4 ♀, 2 ♂, GEORGIA, Mestia (Upper Svanetia), on *Picea orientalis* ex *Kaltenbachiola strobi*, vii.1981 (Tvaradze) (SIZK); 2 ♀, 1 ♂, same data (ZMAN).
- T. chloromerus* (Walker): large series from various parts of Ukraine (SIZK); 1 ♀, FRANCE, Drôme, Saillans, 2.ix.1987 (Gijswijt) (ZMAN); 1 ♂, SWITZERLAND, Kiental, galls on *Phytolacca*, viii.1983 (van der Assem) (ZMAN).
- T. cingulatus* Nees: 1 ♀, NETHERLANDS, Ankeveen, Bergse Pad (Z), 23.v.1971 (Gijswijt) (ZMAN); 1 ♂, NETHERLANDS, 's Graveland, 23.v.1965 (Gijswijt) (ZMAN).
- T. confinis* (Walker): 11 ♀, 6 ♂, UKRAINE, Carpathian Biosphere res., Ugolsko-Shirokoluzhansky area, beech forest, coll. 31.vii.1999, em. 15–17.viii.99 ex galls on *Urtica dioica* (Zavada) (SIZK); 4 ♀, same data (ZMAN); 2 ♀, LITHUANIA, Vilnius, galls on nettles, coll. 11.x.1979 (Zerova) (SIZK).
- T. cultratus* Graham & Gijswijt: 1 ♀, UKRAINE, Chernomorsky res., Ivano-Rybalchansky area, 18.vii.2000 (Zavada) (SIZK); 1 ♀, UKRAINE, Chernomorsky Res., coast, reed stand, 24.iv.1974 (Zerova) (SIZK); 1 ♀, UKRAINE, Chernomorsky res., Volyzhin Les area, SW coast of Kinburnskaya Kosa 7.vii.2000 (Zavada) (ZMAN).
- T. cultriventris* Ratzeburg: 1 ♀, UKRAINE, nr Lvov, Pogulianka, ex galls *Mikiola fagi*, coll. vi.1952 (Zerova) (SIZK); 1 ♀, UKRAINE, Rovno obl., Ostrozh distr., 6 km N Shepetovka, Grabovy Bud, 24.vi.1999 (Kotenko) (ZMAN); 1 ♀, 1 ♂, NETHERLANDS, 's Graveland, galls *Mikiola fagi* 28.iii.1994 (Gijswijt) (ZMAN).
- T. curticauda* Graham & Gijswijt: 1 ♀, UKRAINE, Zakarpatskaya obl., vic. Rakhov, roadside willows along Tisa, 21.vii.1999 (Zavada) (SIZK); 1 ♀, same data (ZMAN); 1 ♀, UKRAINE, Zakarpatskaya obl., Carpathian Biosphere res., Chernogorsky area, 26.vii.1999 (SIZK).
- T. eadyi* Graham & Gijswijt: 3 ♀, 6 ♂, UKRAINE, Kiev, Teremki, raspberry, 20.iv.1982 (Kotenko) (SIZK); 3 ♀, same data (ZMAN); 4 ♀, 2 ♂, UKRAINE, Zakarpatskaya obl., Perechin, galls on raspberry, 13.iii.1977 (*Diakonchuk*) (SIZK).
- T. erucarum* (Schränk): 1 ♀, UKRAINE, Transcarpathians, Carpathian res., vic. Rakhov, along Tisa, sweeping in willows, 17.vii.1995 (Kotenko) (SIZK); 26 ♀, 21 ♂, Transcarpathians, Beregovo distr., Rafailovo, on roots of 1 to 3-yr oak trees, *Andriens testaceipes*, em. 25.iii.1975 (Boganič) (SIZK); 1 ♂, Transcarpathians, Vari, ex cynipid galls on roots of oaks, em. 17.vii.1976 (Boganič) (SIZK); 1 ♀, UKRAINE, Kiev, Puscha Voditsa, 29.vi.2000 (Maximovich) (ZMAN); 1 ♀, PORTUGAL, A. Alentejo, Portalegre, 700 m So S. Mamede, 22.v.1990 (Gijswijt) (ZMAN).
- T. fowardi* Steffan: 1 ♀, FRANCE, Gard, Crespien, 28.viii.1986 (Gijswijt) (ZMAN).
- T. filipendulae* Graham & Gijswijt: 1 ♀, UKRAINE, Kanev, Mariina Gora, 12.vi.1999 (Gumovsky) (ZMAN).
- T. flavipes* (Walker): Hundred-odd specimens from Ukraine and Azerbaijan (SIZK); 1 ♀, FRANCE, - 84, Mt. Ventoux S slope, 1,200 m, 1.ix.1990 (Gijswijt) (ZMAN); 1 ♀, NETHERLANDS, Ankeveen 4.vi.1966 (Gijswijt) (ZMAN).
- T. flavovariegatus* Gijswijt: 1 ♀, SPAIN, prov. Soria (Gijswijt) (ZMAN).
- T. formosus* (Walker): 1 ♀, UKRAINE, Lipetsk obl., Zadonsk distr., Galichia Gora res., 28.viii.2000 (Fursov) (ZMAN); 1 ♀, UKRAINE, Rakhov, 15.vii.1995 (Simutnik) (ZMAN).

- T. fractosus* Graham & Gijswijt: 1 ♂ paratype, FRANCE, Vaucluse, Col de Perrache, em. 22.vi.1982 ex leaf-egge gall on *Rosa rubiginosa* (de V. Graham) (ZMAN).
- T. galii* Boheman: 1 ♀, NETHERLANDS, A. W. eluinen, ex galls *Geocrypta galii*, 1–10.vii.1963 (Gijswijt) (ZMAN); 1 ♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., Zalivki, flooded meadows, forest, 21.vii.1996 (Gumovsky) (ZMAN).
- T. geranii* (Walker): Large series from Ukraine, European and Far East Russia, and Japan (SIZK): 1 ♀, 1 ♂, JAPAN, Ibaraki pref., Tsukuba, Sakuragaoka, em. 3.v.1997 ex galls on *Quercus* spp. (Fursov) (ZMAN); 1 ♀, RUSSIA Far East, Isl. Sakhalin, Gornozavodsk, 18.vi.1971 (Ermolenko) (ZMAN); 1 ♀, NETHERLANDS, Tongeren Gld, 8.vii.1992 (van Aartsen) (ZMAN); 1 ♂, NETHERLANDS, Haamstede, galls *Biorh. pallida*, 25.vi.1984 (Indenbosch) (ZMAN).
- T. girandianus* (Hoffmeyer): 2 ♀, UKRAINE Crimea, Yalta, coll. ix.1986, em. ix.86 (Vasilieva) (ZMAN).
- T. heveri* Wachtl: 1 ♀, UKRAINE, Carpathian res., Maramorosh, Kvasny, road to v. Ivan, young firs, 20.vii.1995 (Simutnik) (SIZK); 1 ♀, same data (ZMAN); 2 ♀, 3 ♂, UKRAINE, Kharkov obl., Krasnokutsk, dendropark, firs, 15.vi.1992 (Kotenko) (SIZK); 1 ♀, FRANCE Dépt. Drôme, Col de Soubeyrand, 29.vii.1978 (Gijswijt) (ZMAN); 1 ♀, SPAIN, prov. Madrid, Manzanares, El Real, on *Junip. oxye.*, 15.vi.1990 (Gijswijt) (ZMAN).
- T. impar* Rondani: 1 ♀, UKRAINE, Zakarpatskaya obl., nr v. Hetyna, 20–30.vii.1999, ex cecidomyiid gall on *Salix* sp., em. i.2000 (Zavada) (SIZK); 2 ♂, same data (SIZK); 1 ♀, UKRAINE, Khersonskaya obl., nr. v. Vinogradnoye, 5.vii.2000 (Zavada) (SIZK); 1 ♀, same data (ZMAN); 1 ♀, *ibid.*, 15.vii.2000 (Zavada) (SIZK) [holotype (first) and paratypes of *T. drewseni* Zavada]; 9 ♀, 7 ♂, TURKMENISTAN, Kopet-Dag, v. Nokhur, ex galls of *Asphondylia* sp. on *Astragalus*, coll. 18.v.1975, reared ix.1976 (Diakonchuk) (SIZK); 1 ♀, same data (ZMAN); 3 ♀, GEORGIA, Tbilisi, bot. garden of Acad. Sci. of Georgian SSR, ex galls *Astragalus caucasicus*, coll. 5.v.1978 (Khodjevanishvili); 1 ♀, NETHERLANDS, Otterlo (Gld.) 30.ix.1983 (van Aartsen) (ZMAN).
- T. janetiellae* Graham & Gijswijt: 21 ♀, UKRAINE, Chernomorsky Biosphere res., Solenoozerny area, middle outpost, sweeping in steppe, 25.v.1991 (NN) (ZMAN).
- T. juniperi* (L.): 1 ♀, SPAIN, prov. Soria, 10 km S. Abejar, on *Junip. communis*, 22.vi.1994 (Gijswijt) (ZMAN); 1 ♂, SPAIN, prov. Madrid, Manzanares, El Real, on *Junip. oxye.*, 15.vi.1990 (Gijswijt) (ZMAN).
- T. lampros* Graham: 1 ♀, UKRAINE, Lvov obl., Yavorov distr., Rostochie res., vic. v. Ivano-Frankovo, 17.vii.1996 (Gumovsky) (SIZK); 1 ♀, *ibid.*, 23.vii.1996 (Gumovsky) (ZMAN); 1 ♀, UKRAINE, Odessa obl., Liabashev distr., v. Osychki, 14.vi.1995 (NN) (SIZK).
- T. lini* Mayr⁹: A series labelled thus. UKRAINE, Khomutovskaya Steppe res., Donetsk obl., *Linum austriacum*, coll. 20.iv.1974, em. v.74 (Gershenson) is in SIZK; of which 3 ♀ are ZMAN.
- T. longicalcar* Graham: Four specimens in SIZK and one in ZMAN, from a single series of minutien-pinned specimens stayed on pith block with hand-written illegible label, reasonably in German and indicating a year of 1910.
- T. luridus* Zavada: Holotype ♀, East, GEORGIA, Khodjori, 2.ix.1974, em. 28.vii.1975 ex *Quercus* (Khodjevanishvili) (ZMAN)¹⁰.
- T. microcerus* (Walker): 21 ♀, UKRAINE, Brovary, lake Rybnoe, ex galls *Rhabdophaga saliciperda* on willow, 13.iv.1973 (Zerova) (ZMAN).
- T. microstigma* (Walker): 3 ♀, MOLDAVIA, Kishinev, coll. 18.vi.1979, em. ex *Mas. marsupialis* 24.v (Talitsky) (ZMAN); a number of series of rearings from the same locality with varying dates exist in SIZK.
- T. micrurus* Bouček: 2 ♀, 1 ♂, UKRAINE, Odessa obl., Vil'kovo/Zhebriyanskie Plavni, 15.v–5.vi.1996 (Maximovich) (ZMAN); a few more females and males of that series are in SIZK.

⁹ Listed material is presumably this species, which is placed in Species Inquirendae by Graham & Gijswijt (1998).

¹⁰ Depository stated incorrectly in Zavada (2001b).

T. millefolii Ruschka: 1 ♂, UKRAINE. Chernomorsky res., Ivano-Rybalchansky area. 6.vii.2000 (Zavada) (ZMAN).

T. monticola Graham & Gijswijt: 1 ♀, UKRAINE. Carpathians, meadows over Tisa. 2.viii.1994 (Simutnik) (ZMAN).

T. narvikensis Graham: 5 ♀, UKRAINE. Khmel'nitsky obl., Gorodotsky distr., v. Zakupnoe. 27.viii.1997 (Gumovsky) (SIZK); 1 ♀, same data (ZMAN).

T. nobilis Boheman: 1 ♀, HUNGARY. Drávapalkonya. 4.x.1973 (Heller) (SIZK); 1 ♀, GERMANY. Markgröningen. MSG Hannelrai. 1.vi.1981 (Bretzendorfer) (SIZK); 1 ♀, MOLDAVIA. v. Karneshty. 26.vi.1966 (Zerova) (SIZK); 1 ♀, MOLDAVIA. Kotovskoe. 29.vi.1960 (Talitsky) (SIZK); 1 ♀, UKRAINE. Carpathian res., 16.viii.1994 (Simutnik) (SIZK); 1 ♀, UKRAINE. Kiev. Puscha Voditsa. 29.vi.2000 (Maximovich) (ZMAN).

T. partitus Graham & Gijswijt: 1 ♀ paratype, NETHERLANDS. Langbroek. uit depot 139 *Rhabd. salicis*, coll. 29.ii.1968. em. 24.i.1969 on *Salix ?caprea* (Nijveldt) (NNML).

T. pascuorum Bouček: 1 ♀, UKRAINE. Carpathians, highland plains. 1.viii.1994 (Simutnik) (SIZK); 4 ♀, UKRAINE. Donetsk obl., Novoazovsk. 12.vi.2000 (Fursov) (SIZK); 1 ♀, UKRAINE. Lvov obl., Yavorov distr., Rostochie res., vic. v. Ivano-Frankovo. 17.vii.1996 (Gumovsky) (ZMAN).

T. phillyreae Ruschka: 2 ♀, UKRAINE. Khmel'nitsky obl., Neteshin. rt. bank riv. Goryl. 29.vii.1999 (Kotenko) (SIZK); 1 ♀, ITALY. Portici-(Napoli), Park Agric. Inst.. 10.iv.1991 (Fursov) (ZMAN); 1 ♀, UKRAINE Crimea. Karadag res., 14.vii.2001 (Zavada) (ZMAN).

T. poae (Hoffmeyer): 1 ♀, UKRAINE. Donetsk obl., Slaviansk distr., v. Bogorodichnoe, forest. 16.vii.1982 (Kotenko) (SIZK).

T. pulchellus Thomson: 1 ♀, UKRAINE. Zakarpatskaya obl., Tiachev distr., Bushtino, pastureland on Tisa. 17.vii.1999 (Zavada) (SIZK).

T. putoniellae Graham & Gijswijt: 1 ♀, MOLDAVIA. Kishinev. coll. 3.vii.1973. ex *Mus. marsupialis* em. 24.v (Talitsky) (ZMAN).

T. quadriceps Graham & Gijswijt: 1 ♀ paratype, FRANCE. Dépt. Drôme. Saou, natte wei. 29.viii.1981 (Gijswijt) (ZMAN); 1 ♀, HUNGARY -West. Apatistvanfalvi. 30.vi.1994 (Fursov) (SIZK); 1 ♀, UKRAINE. Carpathians, highland plains. 1.viii.1994 (Simutnik) (SIZK).

T. ramicola Ruschka: 1 ♀, UKRAINE. Chernomorsky res., Ivano-Rybalchansky area. 19.vii.2000 (Zavada) (ZMAN).

T. rhamni Bouček: 2 ♀, UKRAINE. Donetsk obl., Khomutovskaya Steppe res., ex fruits *Frangula*, coll. 24.vi.1977. em. 13.iii.1978 (Diakonchuk) (SIZK); 1 ♀, same data (ZMAN).

T. roboris (Walker): 1 ♀, MOLDAVIA. Karneshty. 30.vi.1961 (Bouček, Talitski) (SIZK); 1 ♀, UKRAINE. Kharkov obl., 2 km down riv. Oskol. rt. bank. riv. Sev. Donets, forest. 12.vii.1982 (Kotenko); 1 ♀, UKRAINE. Donetsk obl., Slaviansk distr., v. Bogorodichnoe, forest. 16.vii.1982 (Kotenko) (ZMAN).

T. rosariae Graham & Gijswijt: 2 ♀ paratypes, GERMANY. Lübeck (Waakenitz Ufer), *Rhabdophaga rosaria* & *heterob.*. i-iv.1981 (Meyer) (NNML); 18 ♀, 15 ♂, AZERBAIJAN. Shemakhinsky distr., Pirkuli, ex *Cecitonia rosae* on willow. 23.v.1972 (Zerova) (SIZK); 1 ♀, UKRAINE. Lvov obl., Yavorov distr., Rostochie res., Zalivki, flooded meadows, forest. 21.vii.1996 (Gumovsky) (ZMAN).

T. rubi (Schränk): Abundant material from Ukraine including Crimea; European and Far East Russia; Azerbaijan; Kirghizia; and the Caucasus.

T. ruschkaei (Hoffmeyer): Large series from Russia (Ural), Georgia, Kazakhstan, and Ukraine.

T. silemus Zavada: holotype ♀, TADJIKISTAN. Anzob Pass (3,300 m) 2.vii.2000 (Perepechaenko) (ZMAN)¹¹.

¹¹ Depository stated in Zavada (2001b) is incorrect.

T. socius Mayr: 2 ♀, UKRAINE, Kiev, Theophania, galls on wild carrot, 9.ix.1973 (Zerova) (SIZK); 2 ♀, UKRAINE, Vinnitsa obl., Trostianets distr., Sobolevskoe forest stat., 20.vi.1966 (Zerova) (SIZK); 1 ♀, UKRAINE, vic. Kiev, Vorzel, 18.ix.1977 (Diakonchuk) (ZMAN).

T. stemis Graham: 1 ♀, UKRAINE, Carpathians, 29.vii.1994 (Simutnik) (SIZK); 1 ♀, UKRAINE, Lvov obl., Rostochie res., sweeping in mixed forest, 21.vii.1996 (Gumovsky) (SIZK); 1 ♀, UKRAINE, Kiev, Teremki, 18.v.1982 (Pshebelskaya) (SIZK); 6 ♀, UKRAINE, Kiev, Novoselki, oak wood, 23.vi–4.ix.1984 (Kotenko) (SIZK); 1 ♀, UKRAINE, Rovno obl., v. Voloskovtsy, 21.vi.1999 (Kotenko) (SIZK); 1 ♀, RUSSIA Far East, Isl. Kunashir, Tyatino, mixed forest, 7.ix.1978 (Ermolenko) (SIZK); 1 ♀, UKRAINE, Lvov obl., Rostochie res., vic. v. Ivano-Frankovo; adm. bldg., 23.vii.1996 (Gumovsky) (ZMAN); 1 ♀, UKRAINE, Babyn Yar vicinity, swept from vegetation consisted [sic] mainly of *Lotus* & *Trifolium* spp., 7.vi.1996 (Gumovsky) (ZMAN).

T. tanaceticola Ruschka: 1 ♀, UKRAINE, Kherson obl., Chemomorsky res., Ivano-Rybalchansky area, ex galls on flowers of *Tanacetum* sp., coll. 21.vii, em. 6.viii.2000 (Zavada) (SIZK); 1 ♀, 1 ♂, same data (ZMAN).

T. verbasci Ruschka: 1 ♀, 2 ♂, UKRAINE, Donetsk obl., Krasnolimansky distr., v. Krivaya Luka, 19.vii.1984 (Fursoy) (SIZK); 5 ♀, 1 ♂, UKRAINE, Cherkassy obl., Kanev, scythian settlement, 11.vii.1982 (Zerova) (SIZK); 7 ♀, 5 ♂, *ibid.*, *Verbascum phlomoides*, coll. 29.vii.1982, em. 1.viii.82 (Zerova) (SIZK); 2 ♀, UKRAINE, Kiev, Lysa Hora, ex *Verbascum thapsiforme* (syncarps), em. 23.i.1991 (Korneyev) (SIZK); 2 ♀, 2 ♂, *ibid.*, coll. 31.iii.1982, galls *Verbascum* sp. (Berest) (SIZK); 2 ♀, 1 ♂, UKRAINE, Kiev, Theophania, mullein, coll. 2.v.1974 (Zerova) (SIZK); 3 ♀, 6 ♂, MOLDAVIA, Pridneprovie, Rybnitsa, coll. 6–10.ix.1997, ex cecidomyiid galls on *Verbascum*, 10.ix.1997 (Gumovsky) (SIZK); 1 ♀, same data (ZMAN); 3 ♀, 3 ♂, AZERBAIJAN, v. Baskal, 1,500 m, ex galls *Asphondylia verbasci* on mullein, coll. 1.vii.1973, выв. 8.vii.73 (Zerova) (SIZK).

T. wachliellae Graham & Gijswijt: 1 ♀, paratype, FRANCE, Dépt Gard., Crespion, 22.vi.1982 (Gijswijt) (ZMAN); 1 ♀, paratype, FRANCE, Vaucluse, 19.ix.1990 (Gijswijt) (ZMAN); 3 ♀, UKRAINE, Lipetskiy obl., Galichia Gora res., Morosova Gora, in folded leaves of dog rose, 28.vii.1980 (Fursoy) (SIZK); 1 ♀, UKRAINE Crimea, Crimean res., nr outpost Asport, 2.vii.1976 (Kotenko) (SIZK); 1 ♀, 1 ♂, RUSSIA Far East, Primorsky Krai, 7 km toward Khasan, Golubiny Crag, 28.viii.1986 (Kotenko) (SIZK).

One species of the *chloromerus*-group, *T. drewseni* Zavada, is here synonymized with *T. impar* Rondani.

***Torymus impar* Rondani, 1877**

Torymus impar Rondani, 1877: 201–202; Bouček, 1974: 252–254; Grissell, 1995: 282.

Callinome bakkendorfi Hoffmeyer, 1933:246, ♀; Hellen, 1934: 188.

Torymus sp. near *borealis* Thomson: Graham, 1969: 62.

Torymus drewseni Zavada, 2001a: 85, **Syn. n.**

According to Mr. Gijswijt (pers. comm.), *drewseni* is conspecific with *T. impar* Rondani. As the holotype specimen of *drewseni* was reared from a cecidomyiid gall on *Salix*, the synonymy is evident: its paratypes, though, have apparently a different host (they were collected in Kherson oblast, Southern Ukraine, in a wormwood steppe locality with only shrubs of *Salix viminalis*; no galls could be seen on these in mid-July, when I collected two paratype specimens). In SIZK stands a series of *drewseni* reared from *Asphondylia* sp. (Diptera Cecidomyiidae) on *Astragalus* in Turkmenistan: these specimens are somewhat smaller in size than the holotype, but so is the specimen of *impar* I have received from Theo. As the 5th gastral tergite is more or less emarginate in the specimens of all series and in both *impar* and *drewseni*, I agree with the

opinion of Mr. Gijswijt and confirm the synonymy, stating new host-plant records for *impar*.

Cases like this are a regular source of nomenclatural disorder in *Torymus*, and have been such long since.

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Below is a list of some of the papers on the synonymy of the genus *Diomorus* Walker with *Torymus* Dalman, and recent reviews of Palaearctic and Nearctic faunas of *Torymus*. A comprehensive list of references on Palaearctic *Torymus* can be found in Graham & Gijswijt (1998); Grissell (1976, 1995) contain similar for the Nearctic region.

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A final note on the taxon *Aricia (Ultraaricia) orpheus* and its relationship to *Plebejus (Aricia) anteros* (Lepidoptera: Lycaenidae)

Zdravko Kolev

Summary. It is confirmed, based on research in the type locality of the taxon *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 and in further seven Bulgarian populations of *Plebejus (Aricia) anteros* (Freyer, [1838]), that *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 is an infrasubspecific taxon and a junior subjective synonym of *Lycaena anteros anteros* Freyer, [1838]. Several previously unnoticed factual errors in Nekrutenko's paper are also discussed, and the distribution of *P. (A.) anteros* in Bulgaria is summed up.

Резюме. Изследванията на материал от типовото находище на *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 и от други седем български популации на *Plebejus (Aricia) anteros* (Freyer, [1838]) потвърждават, че *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 е инфраподвидов таксон и младши субективен синоним на *Lycaena anteros anteros* Freyer, [1838]. Дискутират се някои фактологически грешки в работата на Некрутенко и се обобщава разпространението на *P. (A.) anteros* в България.

Samenvatting. Een slotbemerking over het taxon *Aricia (Ultraaricia) orpheus* en diens relatie met *Plebejus (Aricia) anteros* (Lepidoptera: Lycaenidae). Door onderzoek van de type-lokaliteit van het taxon *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 en van zeven andere Bulgaarse populaties van *Plebejus (Aricia) anteros* (Freyer, [1838]) kon aangetoond worden dat *Aricia (Ultraaricia) orpheus* Nekrutenko een infrasubspecifiek taxon is en een jonger subjectief synoniem van *Lycaena anteros anteros* Freyer, [1838]. Verschillende vroeger niet opgemerkte feitelijke fouten in het artikel van Nekrutenko worden aangeduid, en de verspreiding van *P. (A.) anteros* in Bulgarije wordt besproken.

Résumé. Une note finale sur le taxon *Aricia (Ultraaricia) orpheus* et sa relation avec *Plebejus (Aricia) anteros* (Lepidoptera: Lycaenidae). Basé sur une étude de la localité type du taxon *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 et de sept autres localités bulgares de *Plebejus (Aricia) anteros* (Freyer, [1838]), il est possible de confirmer que *Aricia (Ultraaricia) orpheus* Nekrutenko est un taxon infrasubspécifique et un synonyme subjectif plus récent de *Lycaena anteros anteros* Freyer, [1838]. Plusieurs erreurs,

aparavant non remarquées, dans l'article de Nekrutenko, sont discutées et la distribution de *P. (A.) anteros* en Bulgarie est établie.

Key words: Lepidoptera – Lycaenidae – *Plebejus* – *Aricia* – *anteros* – *orpheus* – taxonomy – synonymy – distribution – Bulgaria – Balkan Peninsula.

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In a revision of the taxa belonging to *Ultraaricia* Beuret (Nekrutenko 1980) the taxon "*Aricia (Ultraaricia) orpheus* sp. nov." was described from Bulgaria. It was said to differ by the similar *Plebejus anteros* (Freyer, [1838]) by a larger size, the constant presence of a black spot in the discal cell on the underside of the forewing (which Nekrutenko claimed to be absent in *anteros*), and by features of the male genitalia. However, soon afterwards studies of Turkish (Koçak 1983: 30) and Greek (Coutsis 1983: 200) material demonstrated conclusively that in fact the specimens described by Nekrutenko represent nothing more than an individual form frequently occurring within populations of typical *anteros* (see also Hesselbarth *et al.* 1995: 641–642). Coutsis (1983) and Hesselbarth *et al.* (1995) specifically stressed that genital differences such as had been supposedly discovered by Nekrutenko were in fact non-existent in this individual form.

Thus "*Aricia (Ultraaricia) orpheus*" turned out to be a particularly short-lived taxon which should have certainly deserved no further discussion were it not for a recent checklist of Balkan butterflies, in which "*Ultraaricia orpheus*" was listed as a bona species together with "*Ultraaricia anteros*" (Jakšić 1998: 12). Lest further confusion be generated by this publication, it appears necessary to once again dwell upon the subject of morphological variability of *anteros* with the addition of previously unpublished information from Bulgaria, including the type locality of *orpheus*.

The present author's research on the morphological variability of *Plebejus anteros* in eight separate Bulgarian localities fully confirms the conclusions of Koçak (1983), Coutsis (1983) and Hesselbarth *et al.* (1995). Of particular relevance is my research in the type locality of *orpheus*, Mt. Alibotush. There, on 3.VII.1994, I found *anteros* to be very abundant in the upper reaches of Hambar Dere gorge, at 1400–1600 m. The type series of "*Aricia (Ultraaricia) orpheus*" consists of a male holotype and seven paratypes (3♂, 4♀) with data given by Nekrutenko as "Mts. Alibotusch 1600 m, 21.VII.1929, Al. K. Drenowski leg.": in addition there is a pair (♂, ♀) from "Mts. Pirin, 1000 m, 11.VI.1929, Al. K. Drenowski leg." (Nekrutenko 1980: 63). Hambar Dere gorge is situated in the eastern half of the mountain and it is in this part that Drenovsky collected most extensively during his expeditions. In fact, as far as can be judged by Drenovsky's own accounts (e.g. Drenowski 1930; 1931), most of material from Alibotush collected in the altitude range 1200–1700 m originates precisely from this gorge. Therefore Hambar Dere can be regarded with a very high degree of certainty as the site of origin of most of the type series of "*Aricia (Ultraaricia) orpheus*". The two paratypes from "Pirin, 1000 m" probably

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originated from the immediate vicinity of Alibotush, most likely the surroundings of Paril or Gaitaninovo villages where Drenovsky by his own accounts collected repeatedly (Drenowski 1931). Fig. 1 shows the known distribution of *P. anteros* in Bulgaria and the location of Hambar Dere gorge.

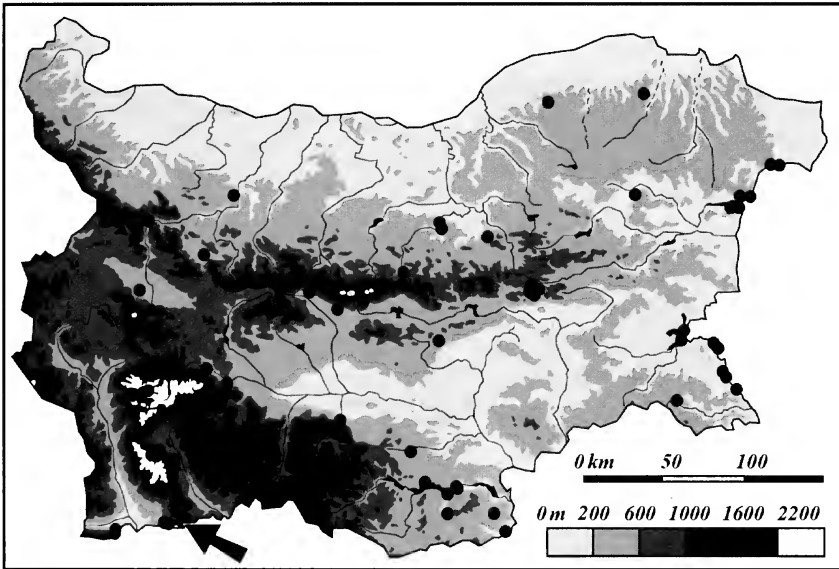


Fig. 1. Known distribution of *Plebejus (Aricia) anteros* (Freyer, [1838]) in Bulgaria (black dots), after Abadjiev (2001), and unpublished data (leg. et coll. Z. Kolev; leg. et coll. D. Staykov; leg. A. Slivov, coll. Institute of Zoology – Sofia). The black arrow in the lower left-hand corner indicates the restricted type locality of *Aricia (Ultraaricia) orpheus* Nekrutenko, 1980 (Mt. Alibotush: Hambar Dere gorge, 1600 m).

The specimens of the population of *anteros* in Hambar Dere gorge are completely identical with all other populations of *anteros* in the country studied by myself. This population does not, in its entirety, match the description of *orpheus*. The size is greatly variable in both sexes, as typical for *anteros*, with only very few specimens being as large as the type specimens of *orpheus* which have forewing lengths of 15.5 ± 0.5 mm (Nekrutenko 1980: 63). More important, the expression of the discal spot on the underside of the forewings is also very variable in both sexes. In the said locality in Alibotush I managed to find specimens in which both forewings had discal spots as well as specimens completely lacking such. Most convincing is the fact that, along with these, specimens were found in which such a spot was present on one of the wings while being absent on the other (Fig. 2: 1). Such "transitional" specimens are to be found in all populations of *anteros* studied by myself (Fig. 2: 3, 4, 7 & 8)¹.

¹ It is interesting to note that with respect to this character *anteros* and its closest relatives such as e.g. the taxon *crassipunctus* Christoph, 1893 (cf. Hesselbarth *et al.* 1995: 387) differ from the other members of subgenus *tricia* which lack such discal spots.

Hence it can be concluded that, as elsewhere in Bulgaria (pers. observ.), Greece (Coutsis 1983) and Turkey (Koçak 1983), the supposedly species-specific external characters as defined by Nekrutenko for *anteros* and *orpheus* are not only greatly variable but actually form a complete cline. The examination of the type population thus confirms that Nekrutenko's concept of "*Aricia* (*Ultraaricia*) *orpheus*" as a taxon distinct from *anteros* and constant in its characters is fallacious.

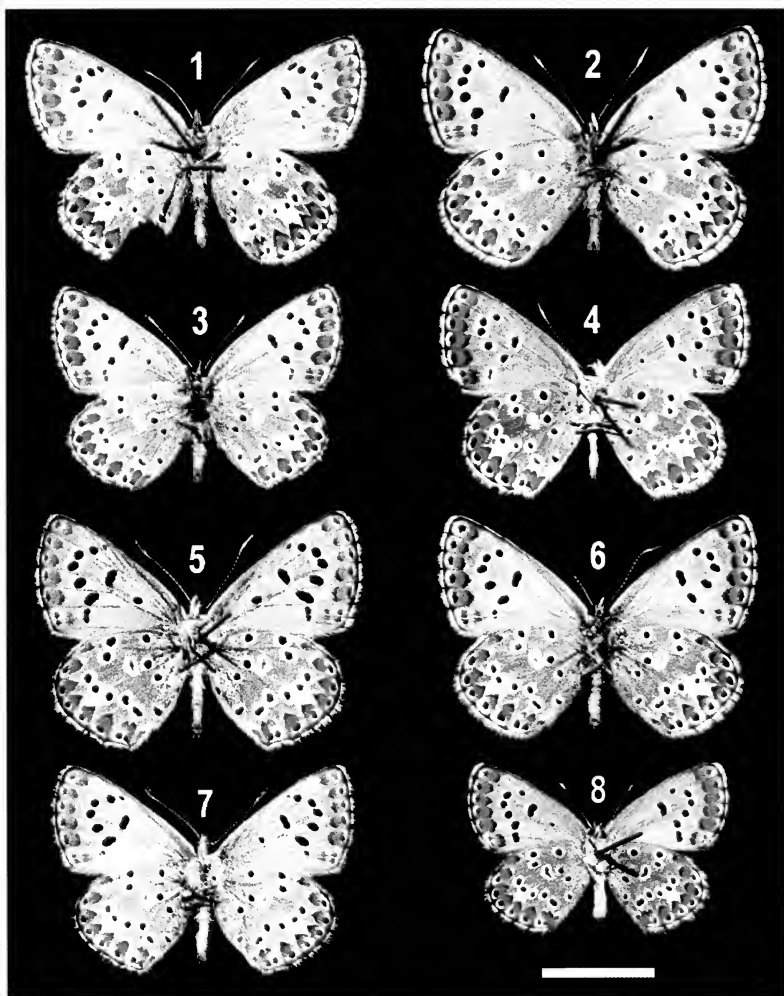


Fig. 2. Undersides of *Plebeius* (*Aricia*) *anteros anteros* (Freyer, [1838]) from Bulgaria. 1–7: ♂♂, 8: ♀; all Z. Kolev leg. et coll. 1.– Mt. Alibotush, Hambar Dere gorge, 1600 m, 3.VII.1994; 2.– Rhodopi Mts., Lukovitsa river gorge, 300 m, 11.VI.1994; 3.– idem, 22.VI.1991; 4.– Stara Planina Mts., Karandila nature park, 1000 m, 21.VII.1999; 5–8: idem, 22.IX.2002. Scale bar = 1 cm.

At this point the central problem of the type series of *orpheus* must be addressed, or, more precisely, the question of how such a uniform series of specimens, so unlike a random sample of typical *anteros* from the same (or, for that matter, any) locality, ever came into existence. Nekrutenko's version is as follows: "It can just be supposed now that, getting into difficulties with determination and trying to avoid publication of misidentification [Nekrutenko believed – erroneously, as shall be shown below – that Drenovsky never mentioned *anteros* from Alibotush in his publications], Drenovsky turned for advice to Sheljuzhko, who was a recognized authority in Palearctic Lepidoptera, and sent him a round number (5 males and 5 females) of specimens. This way the material found itself in the collection of the Kiev State University. For unknown reasons it fell out of Sheljuzhko's attention and until now remained undescribed." (Nekrutenko 1980: 66).

My own interpretation of the facts is that the type series of "*Ultraaricia orpheus*" is no more than a biased sample, originally selected by Drenovsky for the presence of discal spots on both wings. Drenovsky was a perceptive and broad-minded expert on Bulgarian and Balkan Lepidoptera. His numerous publications testify to his consistent attempts to assess the individual and geographical variation of even trivial species against published descriptions and illustrations. It is therefore in keeping with the facts to suppose that, upon cross-checking his material of *anteros* from Alibotush and the neighbouring parts of Pirin against the illustrations in Seitz's famous catalogue (1907–1909), the standard reference work at that time, Drenovsky must have found out that part of his material differed from the illustrated specimen's underside (Seitz 1909: Plate 80, c) in that they possessed forewing discal spots. These specimens he must have separated from the rest, "typical" *anteros* and sent to Leo Sheljuzhko, a foremost expert on Lycaenidae, for an opinion. Since Sheljuzhko apparently never published on these specimens (cf. Nekrutenko 1980: 66) it is most likely that he recognized them as only a part of a cline not worthy of a formal designation. Whether he communicated this to Drenovsky or whether the latter reached the same conclusion on his own (or, most likely, both), it is most probable that Drenovsky himself did not attach any significance to the matter as there is no mention of it in any of his publications.

Finally, there are some other factual errors in Nekrutenko's paper that have evaded notice so far and therefore must be commented upon. In the remarks following the description of *orpheus* he writes (p. 65–66): "The specimens that served as the type material were collected by Al. K. Drenowski, who was a member of the Royal Natural History Institute [sic] (Sofia) expedition exploring the Lepidoptera of the Alibotush mountain range in 1929–1930." In fact Drenovsky, the pioneer of butterfly and insect studies on Alibotush, was never a member of the expeditions to that region organized by the Royal Entomological Station at the Royal Museum (sic!) of Natural History – Sofia. The latter were led by Krüstyū Tuleskov, who was Drenovsky's rival when it came to the exploration of Mt. Alibotush; therefore Drenovsky and Tuleskov concentrated

their simultaneous research on different (respectively the eastern and western) parts of the massif.

Nekrutenko continues (p. 66): "The most strange fact is that in the reports of this expedition Drenowski (1930, 1931, 1932) and Tuleschkow (1929, 1931) passed over in complete silence this quite unusual butterfly find [*Ultraaricia orpheus*] (*anteros* is also absent in their faunal lists)". In fact already in his first paper on the butterflies of Alibotush Tuleschkow wrote about "*Lycaena anteros*": "[Common in all mountain meadows up to 1600 m]" (Tuleschkow 1929). Similarly, Drenovsky wrote about *anteros*: "[The most widespread [in Alibotush] species of its genus [*Lycaena*], found in all forest glades at 1000–1700 m]" (Drenowski 1933).

A final misrepresentation is found in Nekrutenko's statement (p. 65) that "...the distributional picture of *A. (U.) anteros* in the Balkan Peninsula is not clear, and there are only three reliable records for Bulgaria (Buresch & Tuleschkow 1930: 164)...". In fact, the said work lists no less than 27 (!) separate localities from all parts of Bulgaria and from an altitude range of 0–1600 m: how Nekrutenko arrived at the conclusion that of these only three were to be regarded as reliable, is beyond comprehension.

Acknowledgements

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The Noctuidae (Lepidoptera) of the Daghestan Republic (Russia). II

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Abstract. This is the second paper about the Noctuidae of Daghestan. The new list comprises 224 species including 80 new species for this republic and 13 new localities. The new data are the results of 2001–2002 catches; additional data were obtained from the Zoological Institute collection (St.-Petersburg) and from literature references. The number of Noctuidae species currently known from Daghestan amounts now to 423.

Samenvatting. De Noctuidae (Lepidoptera) van de Republiek Daghestan (Rusland). II
Deze tweede lijst van de Noctuidae van Daghestan bevat 224 soorten, waarvan 80 nieuwe vermeldingen voor deze republiek en 13 nieuwe vindplaatsen. De nieuwe gegevens zijn afkomstig van waarnemingen gedurende de jaren 2001–2002, aangevuld met de gegevens in de verzameling van het Zoölogisch Instituut te St.-Petersburg en met literatuurgegevens. Het aantal soorten Noctuidae uit Daghestan bedraagt momenteel 423.

Résumé. Les Noctuelles (Lepidoptera) de la République du Daghestan (Russie). II

Cette deuxième liste des Noctuidae du Daghestan comprend 224 espèces, dont 80 nouvelles pour cette république, ainsi que 13 nouvelles localités. Les données furent rassemblées lors des observations sur le terrain durant les années 2001–2002, et complétées avec les exemplaires de la collection de l'Institut zoologique de St.-Petersbourg et par des références bibliographiques. Le nombre d'espèces de Noctuidae du Daghestan s'élève maintenant à 423.

Key words: Russia – Daghestan – Noctuidae – faunistics – catalogue

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Material and methods

This is the first addition to the complete Noctuidae-list of Daghestan republic of Russian Federation (Poltavsky & Ilyina 2002). After the summer-seasons of 2001–2002 we have got about 40 new species from 13 new localities. We also include 45 new species from the scientific collections of the Zoological Institute of the Russian Academy of Science (ZIN RAS, St.-Petersburg). This information was kindly granted to us by Alexey Matov.

Some additions were made from publications of Herczig *et al.* (1990, 1991). The complete number of Noctuidae moths known from Daghestan amounts now to 423 species.

The Noctuidae systematics and nomenclature are according to Fibiger & Hacker (1991, 1998) and Karsholt & Razowski (1996). Colour photographs of specimens are made by A. I. Matov from the collection of the Zoological Institute of the Russian Academy of Science (St.-Petersburg).

Zonal divisions of the localities

Locality numbers up to 37 are according to the main paper (Poltavsky & Ilyina 2002). Numbers 38–50 are new (numbers in bold).

I. Lowland Daghestan:

2. Tchervlennie Buruni – village in the Nogaisky District.
3. Leninaul – village in the Nogaisky District.
7. Machatschkala – capital of the Daghestan Republic.
12. Derbent – town (the centre of Derbent District).
14. Samur – village in the Magaramkent District.
- 38.** Aknada(2) – village in the Kizilyourt District.

II. Foothill Daghestan:

15. Tarki – settlement (Machatschkala suburb) (400-500 m a.s.l.).
16. Kaptchugaj – village in the Bujnask District (extinct in present time).
17. Kayakent – village in the Kayakent District.
18. Kumtor-Kale – railway station in the Kumtor-Kala District.
- 39.** Buinaksk – town (the centre of Buinaksk District).
- 40.** Hasavjurt – town (the centre of Hasavjurt District).
- 41.** Kutchun – village in Magaramkent district (on the river Samur).

III. Front mountain-ranges of Daghestan:

21. Gertma – village in the Kazbekovsky District (1200 m a.s.l.).
22. Okjuz-Tau – mount of Gimrinsky range (1200-1300 m a.s.l.).
- 43.** Aksu – village in Kazbekovsky District (mount Salatau, 1300 m a.s.l.).

IV. Central mountain area of Daghestan:

25. Gunib – village in the Gunib District (1500 m a.s.l.).
26. Hadjalmahi – village in the Levashi District (700-800 m a.s.l.).
- 44.** Uzdalroso – village in the Hunzakh District (1200 m a.s.l.).
- 45.** plateau Gunib - the plateau of the mount Gunib (2000 m a.s.l.).
- 46.** Lologonitl – village in the Ahvahsky District on the Bogosky mountain range.
- 47.** Karata – village (the centre of the Ahvahsky District).
- 49.** Tchokh – village in the Gunib District on the slopes of mount Turchidag.

V. Highland Daghestan:

30. Ahti – village in the Ahti District (1400-1500 m a.s.l.).
31. Kezenoy-am – lake in the Botlih District (on the boundary with Ichkeria).
33. Kurush – village in the Dokuzparinsky District.
34. Burshag – village in the Agulsky District (2000 m.a.s.l.).
- 48.** Tohota – village in the Tljarata District (1900–2000 m a.s.l.).
- 50.** Rutul – village (the centre of Rutul District).

Abbreviations:

! – caught for the first time in Daghestan in 2001–2002.

* – first record for Daghestan (data from museum collections).

Localities: Kezenoy-am and Kurush without date and collector name means data taken from Herzog *et al.* (1990, 1991).

Figures in brackets: (I, II, III, IV, V) – the natural zones of species distribution: I– Lowlands, II– Foothills, III– Front mountain-ranges, IV– Central mountain area, V– Highlands.

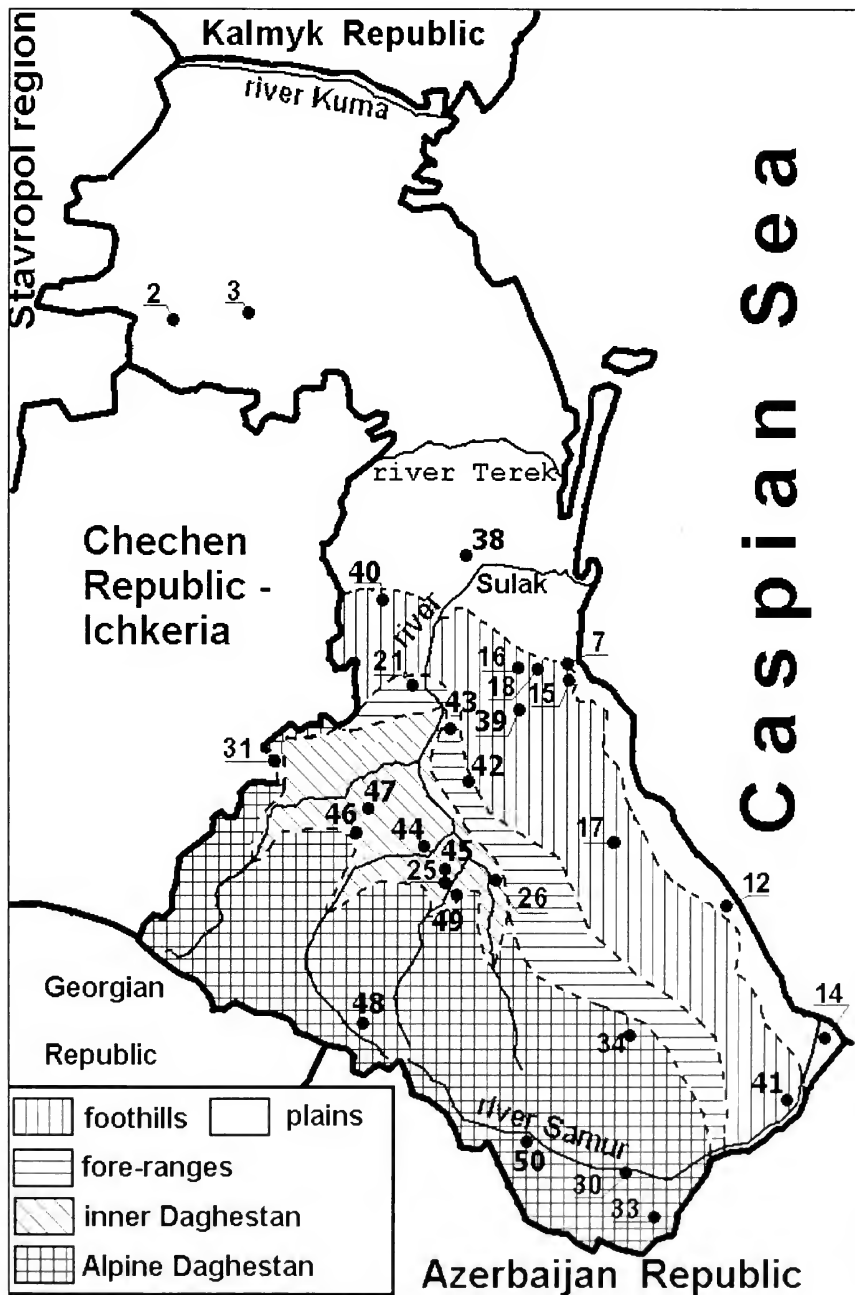


Figure 1: Map of Daghestan with indication of natural zones and localities.

Additions to the systematic list of the Noctuidae of Daghestan

Subfamily Acronictinae

1. *Eogena contaminei* (Eversmann, 1847) – Kayakent, 28.05.2002. (II).
2. *Acronicta alni* (Linnaeus, 1767) – plateau Gunib, 18–20.07.2002. (IV).
3. *Acronicta tridens* ([Denis & Schiffermüller], 1775) – plateau Gunib, 18–20.07.2002. (IV).
4. *Acronicta psi* (Linnaeus, 1758) – Tohota, 20–25.07.2001; Lologonitl, 10–12.08.2002. (IV, V).
5. *Acronicta leporina* (Linnaeus, 1758) – plateau Gunib, 18–20.07.2002. (IV).
6. *Acronicta auricoma* ([Denis & Schiffermüller], 1775) – plateau Gunib, 18–20.07.2002. (IV).
7. *Acronicta rumicis* (Linnaeus, 1758) – Aknada, 10–13.06.2002; Karata, 08.08.2002. (I, IV).
8. *Acronicta euphorbiae* ([Denis & Schiffermüller], 1775) – Kezenoy-am. (V).
9. **Simyra nervosa* ([Denis & Schiffermüller], 1775) – Kaptchugaj, 01.05.1938 (ZIN: M.A. Rjabov) (II); Gunib, 22.04.2001 (II, IV).
10. *Colocasia coryli* (Linnaeus, 1758) – Gunib, 22.04.2001. (IV).

Subfamily Bryophilinae

11. *!Cryphia protecta* Draudt, 1931 – Tohota, 20–25.07.2001. (V).
12. *!Cryphia seladona* (Christoph, 1885) – Tohota, 20–25.07.2001. (V).
13. *!Cryphia uzahovi* Ronkay & Herczig, 1991 – Kezenoy-am; Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002 (IV, V).
- 13b. *Cryphia muralis* (Forster, 1771) – Karata, 08.08.2002. (IV).

Subfamily Herminiinae

14. *Pechipogo plumigeralis* (Hübner, [1825]) – Samur, 01.08.1996. (I).
15. **Antarchaea conicephala* (Staudinger, 1870) – Hadjalmahi, 29.06.1926. (ZIN: M. A. Rjabov). (IV).

Subfamily Chloephorinae

17. *Pseudoips fagana* (Fabricius, 1781) – Tohota, 20–25.07.2001. (V).

Subfamily Catocalinae

18. **Catocala puerpera* (Giorna, 1791) – Machatschkala, 26.08.1946. Uzdalroso, 1980; Kumtor-Kale, 31.08.1940 (ZIN: M. A. Rjabov) (I, II, IV).
19. **Catocala hymenaea* (Esper, 1805) – Тарки, 16.07.1946; Kumtor-Kale, 16.07.1947 (ZIN: M. A. Rjabov) (II).
20. *!Catocala lupina* Herrich-Schäffer, 1851 – Kutchun, 18.09.1999. (II).
21. **Catocala promissa* ([Denis & Schiffermüller], 1775) – Buinaksk, 15.07.1944. (II).
22. **Clytie terrulenta* (Christoph, 1893) – Kaptchugaj, 15.10.1940, 04.08.1945. (ZIN: M. A. Rjabov) (II).

23. **Minucia lunaris* ([Denis & Schiffermüller], 1775) – Тарки. 20.05.1947 (ZIN: M. A. Rjabov) (II).
24. *Drasteria herzi* Kozhantschikov, 1930 – Kaptchugaj, 01.05.1938, 20.06.1940 21.07.1949; Derbent 24.07.1928 (ZIN: M. A. Rjabov) (I, II).
25. *Drasteria flexuosa* (Ménétriés, 1849) – plateau Gunib, 18–20.07.2002. (IV).
26. *Drasteria cailino* (Lefèbvre, 1827) – Leninaul, 01.04.2001; Tchervlennie Buruni. 02.02.2001 (I).
27. *Lygephila viciae* (Hübner, 1822) – plateau Gunib, 18–20.07.2002. (IV).
28. **Colobochyla salicalis* ([Denis & Schiffermüller], 1775) – Machatschkala, 16.05.1949 (ZIN: M. A. Rjabov) (I).
29. !*Apopestes spectrum* (Esper, 1787) – Gertma, 02.10.2001; Machatschkala, 10.06.2002. (I, III).
30. *Apopestes noe* Ronkay, 1990 – Kezenoy-am (V).
31. **Autophila limbata* (Staudinger, 1871) – Gertma, 15.07.2001; Kaptchugaj, 14.07.1945 (II); Ahti, 28.07–01.08.1933; Kumtor-Kale, 16.07.1947 (ZIN: M. A. Rjabov) (II, III, IV, V).
32. *Autophila ligaminosa* (Eversmann, 1851) var. *caucasica* Herz, 1904 – Kezenoy-am; Kumtor-Kale, 21.05.1939; Hadjalmahi, 29.09.1932 (ZIN: M. A. Rjabov), (II, IV, V).
33. **Autophila asiatica* (Staudinger, 1888) – Kaptchugaj, 04.07.1945; Hadjalmahi, 23.09.1932 (ZIN: M. A. Rjabov) (II, IV).
34. **Catephia alchymista* ([Denis & Schiffermüller], 1775) – Derbent, 01.08.1928 (ZIN: M. A. Rjabov) (I).
35. *Tyta luctuosa* ([Denis & Schiffermüller], 1775) – Gertma, 02.10.2001; plateau Gunib, 18–20.07.2002; Kayakent, 28.05.2002; Aknada, 10–13.06.2002. (I, II, III, IV).
36. **Callistege mi* (Clerck, 1759) – Тарки, 08.05.1946 (ZIN: M. A. Rjabov) (II).
37. **Grammodes bifasciata* (Petagna, 1787) [= *G. geometrica* Rossi, 1790] – Derbent, 23.07.1928; Kaptchugaj, 18.05.1939; Tarki, 15.09.1947; Machatschkala, 26.08.1946 (ZIN: M. A. Rjabov) (I, II).

Subfamily Plusiinae

38. *Euchalcia variabilis* (Piller, 1783) – Aksu, 07.07.2001. (III).
39. !*Euchalcia modesta* (Hübner, 1786) – Burshag, 03–05.08.2001. (V).
40. *Panchryisia deaurata* (Esper, 1787) – Kaptchugaj, 05.09.1937 (ZIN: M. A. Rjabov) (II).
41. *Diachryisia chrysisitis* (Linnaeus, 1758) – Aksu, 07.07.2001; Tohota, 20–25.07.2001; Lologonitl, 10–12.08.2002; Tchokh, 21.08.2002; plateau Gunib, 18–20.07.2002. (III, IV, V).
42. *Maccounoughia confusa* (Stephens, 1850) – Aksu, 07.07.2001; Gertma, 15.07.2001. (III).
43. *Autographa gamma* (Linnaeus, 1758) – Machatschkala, 10.04.2001; Kayakent, 07.08.2001; Aksu, 07.07.2001; Rutul, 27.07.2001; Kurush, 23.06.2001; Tohota, 20–25.07.2001; Aknada, 10–13.06.2002; plateau

- Gunib, 18–20.07.2002; Karata, 08.08.2002; Lologonitl, 10–12.08.2002. (I, II, III, IV, V).
44. *Autographa jota* (Linnaeus, 1758) – Tohota, 20–25.07.2001; Karata, 08.08.2002; Lologonitl, 10–12.08.2002. (IV, V).
45. *Autographa bractea* ([Denis & Schiffermüller], 1775) – Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002; plateau Gunib, 18–20.07.2002. (IV, V).
46. *Autographa aemula* ([Denis & Schiffermüller], 1775) – Aksu, 07.07.2001; Burshag, 03–05.08.2001. (III, V).
47. *Abrostola trigemina* (Werneburg, 1864) – plateau Gunib, 18–20.07.2002; Machatschkala, 20.02.2001. (I, IV).
48. *!Abrostola tripartita* (Hufnagel, 1766) – Tohota, 20–25.07.2001. (V).
49. **Abrostola clarissa* (Staudinger, 1900) – Hadjalmahi, 18.06.1944. (IV).

Subfamily Acontiinae

50. *Emmelia trabealis* (Scopoli, 1763) – Gertma, 02.10.2001; plateau Gunib, 18–20.07.2002; Aknada, 10–13.06.2002. (I, III, IV).
51. *Acontia lucida* (Hufnagel, 1766) – Kayakent, 28.05.2002. (II).
52. *Acontia melanura* (Tauscher, 1809) – plateau Gunib, 18–20.07.2002. (IV).
53. *!Protodeltote pygarga* (Hufnagel, 1766) – plateau Gunib, 18–20.07.2002. (IV).
54. *Eublemma rosea* (Hübner, 1790) – plateau Gunib, 18–20.07.2002. (IV).

Subfamily Cuculliinae

55. *Cucullia magnifica* Freyer, 1839 – Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002. (IV, V).
56. *!Cucullia argentea* (Hufnagel, 1766) – Karata, 08.08.2002. (IV).
57. *Cucullia lucifuga* ([Denis & Schiffermüller], 1775) – Gunib, 25.05.2001; Burshag, 03–05.08.2001. (IV, V).
58. *!Cucullia gnaphalii* (Hübner, [1813]) – Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002. (IV, V).
59. *Cucullia umbratica* (Linnaeus, 1758) – plateau Gunib, 18–20.07.2002; Lologonitl, 10–12.08.2002. (IV).
60. *Omphalophana antirrhini* (Hübner, [1809]) – plateau Gunib, 18–20.07.2002. (IV).

Subfamily Amphipyriinae

61. **Amphipyra perflua* (Fabricius, 1787) – Okjuz-Tau, 21.08.1944 (ZIN: M.A. Rjabov) (III).
62. *Amphipyra tragopoginis* (Clerck, 1759) – Tchokh, 21.08.2002. (IV).

Subfamily Heliothinae

63. *Schinia scutosa* ([Denis & Schiffermüller], 1775) – Leninaul, 02.02.2001; Gunib, 25.05.2001; Tchervlennie Buruni, 02.04.2001. (I, IV).

64. !*Schinia imperialis* Staudinger, 1871 – Kurush (ZIN: Erschov); plateau Gunib, 18–20.07.2002. (IV, V).
 65. **Schinia cognata* (Freyer, 1833) – Derbent, 07–08.08.1928 (ZIN). (I).
 66. *Heliothis peltigera* ([Denis & Schiffermüller], 1775) – Lologonitl, 10–12.08.2002. (IV).
 67. *Pyrrhia umbra* (Hufnagel, 1766) – plateau Gunib, 18–20.07.2002. (IV).
 68. *Chazaria incarnata* (Freyer, 1838) – plateau Gunib, 18–20.07.2002. (IV).

Subfamily Hadeninae

69. !*Acosmetia caliginosa* (Hübner, [1813]) – plateau Gunib, 18–20.07.2002. (IV).
 70. *Paradrina morpheus* (Hufnagel, 1766) – Tchokh, 21.08.2002. (IV).
 71. *Paradrina clavipalpis* (Scopoli, 1763) – Tohota, 20–25.07.2001; Lologonitl, 10–12.08.2002. (IV, V).
 72. !*Paradrina hypostigma* (Boursin, 1932) – Tohota, 20–25.07.2001. (V).
 73. !*Eremodrina vicina* (Staudinger, 1870) – Gertma, 15.07.2001. (III).
 74. !*Hoplodrina octogenaria* (Goeze, 1781) (= *H. alsines* (Brahm, 1791)) – Gertma, 15.07.2001, 02.10.2001; Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002; Tchokh, 21.08.2002. (III, IV, V).
 75. *Hoplodrina ambigua* ([Denis & Schiffermüller], 1775) – Tohota, 20–25.07.2001; Gertma, 02.10.2001; Kayakent, 28.05.2002. (II, III, V).
 76. *Megalodes eximia* (Freyer, 1845) – Tarki, 02.07.1945, 15.06.1947 (ZIN: M. A. Rjabov) (II).
 77. !*Athetis furvula* (Hübner, [1808]) – Tohota, 20–25.07.2001; Lologonitl, 10–12.08.2002. (IV, V).
 78. *Athetis gluteosa* (Treitschke, 1835) – plateau Gunib, 18–20.07.2002. (IV).
 79. !*Proxenus lepigone* (Moeschler, 1860) – Aksu, 07.07.2001. (III).
 80. !*Mormo maura* (Linnaeus, 1758) – Machatschkala (coll. of Daghestan Scientific Centre). (I).
 81. *Chilodes maritima* (Tauscher, 1806) – Kaptchugaj, 14.07.1945 (ZIN: M. A. Rjabov) (II).
 82. **Haemerosia vassilini* Bang-Haas, 1912 – Derbent, 27.08.1928; Tarki, 02.07.1947; Kaptchugaj, 14.07.1940, 27.08.1940, 27.07.1952 (ZIN: M. A. Rjabov) (I, II).
 83. *Dypterygia scabriuscula* (Linnaeus, 1758) – Tohota, 20–25.07.2001; Aknada, 10–13.06.2002. (I, V).
 84. *Euplexia lucipara* (Linnaeus, 1758) – plateau Gunib, 18–20.07.2002. (IV).
 85. *Phlogophora meticulosa* (Linnaeus, 1758) – Aksu, 07.07.2001; Tohota, 20–25.07.2001. (III, V).
 86. *Phlogophora scita* Hübner, 1790 – plateau Gunib, 18–20.07.2002. (IV).
 87. *Auchmis detersa* (Esper, 1791) – Kezenoy-am; Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002. (IV, V).
 88. !*Actinotia radiosa* (Esper, 1804) – Tohota, 20–25.07.2001. (V).
 89. !*Chloantha hyperici* ([Denis & Schiffermüller], 1775) – Tohota, 20–25.07.2001. (V).

90. **Callopietria latreillei* (Duponchel. 1827) – Hadjalmahi. 23.06.1944 (ZIN: M. A. Rjabov) (I. IV).
91. *Parasitichtis suspecta* (Hübner. [1817]) – Derbent. 24.06. 10.07.1928 (ZIN).
92. **Cosmia diffracta* (Linnaeus. 1767) – Derbent. 22.07.1928. 20.06.1931 (ZIN: M. A. Rjabov) (I).
93. !*Cosmia trapezina* (Linnaeus. 1758) – plateau Gunib. 18–20.07.2002. (IV).
94. *Xanthia togata* (Esper. 1788) – Kezenoy-am. (V).
95. **Xanthia gilvago* ([Denis & Schiffermüller]. 1775) – Machatschkala. 20.09.2001: Hadjalmahi. 22.09.1932 (ZIN: M. A. Rjabov) (I. II. IV).
96. **Xanthia fulvago* (Clerk. 1759) [=*X. sulfurago* ([Denis & Schiffermüller]. 1775)] – Tarki. 21.09.1944: Machatschkala. 30.10.1949 (ZIN: M. A. Rjabov) (I. II).
97. **Agrochola humilis* ([Denis & Schiffermüller]. 1775) – Tarki. 27.10.1940. 18.10.1947 (ZIN: M. A. Rjabov) (II).
98. **Agrochola lychniis* ([Denis & Schiffermüller]. 1775) – Derbent. 26.10.1931 (ZIN: M. A. Rjabov) (I).
99. **Agrochola macilentata* (Hübner. [1808]) – Tarki. 07.10.1945: Kaptchugaj. 15.10.1945 (ZIN: M. A. Rjabov) (II).
100. **Agrochola circumcellaris* (Hufnagel. 1766) – Derbent. 15.10.1928 (ZIN: M. A. Rjabov) (I).
101. **Agrochola litura* (Linnaeus. 1761) – Kumtor-Kale. 07.10.1940 (ZIN: M. A. Rjabov) (II).
102. **Agrochola nitida* ([Denis & Schiffermüller]. 1775) – Tarki. 25.09.1945 (ZIN: M. A. Rjabov) (II).
103. **Eupsilia transversa* (Hufnagel. 1766) – Hasavjurt. 5.10.1949 (ZIN: M. A. Rjabov) (II).
104. **Jodia croceago* ([Denis & Schiffermüller]. 1775) – Tarki. 17.10.1944: Kaptchugaj. 26.09.1943 (ZIN: M. A. Rjabov) (II).
105. **Conistra erythrocephala* ([Denis & Schiffermüller]. 1775) – Tarki. 01.11.1943: Machatschkala. 04.11.1951 (ZIN: M. A. Rjabov) (I. II).
106. **Conistra rubiginosa* ([Denis & Schiffermüller]. 1775) – Tarki. 06.05.1945: Machatschkala. 12.10.1947: Kumtor-Kale. 01.09.1945 (ZIN: M. A. Rjabov) (I. II).
107. **Conistra rubiginosa* ([Denis & Schiffermüller]. 1775) – Tarki. 23.04.1933 22.02.1941. 05.03.1941 (ZIN: M. A. Rjabov) (II).
108. **Episema lederi* Christoph. 1885 [=*E. sareptana* Alpheraky. 1897] – Tarki. 05.10.1937. 18–20.09.1939. 20.09.1947 (ZIN: M. A. Rjabov) (II).
109. **Cleoceris scoriacea* (Esper. 1789) – Tarki. 25.09.1940: Derbent. 6.10.1931 (ZIN: M. A. Rjabov) (I. II).
110. **Conistra vaccini* (Linnaeus. 1761) – Machatschkala. 22.02.1941. 13.11.1944 (ZIN: M. A. Rjabov) (I).
111. **Conistra veronicae* (Hübner. [1813]) – Tarki. 27.10.1940: Machatschkala. 16.11.1949. (ZIN: M. A. Rjabov) (I. II).

112. *Brachylomia viminalis* (Fabricius, 1777) – Gertma, 15.07.2001; Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002. (III, IV, V).
113. *Lithophane ornitopus* (Hufnagel, 1766) – Tarki, 12.09.1945 (ZIN: M. A. Rjabov) (II).
114. *Mniotype adusta* (Esper, 1790) – Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002; Karata, 08.08.2002. (IV, V).
115. **Anitype chi* (Linnaeus, 1758) – Okjuz-Tau, 29.08.1940 (ZIN: M. A. Rjabov) (III).
116. **Xylena exsoleta* (Linnaeus, 1758) – Tarki, 22.02.1941; Kumtor-Kale, 08.10.1940 (ZIN: M. A. Rjabov) (II).
117. **Xylena lunifera* (Warren, 1910) – Tarki, 18.10.1947 (ZIN: M. A. Rjabov) (II).
118. *Apamea monoglypha* (Hufnagel, 1766) – Gertma, 15.07.2001, 02.10.2001; Burshag, 03–05.08.2001; Karata, 08.08.2002; plateau Gunib, 18–20.07.2002; Lologonitl, 10–12.08.2002. (III, IV, V).
119. !*Apamea lithoxyla* ([Denis & Schiffermüller], 1775) – Gunib, 22.04.2001; Gertma, 15.07.2001. (III, IV).
120. *Apamea crenata* (Hufnagel, 1766) – plateau Gunib, 18–20.07.2002. (IV).
121. *Apamea lateritia* (Hufnagel, 1766) – Gertma, 02.10.2001; Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002; Lologonitl, 10–12.08.2002; Tchokh, 21.08.2002. (III, IV, V).
122. *Apamea furva* ([Denis & Schiffermüller], 1775) – Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002. (IV, V).
123. *Apamea oblonga* (Haworth, 1809) – Gertma, 15.07.2001. (III).
124. *Apamea remissa* (Hübner, [1809]) – Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002. (IV, V).
125. *Apamea sordens* (Hufnagel, 1766) – Lologonitl, 10–12.08.2002. (IV).
126. *Apamea ferrago* (Eversmann, 1837) – Tohota, 20–25.07.2001; Gertma, 02.10.2001; Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002. (III, IV, V).
127. *Oligia latruncula* ([Denis & Schiffermüller], 1775) – Gertma, 15.07.2001. (III).
128. !*Oligia versicolor* (Borkhausen, 1792) – Aksu, 07.07.2001. (III).
129. *Mesoligia furuncula* ([Denis & Schiffermüller], 1775) – Aksu, 07.07.2001; Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002; Karata, 08.08.2002. (III, IV, V).
130. !*Mesoligia literosa* (Haworth, 1809) – Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002. (IV, V).
131. *Mesapamea secalis* (Linnaeus, 1758) – Tohota, 20–25.07.2001. (V).
132. *Hydraecia praecipua* Hacker & Nekrasov, 2001 – Gunib, 21–30.07.1984 (coll. A. V. Nekrasov) (IV).
133. **Nonagria typhae* (Thunberg, 1784) – Machatschkala, 30.09.1950 (ZIN: M. A. Rjabov) (I).
134. !*Amphipoa fucosa* (Freyer, 1830) – plateau Gunib, 18–20.07.2002. (IV).

135. *Calamia tridens* (Hufnagel, 1766) – Kezenoy-am; Burshag, 03–05.08.2001. (V).
136. *Sedina buettneri* (O. Hering, 1858) – Bujnask, 01.09.1940 (ZIN; M. A. Rjabov).
137. *Discestra furca* (Eversmann, 1852) – Aksu, 07.07.2001. (III).
138. *Discestra trifolii* (Hufnagel, 1766) – Leninaul, 02.02.2001; Gertma, 15.07.2001, 02.10.2001; plateau Gunib, 18–20.07.2002; Aknada, 10.06.2002. (I, III, IV).
139. *Discestra stigmosa* (Christoph, 1887) – Leninaul, 02.02.2001; Kayakent, 28.05.2002. (I, II).
140. *Discestra sociabilis* (de Graslin, 1850) – Kayakent, 28.05.2002. (II).
141. *Lacanobia w-latinum* (Hufnagel, 1766) – plateau Gunib, 18–20.07.2002; Tchokh, 21.08.2002. (IV).
142. *Lacanobia oleracea* (Linnaeus, 1758) – Tohota, 20–25.07.2001; Tchokh, 21.08.2002; Lologonitl, 10–12.08.2002; Karata, 08.08.2002. (IV, V).
143. *Lacanobia thalassina* (Hufnagel, 1766) – plateau Gunib, 18–20.07.2002. (IV).
144. *Lacanobia contigua* ([Denis & Schiffermüller], 1775) – Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002; Tchokh, 21.08.2002. (IV, V).
145. *Aetheria bicolorata* (Hufnagel, 1766) – Rutul, 27.07.2001; Tchokh, 21.08.2002; plateau Gunib, 18–20.07.2002. (IV, V).
146. *Hadena compta* ([Denis & Schiffermüller], 1775) – Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002; Lologonitl, 10–12.08.2002. (IV, V).
147. *Hadena confusa* (Hufnagel, 1766) – Aksu, 07.07.2001; Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002; Lologonitl, 10–12.08.2002. (III, IV, V).
148. *Hadena melanochoera* (Staudinger, 1892) – Aksu, 07.07.2001; Gertma, 15.07.2001; Tohota, 20–25.07.2001. (III, V).
149. *Hadena tephroleuca* (Boisduval, 1833) – Aksu, 07.07.2001. (III).
150. *Hadena rivularis* (Fabricius, 1775) – Burshag, 03–05.08.2001. (V).
151. *Hadena perplexa* ([Denis & Schiffermüller], 1775) – Gertma, 15.07.2001. (III).
152. *Sideridis reticulata* (Goeze, 1781) – Aksu, 07.07.2001; Kurush, 23.06.2001; Tohota, 20–25.07.2001; plateau Gunib, 18–20.07.2002. (III, IV, V).
153. *Saragossa porosa* (Eversmann, 1854) – Aksu, 07.07.2001. (III).
154. *Melanchnra persicariae* (Linnaeus, 1761) – plateau Gunib, 18–20.07.2002. (IV).
155. *Melanchnra pisi* (Linnaeus, 1758) – plateau Gunib, 18–20.07.2002. (IV).
156. *Polia bombycina* (Hufnagel, 1766) – Aksu, 07.07.2001; Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002. (III, IV, V).

157. *Polia nebulosa* (Hufnagel, 1766) – Lologonitl, 10–12.08.2002; plateau Gunib, 18–20.07.2002. (IV).
158. *Polia serratilinea* (Treitschke, 1825) – Aksu, 07.07.2001; Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002; Lologonitl, 10–12.08.2002. (III, IV, V).
159. *Mythimna conigera* ([Denis & Schiffermüller], 1775) – Aksu, 07.07.2001; Gertma, 15.07.2001, 02.10.2001; Burshag, 03–05.08.2001; Lologonitl, 10–12.08.2002; plateau Gunib, 18–20.07.2002; Karata, 08.08.2002. (III, IV, V).
160. *Mythimna ferrago* (Fabricius, 1787) – Lologonitl, 10–12.08.2002; Tchokh, 21.08.2002. (IV).
161. *Mythimna albipuncta* ([Denis & Schiffermüller], 1775) – Tohota, 20–25.07.2001; Lologonitl, 10–12.08.2002. (IV, V).
162. *Mythimna vitellina* (Hübner, [1808]) – Kayakent, 28.05.2002. (II).
163. *Mythimna comma* (Linnaeus, 1761) – Aksu, 07.07.2001; Tohota, 20–25.07.2001; Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002. (III, IV, V).
164. *Mythimna flammea* (Curtis, 1828) – Gunib, 22.04.2001. (IV).
165. *Mythimna l-album* (Linnaeus, 1767) – Kezenoy-am; plateau Gunib, 18–20.07.2002; Tchokh, 21.08.2002. (IV, V).
166. *Panolis flammea* ([Denis & Schiffermüller], 1775) – Gunib, 22.04.2001. (IV).
167. **Orthosia incerta* (Hufnagel, 1766) – Tarki, 31.03.1940 (ZIN: M. A. Rjabov), Gunib, 22.04.2001 (II, IV).
168. **Orthosia gothica* (Linnaeus, 1758) – Tarki, 23.04.1933, 31.03.1940 (ZIN: M. A. Rjabov) (II).
169. **Orthosia cerasi* (Fabricius, 1775) [= *O. stabilis* ([Denis & Schiffermüller], 1775)] – Beligy, 23.04.1928. (I).
170. *!Egira anatolica* (Hering, 1933) – Gunib, 22.04.2001. (IV).
171. *Perigrapha i-cinctum* ([Denis & Schiffermüller], 1775) – Gunib, 22.04.2001, 25.05.2001. (IV).
172. *Hyssia cavernosa* (Eversmann, 1842) – Aksu, 07.07.2001; Burshag, 03–05.08.2001. (III, V).
173. *Cerapteryx megala* Alpheraky, 1882 – Kezenoy-am; Burshag, 03–05.08.2001. (V).
174. *Tholera cespitis* ([Denis & Schiffermüller], 1775) – Kezenoy-am. (V).
175. *Eriopygodes imbecilla* (Fabricius, 1794) – Aksu, 07.07.2001; Burshag, 03–05.08.2001; plateau Gunib, 18–20.07.2002. (III, IV, V).
176. *Lasionycta proxima* (Hübner, [1809]) – Tohota, 20–25.07.2001. (V).

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177. *Axylia putris* (Linnaeus, 1761) – Lologonitl, 10–12.08.2002; Tchokh, 21.08.2002; Karata, 08.08.2002. (IV).
178. *Ochropleura flammatra* ([Denis & Schiffermüller], 1775) – Lologonitl, 10–12.08.2002; plateau Gunib, 18–20.07.2002. (IV).
179. *Ochropleura musiva* (Hübner, [1803]) – Burshag, 03–05.08.2001. (V).

180. *Ochropleura plecta* (Linnaeus, 1761) – Aksu, 07.07.2001: Gertma, 15.07.2001: Burshag, 03–05.08.2001: plateau Gunib, 18–20.07.2002. (III, IV, V).
181. *Diarsia mendica* (Fabricius, 1775) – plateau Gunib, 18–20.07.2002. (IV).
182. *Noctua pronuba* (Linnaeus, 1758) – Tohota, 20–25.07.2001. (V).
183. *Noctua orbona* (Hufnagel, 1766) – plateau Gunib, 18–20.07.2002. (IV).
184. !*Noctua interposita* (Hübner, 1789) – Tohota, 20–25.07.2001: Burshag, 03–05.08.2001: plateau Gunib, 18–20.07.2002. (IV, V).
185. **Noctua fimbriata* (Schreber, 1759) – Tarki, 15.09.1947 (ZIN: M. A. Rjabov) (II).
186. *Noctua comes* (Hübner, [1813]) – Lologonitl, 10–12.08.2002: Karata, 08.08.2002: Aknada, 10–13.06.2002. (I, IV).
187. *Chersotis ocellina* ([Denis & Schiffermüller], 1775) – Tohota, 20–25.07.2001: Gertma, 02.10.2001: Burshag, 03–05.08.2001: plateau Gunib, 18–20.07.2002. (III, IV, V).
188. *Chersotis multangula* (Hübner, [1803]) – plateau Gunib, 18–20.07.2002. (IV).
189. *Chersotis elegans* (Eversmann, 1837) – Gertma, 02.10.2001: Burshag, 03–05.08.2001. (III, V).
190. !*Chersotis anachoreta* (Herrich-Schäffer, 1851) – Kurush, 23.06.2001: Tohota, 20–25.07.2001: Gertma, 02.10.2001. (III, IV, V).
191. *Chersotis anatolica* (Draudt, 1936) – Kezenoy-am. (V).
192. *Chersotis semna* (Püngeler, 1906) – Kezenoy-am. (V).
193. *Chersotis caspinis* (Lederer, 1871) – Kezenoy-am. (V).
194. *Chersotis cuprea* ([Denis & Schiffermüller], 1775) – Kezenoy-am. (V).
195. *Chersotis fimbriola* (Esper, [1803]) – Kezenoy-am. (V).
196. *Rhyacia simulans* (Hufnagel, 1766) – Burshag, 03–05.08.2001. (V).
197. *Standfussiana nictymera* (Boisduval, 1834) – Gertma, 15.07.2001: Tohota, 20–25.07.2001. (III, V).
198. *Eurois occulta* (Linnaeus, 1758) – plateau Gunib, 18–20.07.2002: Lologonitl, 10–12.08.2002. (IV).
199. *Spaelotis ravida* ([Denis & Schiffermüller], 1775) – Gertma, 15.07.2001, 02.10.2001: plateau Gunib, 18–20.07.2002. (III, IV).
200. *Xestia c-nigrum* (Linnaeus, 1758) – Gertma, 02.10.2001: Karata, 08.08.2002. (III, IV).
201. *Xestia dirapezium* ([Denis & Schiffermüller], 1775) – Tohota, 20–25.07.2001: Burshag, 03–05.08.2001: Tchokh, 21.08.2002. (IV, V).
202. *Xestia triangulum* (Hufnagel, 1766) – Burshag, 03–05.08.2001: Tchokh, 21.08.2002: Karata, 08.08.2002. (IV, V).
203. *Xestia ashworthii* (Doubleday, 1855) – Lologonitl, 10–12.08.2002. (IV).
204. *Xestia baja* ([Denis & Schiffermüller], 1775) – plateau Gunib, 18–20.07.2002. (IV).
205. *Xestia ochreago* (Hübner, [1808]) – Tohota, 20–25.07.2001: Burshag, 03–05.08.2001. (V).

Plate 1



1



2



3



4



5



6



7



8

1.- *Antarchaea conicephala* (Staudinger, 1870), Hadjalmahi, 29.06.1926; 2.- *Clytie terrulenta* (Christoph, 1893), Kaptechugaj, 04.08.1945; 3.- *Drasteria herzi* Kozhantschikov, 1930, Kaptechugaj, 20.06.1940; 4.- *Autophila limbata* (Staudinger, 1871), KumtorKale, 16.07.1947; 5.- *Megalodes eximia* (Freyer, 1845), Tarki, 15.06.1947; 6.- *Haemerusia vassilinierei* Bang-Haas, 1912, Tarki, 22.07.1947; 7.- *Episema lederi* Christoph, 1885, Tarki, 18.09.1939; 8.- *Xylene limifera* (Warren, 1910), Tarki, 18.10.1947.

206. *Anaplectoides prasina* ([Denis & Schiffermüller], 1775) – Gertma. 02.10.2001; Burshag. 03–05.08.2001; plateau Gunib. 18–20.07.2002; Karata. 08.08.2002; Lologonitl. 10–12.08.2002. (III, IV, V).
207. *Parexarnis taurica* Staudinger, 1879 *ssp. pseudosollers* (Boursin, 1940) – Tohota. 20–25.07.2001; Kezenoy-am; Kurush; Lologonitl. 10–12.08.2002 (IV, V).
208. *Parexarnis fugax* (Treitschke, 1825) – Lologonitl. 10–12.08.2002. (IV).
209. *Protexarnis squalida* (Guenée, 1852) – Lologonitl. 10–12.08.2002. (IV).
210. *Euxoa birivia* ([Denis & Schiffermüller], 1775) – Ahti, 27.06.2001. (V).
211. *Euxoa heringi* (Staudinger, 1877) – Tohota. 20–25.07.2001; Burshag. 03–05.08.2001. (V).
212. *Euxoa nigricans* (Linnaeus, 1761) – Gertma. 02.10.2001. (III).
213. *Euxoa tritici* (Linnaeus, 1761) – Lologonitl. 10–12.08.2002. (IV).
214. *Euxoa obelisca* ([Denis & Schiffermüller], 1775) – Tohota. 20–25.07.2001. (V).
215. *Euxoa vitta* (Esper, 1789) – Gertma, 15.07.2001. (III).
216. *Euxoa conspiciua* (Hübner, [1824]) – Tohota. 20–25.07.2001; Lologonitl. 10–12.08.2002; plateau Gunib. 18–20.07.2002. (IV, V).
217. *Dichagyris renigera* (Hübner, [1808]) – Aksu. 07.07.2001; Gertma. 15.07.2001; Tohota. 20–25.07.2001; Burshag. 03–05.08.2001; Tchokh. 21.08.2002. (III, IV, V).
218. *Dichagyris candelisequa* ([Denis & Schiffermüller], 1775) – Kezenoy-am. (V).
219. **Actebia praecox* (Linnaeus, 1758) – Derbent. 1.09.1928 (ZIN: M. A. Rjabov) (I).
220. *Ledereragrotis multifida* (Lederer, 1870) – Burshag. 03–05.08.2001; plateau Gunib. 18–20.07.2002. (IV, V).
221. *Agrotis ipsilon* (Hufnagel, 1766) – Machatschkala. 10.04.2001; Rutul. 27.07.2001; Lologonitl. 10–12.08.2002. (I, IV, V).
222. *Agrotis exclamationis* (Linnaeus, 1758) – Aksu. 07.07.2001; Gertma. 15.07.2001; Tohota. 20–25.07.2001; plateau Gunib. 18–20.07.2002; Tchokh. 21.08.2002; Aknada, 10–13.06.2002. (I, III, IV, V).
223. *Agrotis clavis* (Hufnagel, 1766) – Aksu. 07.07.2001; Tohota. 20–25.07.2001; Burshag. 03–05.08.2001; plateau Gunib. 18–20.07.2002; Tchokh. 21.08.2002; Lologonitl. 10–12.08.2002. (III, IV, V).
224. *Agrotis segetum* ([Denis & Schiffermüller], 1775) – Tohota. 20–25.07.2001; Burshag. 03–05.08.2001. (V).

Acknowledgements

The authors are grateful to Dr. A. Y. Matov of ZIN RAS (Sankt-Petersburg) for information about some Noctuidae moths in the ZIN's collection, used in this paper and the permission of representing the colour photographs of moths used in this paper.

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Boekbespreking

Mironov, V.: *The Geometrid Moths of Europe, volume 4 Larentiinae II (Perizomini and Eupitheciini).*

17 × 24 cm, 463 p., 16 kleurenplaten, 46 zwart-witplaten, 83 tekstfiguren, 151 verspreidingskaartjes, Apollo Books Aps., Kirkeby Sand 19, DK-5771 Stenstrup, Denmark, 2003, gebonden, DKK 720,- (10% korting bij intekening op de reeks) (ISBN 87-88757-40-4).

In 2001 werd het eerste deel in deze reeks gepubliceerd (zie bespreking in *Phegea* 30: 4). Dit volgende deel, eigenlijk het vierde in de reeks, bevat de beschrijving van het grote en moeilijke genus *Eupithecia*, naast de genera *Perizoma*, *Gymnoscelis*, *Chloroclystis* e.d.. Het boek is haast eens zo dik als het eerste deel in de reeks, het bevat dubbel zoveel kleurenplaten, maar er worden dan ook veel meer soorten in behandeld.

Elk genus wordt kort gekarakteriseerd, met opgave van synoniemen en type-soort, beschrijving van mannelijke en vrouwelijke genitalia, kenmerken van de pre-imaginale stadia en enkele algemene bemerkingen. Elke soort wordt zeer gedetailleerd behandeld: volledige wetenschappelijke naam, lijstje van synoniemen met referentie naar de originele beschrijving, type-lokaliteit en type-exemplaren. Dan volgt een uitgebreide beschrijving van de uiterlijke kenmerken van het imago, de mannelijke en vrouwelijke genitalia, de verspreiding, de fenologie, biologie, het habitat en een korte bespreking van de gelijkende soorten met opgave van kenmerken waardoor de soort van nauw verwante soorten kan worden onderscheiden.

Het boek bevat de beschrijving van een nieuwe soort *Eupithecia*, en verder worden er 27 taxonomische ingrepen uitgevoerd, o.a. het invoeren nieuwe synoniemen. Er worden lectotypes voor enkele soorten vastgelegd. Drie soorten worden voor het eerst uit Europa vermeld en er werden heel wat soorten voor de eerste keer vermeld voor verschillende Europese landen.

De verspreiding van elke soort wordt op een stippenkaart grafisch voorgesteld. Deze bevat ook een gearceerd deel waarmee aangegeven wordt wat het eigenlijke areaal van de soort is. De tekst bevat verder nog een tachtigtal tekstfiguren, meestal zwart-wit foto's van imago's met opgave van diagnostische kenmerken.

De kleurenplaten zijn van zeer goede kwaliteit en laten in vele gevallen een zekere determinatie toe. In het totaal worden iets meer dan 800 exemplaren afgebeeld zodat duidelijk rekening werd gehouden met de individuele variabiliteit van vele soorten. De exemplaren uit het tribus Perzomini zijn op ware grootte, en die uit het tribus Eupitheciini werden anderhalve keer vergroot afgebeeld. Op de zwartwitplaten staan de mannelijke en vrouwelijke genitalia van alle soorten afgebeeld in duidelijke pentekeningen. Zoals gebruikelijk bij het genus *Eupithecia* is bij de mannetjes ook telkens het genitaalplaatje afgebeeld zodat bij afborstelen van de onderkant van het achterlijf in vele gevallen reeds meer zekerheid over de determinatie verkregen wordt zonder dat men effectief een preparaat moet maken.

Achtereaan volgt nog een checklist van de Europese soorten Perizomini en Eupitheciini. Deze checklist bevat ook een aantal soorten die aan de rand van het behandelde gebied liggen, zodat men bij eventuele twijfelgevallen ook verdere informatie over die soorten kan opzoeken. Het boek eindigt met een uitgebreide literatuurlijst en een alfabetische index van de wetenschappelijke namen. Het boek is zeer keurig uitgegeven en zeker zijn prijs waard. Wie geïnteresseerd is in Geometridae zal bij het doorbladeren van dit boek reeds verlangend uitkijken naar toekomstige delen.

W. De Prins

New or little known platygastrids (Hymenoptera: Platygastridae)

Peter Neerup Buhl

Abstract. Six new species, viz. *Leptacis longiciliata* (from Guinea-Bissau), *Platygaster costaricae*, *P. flabellata*, *P. hanssoniana*, *Synopeas acuticornis* (all from Costa Rica), and *S. guatemalae* (from Guatemala) are described. The hitherto unknown male of *Platygaster laricis* Haliday, and the hitherto unknown female of *P. striatidorsum* Buhl are described.

Samenvatting. Nieuwe of slecht bekende platygastriden (Hymenoptera: Platygastridae) Zes nieuwe soorten, nl. *Leptacis longiciliata* (uit Guinea-Bissau), *Platygaster costaricae*, *P. flabellata*, *P. hanssoniana*, *Synopeas acuticornis* (alle uit Costa Rica) en *S. guatemalae* (uit Guatemala) worden beschreven. Het tot nu toe onbekende mannetje van *Platygaster laricis* Haliday, en het tot nu toe onbekende wijfje van *P. striatidorsum* Buhl worden beschreven.

Résumé. Platygastrides nouveaux ou peu connus (Hymenoptera: Platygastridae) Six espèces nouvelles. *Leptacis longiciliata* (de Guinea-Bissau), *Platygaster costaricae*, *P. flabellata*, *P. hanssoniana*, *Synopeas acuticornis* (tous de Costa Rica), and *S. guatemalae* (de Guatemala) sont décrites. Le mâle (jusqu'à présent inconnu) de *Platygaster laricis* Haliday, et la femelle (jusqu'à présent inconnue) de *P. striatidorsum* Buhl sont décrits.

Key words. Hymenoptera – Platygastridae – new species – West Africa – Central America
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All the specimens treated below are preserved in the Museum of Zoology, Lund University (Sweden). They were part of a loan by courtesy of curator Roy Danielsson whom I thank for the loan of the material.

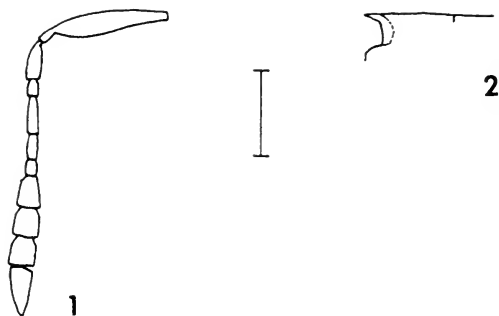
Leptacis longiciliata sp. nov. (figs. 1–2)

Material examined. Holotype ♂: Guinea-Bissau, Regiao Cacheu, 2 km E Bigene, I.XI.1992 (M. Söderlund).

Description. Female: Length 0.6 mm. Colour dark brown, head almost black; A1–A2 and legs yellowish. A3–A10 more or less brown.

Head from above 1.8× as wide as long, 1.2× as wide as thorax, distinctly and rather uniformly reticulate with large meshes, without occipital carina; lateral ocelli separated from eye by slightly less than their diameter, LOL = 3 OOL. Head from front hardly 1.2× as wide as high. Antenna (fig. 1) with A1 slightly shorter than height of head (18:19).

Mesosoma 1.6× as long as wide, almost 1.2× as high as wide. Sides of pronotum smooth except for reticulation in upper anterior corner. Mesoscutum almost smooth, with rather sparse hairs, without notauli; hind margin semitransparent, not raised but slightly convex, on each side of scutellum with dense hairs. Mesopleura smooth except for about seven fine longitudinal lines in upper third. Scutellum (fig. 2) sculptured and hairy as mesoscutum, behind with a short pale spine and a vertical lamella below. Metapleura smooth and bare except for fine pubescence posteriorly. Propodeal carinae low and straight, slightly semitransparent.



Figs. 1–2. *Leptacis longiciliata* sp. nov. ♀: 1.– antenna, 2.– scutellum and propodeum, lateral view (reference bar 0.10 mm).

Fore wing hardly shorter than body, $3.4\times$ as long as wide, almost clear, rather densely covered by short hairs; longest marginal cilia 0.5 width of wing. Hind wing about $10\times$ as long as wide; marginal cilia $1.5\times$ width of wing.

Metasoma hardly longer than mesosoma ($15:14$), about as wide as this, $1.7\times$ as long as wide. T1 about $1.5\times$ as wide as long, medially with a distinct transverse impression, rest smooth except for a few weak longitudinal carinae in posterior half; T2 smooth; T3–T6 very short.

Comments: Differs from *Leptacis microcera* Buhl, 2003 from Sierra Leone e.g. in stronger sculptured head without occipital carina, and in denser hairy wings with longer marginal cilia, cf. Buhl (2003). Runs to *L. nana* Masner, 1960 from Madagascar in Masner's (1960) key to females of African *Leptacis*, but *nana* has mesoscutum almost hairless and T1 nearly square in shape. Masner (1960) also describes *L. pumilio* Masner, 1960 from Madagascar, but only in the male sex. This species differs from *L. longiciliata* at least in shape of scutellum, cf. Masner (1960).

***Platygaster costaricae* sp. nov.** (figs. 3–6)

Material examined. Holotype ♀: Costa Rica, Cartago, Parque Nacional Tapantí, 1200–1500m ($9^{\circ}45'N$ $83^{\circ}47'W$), 20.III.–10.IV.2000 (C. Hansson & D. Rubi).

Description. Female: Length 1.6 mm. Colour black, antennae and legs dark brown: A1 basally, trochanters, femora basally, both ends of tibiae, and all tarsi light brown.

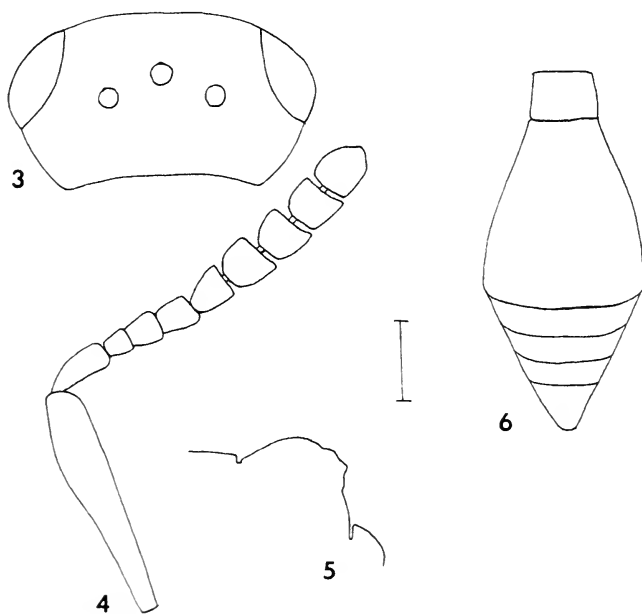
Head from above (fig. 3) $2.0\times$ as wide as long, as wide as thorax; occiput finely transversely striated, vertex with numerous distinct hair-implantations and fine reticulation; frons smooth, with a couple of transverse wrinkles just above antennae; eyes distinctly hairy; OOL:LOL = 4:3. Head from front $1.2\times$ as wide as high. Antenna (fig. 4) with A1 $0.9\times$ as long as height of head.

Mesosoma $1.4\times$ as long as wide, very slightly higher than wide. Sides of pronotum smooth except for some fine reticulation antero-medially, with numerous distinct hairs posteriorly and in upper half. Mesoscutum finely

reticulate-coriaceous anteriorly, rest smooth but uniformly and rather densely hairy, without notauli; hind margin medially with a short and narrow prolongation which is slightly raised. Mesopleura smooth. Scutellum (fig. 5) at level of mesoscutum, distinctly reticulate-coriaceous and densely hairy, behind somewhat uneven and almost vertical. Metapleura smooth and bare except for a few scattered setae. Propodeal carinae well separated, smooth and shiny area between them about as long as wide.

Fore wing $0.9\times$ as long as body, $2.7\times$ as long as wide, distinctly brownish and much hairy; marginal cilia at most 0.15 width of wing. Hind wing $5.3\times$ as long as wide, with two frenal hooks; marginal cilia one-third the width of wing.

Metasoma (fig. 6) $1.1\times$ as long as head and mesosoma combined, very slightly wider than thorax. T1 strongly and uniformly crenulated, bare dorsally. T2 medially striated to 0.15, in basal foveae to 0.40; T3–T6 smooth, each with a transverse row of rather deeply implanted long hairs.



Figs. 3–6. *Platygaster costaricae* sp. nov. : 3– head, dorsal view, 4– antenna, 5– scutellum and propodeum, lateral view, 6.– metasoma, dorsal view (reference bar 0.10 mm for figs. 3–5, 0.20 mm for fig. 6).

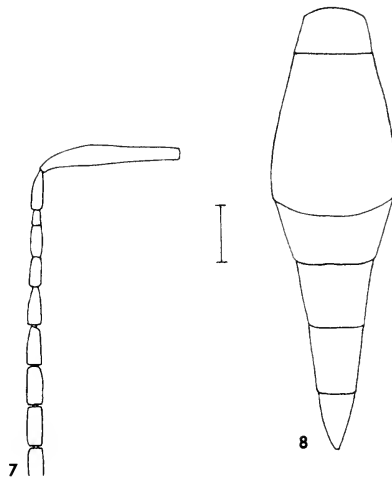
Comments: This species, named after its country of origin, seems to be rather similar to Nearctic *P. victoriae* MacGown, 1979 which, however, has OOL shorter than LOL and flagellar segments more slender than in *P. costaricae*, cf. MacGown (1979).

Platygaster flabellata sp. nov. (figs. 7–8)

Material examined. Holotype ♀: Costa Rica, Cartago, Parque Nacional Tapantí, 1200–1500m (9°45'N 83°47'W), 20.III.–10.IV.2000 (C. Hansson & D. Rubi).

Description. Female: Length 1.4 mm. Colour black, antennae hardly lighter; legs dark brown, both ends of tibiae and base of tarsi light brownish.

Head from above $2.0\times$ as wide as long, $1.1\times$ as wide as thorax; entire frons finely fan-like striated; vertex between ocelli transversely striated, ocellocular space longitudinally striated; occiput rounded, rather strongly transversely striated. Lateral ocelli separated from eyes by $1.25\times$ their longer diameter; OOL and LOL about equal. Head from front $1.25\times$ as wide as high. Antenna (fig. 7) with A1 slightly shorter than height of head (16:17).



Figs. 7-8. *Platygaster flabellata* sp. nov. ♀: 7.– antenna, 8.– metasoma, dorsal view (reference bar 0.10 mm).

Mesosoma $1.5\times$ as long as wide, $1.1\times$ as high as wide. Sides of pronotum finely longitudinally reticulate-coriaceous all over. Mesoscutum somewhat roughly longitudinally reticulate-coriaceous with rather dense hairs; notauli weak, missing in about anterior 0.3; mid lobe bluntly prolonged to base of scutellum; scuto-scutellar grooves wide, densely hairy. Mesopleura smooth. Scutellum evenly convex, above level of mesoscutum, virtually smooth except for rather dense hair-implantations. Metapleura with whitish pilosity all over. Propodeal carinae short and dark, area between them smooth and much transverse.

Fore wing just overreaching tip of metasoma. $2.4\times$ as long as wide, with yellowish tint, dense hairs and short marginal cilia. Hind wing $5.9\times$ as long as wide, with two frenal hooks; marginal cilia one-third the width of wing.

Metasoma (fig. 8) $1.4\times$ as long as head and mesosoma combined. $0.75\times$ as wide as thorax. T1 strongly crenulated. T2 striated in basal foveae to 0.3, medially with a couple of very short wrinkles at base. T3 smooth medially, at sides with numerous rather scattered deeply implanted hairs. T4–T5 with some scattered deeply implanted hairs and longitudinal rugosity, smooth along margins. T6 with very faint longitudinal rugosity, almost smooth, and with a few hairs. Large sternite without hump anteriorly.

Comments: Runs to *P. leguminicolae* Fouts, 1920 and *P. oenone* Fouts, 1925 in MacGown's unpublished key to *Platygaster* of the United States, but these species have metasoma differently shaped and sculptured than in *P. flabellata*, and flagellar segments less elongate. The same characters separate *flabellata* from the similar Palaearctic species *P. demades* Walker, 1835, *P. orcus* Walker, 1835, and *P. pelias* Walker, 1835, cf. Fouts (1920, 1925) and Vlugh (1985).

Platygaster hanssoniana sp. nov. (figs. 9–11)

Material examined. Holotype ♀: Costa Rica, Cartago, Parque Nacional Tapantí, 1200–1500m ($9^{\circ}45'N$ $83^{\circ}47'W$), 20.III.–10.IV.2000 (C. Hansson & D. Rubi). Paratypes: 2 ♂ same data.

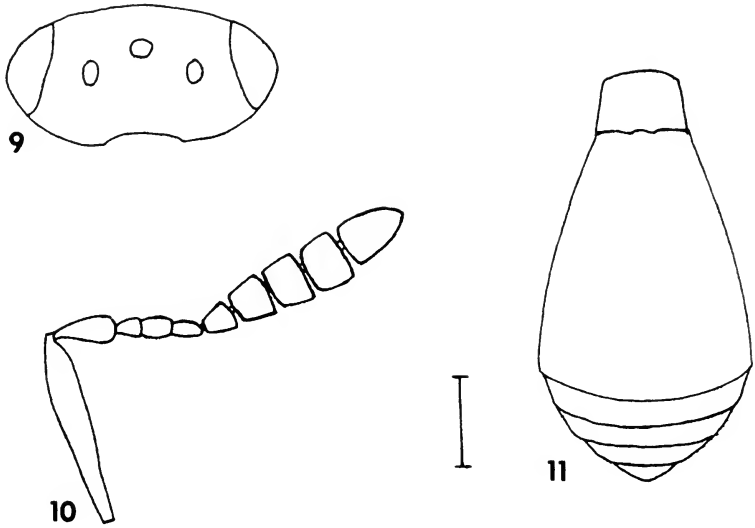
Description. Female: Length 1.0 mm. Colour black; A1 and legs dark brown; both ends of fore tibiae, base of middle and hind tibiae, and segments 1–4 of all tarsi yellowish brown.

Head shiny, from above (fig. 9) $2.1\times$ as wide as long, $1.1\times$ as wide as thorax; frons in lower half finely transversely striate-reticulate, in upper half feebly reticulate with large meshes; vertex reticulate with small meshes; occiput narrowly rounded, distinctly transversely striated all over. OOL and LOL equal. Head from front $1.2\times$ as wide as high, antenna (fig. 10) with A1 shorter than height of head (7:8), A9 $1.2\times$ as wide as long.

Mesosoma $1.4\times$ as long as wide, $1.1\times$ as high as wide. Sides of pronotum smooth along hind margin and in slightly more than lower half, rest longitudinally reticulate. Mesoscutum shiny, superficially but distinctly reticulate, in posterior third smooth, with notauli indicated in posterior third; hairs much denser in posterior half than in anterior half; mid lobe slightly prolonged to base of scutellum; scuto-scutellar grooves with dense hairs. Mesopleura smooth. Scutellum low, slightly convex, at level of mesoscutum, smooth except for dense hair-implantations. Metapleura with whitish pilosity all over. Propodeal carinae low, dark and parallel, transverse area between them smooth.

Fore wing $0.95\times$ as long as body, $2.5\times$ as long as wide, densely hairy and with faint brownish tint; marginal cilia at their longest 0.1 width of wing. Hind wing $6.0\times$ as long as wide, with two frenal hooks; marginal cilia hardly one-third the width of wing.

Metasoma (fig. 11) longer than mesosoma (13:12), hardly $0.9\times$ as wide as this. T1 strongly and evenly crenulated. T2 basally with deep and narrow striated foveae to half of length, medially with two strong longitudinal furrows to one-fifth of length. T3–T6 smooth, each with a few rather superficially implanted hairs.



Figs. 9–11. *Platygaster hamsoniana* sp. nov. : 9.– head, dorsal view, 10.– antenna, 11.– metasoma, dorsal view (reference bar 0.10 mm).

Male: 0.9 mm approx. Sculpture of head and mesoscutum somewhat rougher than in female, e.g. mesoscutum not smooth posteriorly. Antenna with A4 widened, twice as wide as A3, as long as A5; A5–A9 about equal, each 1.5–1.6× as long as wide, flagellar pubescence about two-thirds the width of segments.

Comments: Named after one of the collectors. Differs from the Neotropical species of *Platygaster* treated by Kieffer (1926) in the wide preapical antennal segments of female. Runs to *P. rhabdophagae* MacGown, 1979 and *P. astericola* (Ashmead, 1893) in MacGown's unpublished key to *Platygaster* of the United States, but these species have preapical antennal segments at least as long as wide, differently sculptured metasoma, etc., cf. Fouts (1924) and MacGown (1979).

Platygaster laricis Haliday, 1835 (fig. 12)

Material examined: 1 ♂, Sweden, Öl., Halltorp 7.VIII.1967 (A. Sundholm).

Description of the hitherto unknown male: Length 1.2 mm. Head from above 1.8× as wide as long. Antenna (fig. 12) with A4 unusually large. A1–A4 yellowish brown. A5–A10 darker brown. Otherwise as female described by Vlуг (1985).

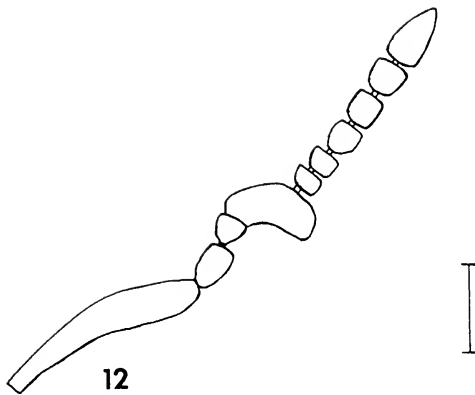


Fig. 12. Antenna of *Platygaster laricis* Haliday, 1835 ♂ (reference bar 0.10 mm).

***Platygaster striatidorsum* Buhl, 1998** (figs. 13–14)

New material examined (2♂, 4♀): 2♂, Sweden, Gotl., Lärbro 4. VIII.1963 and Hanguar 9.VIII.1963; 3♀, Sweden, Bl., Torhamn 25.VII.1969; 1 male, Bl., Rödeby, Gagnekulla 29.VII.1969. (A. Sundholm).

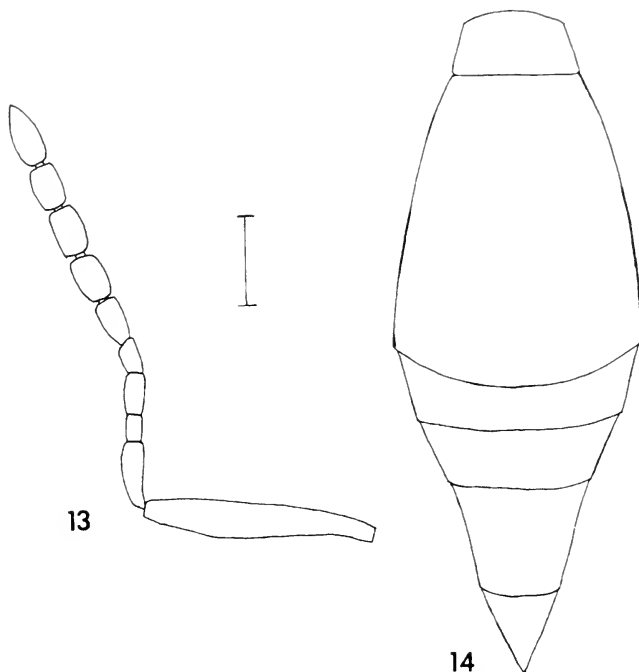
Description of the hitherto unknown female: Length 1.4–1.7 mm. Antenna (fig. 13) with A7–A9 each 1.5× as long as wide. Metasoma (fig. 14) 1.1× as long as head and mesosoma combined. T2 striated in basal foveae to about 0.5 of length, medially with shorter striae. Large sternite without hump. T3–T4 smooth, each with a medially interrupted transverse row of rather superficially implanted fine hairs; T5 with longitudinal rugosity, smoother medially and behind; T6 smooth with a few hairs. Rest of characters as in male described from Sweden by Buhl (1998).

***Synopeas acuticornis* sp. nov.** (figs. 15–18)

Material examined. Holotype ♀: Costa Rica, Cartago, Parque Nacional Tapantí, 1200–1500m (9°45'N 83°47'W), 20.III.–10.IV.2000 (C. Hansson & D. Rubi).

Description. Female: Length 1.1 mm. Colour black: A1–A6 and legs dark brown: most of fore tibia, basal half of middle and hind tibiae, and segments 1–4 of fore and middle tarsi lighter.

Head from above (fig. 15) 1.9× as wide as long, 1.1× as wide as thorax, finely and more or less transversely reticulate-coriaceous, occiput rather sharply angled, with traces of carina; lateral ocelli separated from eye by 1.25× their diameter; LOL = 1.7 OOL. Head from front hardly 1.2× as wide as high; antenna (fig. 16) with A1 0.8× height of head.



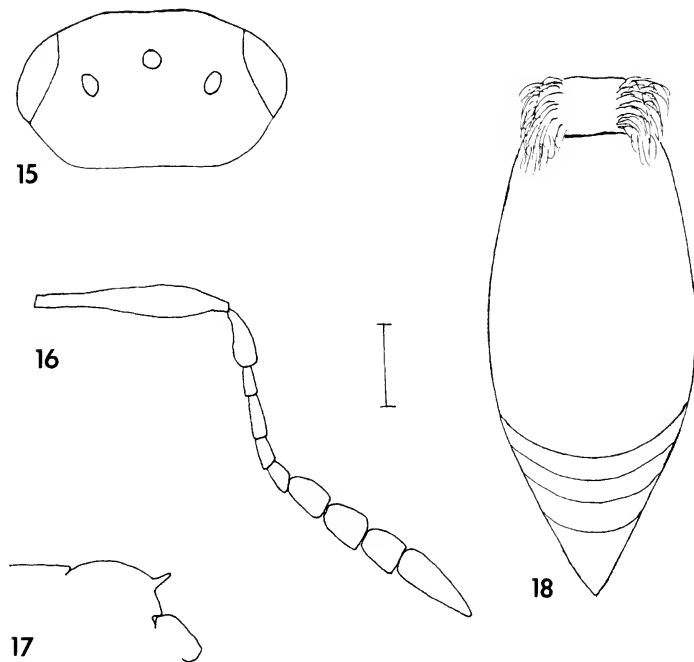
Figs. 13–14. *Platygaster striatidorsum* Buhl, 1998 : 13.– antenna, 14.– metasoma, dorsal view (reference bar 0.10 mm).

Mesosoma 1.4× as long as wide, 1.1× as high as wide. Sides of pronotum finely reticulate-coriaceous and hairy in upper half, rest smooth. Mesoscutum rather uniformly reticulate-coriaceous and densely hairy, without notauli but mid lobe posteriorly slightly raised and prolonged, not semitransparent; scuto-scutellar grooves wide, smooth and hairy. Mesopleura smooth. Scutellum (fig. 17) densely hairy and somewhat more rugose than mesoscutum, with a fine semitransparent tooth and a narrow vertical lamella below. Metapleura with whitish pilosity all over. Propodeal carinae fused, smooth, semitransparent, high and slightly curved.

Fore wing fully as long as entire body, nearly 2.6× as long as wide, with very faint brownish tint and densely hairy; marginal cilia at their longest slightly more than 0.1 width of wing. Hind wing 5.7× as long as wide; marginal cilia 0.4 width of wing.

Metasoma (fig. 18) as long as head and mesosoma combined, narrower than thorax (8:9), wider than high (8:7). T1–T2 smooth. T3–T6 faintly reticulate and with some superficially implanted hairs.

Comments: A very distinct species on account of pointed A10 which is fully 2.5× as long as wide.



Figs. 15–18. *Synopeas acuticornis* sp. nov. ♀: 15.– head, dorsal view, 16.– antenna, 17.– scutellum and propodeum, lateral view, 18.– metasoma, dorsal view (reference bar 0.10 mm).

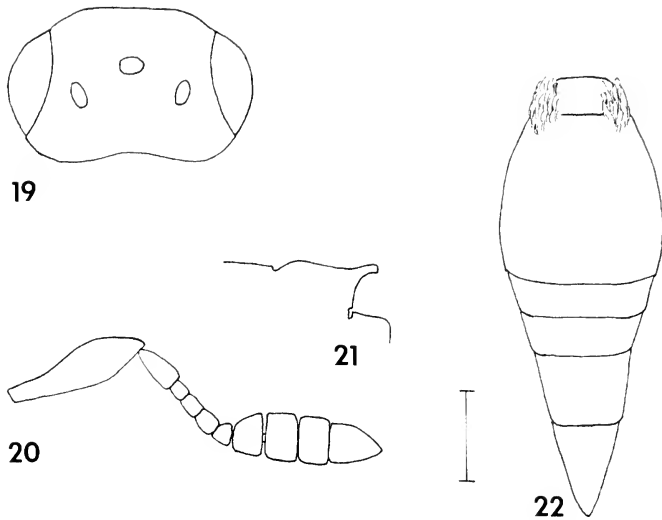
***Synopeas guatemalae* sp. nov.** (figs. 19–22)

Material examined. Holotype ♀: Guatemala, Solola, Panajachel, 1580m, 12.XI.1991 (R. Baranowski).

Description. Female: Length 1.0 mm. Colour black; A1 and legs almost uniformly bright yellowish, A2–A6 and apex of hind tibia brownish yellow; A7–A10 dark brown.

Head from above (fig. 19) 1.8× as wide as long, 1.25× as wide as thorax, dull, uniformly roughly reticulate-coriaceous, without occipital carina; lateral ocelli separated from eye by their longer diameter; OOL = 0.8 LOL. Head from front 1.2× as wide as high. Antenna (fig. 20) with A1 0.7× as long as height of head.

Mesosoma 1.6× as long as wide, 1.2× as high as wide. Sides of pronotum smooth in lower third, rest distinctly reticulate-coriaceous and with sparse hairs. Mesoscutum uniformly reticulate-coriaceous (finer than head, almost as pronotum), with sparse hairs and almost complete notauli which fade out shortly before reaching anterior margin of disc; mid lobe behind distinctly and narrowly pointed, reaching base of scutellum; scuto-scutellar grooves wide and hairy. Mesopleura smooth. Scutellum (fig. 21) with dense whitish hairs, spine and vertical lamella below slightly semitransparent. Metapleura with dense whitish pilosity except along narrow anterior margin. Propodeal carinae smooth, fused and slightly semitransparent.



Figs. 19–22. *Synopeas guatemalae* sp. nov. : 19.– head, dorsal view, 20.– antenna, 21.– scutellum and propodeum, lateral view, 22.– metasoma, dorsal view (reference bar 0.10 mm).

Fore wing almost clear, $0.75\times$ as long as body, slightly overreaching tip of metasoma, $2.5\times$ as long as wide, with rather sparse hairs and no marginal cilia. Hind wing $6.5\times$ as long as wide, marginal cilia 0.4 width of wing.

Metasoma (fig. 22) $1.3\times$ as long as mesosoma, $0.9\times$ as long as head and mesosoma combined, $0.8\times$ as wide as thorax, $1.1\times$ as wide as high. T1 medially smooth and bare, laterally with dense pilosity. T2 smooth, antero-laterally with numerous longitudinal striae reaching about 0.4 length of tergite. T3–T6 rather convex, hardly hairy; T3–T4 with dense punctures except along hind margin; T5–T6 with punctate rugosity all over.

Comments: This species, named after its country of origin, does not fit in Fouts' (1924) key to Nearctic species, especially due to sculpture of head and T3–T6. Among Neotropical species rather similar to the short original description of West Indian *Synopeas grenadensis* (Ashmead, 1895), but this species is smooth and shiny, without distinct scutellar spine, it has A1 and legs brownish yellow and metasoma longer and differently shaped than in *S. guatemalae*, cf. Ashmead (1895).

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Boekbesprekingen

LIKONA: Jaarboek 2002.

21 × 26 cm, 128 pp., talrijke afbeeldingen in kleur, paperback 2003, te bestellen bij Limburgse Koepel voor Natuurstudie, Provinciaal Natuurcentrum, Het Groene Huis, Domein Bokrijk, 3600 Genk (ISSN0778-8495).

Dit twaalfde Likona Jaarboek is weer in lijn met de vorige. Het bevat algemene artikels over verschillende natuurhistorische onderwerpen en een uitgebreid literatuuroverzicht van artikels die over de Limburgse natuur handelen, maar gepubliceerd werden in andere tijdschriften. Zo is er een interessante bijdrage over het fenomeen "Holle wegen". Verder zijn er artikels over vissen, amfibieën, vogels en zoogdieren.

Over insecten zijn er de volgende drie bijdragen: Monitoring van het gentiaanblauwtje in het Hageven te Neerpelt (G. Palmans en W. Pardon). Opmerkelijke ongewervelden op de Tiendeberg (G. Erens, M. Janssen, E. Stassen en F. Vankerhoven), en het klein vliegend hert in Limburg (E. Stassen).

In het becommentarieerd literatuuroverzicht staan heel wat verwijzingen naar interessante artikels die over insecten handelen, o.a. verslagen van inventarisaties in verschillende natuurgebieden, nieuwe soorten vermeld voor de provincie Limburg enz. De publicatie is zeer rijkelijk geïllustreerd met foto's, tabellen en grafieken en zal iedereen aangenaam leesplezier bezorgen die in de Limburgse natuur geïnteresseerd is.

W. De Prins

Verloove, J.: Ingeburgerde plantensoorten in Vlaanderen.

21 × 29,5 cm, 227 pp., 63 tekstfiguren, paperback 2002, te bestellen door overschrijving van 12,50 € (incl. verzending) op rekening 091-2226013-86, en een briefje of e-mail sturen t.a.v. Helen Blow, Instituut voor Natuurbehoud, Kliniekstraat 25, 1070 Brussel, helen.blow@instnat.be (ISBN 90-403-0158-1).

Niet alle planten die men tegenkomt tijdens natuurwandelingen zijn van oorsprong inheems in onze streken. Reeds van oudsher worden geregeld exotische planten aangeplant, waarvan er een deel in geslaagd is te verwilderen en zelfs een tamelijk uitgestrekt bestand op te bouwen. Over die groep handelt dit boek, met die restrictie dat het slechts de taxa beschouwt vanaf 1945. De bespreking van elke soort wordt in drie alinea's ingedeeld: 1. de actuele verspreiding, de verspreidingsecologie en eventuele trends, 2. de herkomst en introductievector, en 3. de ecologie, het concurrentievermogen en eventuele schadelijkheid van het taxon. Bij 63 soorten wordt de huidige verspreiding in Vlaanderen met een kaartje grafisch voorgesteld.

Het is interessant vast te stellen dat tal van soorten die men frequent tegenkomt, tot deze groep neofieten behoren, o.a. *Acer platanoides* L., *Acer pseudoplatanus* L. en zelfs *Pinus sylvestris* L. Het feit dat onze flora zulke neofieten bevat, is natuurlijk ook erg belangrijk voor de entomofauna. Denken we maar even aan de explosieve verovering van het Vlaamse territorium door de kleine *Cameraria ohridella* Deschka & Dimić, waarvan de rups in de bladeren van *Aesculus hippocastanum* L. mineert, een boom vanaf de zestiende eeuw vanuit de Balkan elders in Europa aangeplant, maar slechts verwilderend vanaf de twintigste eeuw.

In bijlage 1 geeft de Standaardlijst van de niet-inheemse taxa een beknopt, maar duidelijk overzicht van alle soorten planten die niet oorspronkelijk in Vlaanderen voorkwamen, maar er nu toch te vinden zijn, door kweken, inburgering enz. Bijlage 2 bevat een lijst van niet-inheemse taxa die niet weerhouden werden voor de standaardlijst. Het boek bevat ook een uitgebreide literatuurlijst en een alfabetische index. Alle entomologen die met fytofaag insecten te maken hebben, zullen in deze publicatie tal van interessante gegevens vinden.

W. De Prins

Dasysyrphus lenensis, nieuw voor de Belgische fauna (Diptera: Syrphidae)

Guy Van de Weyer

Abstract. *Dasysyrphus lenensis*, new for the Belgian fauna (Diptera: Syrphidae)

On 17 June 2000 a female of *Dasysyrphus lenensis* Bagatshanova, 1980 was found near Robertville (Belgium, prov. Liège). The species is mentioned here for the first time from Belgium.

Résumé. *Dasysyrphus lenensis*, espèce nouvelle pour la faune belge (Diptera: Syrphidae)

Le 17 juin 2000 une femelle de *Dasysyrphus lenensis* Bagatshanova, 1980 fut trouvée à Robertville (prov. Liège). Cette espèce est mentionnée ici pour la première fois de Belgique.

Key words: *Dasysyrphus lenensis* – faunistics – Belgium – new record.

Van de Weyer, G.: Pieter Breughellaan 26, B-2840 Reet.

In 1996 werd door Doczkal erop gewezen dat *Dasysyrphus lenensis*, door Bagatshanova in 1980 uit Chabarowsk (Centraal-Yakutië) beschreven, eveneens voorkomt in Centraal-Europa: Duitsland, Oostenrijk, Zwitserland en Noord-Italië. Deze soort hoort thuis in wat Vockeroth (1969) de "*lumulatus* groep" noemt. In Midden- en West-Europa kan men drie soorten uit deze groep vinden: *D. pinastri* (De Geer, 1776) [= *lumulatus* auct. nec Meigen; cf. Thompson & Pont 1994: 107], *D. pauxillus* (Williston, 1887) [= *nigricornis* auct. nec Verrall; cf. Láska & Bičik 1996] en nu ook *D. lenensis* Bagatshanova, 1980.

D. pinastri komt in België algemeen voor in de buurt van naaldbossen. *D. pauxillus* is daarentegen veel zeldzamer en het tot op heden enige Belgische exemplaar werd gevangen door Jan Lucas op 17-05-1972 te Recht (Hoge Venen) (Verlinden & Decler 1987). Dit exemplaar werd door mezelf nagekeken in de verzameling van het Zoölogisch Museum te Amsterdam. Verlinden (1991) vermeldt wel een tweede exemplaar uit Noord-Limburg (leg. K. Decler, zonder vermelding van datum of vindplaats), maar in de franstalige versie van 1994 is deze vangst weggelaten. Uit Nederland zijn de drie soorten gemeld (Reemer 2002) en hier blijken ook *pauxillus* en *lenensis* eerder zeldzaam.

Bij nazicht van mijn verzameling bleek zich hier ook één ♀ exemplaar van *D. lenensis* te bevinden. Het werd gevangen op 17-06-2000 te Robertville (prov. Luik) op een bosweg tussen sparren (leg. & coll. G. Van de Weyer). De voornaamste herkenningpunten zijn de onderbroken en iets kleinere stofvlekken op het voorhoofd en de vorm van de zwarte vlek op het tweede sterniet. Gelieve dus alle exemplaren *Dasysyrphus*, waarvan de gele vlekken op de tergieten niet over de zijnaad gaan grondig te vergelijken, want in de toekomst zullen zeker nog nieuwe exemplaren opduiken.

In de "*Catalogue of the Diptera of Belgium*" worden dus best volgende wijzigingen aangebracht op pagina 111 onder het genus *Dasyrphus* Enderlein, 1938:

- *lunulatus* (Meigen, 1822)* vervangen door *pinastri* (De Geer, 1776)*
- *nigricornis* (Verrall, 1873) vervangen door *paucillus* (Williston, 1887)
- *lenensis* Bagatshanova, 1980 toevoegen

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Chasses insolites et quelques localisations géographiques belges peut-être utiles ou rares (Lepidoptera)

R. H. Nyst

Samenvatting. Geïsoleerde waarnemingen en enkele Belgische vindplaatsen (Lepidoptera)
De auteur vermeldt de soorten Lepidoptera die hij in het centrum van Brussel waarnam in 2002. De meest opmerkelijke soort was *Pseudopostega crepusculella* (Zeller, 1839), waarvan de rups op *Mentha* sp. leeft, een plant die dikwijls verkocht wordt op de markten en in groentewinkels. Verder wordt *Agonopterix heracliana* (Linnaeus, 1758) voor het eerst vermeld uit de provincie Namur.

Abstract. Isolated records and some Belgian localities with special interest (Lepidoptera)
The author lists some Lepidoptera observed in the centre of Brussels city during 2002. The most remarkable of these is *Pseudopostega crepusculella* (Zeller, 1839), of which the caterpillar lives on *Mentha* sp., a plant which is frequently available on the markets and in vegetable shops. Furthermore, *Agonopterix heracliana* (Linnaeus, 1758) is recorded for the first time from the province of Namur.

Keywords: Belgium – faunistics – *Pseudopostega crepusculella* – *Agonopterix heracliana*.

Nyst, R. H.: Boulevard de Dixmude 17, B-1000 Bruxelles.

Un lépidoptériste passionné est toujours à l'affût, même à la limite intérieure de la Petite Ceinture de Bruxelles où la végétation brille par son absence. J'utilise un éclairage constitué de lampadaires halogènes dont les coupes réfléchissantes éclairent mes plafonds. Ayant constaté que beaucoup de petits insectes étaient victimes de l'attraction lumineuse tout en demeurant intacts, j'ai relevé les espèces les plus significatives accumulées en août et septembre 2002.

Les lépidoptères ainsi observés sont: *Endrosis sarcitrella* (Linnaeus, 1758) (Oecophoridae), *Hoffmannophila pseudospretella* (Stainton, 1849) (Oecophoridae), *Argyresthia goedartella* (Linnaeus, 1758) (Yponomeutidae) et *Cameraria ohridella* Deschka & Dimić, 1986 (Gracillariidae).

Mais j'ai fait une trouvaille bien plus intéressante le 18 août 2002. Il s'agit du minuscule mais ravissant *Pseudopostega crepusculella* (Zeller, 1839) (Opostegidae) dont Krenek (2000) et Parenti (2000) donnent de superbes photos. Dans le catalogue De Prins (1998: 22) l'espèce n'est signalée que des provinces Flandre orientale et Luxembourg avant 1980 et Anvers après 1980. En plus, il y a une référence non vérifiée de la province de Hainaut dans la littérature. Ce micro semble donc rare et l'espèce est mentionnée ici comme nouvelle pour la province de Brabant.

Mon étonnement a été grand quand j'ai constaté que sa plante nourricière est la menthe (*Mentha* sp.). Il a cessé quand j'ai songé que, dans mon quartier bruxellois, de nombreux commerçants vendent en grande quantité de la menthe

fraîche d'espèces et d'origines diverses, aux amateurs de tisanes. Quelques rares inflorescences m'ont permis de reconnaître *Mentha rotundifolia*.

Quittant mes lampes mais non les lépidoptères j'ai constaté, en mettant de l'ordre, que j'ai négligé dans mes listes d'Ottignies: *Amphipyra berbera* Rungs, 1949 (Noctuidae), 4 exemplaires de 1989 et 1 de 2000. Un exemplaire aussi de Jannée (Province de Namur) en 2002.

Pour continuer ce relevé hétéroclite, ma petite-fille Capucine, dont la chance était déjà signalée par deux captures, a pris à Jannée (Province de Namur), le 8 février 2003, un exemplaire d'*Agonopterix heracliana* (Linnaeus, 1758) (Depressariidae). Il a été réveillé dans la maison où il hivernait. Ce qui correspond au comportement décrit dans l'ouvrage de Emmet (2002). Ce microlépidoptère est mentionné ici pour la première fois de la province de Namur (De Prins 1998: 54).

Enfin, pour clore, je voudrais signaler que, empêché de chasser à Ottignies, j'ai placé mes tubes à U.V. devant une fenêtre ouverte sur la Petite Ceinture citée plus haut. Cela m'a valu (outre les migrants) de nombreuses captures. Certaines méritent, je crois, d'être notées vu leur situation dans le Catalogue De Prins (1998).

Bucculatrix thoracella (Thunberg, 1794) (Bucculatricidae): 2 ex. les 9 et 16.VII.2003. Très localisé.

Cedestis gysselella (Zeller, 1839) (Yponomeutidae): 1 ex. le 5.VI.2003, non signalé depuis 1980.

Cnephasia communana (Herrich-Schäffer, 1851) (Tortricidae): 1 ex. le 5.IX.2003, non signalé du Brabant après 1980.

Plagodis dolabraria (Linnaeus, 1767) (Geometridae): 1 ex. le 18.VI.2003, non signalé du Brabant.

Stegania trimaculata (De Villers, 1789) (Geometridae): 2 ex. de la forme *cognataria* (Lederer), les 13 et 14.IX.2003, uniquement signalé du Brabant après 1980.

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Boekbesprekingen

Makris, C.: *Butterflies of Cyprus*.

24 × 29 cm, 329 p., 675 foto's, 53 verspreidingskaartjes en 32 kleurenplaten. Uitgegeven door Bank of Cyprus Cultural Foundation, Nicosia, 2003. Te bestellen bij de auteur r.c.makris@cytanet.com.cy of Eddie John eddie@grayling.dircon.co.uk. Hardcover € 42.85 (ISBN 9963-42-815-0), Softcover € 37.72 (ISBN 9963-42-817-7).

Nu Cyprus weldra deel zal uitmaken van de Europese Unie, wordt het tijd dat vlindergidsen beginnen rekening te houden met de prachtige fauna van dit eiland. Inderdaad is tot op heden in de voor ons gangbare vlindergidsen bijna nooit sprake van de vlinders die op Cyprus voorkomen. Met dit prachtige werk wordt meteen deze leemte gevuld. Het boek bevat maar liefst 675 foto's en 53 verspreidingskaartjes. Deze kaartjes werden gemaakt door Eddie John en zijn een geactualiseerde versie van deze gemaakt door Rob Parker in 1983. Vele waarnemingen dateren van na 2000.

Er wordt vooraf in een inleiding van 60 pagina's informatie gegeven over de geografische en geomorfologische/geologische positie van Cyprus, het klimaat, het oppervlaktewater, de flora en vegetatie van het eiland. De Rhopalocera worden gesitueerd in het insectenrijk en waar mogelijk worden daarbij steeds foto's gebruikt van de Cypriotische fauna. De levenscyclus van de vlinder wordt eveneens besproken en overvloedig geïllustreerd met foto's van Cypriotische vlinders en hun verschillende stadia. Daarna worden uitwendige kenmerken, variatie, gedrag, natuurlijke vijanden en verdediging daartegen beschreven, telkens rijkelijk gedocumenteerd met prachtige foto's uit de vlinderfauna van Cyprus.

Sectie A van het boek, 212 pagina's, behandelt de systematiek van de vlinders op Cyprus, na een korte historische schets van de personen die op Cyprus inventarisatiewerk hebben verricht wat betreft de vlinderfauna. Daarna wordt elk van de 53 soorten die voor Cyprus in dit boek beschreven worden, apart behandeld. Dit gebeurt aan de hand van prachtige foto's van vlinders evenals van de overige stadia in de vrije natuur met daarbij eveneens aandacht voor de voedselplant en de biotopen waarin de verschillende soorten voorkomen. Er zijn steeds verscheidene foto's genomen van beide sexen, de copula, de eiafzetting, de rups en de pop. De foto's zijn prachtig en de mooiste vullen dikwijls een gehele pagina. Alle foto's gaan vergezeld van datum en vindplaats. Bij elke soort staat natuurlijk een verspreidingskaartje dat, zoals het hoort, opgevat is als een UTM-rooster van 10×10km. Deze verspreidingskaartjes zijn het resultaat van een 50-tal bronnen over meer dan 150 jaren verzameld. De stippen op de kaartjes onderscheiden waarnemingen vóór of na 1990 en bieden een vrij goed beeld over het voorkomen van de vlinders op Cyprus. Er werd eveneens een fenogram in tabelvorm toegevoegd met de vliegtijd en duur van alle stadia, zoals die geldt voor Cyprus.

Sectie B bevat 32 kleurenplaten met de geprepareerde vlinders op ware grootte. Telkens worden de boven- en onderkant afgebeeld van mannetje en wijfje, waar dit van toepassing is, zelfs in verschillende generaties. Het geheel wordt afgerond met een index en een bibliografie van de Cypriotische vlinderfauna. Het boek is wetenschappelijk zeer correct van opzet.

Dank zij de subsidie van de bank of Cyprus kon dit zeer verzorgde, rijkelijk met foto's geïllustreerde werk toch tegen een zeer aanvaardbare prijs aangeboden worden! Een must voor wie een vliedervakantie op Cyprus overweegt. Wie geboeid is door prachtige foto's van vlinders komt met dit boek ogen te kort.

Bart Vanholder

Gielis, C.: *Pterophoroidea & Alucitoidea (Lepidoptera) – World Catalogue of Insects Volume 4.* 24 × 17cm. 198 pagina's. Apollo Books Aps., Kirkeby Sand 19. DK-5771 Stenstrup. apollobooks@vip.cybercity.dk. 2003. gebonden. DKK 320.00 (excl. verzending) (ISBN 87-88757-68-4).

Dit vierde deel in de reeks "World Catalogue of Insects" is het eerste waarin enkele families Lepidoptera behandeld worden. Voordien werden reeds drie delen over Coleoptera gepubliceerd (nl. de groepen Hydraenidae, Hydrophiloidea en Dytiscidae).

In dit deel worden de Pterophoroidea behandeld, samengesteld uit de families Pterophoridae (1136 soorten) en Macropiratidae (3 soorten), en de Alucitoidea, samengesteld uit Alucitidae (186 soorten) en Tineodidae (19 soorten). Bij de genera wordt de referentie naar de oerbeschrijving gegeven en de type-soort, alsook de eventuele synoniemen. Door het ontbreken van taxonomische studies op soortniveau, worden de soorten alfabetisch gerangschikt. Bij elke soort wordt de originele combinatie gegeven en de referentie naar de beschrijving, met vermelding van het land waaruit de soort beschreven is. Hetzelfde geldt voor de synoniemen. Telkens wordt in een aparte paragraaf de geografische verspreiding aangeduid tot op landniveau, en onderverdeeld in zeven zoögeografische gebieden: Palaearctisch, Nearctisch, Neotropisch, Afrotropisch, Oriëntaal, Australaziatisch en Pacifisch.

Indien de voedselplant van de rups bekend is, wordt deze ook vermeld en in enkele gevallen de parasieten (Diptera of Hymenoptera). Deze gegevens ontbraken in de vroegere delen uit deze reeks, maar ze vermeederden duidelijk de gebruikswaarde van de catalogus. Zes nieuwe synoniemen worden voorgesteld alsook een vervangingsnaam voor een homoniem.

Achteraan volgt een uitgebreide literatuurlijst die niet minder dan 45 pagina's beslaat en enkele indexen die het snel opzoeken van de informatie vergemakkelijken: de diptere parasieten, de hymenoptere parasieten, de voedselplanten, de taxa van de Alucitoidea en de taxa van de Pterophoroidea. Het boek is keurig uitgegeven en zal lange tijd dienst doen als informatiebron voor iedereen die met pluimmotten te maken heeft.

Willy De Prins

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