



# 3<sup>rd</sup> European Moth Nights, 27.4.-1.5.2006, a scientific evaluation (Lepidoptera: Macrolepidoptera)

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**Abstract:** On behalf of the „József Szalkay Lepidopterological Society of Hungary“ and the „Entomological Society of Luzern“ (Switzerland), the first two authors for the most part organized the international event „3<sup>rd</sup> European Moth Nights“ („3.EMN“) between 27.4.–1.5.2006. On the given days, lepidopterists were invited to collect or observe nocturnal moths (Macrolepidoptera) simultaneously for the third time at any European location of their choice, and report to EMN Headquarters the results obtained. The event set itself the basic goal of establishing contacts between moth-collectors in Europe, creating a geographically wide-ranging snapshot of the moths flying in the same period and drawing attention to moths in general, as well as to the high proportion they represent in the system of nature and their present protection requirements.

A total of 392 persons from 26 countries took an active part in the event. The highest numbers came from the countries Great Britain (49), Hungary (47), Finland (39), Spain (32), Germany (30), Denmark and Portugal (20 each), Belgium, Switzerland and Malta (19 each) and Romania (16). Altogether, 436 localities from 29 countries are concerned. (The highest numbers come from Great Britain (71), followed by the countries Spain (59, most of them from Catalonia!), Finland (46), Hungary (34), Germany (33), Switzerland (25), France (21), Denmark (17), Austria and Malta (15 each). These localities cover Europe from Great Britain to the Ukraine and from Portugal and Greece respectively to Finland and range vertically from 0.8 m up to 1265 m. 553 Macrolepidoptera species were able to be recorded by this method in spite of early dates and cool weather in many places within five days (some important subspecies included additionally) (for comparison 1.EMN, middle of August 2004: 850 species; 2.EMN, beginning of July 2005: 975 species). The result of the 3.EMN contains about 20.3% of the total number of nocturnal moth species (Macrolepidoptera) of the whole of Europe. The total number of the three EMN, carried through so far, amounts to 1328 species (48.7% of the fauna of Europe concerned).

Attention is drawn again to several species complexes whose specimens cannot be determined from their appearance only, thus not being identifiable unmistakably from “observations” or from a photograph. Species recorded from almost all localities and of almost all countries are listed, in addition those recorded as very common in at least one locality (more than 100 specimens) or recorded as relatively common (30-99 specimens) (as far as recorders reported quantitative data).

We report in more detail about the taxa *Saturnia pavonia* L. and *pavoniella* SCOP. (= *ligurica* WEISM., *meridionalis* CALB.) (bona sp.), *Nebula salicata* D.SCH. and *ablutaria* BSD. (bona sp.), *Eupithecia venosata* F. and *schiefereri* BOH., *Orthosia schmidti* DIÓSZEGHY (valide comb.: *Dioszeghyana schmidti*), plus *Mythimna sicula* TR. and *scirpi* DUP. (bona ssp., stat.rev.). Shorter remarks concern *Charissa variegata* DUP. and *mucidaria* HBN and *Lithostege griseata* D.SCH.

– As to *Saturnia pavonia* and *pavoniella* (Saturniidae) it is probable that they are two bona species which should be accepted in general today. This is mentioned again because of a publication of HUEMER & NÄSSIG 2003 about *Saturnia pavonia* and *pavoniella* (Saturniidae).



However, the taxonomic situation with regard to „*pavonia*“ e.g. on the Iberian Peninsula or in Southeast Europe and Asia Minor is still unclear and needs to be thoroughly investigated (cross-breeding, comparisons of gene frequencies).

– In *Nebula salicata* and *ablutaria* also (with the ssp. *probaria* H.SCH.) (Geometridae), it is probable, that these two taxa are separate species. Imagos show only minor differences in appearance and in the genitalia, but are distinguished clearly by the antennae of the males as well by their larvae and pupae. The species have distributions with only marginal overlap, different periods of flight in areas of sympatry and apparently no transitional forms (hybrids).

– Attention is drawn to characters of differentiation for *Charissa variegata* and *mucidaria* (Geometridae) and to the fact that some *variegata* might easily be mistaken habitually as *mucidaria*. Mistakes do exist in collections as well as in professional literature.

– With *Eupithecia venosata* and *schiefereri* (Geometridae) it is unwise to determine imagines of the two species without investigation of genitalia (characters typical for the species are even clearly visible externally: the spines of the sternites in case of the males). Although certain differences in the marking of the wings of *venosata* and *schiefereri* do exist, they are not sufficient for an absolutely correct determination. The species can be found together although *schiefereri* usually flies somewhat earlier (March-May) and *venosata* mostly later (May-August). The imagines of *schiefereri* look always „worn“, and those of *venosata* totally „fresh“. Numerous wrong determinations probably occur in professional literature and in different collections. This was also the case with several „*venosata*“, reported during the 3.EMN.

– Important facts about a Ponto-Mediterranean speciality of Europe, *Dioszeghyana schmidtii* (formerly *Orthosia schmidtii*) (Noctuidae), are reported in summary.

– Whether *Mythimna sicula* and *scirpi* are two bona sp. or only two ssp. of the same species, is still unclear and should be investigated further by breeding and crossing experiments or by comparison of gene frequencies. The assumption, accepted „officially“, in general today, that *scirpi* is only an infra-subspecific form of *sicula* (that means a „synonym“), is definitely wrong. The taxa show obvious characters of differentiation habitually and partly have a different area of distribution, so must be looked at, for the time being, as distinct taxa. But, because both taxa show genetic homogenous populations in a wide range but also fly together in broad zones and apparently create forms of transition there (hybrids?), most likely two subspecies of the same species are concerned.

In this connection this publication contains three subchapters, which might be cited as separate original publications too:

– REZBANYAI-RESER, L.: About problems of the taxon pairs *Nebula salicata* (DENIS & SCHIFFERMÜLLER, 1775) and *Nebula ablutaria* (BOISDUVAL, 1840) bona sp. (Lepidoptera: Geometridae). – In „REZBANYAI-RESER, L., KÁDÁR, M. & SCHREIBER, H. (transl.): 3<sup>rd</sup> European Moth Nights, 27.4.-1.5.2006, a scientific evaluation (Lepidoptera: Macrolepidoptera)“.

– KOROMPAI, T.: A Ponto-Mediterranean speciality of Europe, the „Hungarian Quaker“, *Dioszeghyana schmidtii* (DIÓSZEGHY, 1935) (formerly *Orthosia schmidtii*) (Lepidoptera: Noctuidae). – In „REZBANYAI-RESER, L., KÁDÁR, M. & SCHREIBER, H. (transl.): 3<sup>rd</sup> European Moth Nights, 27.4.-1.5.2006, a scientific evaluation (Lepidoptera: Macrolepidoptera)“.

– REZBANYAI-RESER, L.: Opinion on the taxonomic status of *Mythimna sicula* (TREITSCHKE, 1835) and *Mythimna sicula scirpi* (DUPONCHEL, 1836) bona ssp., stat. rev. (Lepidoptera: Noctuidae). – In „REZBANYAI-RESER, L., KÁDÁR, M. & SCHREIBER, H. (transl.): 3<sup>rd</sup> European Moth Nights, 27.4.-1.5.2006, a scientific evaluation (Lepidoptera: Macrolepidoptera)“.

The authors are grateful to all of those, who have participated in some way or other so far and draw attention to another four anticipated European Moth Nights (4.EMN: 11.-15.10.2007 – 5.EMN: 24.-28.7.2008 – 6.EMN: 21.-25.5.2009 – 7.EMN: 9.-13.9.2010) (please mark in your calendar already now!) and to the fact, that many more Lepidopterists and other persons interested in nature, should engage themselves in these events in the future.

The most important addresses for further information are to be found at the end. The list of participants, localities and species observed, is given in tables. The complete table of results of the 3.EMN (table 6) and a total list of all species reported of EMN so far and of all previous EMN-participants („EMN-Checklists“) are only available at the given internet-addresses.

## INTRODUCTION

Following the events of the 1<sup>st</sup> and the 2<sup>nd</sup> European Moth Nights = EMN from 12.–16.8.2004 and from 30.6.–4.7.2005 respectively, experts on nocturnal moths have been asked now for the third time, to take part in this event, crossing all European borders, in spring 2006. This international collaboration, organized in the name of the „Szalkay József Hungarian Lepidopterological Society“ and the „Entomological Society of Luzern“ (Switzerland) by the two authors, for the



most part, as well as by several national „ambassadors“ (see further down), has been a success already in 2004 as well as in 2005.

At this event, taking place once a year, all possible experts on moths (scientists, collectors, photographers) should – on the nights of a given period of 5 days, at a place in Europe, chosen by themselves – make observations of moths, summarize the data and send them to a central data base. For several important reasons however, already discussed in the report on the 2.EMN, Macrolepidoptera are considered only. The aims of the EMN are to promote the establishment of contacts and joint work of European researchers on moths, to present wide-ranging snapshots of the moths flying in a given period of time within Europe, to collect the locality data and findings obtained in a data bank, to make them available to the general public and to further research respectively as well as to draw attention to the needs of protection of moths once more.

Results of the 1.EMN and the 2.EMN, lists of the participants and of the recorded nocturnal moths as well as scientific evaluations to it are to be found on the internet at the following addresses:

<http://lepidoptera.fw.hu> or <http://euromothnights.uw.hu> (NEW!)

The German original version of the evaluation and of the smaller summary tables of the 1.EMN (tables 1-5) have also been published in the journal „Atalanta“ (Germany) (the publication of the material of the 2.EMN and possible that of the EMN to follow, is likewise intended to be published there):

**REZBANYAI-RESER, L. & KÁDÁR, M. (2005): 1. Europäische Nachtfalternächte („1<sup>st</sup> European Moth Nights“), 13.-15.VIII.2004, a scientific evaluation (Lepidoptera, Macrolepidoptera). – Atalanta, 36 (1/2): 311-358.**

The 3.EMN had been announced for the period „28.-30.4.2006 (+/-1day)“ with the aim to incorporate and investigate the spring fauna. But, an unusual strong polar current, a cold front, hit Europe in those days, which „devastated“, most of all, the northern parts of Western Europe as well as Central Europe and caused nightly temperatures near freezing point. This cold snap penetrated also far into the Mediterranean area, causing the nightly temperatures to sink clearly below 10°C, even in Catalonia and in Central Italy (and at the same time also in the Republic of San Marino). But, it has still been possible to collect or observe, more or less sufficiently, in some areas of Europe, either immediately before or after this cold front. This is clearly evident from the total of species (553) recorded altogether. But several „brave“ colleagues tried to set up a light somewhere in the field without success in those 5 days. Their lights attracted only but a few or no moths at all, or even snow flakes only. Those, who reported, that their hopeless attempt had been a total failure, have still been recognized as EMN-participants. This is meant as a due reward for their loyalty and efforts.

Deadline for handing in the records was in the beginning 30.6.2006, it has been prolonged later till 31.8. The organizers received in the end, in the months May-December 2006, different shorter or longer lists of species from numerous colleagues: the final lists came from Catalonia only in January 2007. This has considerably delayed the evaluation of the results and also caused much additional unnecessary work.

**FOR THAT REASON ALL FUTURE PARTICIPANTS ARE HEREWITH EXPRESSLY ASKED AGAIN, TO KEEP TO THE DEADLINES IN QUESTION.**

The EMN is taking place only once a year. It shouldn't therefore be too much of a burden to handle the results with priority and to process them promptly to meet the deadline, to determine samples which can only be identified at home or photographs in time and to compile the data for transmission to EMN-Headquarters or to EMN-Ambassadors well before the deadline.

Some tables were received via e-mail again, accurate and completely filled in, many others, likewise via e-mail, but arrived with various shortcomings and so had to be, as far as possible, corrected and filled in subsequently. Several inadequate tables were received again by regular mail, and had to be fed in by the organizers themselves. This was a lot of work, which would have been mostly avoided if participants could have made the effort to use and complete the designed EMN-basic table, distributed and also published via the internet. Nevertheless the organizers have not rejected any data received and are also personally grateful to all colleagues who have participated to the best of their ability!

**FOR THAT REASON ALL FUTURE PARTICIPANTS ARE HEREWITH EXPRESSLY ASKED AGAIN POSSIBLY TO USE THE OFFICIAL EMN-BASIC TABLE IN QUESTION AND TO FILL IN ALL „OBLIGATORY“ DATA WITHOUT REMINDED.**

The following data are extremely important for registration and evaluation of the results and therefore „obligatory“ (please, all of them in separate columns!), though records with shortcomings will still be accepted and considered:

**genus name – species name (please, Macrolepidoptera only!) – X=determined by investigation of genitalia – country – part of country – name of the village nearest by – name of exact place of collecting/observing (if possible) – position above sea level in meters (approximately at least, rounded to 10 to 100m) – method of collecting/observing (type of light bulb, brightness of light bulb, trap, bait, and so on) and duration in hours – number of recorded specimens (exactly in figures or approximately, using number of x-symbols, given in the EMN-basic table) – day – month – year – name of participant (surname first, followed by full Christian name!) (if several participants together, than one behind the other) – name of determiner (surname first, followed by all first names!) (if several experts together, than all, one behind the other).**

In the end the lists, which had been prepared as well as possible, were put together in a summarized table. This table is available in totality at the two web sites cited below and at the disposal of all lepidopterists for any further research or utilization, with the source of data indicated only (see „EMN-Copyright“ in internet).

We have to emphasize here that all senders were personally responsible for the data they sent, including those of localities as well as species determination. The two authors and the national „ambassadors“ solely limited themselves to ask for additional information in some problematic cases. Any question that might occur should be addressed to the various contributors of data; the authors will be pleased to mediate whenever necessary.

## ACKNOWLEDGEMENTS

We acknowledge in the first place naturally the colleagues who took an active part in the 3.EMN, by collecting, photographing or observing and submitting data on localities (see table 1).

Further special thanks go to the EMN-ambassadors, who are listed in a separate chapter further on. Their engagement in the organization and collection of records in a first instance has supplemented the work of EMN-Headquarters and has made it considerably easier.

The following 13 colleagues were active as translators of different material for the 3.EMN above all: Jordi DANTART (ES), Claudio FLAMIGNI (IT), Dick GROENENDIJK (NL), Krzysztof JONKO (PL), Eduardo MARABUTO (PT), Gergely PETRÁNYI (HU), Diana RESER (CH), Antoine SIERRO (CH), Bjarne SKULE (DK), Pekka TOKOLA (FI), Dragan VAJGAND (RS = Republik Serbien), T. Csaba VIZAUER (RU) and Vladimír VRABEC (CZ).

According to the reports received, the following 12 experts, who have otherwise not participated actively in the 3.EMN, have helped some participants to some extent, with determinations and so were indirectly participants in the event (see table 6: column „det.“): Steven ERLACHER (DE), Thomas FÄHNRIK (DE), Claudio FLAMIGNI (IT), Vjacheslav GERASIMOV (UK), Uwe GEULEN (DE), Peter HÄTTENSCHWILER (CH), M. KETTNER (DE), Helmut KOLBECK (DE), Krzysztof PABIS (PL), Josep Joaquim PÉREZ DE-GREGORIO (ES), László RONKAY (HU) and Hans-Joachim WEIGT (DE).

Among further colleagues who helped the two organizers in some way with different minor things, advice, ideas or with coordination work in their own country, the following above all shall be mentioned with special thanks (we apologize if somebody eventually is omitted by accident): Matti AHOLA (FI), Sandro CASALI (SM), Yves GONSETH (CH), Peter HUEMER (AT), Tamás KOROMPAI (HU), Karl KISER (CH), Nicole LEPERTEL (FR), Attila PÁL (HU), Colin J. PLANT (GR), Vilmos POLONYI (HU), Erwin SCHÄFFER (CH), Andrea SUZZI-VALLI (SM), Ludger WIROOKS (DE), Jaap ZWIER (NL).

## EMN-AMBASSADORS

We are still looking for partners to be responsible for EMN („EMN-Ambassadors“) for some countries, or parts of a country, where this has not been achieved so far, to activate their local colleagues and to organize the collection and checking of locality data as a first instance and to transfer them to EMN-Headquarters. Several colleagues have already agreed to cooperate as EMN-Ambassadors and some of them have already performed as such at the occasion of the 2.EMN and of the 3.EMN. At the time of the drawing up of this statement (March 2007) no EMN-ambassadors were available to us, or nobody had definitely promised to cooperate, from the following countries (cp. from southwest to east): Spain + Andorra + Gibraltar (with the exception of Catalonia), Ireland, Italy, Croatia, Bosnia-Herzegovina, Montenegro, Albania, Greece, Cyprus, European Turkey, Czech Republic, Latvia, Lithuania, Byelorussia and Russia.

EMN-Ambassadors, already in office and their e-mail-addresses are given in a special table:

[http://lepidoptera.fw.hu/emn/EMN\\_ambassador\\_table.xls](http://lepidoptera.fw.hu/emn/EMN_ambassador_table.xls)

[http://euromothnights.uw.hu/emn\\_ambassadors\\_2007\\_VII\\_8.xls](http://euromothnights.uw.hu/emn_ambassadors_2007_VII_8.xls)

Their names are listed here too with special thanks for their collaboration:

Jérome BARBUT (France), Stoyan BESHKOV (Bulgaria), Jordi DANTART (Spain: Catalonia), Willy DE PRINS (Belgium), Ron ELLIOT (Great Britain: Wales), Stanislav GOMBOC (Slovenia), Dick GROENENDIJK (the Netherlands), Norbert HIRNEISEN (Germany), Antony R. JAMES (Great Britain: Cornwall), Krzysztof JONKO (Poland), Mihály KÁDÁR (Hungary), Igor KOSTJUK (Ukraine), Michael KURZ (Austria), Eduardo MARABUTO (Portugal), Marc MAYER (Luxembourg), Ladislaus REZBANYAI-RESER (Switzerland, Liechtenstein and Republic of San Marino), Paul SAMMUT (Malta), Bjarne SKULE (Denmark), Pekka TOKOLA (Finland, as well as Sweden and Norway, provisionally), Dragan VAJGAND (Yugoslavia), Jaan VIIDALEPP (Estonia) and T. Csaba VIZAUER, (Romania).

All kind of questions or problems, concerning EMN, may also be directed to the ambassadors, at any time, from the countries listed, besides to EMN-Headquarters.

### THE PARTICIPANTS OF THE 3.EMN

A total of 392 persons took part in the event (table 1a-c), some of them completely on their own, others in pairs or threesomes, while in some cases several colleagues were present together on the same day. (As mentioned above, some amongst them, that they tried to set up a light, but didn't record anything at all due to weather conditions.) With this the total number of participants of the 3.EMN is twice as high as at the 1.EMN (154) and only very slightly lower than at the 2.EMN 2005(400).

But, if we take in account the following circumstances, the number of 392 really means a significant rise against the number of the year 2005: The Dutch National Moth Night 2005, where many participants were not real lepidopterists, but photographers or other people interested in nature, had been organized by chance at the same time as the 2.EMN. We therefore received from the Netherlands the recorded data of 139 persons. But you have to remember that some of these lists contained only a few species. The date of the Dutch National Nocturnal Moth Night 2006 and of the 3.EMN unfortunately did not coincide again, therefore only 11 persons from the Netherlands participated, yet those being "real" lepidopterists however. The number of participants from the Netherlands was certainly influenced negatively by very unfortunate conditions of weather this time.

With regard to the nationality of the participants, 26 countries are represented (map 1, table 1c) (the number of the 1.EMN and the 2.EMN 2004 and 2005 from the same countries in brackets):

AT = Austria 13 (3, 13), BE = Belgium 19 (2, 3), BG = Bulgaria 2 (3, 1), CH = Switzerland 19 (9, 28), CZ = Czech Republic 4 (0, 0), DE = Germany 30 (23, 46), DK = Denmark 20 (3, 0), EE = Estonia 4 (5, 8), ES = Spain 32 (11, 5), FI = Finland 39 (4, 31), FR = France 14 (8, 15), GB = Great Britain 49 (11, 28), HU = Hungary 47 (15, 30), IT = Italy 6 (11, 8), LT = Lithuania 1 (0, 1) MT = Malta 19 (12, 9), NL = the Netherlands 11 (16, 139), NO = Norway 3 (1, 1), PL = Poland 8 (2, 8), PT = Portugal 20 (2, 3), RO = Romania 16 (10, 15), RS = Republic of Serbia 4 (0, 0), SE = Sweden 5 (2, 2), SK = Slovakia 3 (1, 1), SM = San Marino 2 (0, 3), UK = Ukraine 2 (0, 2).

It should be noted, that three new countries took part in the 3.EMN: the Czech Republic, Denmark (which participated earlier in 2004) and the Republic of Serbia. Also, the number of participants has been more or less higher than in 2005 or 2004, and this especially in Spain (+27), Great Britain (+21), Denmark (+17), Hungary (+17), Portugal (+17), Belgium (+16) and Finland (+8). Against the Netherlands show a clear decrease with -128 (reasons have been explained above) and there is a slight decrease in some other countries, most of all in Switzerland (-9), and Germany (-16) (partly certainly caused by weather again).

The highest number of participants came from Great Britain this time (49), followed by the countries Hungary (47) Finland (39), Spain (32, most of them from Catalonia!), Germany (30), Denmark and Portugal (20 each), Belgium, Switzerland and Malta (19 each) and Romania (16).

It is of special significance to point out that 8 of the participants collected, or collected in addition, beyond the frontiers of their own countries in those days (see table 1a-b). So it should not be forgotten that it is possible to participate in this event in any country of Europe, even if somebody is abroad, on holiday, on some business trip or in transit on the given days.

## PLACES OF INVESTIGATION OF 3.EMN

The number of localities sampled totals 436 (table 2a-c). This is not identical with the number of participants, as in some places several persons were present together, others, in turn, collected using light in several localities during those five nights. The number of the countries here (29) is also higher than that of the participants, since in Greece, Croatia and in Macedonia only foreigners were active and not a native lepidopterist. The localities cover Europe, looked at horizontally, from Great Britain to the Ukraine and from Portugal and Greece, respectively to Finland and range vertically from -0.8 m (NL Frisland, Sintiohannesga, Ooster Schar) up to 1265 m above sea level (ES Catalonia, Cerdanya, Lles, cortical de Marten).

The breakdown of the 436 places of investigation by countries (29) is as follows (map 2, table 2b) (number of 1.EMN and 2.EMN 2004, 2005, from the same countries, in brackets):

AT = Austria 15 (3, 20), BE = Belgium 14 (2, 4), BG = Bulgaria 3 (4, 3), CH = Switzerland 25 (11, 15), CZ = Czech Republic 6 (0, 0), DE = Germany 53 (17, 53), DK = Denmark 17 (3,0), EE = Estonia 4 (6, 9), ES = Spain 59 (18, 14), FI = Finland 46 (5, 17), FR = France 21 (9, 24), GB = Great Britain 71 (10, 13), Greece 3 (0, 0), HR = Croatia 2 (1, 1), HU = Hungary 34 (19, 17), IT = Italy 6 (13, 7), LT = Lithuania 2 (0, 2), ME = Macedonia 1 (0, 0), MT = Malta 15 (9, 5), NL = the Netherlands 10 (10, 139), NO = Norway 2 (2, 2), PL = Poland 10 (3, 10), PT = Portugal 7 (2, 2), RO = Romania 12 (9, 12), RS = Republic of Serbia 3 (0, 0), SE = Sweden 6 (1, 3), SK = Slovakia 2 (1, 1), SM = San Marino 4 (0, 3), UA = Ukraine 3 (0, 4).

5 new countries were represented amongst the localities sampled: the Czech Republic, Denmark (which participated already in 2004), Greece, Macedonia and the Republic of Serbia. The number of localities was in several countries more or less somewhat higher than in 2004 or 2005, and this specially in Great Britain (+58), Spain (+41, mostly from Catalonia), in Finland (+29), Hungary (+15), Belgium (+10), Switzerland (+10) and Malta (+6). Against this, the Netherlands show a clear decrease with -129 (for reasons see chapter above about participants), a slighter, but still clear decrease is shown for the countries Germany (-20) and Austria (-5), (partly certainly caused by weather again).

The highest number of localities comes from Great Britain this time (71), followed by the countries Spain (59, most of them from Catalonia!), Finland (46), Hungary (34), Germany (33), Switzerland (25), France (21), Denmark (17), Austria and Malta (15 each).

In three countries (Greece, Croatia, Macedonia) only foreign lepidopterists have collected (see tables 1a-b).

Finally, let us mention the countries and areas from which no data whatsoever have been received in 2006: Albania, Andorra, Balearic Isles (ES), Byelorussia, Bosnia-Herzegovina, Corsica (FR), Cyprus, Gibraltar (GB), Ireland, Iceland, Latvia, Liechtenstein, Luxembourg, Moldavia, Monaco, Northern Ireland (GB), Russia, Sardinia (IT), Sicily (IT), Slovenia and Turkey (European part). – We hope that some of the gaps will be filled in the course of the next European Moth Nights (see below)! Rather distressing the list of shortcomings includes Ireland, first of all, the Mediterranean isles (with the exception of Malta and Crete), Bosnia-Herzegovina, Slovenia and Russia once more.

## PROBLEMS OF DETERMINATION AND THE METHOD OF COLLECTING

Several general remarks were pointed out in the evaluation of the 1.EMN 2004 in respect to problems of determination and the methods of collecting. Naturally numerous species have been reported this time again for those species that are hard to determine, sometimes only identifiable by their genital organs. Often, senders made no mention about the determination of such species. For that reason correspondents are specially asked to indicate species identified on the basis of genital preparation in the submitted lists. A separate column has therefore been arranged in the EMN basic table.

The following pairs or groups of species, reported at the 3.EMN (table 4), appear to be the most problematic at first sight:

SATURNIIDAE: *Saturnia pavonia/pavoniella*; DREPANIDAE: *Watsonalla binaria/uncinula*, *Cilix glaucata/hispanica/asiatica*; GEOMETRIDAE: *Macaria notata/alternata*, *Charissa* spp., *Dyscia* spp., *Chlorissa* spp., *Cyclophora* spp., *Scopula* spp., *Idea* spp., *Nebula salicata/ablutaria/achromaria*, *Horisme tersata/radicaria*, *Eupithecia* spp., *Rhinoprora* spp.; NOTODONTIDAE: *Furcula* spp.; NOCTUIDAE: *Acronicta tridens/psi*, *Dysgonia algira/torrída*, *Cryphia* spp., *Abrostola* spp., *Cucullia* spp., *Shargacucullia* spp., *Paradrina* spp.; NOLIDAE: *Nola* spp., *Nycteola* spp.; ARCTIIDAE: *Eilema caniola/complana/pseudocomplana*, *Spilosoma lubricipeda/urticae*.

Here again, we would like to emphasize: if special, unusual, but not verifiable records (locality, date of recording) enter literature or a data base, it is really impossible ever to delete them from knowledge, which is thus permanently falsified. Examples of unusual species or dates (e.g. an autumn moth in July) should always be kept (which however makes it necessary unfortunately to recognize the „unusual“). If no examples of them can be presented, data should rarely be stored in a data base or be indicated there with a question mark. Possible wrong data would otherwise be permanent, which unfortunately is frequently the case today. In case of species hard to determine, methods of “observing” and “photographing” are unfortunately totally unsuitable, though the accurate and exact research of such species is especially important. For further thoughts on these topics see respective chapters of „evaluations“ to the 1.EMN and 2.EMN.

## DISCUSSION OF RESULTS

### Systematics, taxonomy and nomenclature

We based our list of species (systematics, taxonomy, nomenclature and numbering of species) again on the checklist of Europe by KARSHOLT and RAZOWSKI (“KARSHOLT, O. & RAZOWSKI, J. 1996: The Lepidoptera of Europe. A Distributional Checklist. – Apollo Books, DK-Stenstrup”). Though we and other workers don’t agree to, nor are satisfied with all details of this system, we do consider K & R to be the most practical one, until a better comprehensive European list is published. However, it may never be possible to compile such a list of Lepidoptera for Europe, which is going to please everyone concerned with respect to systematics, taxonomy and nomenclature.

However, in the list of species of the 3.EMN some divergence from K & R 1996 is to be found:

- Such names of species of any taxon, which were validated only after 1996, and which are known by the authors, are listed as synonyms, marked here however as „valide sp.-name“ (=at present valid species name).
- Species missing from the catalogue of KARSHOLT & RAZOWSKI 1996, have been integrated and characterized with tenths to the number (e.g.: 9929.1 *Aetheria weissi* DRAUDT, arranged after No 9929 sensu K & R 1996).
- An attempt was made to list separately taxonomical particularly important subspecies, which were not given in K & R 1996. These have been characterized with hundredths to the number (e.g. nominal subspecies: 8048.00 *Scopula submutata submutata* TR., a further ssp. of the same species: 8048.01 *Scopula submutata nivellearia* OBTH.).

### The „Macrolepidoptera” species reported

Although weather conditions were less than optimal again at many localities and the dates for the 3.EMN had been chosen for spring, poorer in species, the 392 collaborators were able to record altogether 553 „Macroheterocera” species (some special subspecies included) from 436 localities (table 4, map 3) (1.EMN 2004: 850 spp., 2.EMN 2005: 985 spp.). In the course of only five calendar days in spring, this amounts to not less than 20.3% of the about 2730 nocturnal Macrolepidoptera species given for the whole of Europe in the 1996 checklist of KARSHOLT & RAZOWSKI! The table of results contains 6.971 series of data (Excel-table lines). (1.EMN 2004: 6.825), 2.EMN 2005: 16.079.

As a result the number of species recorded at the three EMN, organized so far, totals 1328, namely 1306 species (c. 47.8% of the fauna of Europe concerned) and 24 further important subspecies. The number of species and subspecies, recorded in all the three years is 282 (21.2%) which is surprisingly quite high in respect to the different periods (end of April, beginning of July, middle of August). 167 (12.6%) of the 1328 recorded species and subspecies have only been found at the 1.EMN, 230 (17.3%) only at the 2.EMN and 163 (12.3%) only now, at the 3.EMN. The strong enlargement of the EMN total list in number of species is due to the circumstances that after two events in summer (2004 and 2005) the EMN had been arranged in spring in 2006. Presumably, a further clear increase in amount of species can be expected from the 4.EMN (11.-15.10.2007).

- The species reported from the highest number of places were the following (in sequence to the number of localities): *Orthosia gothica*, *Orthosia incerta*, *Orthosia cerasi*, *Conistra vaccinii*, *Selenia dentaria*, *Orthosia cruda*, *Cerastis nubicosa*, *Ectropis crepuscularia* (=bistortata) *Drymonia ruficornis*, *Peridaea anceps*, *Lycia hirtaria*, *Egira conspicularis*, *Xylocampa areola*, *Trichopteryx carpinata*, *Selenia tetralumaria*, *Colocasia coryli*, *Eupithecia abbreviata*, *Daphora mendica*, *Conistra rubiginea*, *Panolis flammea*, *Gymnoscelis rufifasciata*, *Xanthorhoe fluctuata*, *Agrotis puta*, *Ligdia adustata*, *Orthosia gracilis*, *Phragmatobia fuliginosa*, *Brachionycha nubeculosa*.



– The species reported from most countries were the following (see also table 5):

*Orthosia incerta* (22), *Orthosia gothica* (21), *Orthosia cruda* and *Orthosia cerasi* (19 each), *Conistra vaccinii* and *Cerastis rubricosa* (17 each), *Selenia dentaria*, *Lycia hirtaria*, *Ectropis crepuscularia* (= *bistortata*), *Drymonia ruficornis* and *Conistra rubiginea* (16 each).

– The following 5 species (0.9%) have been reported in high frequency (100 or more specimens) at least from one locality (in systematic order):

GEOMETRIDAE: *Ectropis crepuscularia* (= *bistortata*), *Eupithecia abbreviata*; NOTODONTIDAE: *Peridea anceps*; NOCTUIDAE: *Mythimna vitellina*; ARCTIIDAE: *Eilema sororcula*.

– The following 26 species (4.7%) have been reported fairly common at least from one locality (30 to 99 specimens) (in systematic order):

DREPANIDAE: *Polyplocia ridens*; GEOMETRIDAE: *Lomaspilis marginata*, *Hypomecis punctinalis*, *Ematurga atomaria*, *Epirrhoe alternata*, *Contaconvexa polygrammata*, *Eupithecia dodoneata*, *Gymnoscelis rufifasciata*, *Trichopteryx carpinata*; NOCTUIDAE: *Autographa gamma*, *Brachionycha nubeculosa*, *Synthymia fixa*, *Hoplodrina ambigua*, *Conistra vaccinii*, *C. rubiginea*, *Xylocampa areola*, *Orthosia incerta*, *O. gothica*, *O. cruda*, *O. cerasi*, *Panolis flammea*, *Egira conspicularis*, *Noctua pronuba*, *Agrotis puta*; PANTHEIDAE: *Colocasia coryli*; ARCTIIDAE: *Diaphora mendica*.

– The highest total numbers of species are to be found in the following countries (table 3):

Spain (254), Hungary (217), France (140), Switzerland (135), Romania (106), Italy (93), Great Britain (90), Germany (79) and San Marino (77).

## Faunal novelties

One target of our event is to find eventually any novelties or other peculiarities too for the fauna of Europe, of single countries or even greater parts of countries. Not all kind of minor details, but „true” peculiarities really are the salt in the soup! To achieve this, we need more engagement and pleasure to communicate with our colleagues in lepidopterology, who know their own area most of the time much better than we do. Please, don't forget: The participants should complement their record lists with short comments, if necessary. The EMN-ambassadors too should be especially watchful and active in this respect.

It is not known to us that new species have been recorded for the fauna of Europe, or for any country, during the 3.EMN, with the exception of a larger number in the Republic of San Marino, little investigated so far. However, a few species have been recorded, that are not listed in KARSHOLT & RAZOWSKI 1996, namely *Saturnia pavoniella* ESP. (bona sp.), *Cilix asiatica* O.BANG-HAAS, *Nebula abluaria* BSD. (bona sp.) and *Aetheria weissii* DRAUDT (bona sp.).

Thus in most cases no real novelties are concerned but former subspecies only, which are treated as „bona species” today.

## Taxonomic remarks and further important comments

### 1) *Saturnia pavonia* (LINNAEUS, 1758) and *pavoniella* (SCOPOLI, 1763) (Saturniidae):

3. European Moth Nights 2006:

*S. pavonia*: Some specimens from the countries Germany, Great Britain, Hungary, the Netherlands, Poland and Spain (?).

*S. pavoniella*: Some specimens from Switzerland (2) and the Republic of San Marino (1).

Although accepted since 1987 from a publication of SEYER (Entomologische Zeitschrift, Essen, **97**: 171–173) that the former „*pavonia* subspecies” *ligurica* WEISMANN, 1872 (= *meridionalis* CALBERLA, 1887) is a separate species, these names are missing in the checklist of KARSHOLT & RAZOWSKI 1996. The position of these taxa, including the correct species name (*pavoniella* ESP.), has finally been unambiguously clarified and summarized in HUEMER & NÄSSIG 2003, and this should generally be known and accepted today. – To support this, we would like to repeat here the summary and some illustrations from this publication, with a map of the presently electronically fixed distribution records (March 2007) at the CSCF in Neuchâtel (Centre Suisse de Cartographie de la Faune = Swiss Centre of Cartography of the Fauna) for the two taxa in Switzerland. We thank the colleagues Peter HUEMER (Innsbruck) and Wolfgang NÄSSIG (Frankfurt on the Main), and also Yves GONSETH (CSCF Neuchâtel) for their kind complaisance.



**HUEMER, P. & W. A. NÄSSIG (2003): The Peacock Emperor Moth *Saturnia pavoniella* (SCOPOLI, 1763) sp. rev. in the area of the Eastern Alps (Lepidoptera: Saturniidae). – Entomologische Zeitschrift, Stuttgart, 113 (6): 180-190.**

„**Summary:** In Europe exist most likely (at least) two different species of the „Lesser Emperor Moth“: *Saturnia (Eudia) pavonia* (LINNAEUS, 1758) in the north and *Saturnia (Eudia) pavoniella* (SCOPOLI, 1763), sp.rev., in the south, with a still unclear situation in South France as well as on the Iberian and the Balkan Peninsula. The distribution of these two species, defined by infertility of the females and most of the males of the F<sub>1</sub>-hybrids as well as morphological characters (including morphology of the genitalia) in Europe and especially in the Eastern Alps is explained and illustrated by maps. The two species overlap locally, and obviously introgression (caused by occasionally fertile males?) does occur sporadically. The taxa *ligurica* WEISMANN, 1876, *meridionalis* CALBERLA, 1887, *donauensis* SEYER, 1991 and *melichi* SEYER, 1991, are new synonyms of *S.pavoniella* (SCOPOLI, 1763) (syn.nov.). The taxon *carpini* ([DENIS & SCHIFFERMÜLLER], 1775) is left in the synonymy of *S.pavonia* for traditional reasons. The taxa *val-careli* (AGENJO, 1970 [1972?]) and *iberligurica* (GÓMEZ BUSTILLO et al., 1982) don't belong to *S.pavoniella* and are recombined and synonymized with *S.pavonia* (comb.rev., syn.nov.); there is no obvious proof of *S.pavoniella* in Spain so far. The north of Spain obviously is colonized by *S.pavonia* and the south by the taxon *josephinae* SCHAWERDA, 1924, whose status remains to be clarified; the situation in Central Spain and especially in the northeastern corner of Spain around Barcelona as well as in South France (where specimens occur, which resemble *S.pavoniella* in habitus, but are *S.pavonia* upon the morphology of the genitalia) remains unsolved“.

Here, once again, the most important characters of differentiation in habitus of *pavonia* and *pavoniella* are given (see arrows in figures 1-4), which however are only provisionally valid in the larger area of the Alps (with the exception of the south-western Alps) as well as to the north and south of the Alps:

*Saturnia pavonia*

- In both sexes: The outer transverse fasciae (post and sub-medial lines) of the hindwings run almost parallel to the inner margin and meet it almost vertical.
- In the female only: The dark grey abdomen with distinct rings on the posterior margins of the segments, formed from whitish grey hairs and scales.

*Saturnia pavoniella*

- In both sexes: The outer transverse fasciae (post and sub-medial lines) of the hindwings strongly approach each other behind the ocellus, but than drift apart again towards the inner margin and finally bend before the inner margin in a small curve clearly towards the hind angle of the wing.
- In the female only: Abdomen much more monotonous, plain grey brown, the margins of the segments without bright rings, only the transparent inter-segmental membrane of the abdominal segments between the hairs shines through as a pale, mostly yellowish ring.

For differences in genitalia and comprehensive references see HUEMER & NÄSSIG 2003. For further information on the topic (amongst it description of breeding and of first instars of both taxa) see in „LEPIDOPTEROLOGEN ARBEITSGRUPPE (WORKING GROUP OF LEPIDOPTERISTS) (2000): Lepidoptera and their habitats. Species – Threat – Protection. Switzerland and adjacent areas. Volume 3 (Publ. PRO NATURA, publ. Fotorotar, Egg ZH)“ (Chapter „Saturniidae“ of Bernhard JOST, Jürg SCHMID & Hans-Peter WYMANN).

It is important, clearly to point out, once again, that the two species in the better understood eastern area of the Alps (but perhaps elsewhere too) may locally even occur together. To what extent the *pavoniella*-populations are natural in this actual „*pavonia*-area“, can hardly any more exactly be estimated today. It isn't possible to know, namely, where adventive *pavoniella* descendants do exist and where supposed „*pavonia*“, which were bred and released to nature, in good humour: perfect examples of unfortunate falsifications of the fauna.

Records of *pavonia*, received in the course of the 3.EMN, are most probably correct, though it could not really be proved exactly everywhere, whether really *pavonia*, and not *pavoniella*, was concerned. Above all, the specimen reported from North Spain (Cantabria: Pesaguero), a female, of which only photos exist, made by Teresa FARINO (figure 5), is problematic and not possible to determine with certainty at present. It might belong to populations, which resemble externally *pavoniella* but still have genitalia like *pavonia* (see above), whose taxonomic status thus is not clarified at present.

The *pavoniella* reported from Southern Switzerland and from the Republic of San Marino, during the 3.EMN, from their appearance clearly belong to this taxon (det. REZBANYAI-RESER).

More attention should be paid to these facts, especially in Central Europe (e.g., no records of *pavoniella* exist at all in literature from Hungary, to our knowledge, though the species must occur there too). All samples in collections should be accurately determined, new *pavonia/pavoniella* records should be looked for and the findings should also be published to advance the research on the distribution of both species. Further important tasks would be to clarify the taxonomic situation of *pavonia* and *pavoniella* in South France, on the Iberian Peninsula, on the Balkans and in Asia Minor (also further to the east, respectively) by experiments of cross-breeding or by comparison of gene sequences.



Fig. 1: *Saturnia pavonia* L., male, AT-North Tyrol, Niederau (photo Peter HUEMER).

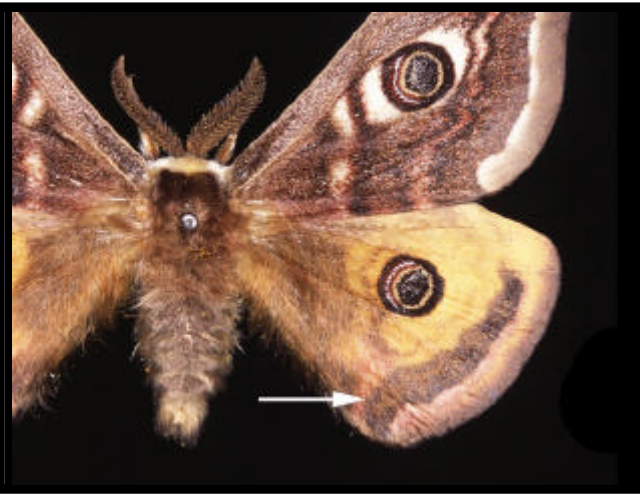


Fig. 2: *Saturnia pavoniella* Scop., male, AT-North Tyrol, Innsbruck (photo Peter HUEMER).



Fig. 3: *Saturnia pavonia* L., female, AT-North Tyrol, Niederau (photo Peter HUEMER).



Fig. 4: *Saturnia pavoniella* Scop., female, AT-North Tyrol, Ampass (photo Peter HUEMER).

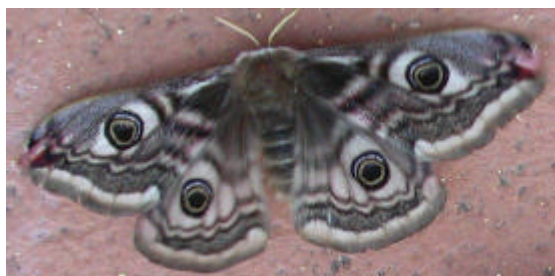


Fig. 5: The *Saturnia* female, reported from North Spain, from the present state of knowledge most likely a specimen of the species *pavonia* (Cantabria: Pesaguero. photo: Teresa FARINO).

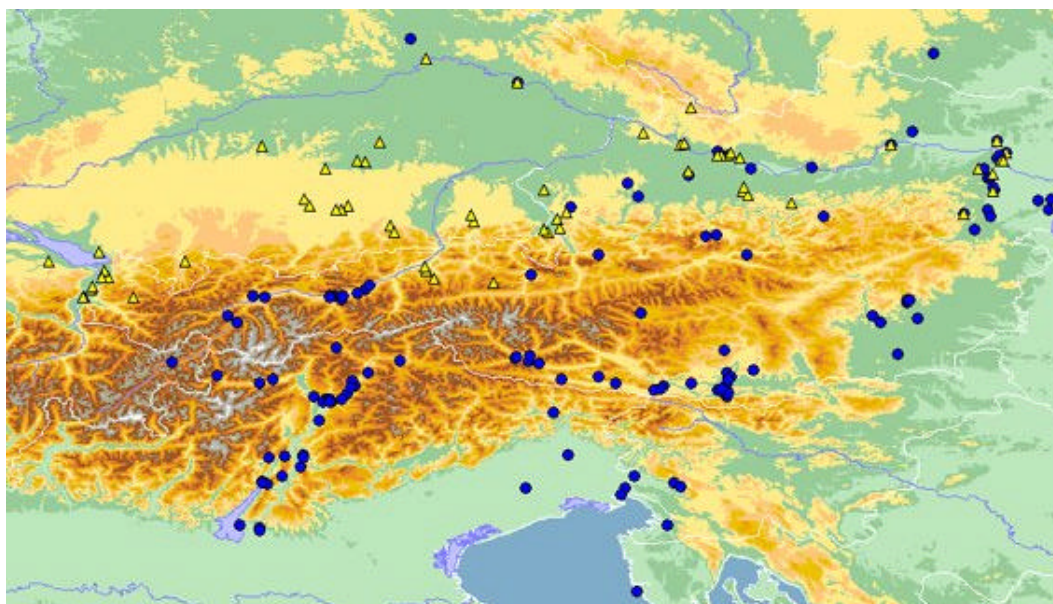


Fig. 6: Locality records of *S.pavonia* (yellow triangles) and of *S.pavoniella* (blue dots) in the area of the Eastern Alps and in adjacent areas (based on examined material) (after HUEMER & NÄSSIG 2003).

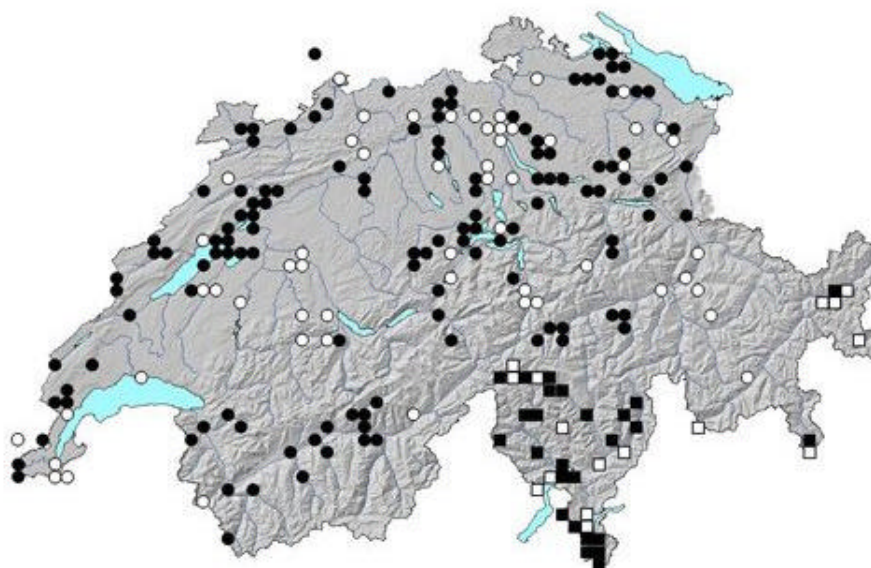


Fig. 7: The localities of Switzerland, presently recorded at the CSCF (Centre Suisse de Cartographie de la Faune) (March 2007) of *S.pavonia* (dots) and *S.pavoniella* (squares) (white: before 1980; black: since 1980).

## 2) *Nebula salicata* (DENIS & SCHIFFERMÜLLER, 1775) and *ablutaria* (BOISDUVAL, 1840)(Geometridae):

**To problems of the pair of taxa *Nebula salicata* (DENIS & SCHIFFERMÜLLER, 1775) and *Nebula ablutaria* (BOISDUVAL, 1840) bona sp. (Lepidoptera: Geometridae).**

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### 3. European Moth Nights 2006:

*N.salicata*: Few records from Belgium, Hungary and Switzerland (north of the Alps).

*N.ablutaria ablutaria*: Some records from Bulgaria, Italy and the Republic of San Marino.

*N.ablutaria probaria*: Some records from Southern Switzerland and from Croatia.

Although *N.ablutaria* has formerly been regarded as a separate species, because of very similar genitalia to *salicata*, it was reduced to the status of a „form“ (junior synonym to *salicata*) by HERBULOT. *Ablutaria* appeared later in professional literature but still again as a subspecies of *salicata*. In KARSHOLT & RAZOWSKI 1996 this name is completely missing. REZBANYAI-RESER has already pointed out in several publications, that *ablutaria* and *salicata* must be two separate species. Even if only very slight differences in the genitalia are recognizable (Fig. 11-13), the larvae and pupae of both taxa and the structure of the antennae of the males are distinctly different.

The antennae of the males in *ablutaria* are much more broadly pectinate in the basal third than in *salicata* (Fig. 10). This is less noticeable, when the pectinations roll strongly together in dry material. – The larva of *salicata* basically has a longitudinal striped pattern and is rather reddish brown (Fig. 9), that of *ablutaria* shows a typical *Larentia*-pattern with the characteristic „stair spots“ (like small victory rostrums) on the back of the body segments and is grey-coloured in principle. – The pupa of *salicata* is evenly ochre brown, whereas that of *ablutaria* has a distinct greenish cast of colour upon the ochre brown ground colour, especially in the discs of the wings.

*Ablutaria*, as a member of the Ponto-Mediterranean faunal element, is widespread in the East- and Central-Mediterranean area, including the valleys of the Southern Alps, up to almost above 1000m (it is replaced by *Nebula ibericata* STGR. in the West-Mediterranean area). Against it, *salicata* lives in the area of the Alps (up to above 2500m) and north to the Alps, in the Carpathians, in the Apennines, in some mountains of the Balkans, eventually also in the Pyrenees, but also in Great Britain up to Scotland and in Ireland. Reports of *ablutaria* north of the Alps (e.g. Valais or Jura area in Switzerland) must be understood to be *salicata*.

The two species can occur together in places such as in the middle and deeper zones of the valleys of the Southern Alps, of the Balkans and the Apennines. The first generation of *ablutaria* flies, as a rule, earlier in such habitats (March – April, occasionally till mid-May at a maximum), the one of *salicata* later (end of May – June). The situation is different in the 2<sup>nd</sup> generation. Here *salicata* occurs earlier (end of July – end of August) and *ablutaria* later (September – October). In *ablutaria* also a partial 3<sup>rd</sup> generation can occur in especially warm areas (or in the laboratory) in November – December. However, *salicata* develops only a partial, or no 2<sup>nd</sup> generation in cooler habitats, where *ablutaria* can't live at all, and the possible 2<sup>nd</sup> generation flies much later also, only in September-October.

On the basis of extensive breeding of both species in the laboratory, the following reasons may be mentioned for this: the speed of development is much more influenced by higher temperatures in *salicata* than in *ablutaria*. Development is distinctly faster at higher temperatures in *salicata*, which is why the 2<sup>nd</sup> generation occurs in warmer areas in the second half of summer. In cooler areas, where *ablutaria* doesn't occur, the development of a possible 2<sup>nd</sup> generation of *salicata* is relatively delayed. The development of *salicata* finally takes much more time, through the winter, till the next spring. – Speed of development of *ablutaria* is much more fixed by hereditary factors; even in laboratory breeding development can neither be slowed down to any great degree by influence of temperature nor accelerated. For this reason both normal generations of this species seem to be distributed more evenly in the year.

Although *salicata* has several forms (darker and lighter, greyer and more or less yellowish speckled ones), no obvious subspecies seem to be recognizable in this. Against this, *ablutaria* shows at least two different geographic forms. The nominate form is darker and variably but clearly speckled yellowish to greenish-yellow. Whether this form might still be separated into further subspecies (Near East, Mediterranean isles, Italy?), should be investigated more thoroughly. There are perhaps populations among them (Crete, Cyprus?), which might even be separate species. The ssp. *probaria* (HERRICH-SCHÄFFER, 1852), distributed in the valleys of the Southern Alps (and most probably in the valleys of the Balkan Mountains too), is much lighter grey, nearly or totally without yellowish admixture and therefore especially similar to *salicata*. In the 1<sup>st</sup> generation in particular this case is distinctly bigger and has more rounded wings than the nominate form. – With breeding in the laboratory at the same conditions also, offspring of these forms have the same appearance, making it evident, that these characteristics are fixed by heredity.

As the author has noted previously, the species *salicata* D.SCH., *ablutaria* BSD. and *tophaceata* D.SCH. should actually be arranged in the genus *Coenotephria* PROUT, 1914 (type species: *tophaceata*) on the basis of the morphology of their genitalia and not in *Nebula*, BRUAND, 1846 (type species: *nebulata*).

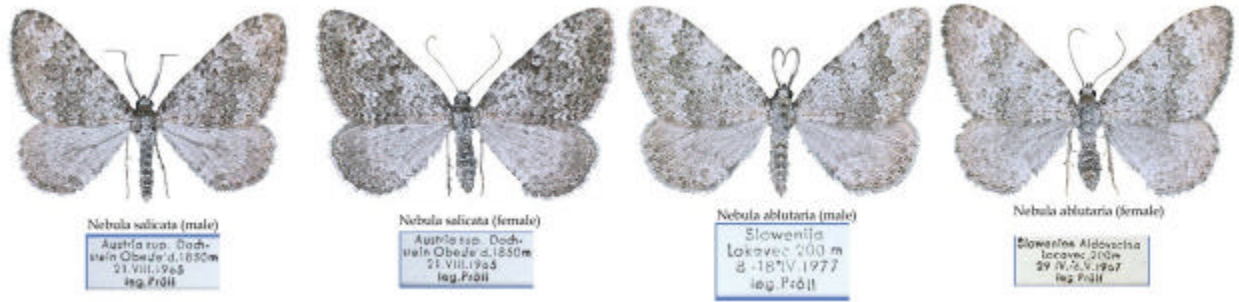


Fig. 8: *Nebula salicata* (DENIS & SCHIFFERMÜLLER, 1775) and *Nebula ablutaria probaria* (HERRICH-SCHÄFFER, 1852) (photo: H. RÖTSCHKE: The Geometrids of Central Europe)



Fig. 9: The upper side of the larva of *Nebula ablutaria probaria* (left) and *salicata* (right) in the last instar (photo: Rezbanyai-Reser).

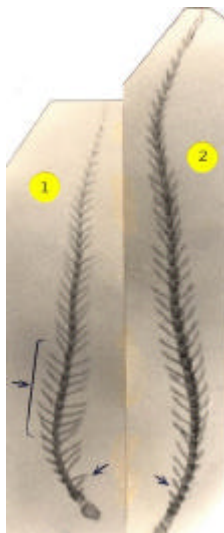


Fig. 10: The antennae of the males of *Nebula ablutaria* (1) and *salicata* (2) (preparation soaked in potash lye and covered). In *ablutaria* the antennae are shorter and more stocky, the pectinations (rani) are, from the base abruptly lengthened and form a small protrusion on the outline of the antenna. The rani in this area are three times as long as the length of the segments of the antennae. In *salicata* the antennae are relatively longer and slimmer, the rani get only gradually longer from the base and the outline of the antenna is only slightly curved. Rani in the area, where they are longest, are only about twice as long as the length of the segments of the antennae. These characters are only rarely recognizable in a prepared specimen, when the rani of the antennae have to much rolled up due to drying.

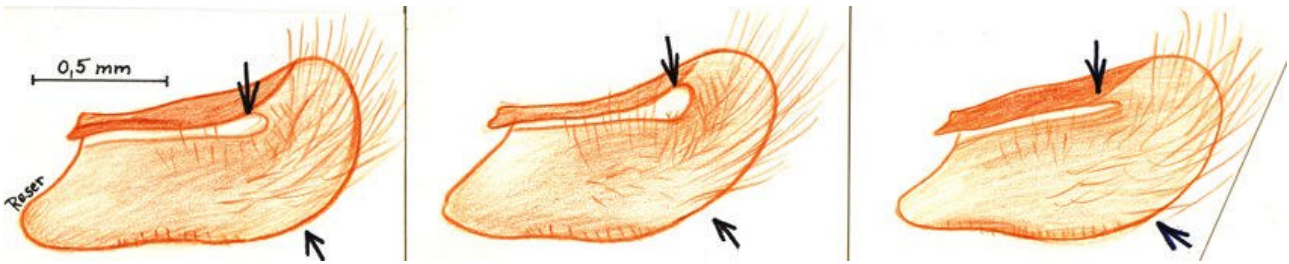


Fig. 11: Valva of the male genitalia of *Nebula salicata*, *ablutaria probaria* and *tophaceata* (from left to right) with the most important characters of differentiation (preparation covered).

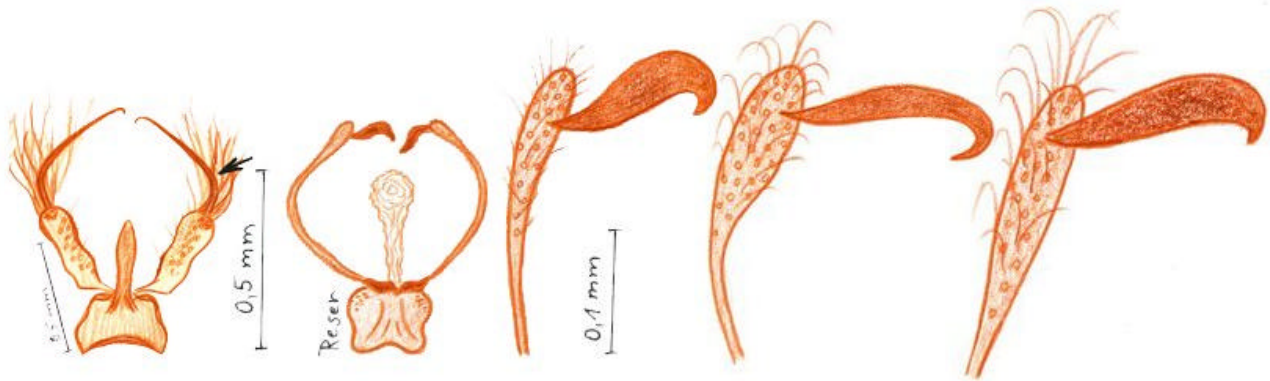


Fig. 12: Juxta of the male genitalia of *Nebula nebulata* (left) and of the *tophaceata*-group (right) with the most important characters of differentiation on the end of the processus juxtae, in *salicata*, *ablutaria probaria* and *tophaceata* (from left to right) (preparation covered). The flame-like structure in *salicata* is shorter and thicker, in *ablutaria probaria* longer and slimmer, thinner than „head“ of processus; *tophaceata*, against it, is approximately intermediate. These juxta arms differ in *salicata*, *ablutaria* and *tophaceata* from further *Nebula*-species, like e.g. *nebulata* (type species of the genus), *achromaria*, *ibericata*, *senectaria* and *schneideriana*, in which the arms end simply pointed. The other three should therefore (and others eventually too) rather be arranged in a separate genus (*Coenotephria* PROUT 1914, type species: *tophaceata*).

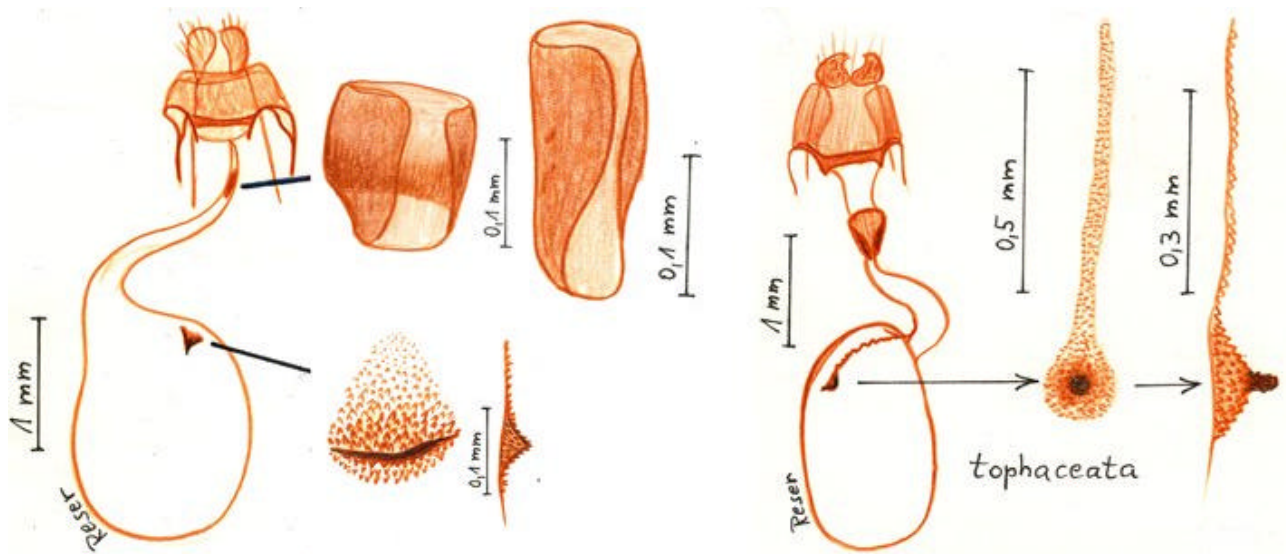


Fig. 13: Female genitalia of *salicata/ablutaria* (left) and of *tophaceata* (right) with the characteristic fields of spines (stigma) and with the sclerotized ring in the ductus bursae of *salicata* (square) and of *ablutaria probaria* (long) („in natura“, so not covered and squashed).

### 3) *Charissa (Euchrognophos) variegata* (DUPONCHEL, 1830) and *mucidaria* (HÜBNER, 1799) (Geometridae):

3. European Moth Nights 2006:

*Ch.variegata*: Few specimens from Southern Switzerland (4) and from Croatia (1).

*Ch.mucidaria*: Several specimens from Spain and Portugal.

In several collections and in professional literature too, *mucidaria* has been reported by mistake because a yellowish form of *variegata* is easily mistaken for this species. It is not even certain for this reason, whether the actual distribution of these species is correctly known. Even in the standard treatment of FORSTER & WOHLFAHRT 1981 *mucidaria* is reported from South Switzerland by mistake (this species occurs in Switzerland probably in the vicinity of Geneva only). Apart from the different genitalia, the structure of the male antenna may be a good character of differentiation (in *variegata* not pectinate, only with weak, lightly hairy saw-teeth, in *mucidaria* with very short, but distinct bipectinate teeth, covered with scales [see figures]). – It is certain or quite possible, that the determination of *variegata* (Switzerland and Croatia) and *mucidaria* (Spain and Portugal), reported at the 3.EMN, is correct.

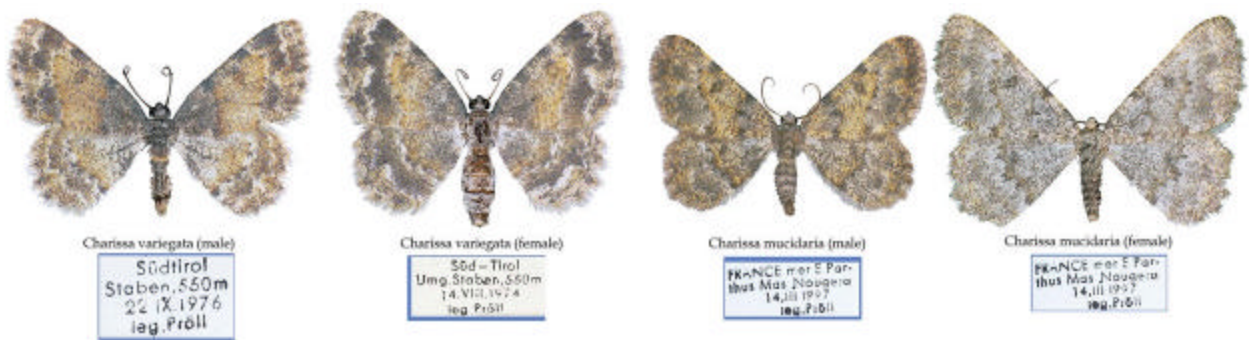


Fig. 14: *Charissa variegata* (DUPONCHEL, 1830) (photo: H. RÖTSCHKE: The Geometrids of Central Europe)

Fig. 15: *Charissa mucidaria* (HÜBNER, 1799) (photo: H. RÖTSCHKE: The Geometrids of Central Europe)

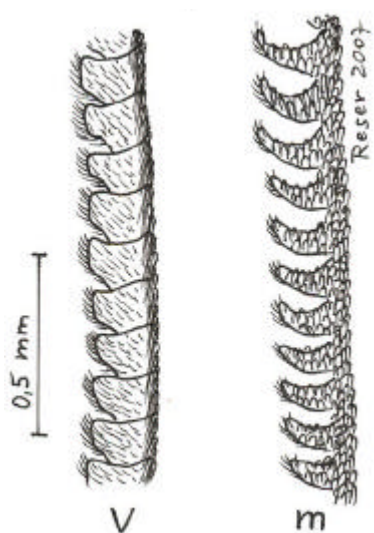


Fig. 16: The segments in the middle part of the antennae of the males of *Charissa variegata* (v) (CH Lugano, Monte Bré) and *mucidaria* (m) (ES Catalonia, Rosas).

### 4) *Eupithecia venosata* (FABRICIUS, 1787) und *schiefereri* BOHATSCH, 1893 (Geometridae)

3. European Moth Nights 2006:

*E.venosata*: One specimen each from Spain (Andalusia) and Italy (Sicily) (both questionable without investigation of genitalia).

*E.schiefereri*: Some specimens from Bulgaria and Spain (Catalonia).

Though some differences in the imagines of these more or less xero-thermophilic species are present externally (fig. 18), a reliable determination is only possible from the genitalia (fig. 21-22). Characteristic thorns on the eighth sternite

(last lower segment of abdomen) are easily to distinguish in the males after removal of hairs with a fine paintbrush, even externally (fig. 21). – The distribution of *schiefereri* (see MIRONOV 2003: The Geometrid Moths of Europe, Vol.4. – Apollo-Books, DK-Stenstrup, <http://www.apollobooks.com>) is not clearly known, since the species is most probably mistaken and registered as *venosata* over and over again. In countries or parts of countries, first of all, where only *venosata* has been recorded so far, but never *schiefereri* (in the larger part of Hungary, e.g. or in South Spain), the available samples of „*venosata*“ should be investigated more thoroughly. The date of recording of this species can give a good first clue, at least in Switzerland, but most probably elsewhere too. *Schiefereri* partly flies earlier (March-May), *venosata* later (May-August). In the period of time in which both species fly together somewhere (May, beginning of June), the imagines of *schiefereri* look already „worn“, as a rule, and those of *venosata* totally fresh.

At least 12 „*venosata*“ have been reported from 6 localities at the 3.EMN, namely from the countries Spain (4), Italy (1) and Bulgaria (1), but no single *schiefereri*. Since the end of April is normally typical as the period of flight for *schiefereri* and not for *venosata*, supplementary examinations of genitalia were requested from the reporters of data by EMN-HQ. In some cases, unfortunately, only a photograph or a „result of observation“ existed, but no collected sample. Anyway, one fact must specially be laid down: not a single specimen of the reported „*venosata*“ could be confirmed as such on account of genitalia.

From Bulgaria (Eastern Rhodope-Mountains) and from Spain (Catalonia: Casàres and La Pobla de Claramunt) some specimens proved later to be definitely *schiefereri* (though this species is supposed to be a great rarity otherwise in Catalonia!). Further „*venosata*“, reported from Catalonia (Beuda: Can Grau), seemed also to be *schiefereri*, based on a photograph. The „*venosata*“ from South Spain (Andalusia: Casares) could not be determined more exactly, since neither a sample nor a photograph exists. However 6 photographs of other „*venosata*“ from the same locality with very early record dates do exist (fig. 19). Some of them might eventually prove to be *venosata*, but some of them must be regarded as intermediate. Besides, it has to be mentioned, that *schiefereri* has still not formerly been recorded in Andalusia so far, according to the distribution map in MIRONOV 2003 (which should just still be checked again!). – The specimen from Sicily (Taormina) only, could really be *venosata* on account of the photograph (Fig. 20), but this is still a bit uncertain without investigation of the genitalia. Both species are known from Sicily. It is quite possible that *venosata* flies much earlier in the extreme south of Europe than further to the north. The exact periods of flight of both species should still be investigated more thoroughly, e.g. in South Italy (and probably elsewhere as well).

All naturalists are therefore advised not to differentiate *E.venosata* and *schiefereri* solely upon the external appearance of the imagines. In professional literature and in collections numerous wrong determinations certainly do exist. More attention should be paid to the correct differentiation of both of these species everywhere. – For further attention: the genitalia of *Eupithecia carpophagata* STAUDINGER, 1871 are very similar to *venosata*. The two species can be distinguished as imagines rather from their appearance!



Fig. 17: A selection of the collection of the Nature-Museum Luzern, Switzerland.



- *Eupithecia venosata* (from left to right): CH-Gersau (Schwyz) 8.7.1980; CH-Gersau (Schwyz) 14.7.1980; CH-Meggen (Luzern) 2.7.1931; CH-Lavorgo (Ticino) 15.6.1986; CH-Mergoscia (Ticino) 15.7.1979; CH-Visperterminen (Valais) 18.6.1994; CH-Visperterminen (Valais) 17.6.1994; CH-Visperterminen (Valais) 5.6.1994; CH-Bern (Bern); HU-Zirc (Veszprém) 18.6.1969.
- *Eupithecia schiefereri* (from left to right): CH-Biasca (Ticino) 26.4.1992; CH-Lavorgo (Ticino) 18.5.1986 (3x); AT-Graz (Styria) e.l. 5.1924; CH-Biasca (Ticino) 20.5.1998; CH-Lavorgo (Ticino) 1.6.1987 (3x); AT-Graz (Styria) e.l. 5.1924.



Fig. 18: Characters of differentiation in habitus between *E.venosata* and *E.schiefereri* after MIRONOV 2003 („The Geometrid Moths of Europe, Vol.4, Larentiinae II.“, p.116 – Apollo-Books, DK-Stenstrup) (with kind approval of the authors and publisher, <http://www.apollobooks.com>). These however are not suitable for an absolutely correct determination.

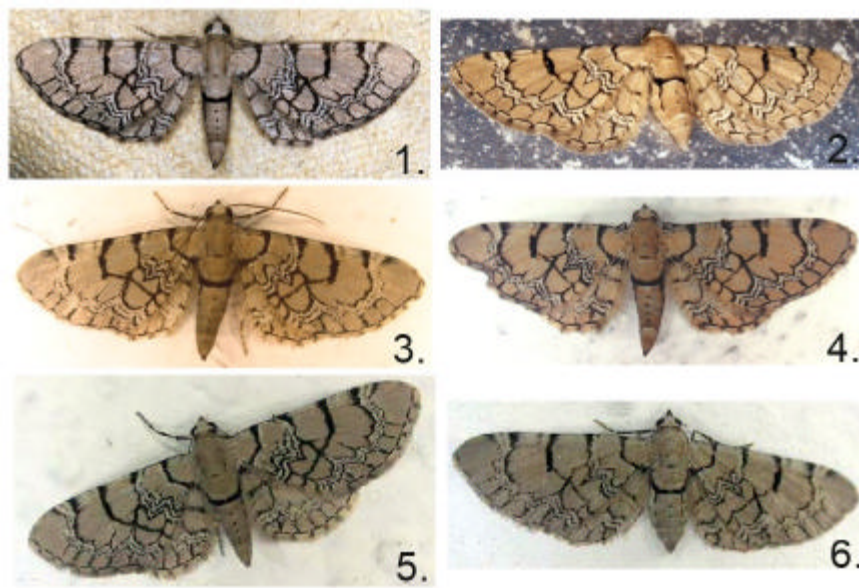


Fig. 19: Six very early „*venosata*“ (or some perhaps *schiefereri*?) from Andalusia (ES-Casares) (photo Penny HALE), photographs not taken at the 3.EMN however (colours not naturally in part). In order of numbering: 28.2.2003, 19.3.2002, 29.3.2004, 31.3.2003, 4.4.2007 and 5.5.2007.



Fig. 20: „*venosata*“, reported from Sicily (Taormina, 30.4.2006) (photo Marco TÄCHTINEN).

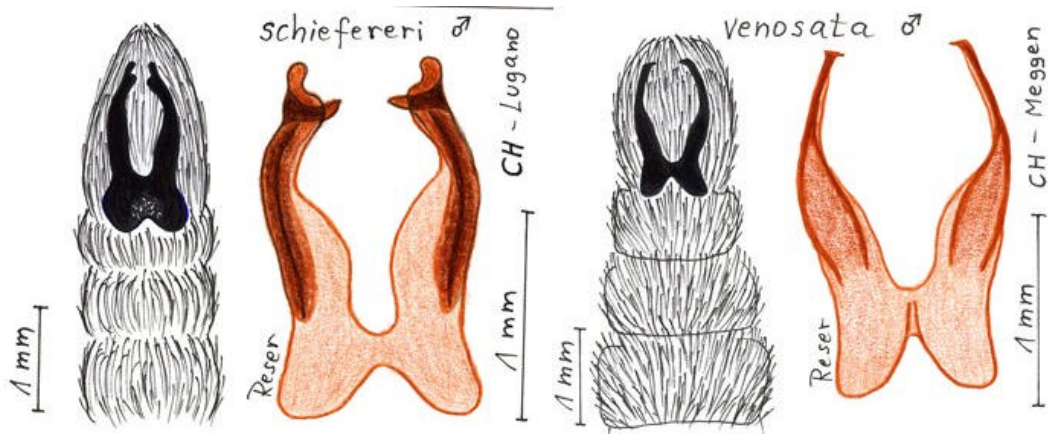


Fig. 21: Parts of male genitalia (lower end of abdomen and sternite with hairs removed as well as prepared sternite) of *Eupithecia schiefereri* (CH Lugano, canton Ticino, gen.prep.Nr. REZBANYAI-RESER 28509) and *venosata* (CH Meggen, canton Luzern, gen.prep.Nr. REZBANYAI-RESER 28517)

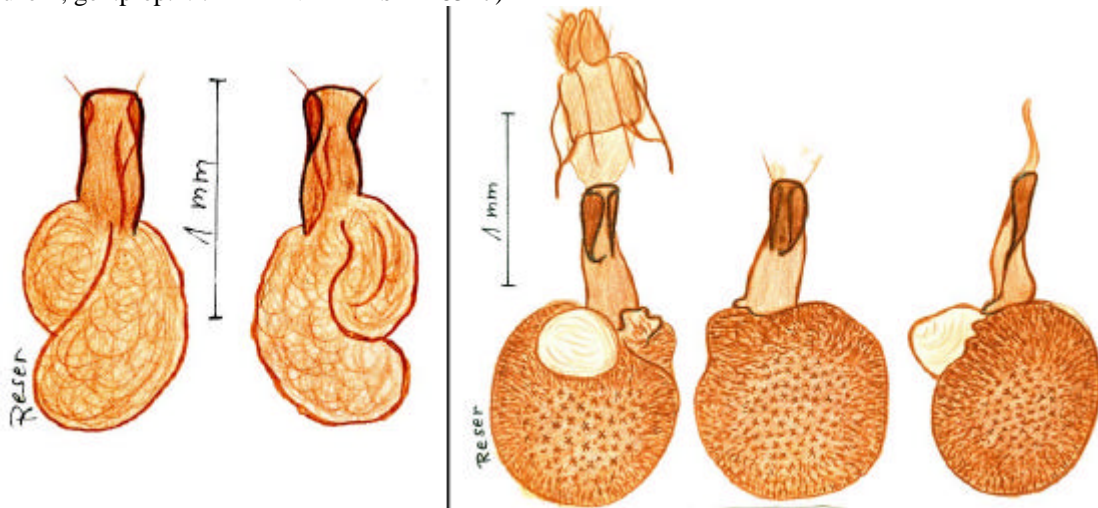


Fig. 22: Parts of female genitalia (bursa, ductus bursae) of *Eupithecia schiefereri* (CH Ascona, canton Ticino, gen.prep.Nr. REZBANYAI-RESER 4779) and *venosata* (CH Meggen, canton Luzern, gen.prep.Nr. REZBANYAI-RESER 7357) looked at from several sides.

### 5) *Lithostege griseata* (DENIS & SCHIFFERMÜLLER, 1775) (Geometridae) (correction to the 1.EMN)

3. European Moth Nights 2006: Few records from Hungary and of the Republic of Serbia.

This special species (see figure 23) has also been reported in the 1.EMN, namely from France (Normandy, Manche, Montmartin en Graignes, Marais de Cap). It was discovered only later that it had been mistaken as „*Timandra griseata*“ (= *comae*). This French record of *griseata* is therefore to be regarded invalid, respectively, it belongs to *Timandra comae*. From the 3.EMN now, correct records of *Lithostege griseata* are at hand also.

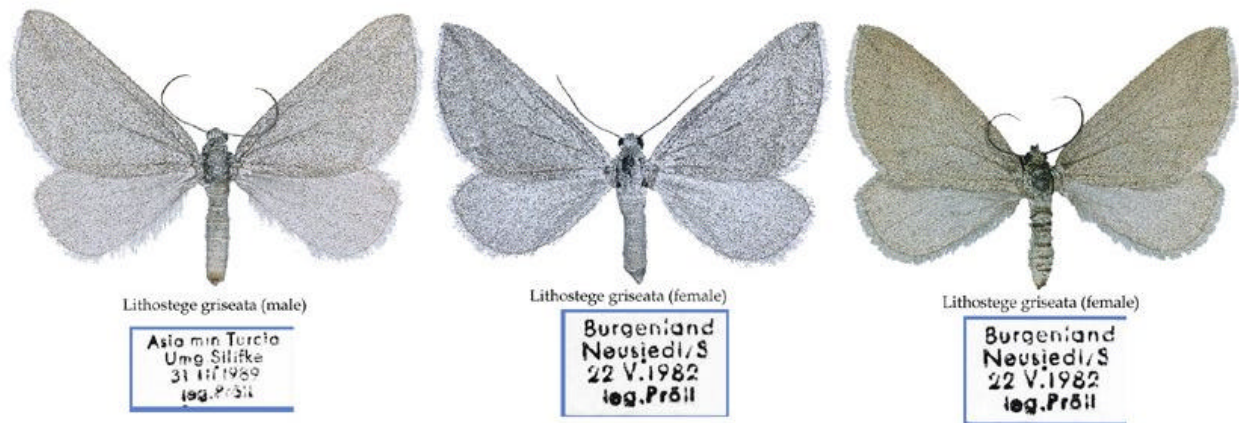


Fig. 23: *Lithostege griseata* (DENIS & SCHIFFERMÜLLER, 1775) (photo: H. RÖTSCHKE: The Geometrids of Central Europe)

### 6) *Orthosia schmidti* (DIÓSZEGHY, 1935) (sensu K & R 1996) (Noctuidae):

#### A Ponto-Mediterranean speciality of Europe, the „Hungarian Quaker”, *Dioszeghyana schmidti* (DIÓSZEGHY, 1935) (formerly *Orthosia schmidti*) (Lepidoptera: Noctuidae).

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#### 3. European Moth Nights:

Numerous specimens of five localities in North Hungary.

The „Hungarian Quaker” belongs to the family Noctuidae, therein to the subfamily Hadeninae, to the tribe Orthosiini and, according to present-day belief, to the genus *Dioszeghyana* HREBLAY, 1993 (in RÁKOSY 1996 mistakenly „*Dioszeghyela*”), though, even today, it is sometimes mentioned as an *Orthosia*-species and „*Dioszeghyana*” occurs only as a subgenus. Its species name has long been written as „*schmidti*” (so, e.g. also in the European catalogue of KARSHOLT & RAZOWSKI 1996, for that reason it is quoted like that in the EMN-documents too). But the valid spelling of today is „*schmidtii*”, as stated in the original description, and such corrections („emendations”) are to be avoided, according to the newest edition of the International Code of Zoological Nomenclature. – The species has been reported only from Hungary at the occasion of the 3.EMN, where it belongs amongst the most valuable representatives of the fauna. Zoogeographically it is a very important faunal flagship element, a western Palearctic, Ponto-Mediterranean species (VARGA et al., 2005), obviously a postglacial relict in the Carpathian Basin. It was described from the surroundings of „Borosjeno” and „Temesvár” (respectively Ineu and Timisoara today, both in Romania) and has since long been regarded as endemic to the Carpathian Basin. But it has since been found also in the north-eastern parts of the Balkans and even in Asia Minor some decades ago (HACKER & SCHREIER 1989, VARGA, 1989). It is therefore an indicator species of the loess steppe forests, dominated by Tataric steppe-maple and oaks and for that reason one of the most typical and rarest nocturnal moths of the Pannonic biogeographical region. It is under special protection in Hungary, is listed in appendixes 2 and 3 of „Natura 2000” and ranked as an actually endangered species in the Hungarian „Vörös Könyv” („red book”).

**Taxonomic situation:** The species had originally been described by DIÓSZEGHY 1935 as a representative of the genus *Monima* HÜBNER, [1821]. It was later believed to belong to the genus *Orthosia* OCHSENHEIMER, 1816, then finally, it has been placed in the genus *Dioszeghyana* HREBLAY, 1993 (the subgenus name „*Parorthosia* RÁKOSY, 1991” is a „nomen nudum”, since it has not been published with this year, and the subgenus name „*Parorthosia* RÁKOSY, 1996” is a junior synonym, both are invalid therefore). Since the species is still listed as *Orthosia* in the European catalogue of KARSHOLT & RAZOWSKI 1996 and we follow this system on principle, the name *Dioszeghyana* has not been used by us in the different EMN-tables. But this does not mean that we doubt that this name is valid as a genus name for this species. – The external morphologic characters, life history and phenology of *D.schmidtii* are very similar to those of *Orthosia*-species, but their genitalia differ distinctly in some details. This is an indication that it must be placed in another genus, indicating that *Dioszeghyana* represents a distinctly separate line of development within the *Orthosia*-relationship (RONKAY & RONKAY, 2006). – BECK has an opposite opinion, based on a comparative investigation of



larvae, which requires consideration (see BECK 2000, in which „*schmidtii*“ is placed in the genus *Orthosia* and mistakenly in its subgenus „*Parorthosia*“, and a larva is described and illustrated from Turkey, not of the nominate form from Europe!). A separate genus for „*O.schmidtii*“ is not necessary, in his opinion, because of the basically identical ornamentation to that in *O.miniosa* and *O.munda* (and here he refers to a publication of HREBLAY 1993). But, it has to be investigated whether this is correct for the three respective taxa. – It can be seen, how problematic and ambiguous taxonomic work based on comparative morphology can be, since not a single feature of an organism can be called the „most important“, not even those of the genitalia! – The nominate form lives in the European part of the area of distribution, in the Carpathian-Basin as well. In Asia Minor (Turkey) flies the subspecies *D. schmidtii pinkeri* HREBLAY & VARGA, 1993. This differs from the nominate form in its pink tinted, pale-brown ground colour, by a less pronounced pattern and by some morphologic characters of the male genitalia (RONKAY & RONKAY, 2006).

**External morphology:** The forewing is rather short and broad, the ground colour is monotonously dark ochre-brown, very fine ochre-yellow powdered. The markings (orbicular and reniform stigmata) are thin yellowish-brown bordered, both filled out identically with the ground colour. Of the horizontal lines only the wavy line is present. Fringes are monotonously dark ochre-brown. The lunar spot of the hindwings is faint. The marking elements of the forewings are only weakly present on the underside. – The most important external characters of differentiation between *Orthosia cruda* D. & SCH. and *D.schmidtii*, are: the forewing of *D.schmidtii* is less elongate than in *O.cruda*; orbicular and reniform stigmata are much brighter (yellowish-brown) bordered, on the inside they are not or only little darker than the ground colour. The reniform stigma in *O.cruda* is much darker filled in as the ground colour, the orbicular stigma is missing or only visible as a pale shadow. The wavy line in *D.schmidtii* is light yellowish-brown (exactly like the margin of the orbicular and reniform stigmata), with a slightly zigzag course. The external and internal lines, which border the central field, are almost always missing in *O.cruda* and in *D.schmidtii*.

**Distribution:** The relatively scarcely distributed *D.schmidtii* has long been taken for an endemic of the Carpathian Basin (Pannonic biogeographical region). It occurs in Hungary, in the southern part of Slovakia and in Romania (but only in the west of the country, in the „Banat“ – RÁKOSY 1996), but it is, apart of this, also known from Bulgaria, from North-Greece and from Turkey (RONKAY et al., 2001). – It is typical of its distribution in Hungary that most records come from the lower areas of the southern slopes of the Trans-Danube and north Hungarian highlands, furthermore of the southeast areas of the great Hungarian plain (surroundings of „Körös“-rivers). The number of known localities of the species has doubled due to intensive studies in Hungary in the last four to five years (KOROMPAI & KOZMA, 2004).

**Habitat:** It can be said in general, that *D.schmidtii* is an indicator species of the xerothermic loess steppe-forests (*Aceri tatarico - Quercetum*), formed by Tataric steppe-maple and oaks. It occurs most frequently in this habitat, but it lives in addition also in other natural, well preserved, forest-steppe-oak forests of the plain, of hill-landscapes and foothills of mountains. – It has been established in the last years, by intensive research, that ecological demands of the species are much wider than assumed so far. Most habitats of the species are in the southern area at the foothills of the Mátra- and Bükk-Mountains, in managed forest, dominated the by Turkey-oak (*Quercus cerris*), in whose undergrowth the main food plants of the species, the Tataric steppe-maple (*Acer tataricum*) or the common maple (*Acer campestre*) can be found. These maple species often grow only on the edge of such forests, which is sufficient for *D.schmidtii*. This knowledge is very important with respect to the protection of the species, since by protection of the edges of such forests, utilized otherwise, the preservation of *schmidtii*-populations may possibly be ensured (KOROMPAI, 2006). According to KÖNIG 1971 (description of breeding and of first instars) the species however lives on oak (*Quercus*) too. Cannibalism happens amongst the larvae, according to KÖNIG, so they should possible be kept separate!

**Phenology:** The imagos fly in years with average weather from the beginning of April to the beginning of May. The period of flight begins by the end of March, in case of an early spring. Some delay in appearance at some higher levels. One can find newly hatched females in such habitats still at the beginning of May. It can be said on account of results of investigations in Hungary of the last years, that the beginning of the main period of flight of the species is congruent with the beginning of the flowering time of blackthorn (*Prunus spinosa*). The peak of the main period of flight occurs when the blackthorn is still in flower, but also when faded flowers are present and the hawthorn (*Crataegus*) only shows green buds of flowers, but the wild pear tree (*Pyrus pyraster*) is already in flower (KOROMPAI, 2006). The time of abundance extends in individual habitats c. 15 to 20 days. The moths are active at night, first specimens appearing at the light about half an hour after it gets dark, and the activity of flight lasts till late into the night. They are strongly attracted by mercury vaporous light (HQL) and they are rarely attracted by bait.

**Acknowledgment:** The author would like to thank Ladislaus REZBANYAI-RESER, who has supplemented the manuscript of important observations from the professional literature and László RONKAY for information in connection with the nomenclature of the species.

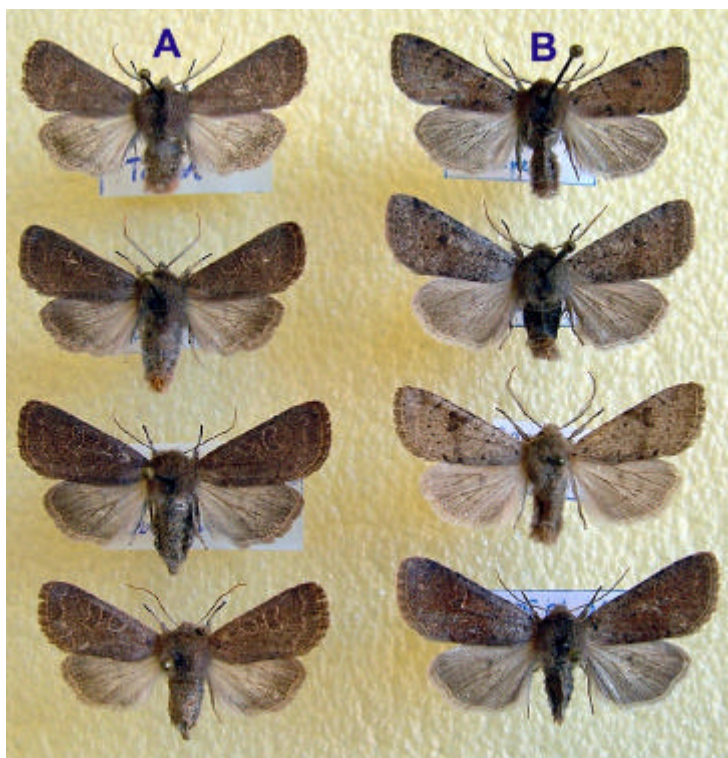


Fig. 24: *Dioszeghyana schmidtii* (DIÓSZEGHY, 1935) (A) and *Orthosia cruda* (DENIS & SCHIFFERMÜLLER, 1775) (B) from Hungary (photo: Tamás KOROMPAI).

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### 7) *Mythimna sicula* (TREITSCHKE, 1835) and *scirpi* (DUPONCHEL, 1836) (Noctuidae):

#### Opinion to the taxonomic status of *Mythimna sicula* (TREITSCHKE, 1835) and *Mythimna sicula scirpi* (DUPONCHEL, 1836) bona ssp., stat.rev. (Lepidoptera: Noctuidae).

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#### 3. European Moth Nights 2006:

*M.sicula sicula*: Several specimens from the countries Spain, San Marino, Italy, Malta and Croatia.

*M.sicula scirpi*: Numerous specimens from the countries Switzerland, Spain, France and Portugal.

It has been debated for decades whether *Mythimna sicula* and *scirpi* are two separate species or two subspecies of the same species. But they are always listed as separate species, partly as a precaution only, in important lepidopterous treatises (e.g. SEITZ 1938, KOCH 1958 and 1984, FORSTER & WOHLFAHRT 1971, BERIO 1985, FIBIGER & HACKER 1991, FIBIGER 1993, RAINERI & ZILLI 1995, RÁKOSY 1996, KARSHOLT & RAZOWSKI 1996, NOWACKI 1998, FAJCIK 1998,

BECK 2000). – BECK describes, curiously enough, the larvae of *sicula* and *scirpi* very thoroughly, with good illustrations, yet no word is written about the taxonomic status of the two of them, though the author doesn't flinch from stating with such opinions elsewhere. In any case, he lists both taxa as separate species and obvious characters of differentiation of *sicula* and *scirpi* are also mentioned in a key to the larvae of the subgenus „*Sablia* SUKHAREVA, 1973“. It is thus evident, that the author is convinced about their status as good.

In some treatises (e.g. CALLE 1976, LERAUT 1980 and 1996) however, *scirpi* is still a subspecies of *sicula* and in some of the above mentioned publications it is stated, that the taxonomic status of *scirpi* has not been sufficiently clarified.

Yet, *scirpi* has officially been reduced recently to an „infra-subspecific form“ of *sicula* (thus to a simple „synonym“ (HACKER, RONKAY, HREBLAY 2002, see also FIBIGER & HACKER 2005), following an earlier opinion by BOURSIN. But this is an error, for sure. This should be corrected here, so as not to hinder further research on the taxon *scirpi*. Publications do now occur occasionally, that follow this „official“ opinion, in which *scirpi* is simply called „*sicula*“ without any further comment on what is clearly a taxonomic error. In the internet too, one can find distinct imagines of *scirpi* illustrated widely under the name „*sicula*“.

In CALLE 1976, where *scirpi* is placed as a subspecies of *sicula*, it is unclear whether both are reported from Spain (what would correspond to reality), or the „ssp.*scirpi*“ only. The specimen figured as „*sicula* ssp.*scirpi*“ (plate 17/215) from Moscoso (Pontevedra) though, is a distinct „*sicula sicula*“, fig.215f (called „*sicula* ssp.*scirpi* f.*montium*“) is a typical *scirpi*, but not its darker f.*montium*, and the specimen in fig.215d (called „*sicula* ssp.*scirpi* f.*dactylidis*“) most probably is identified correctly, or is an intermediate form between *sicula* and *scirpi* (see below), since obviously both of them occur in the vicinity of Moscoso. This situation might cause total confusion with Iberian recorders and possibly with other lepidopterists too.

It should be made clear here, that distribution reports about *sicula* and *scirpi* in FAJCIK 1998 (p.128) are in part fundamentally wrong. It is stated about *sicula* that it is a „south-western species“ (but it is Holo- or Ponto-Mediterranean), further „in southwest Central Europe“ (it is missing there totally), as well as „known in Germany and Switzerland“ (*sicula* is totally unknown from Switzerland, but does occur in „Franconia Switzerland“ in Central Germany!). For *scirpi* it is stated that it is „not yet in Switzerland“, though it is widely distributed in suitable habitats in this country and common in places.

The typical forms of the imagines of both taxa can clearly be distinguished in habitus:

- *sicula* (siculus = from Sicily) (type locality Palermo, Sicily): forewings more pointed, narrower, ground colour shining bright ochre-yellow to white-yellow, a more or less distinct dark, long streak from the whitish discal spot towards the margin; also directed basally a dark central streak below the brightened central vein. Hindwings bright, sometimes with slightly darkened marginal field, veins bright or only very little darkened (the hindwings of the German and Belgian forms are darker, similar to *scirpi*).
- *scirpi* (Scirpus = club-rush, food plant of larva) (type locality Montpellier, South France): forewings more rounded, deeper, ground colour pale brown-yellow, more or less greyish powdered, with a submarginal row of dark spots. The whitish discal spot has only a dark spot immediately adjacent to it basally. Hindwings more or less darkened with still darker veins.

The assessment that only very slight or inconstant differences were to be found in the male genitalia of *sicula* and *scirpi*, with no differences at all in the female genitalia, cannot be taken as unmistakable proof of taxonomic „similarity“. Genitalia could also be very similar to each other in case of two separate species, or look „identical“, but could vary evidently within the same species. Genitalia could also be almost identical in two subspecies of the same species or be distinctly different. A subspecies name should not be reduced to a synonym, based on morphology of genitalia alone. – Thus it is irrelevant, whether the differences in the male genitalia of *sicula* and *scirpi* proposed by BERIO 1985 are present. This circumstance would perhaps make determination more easy, if it were true, but would not be specific proof of genetic isolation on the species level.

The existence of seemingly intermediate forms is no proof of that the two taxa are „identical“ (=synonym), looked at genetically, when this phenomenon is taken out of context. Intermediate forms may be sterile or exceptionally even partly fertile specific hybrids or fertile hybrids of subspecies without restriction. It can only then be assumed, that two different looking taxa are genetically „identical“, when their distribution areas cover each other completely or in part and when such seemingly intermediate forms do occur widely therein (there are numerous examples to this too).

But this is not true for the taxa *sicula* and *scirpi*. While *scirpi* is missing in the actual Mediterranean area in many places where *sicula* is native, only *scirpi* occurs almost in the whole area of the Alps, but most likely also in Central- and North Spain, as well as in northern Portugal and in the greater part of France. Anyway, a „true“ *sicula* has never been found, to our knowledge, in the whole of Switzerland (Ticino and Valais included), where *scirpi* is widespread in suitable habitats and in places common, or in North and South Tyrol. So, if *scirpi* occurs alone over such a considerable range, it can't be a synonym of *sicula*.

But there is a zone of sympatry or close vicinity at least in the northern Mediterranean area (South Portugal, South Spain, South France, South and Central Italy, valleys of the southeast Alps, in Carinthia and in northeast Italy, Dalmatia, also Albania, Greece and Bulgaria, eventually). Also intermediates occur in such areas, which must be regarded either as species hybrids, or more likely as hybrids of subspecies (fig. 25-26). But, whether a hybrid between *sicula* and *scirpi* is really possible, and if such offspring is fertile or sterile, has never been investigated, as far as we know.

A further indication, that *scirpi* is genetically not „identical“ with *sicula* is the fact, that they have developed separate geographic and infra-subspecific forms also. This might almost even indicate, that both could still be distinct species, or two semi-species at least. So *scirpi* e.g., has very strongly brightened forms, frequently totally without markings, first of all in Asia Minor and in Northwest Africa it is distinctly pink in Sardinia; in Belgium and in Central Germany it is more or less strongly cloudy. – In *sicula* occurs a cloudy form, first of all, in the Valais (Switzerland), where it is predominant. The same form is occasionally located also in South Switzerland (Ticino) and in South Tyrol (in South Tyrol even still more pronounced). The assertion in FORSTER & WOHLFAHRT 1971 is not correct, that it is „the form of the south valleys of the Alps“, since many typical brighter *scirpi* are found, as well in the Ticino as also in South Tyrol. – An almost monotonous, but slightly redder form, e.g. lives in some areas of South France. It is to be located sometimes in collections, called „*sicula*“, but it probably has nothing to do with *sicula* (the forewing is much broader, stocky, the hindwing darker).

But, the taxon *scirpi* should not just be relegated as a synonym. *Sicula* and *scirpi* should still be kept separate for the time being in faunal investigation and be correctly determined and registered, so that attention could always still be paid to their geographic or most important individual forms, or to possible intermediate forms also.

**Summary:** *M.sicula* and *scirpi* show distinct differences in habitus and partially, areas of distribution, thus, they must definitely be treated as separate taxa for the time being. Since both have genetically homogenous populations in larger areas, but also fly together in broad zones and obviously create intermediate forms there (hybrids?), two subspecies of the same species are probably involved, but not two genetically „identical“ infra-subspecific forms („synonyms“). But correct genetic proof in this area (e.g. cross-breeding or comparisons of gene sequences) is still not available.

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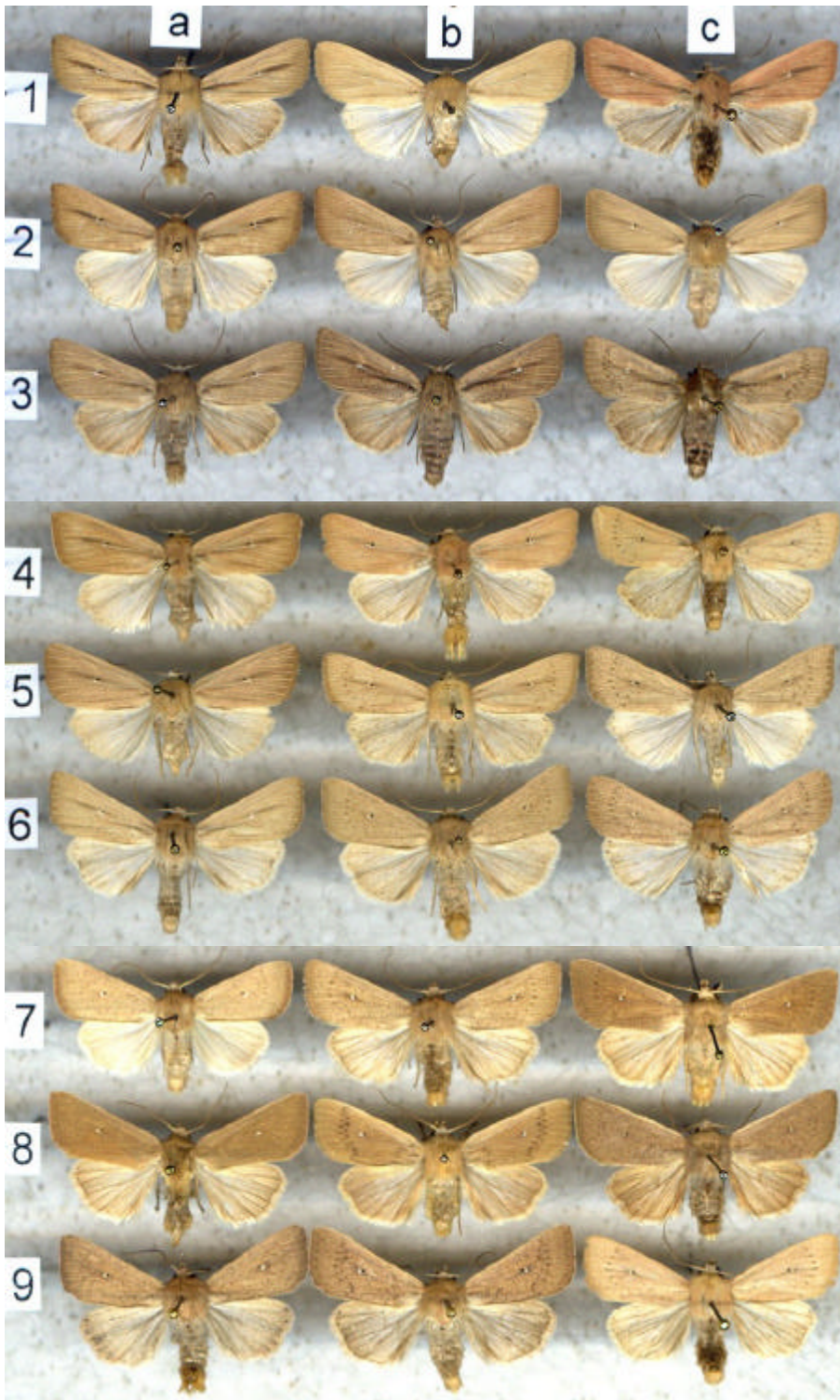


Fig. 25: A selection of both taxa *M.sicula* and *scirpi* (coll. Zoological Collection of the Bavarian State Munich and Nature-Museum Luzern).

1a: *sicula*, IT Sicily, Palermo; 1b: *sicula* f., IT Sicily; 1c: *sicula* f., IT Sardinia; 2a: *sicula*, Marocco, Mogador; 2b: *sicula* f., Marocco, El Ksiba; 2c: *sicula*, TR Asia minor, Çe-bze; 3a-b: *sicula bavarica*, DE Bavaria, Wallersberg; 3c: *sicula bavarica* x *scirpi*?, Bavaria, Wallersberg.

4a-b: *sicula*, GR Peloponnese, Olympia; 4c: *scirpi*, GR Peloponnese, Pyrgos; 5a: *sicula*, IT Roma; 5b-c: *sicula* x *scirpi*?, IT Tivoli; 6a: *sicula*, HR Istria, Rovinj; 6b-c: *scirpi*, HR Istria, Rovinj.

7a-b: *scirpi*, IT Tyrol merid.; 7c: *scirpi* f., IT Tyrol merid.; 8a: *scirpi* f., FR Provence, Digne; 8b: *scirpi* f., DE Thuringia, Blankenburg; 8c: *scirpi* f., DE Hesse, Kassel; 9a: *scirpi* f., CH Ticino, Valle Onsernone; 9b: *scirpi* f., CH Ticino, Dalpe; 9c: *scirpi*, CH Ticino, Lavorgo.





Fig. 26: A selection of an obvious *sicula/scirpi* mixed population near Bologna, Central Italy (leg. Claudio FLAMIGNI, Bologna).

### CORRECTIONS TO EMN-DATA, REPORTED BEFORE

In projects as the EMN, that involve large amounts of data, it is probable, that some reported records, and those already published, are found to be erroneous later. Such corrections may never reach EMN-HQ, but reported mistakes are also difficult to eradicate effectively. In the tables already published, or numbers of species, no alteration is actually allowed, not even in spite of the fact, that the internet allows „actualisation“ at any time.

We would still like to register cases reported to us, at least briefly. Grave mistakes (as e.g. the wrong record above on *Lithostege griseata* from France at the 1.EMN 2004) should always be expressly referred to. All participants are being asked therefore, **to let EMN-HQ know of critical mistakes, discovered afterwards.**

New data which were forgotten, but reported after the deadline can't be considered under any circumstances.

There is another correction to the 2.EMN 2005: *Mythimna conigera* was mistakenly reported from the Republic of San Marino, which is not included in the list, delivered by Claudio FLAMIGNI (Bologna). This species has therefore not been recorded from San Marino so far. The species does occur in the neighbouring Italian Romagna and thus its occurrence in San Marino cannot to be excluded.

### „EMN“ AND PROTECTION OF NOCTURNAL MOTHS

This event is invented to attract wide-scale attention to nocturnal moths. We want to make the general public aware of the very existence of these creatures and their large scale presence in natural ecosystems. Several participants were accompanied on their collecting by friends and acquaintances interested in nocturnal moths and their world. This possibility should be exploited even more in the future. If that is realized, a concrete report on that achievement should be sent to EMN HQ each time.

With regard to the most important remarks and suggestions about measures for protection of nocturnal moths, we refer to the texts in the “scientific evaluation” of the 1.EMN 2004.

Smaller to larger meetings of lepidopterists and other people interested have been organized at the occasion of the 3.EMN, as far as we know, in the following countries particularly: Finland, Germany, Great Britain, San Marino, Switzerland, Spain (Catalonia), Romania and Hungary. Reports in newspapers have been published about the EMN in some



places as well, and it has been reported by radio or by television. All of this has certainly contributed something, once again, to increase understanding and affection of the public towards nocturnal moths and at the same time also to nature as a whole.

## PLANS CONCERNING THE FUTURE OF “EMN”

It is intended to carry on EMN at different periods of time once a year in the future. For the next four events the following dates have been chosen (we ask all interested persons to make a note in the calendar already now!):

<b>4.EMN</b>	<b>5.EMN</b>	<b>6.EMN</b>	<b>7.EMN</b>
<b>11.-15. 10. 2007</b>	<b>24.-28. 7. 2008</b>	<b>21.-25. 5. 2009</b>	<b>9.-13. 9. 2010</b>

The following factors have been considered important for these dates:

- 1) a suitably good phase of the moon for light-trapping,
- 2) at a weekend (Thursday-Friday-Saturday-Sunday-Monday),
- 3) periods of time with distinctly different communities of nocturnal moths to allow a certain change and to increase the EMN total list of species („EMN-Checklist“) more effectively: after two events in summer (beginning of July, mid-August, respectively) and after the EMN days in spring (end of April), now in 2007 first in autumn, than again in summer in 2008 and again in spring in 2009 and late summer in 2010.

## NOCTURNAL MOTH COLLECTORS! - WHERE ARE YOU? - (FOR THE THIRD TIME!)

Although very many participants (392) could be counted again at the 3.EMN, we have to repeat this provocative question once again. On the one hand, the high number is somewhat misleading, as quite many of the participants could not be taken as “real” lepidopterists (though the participation of “real” lepidopterists has gradually become higher in the course of the three events). It is quite certain on the other hand that many active European experts on moths have perhaps never learned of the EMN at all, or stayed away for other reasons.

We herewith refer to the remarks made in the same chapter of the “scientific evaluation” of the 1.EMN, and do hope that the number of „real“ lepidopterists among the EMN-participants will somewhat rise in the future. This is addressed especially to lepidopterists of such countries from which not a single participant has been registered so far.

The higher the number of participants and of recorded data, the more work is to be expected at EMN-Headquarters and the more laborious evaluation will have to be carried out. But this event for the whole of Europe, carried out only once a year, will only be really interesting, exciting and useful with many participants, localities and recorded data.

## APPEAL

We invite all European nocturnal moth collectors and specialists who read these lines:

- 1) to take an active part in the planned events,
- 2) to fill in the data, as completely as possible, in the given tables,
- 3) to inform the colleagues they know of EMN in time, and
- 4) to try and convince other colleagues of the importance of participation in this event.

## THE MOST IMPORTANT ADDRESSES

Here we list the most important addresses of both centres of „European Moth Nights“, where different kinds of information may be found or ordered:

„European Moth Nights / Europäische Nachtfalternächte“

<http://euromothnights.uw.hu> (NEW!)

<http://www.european-moth-nights.ch.vu> (OLD!)

„Szalkay József Magyar Lepkészetű Egyesület“ = „Szalkay József Lepidopterological Society of Hungary“

<http://lepidoptera.fw.hu>

Ladislav RESER (REZBANYAI)

Entomological Society Luzern, Nature-Museum Luzern, Kaserneplatz 6, CH-6003 Luzern (Switzerland)

[ladislav.reser@lu.ch](mailto:ladislav.reser@lu.ch)

[http://www.geocities.com/reser\\_entomologie](http://www.geocities.com/reser_entomologie)

Mihály KÁDÁR

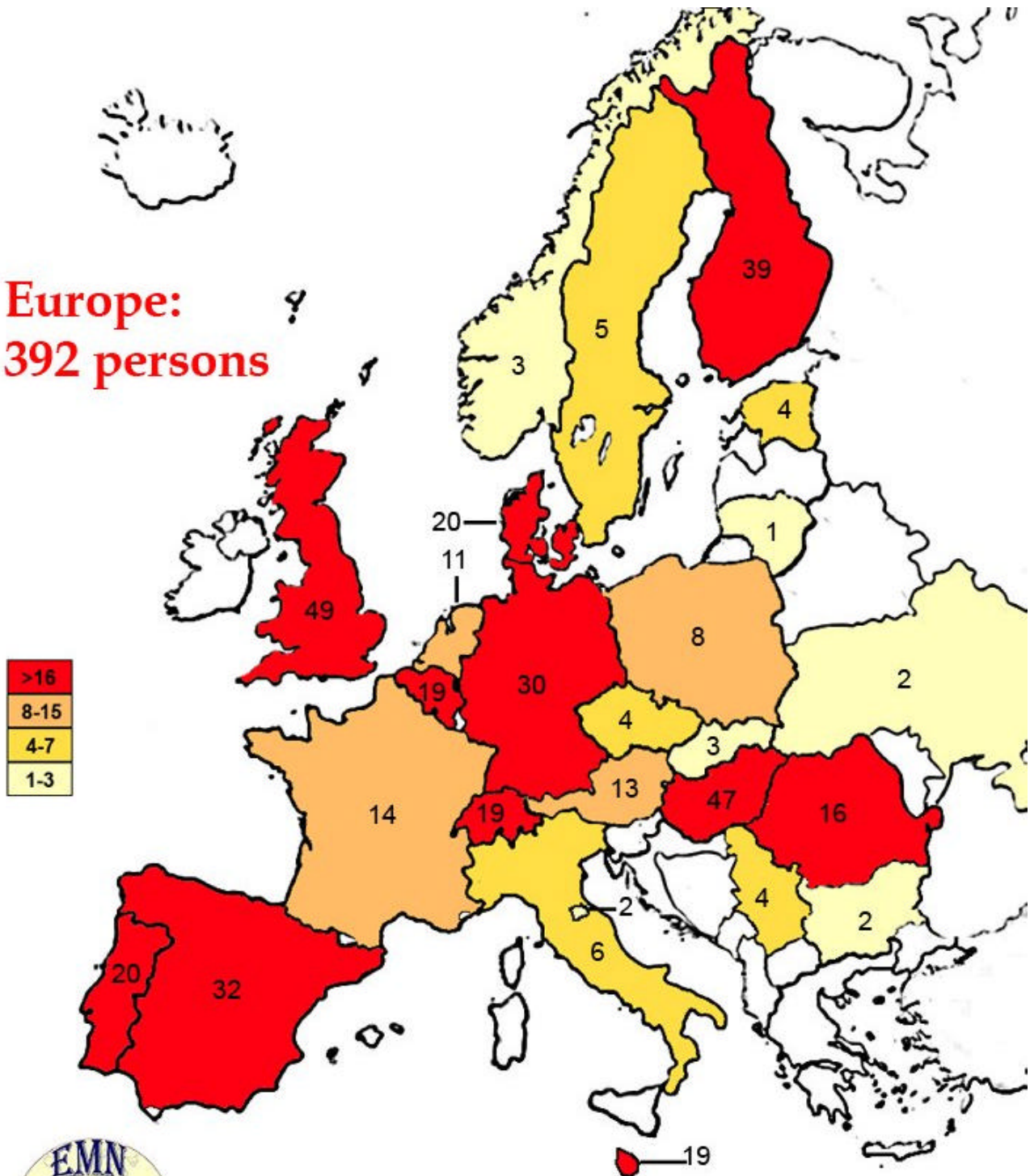
Zoványi J. u. 19/B/9, H-4033 Debrecen (Hungary)

[inachis@t-online.hu](mailto:inachis@t-online.hu)



Map 1: The number of participants of the „3<sup>rd</sup> European Moth Nights 2006” by countries.

Europe:  
392 persons

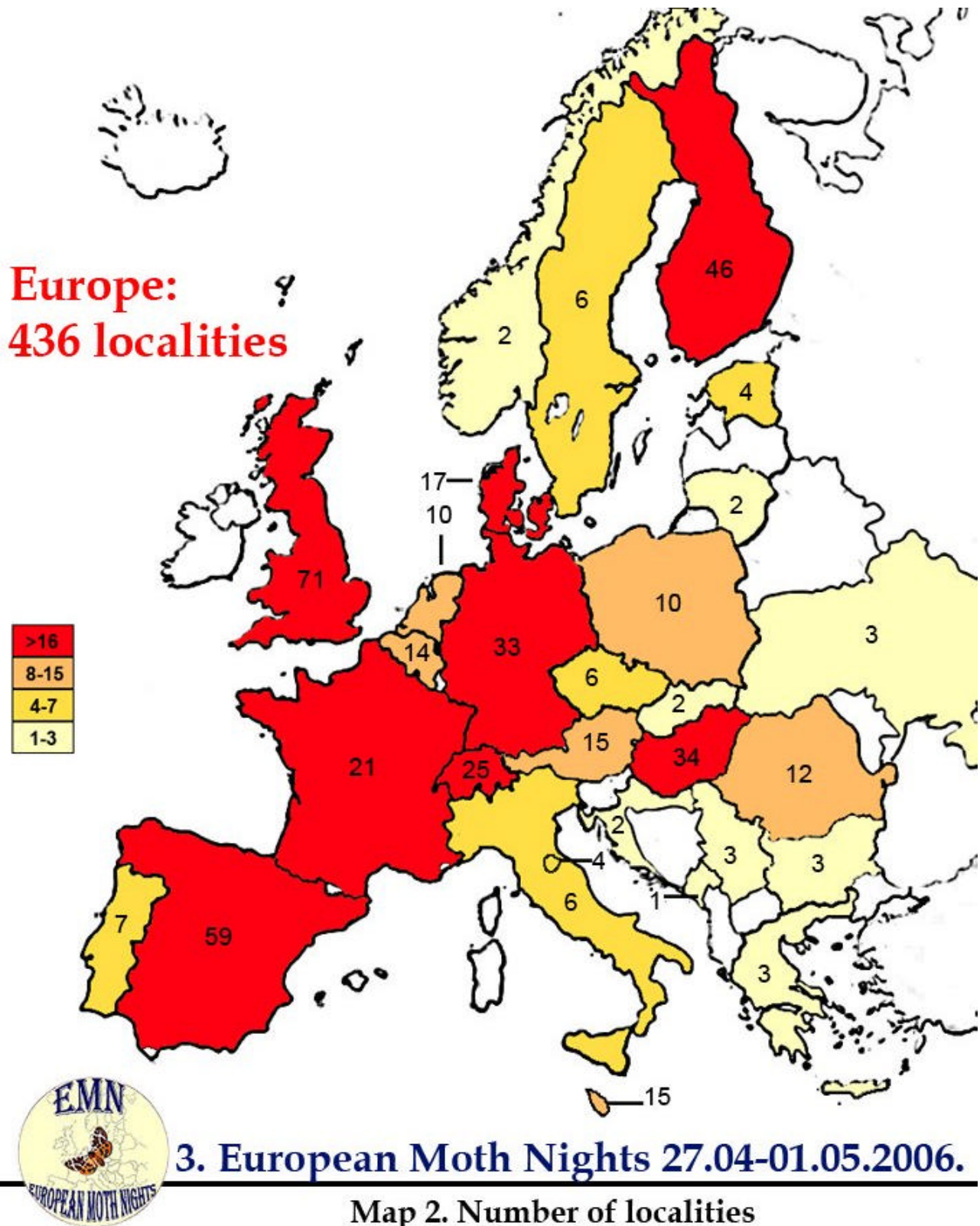


**3. European Moth Nights 27.04-01.05.2007.**

Map 1. Number of persons



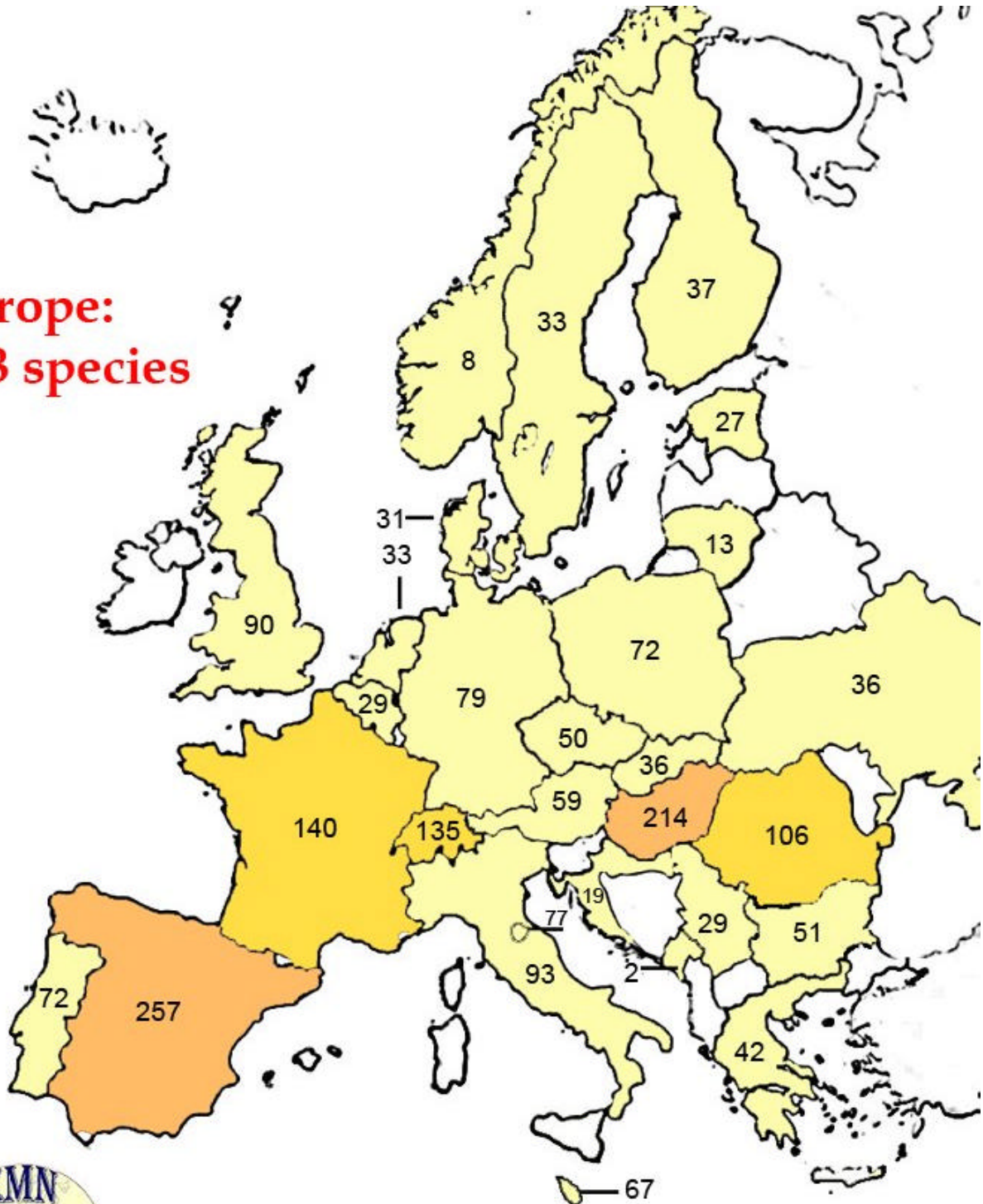
Map 2: The number of localities by countries reported in course of the „3<sup>rd</sup> European Moth Nights 2006”.





Map 3: The number of Macrolepidoptera species reported from each country in the course of the „3<sup>rd</sup> European Moth Nights 2006”.

**Europe:  
553 species**



**3. European Moth Nights 27.04-01.05.2007.**

Map 3. Number of species