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Annotated catalogue of the Nepticulidae and Opostegidae of the Iberian Peninsula (Lepidoptera: Nepticuloidea)

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Abstract

The Nepticulidae and Opostegidae of mainland Spain (including the Balearic Islands), Portugal, Gibraltar and Andorra are listed. All previous literature records are given, and interpreted where needed. Detailed records are given for material collected and /or studied by us. In total 102 Nepticulidae and 5 Opostegidae are listed. *Stigmella nivenburgensis* (Preissecker, 1942), *S. rhamnella* (Herrich-Schäffer, 1860), *S. crenulatae* (Klimesch, 1975) (on new host *Rhamnus lycioides*), *S. sorbi* (Stainton, 1861), *Trifurcula (Trifurcula) beirnei* Puplesis, 1984, *Ectoedemia (Fomoria) euphorbiella* (Stainton, 1869) (on three new hosts in the genus *Euphorbia*) and *E. (E.) subbimaculella* (Haworth, 1828) are new for Spain, and *Stigmella rhamnella* (Herrich-Schäffer, 1860), *S. crenulatae* (Klimesch, 1975), *S. paradoxa* (Frey, 1858), *S. crataegella* (Klimesch, 1936), *S. hybnerella* (Hübner, 1813), *S. incognitella* (Herrich-Schäffer, 1855), *Trifurcula (Glaucolepis) rosmarinella* (Chrétien, 1914), *T. (Levarchama) cryptella* (Stainton, 1856), *T. (T.) squamatella* (Stainton, 1849), *Ectoedemia (Zimmermannia) atrifrontella* (Stainton, 1851), *E. (Z.) longicaudella* Klimesch, 1953*, E. (Z.) liebwerdella* (Zimmermann, 1940), *E. (Z.) hispanica* Van Nieukerken, 1985, *E. (E.) caradjai* (Groschke, 1944), *E. (E.) albifasciella* (Heinemann, 1871) *E. (E.) pubescivora* (Weber, 1938) and *E. (E.) heringi* (Toll, 1934) are new for Portugal. *Stigmella crenulatae* is also new for Europe. *Stigmella ilicifoliella* (Mendes, 1918) and *Acalyptris minimella* (Rebel, 1924) are the first Nepticulidae recorded for resp. Andorra and Gibraltar. *Stigmella assimilella* (Zeller, 1848), *S. vimineticola* (Frey, 1856) and *S. obliquella* (Heinemann, 1862) are confirmed as Spanish. Previous records of *Stigmella viscerella* and *S. lemniscella* could not be confirmed and are regarded as doubtful. *Stigmella ruficapitella* (Haworth) and *Trifurcula pallidella* (Duponchel) are removed from the Portuguese and Spanish lists, and *Ectoedemia groschkei* (Skala) is shown to have been incorrectly cited from Spain. For many species we provide the first detailed records, since they were previously only listed in checklists. Records are summarized per provinces, the highest recorded number of species is 46 for Teruel in Spain, and 34 for the Algarve in Portugal. We illustrate leafmines and genitalia of several rare species of Nepticulidae. The male and female genitalia of *Opostegoides menthinella* (Mann, 1855) and *Pseudopostega chalcopepla* (Walsingham, 1908) are illustrated for the first time; *Opostegoides menthinella* and *Pseudopostega chalcopepla* are also recorded from Tunisia for the first time. In addition a key to the six species of European Opostegidae is provided.
KEY WORDS: Lepidoptera, Nepticulidae, Opostegidae, catalogue, distribution, new records, new hostplants, Iberian Peninsula

Catálogo anotado de los Nepticulidae y Opostegidae de la Península Ibérica (Lepidoptera: Nepticuloidea)

Resumen

Se citan los Nepticulidae y Opostegidae de la Península Ibérica, de España (incluyendo las islas Baleares), Portugal, Gibraltar y Andorra. Se realiza una recopilación de todas las citas bibliográficas anteriores y se interpretan si se considera necesario. Se aportan datos detallados del material recogido y/o estudiado por los autores. Se citan en total 102 Nepticulidae y 5 Opostegidae. *Stigmella nivenburgensis* (Preissecker, 1942), *S. rhamnella* (Herrich-Schäffer, 1860), *S. crenulatae* (Klimesch, 1975) (sobre una nueva planta nutricia, *Rhamnus lycioides*), *S. sorbi* (Stainton,

1861), *Trifurcula (Trifurcula) beirnei* Puplesis, 1984, *Ectoedemia (Fomoria) euphorbiella* (Stainton, 1869) (sobre tres nuevas plantas nutricias del género *Euphorbia*) y *E. (E.) subbimaculella* (Haworth, 1828) son citas nuevas para España, y *Stigmella rhamnella* (Herrich-Schäffer, 1860), *S. crenulatae* (Klimesch, 1975), *S. paradoxa* (Frey, 1858), *S. crataegella* (Klimesch, 1936), *S. hybnerella* (Hübner, 1813), *S. incognitella* (Herrich-Schäffer, 1855), *Trifurcula (Glaucolepis) rosmarinella* (Chrétien, 1914), *T. (Levarchama) cryptella* (Stainton, 1856), *T. (T.) squamatella* (Stainton, 1849), *Ectoedemia (Zimmermannia) atrifrontella* (Stainton, 1851), *E. (Z.) longicaudella* Klimesch, 1953*, E. (Z.) liebwerdella* (Zimmermann, 1940), *E. (Z.) hispanica* Van Nieukerken, 1985, *E. (E.) caradjai* (Groschke, 1944), *E. (E.) albifasciella* (Heinemann, 1871) *E. (E.) pubescivora* (Weber, 1938) y *E. (E.) heringi* (Toll, 1934) son citas nuevas para Portugal. *Stigmella crenulatae* es nueva para Europa. *Stigmella ilicifoliella* (Mendes, 1918) y *Acalyptris minimella* (Rebel, 1924) son los primeros Nepticúlidos citados para Andorra y Gibraltar, respectivamente. Se confirma la presencia de *Stigmella assimilella* (Zeller, 1848), *S. vimineticola* (Frey, 1856) y *S. obliquella* (Heinemann, 1862) en España. Las citas previas de *Stigmella viscerella* y *S. lemniscella* no han podido ser confirmadas y se consideran dudosas. *Stigmella ruficapitella* (Haworth) y *Trifurcula pallidella* (Duponchel) son retiradas de las listas española y portuguesa, y se demuestra que *Ectoedemia groschkei* (Skala) ha sido incorrectamente citada de España. Para varias especies se dan las primeras citas detalladas, puesto que previamente sólo fueron citados en listados. Las citas se tratan por provincias. El mayor número de especies citadas es de 46 para Teruel, en España y de 34 para el Algarve, en Portugal. Se dan ilustraciones de las minas de las hojas y de la genitalia de varias especies raras de Nepticúlidos. Las genitalias masculina y femenina de *Opostegoides menthinella* (Mann, 1855) y *Pseudopostega chalcopepla* (Walsingham, 1908) se presentan por primera vez. *Opostegoides menthinella* y *Pseudopostega chalcopepla* son también nuevas para Túnez. Además se da una nueva clave para seis especies de Opostégidos europeos.

PALABRAS CLAVE: Lepidoptera, Nepticulidae, Opostegidae, catálogo, distribución, nuevas citas, nuevas plantas nutricias, Península Ibérica

Catálogo anotado dos Nepticulidae e Opostegidae da Península Ibérica (Lepidoptera: Nepticuloidea)

Resumo

É apresentada a lista dos Nepticulidae e Opostegidae presentes na Espanha (incluindo as Baleares), Portugal, Gibraltar e Andorra. São referidos todos os registos bibliográficos conhecidos, sendo interpretados quando necessário. De todo o material recolhido e/ou estudado pelos autores é dada informação detalhada. No total, são listados 102 Nepticulidae e 5 Opostegidae. *Stigmella nivenburgensis* (Preissecker, 1942), *S. rhamnella* (Herrich-Schäffer, 1860), *S. crenulatae* (Klimesch, 1975) (no novo hospedeiro *Rhamnus lycioides*), *S. sorbi* (Stainton, 1861), *Trifurcula (Trifurcula) beirnei* Puplesis, 1984, *Ectoedemia (Fomoria) euphorbiella* (Stainton, 1869) (em três novos hospedeiros do género *Euphorbia*) e *E. (E.) subbimaculella* (Haworth, 1828) são novos para Espanha, e *Stigmella rhamnella* (Herrich-Schäffer, 1860), *S. crenulatae* (Klimesch, 1975), *S. paradoxa* (Frey, 1858), *S. crataegella* (Klimesch, 1936), *S. hybnerella* (Hübner, 1813), *S. incognitella* (Herrich-Schäffer, 1855), *Trifurcula (Glaucolepis) rosmarinella* (Chrétien, 1914), *T. (Levarchama) cryptella* (Stainton, 1856), *T. (T.) squamatella* (Stainton, 1849), *Ectoedemia (Zimmermannia) atrifrontella* (Stainton, 1851), *E. (Z.) longicaudella* Klimesch, 1953*, E. (Z.) liebwerdella* (Zimmermann, 1940), *E. (Z.) hispanica* Van Nieukerken, 1985, *E. (E.) caradjai* (Groschke, 1944), *E. (E.) albifasciella* (Heinemann, 1871), *E. (E.) pubescivora* (Weber, 1938) e *E. (E.) heringi* (Toll, 1934) são novos para Portugal. *Stigmella crenulatae* é ainda nova para a Europa. *Stigmella ilicifoliella* (Mendes, 1918) e *Acalyptris minimella* (Rebel, 1924) são os primeiros Nepticulidae registados para, respectivamente, Andorra e Gibraltar. *Stigmella assimilella* (Zeller, 1848), *S. vimineticola* (Frey, 1856) e *S. obliquella* (Heinemann, 1862) são confirmadas como pertencendo à fauna espanhola. Registos anteriores de *Stigmella viscerella* e *S. lemniscella* não foram confirmados e são considerados dúbios. *Stigmella ruficapitella* (Haworth) e *Trifurcula pallidella* (Duponchel) são retirados das listas portuguesa e espanhola, e é demonstrado que *Ectoedemia groschkei* (Skala) foi incorrectamente citada de Espanha. Para muitas espécies damos agora detalhe dos primeiros registos, uma vez que os mesmos haviam sido previamente citados apenas em listas. Os registos são sumarizados por Províncias, sendo que o maior registo provincial se refere Teruel com 46 espécies em Espanha, e 34 para o Algarve, em Portugal. São ilustradas várias espécies raras, nomeadamente minadoras da família Nepticulidae. As genitálias masculina e feminina de *Opostegoides menthinella* (Mann, 1855) e *Pseudopostega chalcopepla* (Walsingham, 1908) são ilustradas pela primeira vez. *Opostegoides menthinella* e *Pseudopostega chalcopepla* são referidos para a Tunísia pela primeira vez. Adicionalmente, é fornecida uma chave de determinação das seis espécies europeias de Opostegidae.

PALAVRAS CHAVE: Lepidoptera, Nepticulidae, Opostegidae, catálogo, distribuição, novos registos, novos hóspedes, Península Ibérica

Introduction

The Iberian Peninsula has one of the richest insect faunas in Europe, including a high number of endemic species. This is also true for Lepidoptera, although KARSHOLT & RAZOWSKI (1996) still give a higher number of Lepidoptera for respectively France and Italy (4655 and 4614 against 4263 for Spain). This is probably partly a sampling artefact, since the study of especially the Microlepidoptera of the Iberian Peninsula has started relatively late. Yearly many new records for Spain and Portugal are listed and many new species described (ESTEBAN & SANCHIZ, 1998 and regular lists in Graellsia).

The smallest Lepidoptera, the Nepticulidae and Opostegidae have until recently only been studied poorly in this Peninsula. Our research has shown that this area harbours a very rich fauna and many new species have been discovered already (i.e. VAN NIEUKERKEN, 1985a, 1990b) or are known to us, but still unnamed, particularly in the genera *Trifurcula* and *Parafomoria*. While revisions on these groups are still going on, we present here an annotated catalogue of all the described species as we have found in the Iberian Peninsula or as have been cited in literature. We only make an exception for the genus *Parafomoria*, where we only cite published records, because all new records will be treated in a forthcoming revision.

In this paper we thus list 107 species, 101 for Spain, 62 for Portugal, 1 for Andorra and 1 for Gibraltar. The paper is confined to the Peninsula and the Mediterranean islands, the fauna of the Macaronesian Archipelagos is not listed here.

History

In the 19th century most authors only looked at the larger species of Lepidoptera, and only two papers list Nepticulidae: CUNÍ Y MARTORELL (1874) lists two species for Spain (Catalonia) and later STAINTON (1881) lists one for Portugal. The last paper and two others list a single species of Opostegidae: RÖSSLER (1877) and SEEBOLD (1899).

The study of Nepticulidae really started with Candido Mendes, who made detailed studies of the Lepidoptera fauna especially of the São Fiel region in Portugal (Beira Baixa), where he also reared the Nepticulidae. He described three species from there, two of which are still regarded as valid (*Ectoedemia ilicis*, *Parafomoria ladaniphila*) and later described a species from Spain (*Stigmella ilicifoliella*), where he was in exile after the civil war in Portugal (LUISIER, 1944).

After his activities, these moths were almost forgotten, except for the expedition for leafmines by the famous Martin Hering, who cited just a few Nepticulidae mines from Spain (HERING, 1935). Apart from a few odd records of Opostegidae, nobody cited any nepticuloid for a long time. On the basis of the previous publications, ZERKOWITZ (1946) made a catalogue of the Portuguese species, and AGENJO (1964) a simple checklist for Spain. These were both small lists, which did not show at all the rich character of the Iberian fauna. We had to wait until Klimesch started to visit the Port Bou area (Gerona) and Mallorca regularly, where he discovered several undescribed species, mostly in *Trifurcula*, of which he named four (KLIMESCH, 1975a, 1979).

Klimesch's work and especially the rich material collected by Ernst Traugott-Olsen in the region of Marbella (Málaga), prompted the senior author to start searching for leafmines in wintertime in the eighties. He did so in many areas of the Peninsula in 1984, 1987, 1988, 1993, 1996, 1997, 2000 and 2001. He further collected in summer in 1986 and 2001 and collected just a few additional things in some vacations. The two junior authors started with summer trips to the Peninsula in the nineties, and collected mainly at light from 1991-1994, and again from 2001-2003. Meanwhile Martin Corley had started an active survey of the Algarve and later other parts of Portugal (CORLEY, 2002, CORLEY *et al.*, 2000, PASSOS DE CARVALHO & CORLEY, 1995), and also actively searched for Nepticulidae.

Since Agenjo's and Zerkowitz' checklists, four more complete checklists have been published, showing a growing number of Nepticulidae species. The first three checklists were uncritical compilations of the literature: GOMEZ BUSTILLO (1981) who listed 46 species (30 for Spain, 24 for Portu-

gal), VIVES MORENO (1991), who listed 66 species (58, 26) and VIVES MORENO (1994) with 73 species (64, 26). These numbers are still too optimistic, because there are several mistakes and synonyms in these lists. The last list by VAN NIEUKERKEN (1996) in the European checklist by Karsholt & Razowski was a critical compilation of all material known, and included many unpublished records, of which the details are here published for the first time. Unfortunately, in the final stage of production of this book, two species (*Trifurcula pallidella* and *Ectoedemia groschkei*) were mistakenly added without consent of the author: these are here removed at the end of this paper. In all, this list counts, after correction for these, 89 Iberian species (84, 36).

Here we list 102 Nepticulidae and 5 Opostegidae, 96 + 5 for Spain, 58 + 4 for Portugal, 1 Nepticulidae each for Andorra and Gibraltar. Although this is a considerable increase, it is far from the final number: we already know many unnamed species in *Trifurcula* (subgenera *Glaucolepis* and *Trifurcula*) and *Parafomoria*, and we expect that in northern parts of Spain additional species with a more northern distribution can be found. We estimate therefore that the total number will be more like 150, of which most will be found in Spain and about half that number in Portugal.

Six of the species listed here are currently considered as endemics, and many of the unnamed species are probably endemics, but this number probably will decrease when the fauna of Morocco and southwestern France is studied in more detail.

Table 1 gives a survey of the number of species taken in each province. It is clear that large parts of the Peninsula are still poorly recorded, in particular the Northwest of Spain and several central Spanish provinces. The highest numbers are recorded for Teruel (46), Málaga (45), Granada (39) and Barcelona (36) in Spain and the Algarve (34) and Beira Baixa (28) in Portugal.

Table 1. Provinces in Portugal and Spain with their codes and number of recorded Nepticuloidea. Listed alphabetically by Code.

Code	Province	# spp.	Code	Province	# spp.	Code	Province	# spp.
	PORTUGAL		BU	Burgos	4	NA	Navarra	0
AAL	Alto Alentejo	7	C	La Coruña	0	O	Asturias	3
AG	Algarve	34	CA	Cádiz	19	OR	Orense	0
BA	Beira Alta	19	CC	Cáceres	7	P	Palencia	0
BAL	Baixo Alentejo	3	CO	Córdoba	2	PM	Islas Baleares	6
BB	Beira Baixa	28	CR	Ciudad Real	0	PO	Pontevedra	2
BL	Beira Litoral	5	CS	Castellón	16	S	Cantabria	10
DL	Douro Litoral	0	CU	Cuenca	31	SA	Salamanca	24
E	Extremadura	11	GE	Gerona	31	SE	Sevilla	12
MI	Minho	2	GR	Granada	39	SG	Segovia	9
R	Ribatejo	10	GU	Guadalajara	1	SO	Soria	0
TM	Trás-os-Montes	14	H	Huelva	16	SS	Guipúzcoa	1
			HU	Huesca	12	T	Tarragona	6
	SPAIN		J	Jaén	1	TE	Teruel	46
A	Alicante	2	L	Lérida	9	TO	Toledo	16
AB	Albacete	14	LE	León	8	V	Valencia	16
AL	Almería	14	LO	Logroño	0	VA	Valladolid	0
AV	Ávila	4	LU	Lugo	0	VI	Álava	0
B	Barcelona	36	M	Madrid	15	Z	Zaragoza	12
BA	Badajoz	0	MA	Málaga	45	ZA	Zamora	0
BI	Vizcaya	1	MU	Murcia	19			

Material and methods

Material collected by ourselves is mostly stored respectively in the collection of the National Museum of Natural History (RMNH) and the private collection of Aleš Laštůvka (AL), a few early specimens by EvN in the Zoological Museum of Amsterdam (ZMAN). We also studied material of several ot-

her collectors (see acknowledgements) and museums and present that all together here. Some of our results have been published in previous revisions, and such material is not repeated in detail, but only listed as literature references (LAŠTŮVKA & LAŠTŮVKA, 1993, VAN NIEUKERKEN, 1985a, 1985b, 1990b, 1990c, VAN NIEUKERKEN & PUPLESIS, 1991, VAN NIEUKERKEN & LAŠTŮVKA, 2002, VAN NIEUKERKEN & JOHANSSON, 2003). The material collected by EvN in the Algarve in 1987, and published by CORLEY *et al.*, 2000 is listed here again, because that paper did not indicate for which species adults were reared. We add a few records which we received from resp. J. Klimesch (in litt. 1983) and E. Requena Miret (in litt. 2003), the latter in addition to material seen by EvN.

Identification

Unfortunately at the moment there is not yet a single work for the identification of Iberian Nepticulidae, but hopefully there will be one in a few years. Most *Stigmella* species can be identified with the treatments by JOHANSSON & NIELSEN (1990) and LAŠTŮVKA & LAŠTŮVKA (1997), and for the *Quercus* miners VAN NIEUKERKEN & JOHANSSON (2003) is available. Many of the other named species are also treated by LAŠTŮVKA & LAŠTŮVKA (1997), but especially in *Trifurcula* and *Parafomoria* many unnamed species are already known (partial revisions are VAN NIEUKERKEN, 1985b, 1990b). Most *Ectoedemia* s.s. and *Ectoedemia (Zimmermannia)* can be identified with VAN NIEUKERKEN (1985a). Because of the absence of a key for the few European Opostegidae, we provide one here.

Literature

We have tried to trace all literature records, which we treat under the species to which we think the records belong. When we have interpreted the original record to belong to a different species, we cite it as misidentification [between square brackets], and mention it again under 'wrong records' under the species it was originally attributed to. Although it was not always explicitly mentioned, we regard Mendes' identifications of material collected as leafmines to have been based on reared adults. He was rather meticulous about this, and mentioned the flying month after the locality, for all species which he identified to name, indicating he had adults himself. He also indicated the time of collecting the larva. Species he did not rear he mentioned as unidentified under the hostplants. Unfortunately very little seems to remain of the Mendes collection (E. Maravalhas, pers. comm.), and we only have seen few species reared by him in the Joannis collection in Paris, as we discussed before under the species named by him (VAN NIEUKERKEN, 1983, 1985a, VAN NIEUKERKEN & JOHANSSON, 2003). Some of the mine records by Mendes have later been interpreted with species names in one of the checklists, sometimes incorrectly.

For the four cited checklists, we use the following abbreviations in the species treatments: GM: GOMEZ BUSTILLO (1981), VM 91: VIVES MORENO (1991), VM 94: VIVES MORENO (1994), vN: VAN NIEUKERKEN (1996).

Format of species accounts

After the heading we list the references chronologically, grouped by country: Spain first after 'ES' and Portugal after 'PT'. No literature records exist for Gibraltar or Andorra. The names used in the original publication are given. After each reference we indicate the provinces (**in bold**), but when no detailed record is given (in checklists) only ES or PT.

Material follows, also first Spain, then Portugal, listed alphabetically by province code (**bold**), number of males, females, larvae, mines, locality name, altitude, date, hostplant, (e.l.) emergence dates, collectors and collection in brackets. Province codes are only given once, before the first record for that province. Depositories are only given at the end of a consecutive number of records from the same collection. When all reared material and mines are from one hostplant species, then this is only given at the end of the list. Nomenclature of hostplants follows Flora Iberica (CASTROVIEJO *et al.*, 2001,

CASTROVIEJO *et al.*, 1986-2004) as far as available, or otherwise the Flora Europaea (TUTIN *et al.*, 1964-1993). Species which are recorded on the basis of leafmines or larvae only are provided with an asterisk (*) before the name.

Geographical entities

Provincial codes follow the codes as used in the Flora Iberica and its short edition (CASTROVIEJO *et al.*, 2001): the 'official' ISO codes for Spanish provinces and the codes for the 'old' regions (regiãos) in Portugal, not the modern Districts (Distritos). The used codes are given in table 1.

Depositories

For depositories we use the abbreviations given by SAMUELSON *et al.* (2001). Additional abbreviations for collectors and collections:

AL	A. Laštůvka (Prostějov, Czech Republic)
AV	A. Vives Moreno (Madrid, Spain)
BÅB	B. Å. Bengtsson (Färjestäden, Sweden)
BS	B. Skule (Denmark)
CG	C. Gielis (Lexmond, Netherlands)
ER	E. Requena Miret (Igualada, Spain)
ETO	E. Traugott-Olsen (Marbella, Spain)
EvN	E. J. van Nieukerken (Leiden, Netherlands)
GB	G. Baldizzone (Asti, Italy)
GD	G. Derra (Reckendorf, Germany)
HS	H. Steuer (Bad Blankenburg, Germany)
HW	H. W. van der Wolf (Nuenen, Netherlands)
JJ	J. Junnilainen (Vantaa, Finland)
JCK	J.C. Koster (Callantsoog, Netherlands)
JHK	J. H. Kuchlein (Wageningen, Netherlands)
JK	J. Klimesch (Linz, Austria)
MC	M. F. V. Corley (Faringdon, United Kingdom)
PS	P. Skou (Stenstrup, Denmark)
RJ	R. Johansson (Växjö, Sweden), to be deposited in zmuc
SR	S. Richter (Leiden, Netherlands)
ZL	Z. Laštůvka (Brno, Czech Republic)

NEPTICULIDAE

***Simplimorpha promissa* (Staudinger, 1870)**
ES: *Nepticula promissa*; HERING, 1935: 368 - ES: **B** [Empty mines on *Pistacia terebinthus*]; AGENJO, 1964: [4] - ES
Stigmella promissa; GM: 19 - ES
Simplimorpha promissa; VM 91: 43; VM 94: 24; vN: 21 - ES

ES – B: 1 mine, Montserrat, 10-IX-1976, *Pistacia terebinthus*, JK (in litt.); **MA**: 1♂, Monda, 500 m, 5-VII-2001; **TO**: 1♂, Robledo del Mazo, 800 m, 19-VI-2003, AL & ZL (AL).

The mines listed by Hering are probably correct, although a confusion with *Acalyptris minimella* (rare on this host) is still possible. We list here the first known adults of *S. promissa* from Spain.

*** *Stigmella lapponica* (Wocke, 1862)**
PT: *Stigmella lapponica*; vN: 21 - PT

PT – MI: 4 mines, Parc nat. de Gerez, 7-VII-1980, *Betula pubescens*, J.W. Schoorl (ZMAN); **TM**: 3 mines, PN Montesinho, Montesinho, 19-VI-2004, *Betula pubescens*, AL & ZL (AL).

These are the only records of a *Betula* feeding species in the Peninsula. The characteristic leafmine is illustrated in Fig. 1. We assume that some of the other species can also been found in the North of Spain and Portugal.

***Stigmella freyella* (Heyden, 1858)**

ES: *Stigmella freyella*; NUPPONEN *et al.*, 2003: 229 - ES: **V**

ES – MA: mines, Carratraca, 400 m, 5-VII-2001, *Convolvulus elegans*, AL & ZL (AL)

S. freyella is widespread in southern Europe, and probably still overlooked in most places of the Iberian Peninsula. Leafmines are very characteristic, only young mines can sometimes be confused with the early mines of *Bedellia* spp.

*** *Stigmella tiliae* (Frey, 1856)**

ES: *Stigmella tiliae*; vN: 21 - ES

ES – LE: mines, Puente Capozo, 4 km N of Posada de Valdéon, 620 m, 29-VII-1986, *Tilia* sp., EvN & SR (RMNH).

Only recorded by the characteristic mines.

***Stigmella nivenburgensis* (Preissecker, 1942) – New for Spain**

ES – HU: 1♂, Candasnos, 300 m, 23-VI-2001, AL & ZL; 1♂, **TE**: Vivel del Río, 1000 m, 24-VI-2001, AL & ZL (AL).

S. nivenburgensis was until recently mostly known from South-eastern Europe, but apparently reaches the Northeast of the Iberian Peninsula. It feeds on *Salix* species with smooth leaves (*Salix alba, S. fragilis* etc.).

***Stigmella glutinosae* (Stainton, 1858)**

PT: *Nepticula rubescens* Heinemann; MENDES, 1913: 28 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella glutinosae; MONTEIRO GUIMARAES, 1977: 23 - PT: **BB**; GM: 19; VM 91: 43; VM 94: 24; vN: 21 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG** [empty mines]

PT – R: 2♂, 4♀, mines, Couco, 150 m, 23-VI-2002, *Alnus glutinosa*, e.l. VII-2002, AL & ZL (AL).

Only known from Portugal, now confirmed by the record of adults in Ribatejo. Mines very difficult to separate from *S. alnetella.*

***Stigmella alnetella* (Stainton, 1856)**

ES: *Nepticula alnetella*; MENDES, 1918: 127 - ES: **SA** [larvae]
Stigmella alnetella; AGENJO, 1964: [4]; GM: 19; VM 91: 44; VM 94: 24; vN: 21 - ES
PT: *Nepticula alnetella*; MENDES, 1905: 173 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella alnetella; MONTEIRO GUIMARAES, 1977: 15 - PT: **BB**; GM: 19; VM 91: 44; VM 94: 24; vN: 21 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG** [empty mines]

PT – BA: vacated mines, Tibaldinho, 7 km W of Mangualde: Moinhos do Dão, 240 m, 6-VIII-2001; **TM**: 1 larva, 1 mine, PN Montesinho, Paramia, 2 km S: near bridge over Río Baceiro, 705 m, 31-VII-2001, all on *Alnus glutinosa*, EvN (RMNH).

Leafmines of the *Alnus* feeding species are often not separable, we present therefore these Portuguese records with some doubts, although all the mines belong to the type which is most common in *S. alnetella*: mines with very thin frass. Mendes had already proven the occurrence of *S. alnetella* in both countries.

*** *Stigmella microtheriella* (Stainton, 1854)**

ES: *Nepticula* sp. 'No *Carpinus…*'; MENDES, 1918: 129 - ES: **SA**
Stigmella microtheriella; VM 91: 44; VM 94: 24; vN: 21 - ES

This common European species was recorded for Spain in several checklists, which probably go all back to MENDES (1918) record of larvae on *Carpinus*, on which he found two species: 'lagartas de duas especies, uma verde em mina comprida, outra amarellada em mina curta e larga" (caterpillars of two species, one green in a long mine, the other yellow in a short and wide mine). *Carpinus* does not occur as native tree in the Iberian Peninsula (JALAS & SUOMINEN, 1976), but is regularly planted (CASTROVIEJO *et al.*, 2001). The description of the mine fits *S. microtheriella*. The larval colour is given as green, but the yellow larva of *S. microtheriella* can seem greenish when seen in the mine, and the gut also is often strongly green.

*** *Stigmella malella* (Stainton, 1854)**

PT: *Stigmella malella*; MONTEIRO GUIMARAES, 1977: 27 - PT; GM: 19; VM 91: 44; VM 94: 24; vN: 21 - PT

[ES: *Nepticula mespilicola*; CUNÍ Y MARTORELL, 1874: 201 - ES: **B** [Mines on *Malus*, uncertain identity]

PT – BB: larvae, mines Fundão, 500 m, 23-VI-2002, *Malus,* AL & ZL (AL)

This apple feeding species, that can become a pest in certain orchards, has only been recorded from Portugal, without locality or district, in the checklist of potential pest species (MONTEIRO GUIMARAES, 1977). The occurrence is now confirmed by our record of larvae. The occurrence in Spain is very likely, and during research in apple orchards in Lérida a few nepticulid mines were found, but they were not identified, nor kept (E. Olivella pers. comm.). It is possible that Cuní y Martorell's old record belongs actually to this species.

***Stigmella rhamnella* (Herrich-Schäffer, 1860) – New for Spain and Portugal**

ES – B: mines, Sierra de Cadi, 11 km W Baga, 1700 m, 7-VIII-1996, *Rhamnus alpinus,* EvN (RMNH), **GE**: 1♂, 1♀, Caldas de Bohl, 1650 m, 17-VII-1976, *Rhamnus alpinus,* e.l. 24-II-1977-1-III-1977, JK (ZSMC); **GR**: 2♂, 1♀, mines Sierra Guillimona, Pinar, 1600 m, 29-VI-2003, *Rhamnus catharticus*, e.l. VII-2003, AL & ZL (AL). **– PT – AG**: 1♀, 4 mines, Foia, Serra de Monchique, 6-XI-2000, *Frangula alnus*, e. l. 11-V-2001, MC (MC); **BA**: 1 mine Tibaldinho, 7 km W of Mangualde: Moinhos do Dão, 240 m, 6-VIII-2001, *Frangula alnus*, EvN; BB: 2 mines, Folhadosa, 2 km SW, 575 m, 15-VIII-2001, *Frangula alnus*, EvN (RMNH).

Stigmella rhamnella is common and widespread in Central Europe, south to southern France, northern Italy and the Balkan Peninsula. In Spain we found mines on the well known hosts *Rhamnus catharticus* and *R. alpinus*, and confirmed the identity also by rearing. In Portugal several mines and larvae have been found on *Frangula alnus*, which was hitherto only cited as host by LHOMME [1963], but the origin of this record is unknown to us. The female reared shows genitalia not different from other *S. rhamnella*, but since female genitalia are not very characteristic in this group, confirmation of the identity by males is still required.

***Stigmella crenulatae* (Klimesch, 1975) – New for Spain and Portugal**

ES – H: 1♂, 2 larvae, 2 mines, Laguna de Mujer, 4 km WNW Mazagón, 25-II-2000, e.l. 16-III, EvN (RMNH); **MA**: 1♀, 3 larvae, mines 3 km NE Marbella, road to Ojén, 200 m, 15-I-1988, 11-II-1988, EvN (RMNH); mines Marbella, 2 km N, 28-III-1979, EvN (RMNH); mines Sierra Blanca, 7 km N Marbella: Refugio de Juanar, 700 m, 9-II-1984, EvN (RMNH). **– PT – AG**: mines, Cabo de São Vicente, 8-I-1987, EvN (RMNH); 1♂, mines Messines de Baixo, 300 m, 25-VI-2003, e.l. VII-2003, AL & ZL (AL); 1♂, 14 larvae, mines, Salema, 2 km S Budens, 9-I-1987, e.l. 1-II-1987, EvN (RMNH); all on *Rhamnus lycioides.*

Stigmella crenulatae was described from the Canary islands from *Rhamnus crenulata*. The genitalia of the specimens we reared from *Rhamnus lycioides* are identical (Figs. 7-9), and we thus record this species for the first time from mainland Europe. The adult differs from other western European *Rhamnus* miners by the presence of a fascia. The leafmines of *S. crenulatae* are a long gallery (Fig. 5), rather

different form the next species; young mines are easily overlooked amongst the usually numerous *Bucculatrix* mines on this host.

***Stigmella alaternella* (Le Marchand, 1937)**
ES: *Stigmella alaternella*; vN: 22 - ES
PT: *Nepticula* sp.; MENDES, 1910b: 128 - PT: **E**

ES – B: empty mines, Montserrat, 10-IX-1976, JK (in litt.); 1 mine, Sant Feliú de Codines, E, 450 m, 16-IV-1993, EvN & JCK (RMNH); **CS**: 4♂, 5♀, mines 3.5 km SW of Cortes de Arenoso, 700 m, 23-IV-1993, e.l. 19-24-V-1993, EvN & JCK (RMNH, JCK); **GE**: 1♀, Port Bou, e.l. 26-III-1967, JK (ZSMC) [many mines cited in litt.]; **GR**: 5♂, 4♀, mines, Diezma, 1100 m, 28-VI-2003, e.l. VII-2003, AL & ZL (AL); mines, Jimera de Líbar, 500 m, 27-VI-2003, AL & ZL (AL); 1♂, 1♀, mines, between Nerja and Almuñecar, coastal road, 27-III-1979, e.l. 26-IV-1979, EvN (ZMAN, RMNH); **MA**: mines, 1 km SE Cortes de la Frontera, 500 m, 19-I-1988, EvN (RMNH); mines, Marbella, 2 km N, 28-III-1979, EvN (RMNH). All on *Rhamnus alaternus*.

The leafmines reported by Mendes from *Rhamnus alaternus* almost certainly belong to this species, although the occurrence in Portugal is not yet confirmed by new findings. *S. alaternella* seems to have a Southwest European distribution: it occurs elsewhere commonly in Southern France, and Northwest Italy (Liguria), but in other parts of Italy, the Balcan Peninsula, Turkey and Cyprus it seems to be replaced by *S. rhamnophila* (Amsel, 1935) on the same host (LAŠTŮVKA & LAŠTŮVKA, 1997). Leafmines are characteristically widened in the second part (Fig. 6), rather different from the previous species.

***Stigmella anomalella* (Goeze, 1783)**
PT: *Nepticula anomalella*; MENDES, 1910b: 127 - PT: **E**
Nepticula auromalella [sic!]; ZERKOWITZ, 1946: 116 – P: **E**
Stigmella anomalella; MONTEIRO GUIMARAES, 1977: 17 - PT: **E**; GM: 19; VM 91: 44; VM 94: 25; vN: 22 - PT

The only record is by MENDES (1910b) from Portugal, Estremadura: Collegio de Barro. He cited a large number, and we may assume he has studied adults (see introduction). There is a slight possibility that he mistook other species with uniform forewings: *S. spinosissimae* (Waters, 1928) or *S. rolandi*; confirmation is therefore desirable.

***Stigmella centifoliella* (Zeller, 1848)**
ES: *Nepticula centifoliella*; CUNÍ Y MARTORELL, 1874: 201 - ES: **B**; MENDES, 1918: 127 - ES: **SA** [larvae]
Stigmella centifoliella; AGENJO, 1964: [4] ; GM: 19; VM 91: 44; VM 94: 25; vN: 22 - ES; OLIVELLA, 2000: 30 - ES: **B**
Nepticula Hodghintsoni; MENDES, 1918: 127 - ES: **SA** [larvae]
PT: *Stigmella centifoliella*; VM 91: 44; VM 94: 25; vN: 22 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

ES – GE: mines S. of Mt. Salinas, 4 km N of Massanet-de-Cabrenys, 950 m, 1-VIII-1982, *Rosa* sp. EvN (RMNH); **MA**: 3♂, mines, Marbella, Urbanización El Mirador, 100 m, 9-II-1984, e.l. 19-21-II-1984, *Rosa* sp., EvN (RMNH,ZMAN); 1♀, mines, Sierra Blanca, 6 km N Marbella: El Mirador, 800 m, 9-II-1984, e.l. *Sanguisorba hybrida*, 3-5-III-1984, EvN (RMNH). **– PT – AG**: 1♀, mines, Barranco do Velho, 11-I-1987, e.l. *Sanguisorba hybrida*, 8-II-1987, EvN (RMNH); **TM**: vacated mines, Vila Real, Camping in town, 640 m, 2-3-VIII-2001, *Rosa sp.*, EvN (RMNH).

S. centifoliella is probably a commoner *Rosa* feeder in the Peninsula than *S. anomalella*, and also feeds here on *Sanguisorba.*

***Stigmella ulmivora* (Fologne, 1860)**
ES: *Nepticula ulmivora*; MENDES, 1918: 127 - ES: **SA**
Stigmella ulmivora; AGENJO, 1964: [4] ; GM: 18; VM 91: 44; VM 94: 25; vN: 22 - ES

PT: *Nepticula ulmivora*; MENDES, 1910b: 127 - PT: **E**; ZERKOWITZ, 1946: 116 – P: **E**
Stigmella ulmivora; MONTEIRO GUIMARAES, 1977: 33 - PT: **E**; GM: 18; VM 91: 44; VM 94: 25; vN: 22 - PT

ES – B: 1♂, Bellprat, 30-VI-2001, ER (ER); empty mines, Montserrat, 11-IX-176, JK (in litt.); **GR**: mines, Sierra Nevada, Pitres, 20-XI-1988, *Ulmus* sp., J.W. Schoorl (RMNH); **SE**: 1 vacated mine, Sevilla, 10-I-2001, EvN (RMNH). **– PT – TM**: 1 vacated mine, PN Montesinho, Salgueiros, Vallone das Furnas, 8 km N Vinhais, 940 m, 30-VII-2001, *Ulmus* sp., EvN (RMNH).

Stigmella ulmivora is the only *Ulmus*-feeding species recorded with certainty from the Iberian Peninsula. MENDES (1918) referred to two species feeding on *Ulmus*, but he only could rear *S. ulmivora*. A mine from Portugal is here illustrated (Fig. 3).

***Stigmella thuringiaca* (Petry, 1904)**
Stigmella thuringiaca; vN: 22 - ES

ES – CU: 1♂, Casas del Egidillo, 30-VI-2004, AL & ZL (AL; 1♂, 8 km N of Tragacete, 1450 m, 14-VII-1986, CG (RMNH); 1♂, Cuenca, 900 m, 16-VII-1986, CG (CG); 1♂, Sierra de Altomira, Vellisca, 1000 m, 11-VIII-1983, AV (AV); 1♂, Tragacete, 28-VI-1982, CG (CG); 1♂, Uña, 1150 m, 28-VIII-2001, BS & PS (ZMUC); **GR**: 1♂, 1♀, Diezma, 1100 m, 29-VI-2003, AL & ZL (AL); **HU**: 1♂, Esteña, 700 m, 18-19-VIII-2001, BS & PS (ZMUC); **L**: 1♂, 2♀, Valencia de Aneu, 1300 m, 15-VII-1976, e.l. *Sanguisorba minor*, JK (ZSMC), **T**: 1♂, 5km S St. Carles de la Rápita, 20 m, 14-VI-2001, PS (ZMUC); **TE**: 1♂, Albarracín, Valdovecar, 1100 m, 2-VII-1977, JHK (JHK); 1♂, ibidem, 1200 m, 21-VIII-2001, PS & BS (ZMUC); 3♂, Alcalá de la Selva, 1300 m, 5-VII-2002, AL & ZL; 3♂, Alcorisa, 800 m, 5-VII-1991, AL & ZL (AL); 1♂, Cosa, 2-VIII-1989-13-VIII-1989, CG (CG); 1♂, Montalbán, 1100 m, 16-VI-2002, collected near *Sanguisorba minor,* AL & ZL (AL); 2♂, Montalbán, 1100 m, 15-VI-2003, AL & ZL (AL); 2♂, Royuella, 1300 m, 16-VI-2003, AL & ZL (AL); 7♂, Segura de los Baños, 1000 m, 6-VII-2002, AL & ZL (AL); **V:** 5♂, 4♀, Jarafuel, 350 m, 29-VI-1991, AL & ZL (AL).

This widespread European species is particularly common in the limestone mountains, especially in Teruel. Klimesch reared it from *Sanguisorba* and elsewhere it was found near this host, but *Potentilla* is probably another important host here. Since other species with similar mines may occur on these hosts, identification of mines is not possible.

***Stigmella rolandi* Van Nieukerken, 1990**
Stigmella rolandi; VAN NIEUKERKEN, 1990c: 240 - ES: **CA**, **CU**, **J**, **M** [paratypes]; VM 94: 25; vN: 22 - ES

ES – B: 1♂, La Pobla de Claramunt, 26-VIII-2000, ER (RMNH); 1♂, Jorbá, 1-VIII-2003, ER (ER – det ER); **CU**: 2♂, Boniches, 1200 m, 17-VI-2002, AL & ZL (AL); **GR**: 2♂, Diezma, 1100 m, 29-VI-2002, AL & ZL (AL); 1♂, Sierra Guillimona, Pinar, 1500 m, 28-VI-2003, AL & ZL (AL); **SE**: 2♂, Coripe, 300 m, 26-VI-2002, AL & ZL (AL); **TE**: 1♂, Albarracín, 5 km SE, 1400 m, 18-VII-1995, P. PS (ZMUC); **TO**: 1♂, Buenasbodas, 800 m, 19-VI-2002, AL & ZL (AL); 1♂, Robledo del Mazo, 800 m, 19-VI-2003, AL & ZL (AL).

S. rolandi is as common or even commoner than the rather similar *S. thuringiaca*, it is now known from nine provinces in Spain, but not yet found in Portugal. It feeds on *Rosa* and *Sanguisorba*, possibly also on other Rosaceae.

*** *Stigmella paradoxa* (Frey, 1858) – New for Portugal**
ES: *Stigmella paradoxa*; JOHANSSON & NIELSEN, 1990: 172; VM 91: 44; VM 94: 25; vN: 22 - ES

ES – LE: mines, Posada de Valdeón, 3.5 km SE: Santa Marina, 1200 m, 30-VII-1986, EvN & SR; **S**: mines, 2 km NW Los Tojos, Reserva Nacional de Saja, 500 m, 23-VII-1986, EvN & SR. **– PT – TM**: 2 vacated mines, PN Montesinho, Salgueiros, Vallone das Furnas, 8 km N Vinhais, 940 m, 27-VII-2001, EvN (RMNH); all on *Crataegus monogyna*.

The leafmines (Fig. 4) cannot be confused with other Nepticulidae, but show a certain resemblance to those of *Leucoptera malifoliella* (Costa, 1836), which differ by the concentric circles of frass and

by the shape of the egg-scale which is a rounded cap-like structure in Nepticulidae, but has a flat surface and vertical sides in *Leucoptera*.

*** *Stigmella regiella* (Herrich-Schäffer, 1855)**
ES: *Stigmella regiella*; SCHOORL *et al.*, 1985: 78 - ES: **GE** [empty mines]; VM 91: 44; VM 94: 25; vN: 22 - ES
ES – LE: mines, Puente Capozo, 4 km N of Posada de Valdeón, 620 m, 29-VII-1986, EvN & SR; **S**: mines, 2 km NW Los Tojos, Reserva Nacional de Saja, 500 m, 23-VII-1986, EvN & SR (RMNH); all on *Crataegus monogyna*.

Another species only found as mines on *Crataegus*. *S. regiella* is usually found in more shady conditions than other *Crataegus* miners, and here only found in the wetter north.

*** *Stigmella crataegella* (Klimesch, 1936) – New for Portugal**
ES: *Stigmella crataegella*; SCHOORL *et al.*, 1985: 78 - ES: **GE** [mines with larvae]; VM 91: 44; VM 94: 25; vN: 22 - ES

ES – LE: mines, Posada de Valdeón, 3.5 km SE: Santa Marina, 1200 m, 30-VII-1986, EvN & SR; **O**: mines, Valley of Río Cares, N. Caín, 10 km NNE Posada de Valdeón, 500 m, 31-VII-1986, EvN & SR; **S**: mines, 2 km NW Los Tojos, Reserva Nacional de Saja, 500 m, 23-VII-1986, EvN & SR. **– PT – TM**: 2 vacated mines, PN Montesinho, Salgueiros, Vallone das Furnas, 8 km N Vinhais, 940 m, 27-VII-2001, EvN (RMNH); all on *Crataegus monogyna*.

Mines of *S. crataegella* (Fig. 2) may resemble those of *S. perpygmaeella*, but the colour of the larva (green contra yellow) immediately separate the two. This is probably a very common and widespread species, but since it rarely flies at light, it can best be recorded by the leafmines.

***Stigmella hybnerella* (Hübner, 1813) – New for Portugal**
ES: *Stigmella hybnerella*; vN: 22 - ES
Possible misidentifications: *Nepticula mespilicola*; CUNÍ Y MARTORELL, 1874: 201 - ES: **B** [mines on *Amelanchier vulgaris*]
Nepticula sp.; HERING, 1935: 397 - ES: **B** [mines on *Amelanchier vulgaris*]

ES – B: 3♂, Jorba, 20-VII / 1-VIII-2003, ER (ER); **CU**: 1♂, Cuenca, 900 m, 16-VII-1986, CG (CG); 1♀, Tejadillo, 17-VII-1986, CG (CG); **GR**: 1♂, Sierra de Guillimona, Pinar, 1500 m, 28-VI-2003, AL & ZL (AL); 1♀, Sierra Nevada, Camino de Veleta, 1600 m, 2-VIII-1987, ETO (ZMUC); **H**: 1♂, Bonares, 100 m, 26-VI-2003, AL & ZL (AL); **LE**: mines, Posada de Valdeón, 3.5 km SE: Santa Marina, 1200 m, 30-VII-1986, *Crataegus monogyna*, EvN & SR (RMNH), **MA**: 1♀, Jimera de Líbar, 500 m, 27-VI-2002, AL & ZL (AL); **TE**: 1♀, Puerto de Orihuela, near, 25-VIII-1984, M. Kavin & P. PS (ZMUC). **– PT – AAL**: 1♂, S. Julião Barocão, Portalegre, ix-x.1998, e.l. *Crataegus*, III-1999, MC (MC); **TM**: 1 vacated mine,PN Montesinho, Salgueiros, Vallone das Furnas, 8 km N Vinhais, 940 m, 27-VII-2001, *Crataegus monogyna*, EvN (RMNH).

This common *Crataegus* miner, also feeds on *Amelanchier*. Records of *S. mespilicola* from this host usually belong to *hybnerella*, but since occasionally also *S. mespilicola* may feed on *Amelanchier*, such records remain doubtful.

***Stigmella mespilicola* (Frey, 1856)**
ES: *Nepticula mespilicola*; CUNÍ Y MARTORELL, 1874: 201 - ES: **B** [mines on *Sorbus*]; AGENJO, 1964: [4] - ES
Stigmella mespilicola; GM: 19; VM 91: 44; VM 94: 25; vN: 22 - ES

ES – GR: 1♂, 1♀, Diezma, 1100 m, 29-VI-2003, AL & ZL (AL); **TE:** 1♀, 1 km E Tramacastilla, 1250 m, 24-VIII-2001, BS & PS (ZMUC); 2♂, Alcalá de la Selva, 1300 m, 22-VI-1994, AL & ZL (AL); 1♂, Albarracín, Valdovecar, 1200 m, 21-VIII-2001, BS & PS (ZMUC); mines, Montalbán, 1000 m, 16-VI-2002, *Cotoneaster*, AL & ZL; 2♂, Vivel del Río, 1000 m, 24-VI-2001, AL & ZL (AL).

Stigmella mespilicola feeds most commonly on *Sorbus aria, S. torminalis* and related species, but

also on *Cotoneaster* and occasionally on other Rosaceae. The Cuní y Martorell record on *Sorbus* is therefore probably correct, but his record on *Malus* is considered to be wrong (see *S. malella*).

***Stigmella floslactella* (Haworth, 1828)**
ES: *Nepticula* sp. 'No *Carpinus*…lagartas…'; MENDES, 1918: 129 - ES: **SA**
Stigmella floslactella; vN: 22 - ES

ES – L: 1♀, Coll del Cantó, 1750 m, 7-VII-1991, AL & ZL (AL); **LE**: mines, Posada de Valdeón, 3.5 km SE: Santa Marina, 1200 m, 30-VII-1986, EvN & SR; mines, Puente Capozo, 4 km N of Posada de Valdeón, 620 m, 29-VII-1986, EvN & SR (RMNH), all mines on *Corylus avellana*.

The first record of this species is probably that by MENDES (1918) of yellow larvae in a wide mine on *Carpinus*. Since *Carpinus* does not occur as native tree in the Iberian Peninsula (JALAS & SUOMINEN, 1976), but only as a planted ornamental tree, we think it is less likely that these mines belonged to *S. carpinella* (Heinemann, 1862). *S. floslactella* is also known to feed on *Carpinus* elsewhere (EMMET, 1988; LAŠTŮVKA & LAŠTŮVKA, 1997).

*** *Stigmella tityrella* (Stainton, 1854)**
Stigmella tityrella; vN: 22 - ES
ES: *Nepticula* sp.; MENDES, 1918: 128 - ES: **SA** [mines on *Crataegus*]

ES – GE: mines SW. of Mt. Salinas, 4 km N of Massanet-de-Cabrenys, 1150 m, 1-VIII-1982, *Fagus sylvatica*, EvN (RMNH).

Only recorded by the characteristic mines, probably common in *Fagus* forests in northern Spain.

***Stigmella salicis* (Stainton, 1854)**
ES: *Stigmella salicis*; VM 91: 44; VM 94: 25; vN: 22 - ES
PT: *Nepticula salicis*; MENDES, 1905: 173 - PT: **BB** [larvae on *Salix cinerea*, *S. aurita*]; ZERKOWITZ, 1946: 116 – P: **BB**; MONTEIRO GUIMARAES, 1977: 11 - PT: **BB**
Stigmella salicis; GM: 18; VM 91: 44; VM 94: 25; vN: 22 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG** [empty mine]

ES – H: 1♀, Bonares, 100 m, 26-VI-2003, AL & ZL (AL); **M**: 1♂, Cadalso de los Vidrios, 2 km E, 7-VIII-1986, EvN & SR (RMNH); **MA**: 1♀, Carratraca, 400 m, 28-VI-1994, AL & ZL (AL); 1♀, larvae, mines, El Burgo, 3 km N, 700 m, 7-I-2001, e.l. *Salix atrocinerea*, 9-II-2001, EvN (RMNH); 1♂, Fuengirola, *Salix* [*caprea*?], B. Gustafsson (NHRS); **SA**: mines, San Miguel de Valero N, 3 km S of Linares de Riofrío, 850 m, 2-VIII-1986, EvN & SR (RMNH); **TE**: 1♂, 1♀, Alcalá de la Selva, 1300 m, 5-VII-2002, AL & ZL (AL). **– PT – BA**: Vacated mines Serra da Estrela: 3.5 km E Gouveia, 1090 m, 8-VIII-2001, *Salix atrocinerea*, EvN (RMNH); **BL**: 1 vacated mine, Lagoa da Vela, 13 km N Figueira da Foz, 19-VIII-2001, *Salix atrocinerea*, EvN (RMNH); 1♂, mines, Vale Grande, 800 m, 23-VI-2003, e.l. *Salix* [*caprea*?], VII-2003, AL & ZL (AL).

The male genitalia of some of the *S. salicis* specimens studied by us, show some differences with specimens from Central and Northwest Europe. They probably belong to a different species, but since this problem needs some more study and more material, we do not separate such material here. In the literature recorded from *Salix cinerea,* but this species is in the Iberian Peninsula replaced by the very similar *S. atrocinerea* (CASTROVIEJO *et al.*, 2001). Likewise the records of *S. caprea* from MA and *S. caprea* and *S. aurita* from Portugal are doubtful, because these host species do not occur there according to CASTROVIEJO *et al.* (2001).

***Stigmella vimineticola* (Frey, 1856)**
Nepticula vimineticola; MENDES, 1918: 128 - ES: **SA** [mines on 'salgueiros', *Salix* spp.]; AGENJO, 1964: [4] - ES

ES – TE: 1♀, Montalbán, 1000 m, 16-VI-2002, near *Salix eleagnos*, AL & ZL (AL)

The record by Mendes is questionable, but not impossible. The recent record confirms the occurrence of this species in Spain. *S. vimineticola* was until recently believed to be primarily alpine, but re-

cent records in Norway (AARVIK *et al.*, 2001) associated with *Salix caprea* rather than *S. eleagnos¸* indicate that this species is more widely distributed and possibly often overlooked.

***Stigmella obliquella* (Heinemann, 1862)**
ES: *Stigmella obliquella;* GM: 18; VM 91: 44; VM 94: 25; vN: 22 - ES
??P: *Nepticula salicis*; MENDES, 1905: 173 - **PT: BB** [Mines on *Salix fragilis*]

ES – Z: 1♂, Tosos, 1-VII-2004, AL & ZL (AL).

This species was introduced for Spain by GOMEZ BUSTILLO (1981), probably on the basis of the record of *S. vimineticola* by MENDES (1918). Mendes referred to two species of mines he found on 'Salgueiros' (*Salix* species), but only reared one, which he named as *S. vimineticola*. Although many northern European records of *S. vimineticola* have later been identified as *S. obliquella*, there is no indication that this was the case here. MENDES (1905) recorded *S. salicis* in Portugal from *Salix fragilis*. Although such mines could belong to *S. obliquella*, also here proof is lacking. However, the Tosos record confirms the occurrence of this species in the Iberian Peninsula.

***Stigmella trimaculella* (Haworth, 1828)**
ES: *Nepticula trimaculella*; MENDES, 1918: 128 - ES: **SA** [larvae]; AGENJO, 1964: [4] - ES
Stigmella trimaculella; GM: 18; VM 91: 44; VM 94: 25; vN: 22 - ES
Stigmella vimaculella [sic!]; GM: 18 - ES
PT: *Stigmella trimaculella*; CORLEY, 2002: 102 - PT: **BA**

ES – TE: 1♂, Montalbán, 1000 m, 16-VI-2002, AL & ZL (AL); **TO**: mines, Escalona, 9-VIII-1986, *Populus nigra*, EvN & SR (RMNH). **– PT – BB**: mines, Fundão, 500 m, 23-VI-2002, *Populus nigra,* AL & ZL (AL).

A common European species, expected to occur throughout the Peninsula on poplars.

***Stigmella assimilella* (Zeller, 1848)**
ES: *Nepticula assimilella*; MENDES, 1918: 128 - ES: **SA**; AGENJO, 1964: [4] - ES
Stigmella assimilella; GM: 18; VM 91: 45; VM 94: 26; vN: 22 - ES
Nepticula sp.; HERING, 1935: 371 - ES: **MA** [Mines on *Populus alba*]

ES – MA: 1♂, mines, Alpandeire, 500 m, 30-VI-1994, e.l. *Populus alba*, VII-1994, AL & ZL (AL).

MENDES (1918) recorded larvae of this species on *Populus pyramidalis* (= *P. nigra*), together with those of *S. trimaculella*. We have never seen *S. assimilella* on other hosts than *P. tremula* or *P. alba*. However, we find it also unlikely that Mendes could not recognize these two externally rather different moths. The unidentified mines recorded by Hering probably belong also to *assimilella.*

*** *Stigmella sorbi* (Stainton, 1861) – New for Spain**

ES – TE: larvae, mines, Segura de los Baños, 1000 m, 6-VII-2002, *Sorbus aucuparia*, AL & ZL (AL).

Stigmella sorbi is a boreo-montane species, which in southern Europe only occurs on mountains, usually on *Sorbus aucuparia*. The mines are unmistakeable.

***Stigmella plagicolella* (Stainton, 1854)**
ES: *Stigmella plagicolella*; vN: 23 - ES
PT: *Nepticula plagicolella*; MENDES, 1905: 173 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella plagicolella; VM 91: 45; VM 94: 26; vN: 23 - PT

ES – O: mines, Valley of Río Cares, N. Caín, 10 km NNE Posada de Valdeón, 500 m, 31-VII-1986, *Prunus spinosa*, EvN & SR; **S**: mines, 2 km NW Los Tojos, Reserva Nacional de Saja, 500 m, 23-VII-1986, *Prunus*, EvN & SR (RMNH); **TE**: 1♀, Montalbán, 1000 m, 16-VI-2002, AL & ZL (AL). **– PT – BA**: 4 vacated mines, Tibaldinho, 7 km W of Mangualde: Moinhos do Dão, 240 m, 6-VIII-

2001, *Prunus domestica*, EvN (RMNH); **TM**: 3 larvae + vacated mines, PN Montesinho, Salgueiros, Vallone das Furnas, 8 km N Vinhais, 940 m, 27-VII-2001, *Prunus spinosa*, EvN (RMNH)

A very common and widespread European species, but adults only rarely collected, usually recorded by the characteristic mines.

***Stigmella aurella* (Fabricius, 1775)**

ES: *Nepticula aurella*; MENDES, 1918: 127 - ES: **SA** ; AGENJO, 1964: [4] - ES
Stigmella aurella; GM: 18; VM 91: 45; VM 94: 26; vN: 23 - ES
PT: *Nepticula aurella*; MENDES, 1905: 172 - PT: **BB**, **E** ; MENDES, 1910b: 127 - PT: **E** ; ZERKOWITZ, 1946: 116 – P: **BB**, **E**
Stigmella aurella; VM 91: 45; VM 94: 26 - PT; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**; vN: 23 - PT
Nepticula fragariella; MENDES, 1905: 172 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella fragariella; GM: 18 - PT

ES – CA: 1♂, 1 mine, 2 km E Grazalema, near Puerto de los Álamos, 800 m, 7-I-2001, e.l. *Rubus ulmifolius*, 7-II-2001, EvN (RMNH).

Uncertain: **ES –** mines on *Fragaria vesca*, **GE**, mines on *Rubus*, **PM** (JK). **– PT –** mines on *Rubus*: **BA**, **BL**, **TM**

Leafmines on *Rubus* and *Fragaria* cannot be identified with certainty: they can also belong to *S. splendidissimella* (Herrich-Schäffer, 1855), which is not yet known from the Peninsula, or *S. auromarginella* (see below). The cited male is the only reliable specimen we have seen, but we assume that also Mendes has cited correctly identified reared specimens. We tentatively assume that this is the commonest *Stigmella* on *Rubus* in the Peninsula, we have seen similar mines on many places.

***Stigmella auromarginella* (Richardson, 1890)**

PT: *Stigmella auromarginella*; vN: 23 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

PT – AG: 1 adult, Monchique, Piquota, N. slopes, 460- 650 m, 7-I-1987, *Rubus ulmifolius*, e.l. 15-I / 6-II-1987, EvN (RMNH).

Up to now we only have seen the single adult reared from Portugal, but it is probably more widespread. The mines of this species, usually on *Rubus ulmifolius*, are indistinguishable from those of *S. aurella.* Widespread species, but nowhere common, with scattered records in the Mediterranean region (Cyprus, Crete, Croatia), along the Atlantic coast (France, Great Britain, Ireland), up to the coastal regions of Denmark and Sweden.

***Stigmella incognitella* (Herrich-Schäffer, 1855) – New for Portugal.**

ES: *Nepticula pomella*; AGENJO, 1964: [4] - ES
Stigmella incognitella; VM 91: 45; VM 94: 26 - ES

ES – PO: 1♂, Moscoso, 3-VIII-1975, R. Outerelo (AV); **– PT – BA**: 3♂, 2♀, Povolide, 21-VI-2004, *Malus,* e. l. VII-2004, Al & ZL (AL).

We have been unable to find the source for the listing of this apple-feeding species by AGENJO (1964). Its occurrence in Spain is confirmed by the male specimen cited here.

***Stigmella perpygmaeella* (Doubleday, 1859)**

ES: *Stigmella perpygmaeella*; vN: 23 - ES
PT: *Nepticula pygmaeella* (Haworth, 1828); MENDES, 1910b: 127 - PT: **E**; ZERKOWITZ, 1946: 116 – P: **E**; MONTEIRO GUIMARAES, 1977: 9 - PT: **E**
Stigmella pygmaeella; GM: 18 - PT
Stigmella perpygmaeella; VM 91: 45; VM 94: 26; vN: 23 - PT

ES – GE: mines, 3 km SW Le Perthus, N La Junquera, 620 m, 31-VII-1982, *Crataegus monogyna*, EvN; mines, SW. of Mt. Salinas, 4 km N of Massanet-de-Cabrenys, 1150 m, 1-VIII-1982,

Crataegus monogyna, EvN (RMNH); **MA**: 1♂, Ronda, 25-VII-1986-28-VII-1986, CG (CG); **SE**: 2♂, 1♀, Coripe, 300 m, 26-VI-2002, AL & ZL (AL).

S. perpygmaeella has previously only been recorded once, from Estremadura in Portugal, where Mendes found the larvae in December.

*** *Stigmella hemargyrella* (Kollar, 1832)**

ES: *Stigmella hemargyrella*; vN: 23 - ES

ES – GE: mines, SW. of Mt. Salinas, 4 km N of Massanet-de-Cabrenys, 1150 m, 1-VIII-1982, EvN; **LE**: mines, Posada de Valdeón, 3.5 km SE: Santa Marina, 1200 m, 30-VII-1986, EvN & SR ; **S**: mines, 2 km NW Los Tojos, Reserva Nacional de Saja, 500 m, 23-VII-1986, EvN & SR (RMNH); all on *Fagus sylvatica.*

Only recorded by the characteristic mines, probably common in *Fagus* forests northern Spain.

***Stigmella speciosa* (Frey, 1857)**

ES: *Stigmella speciosa*; vN: 23 - ES

ES – B: empty and tenanted mines, Montserrat, 14-IX-1976, *Acer opalus*, JK (in litt.); **TE**: 1♂, Albarracín, 1200 m, 26-VI-2001, AL & ZL (AL).

Stigmella speciosa feeds on a number of *Acer* species, in particular *A. pseudoplatanus* and *A. monspessulanum*. *Acer opalus* is a new host.

Stigmella* species feeding on *Quercus

The following species all belong to the *Stigmella ruficapitella* group and feed on *Quercus* species. These have just been revised (VAN NIEUKERKEN & JOHANSSON, 2003), and we therefore just list references without comments, and only records not cited in that paper.

***Stigmella suberivora* (Stainton, 1869)**

ES: *Nepticula suberivora*; MENDES, 1918: 127 - ES: **SA** ; HERING, 1935: 373 - ES: **B**, **TE**
Stigmella suberivora; AGENJO, 1964: [4]; VM 91: 45; VM 94: 26; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 326 - ES: **CA**, **CO**, **CS**, **CU**, **GE**, **GR**, **H**, **MA**, **MU**, **TE**, **TO**, **S**, **V**
PT: *Nepticula suberivora*; MENDES, 1913: 28 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Nepticula ilicivora Peyerimhoff, 1871; ZERKOWITZ, 1946: 115 – P: **BB**
Stigmella suberivora; MONTEIRO GUIMARAES, 1977: 31 - PT: **BB**; GM: 18; VM 91: 45; VM 94: 26 - PT; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**; vN: 23 - PT; CORLEY *et al.*, 2000: 250 - PT: AG; VAN NIEUKERKEN & JOHANSSON, 2003: 326 - PT: **AG**, **BA**, **BB**

ES – SE: 1♂, El Garrobo, 24-VI-2004, AL & ZL**; PT – BAL**: 3♂, 1♀, Marateca, 23-VI-2004, AL & ZL; **R**: 3♂, 2♀, Monsanto, 22-VI-2004, AL & ZL (AL)

***Stigmella ilicifoliella* (Mendes, 1918) – New for Andorra**

ES: *Nepticula ilicifoliella* MENDES, 1918: 127 - ES: **SA** [types]; AGENJO, 1964: [4] - ES
Stigmella ilicifoliella; GM: 18 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 329 - ES: **AB**, **B**, **BU**, **CA**, **CU**, **GR**, **M**, **MA**, **MU**, **TE**, **S**
[no genus] *ilicifoliella* [as incertae sedis]; VM 91: 47; VM 94: 28
PT: *Nepticula* sp.?; MENDES, 1913: 26 - PT: **BB**
Stigmella ilicivora ssp. *nigra*; DUFRANE, 1955: 192 - PT: **BB**
Stigmella ilicifoliella; VAN NIEUKERKEN & JOHANSSON, 2003: 329 - PT: **AG**, **E**, **BB** [as **BA**]

AND – 1♂, Sant Julià, 920m, 26-V-1982, P. J. L. Roche (RMNH); **ES – CU**: 2♂, 1♀, Casas del Egidillo, 30-VI-2004, AL & ZL; **GR**: 2♂, Diezma, 28-VI-2004, AL & ZL; 1♂, 1♀, El Molinillo, 27-VI-2004, AL & ZL (AL).

This species was taken out of synonymy with *S. suberivora* by VAN NIEUKERKEN & JOHANSSON (2003), who gave the detailed distribution in the Iberian peninsula. The cited record from BA (Covilha), however, is incorrect, this is in BB. Here we record also a specimen from Andorra. *S. ilicifoliella*

appears to be almost as common as *S. suberivora*, being a little more common in higher altitudes, up to 2200 m.

***Stigmella basiguttella* (Heinemann, 1862)**
ES: *Stigmella basiguttella*; JOHANSSON & NIELSEN, 1990: 230; VM 91: 45; VM 94: 26; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 333 - ES: **CC**, **CU**, **GR**, **MA**, **SA**, **SG**, **TE**, **TO**
PT: *Nepticula basiguttella*; MENDES, 1913: 27 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella basiguttella; MONTEIRO GUIMARAES, 1977: 21 - PT: **BB**; GM: 18; VM 91: 45; VM 94: 26; vN: 23 - PT; VAN NIEUKERKEN & JOHANSSON, 2003: 329 - PT: **BA**, **TM**

ES – GR: 1♂, El Molinillo, 27-VI-2004, AL & ZL (AL) 1♂, 22 km above Otivar, Huerto Alegre, 1250 m, 30-VIII-2001, B.BS (ZMUC); **TO**: 1♂, Buenasbodas, 16-VI-2004, AL & ZL; **– PT – BA**: 2♂, Povolide, 21-VI-2004, AL & ZL; **TM**: 1♂, Parc natur. Montesinho, Paco, 20-VI-2004, AL & ZL (AL).

***Stigmella dorsiguttella* (Johansson, 1971)**
ES: *Stigmella dorsiguttella*; JOHANSSON & NIELSEN, 1990: 232; VM 91: 45; VM 94: 26; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 339 - ES: **GR**, **TE**
PT: *Stigmella dorsiguttella*; VAN NIEUKERKEN & JOHANSSON, 2003: 339 - PT: **AAL**

***Stigmella atricapitella* (Haworth, 1828)**
ES: *Stigmella atricapitella*; JOHANSSON & NIELSEN, 1990: 235; VM 91: 45; VM 94: 26; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 343 - ES: **CA**, **MA**, **SA**
PT: *Nepticula atricapitella*; MENDES, 1913: 27 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella atricapitella; MONTEIRO GUIMARAES, 1977: 19 - PT: **BB**; GM: 19; VM 91: 45; VM 94: 26; vN: 23 - PT; VAN NIEUKERKEN & JOHANSSON, 2003: 343 - PT: **BA**

***Stigmella samiatella* (Zeller, 1839)**
ES: *Stigmella samiatella*; JOHANSSON & NIELSEN, 1990: 236; VM 91: 45; VM 94: 26; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 347 - ES: **CC**, **CU**, **GE**, **SA**, **SG**, **TE**
PT: *Nepticula samiatella*; MENDES, 1905: 172 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella samiatella; GM: 19; VM 91: 45; VM 94: 26; vN: 23 - PT

The occurrence in Portugal is not proven by adult material. However, since the MENDES (1905) record refers to mines on *Castanea sativa*, it is very likely that this identification was correct, since this is the only species reared with certainty from this host, apart from *S. basiguttella*, which makes very different mines (VAN NIEUKERKEN & JOHANSSON, 2003).

***Stigmella roborella* (Johansson, 1971)**
Stigmella roborella; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 348-349 - ES: **CA**, **CU**, **TE**, **TO**

***Stigmella eberhardi* (Johansson, 1971)**
ES: *Stigmella eberhardi*; VM 91: 45, 263 - ES: **CA**; VM 94: 26; vN: 23 - ES; VAN NIEUKERKEN & JOHANSSON, 2003: 350 - ES: **B**, **CA**, **CC**, **CU**, **H**, **MA**
PT: *Nepticula ?ruficapitella*; MENDES, 1905: 172 - PT: **BB** [mines on *Quercus ilex*].
Stigmella eberhardi; VAN NIEUKERKEN & JOHANSSON, 2003: 350 - PT: **BA**, **BB**

ES – CU: 1♂, 1♀, Uña, 1150 m, 28-VIII-2001, B.BS (ZMUC); **HU**: 1♀, 10 km S of Benabarre, Estana, 800 m, 18-VI-1999, PS (ZMUC); 1♂, Esteña, 700 m, 18-19-VIII-2001, PS & BS (ZMUC); **TO**: 1♂, 1♀, Buenasbodas, 16-VI-2004, Al & ZL (AL).

***Acalyptris pyrenaica* A. & Z. Laštůvka, 1993**
ES: *Acalyptris pyrenaica*; LAŠTŮVKA & LAŠTŮVKA, 1993: 158 - ES: **L** [types]; VM 94: 26; vN: 24 - ES

* ***Acalyptris platani*** **(Müller-Rutz, 1934)**
ES: *Acalyptris platani*; vN: 24 - ES; OLIVELLA, 2000: 30 - ES: **B**, **GE**, **T**
PT: *Acalyptris platani*; vN: 24 - PT

ES – L: mines, Tremp, VI-1992, AL & ZL (AL); **SS**: mines, San Sebastián, 12-VIII-1986, EvN & SR (RMNH); **PM**: mines, Mallorca, Parque Alfabia, S. Col de Soller, 1-X-1969, JK (in litt.). **– PT – BL**: 3 vacated mines, 12 km N Coimbra, parking lot along highway, 64 m, 20-VIII-2001, EvN (RMNH); **MI**: mines between Valencia do Minho and Monção, 14-VII-1980, J.W. Schoorl (RMNH); all on *Platanus hispanica.*

This species is common in southern Europe on planted *Platanus*. The oldest record is that by Klimesch who found mines in 1969 on Mallorca. It is very likely that this species has been present long before that, unnoticed because of the lack of collectors.

Acalyptris minimella **(Rebel, 1924) – New for Gibraltar**
ES: *Trifurcula (Weberina) minimella*; KLIMESCH, 1978: 257, figs. 37 - ES: **PM**
Trifurcula (Niepeltia) minimella; GUSTAFSSON, 1981: 463 - ES: **PM**
Weberina minimella; GM: 20 - ES
Acalyptris minimella; VM 91: 45 - ES: **PM**; LAŠTŮVKA & LAŠTŮVKA, 1993: 158 - ES: **B**, **CS**, **MU**; VM 94: 26 - ES: **PM**; vN: 24 - ES
PT: *Acalyptris minimella*; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**; vN: 24 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

ES – AB: 5♂, 3♀, Socovos, 7-VII-2001, AL & ZL (AL); **AL**: 2♀, Uleila del Campo, 9-VII-1993, AL & ZL (AL); **CA**: 1 larva, mines, Sierra de Grazalema, El Bosque, 400 m, 27-II-2000, EvN; **H**: 1 larva, Laguna de Mujer, 4 km WNW Mazagón, 25-II-2000, EvN; mines, Mazagón, dunes, 10 m, 29-III-1994, EvN; vacated mines, Sierra de Aracena, 3 km SW Aracena, along road, 709 m, 4-I-2001, EvN; 2 vacated mines, Sierra de Aracena, 6 km NW Cortegana, 550 m, 26-II-2000, EvN; **MA**: mines, 2 km S Istán, road to Istán, 400 m, 6-II-1984, EvN; mines, 6 km E of Marbella: Los Monteros, 25 m, 9-II-1984, EvN; 1♀, mines, Benahavis, 300 m, 6-II-1984, e.l. 19-21-V-1984, EvN (RMNH); 1♂, Camino de Ojén, 150 m, 20-VI-1983, ETO (ZMUC); 3♂, 1♀, Istán, 1-VII-1994, AL & ZL (AL); 2♂, Jimera de Líbar, 27-VI-2002, AL & ZL (AL); mines, Marbella, 25-III-1979, EvN; 1♀, mines, Marbella, 2 km N, 28-III-1979, e.l. 6-VI-1979, EvN (RMNH); 1♂, Marbella, Casa y Campo, 100 m, 5-X-1982, ETO; 1♂, Marbella, El Mirador, 100 m, 28-VII-1991, ETO (ZMUC); 1♂, Monda, 26-VI-2004, AL & ZL (AL); **PM**: 4♂, 4♀, Ibiza, San Antonio, 27-IV + 7-V-1975, e.l. 29-V / 9-VI-1975, B. Gustafsson (NHRS); 1♂, Mallorca, Paguera, 'early' V-1970, JK (ZSMC); 5♂, 5♀, Mallorca, Palma Nova, 10-III-1968, e.l. 19-IV-23-IX-1968, JK (ZSMC); **SE**: 2♂, 1♀, Coripe, 26-VI-2002, AL & ZL; 1♂, El Garrobo, 25-VI-2004, Al & ZL (AL); **V:** 1 mine, 6 km N Bétera: Cañada de Bigarra, 100 m, 24-IV-1993, EvN & JCK (RMNH). **– GIBR –** 1♀, Gibraltar, *Pistacia terebinthus*, e.l. 30-V-1903,Walsingham (BMNH). **– PT – AG**: 1♀, 1 larva, mines, Cabo de São Vicente, 8-I-1987, e.l. 27-II-1987, EvN (RMNH); 1♂, Messines de Baixo, 25-VI-2002, AL & ZL (AL); 1♀, Serra de Monte Figo, 24-V-2001, MC (MC); 1♀, Serra de Monte Figo, 24-V-2001, MC (RMNH); **R**: 1♂, Monsanto, 22-VI-2004, AL & ZL (AL). All mines in ES and PT on *Pistacia lentiscus.*

A very common element of the coastal Matorral vegetations, where it feeds on *Pistacia lentiscus*, here for the first time recorded from *Pistacia terebinthus* as well. Vacated mines may possibly confused with those of *Simplimorpha promissa*, which seems to be much rarer here.

Genus *Trifurcula*

The genus *Trifurcula* forms a very important element of the Iberian fauna, as yet still imperfectly known. We have already collected 20-30 undescribed species, and these will be described in coming publications. Identification of *Trifurcula* species is therefore at the moment still problematic: the authors welcome further material for study.

The subgenus *Glaucolepis* comprises mainly species feeding on Matorral shrubs from the families Lamiaceae, Apiaceae (genus *Bupleurum*) and Plantaginaceae (*Globularia*), plus a few other hosts. Spe-

cies of *Levarchama* are all leafminers of Fabaceae (genera *Lotus, Dorycnium, Anthyllis, Coronilla* etc.). This is the only subgenus of which we have not found new species in the Peninsula. All species of *Trifurcula* s. str. make stemmines in Fabaceae, the *T. subnitidella* group (revised by VAN NIEUKERKEN, 1990b) on the same genera as *Levarchama* and also *Onobrychis*, the remaining, in the *pallidella* group all on brooms (retamares) (tribus Genisteae), which is a very diverse group in the Peninsula.

Larvae are often found in the wet and cool part of the year: November-March, but some species feed also in summer. Adults come frequently at light.

***Trifurcula (Glaucolepis) melanoptera* Van Nieukerken & Puplesis, 1991**
ES: *Trifurcula (Glaucolepis) melanoptera* VAN NIEUKERKEN & PUPLESIS, 1991: 205 - ES: **AB**, **CU**, **GR**, **M**, **SA**, **SG**, **TE**; VM 91: 46; VM 94: 27; vN: 24 - ES

ES – B: 1♀, La Pobla de Claramunt, 26-VIII-2000, ER (RMNH); **GR**: 22♂, 8♀, Diezma, 1100 m, 1-VII-1992, 2-VII-2001, 29-VI-2002, 28-VI-2004, AL & ZL; 4♂, Puerto Pinar, 1700 m, 15-VII-1993, AL & ZL; **MA**: 1♂, Monda, 500 m, 28-VI-2002, AL & ZL (AL); **TE**: 1♂, 1 km E Tramacastilla, 1250 m, 24-VIII-2001, PS & BS (ZMUC); 1♀, Albarracín, 1171 m, 12-VII-1981, AV (AV); 1♀, Albarracín, Valdovecar, 1200 m, 25-26-VIII-2001, PS & BS (ZMUC); 1♂, 1♀, Alcalá de la Selva, 1300 m, 22-VI-1994, AL & ZL (AL); 1♀, Cosa, 2-13-VIII-1989, CG (RMNH); 1♀, Puerto de Orihuela, 1650 m, 23-VIII-2001, PS & BS (ZMUC); **TO**: 3♂, Buenasbodas, 800 m, 19-VI-2002, AL & ZL (AL); **Z**: 1♂, Tosos, 1-VII-2004, AL & ZL (AL).

A widespread species, of which the biology is still unknown. It may be associated with *Prunus*, and the localities cited here do not contradict that possibility.

***Trifurcula (Glaucolepis) alypella* Klimesch, 1975**
ES: *Trifurcula (Fedalmia) alypella*; KLIMESCH, 1975a: 14, figs. 17-19 - ES: **PM** ; GM: 19 - ES
Trifurcula (Glaucolepis) alypella; VM 91: 46 - ES: **PM**; VM 94: 27 - ES: **PM**; vN: 24 - ES

ES – B: 4 mines, Montserrat, San Juan, 1000 m, 17-IV-1993, *Globularia alypum*, EvN & JCK; 1 mine, Sant Feliu de Codines, E, 450 m, 16-IV-1993, *Globularia alypum*, EvN & JCK; **CA**: larvae, vacated mines, 6 km NE Alcalá de los Gazules, 150 m, 1-III-2000, *Globularia alypum*, EvN & SR (RMNH); **HU**: 1♂, Candasnos, 250 m, 23-VI-2001, AL & ZL; **MA**: 1♂, Jimera de Líbar, 500 m, 4-VII-2001, AL & ZL (AL); **V**: 1♂, 24 mines,6 km N Bétera: Cañada de Bigarra, 100 m, 24-IV-1993, *Globularia alypum*, e.l. 18-VI-1993, EvN & JCK (RMNH).

T. alypella was described from Mallorca, and is here cited for the first time from continental Spain. The mines are very characteristic. The species is confined to warm limestone areas, where the host flourishes.

***Trifurcula (Glaucolepis) headleyella* (Stainton, 1854)**
ES: *Trifurcula (Glaucolepis) headleyella*; vN: 24 - ES

ES – GE: 1♂, Setcases, 1600 m, 3-VII-1989, BÅB (BÅB).

The most widespread species of the subgenus occurs throughout Europe to the British Isles, Sweden, western Russia and east to Greece, feeding on the widespread genus Selfheal (*Prunella*). The cited male, collected just in Spain, is the only one known here.

***Trifurcula (Glaucolepis) saturejae* (Parenti, 1963)**
ES: *Fedalmia (Stigmella) saturejae*; KLIMESCH, 1976: 48 – E: **GE**
Trifurcula (Fedalmia) saturejai [sic!]; GM: 19 - ES
Trifurcula (Glaucolepis) saturejae; VM 91: 46; VM 94: 27; vN: 24 - ES

ES – AB: 1♂, El Pardal, 29-VI-2004, AL & ZL (AL); **B**: 1♂, La Pobla de Claramunt, 20-VIII-1988, ER (RMNH); **CA**: mines, 3 km E Grazalema, road C344, 780 m, 19-I-1988, *Calamintha sylvatica*, EvN (RMNH); **CU**: 3♂, Casas del Egidillo, 30-VI-2004, AL & ZL (AL); 1♂, Paracuelles, 17-VII-1986, CG (CG); **GE**: 2♂, Anglés, 500 m, 24-VI-1991, AL & ZL (AL); **MA**: 1 mine, 5 km S Istán, road to Embalse de la Concepción, 150 m, 17-I-1988, *Calamintha sylvatica*, EvN (RMNH); 1♂, 1♀, Camino

de Benahavis, 8-VI-1983, ETO; 2♂, Camino de Cesares, 9-VII-1973, ETO (ZMUC, RMNH); 4♂, Jimera de Líbar, 500 m, 4-VII-2001, 27-VI-2002, AL & ZL (AL); 1♂, 2♀, mines, Marbella, 2 km N: road to Ojén, 150 m, 5-II-1984, *Calamintha nepeta*, e.l. 23-IV / 6-V-1984, EvN (RMNH); **SE**: 2♂, Coripe, 300 m, 26-VI-2002, AL & ZL; **Z**: 5♂, Tosos, 1-VII-2004, AL & ZL (AL).

Previously only cited from Port Bou by KLIMESCH (1976), it occurs probably commonly in Spain. Stemmines and leafmines also on *Calamintha* are easy to recognize.

***Trifurcula (Glaucolepis) thymi* (Szöcs, 1965)**

ES: *Trifurcula (Glaucolepis) thymi*; vN: 24 - ES

PT: *Trifurcula (Glaucolepis) thymi*; vN: 24 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

ES – AL: 4♂, 10 km E Bedar, El Pinar, 325 m, 19-27-IV-2001, PS & BS; 1♂, El Pozo de Esparto, 20 m, 22-26-IV-2001, Hviid, PS & BS (ZMUC); **B**: 2♂, La Llacuna, 2-VIII-1989, 23-VIII-2001, ER (RMNH, ER); **CS**: 1♂, 20 km SE Morella, 15-VI-1989, BÅB (BÅB); 1♂, Cuevas de Vinromá, 26-VI-1991, AL & ZL (AL); **CU**: 1♂, 16 km W Cuenca, 17-VI-1989, BÅB (BÅB); 3♂, Casas del Egidillo, 30-VI-2004, AL & ZL; 9♂, Casillas de Ranera, Sinarcas, 900 m, 30-VI-1991, AL & ZL; 3♂, Monteagudo de las Salinas, 900 m, 17-VI-2003, AL & ZL; 5♂, Villalba de la Sierra, 15-VI-2004, AL & ZL; **GE**: 2♂, Anglés, 500 m, 5-VII-1994, AL & ZL (AL); 3♂, near Sagas at B432, 650 m, 13-VIII-2001, PS (ZMUC); 1♂, Setcases, 1600 m, 3-VII-1989, BÅB (BÅB); **GR**: 6♂, 2♀, Sierra de la Yetra, El Molinillo, 1200 m, 28-VI-1992, 27-VI-2004, AL & ZL; **H**: 1♂, Bonares, 100 m, 26-VI-2034, AL & ZL (AL); **HU**: 1♂, 10 km S of Benabarre, Estana, 800 m, 18-VI-1999, PS; 1♂, Esteña, 700 m, 18-19-VIII-2001, BS & PS (ZMUC); **M**: 2♂, Campo Real, 640 m, 19-IX-1979, AV; 1♀, Campo Real, 640 m, 2-VII-1982, AV (AV); **MA**: 1♂, Monda, 26-VI-2004, AL & ZL (AL); **MU**: 1♂, Mazarrón, 26-IV-1981, CG (CG); **TE**: 13♂ Albarracín, 1100-1200 m, 23-VI-1994 +26-VI-2001, AL & ZL; 2♂, Alcalá de la Selva, 1300 m, 3-VII-1994, AL & ZL (AL); 1♂, Cosa, 2-VIII-1989-13-VIII-1989, CG (CG); 4♂, Montalbán, 1000 m, 4-VII-1991+16-VI-2002, AL & ZL (AL); 1♂, Pozondón, 22-V-1981, CG (CG); 8♂, Royuella, 1300 m, 16-VI-2003, AL & ZL; 1♂, Segura de los Baños, 1000 m, 6-VII-2002, AL & ZL; 4♂, Vivel del Río, 1000 m, 4-VII-1991, AL & ZL (AL); **V**: 4♂, 6 km N Bétera: Cañada de Bigarra, 100 m, 23-IV-1993, EvN & JCK (RMNH). **– PT – AG**: 3♂, 2♀, mines, 2 km W Bordeira, 8-i-1987, *Thymus camphoratus*, e.l. 22-30-III-1987, EvN; 1♂, 1♀, mines, Salema, 2 km S Budens, 9-I-1987, *Thymus camphoratus*, e.l. 19-III / 26-III-1987, EvN; 2♂, mines, Umbrias de Camacho, 10-I-1987, *Thymus mastichina*, e.l. 30-III / 20-IV-1987, EvN (RMNH).

This is one of the most widespread *Glaucolepis* in the Peninsula (14 provinces), were it is most frequently encountered at light. The leafmines in *Thymus* are very small and hard to find. In Portugal it was reared from *Thymus mastichina* and *T. camphoratus*. J. Klimesch (in litt.) found it on *Thymus vulgaris*. The junior authors collected *T. thymi* also often near *Satureja* sp. and reared it from that host in France, Croatia and Italy, which is almost certainly also here an alternative host.

***Trifurcula (Glaucolepis) teucriella* (Chrétien, 1914)**

ES: *Trifurcula (Glaucolepis) teucriella*; vN: 24 - ES

ES – GE: 3♂, 1♀, Port Bou, 22-III-1967, *Teucrium chamaedrys*, e.l. 4-9-V-1967, JK (ZSMC); mines, same locality, 19-II-1968, JK (in litt.).

Trifurcula teucriella is still a very poorly known species, only known from France (Ardèche) and the above cited specimens, reared by J. Klimesch. The male genitalia are illustrated in Figs. 10-12.

***Trifurcula (Glaucolepis) stoechadella* Klimesch, 1975**

ES: *Trifurcula (Ectoedemia) stoechadella*; KLIMESCH, 1975a: 27, figs 38-40 - ES: **GE**

Ectoedemia (Dechtiria) stoechadella; GM: 19 - ES

Trifurcula (Glaucolepis) stoechadella; VM 91: 46; VM 94: 27; vN: 24 - ES

PT: *Trifurcula (Glaucolepis) stoechadella*; vN: 24 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

ES – AB: 2♂, El Pardal, 1100 m, 30-VI-2003, 29-VI-2004, AL & ZL (AL); **AL**: 4 mines, Rodalquilar, 5 km SW Las Negras (Sierra del Cabo de Gata), 120 m, 8-I-1988, EvN (RMNH); **CC**: 1♂, Pior-

nal, 1200 m, 20-VI-2003, AL & ZL (AL); **CU**: 1♂, 16 km W Cuenca, 17-VI-1989, BÅB (BÅB); 2♂, 2♀, Boniches, 1200 m, 17-VI-2002, AL & ZL; 1♂, Casillas de Ranera, Sinarcas, 30-VI-1991, AL & ZL (AL); **GE**: 1♀, Port Bou, 11-VII-1967-18-VII-1967, E. Arenberger (SMNK); **GR**: 7♂, 3♀, Sierra de la Yetra, El Molinillo, 1200 m, 28-VI-1992, AL & ZL (AL); 2♂, Sierra Nevada, Ruta de Veleta, 24-VIII-1984, M. Kavin & PS (ZMUC); **H**: larvae + vacated mines, 5 km ENE Mazagón, 75 m, 5-I-2001, EvN (RMNH); 1♀, Mazagón, 8.-10-IV-1994, HW (HW); larvae + vacated mines, Sierra de Aracena, 5 km NW Cortegana, 550 m, 26-II-2000, EvN (RMNH); **HU**: 1♂, Esteña, 700 m, 18-19-VIII-2001, BS & PS (ZMUC); **M**: 2♂, Villar del Olmo, 675 m, 16-VIII-1980, AV (AV); **MA**: 2♂, Marbella 10 km N, 24-25-IV-2001, JJ (JJ,RMNH); 6♂, 11♀, 2 larvae, Sierra Mijas, 2.5 km S Alhaurín de la Torre, 280 m, 14-I-1988, e.l. 25-IV-22-VIII-1988, EvN (RMNH); **SE**: 1♂, El Garrobo, 25-VI-2004, AL & ZL (AL); **TE**: 2♂, 1♀, 2 larvae, 4 km E of Albarracín, near Cuevas de Alb., 1300 m, 21-IV-1993, 6.vi-23-VII-1993, EvN & JCK (RMNH, JK); 16♂, 7♀, Albarracín, 1100-1200 m, 3-VII-1991, 23-VI-1992, 26-VI-2001, AL & ZL (AL); 1♂, Albarracín, 8-28-IX-1955, J. R. Caron (ZSMC); 1♂, Cosa, 2-13-VIII-1989, CG (CG); 2♂, Montalbán, 1000 m, 4-VII-1991, 15-VI-2003, AL & ZL; 6♂, 2♀, Vivel del Río, 1000 m, 4-VII-1992, 2-VII-2003, AL & ZL; **TO**: 9♂, 10♀, Buenasbodas, 800 m, 19-VI-2002, 16-VI-2004, AL & ZL; 6♂, 3♀, Robledo del Buey, 800 m, 18-VI-2002, AL & ZL; 2♀, Robledo del Mazo, 800 m, 19-VI-2003, AL & ZL (AL). **– PT – AG**: 1♂, mines, Cabo de São Vicente, 8-I-1987, EvN; 1♀, mines, Foz do Ribeiro, 8 km NE São Bartolomeu de Messines, 6-I-1987, e.l. 11-V-1987, EvN; 3♂, mines, ibidem, but *Lavandula viridis*, 22-26-VIII-1987, EvN; 2♂, mines, Paderne, ca 1 km NW, along N270, 6-I-1987, e.l. 22-28-IV-1987, EvN (RMNH); 3 km N. of Porto de Lagos, 22-V-2001, MC (MC); 1♀, mines, Quinta da Lago, 5 km SE Almansil, 5-I-1987, e.l. 1-VI-1987, EvN (RMNH); 1♂, São Romao, 21-V-2001, MC (MC); 11♂, 8♀, mines, Vales, 5 km N Santa Rita, 10-I-1987, e.l. 13-IV / 11-V-1987, EvN (RMNH); **BA**: 2♂, Povolide, 21-VI-2004, AL & ZL; **BAL**: 1♂, Marateca, 23-VI-2004, AL & ZL; **BB**: 1♂, 3♀, Covilha, Serra da Estrela, 1250 m, 21-VI-2002, AL & ZL; 1♀, Salgueiro do Campo, 300 m, 23-VI-2002, AL & ZL; 1♂, 1♀, Zebreira, 200 m, 20-VI-2002, AL & ZL; **E**: 1♂, Setúbal, Marateca, 100 m, 24-VI-2003, AL & ZL; **R**: 4♂, 5♀, Monsanto, 22-VI-2004, AL & ZL; **TM**: 1♂, PN Montesinho, Paco, 20-VI-2004, AL & ZL; 2♂, PN Montesinho, Varge, 19-VI-2004, AL & ZL (AL). Mines on *Lavandula stoechas*, except when otherwise indicated.

T. stoechadella was described from mines on *Lavandula stoechas* near Port Bou, and is another very common and widespread species, recorded elsewhere only from France and Italy. Leafmines are almost always present on *Lavandula stoechas*. In Portugal it was also found on the closely related *L. viridis*. On other *Lavandula* species we have also found mines, but they belong probably all to one or more other species.

***Trifurcula (Glaucolepis) rosmarinella* (Chrétien, 1914) – New for Portugal**

ES: *Trifurcula rosmarinella*; KLIMESCH, 1975a: figs. 34-37, 41 - ES: **GE**

Trifurcula (Fedalmia) rosmarinella; GM: 19 - ES

mistake!: *Trifurcula (Glaucolepis) rosmarinella*; VM 91: 46 - ES: **PM**; VM 94: 27 - ES: **PM**

Trifurcula (Glaucolepis) rosmarinella; vN: 24 - ES

ES – AB: 1♀, El Pardal, 1100 m, 30-VI-2003, AL & ZL (AL); **AV**: 3♂, 6 larvae, mines, Casavieja, 5 km W, 850 m, 5-III-1997, e.l. 17-28-V-1997, EvN; mines, Cuevas de Valle, 2 km SW, 1100 m, 3-III-1997, EvN (RMNH); 1♂, 3♀, Navarrevisca, 16-VII-1985, CG (CG); **B**: 4♂, 4♀, mines, Muntanyas de Garraf, 8 km NW Castelldefels, 450 m, 18-IV-1993, e.l. 23-30-V-1993, EvN & JCK (RMNH, JK); 2♂, Villafranca del Penedes, 25-VI-1991, AL & ZL; **CS**: 1♀, Cuevas de Vinromá, 26-VI-1991, AL & ZL (AL); **CU**: 6♂, 1♀, Casas del Egidillo, 30-VI-2004, AL & ZL; 5 mines, 4 km S of Villalba de la Sierra, 1000 m, 22-IV-1993, EvN & JCK (RMNH); 6♂, 4♀, Gabaldón, 950 m, 1-VII-2002, AL & ZL (AL); 1♂, Monteagudo de las Salinas, 900 m, 15-VI-2003, AL & ZL (AL); 2♂, Vega del Codorno, 1350 m, 23-VII-1985, JHK (JHK, RMNH); **GE**: 1♀, Port Bou, 25-II-1967, e.l. 20-V-1967, JK(RJ); **GR**: 1♂, 20 km ENE of Granada, 23-VII-1986, CG (CG); 1♂, 25 km NW Granada: Puerto de Moras, 1250 m, 2.x.2001, C & F K Gielis (RMNH); 1♀, mines, 3 km W Lanjarón, along road, 640 m, 12-I-1988, e.l. 18-V-1988,EvN (RMNH); 1♂, Diezma, 1100 m, 29-VI-2003, AL & ZL; 2♂, El Molinillo, 27-VI-2004,

AL & ZL (AL); 1♂, 1♀, Motril 10 km N, 23-IV-2001, JJ (JJ); 1♂, Orgiva, 1300 m, 11-IX-1974, M. & W. Glaser (SMNK); 1♀, Pampaneira, 940 m, 21-22-VI-1989, BÅB (BÅB); **H**: 1♂, Bonares, 100 m, 26-VI-2003, AL & ZL (AL); 8♂, 4♀, mines, Cota Doñana entorno, coastal road, 12 km NW Matalascañas, 50 m, 5-I-2001, e.l. 2-II / 5-III-2001, EvN (RMNH); 1♂, Mazagón, 8-10-IV-1994, HW (HW); **M**: 1♀, 1 km S Berzosa del Lozoya, 10 km SE Buitrago del Lozoya, 1140 m, 2-III-1997, 7-V-1997, EvN (RMNH); 1♂, Campo Real, Madrid, 640 m, 20-V-1980, AV (AV); mines, Miraflores de la Sierra, 2 km N, 1300 m, 4-V-1996, EvN (RMNH); **MA**: mines, Marbella, 1987, ETO (RMNH); 2♂, 1♀, Monda, 500 m, 28-VI-2002, 26-VI-2004, AL & ZL (AL); 1 mine**,** Sierra Blanca, 6 km N Marbella, El Mirador, 800 m, 5-II-1984, EvN (RMNH); 4♂, 1♀, Sierra de Marbella, El Mirador, 700 m, 6, 19-VIII-1977, 14-VII-1980, ETO (ZMUC, RMNH); **MU**: 1♂, 4 km NW Aledo, 26-IX-2001, C & F K Gielis (CG); **TE**: 6♂, 4♀, Alcorisa, 800 m, 5-VII-1991, AL & ZL; 9♂, 8♀, Vivel del Río, 1000 m, 5-VII-1993, 8-VII-2001, 2-VII-2003, AL & ZL (AL); **Z**: 1♂, 4 km N Tosos, 400 m, 28-IV-1997, PS (ZMUC); 8♂, 12♀, Caspe, 250 m, 22-VI-1992, AL & ZL (AL); **PM**: few empty mines, Mallorca: Paguera, Cala Fornells, 29-XI, 3-XII-1967, JK (in litt.); **Z**: 8♂, 1♀, Tosos, 13-VI, 1-VII-2004, AL & ZL (AL). **– PT – R**: 3♂, Monsanto, 22-VI-2004, AL & ZL (AL).

In the checklists (VIVES MORENO, 1991, 1994) this species was incorrectly cited from the Baleric Islands, because the only published record (KLIMESCH, 1975a) refers to a specimen from Port Bou (Gerona). Here we record it from the first time from Mallorca. *T. rosmarinella* is a widespread and very common species in Spain, particularly in limestone areas. Its distribution is similar to that of *stoechadella*, but it has also been cited from Cyprus.

***Trifurcula (Glaucolepis) sanctibenedicti* Klimesch, 1979** (endemic)

ES: *Trifurcula (Fedalmia) sanctibenedicti*; KLIMESCH, 1979: 24 - ES: **B** ; GM: 19 - ES

Trifurcula (Glaucolepis) sanctibenedicti; VM 91: 46; VM 94: 27; vN: 24 - ES

ES – A: 3♂, Puerto de Tudons, 1000 m, 27-VI-1991, AL & ZL; **AB**: 5♂, Socovos, 700 m, 7-VII-2001, AL & ZL (AL); **B**: mines Montserrat, 12-IX-1976, JK (RMNH); 15♂, 7♀, 17 larvae, mines, Montserrat, San Juan, 1000 m, 17-IV-1993, e.l. 30-V / 12-VIII-1993, EvN & JCK (RMNH); 1♂, Villafranca del Penedés, 25-VI-1991, AL & ZL (AL); **CS**: 1♂, mines, 3.5 km SW of Cortes de Arenoso, 700 m, 23-IV-1993, e.l. 9-VIII-1993, EvN & JCK (RMNH); **CU**: 1♂, Casas del Egidillo, 30-VI-2004, AL & ZL; 4♂, Gabaldón, 950 m, 1-VII-2002, AL & ZL (AL); **GU**: 1♀, Chiloeches, 1 km SE, 900 m, 7-III-1997, e.l. 30-VII-1997, EvN (RMNH); **HU**: 1♂, Barranco de Valcuerna, 8 km S Candasnos, 175 m, 7-IX-2001, BS & Hviid (ZMUC); **M**: mines, Arganda, 2km E, 650 m, 6-III-1997, EvN (RMNH); 1 larva, vacated mines, E of Los Santos de la Humosa, 900 m, 11-I-2001, EvN (RMNH); **MU**: 3♂, Yecla, 28-VI-1991, AL & ZL (AL); **T**: 3♂, Collado de Falset (Cataluna), 3-VII-1967, E. Arenberger (SMNK,RMNH); 6 mines, Pratdip, 3 km SE, 200 m, 25-IV-1993, EvN & JCK (RMNH); **TE**: 1♂, mines, 2 km NW Gea de Albaracín, 1040 m, 20-IV-1993, e.l. 14-VIII-1993, EvN & JCK (RMNH); 1 mine, 4 km SE of Rubielos de Mora, 900 m, 23-IV-1993, EvN & JCK (RMNH); 2♂, Albarracín, 5 km SE, 1400 m, 18-VII-1995, PS (ZMUC); 1♂, Alcorisa, 5-VII-1991, AL & ZL; 4♂, Montalbán, 1000 m, 4-VII-1991, 16-VI-2002, AL & ZL (AL); 3 larvae, mines, Montes Universales, 4 km E Calomarde, 1250 m, 20-IV-1993, EvN & JCK (RMNH); 3♂, Rubielos de Mora, 4-VII-1967, E. Arenberger (SMNK,RMNH); 3♂, Vivel del Río, 1000 m, 4-VII-1991, AL & ZL; **V**: 1♂, Jarafuel, Cofrentes, 29-VI-1991, AL & ZL (AL); **Z**: 12♂, 1♀, Caspe, 250 m, 22-VI-1992, AL & ZL (AL, RMNH); 11♂, 2♀, Tosos, 13-VI, 1-VII-2004, Al & ZL (AL).

Trifurcula sanctibenedicti was described from Montserrat on *Bupleurum fruticescens* ssp. *fruticescens.* It occurs commonly with this hostplant in the limestone areas of East and Central Spain, south to Murcia. On the closely related host *Bupleurum fruticescens* ssp. *spinosum*, occurring in high mountains, we found another, closely related species. Another closely related host occurs on Mallorca (*B. barceloi*): no mines have yet been searched there.

***Trifurcula (Glaucolepis) bupleurella* (Chrétien, 1907)**

ES: *Nepticula bupleurella*; HERING, 1935: 342 - ES: **B**, **MU** ; AGENJO, 1964: [4] - ES

Ectoedemia (Dechtiria) bupleurella; KLIMESCH, 1975b: 863 - ES: NO-Spanien; GM: 19 - ES
Trifurcula (Glaucolepis) bupleurella; VM 91: 46; VM 94: 27; vN: 24 - ES
PT: *Trifurcula (Glaucolepis) bupleurella*; vN: 24 - PT; CORLEY *et al.*, 2000: 251 - PT: **AG**

ES – B: 1♂, Sant Martí de Tous, 21-VII-1999, ER (RMNH); 2♂, 5 mines, Montserrat, 10-20-IX-1974, e.l. 17-V-1975, JK (RMNH); **GR**: 3♂, 4♀, mines, Cogollos, 900 m, 3-VII-2001, e.l. VII-2001, AL & ZL; **MA**: 1♂, 1♀, Monda, 26-VI-2004, AL & ZL (AL). **– PT – AG**: 15♂, 25♀, mines, Monchique, Piquota, N. slopes, 460- 650m, 7-I-1987, e.l. 20-II / 7-IV-1987, EvN (RMNH); all mines on *Bupleurum fruticosum*.

Trifurcula bupleurella feeds on the shrubby *Bupleurum fruticosum*, where it makes distinct long leafmines, and has only been found on very scattered localities. However, where it occurs, it can be very common. We found yet another species on the rather similar *Bupleurum gibraltaricum*. We therefore have doubts that the mines cited from the rather different *B. rigidum* by CHRÉTIEN (1907) and HERING (1935) do indeed belong to *T. bupleurella*.

***Trifurcula (Glaucolepis) bleonella* (Chrétien, 1907)**
ES: *Trifurcula (Glaucolepis) bleonella*; vN: 24 - ES
ES – AB: 1♂, El Pardal, 29-VI-2004, AL & ZL (AL); **CU**: 1♂, Cuenca, 900 m, 16-VII-1986, CG (CG); 2♂, Gabaldón, 950 m, 1-VII-2002, AL & ZL; 2♂, Monteagudo de las Salinas, 900 m, 17-VI-2003, AL & ZL (AL); **GR**: 2♂, Sierra Nevada, Camino de Veleta, 1600 m, 3-VII-1986, ETO (ZMUC, RMNH); **TE**: 8♂, Alcalá de la Selva, 1300 m, 22-VI-1994, 25-VI-2001, 5-VII-2002, AL & ZL; 6♂, 1♀, Montalbán, 1000 m, 16-VI-2002, 15-VI-2003, collected near *Linum* sp. and *L. narbonense*, AL & ZL; 2♂, Segura de los Baños, 1000 m, 6-VII-2002, AL & ZL; 4♂, Vivel del Río, 1000 m, 21-VI-1994, 2-VII-2003, AL & ZL (AL).

Trifurcula bleonella is one of the outliers in host choice: it feeds on *Linum* species where it makes stemmines. Mines have only rarely been found, and not yet in the Peninsula. All specimens cited here have been collected at light.

***Trifurcula (Levarchama) cryptella* (Stainton, 1856) – New for Portugal**
ES: *Trifurcula (Levarchama) cryptella*; VAN NIEUKERKEN & JOHANSSON, 1990: 265; VM 91: 46; VM 94: 27; vN: 24 - ES

ES – B: 1♂, Castellet-Villafranca del Panadés, 200 m, 15-IV-1978, U. Parenti (RMNH); **S**: mines, 2 km NW Los Tojos, Reserva Nacional de Saja, 500 m, 23-VII-1986, *Lotus uliginosus*, EvN & SR (RMNH). **– PT – BA**: 3♂, 2♀, mines, Serra da Estrela: E. Covão de Ametade, along road, 9 km S Manteigas, 1500 m, 12-VIII-2001, *Lotus uliginosus*, e.l. 1-12-V-2002, EvN (RMNH).

This is a more northern species, occurring north to Scandinavia, and here confined to wetter habitats in the north and mountains. Here only recorded from *Lotus*, but in other places also found on *Emerus major* (=*Coronilla emerus*), *Securigera varia* (=*Coronilla varia*), *Hippocrepis* and *Anthyllis montana*.

***Trifurcula (Levarchama) eurema* (Tutt, 1899)**
ES: *Trifurcula (Levarchama) eurema;* VAN NIEUKERKEN & JOHANSSON, 1990: 266; VM 91: 46; VM 94: 27; vN: 24 - ES
PT: *Trifurcula (Levarchama) eurema*; vN: 24 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

ES – AB: 3♂ El Pardal, 29-VI-2004, AL & ZL; 4♂, 6♀, Socovos, 700 m, 7-VII-2001, AL & ZL (AL); **B**: mines, 3 km W Tibidabo, along road to Molins de Rei, 400 m, 18-IV-1993, *Dorycnium hirsutum*, EvN & JCK (RMNH); **CS**: 1 ♂, Cuevas de Vinromá, 26-VI-1991, AL & ZL (AL); **CU**: 1♂, Casas del Egidillo, 30-VI-2004, AL & ZL (AL); 1♂, Paracuellos, 17-VII-1986, CG (CG); **GE**: 1♂, Beuda, 14-VII-1967, E. Arenberger (SMNK); **H**: 2♂, Bonares, 100 m, 26-VI-2003, AL & ZL (AL); **HU**: 1♂, Biesca, 1-VIII-1989, CG (CG); 1♂, Esteña, 700 m, 18-VIII-2001-19-VIII-2001, BS & PS (ZMUC); **MA**: 1♂, Camino de Istan, 400 m, 25-VI-1975, ETO (ZMUC); 1♂, Marbella, 16-V-1977, H. Steuer (HS); 1♂, Marbella, 2 km N: road to Ojén, 150 m, 5-II-1984, *Dorycnium hirsutum*, e.l. 3-III-1984, EvN

(ZMAN); 8♂, 4♀, mines, Sierra Blanca, 6 km N Marbella, El Mirador, 800 m, 5-II-1984, *Dorycnium hirsutum*, 9-26-III-1984, EvN (RMNH,ZMAN); 1♂, Sierra Blanca, Refugio de Juanar, 3 km NW Ojén, 840 m, 15-I-1988, *Dorycnium hirsutum*, e.l. 17-III-1988, EvN (RMNH); 1♂, 1♀, Sierra de Marbella, El Mirador, 700 m, 21-VII-1982, ETO (ZMUC); **MU**: 1♀, 4 km SW Águilas, 12-IX-1995-14-IX-1995, HW (HW); 1♂, Bolnuevo de Mazarrón, 10 m, 1-VI-1998, PS (ZMUC); 1♂, Cehegin, 2-VII-1992, AL & ZL (AL); **PM**: adult, mines, Mallorca, Paguera, 7-V-1970, *Dorycnium hirsutum*, e.l. v.1970, JK (in litt.); 1♂, Mallorca, Sa Roca, S. Albufera, 28-IV-2001, N.J. Riddifad (BMNH); **TE**: 6♂, 2♀, Montalbán, 4-VII-1991, 16-VI-2002, 15-VI-2003, AL & ZL; 6♂, 7♀, Vivel del Río, 1000 m, 4-VII-1992, AL & ZL; **V**: 1♂, Jarafuel, Cofrentes, 29-VI-1991, AL & ZL (AL), **– PT – AG**: 2♂, 2♀, mines, Cabo de São Vicente, 8-I-1987, *Dorycnium hirsutum*, e.l. 17-II / 3-IX-1987, EvN (RMNH).

A widespread European species, which is common in the Mediterranean region. Here only recorded from *Dorycnium*, but in northern Europe commonly on *Lotus*. In contrast to the other species in the subgenus, the larvae usually make their cocoons inside the mines.

***Trifurcula (Levarchama) ortneri* (Klimesch, 1951)**

ES: *Trifurcula (Levarchama) ortneri*; VM 91: 46, 263 - ES: **M**; VM 94: 27; vN: 24 - ES

ES – B: 1♀, Sant Martí de Tous, 4-VIII-2003, ER (ER); **CS**: 1♂, 1♀, mines, 3.5 km SW of Cortes de Arenoso, 700 m, 23-IV-1993, *Coronilla minima*, e.l. 24-25-V-1993, EvN & JCK (RMNH), **CU**: 1♂, Gabaldón, 950 m, 1-VII-2002, AL & ZL (AL); **M**: 2 larvae, E of Los Santos de la Humosa, 900 m, 11-I-2001, *Coronilla minima*, EvN (RMNH); **MU**: 3♂, Sierra Espuña, 810 m, 25-VI-1989, BÅB (BÅB, RMNH); **TE**: 1♂, 2 mines, 4 km SE of Rubielos de Mora, 900 m, 23-IV-1993, *Coronilla minima*, e.l. 27-V-1993, EvN & JCK (RMNH); 15♂, 8♀, Montalbán, 1000 m, 4-VII-1991, 16-VI-2002, 15-VI-2003, collected near *Coronilla minima*, AL & ZL; 2♂, Segura de los Baños, 1000 m, 6-VII-2002, AL & ZL (AL); 1♂, Valdovecar, Albarracín, 1200 m, 21-VIII-2001, PS & BS (ZMUC); 4♂, Vivel del Río, 1000 m, 4-VII-1991, 2-VII-2003, AL & ZL (AL); **V**: 1♂, 6 km N Bétera: Cañada de Bigarra, 100 m, 23-IV-1993, EvN & JCK (RMNH); **Z**: 1♂, 1♀, mines, Caspe, 250 m, 22-VI-1992, *Coronilla minima*, e.l. VII-1992, AL & ZL; 5♂, Caspe, 250 m, 22-VI-1992, AL & ZL (AL).

In Spain and France we often reared a small greyish *Levarchama* species from *Coronilla minima*, that in genitalia is completely similar to the larger and more ochreous Central European *T. ortneri*. We conclude that it is conspecific, and explain the size difference merely by the size of the leaflets of *Coronilla minima*, which do not allow the specimens to get bigger. It is particularly common in the eastern limestone areas, where *Coronilla minima* can be very common in dry open forests and Matorral vegetations.

***Trifurcula (Levarchama) anthyllidella* Klimesch, 1975** (endemic)

'a new Nepticula'; WALSINGHAM, 1901: 237 - ES: **MA** [Mines on *Anthyllis cytisoides*]
Nepticula sp.; HERING, 1935: 339 - ES: **MU** [Larvae on *Anthyllis cytisoides*]
Stigmella sp.; HERING, 1957: 97 - ES: **S**. Sp. [Mines on *Anthyllis cytisoides*]
Trifurcula (Levarchama) anthyllidella KLIMESCH, 1975a: 19, figs.20,23 - ES: **PM** [types]; GM: 19; VM 91: 46 - ES: **PM**; VM 94: 27 - ES: **PM**; vN: 24 - ES

ES – AL: 1♂, Las Menas de Seron, 1500 m, 1-2-VI-2003, HW (HW); 1♂, 1♀, 2 larvae, mines, 2 km NE Gádor, 200 m, 10-I-1988, *Anthyllis terniflora*, e.l. 14-17-II-1988, EvN (RMNH); 4 larvae, 2 km W Beires, along road Beires-Fondón, 1000 m, 10-I-1988, EvN (RMNH); 1♀, 4 larvae, mines, El Pozo de los Frailes, 3 km N San José, 8-I-1988, e.l. 18-II-1988, EvN (RMNH); 16♂, 10♀, mines, Sierra Almahilla, 2 km E Turillas, 700 m, 9-I-1988, e.l. 14-II / 1-IX-1988, EvN (RMNH); 1♀, Sierra Cabrera, 10 km S Gafarillos, e.l. 21-III-1994, HW (HW); 14♂, 3♀, Sierra de los Filabres, Uleila del Campo, 800 m, 26-VI-1992, 9-VII-1993, AL & ZL; (AL); CA: 5♂, 2♀, mines, 6 km NE Alcalá de los Gazules, 150 m, 6-I-2001, 15-20-II-2001, EvN; **GE**: 2 mines, Rosas, Canyelles, coastal cliff, 15-IV-1993, EvN & JCK (RMNH); **GR**: 1♂, Puerto de Mora, 1350 m, 22-VII-1986, CG (CG); 2♂, Sierra Nevada, Carretera del Veleta, 1750 m, 15-VII-1971, [on label host as *Rhamnus myrtifolius*, probably misidentification], e.l. 5-VIII-1971, JK (ZSMC); **MA**: mines, larvae, 5 km S Istán, road to Embalse de la Concepción, 150-200

m, 6+10-II-1984, 17-I-1988, EvN; mines, 7 km NW San Pedro de Alcantara, 350 m, 7-II-1984, EvN; mines, Benahavis, 300 m, 6-II-1984, EvN (RMNH); 1♂, Camino de Istán, 200 m, 10-VI-1983, ETO; 1♂, Camino de Ojén, 150 m, 12-VI-1981, ETO (ZMUC); mines, El Chorro, 600 m, 5-VII-2001, AL & ZL (AL); 2♂, 7♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ,RMNH); larvae, mines, Sierra Blanca, Puerto de Marbella (El Mirador) 3 km NW Ojén, 900 m, 20-I-1988, EvN (RMNH); 1♀, Sierra de Marbella, El Mirador, 700 m, 14-VII-1980, ETO (ZMUC); **MU**: 1♂, Bolnuevo de Mazarrón, 10 m, 1-VI-1998, PS (ZMUC); **PM**: mines, Mallorca, Paguera, 5-III-1968, 15-III-1969, JK(RMNH); **V**: 3♂, 6 km N Bétera: Cañada de Bigarra, 100 m, 23-IV-1993, EvN & JCK (RMNH); 4♂, 2♀, Jarafuel, 350 m, 29-VI-1991, 3-VII-1992, AL & ZL; 1♀, mines, Jarafuel, 350 m, 29-VI-1991, e.l. VII-1991, AL & ZL (AL). All mines from *Anthyllis cytisoides*, except when indicated.

Trifurcula anthyllidella was described from Mallorca, but is very common in the whole coastal limestone region from Cádiz to Gerona. As can be seen in the list of citations, Walsingham and Hering had noted the presence of mines before it was actually described. We record *Anthyllis terniflora* as new hostplant.

***Trifurcula (Trifurcula) coronillae* Van Nieukerken, 1990**

ES: *Trifurcula (Trifurcula) coronillae*; VAN NIEUKERKEN, 1990b: 217-218 - ES: **AL**, **MA**, **V** [types]; VM 94: 27; vN: 24 - ES

ES – AL: 8♂, 7♀, mines, Castalla, 700 m, 11-VII-1992, e.l. VII-1992, AL & ZL (AL); **B**: 1♂, Esblada, 18-VIII-2001, ER (ER); **MA**: 3 larvae, 7 vacated mines, Sierra Blanca, 2.5 km N Ojén, 600 m, 29-II-2000, EvN (RMNH); **T**: 6 mines, Pratdip, 3 km SE, 200 m, 25-IV-1993, EvN & JCK (RMNH); **TE**: 3♂, Montalbán, 1000 m, 15-VI-2003, collected near *Coronilla minima*, AL & ZL; **V**: mines, Jarafuel, 3-VII-1992, AL & ZL (AL); all mines on *Coronilla juncea*.

The stemmines of *T. coronillae* are very easy to find, and usually abundant where the host occurs. The males collected in Montalbán, where *C. juncea* is absent, but *C. minima* common, suggest that *C. minima* is an alternative host. Outside Spain only found in France.

***Trifurcula (Trifurcula) victoris* Van Nieukerken, 1990** (endemic)

ES: *Trifurcula (Trifurcula) victoris*; VAN NIEUKERKEN, 1990b: 219 - ES: **AL** [types]; VM 94: 27; vN: 24 - ES

ES – AL: 1♂, Almería, 10 km NW, 20-21-IV-2001, JJ (JJ); 1♂, 1♀, Mini Hollywood, 230 m, 14-15-X-1992, M. Fibiger (ZMUC); 7♂, Sierra de los Filabres, 26-VI-1992, AL & ZL (AL,RMNH); 1♂, 5 km SW Tabernas, 350 m, 18-25-IV-2001, Hviid, PS & BS (ZMUC); 2♂, 1♀, Rambla de Tabernas, 200 m, 28-V-1998, PS (ZMUC); **B**: 1♂, Sant Martí de Tous, 530 m, 16-VIII-2001, BS & PS (ZMUC); **MU**: 1♂, 4 km SW Águilas, 24-IV-1995, HW (HW); 2♂, Cehegín, 450 m, 2-VII-1992, AL & ZL; 1♂, Yecla, 600 m, 28-VI-1991, AL & ZL; **V**: 2♂, 1♀, Jarafuel, Cofrentes, 400 m, 29-VI-1991, AL & ZL; **Z**: 1♂, mines, Mequinenza, 250 m, 10-X-1998, *Dorycnium pentaphyllum*, e.l. III-1999, AL & ZL (AL).

After the original type series from Almería, we can now cite a number of records throughout eastern Spain, but most in the very dry extreme southeast. The types were reared from stemmines on *Anthyllis cytisoides*, but here we can record *Dorycnium pentaphyllum* as an unexpected new host. It also means that stemmines on *Dorycnium* cannot be identified with certainty as *T. josefklimeschi*, although the latter is the only one where the mine starts in a leaflet.

***Trifurcula (Trifurcula) subnitidella* (Duponchel, 1843)**

ES: *Trifurcula (Trifurcula) subnitidella*; VAN NIEUKERKEN, 1990b: 224 - ES: **GE**, **GR**, **HU**, **MA**, **SA**; VM 91: 46; VM 94: 27; vN: 24 - ES

ES – GR: 1♂, Sierra Guillimona, pinar, 1500 m, 28-VI-2003, AL & ZL; **L**: 1♂, Sort, Col del Canto, 1650 m, 5-VII-1992, AL & ZL; **MA**: 1♂, Monda, 400 m, 5-VII-2001, AL & ZL; **TE**: 2♂, Alcalá de la Selva, 1300 m, 25-VI-2001, 1-VII-2003, collected near *Lotus corniculatus*, AL & ZL; 2♂, Montalbán, 1000 m, 16-VI-2002, 15-VI-2003, AL & ZL; 1♂, Segura de los Baños, 1000 m, 6-VII-2002, AL & ZL (AL).

This most widespread species of the *subnitidella* group, is relatively rare in Spain and confined to mountainous areas. Stemmines only known from *Lotus*.

***Trifurcula (Trifurcula) josefklimeschi* Van Nieukerken, 1990**
ES: *Trifurcula (Trifurcula) josefklimeschi*; VAN NIEUKERKEN, 1990b: 226 - ES: **AL**, **GR**, **MA**, T [paratypes]; VM 94: 27; vN: 24 - ES

ES – AL: 1♂, El Pozo de Esparto, 20 m, 22-IV-2001, Hviid, PS & BS (ZMUC); **B**: 1 adult, mines, 3 km W Tibidabo, along road to Molins de Rei, 400 m, 18-IV-1993, *Dorycnium hirsutum*, e.l. 4-VII-1993, EvN & JCK; mines, Le Puig d'Olena, ca 7 km SSW Centelles, 850 m, 16-IV-1993, *Dorycnium pentaphyllum*, EvN & JCK; **CA**: 2 mines, 6 km NE Alcalá de los Gazules, 150 m, 1-III-2000, *Dorycnium pentaphyllum*, EvN; **CS**: 2 mines, 3.5 km SW of Cortes de Arenoso, 700 m, 23-IV-1993, *Dorycnium hirsutum*, EvN & JCK (RMNH); **CU**: 3♂, 16 km W Cuenca, 17-VI-1989, BÅB (BÅB); 1♂, 7 mines, 3 km N of Villalba de la Sierra, 1200 m, 22-IV-1993, *Dorycnium pentaphyllum*, e.l. 3-VI-1993, EvN & JCK (RMNH); 1♂, Casillas de Ranera, Sinarcas, 30-VI-1991, AL & ZL (AL); **GE**: 4♂, Setcases, 1600 m, 3-VII-1989, BÅB (BÅB); **GR**: 1♂, El Molinillo, 1200 m, 28-VI-1992, AL & ZL (AL); **M**: 2♂, mines, Arganda, 2km E, 650 m, 6-III-1997, *Dorycnium pentaphyllum*, 2-4-VI-1997, EvN (RMNH); 1♀, mines, 1 km S Serrada de la Fuente, 7.5 km E Buitrago del Lozoya, 1050 m, 2-III-1997, *Dorycnium pentaphyllum*, e.l. 11-VI-1997, EvN (RMNH); **MU**: 1♂, 4 km NW Aledo, 26-IX-2001, C & F K Gielis (CG); **PM**: 1♂, Mallorca, Paguera, 2-V-1970, JK (ZSMC); **TE**: 1♂, Montalbán, 1000 m, 15-VI-2003, AL & ZL; 2♂, Vivel del Río, 1000 m, 2-VII-2003, AL & ZL; **TO**: 1♂, Buenasbodas, 800 m, 19-VI-2002, AL & ZL; **V**: 1♂, Jarafuel, Cofrentes, 29-VI-1991, AL & ZL (AL).

After the original description, now found throughout Spain and the Balearic Islands, but still not known from Portugal. *T. josefklimeschi* makes stemmines in *Dorycnium* that start with a short mine in a leaflet.

***Trifurcula (Trifurcula) iberica* Van Nieukerken, 1990** (endemic)
ES: *Trifurcula (Trifurcula) iberica*; VAN NIEUKERKEN, 1990b: 228 - ES: **GR**, **L** [types]; VM 94: 27; vN: 24 - ES

ES – CU: 1♂, Casas del Egidillo, 30-VI-2004, AL & ZL; 1♂, Monteagudo de las Salinas, 900 m, 17-VI-2003, AL & ZL; 4♂, Villalba de la Sierra, 15-VI-2004, AL & ZL; **GR**: 1♂, Diezma, 1000 m, 1-VII-1992, AL & ZL; **MU**: 1♂, Yecla, 600 m, 28-VI-1991, AL & ZL; **TE**: 6♂, 1♀, Albarracín, 1200 m, 3-VII-1991, 26-VI-2001, AL & ZL; 1♂, Montalbán, 4-VII-1992, AL & ZL; 2♂, Royuella, 1300 m, 16-VI-2003, AL & ZL; 1♂, Segura de los Baños, 1000 m, 6-VII-2002, collected near *Onobrychis* and *Dorycnium*, AL & ZL; 1♂, Vivel del Río, 1000 m, 4-VII-1992, AL & ZL (AL).

After the two type specimens, now found in a number of specimens. It is very well possible that this species also feeds on *Onobrychis*, similar to *T. silviae*.

***Trifurcula (Trifurcula) silviae* Van Nieukerken, 1990**
ES: *Trifurcula (Trifurcula) silviae*; VAN NIEUKERKEN *et al.*, 1996: 176 - ES: **TE**; vN: 24 - ES

ES – TE: 6♂, Alcalá de la Selva, 1300 m, 25-VI-2001, AL & ZL (AL).

This record is in the same locality as cited by VAN NIEUKERKEN *et al.* (1996). In that paper *T. silviae* was shown to make stemmines on *Onobrychis* species.

***Trifurcula (Trifurcula) immundella* (Zeller, 1839)**
ES: *Trifurcula (Trifurcula) immundella*; GM: 19 – E; VAN NIEUKERKEN & JOHANSSON, 1990: 269; VM 91: 46; VM 94: 27; vN: 24 - ES
PT: *Trifurcula (Trifurcula) immundella*; VAN NIEUKERKEN & JOHANSSON, 1990: 269; VM 91: 46; VM 94: 27; vN: 24 - PT; CORLEY *et al.*, 2000: 251 - PT: **AG**

ES – AB: 1♂, El Pardal, 1100 m, 30-VI-2003, AL & ZL; 2♂, Puerto del Barrancazo, 1100 m, 27-VI-2001, AL & ZL (AL); **AV**: 1♂, Sierra de Gredos, Garganta de las Pozas, 1800 m, 11-VII-1970, K. Sattler (BMNH); 1♂, 3♀, Sierra de Gredos, 10 km S Hoyos del Espino, 1700 m, 22-VII-1995, PS

(ZMUC); 1♂, Villanueva de Avila, 17-VI-2004, AL & ZL; **GR**: 3♂, Puerto Pinar, 1600 m, 15-VII-1993, AL & ZL; 1♂, Puerto de la Ragua, 2200 m, 27-VI-1992, AL & ZL; **L**: 7♂, 3♀, Col del Canto, Sort, 1650-1700 m, 5-VII-1992, collected near *Cytisus* sp. (not *scoparius*), AL & ZL (AL); **M**: mines, Cadalso de los Vidrios, 4 km E, 900 m, 6-III-1997, *Cytisus scoparius*, EvN; **MA**: 4♂, 4♀, mines, 7 km NW San Pedro de Alcántara, 350 m, 7-II-1984, *Cytisus scoparius*, e.l. 4-29-X-1984, EvN (RMNH); 1♂, Camino de Ronda, Urbanización Madroñal, Loma de Colmenas, 21-X-1984, ETO (ZMUC); 1♂, 4♀, Serrania de Ronda, near Cortijo de la Nava, 6 km NE Igualeja, 1040 m, 18-I-1988, *Cytisus scoparius*, 18-IV / 9-V-1988, EvN (RMNH); **SG**: 1♂, San Ildefonso, 29-VII-1902, P. Chrétien (MNHN); **TO**: 1♂, 2♀, Buenasbodas, 800 m, 19-VI-2002, 16-VI-2004, collected near *Cytisus scoparius*, AL & ZL (AL). **– PT – AG**: 2♂, 2♀, 2 larvae, mines, Monchique, Piquota, N. Slopes, 460- 650 m, 7-I-1987, *Cytisus scoparius*, 15-VI / 8-VII-1987, EvN (RMNH); **BA**: 1♀, Caldas de Manteigas, 850 m, 4-IX-2001, MC (MC); 1♂, Manteigas Pousada, 1250 m, 22-VI-2003, AL &ZL; 5♂, 4♀, Povolide, 21-VI-2004, AL & ZL (AL); 1♂, 2♀, Videmonte, 750 m, 5-IX-2001, MC (MC, RMNH); **BB**: 2♀, Covão do Boi, Serra da Estrela, 1870 m, 4-IX-2001, MC (MC, RMNH); 2♂, 4♀, Covilha, Serra da Estrela, 1250 m, 21-VI-2002, AL & ZL; 2♂, 2♀, Penhas da Saude, 1300 m, 22-VI-2002, AL & ZL; **BL**: 1♀, Vale Grande, 800 m, 23-VI-2003, AL & ZL; **R**: 1♂, 1♀, Monsanto, 22-VI-2004, AL & ZL; **TM**: 1♂, PN Montesinho, Paco, 20-VI-2004, AL & ZL (AL).

Trifurcula immundella is probably the best known species of the genus, occurring throughout western Europe with common broom (*Cytisus scoparius*), which also in the Iberian Peninsula is its major host. However, it probably also can feed on some very closely related *Cytisus* species, but we have not yet any rearing records.

***Trifurcula (Trifurcula) calycotomella* A. & Z. Laštůvka, 1997**

ES: *Trifurcula (Trifurcula) calycotomella* LAŠTŮVKA & LAŠTŮVKA, 1997: 148 - ES: **GE** [paratypes]

ES – B: mines, Muntanyas de Garraf, 7.5 km WNW Castelldefels, 400 m, 18-IV-1993, *Calicotome spinosa*, EvN & JCK (RMNH); **GE**: 1♂, Anglés, 400 m, 5-VII-1994, AL & ZL (AL); 1♂, Port Bou, 11-18-VII-1967, E. Arenberger (SMNK); 3 mines, Rosas, Canyelles, coastal cliff, 15-IV-1993, *Calicotome spinosa*, EvN & JCK (RMNH); **MA**: 6♂, 1♀, Marbella, Casa y Campo, 100 m, 17-X- 26-XI-1984, ETO (ZMUC, RMNH).

Trifurcula calycotomella is rather similar to the previous species, but occurs in more coastal habitats, where its host grows.

***Trifurcula (Trifurcula) beirnei* Puplesis, 1984 – New for Spain**

ES – HU: 1♂, Biescas, 19-IX-2001, C & F K Gielis (RMNH).

Trifurcula beirnei occurs scattered in western Europe, north to Denmark and east to Hungary and Slovakia (LAŠTŮVKA & LAŠTŮVKA, 1997; VAN NIEUKERKEN & JOHANSSON, 1986), but is still unknown from France. This record from the Pyrenees shows that it should also occur there. The larva is unknown, but adults are always associated with some *Genista* species: *G. tinctoria, G. germanica* and *G. pilosa.* The male genitalia of the Spanish specimen are illustrated in fig. 13.

***Trifurcula (Trifurcula) squamatella* (Stainton, 1849) – New for Portugal**

ES: *Trifurcula (Trifurcula) squamatella*; VAN NIEUKERKEN & JOHANSSON, 1990: 273; VM 91: 46; VM 94: 27; vN: 25 - ES

ES – GR: 1♂, Puerto de la Mora, 1300 m, 13-IX-1974, Glaser (SMNK). **– PT – AAL**: 1♀, Hortas de Baixo, Arronches, 26-IX-1995, MC; **BA**: 2♀, Manteigas, 1000 m, 8-IX-2001, MC; 1♀, Videmonte, 750 m, 5-IX-2001, MC; **BB**: 1♂, 2♀,Covão do Boi, Serra da Estrela, 1870 m, 4-IX-2001, MC (MC, RMNH).

This and the previous species are the largest *Trifurcula* species (up to 11 mm wingspan), and also the only named ones where the life history is still unknown. *T. squamatella* is always associated with *Cytisus scoparius*, and found scattered in Western Europe, north to Denmark and east to Germany

(VAN NIEUKERKEN, 1987). Male and female genitalia of Serra da Estrela specimens are illustrated in Figs. 14 and 15.

Genus *Parafomoria*

This genus is completely monophagous on Cistaceae, and has its best development on the Iberian Peninsula. The senior author has a revision in preparation, including five new species. Because of this, we only present here the previous literature references.

***Parafomoria cistivora* (Peyerimhoff, 1871)**
ES: *Nepticula cistivora*; MENDES, 1918: 128 - ES: **SA** ; AGENJO, 1964: [4] - ES
Stigmella cistivora; GM: 19 - ES
Parafomoria cistivora; VAN NIEUKERKEN, 1983: 460 - ES: **SG**; VM 91: 46; VM 94: 27; vN: 25 - ES
PT: *Nepticula cistivora*; MENDES, 1910c: 132 - PT: **E** ; MENDES, 1913: 29 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**, **E**
Stigmella cistivora; GM: 19 - PT
Parafomoria cistivora; VAN NIEUKERKEN, 1983: 460 - PT: **BB**; VM 91: 46; VM 94: 27; vN: 25 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

***Parafomoria pseudocistivora* Van Nieukerken, 1983**
ES: *Parafomoria pseudocistivora;* VAN NIEUKERKEN, 1983: 461 - ES: **GE**; VM 91: 46; VM 94: 27; vN: 25 - ES
PT: *Parafomoria pseudocistivora*; vN: 25 - PT; CORLEY *et al.*, 2000: 251 - PT: **AG**
Wrong record: *Parafomoria pseudocistivora*; VAN NIEUKERKEN, 1985b: 27 - ES: [misident] **MA**, **SO**

The misidentified records actually represent two new species.

***Parafomoria halimivora* Van Nieukerken, 1985**
ES: *Parafomoria halimivora*; VAN NIEUKERKEN, 1985b: 24 - ES: **MA** [types]; VM 91: 46; VM 94: 27; vN: 25 - ES
PT: *Parafomoria halimivora*; vN: 25 - PT; CORLEY *et al.*, 2000: 251 - PT: **AG** ; CORLEY *et al.*, 2000: 251 - PT: **AG**

***Parafomoria liguricella* (Klimesch, 1946)**
ES: *Parafomoria liguricella*; VAN NIEUKERKEN, 1983: 468 - ES: **B**, **GR**, **MU**; VM 91: 46; VM 94: 27; vN: 25 - ES
Misidentification: *Nepticula cistivora*; HERING, 1935: 347 - ES: **MU**
PT: *Parafomoria liguricella*; vN: 25 - PT; CORLEY *et al.*, 2000: 251 - PT: **AG**

***Parafomoria ladaniphila* (Mendes, 1910)** (endemic)
ES: *Nepticula ladaniphila*; MENDES, 1918: 128 - ES: **SA** ; AGENJO, 1964: [4] - ES
Ectoedemia (Dechtiria) ladaniphila; GM: 19 - ES
Parafomoria ladaniphila; VAN NIEUKERKEN, 1985b: 27 - ES: **MA**; VM 91: 46; VM 94: 27; vN: 25 - ES
PT: *Nepticula ladaniphila* MENDES, 1910a: 102 - PT: **BB**, **E** [types]; MENDES, 1913: 28 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**, **E**
Ectoedemia (Dechtiria) ladaniphila; GM: 19 - PT
Parafomoria ladaniphila; VAN NIEUKERKEN, 1983: 468 - PT: **BB**; VM 91: 46; VM 94: 27; vN: 25 - PT; CORLEY *et al.*, 2000: 250 - PT: **AG**

***Ectoedemia (Etainia) obtusa* (Puplesis & Diškus, 1996)**
ES: *Ectoedemia (Etainia) obtusa*; VAN NIEUKERKEN & LAŠTŮVKA, 2002: 92 - ES: **TE**

***Ectoedemia (Fomoria) septembrella* (Stainton, 1849)**
ES: *Ectoedemia (Fomoria) septembrella*; vN: 25 - ES
PT: *Nepticula septembrella*; MENDES, 1905: 173 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**
Trifurcula (Fomoria) septembrella; GM: 19 - PT
Ectoedemia (Fomoria) septembrella; VM 91: 46; VM 94: 28; vN: 25 - PT

ES – LE: 21♂, 27♀, Valley of Río Cares, N. Caín, 7 + 10 km NNE Posada de Valdeón, 500 m, 31-VII-1986, *Hypericum nummularium*, e.l. 9-27-VIII-1986, EvN & SR (RMNH). **– PT – AG**: 1♂, Quinta do Freixo, Benefim Grande, 20-V-2002, MC (MC); **BA**: 4♂, 4♀, Serra da Estrela: Zezere valley, along road, 8 km S Manteigas, 1300 m, 12-VIII-2001, *Hypericum undulatum*, 24-28-VIII-2001, EvN (RMNH).

This common European species has only rarely been found here, although, where found, mines are abundant. Probably common in the little studied north.

***Ectoedemia (Fomoria) euphorbiella* (Stainton, 1869) – New for Spain**

ES – V: 3♂, 3♀, larvae, mines, 6 km N Bétera: Cañada de Bigarra, 100 m, 24-IV-1993, *Euphorbia brittingeri*, *E. serrata, E. terracina*, e.l. 12-20-V-1993; EvN & JCK (RMNH).

Ectoedemia euphorbiella was described from southern France, feeding on *Euphorbia dendroides*. Later it was also recorded from this host in Sicily GROSCHKE (1944) and POPESCU-GORJ *et al.* (1972) recorded it from *Euphorbia palustris* in Rumania. Recently *Nepticula tergestina* Klimesch, 1940 from Northern Italy was synonymised with it (LAŠTŮVKA & LAŠTŮVKA, 1997), enlarging the host record with *E. fragifera* and we found the species in Sicily also on *E. characias, E. rigida* and *E. myrsinites* (LAŠTŮVKA & LAŠTŮVKA, 1997 and unpublished data). The senior author found the species also commonly in Greece: Peloponnesus on both *E. dendroides* and *E. acanthothamnos.* The three hosts on which we found larvae in Valencia can be added to the host list and show that *E. euphorbiella* is oligophagous on *Euphorbia* spp. The species seems to be confined to the warmest parts of Europe, nowhere far from the sea, and very localised. Adults are very variable in size and colour, probably depending on leaf size. The characteristic mines are illustrated in Figs. 17-19 and the male genitalia in Fig. 16.

***Ectoedemia (Zimmermannia) atrifrontella* (Stainton, 1851) – New for Portugal**
ES: *Ectoedemia (Zimmermannia) atrifrontella*; VAN NIEUKERKEN, 1985a: 20 - ES: **MA**; VM 91: 46; VM 94: 28; vN: 25 - ES

ES – CU: 1♂, Uña, 1150 m, 28-VIII-2001, BS (ZMUC); **GR**: 2♀, Pampaneira, Barranca de la Sangría, 1000 m, 22-VI-1989, BÅB (BÅB); **SA**: 4♂, San Miguel de Valero N, 3 km S of Linares de Riofrío, 850 m, 2-VIII-1986, EvN & SR (RMNH); **SG**: 1♂, Riaza, 3-VIII-1986, CG (CG); **TE**: 1♂, Noguera, 11-VII-1986, CG (RMNH); 1♂, Puerto de Orihuela, 1650 m, 23-VIII-2001, BS & PS (ZMUC). **– PT – BA**: 1♂, Povolide, 21-VI-2004, AL & ZL; **R**: 1♂, Monsanto, 22-VI-2004, AL & ZL (AL).

***Ectoedemia (Zimmermannia) liebwerdella* (Zimmermann, 1940) – New for Portugal**
ES: *Ectoedemia (Zimmermannia) liebwerdella*; vN: 25 - ES

ES – S: 2♂, Picos de Europa: Camaleño, 520 m, 25-VII-1986, EvN & SR (RMNH). **– PT – BAL**: 1♂, Moura, 250 m, 24-VI-2002, AL & ZL (AL).

This is apparently the rarest barkminer in the peninsula. We found it in localities with only *Quercus*, far away from its better known host *Fagus*. The status of the *Quercus* form requires further study.

***Ectoedemia (Zimmermannia) longicaudella* Klimesch, 1953 – New for Portugal**
ES: *Ectoedemia (Zimmermannia) longicaudella*; VAN NIEUKERKEN, 1985a: 26-27 - ES: **SG**; VM 91: 46; VM 94: 28; vN: 25 - ES

ES – CU: 1♂, 16 km W Cuenca, 17-VI-1989, BÅB (BÅB); 3♂, Monteagudo de las Salinas, 900 m, 17-VI-2003, AL & ZL (AL); **S**: 2♂ Picos de Europa: Camaleño, 520 m, 25-VII-1986, EvN & SR (RMNH); **TE**: 1♂, Montalbán, 1000 m, 16-VI-2002, AL & ZL (AL); 5♂, 2♀, Noguera, 1600 m, 11-

VII-1986, 9-10-VIII-1989, CG (RMNH,CG); 6♂, Vivel del Río, 1000 m, 17-VII-1993, 24-VI-2001, 2-VII-2003, AL & ZL (AL); **TO**: 3♂, Robledo del Buey, 800 m, 18-VI-2002, AL & ZL (AL). **– PT – BA**: 1♂, Povolide, 21-VI-2004, AL & ZL (AL).

***Ectoedemia (Zimmermannia) hispanica* Van Nieukerken, 1985 – New for Portugal**

ES: *Ectoedemia (Zimmermannia) hispanica* VAN NIEUKERKEN, 1985a: 22 - ES: **MA**, **TE** [types]; VM 91: 47; VM 94: 28; vN: 25 - ES

ES – AB: 3♂, 1♀, Socovos, 600 m, 7-VII-2001, AL & ZL; **AL**: 6♂, Uleila del Campo, 800 m, 26-VI-1992, AL & ZL (AL); **B**: 1♂, La Llacuna, 23-VIII-2001, ER; 1♂, Odena, 2-VI-2001, ER; 1♂, Sant Martí de Tous, 7-VII-2001, ER; 1♂, Vallbona, 2-VIII-2001, ER (ER); 1♂, Sant Martí de Tous, 530 m, 16-VIII-2001, BS & PS (ZMUC); **CS**: 1♂, 20 km SE Morella, 15-VI-1989, BÅB (BÅB); **CU**: 3♂, Gabaldón, 950 m, 1-VII-2002, AL & ZL (AL); 1♂, 1♀, Sierra de Altomira, Vellisca, 1000 m, 11-VIII-1983, AV (AV); **GR**: 2♂, 2♀, Diezma, 1100 m, 29-VI-2003, AL & ZL; 6♂, 2♀, El Molinillo, 1200 m, 28-VI-1992, 27-VI-2004, AL & ZL (AL); 1♂, Pueblo Don Fadrique, 1600 m, 20-VII-1986, CG (RMNH); 2♂, Sierra Guillimona, Pinar, 1500 m, 28-VI-2003, AL & ZL; **H**: 2♂, Bonares, 100 m, 26-VI-2003, AL & ZL (AL); **M**: 1♂, Cadalso, 15-VII-1985, CG (RMNH); **MA**: 1♂, 1♀, Jimera de Líbar, 500 m, 27-VI-2003, AL & ZL (AL); 1♂, 1♀, Ronda, 25-28-VII-1986, CG (RMNH); **MU**: 1♂, Sierra Espuña, 1040 m, 27-VI-1989, BÅB (BÅB); **SE**: 2♂, 1♀, Coripe, 300 m, 26-VI-2002, AL & ZL; 1♀, El Garrobo, 25-VI-2004, AL & ZL; **TE**: 2♂, Alcorisa, 800 m, 5-VII-1991, AL & ZL (AL); 1♂, Valdetorno, 400 m, 8-VII-1986-9-VII-1986, CG (RMNH); 8♂, 2♀, Vivel del Río, 1000 m, 17-VII-1993, 8-VII-2001, 2-VII-2003, AL & ZL; **Z**: 2♂, 3♀, Mequinenza, 250 m, 4-VII-1992, AL & ZL (AL). **– PT – AG**: 3♂, Messines de Baixo, 250 m, 25-VI-2002, AL & ZL; **BB**: 6♂, 3♀, Zebreira, 200 m, 20-VI-2002, AL & ZL; **E**: 1♀, Setúbal, Marateca, 100 m, 24-VI-2003, AL & ZL (AL).

This is probably the commonest barkminer occurring in the Peninsula, now recorded from 13 provinces in Spain and three in Portugal. It most likely feeds on a number of *Quercus* species, in most places probably on evergreen oaks.

***Ectoedemia (Zimmermannia) liguricella* Klimesch, 1953**

ES: *Ectoedemia (Zimmermannia) liguricella*; VAN NIEUKERKEN, 1985a: 26-27 - ES: **GE**, **GR**, **H, MA**, **TE**; VM 91: 47; VM 94: 28; vN: 26 - ES

PT: *Ectoedemia liguricella*; CORLEY *et al.*, 2000: 251 - PT: **AG**

ES – B: 1♂, La Pobla de Claramunt, 7-VII-2002, ER (ER); **CS**: 1♂, 25 km NW La Banderetta, pass, 800 m, 17-VII-1992, M. Fibiger (ZMUC); **CU**: 1♂, Boniches, 800 m, 17-VI-2002, AL & ZL; 2♂, Monteagudo de las Salinas, 900 m, 17-VI-2003, AL & ZL (AL); **GR**: 1♀, 10 km E Baza, 24-VI-1989, BÅB (BÅB); 14♂, 7♀, El Molinillo, 27-VI-2004, AL & ZL (AL); **H**: 5♂, Maszenas, dunes, 14-16-IX-1974, Glaser (SMNK,RMNH); 1♂, Mazagón, 3-VI-1991, G.R. Langohr (RMNH); 1♂, Mazagón, 19-V-1994, F. Schepler (ZMUC); **MA**: 1♂, 2♀, Camino de Ronda, Urbanización del Madroñal, Loma de Colmenas, 23-V-1986, 3-IX-1988, ETO (ZMUC); 1♀, Camino de Ronda, Urbanización del Madroñal, Loma de Colmenas, 500 m, 21-VI-1986, PS (RJ); 4♂, 5♀, Carratraca, 600 m, 27-VI-1994, AL & ZL; 2♀, Jimera de Líbar, 500 m, 28-VI-1994, 27-VI-2002, AL & ZL (AL); 1♂, 3♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ,RMNH); 1♀, Monda, 26-VI-2004, AL & ZL (AL); **MU**: 1♀, Alhama de Murcia, Sierra Espuña, 13-VI-1974, Glaser (SMNK); **SE**: 1♀, Coripe, 300 m, 26-VI-2002, AL & ZL (AL); **TE**: 1♂, Albarracín, 1100 m, 4-8-VIII-1989, CG (CG); 1♂, Albarracín, 1000 m, 7-VIII-1988, PS (RJ); 1♂, Albarracín, 12-VI-1952-22-VI-1952, JK (ZSMC); 10♂, Albarracín, 1200 m, 23-VI-1994, 26-VI-2001, AL & ZL (AL); 2♂, Muniesa, 800 m, 4-VII-1980, G. Derra (GD); 1♂, Segura de los Baños, 1000 m, 6-VII-2002, AL & ZL; **TO**: 3♂, 3♀, Buenasbodas, 800 m, 19-VI-2002, 16-VI-2004, AL & ZL; 8♂, 7♀, Robledo del Buey, 800 m, 18-VI-2002, 18-VI-2003, AL & ZL; 1♂, Robledo del Mazo, 800 m, 19-VI-2003, AL & ZL (AL). **– PT – AAL**: 1♀, Minhota, Portalegre, 5-VI-1996, MC; 1♀, S. Julião Igreja, Portalegre, 11-V-1999, MC; **AG**: 1♀, Fortes, Rib. de Odeleite, 23-V-2001, MC; 1♂, R. de Alcoutinejo, Alcoutim, 26-IX-1999, MC (MC); **BL**: 1♂, Vale Grande, 800 m, 23-VI-2003, AL & ZL; **R**: 2♂, Monsanto, 22-VI-2004, AL & ZL (AL).

Ectoedemia liguricella is almost as common as *E. hispanica*, and recorded from eleven provinces in Spain and four in Portugal. Also this species probably feeds mainly (only?) on evergreen oaks. Although barkmines have been noted on evergreen oaks, adults have never been reared from these.

***Ectoedemia (Ectoedemia) hannoverella* (Glitz, 1872)**
ES: *Ectoedemia (Ectoedemia) hannoverella*; vN: 26 - ES

ES – GE: 1♂, Anglés, 600 m, 24-VI-1991, AL & ZL (AL).

The cited male (on which the record by VAN NIEUKERKEN, 1996 was based) is still the only specimen known from Spain. The best way to search for this and the next species is for leafmines in autumn, a method hardly used in Spain. *E. hannoverella* feeds on *Populus nigra* and hybrids.

***Ectoedemia (Ectoedemia) turbidella* (Zeller, 1848)**
ES: *Ectoedemia (Ectoedemia) turbidella*; VAN NIEUKERKEN, 1985a: 33 - ES: **GR**, **TE**; VM 91: 47; VM 94: 28; vN: 26 - ES

See previous species, *E. turbidella* feeds on *Populus alba*.

***Ectoedemia (Ectoedemia)* species**
ES: *Ectoedemia* species (specimen 1843); VAN NIEUKERKEN, 1985a: 39-40 - ES: **TE**

This refers to an undescribed species, which will shortly be formally described. It is common in Spain.

***Ectoedemia (Ectoedemia) caradjai* (Groschke, 1944) – New for Portugal**
ES: *Ectoedemia (Ectoedemia) caradjai*; vN: 26 - ES

ES – AL: 1♂, Sierra Cabrera, Cortijo Grande, 700 m, 26-IV-2001, Hviid, PS & BS (ZMUC); **GR**: mines, Sierra Nevada, Pitres, 20-XI-1988, *Quercus pyrenaica*, J.W. Schoorl (RMNH); **SA**: 2♂, San Miguel de Valero N, 3 km S of Linares de Riofrío, 850 m, 2-VIII-1986, EvN & SR (RMNH); **SE**: 1♂, Coripe, 300 m, 26-VI-2002, AL & ZL; **TE**: 5♂, 4♀, Vivel del Río, 1000 m, 21-VI-1994, 24-VI-2001, 2-VII-2003, AL & ZL; **TO**: 1♂, Robledo del Buey, 800 m, 18-VI-2003, collected near *Quercus pyrenaica*, AL & ZL; 1♂, 1♀, Robledo del Mazo, 800 m, 19-VI-2003, AL & ZL (AL). **– PT – AG**: 1♂, Fonte de Apra, Loulé, 2-VI-1996, MC; 1♂, Serra de Monte Figo, 24-V-2001, MC (MC); **BA**: 1♂, Povolide, 21-VI-2004, AL & ZL (AL).

After the revision of *Ectoedemia* (VAN NIEUKERKEN, 1985a), *E. caradjai* was found several times in the peninsula, contradicting the earlier suggestion that this is an eastern species. The principal host here is most likely *Quercus pyrenaica*.

***Ectoedemia (Ectoedemia) suberis* (Stainton, 1869)**
E; *Nepticula viridella;* MENDES, 1918: 127 - ES: **SA** ; HERING, 1935: 373 - ES: **TE** ; AGENJO, 1964: [4] - ES
Stigmella viridella; GM: 18 - ES
Ectoedemia (Ectoedemia) suberis; VAN NIEUKERKEN, 1985a: 41 - ES: **BU**, **CC**, **CA**, **GE**, **GR**, **MU**, **MA**, **SA**, **TE**; VM 91: 47; VM 94: 28; vN: 26 - ES
PT: *Nepticula viridella*; MENDES, 1910d: 164-166 - PT: **BB**, **E**; MENDES, 1913: 29 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**, **E**
Ectoedemia (Ectoedemia) suberis; VM 91: 47; VM 94: 28 - PT; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**; vN: 26 - PT; CORLEY *et al.*, 2000: 250-251 - PT: **AG**

ES – AB: 1♂, 4 km NE Pozohondo, 850 m, 24-IX-1993, HW (HW); **AL**: mines, Sierra Almahilla, 3-4 km S Turillas, 1200 m, 9-I-1988, *Quercus rotundifolia*, EvN (RMNH); **B**: 2♂, La Llacuna, 28-VIII-2000, 23-VIII-2001, ER (RMNH, ER); 2♂, 1♀, La Pobla de Claramunt, 26-VIII-2000, 16-IX-2001, ER; 1♂, 1♀, Sant Martí de Tous, 26-VII-1998, 7-VII-2000, ER (ER); 2♂, 2♀, Montserrat, San Juan, 1000 m, 17-IV-1993, *Quercus ilex*, e.l. 4-9-VIII-1993, EvN & JCK (JK); 1♂, 3♀, 4 larvae, mines, San Martí de Centelles, 4 km S Centelles, 700 m, 16-IV-1993, *Quercus ilex*, e.l. 4VIII / 9-IX-1993,

EvN & JCK; **CA**: 1♂, 2♀, Sierra de Grazalema, Puerto de las Palomas, 4 km NW Grazalema, 1370 m, 27-II-2000, *Quercus rotundifolia*, e.l. 14-VIII-2000, EvN & SR (RMNH); **CO**: 8♂, 7 km NE Santiago de la Espada, 1400 m, 23-IX-1995, HW (RMNH, HW); **H**: 2 larvae, 5 vacated mines, Sierra de Aracena, 2 km NW Almonaster, 700 m, 26-II-2000, *Quercus suber*, EvN (RMNH); **M**: 1♀, mines, Lozoya, 3 km E., 1100 m, 2-III-1997, *Quercus rotundifolia*, e.l. 8-VIII-1997, EvN (RMNH); **MA**: 1♂, Camino de Ronda, Urbanizació del Madroñal, Loma de Colmenas, 4-X-1988, ETO (ZMUC); 1♂, Marbella, Casa y Campo, 20-X-1984, ETO (ZMUC); 1♂, mines, Serranía de Ronda, road C339, 7 km SE Igualeja, 850 m, 18-I-1988, *Quercus coccifera*, 15-VIII-1988, EvN (RMNH); **MU**: 1♂, Sierra de Espuña, Casa Forestal de las Alquerías, 800 m, 20-IX-1994, HW (HW); **TE**: 2♀, Albarracín, Valdovecar, 1200 m, 25-VIII-2001-26-VIII-2001, PS & BS (ZMUC); 1♀, mines 2 km S of Noguera, Sierra de Albarracín, 1400 m, 21-IV-1993, *Quercus rotundifolia*, e.l. 5-VIII-1993, EvN & JCK (RMNH); 1♂, 2♀, Albarracín, Valdovecar, 1400 m, 28-VIII-2002, HW (RMNH); 1♀, mines, Montes Universales, 4 km E Calomarde, 1250 m, 20-IV-1993, *Quercus rotundifolia*, e.l. 5-VIII-1993, EvN & JCK; 2♂, 1♀, mines, N. of Montalbán, open slopes with spread trees, 1000-1200 m, 19-IV-1993, *Quercus rotundifolia,* e.l. 4-19-VIII-1993, EvN & JCK (RMNH, JCK). **– PT – AG**: 1♂, 3 larvae, mines , Catraia, 3 km SW Cachopo, 11-I-1987, *Quercus rotundifolia,* e.l. 13-VIII-1987, EvN; 1♀, 2 larvae, mines, Catraia, 3 km SW Cachopo, 11-I-1987, *Quercus suber*, e.l. 3-IX-1987, EvN (RMNH); 2♀, N. of Alportel, 14-IX-1995, MC (MC); 3 larvae, 2 mines, Paderne, ca 1 km NW, along N270, 6-I-1987, *Quercus rotundifolia,* EvN; mines, Peralva, 11-I-1987, *Quercus coccifera*, EvN (RMNH); **E**: 2♂, Setúbal, Marateca, 100 m, 24-VI-2003, AL & ZL (AL).

After its original description, *E. suberis* was usually mixed with the externally rather similar *E. haraldi*, as can be seen in many collections. Even STAINTON 's (1881) record of *E. suberis* actually refers most likely to *E. haraldi* as can be seen from the flight date. Mendes was the first to separate the two species, but unfortunately misinterpreted Stainton's *suberis* as what we now know as *E. haraldi*. He described the real *suberis* as *Nepticula viridella*, the name which has been used for this species in the Iberian Peninsula prior to the revision by VAN NIEUKERKEN (1985a).

E. suberis is, as with most evergreen oak feeders, very common and widespread in the Peninsula, and known to feed on all the evergreen oaks and also on *Quercus faginea*. It is univoltine with aestivating pupae, adults not emerging before August-October, occasionally in June or July. Larvae known from January to April, but according to MENDES (1918) from October onwards.

Ectoedemia (Ectoedemia) andalusiae **Van Nieukerken, 1985** (endemic)

ES: *Ectoedemia (Ectoedemia) andalusiae*; VAN NIEUKERKEN, 1985a: 41 - ES: **L**, **MA** [types]; VM 91: 47; VM 94: 28; vN: 26 - ES

PT: *Ectoedemia andalusiae*; CORLEY *et al.*, 2000: 251 - PT: **AG**

ES – B: 2♂, 1♀, Villafranca del Penedés, 300 m, 25-VI-1991, AL & ZL (AL); **GR**: 1♀, N 342, 8 km E of Baza, 11-VII-1985, GB & ETO (ZMUC); **HU**: 2♂, 1♀, Candasnos, 300 m, 23-VI-2001, AL & ZL (AL); **MA**: 2♀, 3 km NE Marbella, road to Ojén, 200 m, 15-I-1988, *Quercus coccifera*, e.l. 27.v-22-VI-1988; EvN (RMNH), 2♂, 4♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ, RMNH); 1♂, Marbella, El Mirador, 100 m, 28-VII-1991, ETO (ZMUC); 2♂, Monda, 26-VI-2004, AL & ZL (AL); 3♂, 1♀, mines, Serranía de Ronda, road C339, 7 km SE Igualeja, 850 m, 18-I-1988, *Quercus coccifera*, e.l. 20.v-22-VI-1988, EvN (RMNH); **SE**: 3♂, Coripe, 300 m, 26-VI-2002, AL & ZL (AL); **T**: 1♂, Mora la Nova, 2 km E, 1-VII-1989, BÅB (BÅB); **Z**: 1♂, Caspe, 250 m, 22-VI-1992, AL & ZL (AL). **– PT – AG:** 3♀, Alportel, North of, 24-V-2002, MC (MC); 3♂, 5♀, mines, Assumadas, 250 m, 26-VI-2002, *Quercus coccifera*, e.l. IX-2002, AL & ZL (AL); 1♀, Cerro de Apra, Loulé, 2.x.1998, MC; 1♂, 1♀, São Romão, 21-V-2001, 19-V-2002, MC (MC); 3♂, Serra de Monte Figo, 11-IX-2001, 19-V-2002, MC(RMNH, MC); **R**: 2♂, Monsanto, 22-VI-2004, AL & ZL (AL).

E. andalusiae is much rarer than *suberis*, and mostly found in the coastal regions. It has only been reared from *Quercus coccifera*, but this may be a sampling artefact. The rearing of adults in September from larvae taken in June (Portugal, Assumadas), shows that this species can be bivoltine, and then fly together with the single autumn generation of *E. suberis*.

Ectoedemia (Ectoedemia)* near *algeriensis
Ectoedemia sp. near algeriensis; VAN NIEUKERKEN, 1985a: 45 - ES: **MA**

This refers to an undescribed species, which will shortly be formally described. It occurs in southern Spain.

***Ectoedemia (Ectoedemia) leucothorax* Van Nieukerken, 1985**
ES: *Ectoedemia (Ectoedemia) leucothorax*; VAN NIEUKERKEN, 1985a: 46 - ES: **MA** [types]; VM 91: 47; VM 94: 28; vN: 26 - ES

ES – MA: 2♀, Carratraca, 600 m, 28-VI-1994, AL & ZL; 2♂, 2♀, Istán, 300 m, 1-VII-1994, AL & ZL; 3♂, 10♀, Jimera de Líbar, 500 m, 29-VI-1994, 27-VI-2002, 27-VI-2003, AL & ZL (AL); 1♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ); 1♀, Marbella, El Mirador, 100 m, 19-VII-1991, 23-VII-1991, ETO (ZMUC, RMNH); 1♂, 2♀, Monda, 500 m, 28-VI-2002, 26-VI-2004, AL & ZL (AL); **V**: 1♂, Saler, 24-V-1983, AV (AV).

Although several new specimens have been found since its description, apart from the single male from Valencia, they were all found in Málaga. The biology is still unknown, although evergreen *Quercus* is the most likely candidate.

***Ectoedemia (Ectoedemia) haraldi* (Soffner, 1942)**
ES: *Ectoedemia (Ectoedemia) haraldi*; VAN NIEUKERKEN, 1985a: 48 - ES: **MA**; VM 91: 47; VM 94: 28; vN: 26 - ES
Misidentification: *Nepticula suberis*; MENDES, 1918: 128 - ES: **SA** ; AGENJO, 1964: [4] - ES
Stigmella suberis; GM: 18 - ES
PT: *Stigmella prinophyllella*; LE MARCHAND, 1946: 280-289 - PT: Portugal'
Ectoedemia (Ectoedemia) haraldi; VAN NIEUKERKEN, 1985a: 48 - PT: **BB**; VM 91: 47; VM 94: 28; vN: 26 - PT; CORLEY *et al.*, 2000: 250-251 - PT: **AG**
Misidentification: *Nepticula suberis*; STAINTON, 1881: 249 - PT: **AG**; MENDES, 1905: 173 - PT: **BB**; MENDES, 1910b: 127 - PT: **E** ; MENDES, 1913: 28 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **AAL**, **BB**, **E**; MONTEIRO GUIMARAES, 1977: 13 - PT: **AAL**, **BB**, **E**
Stigmella suberis; GM: 18 - PT

ES – AL: 1♂, 1♀, mines Sierra Almahilla, 3-4 km S Turillas, 1200 m, 9-I-1988, *Quercus rotundifolia*, e.l. 6-8-III-1988, EvN (RMNH); **CS**: 5♀, 20 km SE Morella, 15-VI-1989, BÅB (BÅB); **CU**: 2♀, Boniches, 1200 m, 17-VI-2002, AL & ZL; **GR**: 7♂, El Molinillo, 1200 m, 28-VI-1992, AL & ZL (AL); 2♀, mines, Sierra Nevada, S slopes, 4.5 km S Trévelez, 1450 m, 11-I-1988, *Quercus rotundifolia*, e.l. 14-15-III-1988, EvN (RMNH); **MA**: 3♂, 2♀, Marbella, 10 km N, 24-25-IV-2001, JJ (JJ, RMNH); 7♂, 5♀, 4 larvae, mines, Serranía de Ronda, road C339, 7 km SE Igualeja, 850 m, 18-I-1988, *Quercus coccifera*, e.l. 13-29-III-1988, EvN; 6♂, 5♀, mines, Serranía de Ronda, road C339, 5 km ESE Igualeja, 1050 m, 18-I-1988, *Quercus coccifera*, 17-III / 1-IV-1988, EvN; 1♂, 3 larvae, mines, Sierra Bermeja, 6 km NNW Estepona, 400 m, 17-I-1988, *Quercus coccifera*, e.l. 4-V-1988, EvN (RMNH); **Z**: 2♀, Tosos, 13-VI-2004, AL & ZL (AL). **– PT – AAL**: 1♂, 1♀, Galegos, Portalegre, 3-VI-1996, 11-V-1999, MC (MC); **AG**: 3♂, Alportel, North of, 24-V-2002, MC (MC); 1♀, Alte, 26-IV-1979, Passos de Carvalho (AV); 1♀, 1 larvae, mines, Foz do Ribeiro, 8 km NE São Bartolomeu de Messines, 6-I-1987, *Quercus rotundifolia*, e.l. 12-III-1987, EvN; 1♀, mines, Monchique, Piquota, N. slopes, 460- 650 m, 7-I-1987, *Quercus suber*, e.l. 30-III-1987, EvN; 1♂, 1♀, mines, Peralva, 11-I-1987, *Quercus coccifera*, e.l. 8-9-III-1987, EvN (RMNH); **R**: 1♂, 1♀, Monsanto, 22-VI-2004, AL & ZL (AL).

This species has for a long time be misidentified as *E. suberis*, but Mendes' descriptions clearly refer to a species with gallery mines, flying in April. Mines can usually not be separated from those of *E. ilicis*, and empty mines are therefore not cited. This species is found more frequently on *Quercus coccifera* than *E. ilicis.*

***Ectoedemia (Ectoedemia) ilicis* (Mendes, 1910)**
ES: *Nepticula ilicis*; MENDES, 1918: 128 - ES: **SA** ; AGENJO, 1964: [4] - ES

Stigmella ilicis; GM: 18 - ES
Ectoedemia (Ectoedemia) ilicis; VAN NIEUKERKEN, 1985a: 49 - ES: **GE**, **GR**, **MA**; VM 91: 47; VM 94: 28; vN: 26 - ES
PT: *Nepticula ilicis*; MENDES, 1910d: 164-165 - PT: **BB** [types]; ZERKOWITZ, 1946: 117 – P: **BB**
Stigmella ilicis; MONTEIRO GUIMARAES, 1977: 25 - PT: **BB**; GM: 18 - PT
Ectoedemia (Ectoedemia) ilicis; VAN NIEUKERKEN, 1985a: 48-49 - PT: **BB**; VM 91: 47; VM 94: 28 - PT; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**; vN: 26 - PT; CORLEY *et al.*, 2000: 250-251 - PT: **AG**

ES – AB: 2♂, Carboneras, 1000 m, 27-VI-2001, AL & ZL (AL); **AL**: 1♂, 3♀, mines Sierra Almahilla, 3-4 km S Turillas, 1200 m, 9-I-1988, *Quercus rotundifolia*, 23-III / 18-IV-1988, EvN (RMNH); **BU**: 1♂, Ibeas de Juarros, 884 m, 23-VII-1985, AV (AV); **CA**: 1♂, 1♀, mines, 4.5 km E Grazalema, road C344, 800 m, 19-I-1988, *Quercus suber*, e.l. 2-13-V-1988, EvN (RMNH); **CS**: 1♂, 20 km SE Morella, 15-VI-1989, BÅB (BÅB); **CU**: 1♀, Casas del Egidillo, 30-VI-2004, AL & ZL; 1♂, 3♀, Monteagudo de las Salinas, 900 m, 17-VI-2003, AL & ZL; **GE**: 8♂, 4♀, Anglés, 600 m, 24-VI-1991, AL & ZL; **GR**: 3♀, Diezma, 1100 m, 29-VI-2003, 28-VI-2004, AL & ZL; 3♂, 2♀, El Molinillo, 27-VI-2004, AL & ZL; 13♂, 4♀, Puerto Pinar, 1500 m, 29-VI-2001, 28-VI-2003, AL & ZL (AL); 2♀, mines, Sierra Nevada, S slopes, 4.5 km S Treveléz, 1450 m, 11-I-1988, *Quercus rotundifolia,* , 18-IV / 1-V-1988, EvN (RMNH); **M**: 1♀, mines, Lozoya, 3 km E., 1100 m, 2-III-1997, *Quercus rotundifolia,* 26-IV-1997, EvN (RMNH); **MA**: 2♂, mines, Serranía de Ronda, road C339, 7 km SE Igualeja, 850 m, 18-I-1988, *Quercus coccifera*, 21-28-III-1988, EvN (RMNH); **TE**: 1♂, Royuella, 1300 m, 16-VI-2003, AL & ZL; 8♂, 8♀, Vivel del Río, 1000 m, 4-VII-1991, 24-VI-2001, AL & ZL; **TO**: 1♂, 1♀, Robledo del Buey, 800 m, 18-VI-2002, AL & ZL (AL). **– PT – AG**: 3♂, 2♀, 5 larvae, mines , Catraia, 3 km SW Cachopo, 11-I-1987, *Quercus rotundifolia*, e.l. 17-30-III-1987, EvN (RMNH); 4♂, 3♀, mines, Foz do Ribeiro, 8 km NE São Bartolomeu de Messines, 6-I-1987, *Quercus rotundifolia*, e.l. 14-30-III-1987, EvN (RMNH); 1♀, L. da Nave, Salir, 22-IV-1992, MC (MC); 1♂, 4♀, larvae, mines, Monchique, Piquota, N. slopes, 460-650 m, 7-I-1987, *Quercus suber*, e.l. 17-28-IV-1987, EvN (RMNH); 2♂, 1♀, 2 larvae, 4 mines, Paderne, ca 1 km NW, along N270, 6-I-1987, *Quercus rotundifolia*, 20-31-III-1987, EvN (RMNH); **TM**: 1♀, PN Montesinho, Varge, 19-VI-2004, AL & ZL (AL).

A very widespread oak miner, particular common in mountainous areas and most frequently reared from *Quercus rotundifolia*, although it has been reared from all evergreen oaks.

Ectoedemia (Ectoedemia) albifasciella **(Heinemann, 1871) – New for Portugal**
ES: *Ectoedemia albifasciella*; VAN NIEUKERKEN, 1985a: 54 - ES: **GR**, **SG** ? [males, could also belong to next species]

ES – CU: 2♂, 3♀, Boniches, 1200 m, 17-VI-2002, collected near *Quercus pyrenaica*, AL & ZL (AL). **– PT – AAL**: 1♀, Minhota, Marvão, Castelo de Vide, 1-IX-2000-30-IX-2000, *Quercus pyrenaica*, e.l. 3-VII-2001, MC; 1♀, Minhota, Portalegre, 5-VI-1996, MC (MC); **R**: 1♀, Monsanto, 22-VI-2004, AL & ZL (AL).

This common Central European species has only rarely been found, associated with *Quercus pyrenaica*. These records confirm its occurrence, since the 1985 records refer to males which cannot be separated from the next species with certainty.

Ectoedemia (Ectoedemia) pubescivora **(Weber, 1937) – New for Portugal**
ES: *Ectoedemia (Ectoedemia) pubescivora*; vN: 26 - ES

ES – CC: 6♂, 4♀, Piornal, 1200 m, 20-VI-2003, collected near *Quercus pyrenaica*, AL & ZL; **GE**: 2♀, Anglés, 600 m, 24-VI-1991, AL & ZL (AL); **SG**: 1♀, San Ildefonso, 16-VI-1902, P. Chrétien (MNHN). **– PT – BA**: 1♂, 1♀, Povolide, 21-VI-2004, AL & ZL; **TM**: 8♂, 9♀, PN Montesinho, 20-VI-2004, near *Quercus pyrenaica*, AL & ZL (AL).

Ectoedemia pubescivora is here for the first time cited with detailed records from the Iberian Peninsula. Because it occurs here almost sympatrically with *E. albifasciella*, records of these species can only be accepted on the basis of females, since males and mines are inseparable.

***Ectoedemia (Ectoedemia) subbimaculella* (Haworth, 1828) – New for Spain**
PT: *Nepticula subbimaculella*; MENDES, 1905: 173 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**
Ectoedemia (Dechtiria) subbimaculella; MONTEIRO GUIMARAES, 1977: 35 - PT: **BB**;
Ectoedemia (Dechtiria) subbimaculella; GM: 19 - PT
Ectoedemia (Ectoedemia) subbimaculella; VAN NIEUKERKEN, 1985a: 59 - PT: **BB**; VM 91: 47; VM 94: 28; vN: 26 - PT

ES – CU: 1♂, 4♀, Boniches, 1200 m, 17-VI-2002, AL & ZL; **GE**: 1♂, Anglés, 24-VI-1991, AL & ZL (AL); **GR**: vacated mines, Sierra Nevada, Pitres, 20-XI-1988, *Quercus pyrenaica*, J.W. Schoorl; vacated mines, Sierra Nevada, S slopes, 1 km NE Busquistar, 1260 m, 11-I-1988, in old leaves of *Quercus pyrenaica*, EvN (RMNH); **L**: 1♂, Benavent (Tremp), 1100 m, 6-VII-1991, AL & ZL (AL); **M**: mines, Rascafría, 2 km SE, 1250 m, 2-III-1997, in old leaves of *Quercus pyrenaica*, EvN (RMNH).

This widespread European species, which is very common in central and West Europe, is probably common in the deciduous oak forests of the Peninsula as well. Mines are very characteristic by the slit which the larva makes in the under epidermis. Mines can still be easily recognised in old fallen leaves of the former year. Adults are more difficult to separate from the next species.

***Ectoedemia (Ectoedemia) heringi* (Toll, 1934) – New for Portugal**
ES: *Ectoedemia (Ectoedemia) heringi*; VAN NIEUKERKEN, 1985a: 60 - ES: **MA**; VM 94: 28; vN: 26 - ES

ES – B: 13♀, La Pobla de Claramunt, 26-V-2001, ER (RMNH); 3 exx., Anoia: Odena (Puig Aguilera), 2-VI-2001, ER (ER); **CA**: 1♀, larvae, mines, 12 km NE Alcalá de los Gazules, 400 m, 6-I-2001, *Quercus faginea*, e.l. 27-IV-2001, EvN (RMNH); **CS**: 1♂, 20 km SE Morella, 15-VI-1989, BÅB; **CU**: 1♂, 16 km W Cuenca, 17-VI-1989, BÅB; **GR**: 1♂, Pampaneira, road cross, 1140 m, 19-22-VI-1989, BÅB (BÅB); **MA**: 1♂, 4♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ, RMNH). **– PT – AAL**: 2♂, Galegos, Portalegre, 3-VI-1996, MC; 1♂, Minhota, Portalegre, 5-VI-1996, MC (MC).

Ectoedemia heringi is very similar to *E. subbimaculella*, but mines do not show a slit. It occurs both on deciduous oaks and semi-deciduous oaks as *Quercus faginea*, where larvae can still be found in January/February. It is with some doubt cited here for Portugal: the studied males overall fit best this species, but males are not always separable from *E. subbimaculella*.

***Ectoedemia (Ectoedemia) erythrogenella* (Joannis, 1908)**
ES: *Nepticula erythrogenella*; MENDES, 1918: 127 - ES: **SA** ; AGENJO, 1964: [4] - ES
Ectoedemia (Dechtiria) erythrogenella; GM: 19 - ES
Ectoedemia (Ectoedemia) erythrogenella; VAN NIEUKERKEN, 1985a: 65 - ES: **MA**; VM 91: 47; VM 94: 28; vN: 26 - ES
PT: *Nepticula erythrogenella*; MENDES, 1913: 28 - PT: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**
Ectoedemia (Dechtiria) erythrogenella; GM: 19 - PT
Ectoedemia (Ectoedemia) erythrogenella; VM 91: 47; VM 94: 28; vN: 26 - PT; CORLEY *et al.*, 2000: 252 - PT: **AG**

ES – AL: mines, Sierra Almahilla, 1 km E Turillas, 800 m, 9-I-1988, EvN; **AV**: mines, Casavieja, 5 km W, 850 m, 5-III-1997, EvN(RMNH); **CA**: 4♂, 3♀, 2 km E Grazalema, near Puerto de los Álamos, 800 m, 7-I-2001, e.l. 5-III / 11-IV-2001, EvN (RMNH); **GE**: adults, mines, Port Bou, 25-II-1967, 13-II-1968, e.l. V-1967, JK (in litt.); **H**: 2 larvae, Hinojos, 9-I-2001, EvN (RMNH); **MA**: 1♀, Camino de Ojén, 10-I-1985, e.l. 8-IV-1985, ETO (ZMUC); 3♂, 4♀, Monda, 500 m, 5-VII-2001, 28-VI-2002, AL & ZL (AL); 1♀, near to Río Verde, 21-VII-1983, ETO (ZMUC). **– PT – AG**: 1♀, mines, Foz do Ribeiro, 8 km NE São Bartolomeu de Messines, 6-I-1987, e.l. 5-V-1987, EvN; 1♀, mines, Monchique, Piquota, N. slopes, 460- 650 m, 7-I-1987, e.l. 5-V-1987, EvN (RMNH); all mines on *Rubus ulmifolius*.

A common *Ectoedemia* in the Peninsula, of which the reddish mines can be spotted everywhere on *Rubus ulmifolius*.

***Ectoedemia (Ectoedemia) angulifasciella* (Stainton, 1849)**
ES: *Nepticula angulifasciella;* MENDES, 1918: 128 - ES: **SA** ; AGENJO, 1964: [4] - ES
Ectoedemia (Dechtiria) angulifasciella; GM: 19 - ES
Ectoedemia (Ectoedemia) angulifasciella; VM 91: 47; VM 94: 28; vN: 26 - ES

ES – SA: 1♂, San Miguel de Valero N, 3 km S of Linares de Riofrío, 850 m, 2-VIII-1986, EvN & SR (RMNH); **TE**: 4♂, Alcalá de la Selva, 1300 m, 3-VII-1994, 5-VII-2002, AL & ZL; 1♂, Vivel del Río, 1000 m, 4-VII-1992, AL & ZL (AL).

Up to now this is the only species of the *E. angulifasciella* complex found in Spain. The other species, *E. atricollis* (Stainton, 1857), *E. rubivora* (Wocke, 1860) and *E. arcuatella* (Herrich-Schäffer, 1855) are to be expected in the northernmost part of Spain. *E. angulifasciella* makes characteristic mines on *Rosa* species.

OPOSTEGIDAE

***Opostegoides menthinella* (Mann, 1855)**
ES: *Opostegoides menthinella*; VM 91: 47, 263 - ES: **BU**, **PO**; VM 94: 29; vN: 27 - ES

ES – A: 1♀, Puerto de Tudons, 7-VII-1993, AL & ZL (AL); **AL**: 1♀, Calar Alto, 10-VII-1993, AL & ZL (AL); **B**: 1♂, Vallbona, 1-VI-1986, ER (ER); **CA**: 1♂, Chiclana, 28-II-1901, Walsingham (BMNH); **CC**: 1♀, San Juan, 21-VI-2003, AL & ZL (AL); **CS**: 1♂, 1♀, Chovar, 11-V-1990, JCK (JCK); **CU**: 1♂, 1♀, Boniches, 17-VI-2002, AL & ZL (AL); **GE**: 1♂, E of Montjoi, 6 km E of Rosas, 100 m, 15-IV-1993, EvN & JCK (JCK); **GR**: 1♂, Granada, 15-V-1901, Walsingham (BMNH); 1♀, Granada, 20-V-1901, Walsingham (BMNH); 1♂, 1♀, Tarviscón, 20-V-1975, CG (RMNH, CG); **H**: 1♂, Coto, 23-IV-1901, Walsingham (BMNH); 2♀, El Rompido, 5-IV-1994, HW (RMNH, HW); 2♂, 2♀, Mazagón, 8-10-IV-1994, HW (RMNH, HW); 2♀, Punta Umbría, 7-IV-1994, HW (RMNH, HW); **MA**: 1♀, Algatocín, 6-V-1981, CG (CG); 1♀, Cala Moral, 4-V-1901, Walsingham (BMNH); 2♀, Camino de Benahavis, 27-31-III-1980, ETO (RMNH, ZMUC); 1♀, Camino de Istán, 400 m, 25-VI-1975, ETO; 1♀, Camino de Istán, 200 m, 17-IV-1977, ETO (ZMUC); 1♀, Camino de Ojén, 150 m, 17-IV-1980, 13-III-1981, 7-IV-1984, ETO (BMNH, RMNH, ZMUC); 1♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ); 1♀, Marbella, El Mirador, 14-IV-1971, 11-III-1980, ETO; 2♀, Sierra de Marbella, El Mirador, 700 m, 25-IV-1977, 3-VI-1978, ETO (ZMUC, RMNH); **MU**: 1♂, 2♀, Ifre, 20-IV-1978, CG (RMNH, CG); **PM**: 2♀, Mallorca, Santanyi, 21-I-1997, 19-III-2000, P.J. Cramp (BMNH); **TE**: 1♂, Fuentespalda, 26-VI-1976, CG (CG); **TO**: 2♀, Robledo del Buey, 18-VI-2002, AL & ZL (AL); **SE**: 1♀, Ronquillo, 12-V-1979, CG.

Opostegoides menthinella was originally described from Corsica, and for the first time recorded from Spain by VIVES MORENO (1991). It is one of the two common species in the Mediterranean region, by far the commonest in Spain, found in 15 provinces, but as yet not known from Portugal. It is also known from mainland France, Italy: Sardinia and Greece, and here for the first time recorded from northern Africa: Tunisia (2♂, Aïn Draham region, V-1988, ZMUC).

O. menthinella is recognised from similar Opostegidae by the overall white colour, including the hindwings (Fig. 20), which are more greyish in *Pseudopostega crepusculella* and *P. chalcopepla*, with which it may be confused. The forewing has usually a black dot at termen and fresh specimens have a faint yellowish fascia. Worn specimens may be difficult to separate from *Opostega salaciella.* The genitalia are very characteristic, and typical for the genus *Opostegoides* (DAVIS, 1988). They are here (Figs. 22-25) illustrated for the first time. Biology and host are unknown, the original suggestion by Mann that *Mentha* could be the host is very unlikely, since the species flies in dry Mediterranean habitat (Matorral), where usually no *Mentha* occurs. M. Honey (in litt.) suggested that the Mallorcan specimens may be associated with *Cistus*, which would better explain its distribution and habitat.

***Opostega salaciella* (Treitschke, 1833)**
ES: *Opostega salaciella*; REISSER, 1947: 112 - ES: **AV**; VM 91: 47; VM 94: 29; vN: 27 - ES
PT: *Opostega salaciella*; CORLEY *et al.*, 2000: 252 - PT: **AG**

ES – GR: 1♂, Sierra Nevada, Camino de Veleta, 2250 m, 19-VII-1985, ETO (ZMUC); 1♂, Yator,

22-IV-1978, CG (CG); **HU**: 2♂, N. Bielsa, by Tunnel, 1900 m, 22-VII-1992, M. Fibiger (ZMUC, RMNH); **TE**: 1♀, Alcalá de la Selva, 22-VI-1994, AL & ZL (AL). **– PT – BB**: 1♂, Serra de Estrela, Penhas da Saúde, 22-VI-2002, AL & ZL (AL).

This common European species, associated with *Rumex* spp., is relatively rarely found in the Peninsula, and usually in mountainous areas, except for the single record from the Algarve.

***Opostega spatulella* Herrich-Schäffer, 1855**

ES: *Opostega spatulella*; WALSINGHAM, 1901: 233 - ES: **CA** ; VAN NIEUKERKEN, 1990a: 369; VM 91: 47; VM 94: 29; vN: 27 - ES

PT: *Opostega spatulella*; CORLEY *et al.*, 2000: 252 - PT: **AG**

Opostega spatulella has only twice been reported from the Peninsula. We have not seen any specimens. It feeds on *Salix*, and barkmines have recently been illustrated (PUPLESIS & DIŠKUS, 2003).

***Pseudopostega chalcopepla* (Walsingham, 1908)**

ES: *Opostega chalcopepla* WALSINGHAM, 1908: 228 - ES: **H** [types]; ZERNY, 1927: 145 - ES: **CA**; VM 91: 47; VM 94: 29 - ES; VIVES MORENO, 1995: 309 - ES: **GR**; vN: 27 - ES

Opostega snelleni; KAUTZ, 1928: (76) - ES: **GR**; VM 91: 47; VM 94: 29 - ES

PT: *Opostega chalcopepla*; VM 91: 47, 263 - PT: **AG**; VM 94: 29; vN: 27 - PT; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**

ES – AB: 1♂, El Pardal, 28-VI-2001, AL & ZL (AL); **B**: 1♀, Anoia: Jorba, 20-VI-1998, ER; **CS**: 1♂, 1♀, Els Ports: Beseit [Beceite], 17-IV-2001, ER (ER); 2♂, 1♀, 20 km SE Morella, 15-VI-1989, BÅB (BÅB); **CU**: 2♂, 1♀, Monteagudo de las Salinas, 17-VI-2003, AL & ZL (AL); **GR**: 4♂, 20 km ENE of Granada, 23-VII-1986, CG (RMNH, CG); 1♀, Tarviscón, 20-V-1979, CG (CG); 2♀, Vélez Benaudalla, 29-IV-1978, CG (RMNH, CG); **H**: 1♂ (Holotype), Coto, 24-IV-1901, Walsingham (BMNH); 1♂, 2♀, Mazagón, 8-10-IV-1994, HW (RMNH, HW); 1♂, Mazagón, 3-7-VI-1991, G.R. Langohr (RMNH); 3♀, Punta Umbría, 7-IV-1994, HW (RMNH, HW); **MA**: 1♀, Camino de Istán, 200 m, 17-IV-1977, ETO; 1♀, Marbella 10 km N, 24-25-IV-2001, JJ (JJ); 1♀, Marbella, El Mirador, 100 m, 24-IV-1977, ETO; 1♀, Refugio de Juanar, 700 m, 29-VII-1971, ETO (ZMUC); 2♀, Sierra de Marbella, El Mirador, 700 m, 25.iv+7-VI-1977, ETO (ZMUC, RMNH); **MU**: 1♂, 1♀, Ifre, 20-IV-1978, CG (RMNH, CG); 1♂, 1♀, Sierra Espuña, 1040 m, 27-VI-1989, BÅB (BÅB); **TE**: 1♂, Vivel del Río, 17-VII-1993, AL & ZL (AL); **V**: 1♀, Sevra, 17-IV-1978, CG (CG); **Z**: 1♂, 1♀, Mequinenza, 20-IV-1981, CG (RMNH, CG); **no province known**: 1♀ (Paratype), Andalusia, 1894, Staudinger (BMNH); 2♀, Andalusia, 1881, Staudinger, Stainton coll. (BMNH).

Another Mediterranean species, which is confined to the coastal region. This is the largest European Opostegidae species, usually recognized by greyish hindwings and four dots in the fringe of the forewings; there is usually also a faint patch in the middle of the dorsum (Fig. 21). The genitalia are here illustrated for the first time (Figs. 26-30), and are typical for *Pseudopostega* species (DAVIS, 1988), very similar to those of *P. crepusculella*, see the key below. Staudinger named this species with the manuscript name 'rosmarinella', suggesting that *Rosmarinus* may be the host. Judging from the localities and the fact that other European species also feed on Lamiaceae (VAN NIEUKERKEN, 1990a: *Lycopus* and *Mentha*), it is certainly a possible candidate as hostplant. *P. chalcopepla* is only known from the Iberian Peninsula, Morocco (RUNGS, 1979), southern France and Monaco, and here also recorded from Tunisia (1♀, El Kef, 20-III-1977, L. Gozmány, ZMUC).

***Pseudopostega crepusculella* (Zeller, 1839)**

ES: *Opostega crepusculella*; RÖSSLER, 1877: 380 - ES: **BI** ; SEEBOLD, 1899: 320 - ES: Andalusia, **BI**

Pseudopostega crepusculella; VM 91: 48; VM 94: 29; vN: 27 - ES

PT: *Opostega crepusculella*; STAINTON, 1881: 249 - PT: **AG**; ZERKOWITZ, 1946: 118 – P: **AG**, **E**

Pseudopostega crepusculella; VM 91: 48; VM 94: 29 - PT; PASSOS DE CARVALHO & CORLEY, 1995: 194 - PT: **AG**; vN: 27 - PT; CORLEY *et al.*, 2000: 252 - PT: **AG**

ES – MA: 1♂, Marbella, El Mirador, 17-V-1969, ETO (ZMUC); **TE**: 1♂, Cosa, 1200 m, 23-VII-1991, HW (HW).

This widespread European species, associated with *Mentha*, has rarely been found in the Peninsula.

Keys to European Opostegidae

Because there exists no identification work for the two common Mediterranean Opostegidae, we provide here keys to all six European species. They are based on those given by VAN NIEUKERKEN (1990a) for the four northern European species. For illustrations for these four species we refer to that work.

Key to adults, based on externals

1. Forewing and hindwing white, forewing without or with relatively little darker scaling 2
- Hindwing distinctly darker than forewing, grey to pale brown; forewing with grey to fuscous markings or completely ochreous-brown 3

2. Forewing uniformly white, or occasionally with very pale yellow scaling which may form indistinct fascia. Darker scales always absent .....*Opostega salaciella*
- Forewing with a distinct small black apical dot in fringe, several strigulae in second half of wing, forming 1-2 indistinct chevron's may be present, sometimes almost absent (Fig. 20). Worn examples may be inseparable from *salaciella* .....*Opostegoides menthinella*

3. Forewing pale ochreous, often with indistinct darker brown markings, no apical dot .....
.....*Opostega spatulella*
- Forewing white, with grey fuscous markings and distinct black apical dot 4

4. Forewing with oblique median spot on costa and a similar one on dorsum, often forming an angulate fascia. Hindwings pale grey fuscous to almost white.....*Pseudopostega crepusculella*
- Forewing without costal mark, but with more or less distinct median dorsal spot. Hindwing grey fuscous 5

5. Larger species, wingspan 10.5-14 mm. Forewing dorsal spot small, wing apically with 4-5 small dots in fringe, not forming distinct strigulae or complete chevrons (Fig. 21) .....
.....*Pseudopostega chalcopepla*
- Smaller species, 9-12 mm. Forewing with very distinct medial dorsal spot, wing apically with 3 costal and 2 dorsal strigulae, first pair forming chevron.....*Pseudopostega auritella*

Key based on male genitalia

1. Aedeagus present. Valva a slender pedicel with pectinifer articulating at distal end (Figs. 22, 23)....
.....*Opostegoides menthinella*
- Aedeagus absent. Valva wider with pectinifer articulating below tip.....2

2. Juxta present. Gnathos with acute medial process.....3 (*Opostega*)
- Juxta absent. Gnathos with medial process terminally widened.....4 (*Pseudopostega*)

3. Juxta caudally pointed. Pectinifer distinctly rounded.....*O. salaciella*
- Juxta caudally bilobed. Pectinifer almost straight.....*O. spatulella*

4. Gnathos terminally with acute corners. Cucullar lobe (with pectinifer) larger than remaining valva.
.....*P. auritella*

- Gnathos terminally with rounded corners. Cucullar lobe not so large.....5

5. Gnathos terminally spatulate, slightly pointed in middle. Vinculum rather broad (Figs. 26-27) ....*P. chalcopepla*
- Gnathos terminally bilobed. Vinculum anteriorly extended and narrowed.....*P. crepusculella*

Key based on female genitalia

1. Anal papillae absent, anterior apophyses absent (Fig. 24-25).....*Opostegoides menthinella*
- Anal papillae present, usually paired or bilobed.....2

2. Anterior apophyses present. Spermathecal duct with enlarged outer canal.....3 (*Opostega*)
- Anterior apophyses absent. Spermathecal duct with outer canal fused to bursa ...4 (*Pseudopostega)*

3. Vestibulum and ductus bursae with very distinct close set pectinations .....*O. spatulella*
- Vestibulum and ductus bursae with very indistinct pectinations.....*O. salaciella*

4. Anal papillae forming a deeply dived pair of lobes, U- or V-shaped 5
- Anal papillae forming a single slightly indented lobe. Bursa with more or less circular band of spines (Figs. 28-30).....*P. chalcopepla*

5. Indention between lobes of anal papillae U-shaped. Bursa without spine-like appendages..... .....*P. auritella*
- Indention between lobes of anal papillae V-shaped. Bursa externally with spine-like appendages ....*P. crepusculella*

Excluded or doubtful species

***Stigmella viscerella* (Stainton, 1853)**
PT: *Nepticula viscerella*; MENDES, 1905: 172 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella viscerella; GM: 19; VM 91: 44; VM 94: 25; vN: 22 - PT

The only record by MENDES (1905) refers to a single moth ("Só encontrei a borboleta"). Moths of *S. viscerella* can resemble several others, and can not be identified with certainty without studying the genitalia. Because mines have never been recorded, and the moth has not been found again we prefer to delete this species from the Iberian fauna at this moment.

**** Stigmella lemniscella* (Zeller, 1839)**
ES: *Nepticula* sp. ".. duas especies de lagartas de minas differentes em agosto" MENDES, 1918: 127 – ES: **SA**
Nepticula marginicolella; AGENJO, 1964: [4] - ES
Stigmella lemniscella; GM: 18; VM 91: 45; VM 94: 26; vN: 23 - ES

The record of this species by AGENJO (1964) almost certainly is an interpretation of the second species that Mendes found on *Ulmus*, next to *S. ulmivora*, but that he did not name. Although it is possible that these were mines of *S. lemniscella*, we find this record rather uncertain, and this should thus be confirmed by adults.

***Stigmella ruficapitella* (Haworth, 1828)**
ES: *Stigmella ruficapitella*; VM 91: 45; VM 94: 26; vN: 23 - ES
PT: *Nepticula ruficapitella*; MENDES, 1913: 27 - PT: **BB**; ZERKOWITZ, 1946: 116 – P: **BB**
Stigmella ruficapitella; MONTEIRO GUIMARAES, 1977: 29 - PT: **BB**; VM 91: 45; VM 94: 26; vN: 23 - PT

The confusion around the oak mining *Stigmella* prior to 1972 is well known (see VAN NIEUKERKEN & JOHANSSON, 2003 for details), most records of *S. ruficapitella* refer to other red-headed species; here often *S. eberhardi* or females of *S. suberivora* or *S. ilicifoliella*. No representative of the real *ruficapitella*, a more northern European species, has yet been found in the Iberian Peninsula.

***Trifurcula (Trifurcula) pallidella* (Duponchel, 1843)**
ES: *Trifurcula (Trifurcula) pallidella*; VM 91: 46, 263 - ES: **M**; VM 94: 27; vN: 24 - ES [unauthorized addition]
PT: *Trifurcula pallidella*; MENDES, 1905: 172 – P: **BB**; ZERKOWITZ, 1946: 117 – P: **BB**
Trifurcula (Trifurcula) pallidella; GM: 19; VM 91: 46; VM 94: 27; vN: 24 - PT [unauthorized addition]

This species was introduced by VIVES MORENO (1991) for Spain on the basis of a pale (undescribed) *Trifurcula* taken near Madrid; and by MENDES (1905) for Portugal (Soalheira). *T. pallidella* has a more eastern distribution, and is confined to *Chamaecytisus* species, which are extremely rare in Spain or *Cytisus nigricans* (= *Lembotropis nigricans*), which is altogether absent. This species has therefore to be removed from the checklist. The Iberian fauna counts a number of similar pale *Trifurcula* species, as yet all undescribed. A revision is in preparation.

***Ectoedemia (Fomoria) groschkei* (Skala, 1943)**
ES: *Ectoedemia (Dechtiria) groschkei*; GM: 19 - ES
Ectoedemia (Fomoria) groschkei; VM 91: 46 - ES: **PM**; VM 94: 28 - ES: **PM**; vN: 25 - ES: [unauthorized addition]

This species was introduced for Spain by GOMEZ BUSTILLO (1981), probably by misinterpretation of the German text by KLIMESCH (1978), a publication cited by him. Klimesch wrote (l.c.: 253): 'Vergeblich suchte nach ihr [*T. groschkei*] Verfasser in …. auf Mallorca (Balearen) und bei Port Bou; an beide Stellen kommt die Futterpflanze häufig vor.' In translation: 'The author searched in vain for it [*T. groschkei*] in … on Mallorca (Balearic Islands) and near Port Bou; on both localities the hostplant is common.' We have no indication of the occurrence of *E. groschkei* in Western Europe, and it therefore has to be removed from the list.

Doubtful records

Stigmella species
Nepticula sp.; MENDES, 1910b: 128 - PT: **E** [Mines on *Cydonia*]
Nepticula sp.; MENDES, 1910b: 128 - PT: **E** [Mines on *Pyrus*]
Nepticula sp.; MENDES, 1913: 30 - PT: **BB**
Nepticula sp.; MENDES, 1918: 128 - ES: **SA** [Mines on *Crataegus*]
Nepticula sp.; HERING, 1935: 374 - ES: A [Mines on *Rosa*]

These records of leafmines could not be attributed to any species with certainty.

Trifurcula (Glaucolepis) species
Nepticula? sp.; HERING, 1935: 376 - ES: **TE** [Mines on *Salvia lavandulaefolia*]
Nepticula bupleurella; HERING, 1935: 342 - ES: **MU** [Mines on *Bupleurum rigidum*]

The species on *Salvia* is probably a new species, which has also been found by AL & ZL.

The mines on *Bupleurum rigidum* more likely do not belong to *T. bupleurella*, seen the fact that we found different species (partly undescribed) on all *Bupleurum* species studied. This species has not yet been collected again.

Trifurcula sp.
'a new and distinct *Trifurcula*'; WALSINGHAM, 1901: 239 - ES: **GR**.

Walsingham cited a species flying near *Retama sphaerocarpica*. This is indeed a new species, common in Spain, which we plan to describe in a forthcoming revision.

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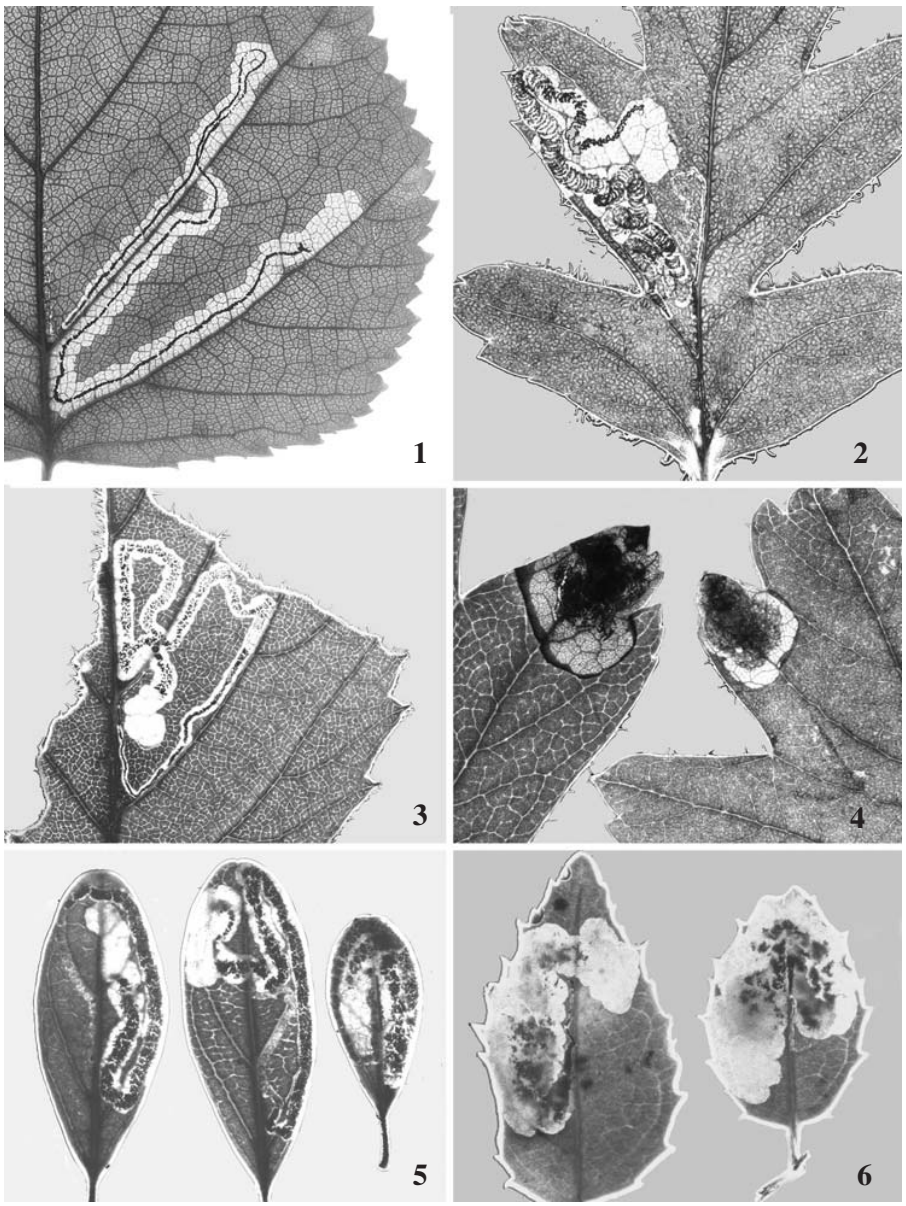
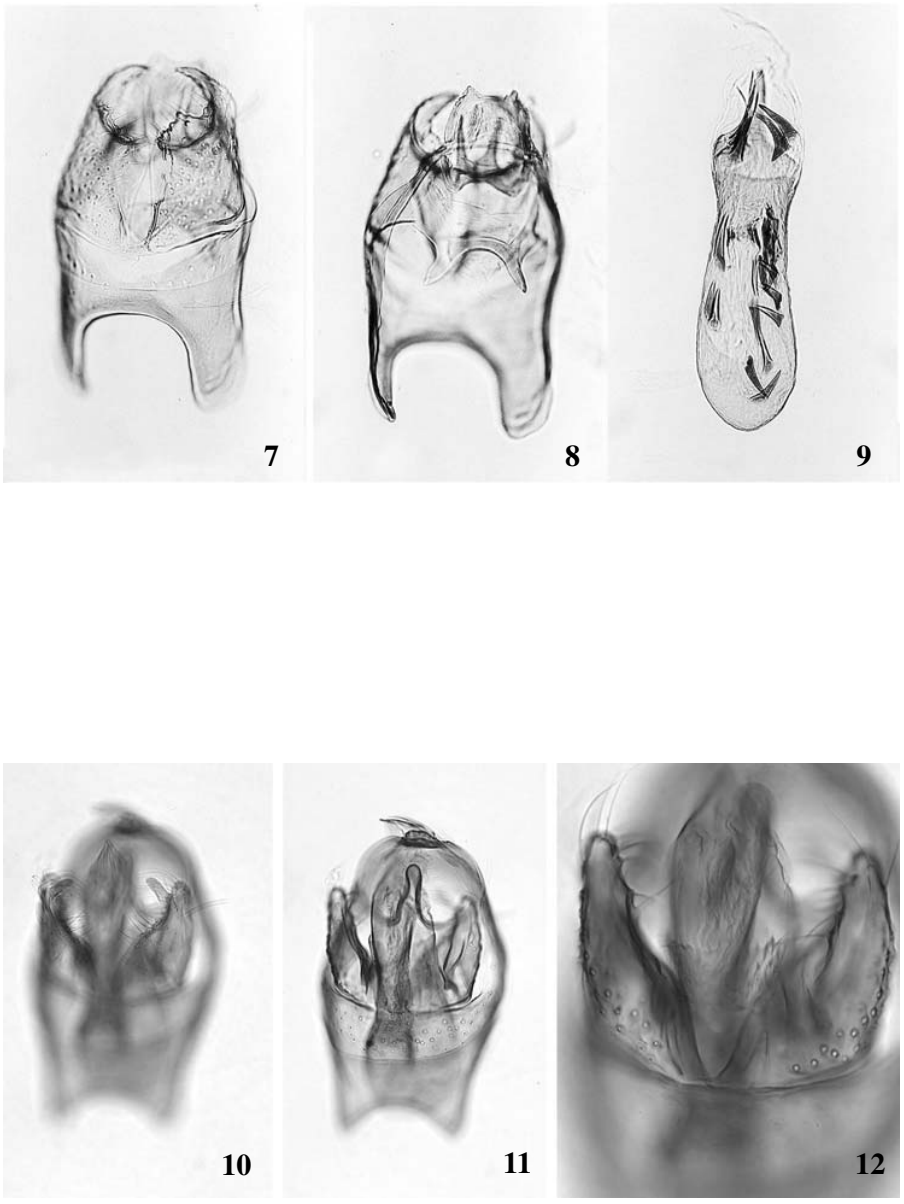
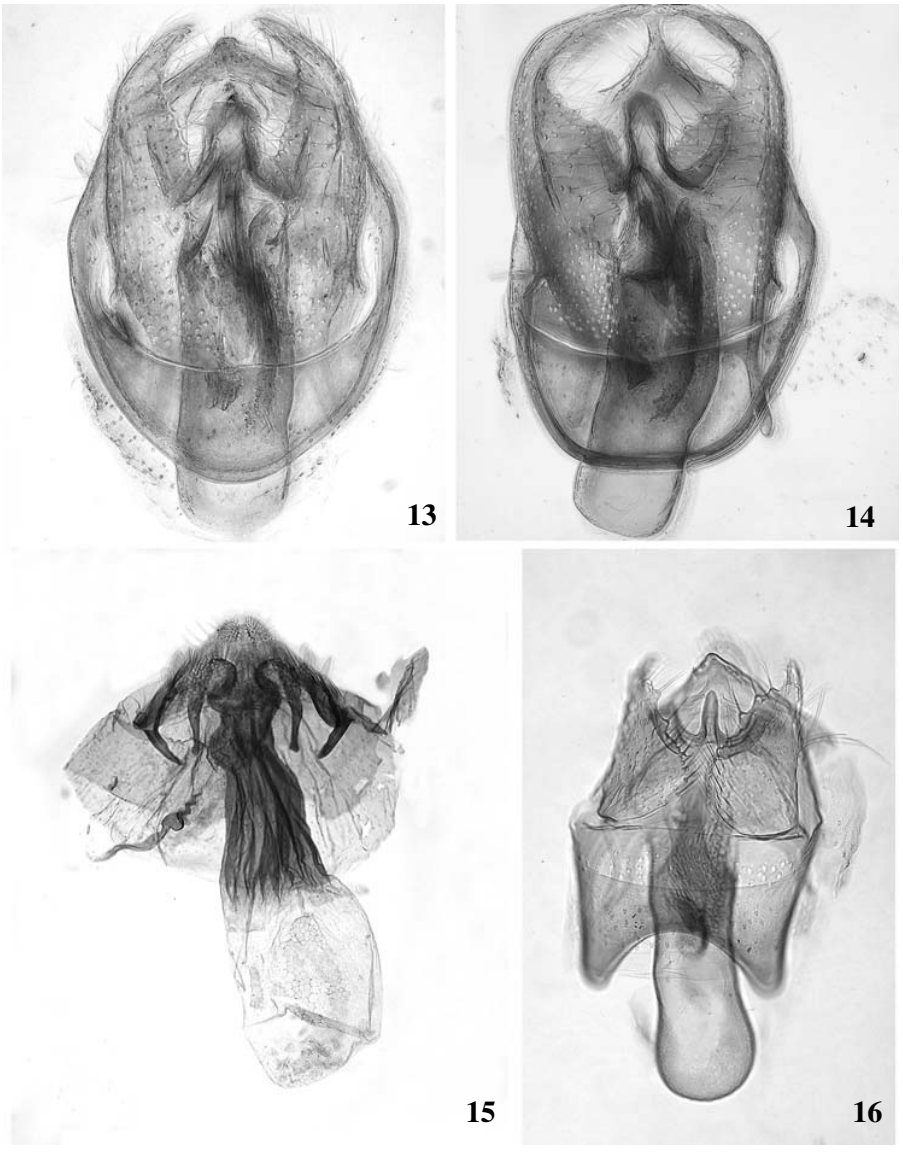


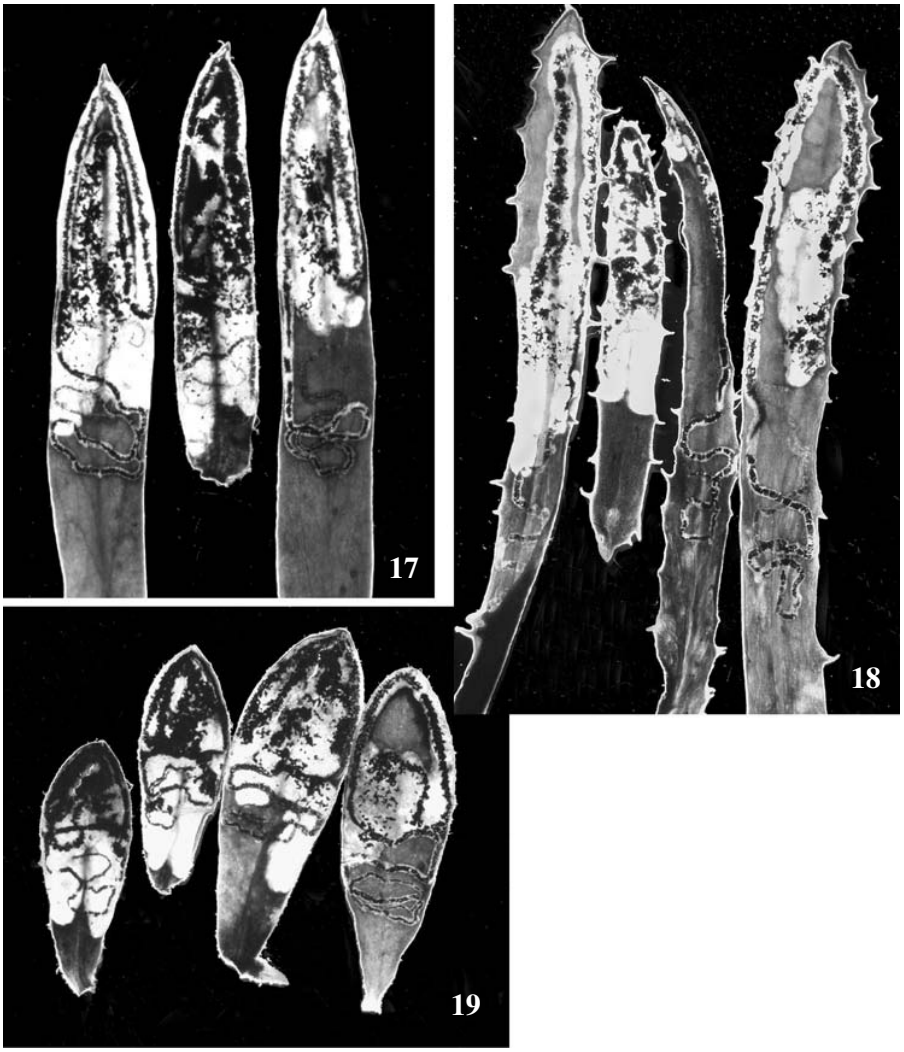
Figs. 1-6.– Leafmines of *Stigmella* species: **1.** *S. lapponica*, on *Betula,* PT-MI. **2.** *S. crataegella* on *Crataegus monogyna*, PT-TM. **3.** *S. ulmivora* on *Ulmus* sp., PT-TM. **4.** *S. paradoxa* on *Crataegus monogyna*, PT-TM. **5.** *S. crenulatae* on *Rhamnus lycioides*, PT-AG, **6.** *S. alaternella* on *Rhamnus alaternus*, ES-CS.



Figs. 7-12.– Male genitalia of Nepticulidae. **7-9.** *S. crenulatae*, PT-AG, slide EvN2794. **10-12**. *Trifurcula (Glaucolepis) teucriella*, slide EvN 3383, ES-GE: Port Bou.

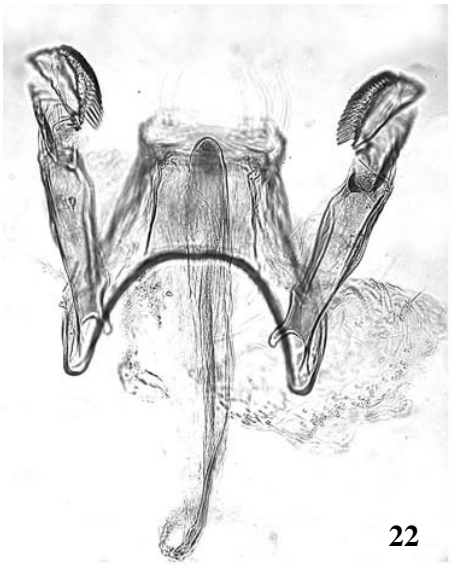


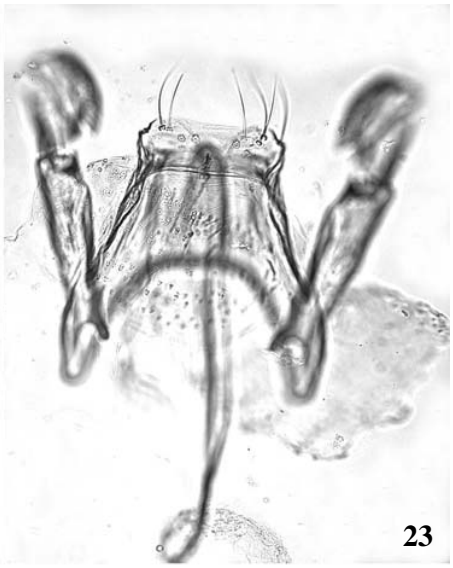
Figs. 13-16.– Genitalia of Nepticulidae. **13.** *Trifurcula beirnei*, male, slide EvN3404, ES-HU. **14** *Trifurcula squamatella*, male, slide EvN3407 PT-BA. **15.** *Trifurcula squamatella*, female, slide EvN3409 PT-BA. **16.** *Ectoedemia (Fomoria) euphorbiella*, male, slide EvN 3560, ES-V.



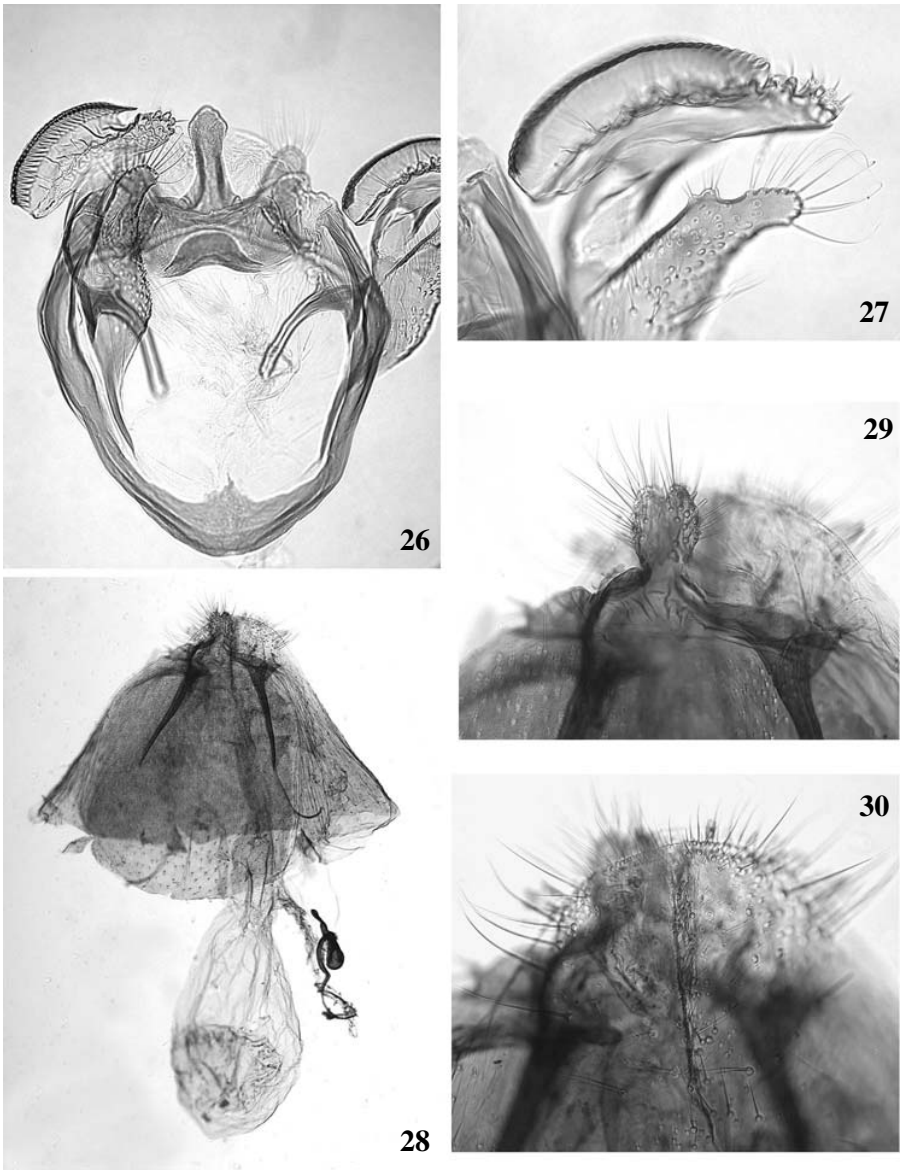
Figs. 17-19.– *Ectoedemia (Fomoria) euphorbiella*, leafmines, ES-V. **17.** On *Euphorbia brittingeri*. **18.** On *E. serrata.* **19.** On *E. terracina*.

Figs. 20-21.– Adults of Opostegidae. **20.** *Opostegoides menthinella*, female, ES-MA: Marbella. **21.** *Pseudopostega chalcopepla*, male, ES-H: Punta Umbría.





Figs. 22-25.– *Opostegoides menthinella*, genitalia. **22, 23.** Male, slide EvN 2898, Tunisia, Aïn Draham. **24, 25.** Female, slide EvN2910, ES-H, El Rompido. **25.** Ventral side of abdominal tip.



Figs. 26-30.– *Pseudopostega chalcopepla*, genitalia. **26, 27.** Male, slide EvN3054, ES-Z, Mequinenza. **27.** Detail valva, cucullar lobe with pectinifer. **28-30.** Female, slide EvN2909, ES-H, Punta Umbría, **29.** Anal papillae. **30.** Ventral side of abdominal tip.