

Lastuvka, A.; Lastuvka, Z.
Seven Nepticulidae new to the Iberian Peninsula and several new province records
(Lepidoptera: Nepticulidae)
SHILAP Revista de Lepidopterología, Vol. 36, Núm. 144, diciembre-sin mes, 2008, pp.
457-464
Sociedad Hispano-Luso-Americana de Lepidopterología
Madrid, España

Disponible en: <http://redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=45511220007>

SHILAP
REVISTA DE LEPIDOPTEROLOGIA

SHILAP Revista de Lepidopterología
ISSN (Versión impresa): 0300-5267
avives@eresmas.net
Sociedad Hispano-Luso-Americana de
Lepidopterología
España

¿Cómo citar?

Número completo

Más información del artículo

Página de la revista

Seven Nepticulidae new to the Iberian Peninsula and several new province records (Lepidoptera: Nepticulidae)

A. Laštůvka & Z. Laštůvka

Abstract

The records of seven Nepticulidae species new to the Iberian Peninsula are given. Five of them are new to Spain, viz. *Parafomoria fumanae* Laštůvka & Laštůvka, 2005, *Bohemannia pulverosella* (Stainton, 1849), *Ectoedemia (Etainia) decentella* (Herrich-Schäffer, 1855), *E. (Ectoedemia) intimella* (Zeller, 1848), and *E. (E.) contorta* Nieuwerkerken, 1985, and the following two species are new to Portugal: *Trifurcula (Trifurcula) orientella* Klimesch, 1953, and *Parafomoria tingitella* (Walsingham, 1904), the latter being new to Europe. New province records are given of 38 species (58 new province records in all). Adults, genitalia, or leaf mines are illustrated in important cases.

KEY WORDS: Lepidoptera, Nepticulidae, Iberian Peninsula, new records.

Siete Nepticulidae nuevas en la Península Ibérica y varios registros nuevos provinciales (Lepidoptera: Nepticulidae)

Resumen

Se mencionan siete registros de nuevas especies de Nepticulidae en la Península Ibérica. Cinco de ellas son nuevas para España, véase *Parafomoria fumanae* Laštůvka & Laštůvka, 2005, *Bohemannia pulverosella* (Stainton, 1849), *Ectoedemia (Etainia) decentella* (Herrich-Schäffer, 1855), *E. (Ectoedemia) intimella* (Zeller, 1848), y *E. (E.) contorta* Nieuwerkerken, 1985, y las dos siguientes especies son nuevas para Portugal: *Trifurcula (Trifurcula) orientella* Klimesch, 1953, y *Parafomoria tingitella* (Walsingham, 1903), la última mencionada es nueva para Europa. Nuevas citas provinciales para 38 especies (58 nuevas citas provinciales en total). Se ilustran los adultos, genitales o minas en los casos importantes.

PALABRAS CLAVE: Lepidoptera, Nepticulidae, Península Ibérica, nuevas registros.

Sete Nepticulidae novos na Península Ibérica e alguns novos registros provincianos (Lepidoptera: Nepticulidae)

Resumo

Cinco delas são novas para Espanha, veja *Parafomoria fumanae* Laštůvka & Laštůvka, 2005, *Bohemannia pulverosella* (Stainton, 1849), *Ectoedemia (Etainia) decentella* (Herrich-Schäffer, 1855), *E. (Ectoedemia) intimella* (Zeller, 1848) e *E. (E.) contorta* Nieuwerkerken, 1985, as seguintes duas espécies são novas em Portugal: *Trifurcula (Trifurcula) orientella* Klimesch, 1953 e *Parafomoria tingitella* (Walsingham, 1904), sendo a última delas nova na Europa. Novos registros provincianos são representados por 38 espécies (58 novos registros provincianos em total). Adultos, genitais ou minas são ilustrados nos casos mais importantes.

PALAVRAS CHAVE: Lepidoptera, Nepticulidae, Península Ibérica, novos registros.

Introduction

The existing literature and collection records on Nepticulidae of the Iberian Peninsula have been summarized by NIEUKERKEN *et al.* (2004). Several faunistic data on *Parafomoria* species are given by LAŠTŮVKA & LAŠTŮVKA (2005) and further individual findings were supplied later by CORLEY (2005), CORLEY *et al.* (2006, 2007, 2008), NIEUKERKEN (2006), and PIRES & CORLEY (2007). The research of this family, continued in 2005-2008, brought many interesting records and observations, including new taxa (LAŠTŮVKA & LAŠTŮVKA, 2007), new discoveries in the Iberian Peninsula and new province records. The findings of seven species new to the Iberian Peninsula and 38 species new to its individual provinces are presented in this contribution.

Material and methods

The presented material and data were obtained mostly by the authors (AL & ZL) during their three weeks visits to the Iberian Peninsula in June 2005-2008. Several records come from other collectors. The exact collection data are given under the respective species. The Nepticulidae species were mostly caught at light, mines with larvae were collected in several cases. The collection of material is given in parentheses after the name of the collector.

Species newly recorded in the Iberian Peninsula

Trifurcula (Trifurcula) orientella Klimesch, 1953

PT: Ribatejo, Serras de Aire e Candeeiros, Valverde, 5 ♂♂, 20-VI-2008, AL & ZL (AL).

The species is described from Dalmatia (KLIMESCH, 1953) and its known range reaches from southern France across Liguria and Slovenia (Nanos Mts., Strmec, 5-X-2002, mines on *Genista sylvestris*, adults ex larva III-2003, AL) and southern central Europe to Greece. In its monotonous forewing colour, the species is very similar to several other *Trifurcula* species (Fig. 1); it differs mainly in male genitalia morphology (Fig. 2). The larva mines the stems of *Genista germanica*, *G. hispanica*, *G. sylvestris* and other small, mostly thorny *Genista* species (LAŠTŮVKA & LAŠTŮVKA, 1997 and own unpublished records). New species to Portugal.

Parafomoria tingitella (Walsingham, 1904)

PT: Algarve, Fóia, southern slopes, ca 800 m a.s.l., mines with larvae on *Tuberaria lignosa*, 23-VI-2007, 6 ♂♂, 8 ♀♀ ex larva VI, VII-2007 and 3 ♂♂, 4 ♀♀ ex larva X-2007, AL & ZL (AL).

The species is described from Morocco (WALSINGHAM, 1904) and it had been known only from the type locality up to now. It was redescribed after the type material by NIEUKERKEN (1983). It differs from the related *Parafomoria* species by the narrow white fascia on the dark forewing in male and by the white thorax and the characteristic white fasciae on the forewing in female (Fig. 3). The genitalia both male and female are quite characteristic (Fig. 4, 5). The larva mines the leaves of *Tuberaria lignosa* (Fig. 6). The species develops three or more generations per year and it overwinters as larva or pupa according to humidity and temperature. New species to Europe and Portugal.

Parafomoria fumanae Laštůvka & Laštůvka, 2005

ES: Barcelona, Santa María de Oló, empty mines on *Fumana ericacea*, 11-VI-2006; Cuenca, Villalba de la Sierra, empty mines on *Fumana procumbens*, 27-VI-2006, both AL & ZL (AL).

The species is recently described from southern France (LAŠTŮVKA & LAŠTŮVKA, 2005). Its larva mines the stems of *Fumana* spp. It develops at least 2 or 3 generations per year. The larvae had not been found during winter, so that the species overwinters as pupa very probably. New species to Spain.

Bohemannia pulverosella (Stainton, 1849)

ES: Gerona, Anglés, empty mines on *Malus domestica*, 8-VI-2008, AL & ZL (AL).

The species is distributed in southern, western and central Europe, up to southern Scandinavia to the north (LAŠTŮVKA & LAŠTŮVKA, 1997). The mines in the leaves of apple trees are quite characteristic (Fig. 7). The species produces only one generation per year, adults are on the wing in V-VI, larvae mine in VI-VII. New species to Spain.

Ectoedemia (Etainia) decentella (Herrich-Schäffer, 1855)

ES: Zaragoza, Aguarón, 1 ♂, 12-VI-2006, AL & ZL (AL).

The species is widely distributed over western, central and partly southern Europe. It differs from the related species *Ectoedemia (Etainia) sericopeza* (Zeller, 1839) and *E. louisella* (Sircom, 1849) in its brownish black head and whitish thorax (Fig. 8). The larva mines the leaves of several *Acer* spp., the main host plant is *Acer pseudoplatanus*, it is also known from *A. monspessulanum*, *A. obtusatum* and *A. sempervirens* (Laštůvka & Laštůvka, 1997). It produces 2 generations per year. New species to Spain.

Ectoedemia (Ectoedemia) intimella (Zeller, 1848)

ES: Zaragoza, Aguarón, 1 ♀, 12-VI-2006, AL & ZL (AL).

This Eurosiberian species, widely distributed in western, central and northern Europe, is also known from the Far East (PUPLESIS, 1994). It is distinguishable by an orange white head and patagia, and by a dark, brownish black forewing with conspicuous yellowish white dorsal spot (Fig. 9). The larva mines the leaves of various *Salix* species. The species produces one generation per year, adults are on the wing in VI-VII, larvae mine in IX-XI (LAŠTŮVKA & LAŠTŮVKA, 1997). New species to Spain.

Ectoedemia (Ectoedemia) contorta Nieuwerkerken, 1985

ES: Guadalajara, Caserío el Monte, 1 ♂?, 1 ♀, 13-VI-2006, AL & ZL (AL).

So far, the species is known from the south of the Czech Republic, Lower Austria, southern Slovakia, Hungary, and Crimea (NIEUKERKEN, 1985, LAŠTŮVKA & LAŠTŮVKA, 1997). The determination from external morphology is unreliable and confusion with several other *Ectoedemia* species mining oaks is possible. Only the female genitalia are characteristic, its ductus spermathecae has a large number (10-13.5) of convolutions (Fig. 10). In central Europe, the larva mines the leaves of *Quercus pubescens*, or *Q. robur*. The Iberian specimens were collected on a growth of *Quercus faginea*, which could be another host plant. The species produces one generation per year, adults are on wing in V-VII, larvae mine in VIII-IX. New species to Spain.

New province records

The survey of complete faunistic data on the following species with various remarks on their distribution, biology, etc. is given by NIEUKERKEN *et al.* (2004). Here we supply new records of these species for several Spanish and Portuguese provinces.

Stigmella freyella (Heyden, 1858)

ES: Cuenca, La Toba, larva on *Convolvulus* sp., 13-VI-2005, 1 ♂ ex l., VI-2005, AL & ZL (AL).

Stigmella thuringiaca (Petty, 1904)

ES: Zaragoza, Tosos, 1 ♂, 11-VI-2006, AL & ZL (AL).

Stigmella rolandi Nieuwerkerken, 1990

ES: Zaragoza, Tosos, 1 ♂, 15-IX-2002, P. Skou (ZMUC).

Stigmella hybnerella (Hübner, 1813)

ES: Toledo, Buenasbodas, 1 ♂, 14-VI-2005; PT: Ribatejo, Serras de Aire e Candeeiros, Valverde, 2 ♀ ♀, 20-VI-2008; both AL & ZL (AL).

Stigmella trimaculella (Haworth, 1828)

ES: Zaragoza, Tosos, 1 ♂, 1 ♀, 11-VI-2006, AL & ZL (AL).

Stigmella aurella (Fabricius, 1775)

ES: Málaga, La Majada Higüera, 1 ♂, 15-VI-2008, AL & ZL (AL).

Stigmella incognitella (Herrich-Schäffer, 1855)

PT: Ribatejo, Serras de Aire e Candeeiros, Valverde, 1 ♂, 20-VI-2008, AL & ZL (AL).

Stigmella perpygmaella (Doubleday, 1859)

ES: Almería, Sra Baza, El Haza del Riego, 1 ♂, 16-VI-2007; Cuenca, La Toba, 1 ♀, 23-VI-2008; PT: Ribatejo, Monsanto, 1 ♂, 19-VI-2005, all AL & ZL (AL).

Stigmella suberivora (Stainton, 1869)

ES: Albacete, El Pardo, 1 ♂, 26-VI-2006; Ávila, Las Vueltas, 2 ♂ ♂, 16-VI-2005; Zaragoza, Aguarón, 4 ♂ ♂, 3 ♀ ♀, 11-VI-2007, 2 ♂ ♂, 1 ♀, 27-VI-2007, all AL & ZL (AL).

Stigmella ilicifoliella (Mendes, 1918)

ES: Guadalajara, Caserío el Monte, 1 ♂, 13-VI-2006, AL & ZL (AL).

Stigmella dorsiguttella (Johansson, 1971)

ES: Cuenca, La Toba, 1 ♀, 13-VI-2005; Guadalajara, Caserío el Monte, 1 ♂, 13-VI-2005; PT: Beira Alta, Pinzio, 1 ♂, 21-VI-2008, all AL & ZL (AL).

Stigmella atricapitella (Haworth, 1828)

ES: Guadalajara, Caserío el Monte, 1 ♂, 13-VI-2006, AL & ZL (AL).

Stigmella eberhardi (Johansson, 1971)

ES: Guadalajara, Caserío el Monte, 5 ♂ ♂, 13-VI-2006; PT: Algarve, Odelouca, 1 ♀, 21-VI-2007; Ribatejo, Serras de Aire e Candeeiros, Valverde, 3 ♂ ♂, 1 ♀, 20-VI-2008, all AL & ZL (AL).

Acalyptris minimella (Rebel, 1924)

PT: Baixo Alentejo, Odemira, 1 ♂, 19-VI-2008, AL & ZL (AL).

Trifurcula (Glaucolepis) thymi (Szöcs, 1965)

ES: Guadalajara, Caserío el Monte, 13 ♂ ♂, 1 ♀, 13-VI-2006; Zaragoza, Aguarón, 3 ♂ ♂, 11-VI-2008, AL & ZL (AL).

Trifurcula (Glaucolepis) stoechadella Klimesch, 1975

ES: Zaragoza, Aguarón, 1 ♂, 3 ♀ ♀, 11-VI-2007, 4 ♂ ♂, 27-VI-2007, AL & ZL (AL).

Trifurcula (Glaucolepis) rosmarinella (Chrétien, 1914)

ES: Almería, Las Piletas, 1 ♂, 11-VI-2008, AL & ZL (AL).

Trifurcula (Glaucolepis) bleonella (Chrétien, 1907)

ES: Guadalajara, Caserío el Monte, 1 ♂, 13-VI-2006, AL & ZL (AL).

Trifurcula (Glaucolepis) pederi Laštůvka & Laštůvka, 2007

ES: Granada, 10 km N Otívar, 4 ♂♂, 14-VI-2008, AL & ZL (AL).

Trifurcula (Glaucolepis) andalusica Laštůvka & Laštůvka, 2007

ES: Málaga, Jubrique, 1 ♂, 16-VI-2008, La Majada Higuera, 3 ♂♂, 15-VI-2008, AL & ZL (AL).

Trifurcula (Levarchama) eurema (Tutt, 1899)

ES: Granada, Puebla de Don Fadrique, 1 ♂, 1 ♀, 26-VI-2005; Toledo, Buenasbodas, 1 ♂, 14-VI-2005; Zaragoza, Aguarón, 2 ♂♂, 12-VI-2006, 1 ♂, 27-VI-2007, AL & ZL (AL).

Trifurcula (Trifurcula) josefklimeschi Nieukerken, 1990

ES: Zaragoza, Aguarón, 2 ♂♂, 11-VI-2007, AL & ZL (AL).

Trifurcula (Trifurcula) iberica Nieukerken, 1990

ES: Barcelona, Santa María de Olo, 1 ♂, 25-VI-2008, AL & ZL (AL).

Trifurcula (Trifurcula) immundella (Zeller, 1839)

ES: Huelva, El Corchuela, 8 ♂♂, 6 ♀♀, 19-VI-2007, in a stand of *Cytisus grandiflorus*; PT: Beira Alta, Pinzio, 1 ♂, 1 ♀, 24-VI-2007, 5 ♂♂, 5 ♀♀, 21-VI-2008, on a stand of *Cytisus multiflorus*, AL & ZL (AL); *Cytisus scoparius* does not occur in the two localities so that the species also develops on these *Cytisus* species.

Trifurcula (Trifurcula) calycotomella Laštůvka & Laštůvka, 1997

ES: Castellón, Sierra del Espadán, 2 km N Eslida, 3 ♂♂, 1-V-1997, P. Skou (ZMUC).

Trifurcula (Trifurcula) squamatella (Stainton, 1849)

PT: Beira Alta, Pinzio, 2 ♂♂, 1 ♀, 24-VI-2007, 5 ♂♂, 1 ♀, 21-VI-2008, on a growth of *Cytisus striatus*, AL & ZL (AL); *Cytisus scoparius* does not occur in the locality; the data of these records are very early, the species is on the wing mostly in September.

Parafomoria liguricella (Klimesch, 1946)

ES: Almería, Uleila del Campo, 800 m a.s.l., mines 9-VII-1993 on *Cistus albidus*, 3 ♂♂, 1 ♀ ex larva VIII-1993, AL & ZL (AL).

Ectoedemia (Fomoria) septembrella (Stainton, 1849)

PT: Baixo Alentejo, Odemira, 1 ♂, 19-VI-2008, AL & ZL (AL).

Ectoedemia (Laqueus) euphorbiella (Stainton, 1849)

ES: Albacete, El Pardo, 1 ♂, 26-VI-2006, AL & ZL (AL).

Ectoedemia (Zimmermannia) longicaudella Klimesch, 1953

ES: Málaga, Jubrique, 1 ♂, 16-VI-2008; PT: Baixo Alentejo, Odemira, 1 ♂, 19-VI-2008; Beira Alta, Pinzio, 1 ♂, 21-VI-2008, all AL & ZL (AL).

Ectoedemia (Zimmermannia) liguricella Klimesch, 1953

ES: Albacete, El Pardo, 1 ♀, 26-VI-2006, AL & ZL (AL).

Ectoedemia (Ectoedemia) caradjai (Groschke, 1944)

ES: Barcelona, Santa María de Olo, 1 ♂, 25-VI-2008; Cuenca, La Toba, 1 ♂, 27-VI-2006; Guadalajara, Caserío el Monte, 1 ♀, 13-VI-2006, all AL & ZL (AL); Huesca, Estena, 1 ♂, 14-VII-2003, B. Skule (ZMUC); Málaga, Jubrique, 2 ♂♂, 16-VI-2008, AL & ZL (AL).

Ectoedemia (Ectoedemia) andalusiae Nieukerken, 1985

ES: Cádiz, Punta Palomas, 4 ♂ ♂, 22-VI-2006, AL & ZL (AL).

Ectoedemia (Ectoedemia) leucothorax Nieukerken, 1985

ES: Cádiz, Punta Palomas, 1 ♀, 22-VI-2006, AL & ZL (AL).

Ectoedemia (Ectoedemia) albifasciella (Heinemann, 1871)

ES: Granada, 10 km N Otívar, 2 ♂ ♂, 1 ♀, 14-VI-2008, AL & ZL (AL).

Ectoedemia (Ectoedemia) pubescivora (Weber, 1937)

ES: Ávila, Las Vueltas, 1 ♀, 22-VI-2008; Barcelona, Santa María de Olo, 1 ♀, 7-VI-2008; Cuenca, La Toba, 1 ♂, 2 ♀ ♀, 23-VI-2008, all AL & ZL (AL).

Ectoedemia (Ectoedemia) erythrogenella (Joannis, 1908)

ES: Zaragoza, Aguarón, 1 ♂, 11-VI-2007, AL & ZL (AL).

Ectoedemia (Ectoedemia) angulifasciella (Stainton, 1849)

ES: Huesca, Estena, 1 ♀, 14-VII-2003, B. Skule (ZMUC).

Acknowledgements

We are very grateful to O. Karsholt (ZMUC, Copenhagen) for the loan of the study material (mostly collected by P. Skou and B. Skule), Dr. A. Vives (Madrid) for support in obtaining permits to collect in Spain, Dr. M. Sequeira (ICN, Lisboa) for the permit to collect Lepidoptera in protected areas of Portugal, Mgr. V. Camacho and Mss. L. Šafránková (Brno) for the translations of the Spanish and Portuguese abstracts, and Dr. R. Obertel (Brno) for linguistic revision of the English text.

This study was supported by Research project No. MSM6215648905 “Biological and technological aspects of sustainability of controlled ecosystems and their adaptability to climate change”, financially supported by the Ministry of Education, Youth and Sports of the Czech Republic.

BIBLIOGRAPHY

- CORLEY, M. F. V., 2005.– Further additions to the Lepidoptera of Algarve, Portugal. II (Insecta: Lepidoptera).– *SHILAP Revta. lepid.*, **33**(131): 247-364.
- CORLEY, M. F. V., MARABUTO, E., MARAVALHAS, E., PIRES, P. & CARDOSO, J. P., 2008.– New and interesting Portuguese Lepidoptera records from 2007 (Insecta: Lepidoptera).– *SHILAP Revta. lepid.*, **36**(143): 283-300.
- CORLEY, M. F. V., MARABUTO, E. & PIRES, P., 2007.– New Lepidoptera for the fauna of Portugal (Insecta: Lepidoptera).– *SHILAP Revta. lepid.*, **35**(139): 321-334.
- CORLEY, M. F. V., MARAVALHAS, E. & PASSO DE CARVALHO, J., 2006.– Miscellaneous additions to the Lepidoptera of Portugal (Insecta: Lepidoptera).– *SHILAP Revta. lepid.*, **34**(136): 407-427.
- KLIMESCH, J., 1953.– Die europäischen *Trifurcula*- und *Ectoedemia*-Arten (Lep., Nepticulidae).– *Z. wien. ent. Ges.*, **38**: 160-170, 191-196.
- LAŠTŮVKA, A. & LAŠTŮVKA, Z., 1997.– *Nepticulidae Mitteleuropas. Ein illustrierter Begleiter (Lepidoptera)*: 229 pp. Konvoj, Brno.
- LAŠTŮVKA, A. & LAŠTŮVKA, Z., 2005.– *Parafomoria fumanae* sp. n., a new stem miner on *Fumana procumbens* (Lepidoptera: Nepticulidae).– *Acta Univ. Agric. Silv. Mendelianae Brunnensis*, **53**(1): 15-18.
- LAŠTŮVKA, Z. & LAŠTŮVKA, A., 2007.– Seven new species of the subgenus *Glaucolepis* Braun from southern Europe (Lepidoptera: Nepticulidae, *Trifurcula*).– *Acta Univ. Agric. Silv. Mendelianae Brunnensis*, **55**(5): 101-110.
- NIEUKERKEN, E. J. van, 1983.– The Cistaceae-feeding Nepticulidae (Lepidoptera) of the western Palearctic region.– *Syst. Ent.*, **8**: 453-478.

- NIEUKERKEN, E. J. van, 1985.– A taxonomic revision of the western Palaearctic species of the subgenera *Zimmermannia* Hering and *Ectoedemia* Busck s. str. (Lepidoptera, Nepticulidae), with notes on their phylogeny.– *Tijdschr. Ent.*, **128**: 1-164.
- Nieukerken, E. J. van, 2006.– *Trifurcula pallidella* (Duponchel, 1843), new for Spain (Lepidoptera: Nepticulidae).– *SHILAP Revta. lepid.*, **34**(136): 279-281.
- NIEUKERKEN, E. J. VAN, LAŠTŮVKA, A. & LAŠTŮVKA, Z., 2004.– Annotated catalogue of the Nepticulidae and Opostegidae of the Iberian Peninsula (Lepidoptera: Nepticuloidea).– *SHILAP Revta. lepid.*, **32**(127): 211-260.
- PIRES, P. & CORLEY, M. F. V., 2007.– The Lepidoptera of Baixo Mondego (Beira Litoral, Portugal) (Insecta: Lepidoptera).– *SHILAP Revta. lepid.*, **35**(138): 187-230.
- PUPLESIS, R., 1994.– *The Nepticulidae of eastern Europe and Asia*: 291 pp. + 840 figs. Backhuys Publ., Leiden.
- WALSINGHAM, L., 1904.– Spanish and moorish Micro-Lepidoptera.– *Entomologist's mon. Mag.*, **40**: 7-8.

A. L.

Slavíčková , 15

CZ-796 01 Prostějov

REPÚBLICA CHECA / CZECH REPUBLIC

Z. L.

Department of Zoology, Fisheries, Hydrobiology and Apiculture

Mendel University of Agriculture and Forestry

Zemědělská , 1

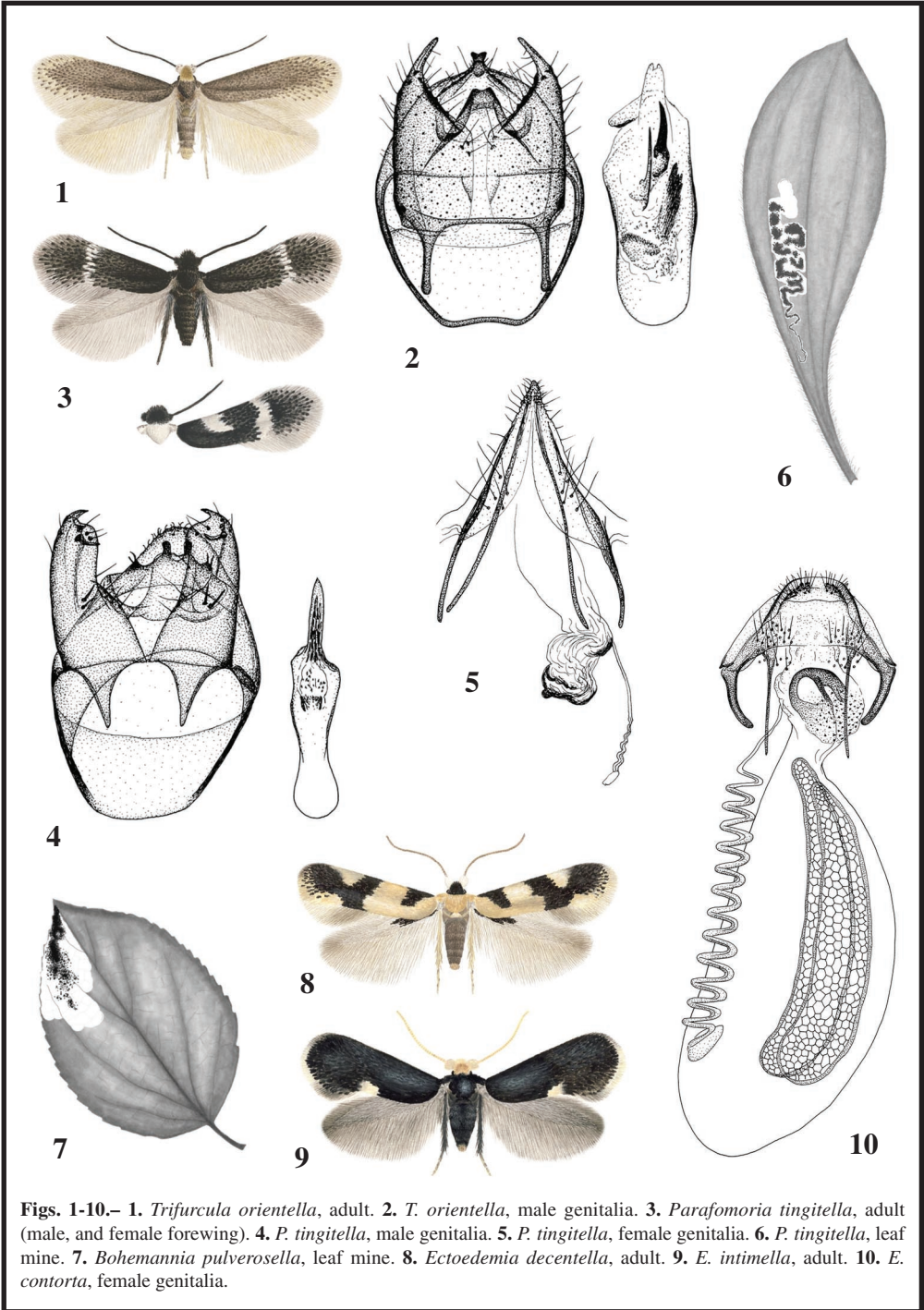
CZ-613 00 Brno

REPÚBLICA CHECA / CZECH REPUBLIC

E-mail: last@mendelu.cz

(Recibido para publicación / Received for publication 21-XI-2008)

(Revisado y aceptado / Revised and accepted 10-XII-2008)



Figs. 1-10.— 1. *Trifurcula orientella*, adult. 2. *T. orientella*, male genitalia. 3. *Parafomoria tingitella*, adult (male, and female forewing). 4. *P. tingitella*, male genitalia. 5. *P. tingitella*, female genitalia. 6. *P. tingitella*, leaf mine. 7. *Bohemannia pulverosella*, leaf mine. 8. *Ectoedemia decentella*, adult. 9. *E. intimella*, adult. 10. *E. contorta*, female genitalia.