

LEPIDOPTERA OF THE AZORES ISLANDS

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ABSTRACT. An up-to-date checklist of the Azorean Lepidoptera is presented. From the 166 species and subspecies recorded for this archipelago only 149 were confirmed, of which 22.8% are endemic. Additional information is provided concerning important changes in the taxonomy, hostplants, and regarding regional, macaronesian and world-wide distribution.

The butterflies and moths observed at São Miguel, Santa Maria, Pico, Faial and São Jorge islands in 1995-1996 are also recorded, including 56 species and subspecies, belonging to the families: Tineidae, Gracillariidae, Yponomeutidae, Cosmopterigidae, Gelechiidae, Choreutidae, Pyralidae, Pieridae, Nymphalidae, Lycaenidae, Geometridae, Sphingidae, and Noctuidae. *Cryptoblabes gnidiella* (MILLIÈRE) and *Tathorhynchus exsiccata* (LEDERER) are new records for the archipelago (São Miguel and Faial islands, respectively). *Caloptilia aurantiaca* (WOLLASTON) and *Cosmopterix parietariae* M. HERING. *C. parietariae* and *Vanessa atalanta* (L.), and *Macroglossum stellatarum* (L.), are new records for Faial, Pico, and Flores, respectively.

RESUMO. Apresenta-se uma lista actualizada dos Lepidópteros açorianos. Das 166 espécies e subespécies registadas para este arquipélago apenas 149 foram confirmadas, sendo 22,8% endémicas. São dadas informações adicionais concernentes a alterações importantes ao nível da taxonomia, plantas hospedeiras e distribuição geográfica, regional, macaronésica e mundial.

As borboletas e traças observadas em 1995-1996, nas ilhas de São Miguel, Santa Maria, Pico, Faial e São Jorge, incluindo 56 espécies e subespécies, pertencem às famílias: Tineidae, Gracillariidae, Yponomeutidae, Cosmopterigidae, Gelechiidae, Choreutidae, Pyralidae, Pieridae, Nymphalidae, Lycaenidae, Geometridae, Sphingidae e Noctuidae. *Cryptoblabes gnidiella* (MILLIÈRE) e *Tathorhynchus exsiccata* (LEDERER) constituem citações novas para o arquipélago (ilhas de São Miguel e Faial, respectivamente). Outros taxa são referidos pela primeira vez para diferentes ilhas: *Caloptilia aurantiaca* (WOLLASTON), *Cosmopterix parietariae* M. HERING (Faial), *C. parietariae*, *Vanessa atalanta* (L.) (Pico) e *Macroglossum stellatarum* (L.) (Flores).

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INTRODUCTION

New information is included in this revision of the checklist of the Azorean Lepidoptera previously published by VIEIRA & PINTUREAU (1991, 1993). The present paper deals with the harmful and beneficial lepidopteran fauna that have been recorded in previous publications and during fieldwork in São Miguel, Santa Maria, Pico, Faial, and São Jorge, in 1995/1996. Many of these species are of little economic importance, but others are of widespread or local importance as pests of cultivated plants (e.g. larvae of Noctuids) and stored products (e.g. larval stage of Pyralids).

In this work, only the most important synonyms of Lepidoptera from the Macaronesian archipelagos, particularly for the Azores, Madeira and Canary Islands, are given. Other synonyms and more details of the position of each species in the Lepidoptera classification can be found in VIVES MORENO (1991, 1994) and in CARVALHO *et al.* (in press) for the Azorean Noctuids.

The hostplants (= Host records) are those cited in literature or determined by author's direct observation due to their importance in crop production, horticulture, forestry and environmental management.

The annotations on zoogeographical distribution (= Distribution) reflects citations for the Azores archipelago and other Macaronesian archipelagos (generally Madeira and Canaries), and also refers the areas or countries where the species is particularly important as a pest (e.g., see BIN-CHENG ZHANG, 1994). No attempt has been made to reach completeness in this zoogeographical range, which will often be wider than is indicated here, but it is mainly intended understanding the affinities between the Azorean Lepidoptera and those species occurring in other Macaronesian archipelagos, Africa and/or Iberian peninsula.

A list of butterflies and moths (= Additional records) observed at São Miguel, Santa Maria, Pico, Faial and São Jorge islands (Azores) in 1995 and/or 1996 is also presented, and includes those that are either new to the Archipelago (marked with @) or individual islands (marked with ®). Those species that are considered as dubious or erroneously identified, or with dubious presence, are marked with an asterisk (*).

The most important bibliography, including that cited from Azores, is listed as "References".

LIST OF THE LEPIDOPTERA OF AZORES

MICROLEPIDOPTERA

Superfamily TINEOIDEA LATREILLE, 1810

Family PSYCHIDAE BOISDUVAL, [1828]

Subfamily PSYCHINAE BOISDUVAL, [1828]

Genus *LUFFIA* TUTT, 1899

1. *Luffia rebeli* WALSINGHAM, 1907 *

SYNONYMY: *Luffia? rebeli* Walsingham.

DISTRIBUTION: Azores (São Miguel), Canary Islands, Sardin. Mediterranean.

REFERENCES: Rebel, 1940; Bacallado & Pinker, 1982; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

Family TINEIDAE LATREILLE, 1810

Subfamily MYRMECOZELINAE CAPUSE, 1968

Genus *PRAEACEDES* AMSEL, 1954

2. *Praeacedes atomosella* (WALKER, 1863)

SYNONYMY: *Tinea thecophora* Walsingham. *Tinea? thecophora* Walsingham. *Praeacedes deluccae* Amsel.

DISTRIBUTION: Azores (Flores), Madeira, Canary Islands, Spain, Malta. Mediterranean.

REFERENCES: Rebel, 1940; Klimesch, 1980; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993.

Subfamily MEESSINAE CAPUSE, 1968

Genus *TENAGA* CLEMENS, 1862

3. *Tenaga nigripunctella* (HAWORTH, 1828)

SYNONYMY: *Lichenovora nigripunctella* (Haworth). *Tinea nigripunctella* Haworth. *Tinea moeniella* Rössler.

DISTRIBUTION: Azores (São Miguel), Canary Islands, Madeira, Porto Santo, W-Europe, Portugal, Spain, England, Sicily, Dalmatian. Mediterranean.

REFERENCES: Rebel, 1940; Klimesch, 1980; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1995.

Genus *EUDARCIA* CLEMENS, 1860

4. *Eudarcia atlantica* HENDERICKX, 1995

COMMON NAMES: Case-building Tineidae species (Henderickx, 1995).

HOST RECORDS: Larval cases were found on walls and rocks near the coast area, and the adults jump and run rapidly on the black lava rocks that are often partially covered with whitish lichen (Henderickx, 1995).

DISTRIBUTION: Azores (São Miguel, Terceira, Faial). Endemic.

REFERENCES: Henderickx, 1995.

Subfamily TINEINAE LATREILLE, 1810

Genus *MONOPIS* HÜBNER, [1825]5. *Monopis crocicapitella* (CLEMENS, 1859)

SYNONYMY: *Tinea crocicapitella* Clemens. *Tinea hyalinella* Staudinger. *Tinea lombardica* Hering. *Tinea ferruginella* Dyar, 1902 (nec Hübner, 1810).

HOST RECORDS: Feeds on organic detritus, stored products, and is often found in birds' nests, seeds and dried vegetables, and wool.

DISTRIBUTION: Azores (Terceira, Flores), Canary Islands, Madeira, M-S and W-Europe, Portugal, Spain, England, N- and S-American, USA, Hawaii. Cosmopolitan. Introduced.

REFERENCES: Rebel, 1940; Klimesch, 1980; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Holloway *et al.*, 1992; Bin-Cheng Zhanz, 1994.

6. *Monopis nigricantella* (MILLIÈRE, 1872)

SYNONYMY: *Tinea nigricantella* Millière.

DISTRIBUTION: Azores (Terceira), Canary Islands, Madeira, Portugal, Spain. Mediterranean.

REFERENCES: Rebel, 1940; Klimesch, 1980; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Carvalho, 1995.

7. *Monopis imella* (HÜBNER, [1813])

SYNONYMY: *Tinea imella* Hübner.

HOST RECORDS: Fur, wool.

DISTRIBUTION: Azores (Terceira, Pico), Canary Islands, Madeira, Europe, Portugal, Spain, Russia, W- and C-Asia, Siberian, Turkey, Siria, Israel. Palaearctic.

REFERENCES: Klimesch, 1980; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994; Carvalho, 1995.

Genus *TRICHOPHAGA* RAGONOT, 18948. *Trichophaga tapetzella* (LINNAEUS, 1758) *

SYNONYMY: *Tinea tapetzella* Linnaeus. *Trichophaga tapetiella* Linnaeus. *Tinea palaestrica* Butler.

COMMON NAMES: Tapestry moth, white-tip cloths moth, carpet moth.

HOST RECORDS: Wool, fur, feathers, hair, guano.

DISTRIBUTION: Azores (São Miguel), Canary Islands, Portugal, Spain. Cosmopolitan.

REFERENCES: Stoetzel, 1989; Sousa, 1991; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993.

9. *Trichophaga bipartitella* (RAGONOT, 1892)

SYNONYMY: *Trichophaga abruptella* Wollaston. *Tinea abruptella* Wollaston. *Tinea bipartitella* Ragonot. *Trichophaga desertella* Mabilie. *Trichophaga amina* Meyrick.

COMMON NAMES: Indian clothes moth.

HOST RECORDS: Stored products.

DISTRIBUTION: Azores (Flores), Madeira, Porto Santo, Canary Islands, Selvagem Grande, S-Europe, Portugal, Spain, W-Asia, N-Africa, Egipto, India. Cosmopolitan.

REFERENCES: Baez, 1984; Bin-Cheng Zhanz, 1994; Balachowsky, 1966; Klimesch, 1980; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1995.

Genus *NIDITINEA* PETERSEN, 1957

10. *Niditinea fuscella* (LINNAEUS, 1758)

SYNONYMY: *Niditinea fuscipunctella* (Haworth). *Tinea fuscipunctella* Haworth. *Tinea eurinella* Zagulajev. *Niditinea spretella* Denis & Schiffermüller.

COMMON NAMES: Brown-dotted clothes moth.

HOST RECORDS: Cereals, seeds, dried fruits and other materials of animal or vegetable origin.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial, Flores, Corvo), Madeira, Canary Islands, Portugal, Spain. Cosmopolitan.

REFERENCES: Rebel, 1940; Klimesch, 1980; Guimarães, 1982; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994; Vieira & Tavares, 1995.

Genus *TINEA* LINNAEUS, 1758

11. *Tinea pellionella* LINNAEUS, 1758

SYNONYMY: *Tinaena pellionella* Linnaeus. *Tineola pellionella* Linnaeus. *Tinea dubiella* Stainton.

COMMON NAMES: Case-bearing clothes moth, casemaking clothes moth.

HOST RECORDS: Wool, fur, feathers and others keratin-containing materials.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial), Madeira, Porto Santo, Canary Islands, Europe, Portugal, Spain, N-Africa, Europe to temperate Asia, introduced into N-America, Australia, New Zealand. Cosmopolitan. Introduced!

REFERENCES: Klimesch, 1980; Guimarães, 1982; Stoetzel, 1989; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Baez, 1984; Bin-Cheng Zhanz, 1994; Carvalho, 1982, 1995.

12. *Tinea poecilella* REBEL, 1940

DISTRIBUTION: Azores (São Miguel). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

13. *Tinea murariella* STAUDINGER, 1859

SYNONYMY: *Tineola bipunctiella* Ragonot.

HOST RECORDS: Wool, fur, hides and skins, hair and others materials of animal origin.

DISTRIBUTION: Azores (São Miguel, Flores), Madeira, Canary Islands, Mediterranean countries, southern Europe, Portugal, Spain, France, Italy, North Africa, Arabian, Sudan.

Mediterranean.

REFERENCES: Rebel, 1940; Klimesch, 1980; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994.

Subfamily HIEROXESTINAE MEYRICK, 1893

Genus *OINOPHILA* STEPHENS, 1848

14. *Oinophila v-flava* (HAWORTH, 1828)

SYNONYMY: *Oinophila flava* (Haworth). *Gracillaria v-flava* Haworth. *Oenophila v-flavum* Haworth.

HOST RECORDS: Detritus, dates (*Phoenix canariensis* Chab.), wine-bottle corks, casks; it can be found in various entities, namely stored products, mills, tea-factory.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial, Flores), Madeira, Canary Islands, W-Europe, Spain, England, France, Germany, USA (California). Native of the Mediterranean region. Introduced.

REFERENCES: Rebel, 1940; Klimesch, 1980; Guimarães, 1982; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994; Carvalho, 1995.

Genus *OPOGONA* ZELLER, 1853

15. *Opogona omoscopa* (MEYRICK, 1909)

SYNONYMY: *Hieroxestis omoscopa* Meyrick. *Hieroxestis praematura* Meyrick.

HOST RECORDS: *Musa*, *Pulmeria*, *Cajanus cajan*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, São Jorge), Madeira, Porto Santo, Canary Islands, Netherlands, USA (including Hawaii), Australia. Almost cosmopolitan. Introduced into Azores, São Miguel island, and Madeira on bananas from Transvaal (Pinetown - Natal).

REFERENCES: Rebel, 1940; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1992, 1995; Bin-Cheng Zhanz, 1994.

16. *Opogona sacchari* (BOJER, 1856)

SYNONYMY: *Opogona subcervinella* Walker. *Alucita sacchari* Bojer. *Tinea* (= *Opogona*) *subcervinella* Walker. *Hieroxestis subcervinella* Walker. *Gelechia sancta-helenae* Walker. *Gelechia ligniferella* Walker. *Laverna plumipes* Butler. *Euplocamus sancta-helenae* Walker. *Opogona panchalcella* Walker.

COMMON NAMES: Borer brun.

HOST RECORDS: *Musa paradisiaca*, *Strelitzia*, *Zea mays*, *Saccharum officinarum*, *Bambusa*, *Calocasia esculenta*, *Phoenix*, *Asparragus officinalis*, *Solanum tuberosum*, *Manguifera indica*, *Persea americana*, *Ficus elastica decora*, *Kentia forsteriana*, *Kentia belmoreana*, *Marantha tricolor*, *Dracaena*, *Sansevieria trifarciata*, *Ananas sativa*, *Hibiscus*, *Chamaedorea*, *Begonia*, *Sansevieria*, *Saintpaulia*, *Solanum tuberosum*, *Zingiber officinale*; and *Pittosporum undulatum* (L. Silva, pers. comm.).

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico), Madeira, Porto

Santo, Canary Islands, Cape Verde, UK, Spain, France, Italy, Netherlands, Greece, Mauritius, Barbados, Brazil, USA, Bermuda, Réunion, Rodríguez, Africa, Mascarene islands, Seychellen, Madagascar. Almost cosmopolitan; cosmopolitan. Probably introduced into Canary Islands and Madeira on bananas (Cavendish variety was imported by the first time around 1820-1830) from South of the China, via Mauritius islands (Padrón & Hernandez, 1984). Introduced into Azores!

ADDITIONAL RECORDS: São Miguel (São Vicente Ferreira, Povoação), September 1996.

REFERENCES: Viette, 1958; Klimesch, 1980; Baez, 1984, 1993; Padrón & Hernandez, 1984; Sousa, 1991; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1992, 1995; Bin-Cheng Zhanz, 1994.

Family GRACILLARIIDAE STANTON, 1854
 Subfamily GRACILLARIINAE STANTON, 1854
 Genus *CALOPTILIA* HÜBNER, [1825]

17. *Caloptilia bistrigella* (REBEL, 1940)

SYNONYMY: *Gracilaria bistrigella* Rebel.

HOST RECORDS: *Myrica faya*.

DISTRIBUTION: Azores (Flores). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993; Vieira, 1994a.

18. *Caloptilia aurantiaca* (WOLLASTON, 1858)

SYNONYMY: *Gracilaria aurantiaca* Wollaston. In the Azores, it was first erroneously identified as *Phyllonorycter myricae* Descka, 1976 (Silva & Tavares, 1995).

HOST RECORDS: *Myrica faya*, *Hypericum foliosum*, *Hypericum canariense*, *Hypericum reflexum*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial®, São Jorge, Corvo), Madeira, Canary Islands. Macaronesian!

ADDITIONAL RECORDS: Faial® (Varadouro), August 1996; São Miguel and Ilhéu de Vila Franca do Campo, during Summer months of 1996. In both islands the larvae were feeding on *Myrica faya*.

REFERENCES: Klimesch, 1979; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1992, 1995; Silva & Tavares, 1995; Vieira, 1995; Vieira & Tavares, 1995.

Subfamily LITHOCOLLETINAE STANTON, 1854
 Genus *PHYLLONORYCTER* HÜBNER, 1822

19. *Phyllonorycter messaniella* (ZELLER, 1846)

SYNONYMY: *Lythocolletis messaniella* Zeller. *Phyllonorycter messaniella* (Zeller).

HOST RECORDS: *Quercus ilex*, *Quercus suber*, *Carpinus*, *Fagus*, *Castanea sativa*.

DISTRIBUTION: Azores (Terceira, Faial), Madeira, Canary Islands, Europe (including Portugal, Spain, UK), Australia, New Zealand. Mediterranean-Australasian!

REFERENCES: Rebel, 1940; Klimesch, 1979; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994.

20. *Phyllonorycter myricae* DESCKA, 1976 *

HOST RECORDS: *Myrica faya*.

DISTRIBUTION: Madeira. In the Azores, it was erroneously identified as *C. aurantiaca*.

REFERENCES: Gardner *et al.*, 1988; Vieira & Pintureau, 1993; Carvalho, 1995; Silva & Tavares, 1995.

Superfamily YPONOMEUTOIDEA STEPHENS, 1829

Family YPONOMEUTIDAE STEPHENS, 1829

Subfamily PRAYDINAE MORIUTI, 1977

Genus *PRAYS* HÜBNER, [1825]

21. *Prays oleae* (BERNARD, 1788)

SYNONYMY: *Prays oleellus* Fabricius. *Prays oliviella* Boyer. *Prays adpersella* Herrich-Schäffer.

COMMON NAMES: Olive kernel borer, olive moth, "traça da oliveira".

HOST RECORDS: *Olea europaea*, *Jasminum*, *Ligustrum*, Oleaceae.

DISTRIBUTION: Azores (Terceira), Madeira, Canary Islands, Mediterranean countries, Europe, Portugal, Spain, France, Belgium, Corse, North Africa, Middle East, Turkey, Greece. Mediterranean!

REFERENCES: Leraut, 1980; Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1993; Bin-Cheng Zhanz, 1994.

22. *Prays citri* (MILLIÈRE, 1873)

SYNONYMY: *Acrolepia citri* Millière. *Prays nephelomima* Meyrick.

COMMON NAMES: Citrus flower moth, "traça dos citrinos".

HOST RECORDS: *Citrus* spp.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico), Madeira, Canary Islands, Mediterranean countries, Europe, Portugal, Spain, France, Belgium, Corse, North and South Africa, Middle East, India, Japan, South East Asia, Australia, New Zealand, Malaysia, Philippines. Palaearctic!

REFERENCES: Leraut, 1980; Carneiro, 1982; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994.

Subfamily ARGYRESTHIINAE BRUAND, [1851]

Genus *ARGYRESTHIA* HÜBNER, [1825]

23. *Argyresthia atlanticella* REBEL, 1940

HOST RECORDS: *Myrica faya*, *Erica scoparia* ssp. *azorica*, *Vaccinium cylindraceum*, while *Calluna vulgaris*, *Juniperus brevifolia*, *Polygonum capitatum* and *Myrsine africana* are also selected as oviposition sites.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo). Endemic.

ADDITIONAL RECORDS: Faial (Morro, Castelo Branco), 01-19.08.96, common; São Miguel (Lombadas, Feteira) and Ilhéu de Vila Franca do Campo, during Summer months of 1996, common on *Erica scoparia* ssp. *azorica*.

REFERENCES: Rebel, 1940; Carvalho, 1982, 1992; Vieira & Pintureau, 1991, 1993; Silva & Tavares, 1995; Vieira, 1994a; Vieira & Tavares, 1995; Vieira, 1995.

24. *Argyresthia minusculella* REBEL, 1940

HOST RECORDS: *Erica scoparia* ssp. *azorica*.

DISTRIBUTION: Azores (Terceira, Pico, Flores), Madeira. Macaronesian.

REFERENCES: Rebel, 1940; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1992, 1995.

Family PLUTELLIDAE GUENÉE, 1845
 Subfamily PLUTELLINAE GUENÉE, 1845
 Genus *PLUTELLA* SCHRANK, 1802

25. *Plutella xylostella* (LINNAEUS, 1758)

SYNONYMY: *Plutella cruciferarum*, Zeller. *Plutella maculata* Curtis. *Plutella maculipennis* Curtis. *Cerostoma xylostella* Linnaeus. *Phalaena xylostella* Linnaeus.

COMMON NAMES: Diamondback moth, cabbage *Plutella*, cabbage web moth, cabbage leaf miner.

HOST RECORDS: Cruciferae, vegetables (*Brassica oleracea* var. *italica*, *Brassica oleracea* var. *gemmifera*, *Brassica oleracea* var. *capitata*, *Brassica oleracea* var. *botrytis*, *Brassica pekinensis*, *Brassica juncea*, *Brassica oleracea* var. *viridis*, *Raphanus sativus*, *Brassica napus* var. *oleifera*, *Brassica campestris* var. *rapa* and other *Brassica*), and *Calinsoga ciliata*, *Calinsoga parviflora*, *Lonicera*, *Zea mays*.

DISTRIBUTION: Azores (São Miguel, Terceira, São Jorge, Graciosa, Flores, Corvo), Madeira, Porto Santo, Canary Islands, Cape Verde, Mediterranean, Portugal, Spain, France, Belgium, Corse, Russia, USA, Canada, Pakistan, Egypt, India, Taiwan, Australia. Migratory pest on crucifers. Cosmopolitan.

REFERENCES: Rebel, 1940; Viette, 1958; Lima, 1982; Stoetzel, 1989; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Holloway *et al.*, 1992; Bin-Cheng Zhanz, 1994; Vieira, 1994a; Vieira & Tavares, 1995.

Family GLYPHIPTERIGIDAE STANTON, 1854
 Subfamily GLYPHIPTERIGINAE STANTON, 1854
 Genus *GLYPHIPTERIX* HÜBNER, [1825]

26. *Glyphipterix longistriatella* REBEL, 1940

SYNONYMY: *Glyphipteryx longistriatella* Rbl..

HOST RECORDS: *Umbilicus* (Crassulaceae).

DISTRIBUTION: Azores (Terceira). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

Family BEDELLIIDAE MEYRICK, 1880

Genus *BEDELLIA* STANTON, 1849

27. *Bedellia somnulentella* (ZELLER, 1847)

SYNONYMY: *Lyonetia somnulentella* Z.. *Bedellia ipomoeae* Bradley.

COMMON NAMES: Morningglory leafminer.

HOST RECORDS: *Ipomoea batatas*, *Calystegia sepium*, *Solanum melongena*, *Convolvulus arvensis*, *Convolvulus siculus*, *Convolvulus althaeoides*, *Sisymbrium irio*.

DISTRIBUTION: Azores (São Miguel, Terceira, Graciosa), Madeira, Canary Islands, Portugal, Spain, Ethiopia, Egypt, Iraq, Romania, Canada, USA, Australia, Fiji, Papua New Guinea, China. Palearctic origin. Cosmopolitan.

REFERENCES: Faria e Maia, 1895; Balachowsky, 1966; Klimesch, 1979; Stoetzel, 1989; Vives Moreno, 1991; Holloway *et al.*, 1992; Baez, 1984; Vieira & Pintureau, 1993; Bin-Cheng Zhanz, 1994; Carvalho, 1992, 1995.

Superfamily GELECHIOIDEA STANTON, 1854

Family DEPRESSARIIDAE MEYRICK, 1883

Subfamily DEPRESSARIINAE MEYRICK, 1883

Genus *AGONOPTERYX* HÜBNER, [1825]

28. *Agonopteryx conciliatella* (REBEL, 1892)

SYNONYMY: *Depressaria? conciliatella* Rebel. *Depressaria conciliatella* Rebel. *Agonopteryx conciliatella* (Rebel). *Depressarioides conciliatellus* (Rebel).

HOST RECORDS: Laurel forest; *Chamaecytisus proliferus*, *Adenocarpus foliolosus*.

DISTRIBUTION: Azores (Flores), Madeira, Canary Islands, Mediterranean, Sicily, America. Holarctic!

REFERENCES: Godman, 1870; Rebel, 1940; Klimesch, 1985; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1995.

Family COLEOPHORIDAE HÜBNER, [1825]

Genus *COLEOPHORA* HÜBNER, 1822

29. *Coleophora versurella* ZELLER, 1849

SYNONYMY: *Coleophora fayalensis* Rebel. *Coleophora atlanticella* Rebel. *Coleophora klimeschi* Vlach. *Coleophora pallorella* Benander. *Coleophora constanti* M. Hering.

HOST RECORDS: *Chenopodium hybridum*.

DISTRIBUTION: Azores (Terceira, Graciosa), Madeira, Canary Islands, Europe (Portugal, Spain, France, Belgium, Corse), Asia, Egypt. Palearctic.

REFERENCES: Leraut, 1980; Baez, 1984; Klimesch, 1982; Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994.

Family BLASTOBASIDAE MEYRICK, 1894
Subfamily BLASTOBASINAE MEYRICK, 1894
Genus *BLASTOBASIS* ZELLER, 1855

30. *Blastobasis lignea* WALSINGHAM, 1894

SYNONYMY: *Blastobasis flavescentella* Rebel.

HOST RECORDS: *Mallus* spp..

DISTRIBUTION: Azores (São Miguel, Terceira), Madeira, Porto Santo, UK, Irish Republic. Western-Palaeartic!

REFERENCES: Rebel, 1940; Guimarães, 1982; Carvalho, 1982, 1995; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994.

31. *Blastobasis acuta* BRADLEY, 1958

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Graciosa), Madeira, Porto Santo. Macaronesian!

REFERENCES: Carvalho, 1982, 1992, 1995; Vieira & Pintureau, 1991, 1993.

32. *Blastobasis desertarum* (WOLLASTON, 1858)

SYNONYMY: *Coleophora desertarum* Wollaston. *Pterolonche? maderensis*, Stainton. *Blastobasis migueleensis* Rebel. *Coleophora migueleensis* Rebel.

DISTRIBUTION: Azores (Terceira, Pico, Graciosa), Madeira. Macaronesian!

REFERENCES: Carvalho, 1992, 1995; Vieira & Pintureau, 1991, 1993.

33. *Blastobasis rubiginosella* REBEL, 1896

DISTRIBUTION: Azores (Terceira, Pico), Madeira, Canary Islands, North America. Holarctic!

REFERENCES: Baez, 1984; Klimesch, 1986; Carvalho, 1992, 1995; Vieira & Pintureau, 1993.

34. *Blastobasis salebrosella* REBEL, 1939

DISTRIBUTION: Azores (Terceira, Pico), Madeira. Macaronesian!

REFERENCES: Carvalho, 1992, 1995; Vieira & Pintureau, 1993.

35. *Blastobasis xanthographela* REBEL, 1939

DISTRIBUTION: Azores (Terceira), Madeira. Macaronesian!

REFERENCES: Carvalho, 1992, 1995; Vieira & Pintureau, 1993.

Genus *MEGACERAEA* REBEL, 1940

36. *Megaceraea incertella* REBEL, 1940

DISTRIBUTION: Azores (Flores). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

37. *Megaceraea oecophorella* REBEL, 1940

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, Flores). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

38. *Megaceraea scriptella* REBEL, 1940

DISTRIBUTION: Azores (Terceira, Pico, Graciosa), Madeira. Macaronesian!

REFERENCES: Rebel, 1940; Carvalho, 1982, 1992, 1995; Vieira & Pintureau, 1991, 1993.

Family COSMOPTERIGIDAE HEINEMANN & WOCKE, [1876]

Subfamily COSMOPTERIGINAE HEINEMANN & WOCKE, [1876]

Genus *COSMOPTERIX* HÜBNER, [1825]

39. *Cosmopterix parietariae* M. HERING, 1931

HOST RECORDS: *Parietaria* (Urticaceae).

DISTRIBUTION: Azores (São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico[®], Faial[®]), Madeira, Portugal, Spain. Mediterranean!

ADDITIONAL RECORDS: São Miguel (Ponta Delgada), all seasons of 1995 and 1996, common; Pico[®] (São Mateus and Cais do Pico), 08.08.96; Faial[®] (Varadouro), 01-19.08.96.

Larvae feeding on *Parietaria*.

REFERENCES: Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1993; Vieira, 1995.

Genus *PYRODERCES* HERRICH-SCHÄFFER, [1853]

40. *Pyroderces argyrogrammos* (ZELLER, 1847)

SYNONYMY: *Pyroderces argyrogrammos* Zeller. *Pyroderces* (*Stagmatophora*) *argyrogrammos* Zeller.

HOST RECORDS: *Cynara scolymus*.

DISTRIBUTION: Azores (Pico), Madeira, Canary Islands, S- and M-Europe, Spain, France, Belgium, Corse, Greece. Mediterranean.

REFERENCES: Leraut, 1980; Klimesh, 1983; Baez, 1984; Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1993.

Family GELECHIIDAE STANTON, 1854

Subfamily GELECHIINAE STANTON, 1854

Genus *PHTHORIMAEA* MEYRICK, 1902

41. *Phthorimaea operculella* (ZELLER, 1873)

SYNONYMY: *Gelechia operculella* Zeller. *Lita solanella* Rebel. *Gnorimoschema operculella* Zeller. *Gelechia* (*Lita*, *Phthorimaea*) *operculella* Zeller.

COMMON NAMES: Potato moth, potato tuber moth, tobacco leaf miner, potato tuberworm, "traça da batata".

HOST RECORDS: *Solanum tuberosum*, *Solanum melongena*, *Lycopersicon* spp., *Pimenta*

dioica, *Nicotiana tabacum*, *Nicotiana rustica*, *Brassica oleracea* var. *italica*, *Daucus carota*, *Datura stramonium*, *Zea mays*; Solanaceae: *Solanum melongena*, *Solanum dulcamara*, *Solanum tuberosum*, *Nicotiana glauca*, *Nicotiana tabacum*; *Hyoscyamus albus*.

DISTRIBUTION: Azores (São Miguel, Terceira, Graciosa), Madeira, Canary Islands. N- and S-America, Peru, Mediterranean Europe, Portugal, Spain, Italy, France, Belgium, Corse, Australia, New Zealand. Cosmopolitan. Imported, and may well be distributed by commerce!

REFERENCES: Leraut, 1980; Bensaúde, 1926a; Carneiro, 1982; Carvalho, 1982, 1992, 1995; Baez, 1984; Klimesch, 1984; Stoetzel, 1989; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Holloway *et al.*, 1992; Bin-Cheng Zhanz, 1994.

Subfamily PEXICOPIINAE HODGES, 1986

Genus *PLATYEDRA* MEYRICK, 1895

42. *Platyedra subcinerea* (HAWORTH, 1828)

SYNONYMY: *Recurvaria subcinerea* Haworth. *Gelechia vilella* Zeller. *Platyedra vilella* Zeller.

COMMON NAMES: Cotton stem moth.

HOST RECORDS: *Gossypium*.

DISTRIBUTION: Azores (Terceira, Pico), Madeira, Porto Santo, Canary Islands, M- and S-Europe, Portugal, Spain, France, Belgium, Corse, UK, Hungary, Russia, N-Africa, USA. Palaeartic.

REFERENCES: Leraut, 1980; Klimesch, 1984; Stoetzel, 1989; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994; Carvalho, 1982, 1992, 1995.

Genus *SITOTROGA* HEINEMANN, 1870

43. *Sitotroga cerealella* (OLIVIER, 1789)

SYNONYMY: *Alucita cerealella* Olivier. *Anacampis cerealella* Olivier. *Gelechia cerealella* Olivier. *Sirrotroga cerealella*.

COMMON NAMES: Grain moth, angoumois grain moth, “borboleta do trigo”, “borboleta do milho”, “traça dos cereais”.

HOST RECORDS: Stored products (grain), dried fruit, cereals, sorghum (*Sorghum bicolor*), and maize (*Zea mays*) and wheat (*Triticum aestivum*, *Triticum durum*), both in the field and in grain stores.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial), Madeira, Porto Santo, Canary Islands. Mediterranean, Portugal, Spain, France, Belgium, Corse, America, India. Cosmopolitan. Imported, and may well be distributed by commerce!

ADDITIONAL RECORDS: São Miguel (Ponta Delgada), October 1996, larva feeds on stored wheat grains.

REFERENCES: Rebel, 1940; Pereira, 1949; Leraut, 1980; Guimarães, 1982; Carneiro, 1982; Carvalho, 1982, 1995; Stoetzel, 1989; Vives Moreno, 1991; Vieira & Pintureau,

1991, 1993; Bin-Cheng Zhanz, 1994.

Subfamily ANACAMPSINAE BRUAND, [1851]

Genus *APROAEREMA* DURRANT, 1897

44. *Aproaerema anthyllidella* (HÜBNER, [1813])

SYNONYMY: *Anacamptis anthyllidella*, Hübner. *Gelechia anthyllidella*, Hübner. *Anacamptis albipalpella*, H.S.. *Aproaerema alfalfiella* Amsel.

COMMON NAMES: Soyabean moth.

HOST RECORDS: *Lotus glaucus*, *Glycine max*, *Medicago sativa*.

DISTRIBUTION: Azores (Terceira, Pico, Graciosa), Madeira, Porto Santo, Canary Islands, Europe, Portugal, Spain, Russia, Egypt, Saudi Arabia. Mediterranean.

REFERENCES: Klimesch, 1984; Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1993; Bin-Cheng Zhanz, 1994.

Subfamily DICHOMERINAE HAMPSON, 1918

Genus *BRACHMIA* HÜBNER, [1825]

45. *Brachmia infuscatella* REBEL, 1940

HOST RECORDS: *Schizogyne*.

DISTRIBUTION: Azores (Terceira, Pico, Faial, São Jorge). Endemic.

REFERENCES: Rebel, 1940; Klimesch, 1984; Carvalho, 1982, 1992; Vieira & Pintureau, 1991, 1993.

Family SYMMOCIDAE GOZMÁNY, 1957

Subfamily OEGOCONIINAE LERAUT, 1992

Genus *OEGOCONIA* STANTON, 1854

46. *Oegoconia quadripuncta* (HAWORTH, 1828)

DISTRIBUTION: Azores (Pico, São Jorge), Europe including Portugal, Spain, France, Belgium, Corse. Mediterranean.

REFERENCES: Rebel, 1940; Leraut, 1980; Carvalho, 1982, 1992; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993.

Superfamily TORTRICOIDEA LATREILLE, [1802]

Family TORTRICIDAE LATREILLE, [1802]

Subfamily TORTRICINAE LATREILLE, 1802

Genus *ACLERIS* HÜBNER, [1825]

47. *Acleris schalleriana* (LINNAEUS, 1761)

SYNONYMY: *Acalla schalleriana* Linnaeus. *Oxygrapha schalleriana* Linnaeus. *Peronea schalleriana* Linnaeus.

HOST RECORDS: *Viburnum*, *Rhododendron*, *Rosa* spp..

DISTRIBUTION: Azores (Pico), Europe, Spain, France, Belgium, Corse, Germany,

Netherlands, Yugoslavia. Western-Palaearctic!

REFERENCES: Leraut, 1980; Sousa, 1991; Vives Moreno, 1991, 1994; Carvalho, 1992; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994.

48. *Acleris variegana* (DENIS & SCHIFFERMÜLLER, 1775)

SYNONYMY: *Acalla variegana* Denis & Schiffermüller. *Oxygrapha variegana* Denis & Schiffermüller. *Peronea variegana* Denis & Schiffermüller.

COMMON NAMES: Garden rose tortix.

HOST RECORDS: *Rosa* spp., *Malus* spp., *Crataegus*, *Rubus*, *Sanguisorba*, *Pyrus communis*, *Pyrus pyifolia*, conifers.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Graciosa), Madeira. Europe to central Asia, Portugal, Spain, France, Belgium, Corse, China, Japan, West Africa, North America. Cosmopolitan. Recently introduced into Azores (Sousa, 1991).

REFERENCES: Leraut, 1980; Sousa, 1991; Vives Moreno, 1991, 1994; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Carvalho, 1992, 1995.

Genus *PANDEMIS* HÜBNER, [1825]

49. *Pandemis heparana* (DENIS & SCHIFFERMÜLLER, 1775)

SYNONYMY: *Pandemis pasquayana* Denis & Schiffermüller. *Tortix heparana* Denis & Schiff.

COMMON NAMES: Fruit-tree tortix, dark fruit-tree tortix.

HOST RECORDS: *Malus pumila*, *Pyrus communis*, *Pyrus pyifolia*, *Prunus persica*, *Rosa* spp., *Humulus lupulus*, *Tilia*, *Salix*, *Betula*, *Lonicera*, *Vaccinium* and others trees, shrubs.

DISTRIBUTION: Azores (Terceira, São Jorge), Madeira, Europe, Portugal, Spain, France, Belgium, Corse, Italy, Bulgaria, also Middle East, Russia (Siberia), China, Japan, North America. Holarctic!

REFERENCES: Leraut, 1980; Vives Moreno, 1991, 1994; Carvalho, 1992; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994.

Subfamily OLETHREUTINAE WALSINGHAM, 1895

Genus *BACTRA* STEPHENS, 1834

50. *Bactra lancealana* (HÜBNER, [1799])

SYNONYMY: *Bactra lanceolana* Hübner.

HOST RECORDS: *Cyperus* spp., namely *Cyperus esculentus*, *Cyperus rotundus* and *Cyperus difformis* (Cyperaceae), Poaceae, Juncaceae.

DISTRIBUTION: Azores (São Miguel, Terceira, Flores), Madeira, Canary Islands, Portugal, Spain, France, Belgium, Corse, Mediterranean, Europe, Republic of Georgia, America. Almost cosmopolitan.

REFERENCES: Rebel, 1940; Leraut, 1980; Vives Moreno, 1991, 1994; Carvalho, 1982,

1992, 1995; Vieira & Pintureau, 1991, 1993; Holloway *et al.*, 1992; Bin-Cheng Zhang, 1994.

51. *Bactra venosana* (ZELLER, 1847)

SYNONYMY: *Bactra* (*Chiloides*) *venosana* (Zeller). *Phoxopterus venosana*, Zeller. *Crocidosema venosana* Zeller.

COMMON NAMES: Nutgrass borer moth.

HOST RECORDS: *Cyperus rotundus*, *Saccharum officinarum*.

DISTRIBUTION: Azores (Terceira), Madeira, Canary Islands, S-Europe, Portugal, Spain, N-Africa, Pacific, Australia, S-Asia, Taiwan, Indonesia, India, USA. Holarctic!

REFERENCES: Klimesch, 1987; Stoetzel, 1989; Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1993; Holloway *et al.*, 1992; Bin-Cheng Zhang, 1994.

Genus *ENDOTHENIA* STEPHENS, 1852

52. *Endothenia gentianaeana* (HÜBNER, [1799])

SYNONYMY: *Endothenia gentiana* Hübner. *Endothenia gentianana* Hübner. *Argyroplote gentiana* Hübner. *Olethreutes gentiana* Hübner.

DISTRIBUTION: Azores (Terceira, Graciosa), Europe, Portugal, Spain, France, Belgium, Corse. Western-Palaeartic!

REFERENCES: Leraut, 1980; Carvalho, 1992; Vives Moreno, 1991; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994.

Genus *RHOPOBOTA* LEDERER, 1859

53. *Rhopobota naevana* (HÜBNER, [1817])

SYNONYMY: *Rhopobota unipunctana* Haworth.

COMMON NAMES: Holly tortrix, holly leaf tier, black-headed fireworm.

HOST RECORDS: *Ilex*, *Vaccinium*, *Prunus*, *Sorbus*, *Rhamnus*, *Crataegus*, *Erica*, *Malus pumila*, *Pyrus communis*, *Pyrus pyifolia*.

DISTRIBUTION: Azores (Pico, Graciosa), Spain, Europe across central Asia to India, Sri Lanka, Japan, N-America, USA. Holarctic!

REFERENCES: Leraut, 1980; Stoetzel, 1989; Vives Moreno, 1991; Carvalho, 1992; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994.

Genus *CROCIDOSEMA* ZELLER, 1847

54. *Crocidosema plebejana* ZELLER, 1847

SYNONYMY: *Steganoptycha signatana* Walsingham. *Eucosma plebejana* Zeller.

COMMON NAMES: Hollyhock moth.

HOST RECORDS: *Alcea rosea*, *Gossypium*, *Anoda cristata*, *Hibiscus* spp., *Abelmoschus esculentus*, *Abutilon arboreum*, *Abutilon theophrasti*, *Malaviscus drummondii*, *Malvastrum spicatum*, *Malva parviflora*.

DISTRIBUTION: Azores (Terceira, Faial), Madeira, Porto Santo, Canary Islands, Europe, Mediterranean, Portugal, Spain, Italy, USA (Columbia), Central and South-America, Peru,

Hawaii, Australia, Asia, North-Africa, Egypt, Israel, Sudan, India, Sri Lanka, Western Samoa, Tonga, Fiji. Origin Austral. Cosmopolitan.

REFERENCES: Rebel, 1940; Klimesch, 1987; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991, 1994; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

Genus *CLAVIGESTA* OBRAZTSOV, 1946

55. *Clavigesta sylvestrana* (CURTIS, 1850)

HOST RECORDS: *Pinus*.

DISTRIBUTION: Azores (Terceira), Madeira, Spain, France, Belgium, Corse, UK. Western-Palaeartic!

REFERENCES: Leraut, 1980; Carvalho, 1992, 1995; Vives Moreno, 1991, 1994; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994.

Genus *CYDIA* HÜBNER, [1825]

56. *Cydia molesta* (BUSCK, 1916)

SYNONYMY: *Carpocapsa molesta* Busck. *Grapholitha molesta* Busck. *Laspeyresia molesta* Busck.

COMMON NAMES: Oriental fruit moth, "traça oriental do pessegueiro".

HOST RECORDS: Fruit trees including *Malus pumila*, *Pyrus communis*, *Pyrus pyifolia*, *Cydonia oblonga*, *Prunus* spp., *Prunus persica*, *Prunus cerasifera*, *Prunus domestica*, *Prunus dulcis*, *Prunus persica*, *Prunus avium*, *Prunus cerasus*, and *Mespilus*, *Cotoneaster*, *Photinia*, *Rosa*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Faial, Graciosa, Corvo), Spain, France, Belgium, Corse, S-Europe, Morocco, Ukraine, Azerbaijan, China, Japan, Korea, Mauritius, Canada, USA, S-America, Australia, New Zealand. Cosmopolitan.

REFERENCES: Leraut, 1980; Carneiro, 1982; Carvalho, 1982; Stoetzel, 1989, Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vives Moreno, 1994; Vieira & Tavares, 1995.

57. *Cydia pomonella* (LINNAEUS, 1758)

SYNONYMY: *Carpocapsa pomonana* Treitschke. *Carpocapsa pomonella* Linnaeus. *Carpocapsa pomonella putaminana* Staudinger. *Carpocapsa (Cydia) pomonella* (L.) *putaminana* Staudinger. *Enarmonia pomonella* Linnaeus. *Laspeyresia pomonella* Linnaeus. *Phalaena pomonella* Linnaeus. *Phalaena Tinea pomonella* Linnaeus.

COMMON NAMES: Codling moth, "traça da fruta", "bichado da fruta".

HOST RECORDS: Fruit trees, *Malus pumila*, *Pyrus communis*, *Pyrus pyifolia*, *Cydonia oblonga*, *Prunus* spp., *Prunus persica*, *Prunus cerasifera*, *Prunus domestica*, *Prunus dulcis*, *Prunus persica*, pomegranates *Punica granatum*, *Malus silvestris*, *Juglans regia*, *Castanea sativa*, *Ficus*, *Sorbus*, *Quercus*. A common and worldwide pest of apples.

DISTRIBUTION: Azores (São Miguel, Terceira), Madeira, Canary Islands, Portugal, Spain, France, Belgium, Corse, USA. Cosmopolitan. Introduced.

REFERENCES: Bensaúde, 1927a; Rebel, 1940; Costa, 1950; Pereira, 1952; Leraut, 1980; Carneiro, 1982; Klimesch, 1987; Stoetzel, 1989; Carvalho, 1982, 1992, 1995; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vives Moreno, 1994.

58. *Cydia penkleriana* (DENIS & SCHIFFERMÜLLER, 1775)

SYNONYMY: *Cydia splendana* (Hübner). *Carpocapsa splendana*, Hübner. *Enarmonia splendana* Hübner. *Laspeyresia splendana* Hübner.

COMMON NAMES: Chestnut tortix.

HOST RECORDS: *Juglans*, *Quercus*, *Fagus*, *Castanea sativa*.

DISTRIBUTION: Azores (Terceira), Madeira, throughout temperate Europe from UK, Portugal, Spain, Italy, France, Belgium, Corse to Turkey, Moldova, Japan. Palaearctic.

REFERENCES: Leraut, 1980; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994).

Genus *SELANIA* STEPHENS, 1834

59. *Selania leplastriana* (CURTIS, 1831)

SYNONYMY: *Cydia leplastriana* Curtis. *Grapholitha leplastriana* Curtis. *Laspeyresia leplastriana* Curtis. *Enarmonia leplastriana* Curtis. *Ephippiphora maderae* Woll.. *Eucерis maderae* Walsm. *Laspeyresia maderae* Woll.. *Grapholitha maderae*, Rebel. *Carpocapsa leplastriana* Curtis.

HOST RECORDS: *Cheiranthus cheiri*, *Cheiranthus scoparius*, *Brassica oleracea* var. *capitata*, *Brassica oleracea* var. *botrytis* and other Cruciferae.

DISTRIBUTION: Azores (Terceira, Graciosa, Corvo), Madeira, Porto Santo, Canary Islands, Europe, Spain, France, Italy, also Morocco. Palaearctic!

REFERENCES: Klimesch, 1987; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vieira & Tavares, 1995.

Superfamily SESIOIDEA BOISDUVAL, [1828]

Family CHOREUTIDAE STANTON, 1854

Subfamily CHOREUTINAE STANTON, 1854

Genus *TEBENNA* BILLBERG, 1820

60. *Tebenna bjer kandrella* (THUNBERG, 1784)

SYNONYMY: *Choreutis micalis* Mann. *Choreutis bjer kandrella*, Thnb.. *Choreutis* (*Porpe*) *bjer kandrella* (Thnbg.) *pretiosana* Dup.. *Tortix bjer kandrella* Thunberg.

COMMON NAMES: Artichoke moth.

HOST RECORDS: *Mentha* sp., *Mentha suaveolens*, *Gnaphalium luteoalbum*, *Cynara* sp.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Flores, Corvo), Madeira, Canary Islands, Cape Verde, Mediterranean, Portugal, Spain, France, Belgium, Corse, W-Asia, N-Africa, N-America, Mauritius, Réunion. Cosmopolitan.

ADDITIONAL RECORDS: São Miguel (São Vicente Ferreira), all seasons excepting Winter 1995; Faial (Canada da Faia), 06-07.11.96; Pico (Ribeiras), 08.08.96. Larvae and

adults on *Mentha suaveolens*.

REFERENCES: Rebel, 1940; Viette, 1958; Leraut, 1980; Klimesh, 1983; Carvalho, 1982, 1984, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhanz, 1994; Vieira, 1994a; Vieira & Tavares, 1995.

Superfamily EPERMENIOIDEA SPULER, 1910

Family EPERMENIIDAE SPULER, 1910

Subfamily EPERMENIINAE SPULER, 1910

Genus *EPERMENIA* HÜBNER, [1825]

61. *Epermenia aequidentella* (HOFMANN, 1867)

SYNONYMY: *Chauliodus aequidentellus* Hofmann. *Chauliodus daucellus*, Peyerimhoff. *Epermenia daucellus* H. de Peyerimhoff. *Epermenia daucella* Peyerimhoff.

HOST RECORDS: *Anthriscus vulgaris*, *Daucus carota*, *Torilis infesta*, *Libanotis montana*.

DISTRIBUTION: Azores (Terceira, Pico, Graciosa), Madeira, Canary Islands, M-, S- and O-Europe, Portugal, Spain, France, Belgium, Corse, N-Africa. Mediterranean.

REFERENCES: Leraut, 1980; Klimesh, 1983; Baez, 1984; Vives Moreno, 1991, 1994; Vieira & Pintureau, 1993; Carvalho, 1992, 1995.

Superfamily PYRALOIDEA LATREILLE, [1802]

Family PYRALIDAE LATREILLE, [1802]

Subfamily GALLERIINAE ZELLER, 1848

Genus *GALLERIA* FABRICIUS, 1798

62. *Galleria mellonella* (LINNAEUS, 1758)

SYNONYMY: *Galleria cerella* Fabricius. *Phalaena mellonella* Linnaeus. *Tinea mellonella* Linnaeus.

COMMON NAMES: Wax moth, coax moth, greater wax moth.

HOST RECORDS: Predacious on *Pseudogonia rufifrons*, and a pest of honeycomb.

DISTRIBUTION: Azores (São Miguel, Terceira, São Jorge, Flores), Madeira, Europe from UK to Russia, Ireland, Portugal, Spain, France, Belgium, Corse, China, Japan, Egypt, Africa, South Africa, Pakistan, Malaysia, Australia, USA. Cosmopolitan or almost cosmopolitan. Introduced.

REFERENCES: Rebel, 1940; Leraut, 1980; Goater, 1986; Stoetzel, 1989; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991, 1994; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

Genus *CORCYRA* RAGONOT, 1885

63. *Corcyra cephalonica* (STAINTON, 1866)

SYNONYMY: *Melissoblaptus cephalonica* Stainton.

COMMON NAMES: Rice moth.

HOST RECORDS: Dried foods, including cereals, *Oryza sativa*, *Sorghum bicolor*, *Zea mays*, dried fruit, *Castanea sativa*, *Juglans regia*, spices, *Theobroma cacao*, *Ceratonia*,

Arachis hypogaea, chocolate, biscuits.

DISTRIBUTION: Azores (São Miguel), Europe, UK, Spain, France, Belgium, Corse, India, Pakistan, Indonesia, Australia, Malaysia, Congo, Sudan, Egypt, Sierra Leone, Nigeria, Madagascar, Cuba, Honduras, USA, Brazil, Bolivia. Cosmopolitan. Introduced!

REFERENCES: Leraut, 1980; Carvalho, 1982; Guimarães, 1982; Goater, 1986; Stoetzel, 1989; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

Subfamily PYRALINAE LATREILLE, [1802]

Genus *PYRALIS* LINNAEUS, 1758

64. *Pyralis farinalis* LINNAEUS, 1758

SYNONYMY: *Asopia farinalis* Linnaeus. *Pyrausta farinalis* Linnaeus. *Phalaena farinalis* Linnaeus.

COMMON NAMES: Meal moth, meal snout moth.

HOST RECORDS: Cereals, cereal products, stored *Trifolium*, *Medicago sativa*, *Sesamum indicum*, hay, *Arachis hypogaea*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Faial, São Jorge, Flores), Madeira, Canary Islands, UK, Ireland, Mediterranean, Portugal, Spain, France, Belgium, Corse, USA. Cosmopolitan. Introduced.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, 01.07.95 (2 adults), July 1996, 20.11.96 (1 adult).

REFERENCES: Warren, 1905; Rebel, 1940; Leraut, 1980; Guimarães, 1982; Goater, 1986; Stoetzel, 1989; Baez, 1993; Vieira & Pintureau, 1991, 1993; Vives Moreno, 1991, 1994; Carvalho, 1982, 1992, 1995; Bin-Cheng Zhang, 1994.

Genus *AGLOSSA* LATREILLE, [1796]

65. *Aglossa cuprealis* (HÜBNER, [1809])

SYNONYMY: *Aglossa cuprealis* Hübner.

COMMON NAMES: Small tabby, murky meal caterpillar.

HOST RECORDS: Poaceae, namely *Triticum aestivum*, *Triticum durum*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Faial, Graciosa), Madeira, Canary Islands, Mediterranean, Portugal, Spain, UK, France, Belgium, Corse. Cosmopolitan.

REFERENCES: Rebel, 1940; Leraut, 1980; Guimarães, 1982; Goater, 1986; Carvalho, 1982, 1992, 1995; Vieira & Pintureau, 1991, 1993; Vives Moreno, 1991, 1994; Bin-Cheng Zhang, 1994.

Subfamily PHYCITINAE ZELLER, 1839

Genus *CRYPTOBLABES* ZELLER, 1848

66. *Cryptoblabes gnidiella* (MILLIÈRE, 1867)[®]

SYNONYMY: *Albinia casazzar* Briosi. *Albinia gnidiella* Millière. *Ephestia gnidiella* Millière. *Cryptoblabes aliena* Swezey.

COMMON NAMES: Honeydew moth, Christmas berry webworm.

HOST RECORDS: *Citrus sinensis*, *Punica granatum*, *Citrus lemon*, *Vitis*, *Prunus cerasifera*, *Prunus domestica*, *Prunus persica*, *Malus pumila*, *Ficus carica*, *Mangifera indica*, *Persea americana*, *Zea mays*, *Oryza sativa*, *Azolla anabaena*, *Macadamia*, *Mespilus germanica*, Meliaceae, *Paspalum dilatatum*; also recorded on male of *Myrica faya* (L. Silva, pers. communication).

DISTRIBUTION: Azores (São Miguel® - Ponta Delgada at Rosto do Cão, in 1995 - L. Silva, pers. comm.), Madeira, Portugal, Spain, Italy (Sicily), UK, France, Belgium, Corse, Cyprus, India, Israel, Nigeria, Egypt, Zaire, Turkey, Malaysia, Indonesia, New Zealand, USA (Hawaii), North Africa, tropical and subtropical America. A native of the Mediterranean region. Cosmopolitan! An accidentally introduced species!

REFERENCES: Leraut, 1980; Goater, 1986; Stoetzel, 1989; Vives Moreno, 1991; Bin-Cheng Zhang, 1994; Carvalho, 1995.

Genus *APOMYELOIS* HEINRICH, 1956

67. *Apomyelois ceratoniae* (ZELLER, 1839)

SYNONYMY: *Myelois ceratoniae* Zeller. *Ectomyelois ceratoniae* Zeller. *Ectomyelois phoenicis* Durrant. *Myelois phoenicis* Durrant. *Spectrobates ceratoniae* Zeller.

COMMON NAMES: Locust bean moth.

HOST RECORDS: Dried fruit, seeds and nuts, such as *Robinia* and *Ceratonia* beans, *Citrus sinensis*, *Ficus carica*, *Punica granatum*, *Macadamia ternifolia*.

DISTRIBUTION: Azores (São Miguel), Mediterranean countries, Spain, Portugal, North Africa, Algeria, Israel, Iraq, South Africa, USA (Hawaii), also some tropical and subtropical regions of America, UK, Norway, France, Belgium, Corse. Cosmopolitan or almost cosmopolitan.

REFERENCES: Leraut, 1980; Carvalho, 1982; Guimarães, 1982; Goater, 1986; Vieira & Pintureau, 1991, 1993; Vives Moreno, 1991, 1994; Bin-Cheng Zhang, 1994.

Genus *PARAROTRUDA* ROESLER 1965

68. *Pararotruda nesiotica* (REBEL, 1911) *

SYNONYMY: *Homoeosoma nesiotica* Rbl..

DISTRIBUTION: Azores (São Jorge), Madeira, Porto Santo, Canary Islands. Macaronesian!

REFERENCES: Marsden *et al.*, 1967; Carvalho, 1982, 1995; Vieira & Pintureau, 1991, 1993.

Genus *PHYCITODES* HAMPSON, 1917

69. *Phycitodes albatella pseudonimbella* (BENTINCK, 1937)

SYNONYMY: *Homoeosoma pseudonimbellum* Bentinck. *Homoeosoma nimbella* Zeller.

HOST RECORDS: Flowers and seed-heads of Compositae.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial, Flores), Canary Islands, Europe, including Norway, Sweden, Denmark, Germany, Spain, Portugal, France, Belgium, Corse, UK, Mediterranean. Western-Palaeartic!

REFERENCES: Rebel, 1940; Leraut, 1980; Carvalho, 1982; Goater, 1986; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993.

Genus *PLODIA* GUENÉE, 1845

70. *Plodia interpunctella* (HÜBNER, [1813])

SYNONYMY: *Ephestia interpunctella* Hübner. *Tinea interpunctella* Hübner.

COMMON NAMES: Indianmeal moth.

HOST RECORDS: Polyphagous. Stored grain of cereals (*Triticum aestivum*, *Triticum durum*, *Hordeum vulgare*, *Zea mays*, *Avena sativa*, *Fagopyrum esculentum*, *Oryza sativa*, *Secale cereale*, *Sorghum bicolor*); stored nuts (*Prunus dulcis*, *Prunus* spp., *Corylus avellana*, *Juglans regia*); dried fruit - raisins; also *Ceratonia siliqua*, *Pisum sativum*, *Lens culinaris*, *Vigna*, *Capsicum*, *Zingiber officinale*, *Myrista fragans*, *Brassica nigra*, *Theobroma cacao*, *Nicotiana tabacum*, *Nicotiana rustica*, dried roots and herbs and dried insects.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial, Flores), Madeira, Porto Santo, Canary Islands, Portugal, Spain, Norway, Sweden, Denmark, Germany, France, UK, Italy, France, Belgium, Corse, USA. Cosmopolitan. Introduced.

REFERENCES: Rebel, 1940; Leraut, 1980; Guimarães, 1982; Goater, 1986; Stoetzel, 1989; Carvalho, 1982, 1995; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vives Moreno, 1991, 1994; Sannino *et al.*, 1995.

Genus *EPHESTIA* GUENÉE, 1845

71. *Ephestia kuehniella* (ZELLER, 1879)

SYNONYMY: *Anagasta kuehniella* Zeller.

COMMON NAMES: Mediterranean flour moth, mill moth, "teigne de la farine", "traça da farinha".

HOST RECORDS: Cereals, wheat-flour, dried mushrooms, *Solanum tuberosum*, *Theobroma cacao*, *Cannabis sativa*, *Sesamum*, *Glycine max*, *Pisum sativum*, *Arachis hypogaea*, *Quercus*, *Juglans*, *prunus*, *Capsicum*.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial, Graciosa), Madeira, Portugal, Spain, France, Belgium, Corse, temperate zones, N-Europe, UK, USA. Subtropical. Introduced!

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, Summer 1996, 18-20.11.96.

REFERENCES: Leraut, 1980; Guimarães, 1982; Goater, 1986; Stoetzel, 1989; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

72. *Ephestia aquella* (DENIS & SCHIFFERMÜLLER, 1775)

SYNONYMY: *Ephestia elutella* (Hübner). *Ephestia sericaria* Scott. *Hyphantidium sericarium* Scott. *Tinea elutella* Hübner.

COMMON NAMES: Cocoa moth, warehouse moth, stored tobacco moth, tobacco moth.

HOST RECORDS: Pest of stored *Theobroma cacao*, *Nicotiana tabacum*, *Nicotiana rustica*, *Cocos nucifera*, cereals, dried fruits, nuts, oil seeds.

DISTRIBUTION: Azores (São Miguel, Terceira), Madeira, Portugal, Spain, France, Belgium, Corse, Italy, UK, USA, N-, C- and S-America, tropical and temperate zones, Indo-Australian region. Cosmopolitan. Introduced!

REFERENCES: Leraut, 1980; Guimarães, 1982; Goater, 1986; Stoetzel, 1989; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Sannino *et al.*, 1995.

Genus *CADRA* WALKER, 1864

73. *Cadra cautella* (WALKER, 1863)

SYNONYMY: *Cadra defectella* Walker. *Ephestia cahireitella* Zeller. *Ephestia cautella* (Walker). *Pempelia cautella* Walker.

COMMON NAMES: Dried currant moth, tropical warehouse moth, fig moth, almond moth.

HOST RECORDS: Cocoa beans, seeds, wheat products, dried beans (*Phaseolus*), dried fruit, *Malus pumila*, *Pyrus communis*, *Pyrus pyifolia*, *Punica granatum*, *Citrus*, *Ceratonia siliqua*, *Arachis hypogaea*, *Cicer arietinum*, *Prunus dulcis*, *Juglans regia*, *Triticum aestivum*, *Triticum durum*, *Zea mays*, *Musa paradisiaca*, *Nicotiana tabacum*, *Nicotiana rustica*.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial), Madeira, Porto Santo, Portugal, Spain, France, Belgium, UK, Corse, Italy, Ethiopia, USA, N-, C- and S-America, tropical and temperate zones, Indo-Australian region.. Cosmopolitan. Introduced!

REFERENCES: Leraut, 1980; Guimarães, 1982; Goater, 1986; Stoetzel, 1989; Carvalho, 1982, 1995; Vieira & Pintureau, 1991, 1993; Vives Moreno, 1991, 1994; Bin-Cheng Zhang, 1994; Sannino *et al.*, 1995.

Subfamily CRAMBINAE LATREILLE, 1810

Genus *EUCHROMIUS* GUENÉE, 1845

74. *Euchromius ocellus* (HAWORTH, 1811)

SYNONYMY: *Euchromius fomiculella* Treitschke. *Enomene ocella* Haworth. *Euchromius ocella* (Haworth).

HOST RECORDS: *Zea mays*, *Sorghum*, *Lolium*, stored products and dead vegetation.

DISTRIBUTION: Azores (Terceira), Madeira, Canary Islands, Portugal, Spain, UK, Netherlands, USA. Tropical and Subtropical.

REFERENCES: Goater, 1986; Vives Moreno, 1991, 1994; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Carvalho, 1982, 1995.

Subfamily GLAPHYRIINAE FORBES, 1923

Genus *HELLULA* GUENÉE, 1854

75. *Hellula undalis* (FABRICIUS, 1775) *

SYNONYMY: *Evergestis occidentalis* de Joannis. *Oebia undalis* Fabricius. *Phalaena undalis* Fabricius.

COMMON NAMES: Old world webworm, oriental cabbage webworm, "Pyrale des crucifères".

HOST RECORDS: *Cruciferae*, *Brassica* spp..

DISTRIBUTION: Azores (island ?), Madeira, Canary Islands, Cape Verde, UK, Mediterranean countries, Portugal, Spain, France, Belgium, Corse, the tropics of the Old World, the tropical regions of Africa, N- and W. Africa, S.E. Asia, Middle East, Australasia, Pacific Islands, Hawaii. Cosmopolitan in Old World!

REFERENCES: Viette, 1958; Leraut, 1980; Goater, 1986; Vives Moreno, 1991; Bin-Cheng Zhang, 1994; Carvalho, 1995.

Subfamily SCOPARIINAE GUENÉE, 1854

Genus *SCOPARIA* HAWORTH, 1811

76. *Scoparia versicolorella* (REBEL, 1940)

SYNONYMY: *Bradyrrhoa versicolorella* Rebel.

DISTRIBUTION: Azores (Terceira, Faial, Flores). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

77. *Scoparia luteusalis* HAMPSON, 1907

SYNONYMY: *Scoparia lutensis* Hampson.

HOST RECORDS: *Juniperus brevifolia* (L. Silva, pers. comm.).

DISTRIBUTION: Azores (São Miguel, Terceira, Pico). Endemic.

REFERENCES: Rebel, 1940; Carvalho, 1982, 1992; Vieira & Pintureau, 1991, 1993.

78. *Scoparia aequipennalis* WARREN, 1905

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores). Endemic.

REFERENCES: Warren, 1905; Rebel, 1940; Carvalho, 1982, 1992; Vieira & Pintureau, 1991, 1993.

79. *Scoparia scoriella* (WOLLASTON, 1858)

SYNONYMY: *Scoparia ? scoriella* Wollaston. *Eudoria scoriella* Wollaston. *Eudoria scoriella* Wollaston.

DISTRIBUTION: Azores (Terceira), Madeira. Macaronesian!

REFERENCES: Warren, 1905; Carvalho, 1982, 1992; Vieira & Pintureau, 1991, 1993.

80. *Scoparia stenota* WOLLASTON, 1858

SYNONYMY: *Scoparia melanographa* Hampson. *Scoparia stenota* Warren. *Eudorea stenota* Wollaston.

DISTRIBUTION: Azores (Terceira, São Jorge, Flores), Madeira, Porto Santo. Macaronesian!

REFERENCES: Warren, 1905; Hampson, 1907; Rebel, 1917, 1940; Carvalho, 1982, 1995; Vieira & Pintureau, 1991, 1993.

81. *Scoparia semiampalis* WARREN, 1905

DISTRIBUTION: Azores (Terceira, Faial). Endemic.

REFERENCES: Warren, 1905; Rebel, 1917, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

82. *Scoparia coecimaculalis* WARREN, 1905

SYNONYMY: *Scoparia caecimaculalis* Warr..

DISTRIBUTION: Azores (Pico, São Jorge, Graciosa). Endemic.

REFERENCES: Warren, 1905; Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

83. *Scoparia interlinealis* WARREN, 1905

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa). Endemic.

REFERENCES: Warren, 1905; Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

Genus *EUDONIA* BILLBERG, 1820

84. *Eudonia angustea* (CURTIS, 1827)

SYNONYMY: *Scoparia angustea* Stephens. *Eudorea acuminatella* Stainton. *Eudoria angustea* Stainton. *Scoparia acuminatella* Stainton.

HOST RECORDS: Moss, namely *Tortula ruraliformis*.

DISTRIBUTION: Azores (São Miguel, Terceira, Faial, São Jorge, Graciosa, Flores), Madeira, Canary Islands, Europe, Portugal, Spain, British Isles including the Shetlands and the Channel Islands, France, Belgium, Corse. Western-Palaeartic!

REFERENCES: Warren, 1905; Rebel, 1917, 1940; Leraut, 1980; Goater, 1986; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993.

85. *Eudonia mercurella* (LINNAEUS, 1758)

SYNONYMY: *Witlesia mercurella* L.. *Scoparia frequentella* Stt..

HOST RECORDS: Tufts of moss growing on trees-trunks, roots, rocks and walls.

DISTRIBUTION: Azores (Santa Maria, São Jorge, Graciosa, Flores), Madeira, Portugal, Spain, France, Belgium, Corse, Europe, UK, Wales, southern Scotland, Hebrides, Ireland, Channel Islands. Western-Palaeartic!

REFERENCES: Warren, 1905; Leraut, 1980; Goater, 1986; Carvalho, 1982, 1995; Vives Moreno, 1991.

Subfamily PYRAUSTINAE MEYRICK, 1890

Genus *UDEA* GUENÉE, [1845] in Duponchel

86. *Udea delineatalis* WALKER, [1863 ?] *

DISTRIBUTION: Azores (Terceira, Pico, São Jorge).

REFERENCES: Carvalho, 1982, 1992; Vieira & Pintureau, 1991, 1993.

87. *Udea numeralis* (HÜBNER, 1796) *

SYNONYMY: *Botys numeralis* var. *illutalis*, Guenée. *Pionea numeralis* Hübner.

DISTRIBUTION: Azores (São Miguel, Terceira), Madeira, Canary Islands, Europe, Portugal, Spain, France, Belgium, Corse. Palearctic!

REFERENCES: Warren, 1905; Leraut, 1980; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993.

88. *Udea ferrugalis* (HÜBNER, 1796)

SYNONYMY: *Botys ferrugginalis* Hübner. *Pionea (Pyrausta) ferrugalis* Hübner. *Pyrausta ferrugalis* Hübner. *Udea martialis* Guenée. *Pionea ferrugalis* Hübner.

HOST RECORDS: *Stachys*, *Eupatorium cannabinum*, *Fragaria*, *Arctium*, *Capsicum*, *Curcubita*, *Solanum melongena*, *Lycopersicon* spp., *Chicorium intybus*, *Beta vulgaris* var. *saccharifera*, Poaceae.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Canary Islands, British Isles, Mediterranean, Italy, Bulgaria, Portugal, Spain, France, Belgium, Corse, Japan. Migrant in British Isles. Palearctic.

ADDITIONAL RECORDS: São Miguel (Ponta Delgada, Relva, Lagoa, Lagoa do Congro, Furnas, Sete Cidades, Ribeira Grande), all seasons 1995 and 1996; Faial (Varadouro, Castelo Branco, Espalamaca, Horta), 01-19.08.96, common on pastures; Pico (Madalena, São Mateus, Lajes, Cais do Pico), 08.8.96. Larva and adult are common on pasture grasses (Poaceae).

REFERENCES: Warren, 1905; Rebel, 1940; Leraut, 1980; Baez, 1984; Goater, 1986; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Carvalho, 1982, 1992, 1995; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vieira & Tavares, 1995; Vieira, 1995.

Genus *MECYNA* DOUBLEDAY, [1849]

89. *Mecyna asinalis* (HÜBNER, [1819])

SYNONYMY: *Botys asinalis* Hübner. *Pyrausta asinalis* Hübner.

HOST RECORDS: *Rubia peregrina*.

DISTRIBUTION: Azores (Santa Maria, Pico), Madeira, Canary Islands, Europe, Portugal, Spain, England, Ireland, France, Belgium, Corse, Scilly. Western-Palearctic!

REFERENCES: Leraut, 1980; Goater, 1986; Carvalho, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1993.

Genus *NOMOPHILA* HÜBNER, [1825]

90. *Nomophila noctuella* (DENIS & SCHIFFERMÜLLER, 1775)

SYNONYMY: *Nomophila noctuella* S.V.. *Nomophila hybridalis* Hübner.

HOST RECORDS: *Poligonum*, *Trifolium*, grasses of Poaceae and other low-growing weeds.

DISTRIBUTION: Azores (São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Faial, Flores), Madeira, Porto Santo, Canary Islands, Cape Verde, Europe, Mediterranean, England, Portugal, Spain, France, Belgium, Corse, Romania, Bulgaria to Russia, China,

Africa, Egypt, Iran, Madagascar, Mascarene Islands, USA (Hawaii). Migrant. Cosmopolitan or almost cosmopolitan.

ADDITIONAL RECORDS: São Miguel (Lagoa do Congro and Salto do Cavalo), 16.07.1996, 1 adult; Faial, 06.11.96, 1 adult.

REFERENCES: Rebel, 1940; Viette, 1958; Leraut, 1980; Baez, 1984; Goater, 1986; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira, 1995.

Genus *HYMENIA* HÜBNER, [1825]

91. *Hymenia recurvalis* (FABRICIUS, 1775)

SYNONYMY: *Spoladea recurvalis* Fabricius. *Zinckenia fascialis* Cramer. *Phalaena recurvalis* Fabricius.

COMMON NAMES: Beet webworm, Hawaiian beet webworm.

HOST RECORDS: *Spinacia oleracea*, *Gossypium*, *Zea mays*, *Glycine max*, *Beta vulgaris* var. *saccharifera*, *Amaranthus*, weeds.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico), Madeira, Canary Islands, Cape Verde, Europe (Spain), Asia, Japan, Cyprus, Africa, Australia, New Zealand, Pacific Islands, USA, M- and S-America. Migrant from the tropics. Tropical.

ADDITIONAL RECORDS: São Miguel (Ponta Delgada, Relva, São Vicente Ferreira), June to November 1995 and 1996, common.

REFERENCES: Viette, 1958; Baez, 1984; Goater, 1986; Carvalho, 1982, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira, 1995.

Genus *DIASEMIOPSIS* MUNROE, 1957

92. *Diasemiopsis ramburialis* (DUPONCHEL, 1833)

SYNONYMY: *Diasemia ramburialis* Duponchel.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores), Madeira, Canary Islands, Mediterranean, Portugal, Spain, France, Belgium, Corse, UK. A scarce migrant. Western-Palaeartic!

ADDITIONAL RECORDS: São Miguel (Ponta Delgada and Caloura), September to November 1996, common.

REFERENCES: Rebel, 1940; Marsden *et al.*, 1967; Leraut, 1980; Goater, 1986; Vives Moreno, 1991; Carvalho, 1982, 1992, 1995; Vieira & Pintureau, 1991, 1993.

Genus *PALPITA* HÜBNER, [1808]

93. *Palpita unionalis* (HÜBNER, 1796)

SYNONYMY: *Glyphodes unionalis* Hübner. *Margarodes unionalis* Hübner. *Margaronia unionalis* Hübner. *Pyralis unionalis* Hübner.

HOST RECORDS: *Jasminum officinale*, *Olea europaea* and other Oleaceae.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, São Jorge, Flores, Corvo), Madeira, Porto Santo, Canary Islands, Cape Verde, Mediterranean, Portugal, Spain, France, Belgium, Corse, UK. Cosmopolitan or almost cosmopolitan.

ADDITIONAL RECORDS: São Miguel - Relva and São Vicente Ferreira, September and October 1996, various adults caught in blacklight traps; Ponta Delgada (garden of the University of the Azores), 11.12.96, 1 adult.

REFERENCES: Rebel, 1940; Viette, 1958; Baez, 1984; Leraut, 1980; Goater, 1986; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Vieira & Tavares, 1995.

Superfamily PTEROPHOROIDEA ZELLER, 1841

Family PTEROPHORIDAE ZELLER, 1841

Subfamily PTEROPHORINAE ZELLER, 1841

Genus *EMMELINA* TUTT, 1905

94. *Emmelina monodactyla* (LINNAEUS, 1758)

SYNONYMY: *Pterophorus pterodactylus*, Stainton. *Phalaena Alucita monodactyla* Linnaeus. *Alucita monodactyla*, Walsingham. *Oidaematophorus monodactylus* (Linnaeus). *Pterophorus monodactylus*, Rebel.

HOST RECORDS: *Convolvulus*, *Cynara scolymus*, *Convolvulus arvensis*, *Ipomoea batatas*, *Calystegia sepium*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Faial, Graciosa), Madeira, Canary Islands, Europe, Portugal, Spain, France, Belgium, Corse, N-Africa, Egypt, W-Asia, Canada, USA. Cosmopolitan.

ADDITIONAL RECORDS: São Miguel (Ponta Delgada, garden of the University of the Azores), 30.07.96, 1 adult; Santa Maria (Airport area), October 1996, 1 adult (D. Pombo, pers. comm.).

REFERENCES: Rebel, 1940; Leraut, 1980; Sousa, 1991; Klemisch, 1993; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

Genus *AMBLYPTILIA* HÜBNER, [1825]

95. *Amblyptilia acanthodactyla* (HÜBNER, [1813])

SYNONYMY: *Alucita acanthodactyla* Hübner. *Platyptilia acanthodactyla*, Hübner. *Pterophorus acanthodactylus*, Stainton.

HOST RECORDS: *Calamintha ascendens*, *Antirrhinum*, *Pelargonium*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge), Madeira, Porto Santo, Canary Islands, Europe, Portugal, Spain, France, Belgium, Corse, W-Asia, W- and S-Africa. Holarctic.

ADDITIONAL RECORDS: São Miguel (Salto do Cavalo), 03.11.96, 2 adults.

REFERENCES: Rebel, 1940; Leraut, 1980; Sousa, 1991; Klemisch, 1993; Carvalho, 1982, 1992, 1995; Vives Moreno, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

MACROLEPIDOPTERA

Superfamily PAPILIONOIDEA LATREILLE, [1802]

Family PIERIDAE DUPONCHEL, [1835]

Subfamily COLIADINAE SWAINSON, 1827

Genus *COLIAS* FABRICIUS, 1807

96. *Colias crocea* (GEOFFROY, 1785 in Fourcroy)

SYNONYMY: *Colias edusa* F., *Croesus helice* Föln., *Colias croceus* (Geoffroy in Fourcroy, 1785), *Papilio croceus* Geoffroy, *Colias crocea crocea* Geoff., *Colias crocea* Geoff., *Colias crocea* Fourc., In the Azores islands *C. crocea* is common, but in some areas few individuals of two forms (*f. helice* Hübner and *f. heliciana* Oberthür) might have been flying together.

COMMON NAMES: “Le souci”, “borboleta amarela”.

HOST RECORDS: Leguminosae, *Medicago sativa*, *Trifolium*, *Lotus*, *Onobrychis*, *Citissium*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Porto Santo, Canary Islands, Europe, Portugal, Spain, Balears, mediterranean, N- and W-Africa, M- and W-Europe, Ethiopian, Africa, W-Asia, Spain, France, Italy, Qatar, Iran. Migrant indigenous into Azores. Migrant. Holomediterranean. Atlanto-mediterranean. Mediterranean.

ADDITIONAL RECORDS: São Miguel (all island, excepting Pico da Vara), all seasons 1995 and 1996; Santa Maria (Vila do Porto, Almagreira), 11-12.11.96; Faial (all island, excepting Caldeira), 01-19.08.96, 06-07.11.96; Pico (Madalena, São Mateus, Lajes, Cais do Pico, Santa Luzia), 08-09.08.96; São Jorge (Velas), 08.08.96.

REFERENCES: Godman, 1870; South, 1894; Rebel, 1917, 1940; Carthy, 1957; Bernardi, 1961; Marsden & Wright, 1971; Leestmans, 1975; Steiniger, 1976; Bacallado & Pinker, 1982; Carvalho, 1982, 1983; Baez, 1984; Sousa, 1984-85, 1991; Fernandez-Rubio, 1991a; Meyer, 1991a; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vieira & Tavares, 1995; Vieira, 1995.

Subfamily PIERINAE DUPONCHEL, [1835]

Genus *PIERIS* SCHRANK, 1801

97. *Pieris brassicae azorensis* REBEL, 1917

SYNONYMY: *Pieris brassicae* L., *Pieris brassicae ab. chariclea* Stph., *Pieris brassicae brassicae* L..

COMMON NAMES: Cabbage moth, cabbage caterpillar, large white, cabbage white, “borboleta branca”, “lagarta da couve”.

HOST RECORDS: Brassicaceae, Cruciferae including *Brassica*, and also *Reseda*, *Brassica oleracea* var. *gemmifera*, *Tropaeolum majus*, *Brassica oleracea* var. *capitata*, *Brassica campestris* var. *rapa*, *Raphanus sativus* (Vieira, pers. observation).

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo,

Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo). Endemic.

ADDITIONAL RECORDS: São Miguel (all island, excepting Pico da Vara), all seasons 1995 and 1996; Santa Maria (Vila do Porto, Almagreira), 11-12.11.96; Faial (all island, excepting Caldeira), 01-19.08.96, 06-07.11.96; Pico (Madalena, São Mateus, Lajes, Cais do Pico, Santa Luzia), 08-09.08.96; São Jorge (Velas), 08.08.96.

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; South, 1894; Warren, 1905; Rebel, 1917, 1940; Carthy, 1957; Bernardi, 1961; Marsden & Wright, 1971; Leestmans, 1975; Steiniger, 1976; Carvalho, 1982; Fontoura, 1917, *in* Carneiro, 1982; Carneiro, 1982; Fernandez-Rubio, 1991a; Sousa, 1985b, 1991; Meyer, 1991a; Vieira & Pintureau, 1991, 1993; Vieira, 1994a; Vieira & Tavares, 1995; Vieira, 1995.

98. *Pieris rapae* (LINNAEUS, 1758) *

DISTRIBUTION: Azores: only recorded for São Miguel by Morelet (1860), Drouët (1861) and Neves de Fontoura (1917, *in* Bensaúde, 1926b); *P. rapae* no more was observed after this authors. Species erroneously identified or located!

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; South, 1894; Rebel, 1917; Walker, 1931; Wolff, 1975; Carvalho, 1982; Meyer, 1991a; Vieira & Pintureau, 1991.

99. *Pieris napi* (LINNAEUS, 1758) *

DISTRIBUTION: Azores: only recorded for São Miguel by Morelet (1860) and Drouët (1861); *P. napi* no more was observed after this authors. Species erroneously identified or located!

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; South, 1894; Rebel, 1917; Walker, 1931; Meyer, 1991a; Vieira & Pintureau, 1991.

Genus *PONTIA* FABRICIUS, 1807

100. *Pontia daplidice* (LINNAEUS, 1758) *

SYNONYMY: *Pieris daplidice* Linn..

DISTRIBUTION: Azores: only recorded for São Miguel by Morelet (1860) and Drouët (1861); *P. daplidice* no more was observed after this authors. Species erroneously identified or located!

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; South, 1894; Rebel, 1917; Walker, 1931; Meyer, 1991a; Vieira & Pintureau, 1991.

Superfamily NYMPHALOIDEA SWAINSON, 1827

Family NYMPHALIDAE SWAINSON, 1827

Subfamily NYMPHALINAE SWAINSON, 1827

Genus *VANESSA* FABRICIUS, 1807

101. *Vanessa atalanta* (LINNAEUS, 1758)

SYNONYMY: *Pyrameis atalanta* L., *Papilio atalanta*.

COMMON NAMES: Red admiral.

HOST RECORDS: *Helichrysum*, *Boehmeria nivea*, Urticaceae, *Urtica*, *Urtica membranacea*, *Parietaria judaica*, *Lantana camara* flowers.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Faial, Pico[®], São Jorge, Flores, Corvo), Madeira, Porto Santo, Canary Islands, Portugal, Spain, Balears, Europe, UK, Yugoslavia, Republic of Georgia, USA, N-Africa, Asia, N-America, Guatemala, Haiti, New Zealand. Migrant. With Palaearctic origin, but with a large world distribution. Holarctic. Almost cosmopolitan.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, 12-15-26.02.95, Spring and Summer 1995, 11-17.11.95, Summer 1996, 18.11.96, Sete Cidades - Cumeceiras, 29.01.95 (9 adults), Ginetes, 29.01.95 (2 adults), São Vicente Ferreira, 02.04.95, and Praia do Degredo, 23.07.95; Faial (Canada da Faia, Areeiro), 07.11.96; Pico[®] (São Mateus), 07.08.96.

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; Rebel, 1917, 1940; Bernardi, 1961; Leestmans, 1975; Bacallado & Pinker, 1982; Sousa, 1984-85, 1991; Fernandez-Rubio, 1991b; Carvalho, 1982; Meyer, 1991a; Vieira & Pintureau, 1991, 1993; Carter, 1992; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vieira & Tavares, 1995; Vieira, 1995.

102. *Vanessa virginiensis* (DRURY, [1773])

COMMON NAMES: Painted beauty.

HOST RECORDS: *Gnaphalium*, *Antennaria*, *Malva*, *Urtica*.

DISTRIBUTION: Azores (São Miguel), Canary Islands (autochtone), Portugal, Spain, Europe, UK, America Nearctic, USA, Guatemala, Cuba, Haiti, Puerto Rico, Hawaii. Migrant errant, and it is very rare in Azores. Nearctic.

ADDITIONAL RECORDS: São Miguel: Ponta Delgada, garden of the University of the Azores, 08.08.1996 (V. Sbordoni, pers. comm.).

REFERENCES: Leestmans, 1975; Bacallado & Pinker, 1982; Baez, 1984; Stoetzel, 1989; Fernandez-Rubio, 1991b; Meyer, 1991a; Vieira & Pintureau, 1993.

103. *Vanessa cardui* (LINNAEUS, 1758)

SYNONYMY: *Pyrameis cardui* L.. *Vanessa cardui* L.. *Cynthia cardui cardui* L..

COMMON NAMES: Painted lady, thistle butterfly.

HOST RECORDS: *Carduus*, *Onopordon*, *Arctium*, *Lapa*, *Boehmeria nivea*, *Cirsium arvense*, *Gossypium*, *Cynara cardunculus*, *Cynara scolymus*, *Medicago sativa*, *Lupinus*, *Malva*, *Brassica napus* var. *oleifera*, *Ricinus*, *Glycine max*, *Helianthus annuus*, *Nicotiana tabacum*, *Nicotiana rustica*, *Xanthium spinosum*, Urticaceae, *Urtica*, Asteraceae.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Faial, Flores), Madeira, Canary Islands, Cape Verde, Portugal, Spain, cosmopolitan except South America and most of Australasia, Europe mediterranean, W-Europe, N- and W-Africa, M- and Ethiopian Africa, W-Asia, America Nearctic, USA, S-Venezuela

and Australia (rare). Migrant. Cosmopolitan. Subcosmopolitan.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, 24.06.95 to 07.07.95, 09.09.95 to 20.09.95, Summer 1996, 12.11.96, 22.11.96, Furnas, 03.11.96, Sete Cidades - Cumeeiras, 29.01.95; Santa Maria (Vila do Porto), 11.11.96 (D. Pombo, pers. comm.); Faial (Espalamaca), 07.11.96.

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; South, 1894; Walker, 1931; Rebel, 1917, 1940; Carthy, 1957; Nyström, 1958; Steiniger, 1976; Leestmans, 1975; Bacallado & Pinker, 1982; Carvalho, 1982; Stoetzel, 1989; Sousa, 1984-85, 1991; Fernandez-Rubio, 1991b; Meyer, 1991a; Carter, 1992; Baez, 1993; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994.

Subfamily ARGYNNINAE DUPONCHEL, [1835]

Genus *HYPOLIMNAS* (HÜBNER, 1819)

104. *Hypolimnas misippus* (LINNAEUS, 1758)

SYNONYMY: *Hypolimnas misippus* Linnaeus.

HOST RECORDS: *Gossypium*, *Elaeis guineensis*, *Elaeis oleifera*, *Portulaca quadrifida*, *Blepharis maderispatensis*, *Ruellia*.

DISTRIBUTION: Occasionally in Azores (São Miguel), Madeira and Canary Islands, Cape Verde, W-Africa, E-Africa, São Tomé and Príncipe, Indonesia, Asia, Australia, North America, South America, etc. Migrant probably from Afrotropical region. Cosmopolitan (exc. Europe).

REFERENCES: Bernardi, 1961; Leestmans, 1975; Sousa, 1984-85; Fernandez-Rubio, 1991b; Meyer, 1991a; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994.

Subfamily SATYRINAE BOISDUVAL, [1833]

Genus *MANIOLA* SCHRANK, 1801

105. *Maniola jurtina* (LINNAEUS, 1758) *

SYNONYMY: *Satyryx janira* L.. *Epinephele janira* L.. *Epinephele jurtina* L..

COMMON NAMES: Meadow brown.

DISTRIBUTION: Azores: only recorded for Santa Maria and São Miguel by Morelet (1860) and Drouët (1861). Species extinct or erroneously identified! In fact, it was erroneously identified as *Hipparchia azorina* (Sousa, 1985a).

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; South, 1894; Rebel, 1917; Walker, 1931; Carvalho, 1982; Sousa, 1985a; Meyer, 1991a; Vieira & Pintureau, 1991.

Genus *HIPPARCHIA* FABRICIUS, 1807

Hipparchia azorina complex - During the past decade there has been an increase in the number of new publications of *Hipparchia azorina* complex, but only centred on poor morphological data. More extensive analyses mainly concerned with genetic variability, as

well as mixiology, are needed to clearly document the recent evolutionary history of this common insect. These analyses probably allow to determine the geographical origin of Azorean *Hipparchia* and to estimate the age of the colonization. While we are waiting for the results of these studies, Meyer's nomenclature (Meyer, 1991a) is used in this work.

***Hipparchia azorina* (STRECKER, 1899) s.l.**

SYNONYMY: *Satyrus semele maderensis* Bak.. *Satyrus semele azorinus* Streck.. *Satyrus azorinus* Streck.. *Hipparchia (semele) azorensis* Streck.. *Hipparchia (aristaeus) azorensis* Streck.. *Hipparchia (aristaeus) azorinus* Streck.. *Hipparchia azorina* Streck..

COMMON NAMES: Azorean Graling.

HOST RECORDS: Poaceae, *Festuca jubata*, *Festuca scoparia*.

REFERENCES: Rebel, 1917, 1938, 1940; Walker, 1931; Le Cerf, 1935; Carthy, 1957; Bernardi, 1961; Marsden & Wright, 1971; Higgins, 1975; Kudrna, 1975; Leestmans, 1975b; Carvalho, 1982; Oehmig, 1983; Sousa, 1982a, 1985a, 1985b; Fernandez-Rubio, 1991a.

106. *Hipparchia miguelensis* (LE CERF, 1935) (Populations of the eastern groupe)

SYNONYMY: *Satyrus azorinus miguelensis* Le Cerf. *Hipparchia azorina miguelensis* Le Cerf.

HOST RECORDS: *Festuca jubata* (Poaceae). Adult feeds on flowers of *Tolpis azorica*, *Ilex perado* ssp. *azorica*, *Rubus*, *Vaccinium cylindraceum*.

DISTRIBUTION: Azores (São Miguel). Endemic.

ADDITIONAL RECORDS: São Miguel (Furnas - Salto do Cavalo, Monte escuro, Lagoa das Empadadas, Nordeste - Pico da Vara), during Summer months of 1995 and 1996, common.

REFERENCES: Le Cerf, 1935; Rebel, 1940; Sousa, 1982a; Oehmig, 1983; Meyer, 1991a; Vieira & Pintureau, 1993; Vieira & Silva, 1994.

***Hipparchia azorina* (STRECKER, 1899) s. str.**

(Populations of the central groupe: Faial, Pico, São Jorge, Terceira)

107. *Hipparchia azorina azorina* (STRECKER, 1899)

SYNONYMY: *Satyrus azorinus picoensis* Le Cerf. *Hipparchia azorina picoensis* Le Cerf.

HOST RECORDS: *Festuca jubata* (Poaceae). Adult feeds on flowers of *Tolpis azorica*, *Rubus*, *Vaccinium cylindraceum*.

DISTRIBUTION: Azores (Pico). Endemic.

ADDITIONAL RECORDS: Pico (Chão do Pelado), 08.08.96.

REFERENCES: Le Cerf, 1935; Rebel, 1940; Sousa, 1982a; Meyer, 1991a; Vieira & Pintureau, 1993.

108. *Hipparchia azorina ohshimai* (ESAKI, 1936)

SYNONYMY: *Hipparchia azorina azorina* Streck.. *Oeneis ohshimai* Esaki.

HOST RECORDS: *Festuca jubata* (Poaceae). Adult feeds on flowers of *Tolpis azorica*, *Rubus*, *Vaccinium cylindraceum*.

DISTRIBUTION: Azores (Faial). Endemic.

ADDITIONAL RECORDS: Faial (Caldeira), 01-19.08.96, common.

REFERENCES: Rebel, 1940; Sousa, 1982a; Oehmig, 1983; Meyer, 1991a; Vieira & Pintureau, 1993.

109. *Hipparchia azorina jorgense* OHEMIG, 1983

SYNONYMY: *Hipparchia azorina cenjonatura* Sousa.

HOST RECORDS: *Festuca jubata* (Poaceae). Adult feeds on flowers of *Tolpis azorica*, *Rubus*, *Vaccinium cylindraceum*.

DISTRIBUTION: Azores (São Jorge). Endemic.

ADDITIONAL RECORDS: São Jorge (Pico da Esperança), 08.08.96, common.

REFERENCES: Sousa, 1982b; Oehmig, 1983; Meyer, 1991a; Vieira & Pintureau, 1993.

110. *Hipparchia azorina barbara* SOUSA, 1985

HOST RECORDS: *Festuca jubata* (Poaceae). Adult feeds on flowers of *Tolpis azorica*, *Rubus*, *Vaccinium cylindraceum*.

DISTRIBUTION: Azores (Terceira). Endemic.

ADDITIONAL RECORDS: Terceira (Serra de Santa Bárbara), 01-08.08.96 (V. Sbordoni, pers. comm.).

REFERENCES: Sousa, 1985a; Meyer, 1991a; Vieira & Pintureau, 1993.

***Hipparchia occidentalis* SOUSA, 1982**

(Populations of the western groupe: Flores and Corvo)

111. *Hipparchia occidentalis occidentalis* (SOUSA, 1982)

SYNONYMY: *Hipparchia azorina occidentalis* Sousa. *Hipparchia caldeirensis* Oehmig.

HOST RECORDS: *Festuca jubata* (Poaceae).

DISTRIBUTION: Azores (Flores). Endemic.

ADDITIONAL RECORDS: Flores (Lagoa Funda), 12.09.96 (V. Sbordoni, pers. comm.).

REFERENCES: Rebel, 1940; Sousa, 1982a; Oehmig, 1983; Meyer, 1991a; Vieira & Pintureau, 1993.

112. *Hipparchia occidentalis minima* (SOUSA, 1985)

SYNONYMY: *Hipparchia azorina minima* Sousa.

HOST RECORDS: *Festuca jubata* (Poaceae).

DISTRIBUTION: Azores (Corvo). Endemic.

REFERENCES: Oehmig, 1983; Sousa, 1985a; Meyer, 1991a; Vieira & Pintureau, 1993; Vieira & Tavares, 1995.

Subfamily DANAINAE BOISDUVAL, [1833]

Genus *DANAUS* KLUK, 1780113. *Danaus plexippus* (LINNAEUS, 1758)SYNONYMY: *Danais archippus* F.. *Danais plexippus* L.. *Danaida plexippus* L..

COMMON NAMES: Monarch butterfly, "Monarca".

HOST RECORDS: Asclepiadaceae, namely *Asclepias curassavica*, *Asclepias speciosa*, *Asclepias syrica*; *Glossipium arboreum* and *Euphorbia mauretanicum*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, Flores; occasionally immigrant in Azores or errant), Madeira (resident), resident in Spain and Canary Islands, M- and W-Europe (rare), America, Canada, Peru, USA (Hawaii, Bermuda), Australia, Norfolk Island, New Caledonia, UK, Irish Republic, Denmark, Indo-Australian, New Zealand. Occasionally immigrant in Europe. Nearctic. Cosmopolitan or almost cosmopolitan.

REFERENCES: Sampaio, 1904; Leestmans, 1975; Carvalho, 1982; Baez, 1984, 1993; Sousa, 1984-85, 1991; Stoetzel, 1989; Fernandez-Rubio, 1991b; Meyer, 1991a; Vieira & Pintureau, 1991, 1993; Carter, 1992; Bin-Cheng Zhang, 1994.

114. *Danaus chrysippus* (LINNAEUS, 1758) *HOST RECORDS: Asclepiadaceae, namely *Asclepias*.

DISTRIBUTION: Probably errant in Azores, but is not resident!

REFERENCES: Carvalho, 1982; Fernandez-Rubio, 1991b; Meyer, 1991a.

Superfamily LYCAENOIDEA GROTE, 1895

Family LYCAENIDAE LEACH, [1815] in Brewster

Subfamily POLYOMMATINAE SWAINSON, 1827

Genus *LAMPIDES* HÜBNER, [1819]115. *Lampides boeticus* (LINNAEUS, 1767)SYNONYMY: *Polyommatus baeticus* L., *Polyammatus boeticus* L.. *Lampides boeticus boeticus* L..

COMMON NAMES: Long-tailed blue, pea blue butterfly, bean butterfly.

HOST RECORDS: Leguminosae, *Pisum sativum*, *Colutea arborescens*, *Lupinus*, *Genista*; the adult feeds on *Sophora japonica*, *Aptenia cordifolia*, and *Ulex europaeus* (Vieira, pers. observation).DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores), Madeira, Porto Santo, Canary Islands, Cape Verde, Portugal, Spain including Baleares, Europe, Europe mediterranean, N- and W-Africa, M- and W-Europe, Africa ethiopian, Asia, Australia, Hawaii, Africa, Asia, India, China, Australasia, New Zealand, USA (Hawaii), Ascencion, Sainte Helene. Azores: migrant indigenous. Macaronesian *L. boeticus* moths are not different those of North Africa and Europe mediterranean. Origin Subtropical. Palaearctic, Afrotropical, Indo-Australian (Carter, 1992). Cosmopolitan with exception to American continent (Sousa,

1984-85). Subcosmopolitan distribution (Baez, 1993).

ADDITIONAL RECORDS: São Miguel (Ponta Delgada), all seasons excepting Spring 1996; Faial (Canada da Faia), 06.11.96, 5 adults.

REFERENCES: Rebel, 1940; Carthy, 1957; Nyström, 1958; Bernardi, 1961; Marsden & Wright, 1971; Leestmans, 1975; Steiniger, 1976; Bacallado & Pinker, 1982; Carvalho, 1982, 1983; Sousa, 1984-85; Stoetzel, 1989; Fernandez-Rubio, 1991b; Meyer, 1991a; Vieira & Pintureau, 1991, 1993; Carter, 1992; Baez, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vieira, 1995.

Superfamily GEOMETROIDEA LEACH, [1815] *in* Brewster

Family GEOMETRIDAE LEACH, [1815] *in* Brewster

Subfamily ENNOMINAE GUENÉE, [1815] *in* Duponchel

Genus *CLEORA* CURTIS, 1825

116. *Cleora fortunata azorica* PINKER, 1971

SYNONYMY: *Scotorithra fortunata* Blach.. *Cleora fortunata* Blach.. *Boarmia fortunata* Blach.. *Ascotis fortunata azorica* Pinker.

HOST RECORDS: *Myrica faya* (Myricaceae), *Erica scoparia* ssp. *azorica* (Ericaceae), *Myrsine africana* (Myrsinaceae), *Viburnum tinus* ssp. *subcordatum* (Caprifoliaceae), *Ligustrum henryi* (Oleaceae).

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores). Endemic.

ADDITIONAL RECORDS: Faial (São João), 06.11.96, 5 adults.

REFERENCES: Willmann, 1939; Pinker, 1971; Carvalho, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Silva & Tavares, 1995.

Subfamily STERRHINAE MEYRICK, 1892

Genus *CYCLOPHORA* HÜBNER, 1822

117. *Cyclophora azorensis* (Prout, 1920)

SYNONYMY: *Cosymbia pupillaria* Hb. *sensu*(?) Warren (1905). *Cosymbia maderensis* B.-Bak.. *Cosymbia maderensis azorensis* Prout. *Cyclophora maderensis azorensis* Prout.

HOST RECORDS: *Myrica faya*, *Erica scoparia azorica*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores). Endemic.

ADDITIONAL RECORDS: São Miguel (Furnas), 03.11.96, 3 adults.

REFERENCES: Warren, 1905; Prout, 1912-1915; Rebel, 1917, 1940; Prout, 1939; Carthy, 1957; Carvalho, 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Vieira, 1995.

118. *Cyclophora pupillaria granti* (PROUT, 1935)

SYNONYMY: *Cosymbia pupillaria* Hb.. *Cosymbia pupillaria granti* Prt.. *Cyclophora*

pupillaria Hb..

DISTRIBUTION: Azores (Santa Maria). Endemic.

REFERENCES: Warren, 1905; Prout, 1912-1915; Rebel, 1938; Carvalho, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993.

Genus *RHODOMETRA* MEYRICK, 1892

119. *Rhodometra sacra* (LINNAEUS, 1767)

COMMON NAMES: Vestal.

HOST RECORDS: Pastures grasses, *Rumex*, *Polygonum aviculare*, *Anthemis*.

DISTRIBUTION: Azores (Santa Maria, São Miguel), Madeira, Porto Santo, Canary Islands, common in Southern Europe, and migrating to Central and Northern Europe, Portugal, Spain, UK. Tropical.

REFERENCES: Carvalho, 1981, 1983; Baez, 1984; Meyer, 1991b; Sousa, 1991; Bacallado & Pinker, 1982; Vieira & Pintureau, 1991, 1993; Carter & Hargreaves, 1994; Vives Moreno, 1994; Vieira & Silva, 1994.

Subfamily LARENTIINAE DUPONCHEL, [1845]

Genus *ORTHONAMA* HÜBNER, [1825]

120. *Orthonama obstipata* (FABRICIUS, 1794)

SYNONYMY: *Coenocalpe obstipata* F.. *Larentia fluviata* Hb.. *Larentia obstipata* F.. *Phyalapteryx polygrammata* sensu Godman (1870). *Nycterosea obstipata* F.. *Campptogramma fluviata* Hb.. *Cidaria fluviata* F..

COMMON NAMES: Gem.

HOST RECORDS: *Rumex*, *Polygonum aviculare*, *Polygonum persicaria*, *Senecio vulgaris*, *Senecio jacobaea*, *Eupatorium cannabinum*, *Convolvulus arvensis*, *Ocimum*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores), Madeira, Canary Islands, Portugal, Spain, Mediterranean, Southern and Central Europe, Italy, UK, Wales and Ireland, America. Cosmopolitan.

REFERENCES: Godman, 1870; Warren, 1905; Rebel, 1917, 1939, 1940; Carthy, 1957; Bacallado & Pinker, 1982; Carvalho, 1981, 1982; Baez, 1984; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Carter & Hargreaves, 1994; Vives Moreno, 1994.

Genus *XANTHORHOE* HÜBNER, [1825]

121. *Xanthorhoe inaequata* WARREN, 1905

SYNONYMY: *Larentia inaequata* Warr.. *Cidaria inaequata* Wrn. *Xanthorhoe* (?) *inaequata* Warren.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Flores). Endemic.

REFERENCES: Warren, 1905; Prout, 1912-1915; Rebel, 1917, 1940; Carthy, 1957; Pinker, 1971; Carvalho, 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993.

Genus *EUPHYIA* HÜBNER, [1825]122. *Euphyia centrostrigaria* (WOLLASTON, 1858)

SYNONYMY: *Euphyia* (?) *centrostrigaria* (Wollaston). *Coenocalpe custodiata* Gn.. *Eubolia custodiata* Gn.. *Coremia centrostrigaria*. *Coremia latirupa* Wlk.. *Coremia luscinata* Z.. *Hydriomena latirupa* Hulst.. *Cidaria luscinata* Z.. *Cidaria interrupta* Rbl.. *Phibalapteryx custodiata* Gn.. *Phibalapteryx mediata* Walk.. *Phibalapteryx centrostrigaria* Woll.. *Phibalapteryx polygrammata* Stt.. *Campptogramma fluvialata*. *Orthonama centrostrigaria* Pr.. *Plemyria paranensis* Sch.. *Hydriomena latirupa* Hulst.. *Catarhoe centrostrigaria* Woll.. *Euphyia centrostrigaria* Wollaston.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores), Madeira, Canary Islands, American. Nearctic!

REFERENCES: Warren, 1905; Prout, 1912-1915; Rebel, 1917, 1940; Carthy, 1957; Bacallado & Pinker, 1982; Carvalho, 1981, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Baez, 1984.

Genus *EUPITHECIA* CURTIS, 1825123. *Eupithecia ogilviata* (WARREN, 1905)

SYNONYMY: *Tephroclystia ogilviata* Warr..

DISTRIBUTION: Azores (Faial). Endemic (Warren, 1905), but this is dubious for Rebel (1940). Endemic.

REFERENCES: Warren, 1905; Rebel, 1940; Carvalho, 1982; Vieira & Pintureau, 1991, 1993.

Genus *GYMNOSCELIS* MABILLE, 1868124. *Gymnoscelis rufifusciata* (HAWORTH, 1809)

SYNONYMY: *Eupithecia pumilata* Hübner. *Gymnoscelis pumilata* Hübner. *Tephroclystia pumilata* Hübner.

COMMON NAMES: Double-striped pug.

HOST RECORDS: *Zea mays*, *Vicia faba*, *Cynara cardunculus*, *Citrus*, *Olea europaea*, *Dianthus*, *Diospyros kaki*, *Rosa*, *Ipomoea batatas*, *Lycopersicon* spp., *Ulex europaeus*, *Cytisus scoparius*, *Clematis vitalba*, *Crataegus monogyna*, *Ilex aquifolium*, *Calluna vulgaris*, also on flowers of *Laurus azorica*, *Myrica faya* and *Erica arborea*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Faial, São Jorge), Canary Islands, Europe, Portugal, Spain, Switzerland, France, UK, Belgium, Corse, Italy (Sicily), Morocco, Egypt, Israel. Recently introduced into Azores (Sousa, 1991); however, this species has been previously recorded for the Azores by Carthy (1957). Palaearctic!

The macaronesian species of *Eupitheciini* group need a global revision (Meyer, 1991b); it could eventually change both nomenclature and distribution of this species.

REFERENCES: Carthy, 1957; Leraut, 1980; Bacallado & Pinker, 1982; Carvalho, 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994;

Carter & Hargreaves, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Silva & Tavares, 1995.

Superfamily BOMBYCOIDEA LATREILLE, [1802]

Family BOMBYCIDAE LATREILLE, [1802]

Genus *BOMBYX* LINNAEUS, 1758

125. *Bombyx mori* (LINNAEUS, 1758) *

COMMON NAMES: Silkworm, “bicho da seda”.

HOST RECORDS: Moraceae (*Morus* spp.), namely *Morus alba*, *Morus nigra*.

DISTRIBUTION: Azores (São Miguel, Terceira), Portugal, Spain, Laos, China, Iran, USA. Sporadically introduced into São Miguel and Terceira islands from Portugal mainland by curiosity, and sometimes it is reared in small numbers, but without commercial interest; it is not present in natural habitat of the Azores archipelago.

REFERENCES: Drouët, 1861; Vives Moreno, 1994.

Family SPHINGIDAE LATREILLE, [1802]

Subfamily SPHINGINAE LATREILLE, [1802]

Genus *AGRIUS* HÜBNER, [1819]

126. *Agrius convolvuli* (LINNAEUS, 1758)

SYNONYMY: *Herse convolvuli* L., *Sphinx convolvuli* L., *Protoparce convolvuli* L., *Sphinx convolvuli*.

COMMON NAMES: Sweet potato moth, convolvulus hawk-moth, “bicho da batata”, “besouro”.

HOST RECORDS: Convolvulaceae, namely *Convolvulus arvensis* and *Ipomea batatas*, *Nicotiana tabacum*, *Nicotiana rustica*, also some Leguminosae (e.g. *Phaseollus*).

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Flores, Corvo), Madeira, Porto Santo, Cape Verde, Portugal, Spain, Europe mediterranean, Italy, UK, N- and W-Africa, M- and W-Europe, Ethiopian Africa, Indo-Australian; migrant into temperate areas: Africa, Iran, Myanmar, Thailand, Malaysia, Indonesia, south China, Japan, Pacific Islands, India, Bangladesh, Australia, New Zealand, Papua New Guinea, Guam. Subtropical.

A. convolvuli inhabit in the Azorean archipelago since of the 16th century; migrant in this archipelago.

ADDITIONAL RECORDS: São Miguel (Relva and Lagoa), September and October 1996; Santa Maria, September 1996 (D. Pombo, pers. comm.).

REFERENCES: Frutuoso, 1522-91; Morelet, 1860; Drouët, 1861; Godman, 1870; Faria e Maia, 1895; Bensaúde, 1926a; Rebel, 1917, 1940; Costa, 1953; Carthy, 1957; Nyström, 1958; Leestmans, 1975; Carneiro, 1982; Carvalho, 1981, 1982, 1983; Sousa, 1991; Silva, 1992; Vieira & Pintureau, 1991, 1993; Vieira, 1994a; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vives Moreno, 1994; Sannino *et al.*, 1995; Vieira & Tavares, 1995.

Genus *ACHERONTIA* [LASPEYRES], 1809127. *Acherontia atropos* (LINNAEUS, 1758)SYNONYMY: *Sphinx atropos* L..

COMMON NAMES: Death's head hawk-moth, "Caveira".

HOST RECORDS: *Solanum tuberosum*, *Solanum melongena*, *Lycopersicon* spp., *Capsicum*, *Nicotiana tabacum*, *Nicotiana rustica*, *Datura*, *Olea europaea*, *Prunus*, *Malus*, *Ligustrum*, wild Solanaceae.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores), Madeira, Porto Santo, Canary Islands, Portugal, Spain, Europe mediterranean, N- and W-Africa, M- and W-Europe, Ethiopian Africa, W-Asia, Europe, Africa, Middle East. Typically migratory species. Subtropical. Afrotropical.

ADDITIONAL RECORDS: São Miguel (Sete Cidades - Vista do Rei - and Nordeste), September to November 1996; Santa Maria, September 1996 (D. Pombo, pers. comm.).

REFERENCES: Drouët, 1861; Godman, 1870; South, 1894; Rebel, 1917, 1940; Carthy, 1957; Leestmans, 1975; Carneiro, 1982; Carvalho, 1981, 1982, 1983; Bacallado & Pinker, 1982; Baez, 1984, 1993; Meyer, 1991b; Carter, 1992; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vives Moreno, 1994.

Genus *SPHINX* LINNAEUS, 1758128. *Sphinx ligustri* LINNAEUS, 1758 *

COMMON NAMES: Privet hawk-moth.

HOST RECORDS: *Malus pumila*, *Ligustrum*, *Syringa vulgaris*, *Fraxinus excelsior*, *Viburnum*, *Sambucus*.

DISTRIBUTION: Azores (Faial, Terceira), Portugal, Spain, through Europe to Russia. Palaearctic. Species probably extinct into Azores (Vieira & Pintureau, 1991, 1993).

REFERENCES: Morelet, 1860; Drouët, 1861; Sampaio, 1904; Vieira & Pintureau, 1991, 1993; Carter, 1992; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994.

Subfamily MACROGLOSSINAE HARRIS, 1839

Genus *DAPHNIS* HÜBNER, [1819]129. *Daphnis nerii* (LINNAEUS, 1758) *SYNONYMY: *Celerio nerii* Linnaeus. *Deilephila nerii* Linn. *Histriosphinx nerii* Linnaeus.

COMMON NAMES: Oleander hawk moth.

HOST RECORDS: *Nerium oleander*, *Picrolema kleiniana*, *Cinchona*, *Cassia florida*, *Theobroma cacao*.

DISTRIBUTION: Azores (Faial), Hungary, Bulgaria, Libya, Egypt, Burkina Faso, São Tomé and Príncipe, Zaire, Uganda, Tanzania, Mauritius, Saudi Arabia, India, South East Asia (Philippines), USA (Hawaii). Afrotropical, Indo-Australian. Species probably extinct into Azores (Vieira & Pintureau, 1991, 1993).

REFERENCES: Morelet, 1860; Drouët, 1861; Stoetzel, 1989; Vieira & Pintureau, 1991,

1993; Carter, 1992; Bin-Cheng Zhang, 1994.

Genus *MACROGLOSSUM* SCOPOLI, 1777

130. *Macroglossum stellatarum* (LINNAEUS, 1758)

SYNONYMY: *Macroglossa stellatarum* L..

COMMON NAMES: Humming-bird Hawk-moth.

HOST RECORDS: *Galium mollugo*, *Galium verum*, *Rubia peregrina*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Pico, Faial, Graciosa, Flores®), Madeira, Canary Islands, Portugal, Spain, Europe mediterranean, UK, N- and W-Africa, M- and W-Europe, Asia, Japan. Holomediterranean. Palaearctic.

ADDITIONAL RECORDS: Flores® - Santa Cruz, July 1994 (V. Vieira, pers. obs.) and 12.09.1996 (V. Sbordoni, pers. comm.); São Miguel - Ponta Delgada: Convento da Esperança 20.05.95, garden of the University of the Azores 25.10.96, and Calheta 13.11.96 (V. Vieira, pers. obs.).

REFERENCES: Morelet, 1860; Drouët, 1861; Godman, 1870; Rebel, 1917, 1940; Leestmans, 1975; Bacallado & Pinker, 1982; Carvalho, 1981, 1982; Meyer, 1991b; Sousa, 1991; Carter, 1992; Vieira & Pintureau, 1991, 1993; Carter & Hargreaves, 1994; Vives Moreno, 1994.

Genus *HIPPOTION* HÜBNER, [1819]

131. *Hippotion celerio* (LINNAEUS, 1758)

SYNONYMY: *Choerocampa celerio* L.. *Sphinx celerio* Linnaeus.

COMMON NAMES: Silver-striped hawk moth.

HOST RECORDS: *Gossypium*, *Ipomoea batatas*, *Colocasia*, *Caladium*, *Boerhavia*, *Nicotiana tabacum*, *Nicotiana rustica*, *Vitis*, *Dioscorea*, *Alocasia*, Rubiaciae (*Galium*).

DISTRIBUTION: Azores (Santa Maria, São Miguel), Madeira, Canary Islands, Cape Verde, Portugal, Spain, Europe mediterranean, M- and W-Europe, N-, W-, S- and E-Africa, Ethiopian Africa, Asia, S-India, Pacific Islands, Papua New Guinea, Australia. An occasional migrant in Europe. Afrotropical, Palaearctic, Indo-Australian. Subcosmopolitan.

ADDITIONAL RECORDS: São Miguel (Vila Franca do Campo), 10.11.95, 4 larvae.

REFERENCES: Rebel, 1940; Nyström, 1958; Leestmans, 1975; Bacallado & Pinker, 1982; Carvalho, 1982; Carter, 1992; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vives Moreno, 1994.

Superfamily NOCTUOIDEA LATREILLE, 1809

Family ARCTIIDAE LEACH, [1815] in Brewster

Subfamily ARCTIINAE LEACH, [1815] in Brewster

Genus *UTETHEISA* HÜBNER, [1819]

132. *Utetheisa pulchella* (LINNAEUS, 1758)

SYNONYMY: *Deiopeia pulchella* Linnaeus.

COMMON NAMES: Crimson-speckled footman.

HOST RECORDS: *Heliotropium indicum*, *Trichodesma indicum*, *Crotolaria*, *Melilotus indica*, *Oryza sativa*, *Allium ascalonicum*, green manure legumes, shade plants, *Borago officinalis*, *Myosotis*.

DISTRIBUTION: Azores (Santa Maria), Madeira, Porto Santo, Canary Islands, Cape Verde, widespread in the Mediterranean region, Europe, UK, Asia, Somalia, Iraq, India, Sri Lanka, Indonesia (Java), Vietnam, China, Australia. Migrant species with tropical origin. Palearctic.

REFERENCES: Nyström, 1958; Carvalho, 1981, 1983; Bacallado & Pinker, 1982; Sousa, 1991; Carter, 1992; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994.

Family NOCTUIDAE LATREILLE, 1809

Subfamily HYPENODINAE FORBES, 1954

Genus *SCHRANKIA* HÜBNER, [1825]

133. *Schranksia costaestrigalis* (STEPHENS, 1834)

SYNONYMY: *Hypenodes costaestrigalis* Stph.

DISTRIBUTION: Azores (Pico), Madeira, Canary Islands, Portugal, Spain. Asiatic-Mediterranean.

REFERENCES: Carvalho, 1981; Bacallado & Pinker, 1982; Calle, 1982; Meyer, 1991; Vieira & Pintureau, 1993; Vives Moreno, 1994; Carvalho *et al.*, in press.

Subfamily HYPENINAE HERRICH-SCHÄFFER, 1845

Genus *HYPENA* SCHRANK, 1802

134. *Hypena obsitalis* (HÜBNER, [1813])

SYNONYMY: *Hypena obstitalis*. *Hypaena obsitalis* Hb..

HOST RECORDS: *Parietaria judaica*, *Urtica membranacea*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, Graciosa, Flores, Corvo), Madeira, Canary Islands, Portugal, Spain, S-Europe. Asiatic-Mediterranean.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, all seasons 1996.

REFERENCES: Godman, 1870; South, 1894; Warren, 1905; Rebel, 1917, 1940; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1981, 1982; Meyer, 1991b; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Vieira, 1995; Carvalho *et al.*, in press.

135. *Hypena lividalis* (HÜBNER, 1796)

HOST RECORDS: *Parietaria judaica*, *Chenopodium album*, *Spinacea oleracea*.

DISTRIBUTION: Azores (São Miguel, Ilhéu de Vila Franca do Campo), Madeira, Canary Islands, Portugal, Spain. Subtropical.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, all seasons excepting Spring 1996.

REFERENCES: Carvalho, 1981; Bacallado & Pinker, 1982; Calle, 1982; Vieira & Pintureau, 1993; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira, 1995; Carvalho *et al.*, in press.

Subfamily CATOCALINAE BOISDUVAL, [1828]

Genus *TATHORHYNCHUS* HAMPSON, 1894

136. *Tathorhynchus exsiccata* (LEDERER, 1855) @

HOST RECORDS: *Medicago sativa*.

DISTRIBUTION: Azores (Faial®), Madeira, Canary Islands, Portugal, Spain, France, Belgium, Corse, S-Europe. Subtropical.

ADDITIONAL RECORDS: Faial® - Canada da Faia, 06.11.96, 1 adult. First record to Faial island and Azores archipelago.

REFERENCES: Leraut, 1980; Carvalho, 1981; Bacallado & Pinker, 1982; Calle, 1982; Vives Moreno, 1994.

Subfamily PLUSIINAE BOISDUVAL, [1828]

Genus *TRICHOPLUSIA* MCDUNNOUGH, 1944

137. *Trichoplusia ni* (HÜBNER, [1803]) *

SYNONYMY: *Phytometra ni* Hbn..

COMMON NAMES: Ni moth, cabbage looper.

HOST RECORDS: Cruciferae, Solanaceae, *Astragalus*, *Brassica tournefortii*, *Brassica oleracea* var. *capitata*, *Apium graveolens*, *Gossypium*, *Curcubita*, *Brassica oleracea* var. *viridis*, legumes, *Lactuca sativa*, *Medicago sativa*, *Lupinus*, *Zea mays*, *Melilotus*, *Sonchus*, *Glycine max*, *Ipomoea batatas*, *Lycopersicon* spp. ...

DISTRIBUTION: Azores (São Miguel), Madeira, Selvagem Grande, Canary Islands, Cape Verde, Portugal, Spain, S-Europe, Canada, USA, widely distributed through the tropics and subtropics (excepting Australasia). Cosmopolitan.

T. ni was only one time recorded to Azores (Sousa, 1991), and it was ignored by Carvalho *et al.* (in press).

REFERENCES: Nyström, 1958, Carvalho, 1981; Bacallado & Pinker, 1982; Stoetzel, 1989; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Vives Moreno, 1994; Carvalho *et al.*, in press.

Genus *THYSANOPLUSIA* ICHNOSÉ, 1973

138. *Thysanoplusia orichalcea* (FABRICIUS, 1775)

SYNONYMY: *Phytometra orichalcea* F.. *Plusia aurifera* HB.. *Chrysodeixis orichalcea* HB.. *Diarchrysis orichalcea* F.. *Plusia orichalcea* F.. *Trichoplusia orichalcea* Fabricius.

COMMON NAMES: Flax caterpillar.

HOST RECORDS: *Crocus sativus*, *Lactuca sativa*, *Ipomoea batatas*, *Solanum tuberosum*, *Solanum melongena*, *Brassica oleracea*, *Brassica napus*, *Pisum sativum*, *Foeniculum*

vulgare, *Cicer arietinum*, *Sinapis alba*, *Salvia officinalis*, *Glycine max*, *Vanilla*, *Vigna*, *Triticum aestivum*, *Triticum durum*, *Coriandrum*, *Linum usitatissimum*, legumes, *Medicago sativa*, *Phaseolus*, *Mentha*, *Allium cepa*, *Brassica oleracea* var. *botrytis*, field crops, ornamental plants.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Porto Santo, Cape Verde, Portugal, Spain, Italy, Switzerland, UK, Morocco, Egypt, Ethiopia, Israel, Kenya, N-, C- and S-Africa, Madagascar, Comoros, Indo-Australian, Sri Lanka, New Caledonia, New Zealand. Tropical-Subtropical.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, Relva and Lagoa, August to November 1996.

REFERENCES: Warren, 1909-1914; Rebel, 1917, 1940; Nyström, 1958; Calle, 1982; Carneiro, 1982; Carvalho, 1981, 1982, 1983, 1984; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vieira & Silva, 1994; Silva *et al.*, 1995a; Vives Moreno, 1994; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

Genus *CTENOPLUSIA* DUFAY, 1970

139. *Ctenoplusia limbirena* (GUENÉE, 1852)

SYNONYMY: *Phytometra limbirena* Gn.. *Ctenoplusia limbirena* Gn.. *Trichoplusia limbirena* Gn.. *Plusia limbirena* Gn..

HOST RECORDS: Vegetables, *Mentha*, *Solanum tuberosum*, *Nicotiana tabacum*, *Sonchus asper*, *Urtica*, ornamental plants.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Canary Islands, Portugal, Spain, Europe, Africa, Asia, Comoros. Ethiopian.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, Relva and Lagoa, August to November 1996; Santa Maria - Aeroporto, September 1996 (D. Pombo, pers. comm.); Faial - Varadouro, 01-19.08.96.

REFERENCES: Draudt, 1938; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1981; 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Vieira, 1995; Carvalho *et al.*, in press.

Genus *CHRYSODEIXIS* HÜBNER, [1821]

140. *Chrysodeixis chalcites* (ESPER, 1789)

SYNONYMY: *Phytometra chalcites* Esp.. *Plusia chalcites* Esp.. *Chrysodeixis chalcites* Esper. *Autographa chalcites* Esper. *Noctua chalcites* Esper.

COMMON NAMES: Golden twin spot moth, cabbage semi-looper.

HOST RECORDS: *Lactuca sativa*, *Cucumis* spp., *Musa paradisiaca*, *Brassica*, *Zea*

mays, *Convolvulus*, *Nicotiana tabacum*, *Nicotiana rustica*, *Gossypium*, Cruciferae, legumes, *Lycopersicum esculentum*, *Lycopersicum hirsutum*, *Lycopersicum pennellii*, *Glycine max*, *Flavera australasica*, *Solanum tuberosum*, *Cynara scolymus*, greenhouse crops.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores), Madeira, Porto Santo, Canary Islands, Cape Verde Islands, Portugal, Spain, S-Europe, Italy, Africa, Mauritius, Comoros, Australasia, India, SE-Asia, Japan, USA. Tropical-Subtropical.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada and Relva, Summer and Autumn 1996.

REFERENCES: Warren, 1909-1914; Rebel, 1940; Calle, 1982; Carneiro, 1982; Carvalho, 1981, 1982, 1983; Lima, 1982; Bacallado & Pinker, 1982; Meyer, 1991b; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Carvalho *et al.*, in press.

Genus *DIACHRYSLIA* HÜBNER, [1821]

141. *Diachrysia chrysitis* (LINNAEUS, 1758) *

SYNONYMY: *Plusia chrysitis* L. In the Azores, probably it was first erroneously identified as *Thysanoplusia orichalcea* (Fabricius, 1775) (Carvalho *et al.*, in press).

COMMON NAMES: Burnished brass.

HOST RECORDS: *Trifolium*, *Urtica dioica*, *Lamium*, *Galeopsis*, *Salvia*.

DISTRIBUTION: Azores (São Jorge), Europe, Portugal, Spain, France Belgium, Corse, UK, Hungary, Italy, Mongolia, Korea, widespread in Palaearctic. Euroasiatic. Palaearctic!

REFERENCES: Marsden *et al.*, 1967; Leraut, 1980; Carvalho, 1982; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vives Moreno, 1994; Carvalho *et al.*, in press.

Genus *AUTOGRAPHHA* HÜBNER, [1821]

142. *Autographa gamma* (LINNAEUS, 1758)

SYNONYMY: *Plusia gamma* L.. *Autographa gamma* (L.).

COMMON NAMES: Silver y moth, beetleworm.

HOST RECORDS: *Cynara scolymus*, *Lactuca sativa*, *Solanum tuberosum*, *Allium cepa*, *Brassica oleracea*, *Pisum sativum*, *Phaseolus vulgaris*, *Beta vulgaris*, *Nicotiana tabacum*, *Pyrus communis*, *Pyrus pyifolia*, *Helianthus annuus*, *Dahlia*, *Chrysanthemum*, *Dianthus*, *Hyssopus officinalis*, *Nepeta*, *Zea mays*, *Trifolium*, *Urtica menbranacea*, *Souchus asper*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Selvagem Grande, Canary Islands, Portugal, Spain, UK, resident in southern Europe, migrating to the rest of Europe as far north as the Arctic Circle. Palaearctic.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, Relva, Lagoa, Furnas and

Lagoa do Congro, Summer-Autumn 1996; Santa Maria - Vila do Porto, 11.11.96; Faial - Varadouro, 01-19.08.96.

REFERENCES: Godman, 1870; South, 1894; Rebel, 1917, 1940; Bacallado & Pinker, 1982; Calle, 1982; Carneiro, 1982; Carvalho, 1981, 1982; Sousa, 1991; Meyer, 1991b; Carter, 1992; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vieira, 1994a; Vieira & Silva, 1994; Vives Moreno, 1994; Silva *et al.*, 1995a; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

Subfamily HELIOTHINAE BOISDUVAL, [1828]

Genus *HELIOTHIS* OCHSENHEIMER, 1816

143. *Heliothis armigera* (HÜBNER, [1808])

SYNONYMY: *Chloridea obsoleta* F.. *Heliothis armiger* HB.. *Chloridea armigera* HB.. *Helicoverpa armigera* HB.. In the Azores, it was first erroneously identified as *Hadena oleracea* by Bensaúde (1927b)!

COMMON NAMES: Corn earworm, tomatoworm, scarce bordered straw, American bollworm.

HOST RECORDS: *Lycopersicum esculentum*, *Capsicum annum*, *Cucumis sativus*, *Rosa*, *Chrysanthemum*, *Zea mays*, *Brassica*, *Lactuca sativa*, legumes, *Medicago sativa*, *Helianthus annuus*, *Solanum tuberosum*, *Sorghum bicolor*, ornamental plants, *Glycine max*, *Nicotiana tabacum*, *Nicotiana rustica*, *Dianthus*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Faial, Graciosa, Flores), Madeira, Porto Santo, Selvagem Grande, Canary Islands, Cape Verde, Europe, S- and C-Europe, Portugal, Spain, Germany, Italy, Israel, Africa, Morocco, Sudan, Ethiopia, Tanzania, India, Japan, China, Australasia region, tropical, subtropical and warmer temperate regions of the Old World. Afrotropical, Palaearctic, Indo-Australian (Carter, 1992); cosmopolitan (Baez, 1993); almost cosmopolitan tropical and subtropical (Calle, 1982).

ADDITIONAL RECORDS: São Miguel - Relva and Lagoa, September-October 1996.

REFERENCES: Warren, 1909-1914; Bensaúde, 1927b; Rebel, 1940; Carthy, 1957; Carvalho, 1981, 1982; Bacallado & Pinker, 1982; Calle, 1982; Carneiro, 1982; Lima, 1982; Sousa, 1991; Meyer, 1991b; Vieira *et al.*, 1990; Vieira & Pintureau, 1991, 1993; Carter, 1992; Baez, 1993; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Sannino *et al.*, 1995; Carvalho *et al.*, in press.

Subfamily IPIMORPHINAE HÜBNER, [1821]

Genus *GALGULA* GUENÉE, 1852 in BOISDUVAL & GUENÉE

144. *Galgula partita* GUENÉE, 1852

SYNONYMY: *Galgula ferruginea* Wlk.. *Calymnia ferruginea* Wlk.. *Hydrebria ferruginea* Wlk..

HOST RECORDS: Poaceae.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge,

Graciosa, Flores, Corvo), Madeira, Canary Islands, Spain. Subtropical.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, Relva, Lagoa, Furnas and Lagoa do Congro, all seasons 1996; Santa Maria - Vila do Porto, 11.11.96; Faial - Varadouro, 01-19.08.96.

REFERENCES: Draudt, 1938; Rebel, 1940; Carvalho, 1981, 1982; Bacallado & Pinker, 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

Genus *SPODOPTERA* GUENÉE, 1852 in BOISDUVAL & GUENÉE

145. *Spodoptera exigua* (HÜBNER, [1808])

SYNONYMY: *Laphygma exigua* Hb.. *Caradrina exigua* Hb..

COMMON NAMES: Beet armyworm, lucerne caterpillar, "rosca".

HOST RECORDS: *Zea mays*, *Beta vulgaris*, *Helianthus annuus*, *Allium*, *Amaranthus spinosus*, asparagus, *Astragalus*, *Brassica turnefortii*, *Gossypium*, *Cucumis sativus*, *Vicia faba*, *Linum usitatissimum*, *Vitis*, *Medicago sativa*, legumes, *Carthamus tinctorius*, *Glycine max*, *Spinacia oleracea*, *Nicotiana tabacum*, *Nicotiana rustica*, *Lycopersicon* spp..

DISTRIBUTION: Azores (São Miguel), Madeira, Selvagem Grande, Canary Islands, C- and S-Europe, Portugal, Spain, Russia, Meadle East, Iraq, India, Asia, Africa, Japan, Thailand, Australasia region, N-America, USA, Canada. Migrant in Europe. Cosmopolitan. REFERENCES: Warren, 1909-1914; Rebel, 1940; Bacallado & Pinker, 1982; Calle, 1982; Carneiro, 1982; Carvalho, 1981, 1982; Stoetzel, 1989; Vieira & Pintureau, 1991, 1993; Meyer, 1991b; Carter, 1992; Bin-Cheng Zhang, 1994; Vives Moreno, 1994; Carvalho *et al.*, in press.

146. *Spodoptera littoralis* (BOISDUVAL, 1833)

SYNONYMY: *Prodenia litura* F.. *Prodenia littoralis* B..

COMMON NAMES: Mediterranean climbing cutworm, Mediterranean brocade, "rosca".

HOST RECORDS: Poliphagous; in Egypt it feeds on about 115 different hostplants (Aziz, pers. communication); field crops, vegetables, legumes, *Gossypium*, *Medicago sativa*, *Zea mays*, *Cucumis melo*, *Phaseolus vulgaris*, *Solanum tuberosum*, *Ipomea batatas*, *Oryza sativa*, *Nicotiana tabacum*, *Beta vulgaris*, *Capsicum annum*, *Leontodon*, *Bromus*, *Rumex*, *Petroselinum crispum*, *Citrus sinensis*, *Brassica oleracea*, *Pelargonium*, *Phytolacca americana*, also ornamental plants.

DISTRIBUTION: Azores (Santa Maria, São Miguel), Madeira, Porto Santo, Canary Islands, Cape Verde, Mediterranean countries, Portugal, Spain, Greece, Italy, Middle East, Israel, Egypt, Africa. Tropical.

ADDITIONAL RECORDS: São Miguel - Ponta Delgada, Relva and Lagoa, Summer-Autumn 1996; Santa Maria - Paúl (larvae and adult), Fontinhas and Miradouro da Pedra Rija (larval instar), 11-12.11.96.

REFERENCES: Rebel, 1940; Nyström, 1958; Carneiro, 1982; Bacallado & Pinker, 1982;

Calle, 1982; Carvalho, 1981, 1982; Meyer, 1991b; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Carvalho *et al.*, in press.

Genus *SESAMIA* GUENÉE, 1852 in BOISDUVAL & GUENÉE

147. *Sesamia nonagrioides* (LEFEBVRE, 1827)

SYNONYMY: *Nonagria sacchari* Woll.. *Sesamia vuteria* Stol..

COMMON NAMES: Rice ear-cutting caterpillar, “bicho da cana”, “broca do milho”.

HOST RECORDS: Polyphagous; *Solanum tuberosum*, *Lycopersicum esculentum*, *Saccharum officinarum*, *Citrus*, *Strelitzia reginae*, *Rhododendron*, *Gladiolus hortulans*, *Typha latifolia*, *Rosa*, *Viola*, *Oryza sativa*, *Avena sativa*, *Zea mays*, *Sorghum bicolor*, *Triticum aestivum*, *Triticum durum*, Poaceae, *Stellaria media*, *Urtica*, *Arundo donax*, *Eluisine coracana*, *Panicum miliaceum*, *Pennisetum*, *Phragmites*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Canary Islands, Cape Verde, S-Europe, Portugal, Spain, Turkey, Iran, N- and E-Africa and parts of W-Africa Subtropical.

S. nonagrioides inhabit in the Azorean archipelago since the beginning of the 16th century.

ADDITIONAL RECORDS: São Miguel - Relva, Lagoa and Ribeira Grande, Summer 1996; Santa Maria - Vila do Porto, 11.11.96; Faial - Castelo Branco (Morro), 01-19.08.96.

REFERENCES: Frutuoso, 1522-91; Rebel, 1940; Costa, 1949; Nyström, 1958; Oliveira & Tavares, 1981; Carneiro, 1982; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1981, 1982; Lima, 1982; Vieira & Pintureau, 1991, 1993; Silva *et al.*, 1994; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

Genus *EUPLEXIA* STEPHENS, 1829

148. *Euplexia lucipara* (LINNAEUS, 1758)

COMMON NAMES: Small angle shades.

HOST RECORDS: Polyphagous; *Latuca sativa*, *Pteridium aquilinum*, *Epilobium*, *Plantago*, *Rumex*, *Salix*, *Betula*.

DISTRIBUTION: Azores (Santa Maria), Europe, Portugal, Spain, France, UK. Holarctic.

REFERENCES: Calle, 1982; Carter & Hargreaves, 1994; Sousa, 1991; Vieira & Pintureau, 1993; Bin-Cheng Zhang, 1994; Vives Moreno, 1994; Carvalho *et al.*, in press.

Genus *PHLOGOPHORA* TREITSCHKE, 1825

149. *Phlogophora meticulosa* (LINNAEUS, 1758)

SYNONYMY: *Brotolomia meticulosa* L..

COMMON NAMES: Angle shades.

HOST RECORDS: Vegetables, *Cynara scolymus*, *Lactuca sativa*, *Allium porrum*, *Solanum tuberosum*, *Datura stramonium*, *Brassica oleracea*, *Spinacea oleracea*, *Vicia*

faba, *Helianthus annuus*, *Fragaria chiloensis*, *Lycopersicon esculentum*, *Beta vulgaris*, *Nicotiana tabacum*, *Vitis vinifera*, *Prunus avium*, *Prunus armeniaca*, *Rubus x loganobaccus*, *Malus domestica*, *Pyrus communis*, *Pyrus pyrifolia*, *Vitis*, *Quercus*, *Anemone*, *Betula*, ornamental plants, *Chrysanthemum*, *Dahlia*, *Dianthus*, *Geranium*, *Helianthus annuus*, *Primula*, *Avena sativa*, *Triticum aestivum*, *Triticum durum*, *Azalia*, *Cyclamen*, *Helianthus*, *Mercurialis*, *Rubus*, *Rumex*, *Stellaria media*, *Urtica*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Canary Islands, Europe, Portugal, Spain, Italy, UK, North Africa. Asiatic-mediterranean.

ADDITIONAL RECORDS: São Miguel - Lagoa (Remédios) and Lagoa do Congro, all seasons excepting Winter 1996; Faial - Varadouro, 01-19.08.96.

REFERENCES: Warren, 1905; Rebel, 1917, 1940; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1981, 1982; Meyer, 1991b; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Silva *et al.*, 1994; Vieira, 1994a; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

150. *Phlogophora furnasi* PINKER, 1971

DISTRIBUTION: Azores (São Miguel, Terceira). Endemic.

ADDITIONAL RECORDS: São Miguel - Lagoa do Congro, Spring-Summer 1996.

REFERENCES: Pinker, 1971; Carvalho, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Carvalho *et al.*, in press.

151. *Phlogophora interrupta* (WARREN, 1905)

SYNONYMY: *Brotolomia periculosa* ab. *interrupta* Warr.. *Chutapha wollastoni interrupta* Warr.. *Chutapha interrupta* Warr.. *Phlogophora wollastoni* Bak. *sensu* Carthy, 1957; *sensu* ? Carvalho, 1982. *Phlogophora interrupta* (Warr.).

HOST RECORDS: Larva feeds on Poaceae.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Flores). Endemic.

ADDITIONAL RECORDS: São Miguel - Lagoa do Congro, Spring-Summer 1996.

REFERENCES: Warren, 1905; Warren, 1909-1914; Rebel, 1917, 1940; Carthy, 1957; Pinker, 1971; Carvalho, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Araújo, 1994; Vieira & Silva, 1994; Carvalho *et al.*, in press.

152. *Phlogophora cabrali* PINKER, 1971

SYNONYMY: *Eumichtis whitei* Rbl. *sensu* Rebel, 1940.

HOST RECORDS: Unknown. It is a typical species of the Azorean natural forest, namely from central and oriental islands groups.

DISTRIBUTION: Azores (São Miguel, Pico, Faial, São Jorge). Meyer (1991b) do not

considerè *P. cabrali* as azorean endemic species. Endemic.

ADDITIONAL RECORDS: São Miguel - Lagoa do Congro, Spring-Summer 1996, it is not very common.

REFERENCES: Rebel, 1940; Pinker, 1971; Carvalho, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Carvalho *et al.*, in press.

Genus *MESAPAMEA* HEINICKE, 1959

153. *Mesapamea storai* (REBEL, 1940)

SYNONYMY: *Hadena storai* Rbl.. *Mesapamea acorina* (Pinker, 1971: *f. strigata*, *f. i-niger*, *f. oculea*, *f. leucostigma*).

HOST RECORDS: *Avena sativa*, *Hordeum vulgare*, *Triticum aestivum*, *Triticum durum*, Poaceae, *Agropyron repens*, *Festuca*, *Holcus*, *Lamium*.

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Flores, Corvo). Meyer (1991b) do not consider *M. storai* as azorean endemic species. Endemic.

ADDITIONAL RECORDS: São Miguel - Lagoa do Congro, Spring-Summer 1996; Faial - Caldeira, 12.08.96.

REFERENCES: Rebel, 1940; Pinker, 1971; Carvalho, 1982; Meyer, 1991b; Silva *et al.*, 1994; Vieira & Silva, 1994; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

Subfamily HADENINAE GUENÉE, 1837

Genus *DICESTRA* HAMPSON, 1905

154. *Dicestra trifolii* (HUFNAGEL, 1766)

COMMON NAMES: Nutmeg, clover cutworm, “traça do trevo”.

HOST RECORDS: Larva polyphagous; *Chenopodium*, *Atriplex*, *Allium cepa*, *Polygonum aviculare*, *Alyssum saxatile*, *Beta vulgaris*, *Licopersicon esculentum*, *Ipomoea batatas*, *Trifolium*, *Vaccinium*, *Empetrum nigrum*.

DISTRIBUTION: Azores (São Miguel), Porto Santo, Canary Islands as *Dicestra trifolii* Hufn. ssp. *cinnamomina* Rothsch., Europe, Portugal, Spain, Italy, Algeria, Tibet, Syria, Turkestan, N-America, USA. Holarctic.

ADDITIONAL RECORDS: São Miguel - Relva, Spring-Autumn 1995 and 1996.

REFERENCES: Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1983; Stoetzel, 1989; Vieira & Pintureau, 1993; Carter & Hargreaves, 1994; Vieira, 1994b; Vieira & Silva, 1994; Vives Moreno, 1994; Carvalho *et al.*, in press.

Genus *GRAPHANIA* HAMPSON, 1905

155. *Graphania granti* (WARREN, 1905)

SYNONYMY: *Melanchnra granti* Warren. *Polia granti* (Warren). *Mamestra granti* (Warren).

DISTRIBUTION: Azores (São Miguel, Terceira, Pico). Endemic.

REFERENCES: Warren, 1905; Rebel, 1940; Pinker, 1971; Carvalho, 1982; Vieira & Pintureau, 1991, 1993; Carvalho *et al.*, in press.

Genus *HADENA* SCHRANK, 1802156. *Hadena bicruris* (HUFNAGEL, 1766)

COMMON NAMES: Lychmis.

HOST RECORDS: *Silene dioica*, *Lychnis*, *Dianthus barbatus*, Caryophyllaceae.

DISTRIBUTION: Azores (São Jorge), widespread in Europe, UK. Euroasiatic.

REFERENCES: Calle, 1982; Meyer, 1991b; Vieira & Pintureau, 1993; Carter & Hargreaves, 1994; Carvalho *et al.*, in press.Genus *MAMESTRA* OCHSENHEIMER, 1816157. *Mamestra oleracea* (LINNAEUS, 1758) *

DISTRIBUTION: Azores: only recorded for São Miguel by Bensaúde (1926c) that was later cited by Carneiro (1982). Species extinct or erroneously identified!

REFERENCES: Bensaúde, 1927c; Carneiro, 1982.

Genus *MYTHIMNA* OCHSENHEIMER, 1816158. *Mythimna loreyi* (DUPONCHEL, 1827)SYNONYMY: *Leucania loreyi* Duponchel. *Acantholeucania loreyi* (Duponchel).

COMMON NAMES: Rice armyworm.

HOST RECORDS: Polyphagous; Poaceae including *Zea mays*, *Oryza sativa*, *Saccharum officinarum*, *Sorghum bicolor*, *Avena sativa*, *Triticum aestivum*, *Triticum durum*, *Pennisetum purpureum*, and many other plants.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Graciosa), Madeira, Porto Santo, Canary Islands, Portugal, Spain, mediterranean countries, W-, E-Africa, meddle East, India, China, Japan, Papua New Guinea. Cosmopolitan with Tropical-Subtropical origin.

ADDITIONAL RECORDS: São Miguel - Relva, Spring-Autumn 1995 and 1996.

REFERENCES: Rebel, 1940; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1981, 1983; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vives Moreno, 1994; Vieira, 1995; Carvalho *et al.*, in press.159. *Mythimna unipuncta* (HAWORTH, 1809)SYNONYMY: *Leucania extranea* Gn.. *Leucania unipuncta* Hw.. *Pseudaletia unipuncta unipuncta* HAW.. *Pseudaletia unipuncta* (Haworth).

COMMON NAMES: Armyworm, "lagarta", "lagarta das pastagens".

HOST RECORDS: Polyphagous; it is the most important pest grasses of the azorean pastures; *Lactuca sativa*, *Solanum tuberosum*, *Ipomea batatas*, *Vicia faba*, *Phaseolus vulgaris*, *Beta vulgaris*, *Nicotiana tabacum*, *Zea mays*, *Triticum aestivum*, *Avena*, *Lolium multiflorum*, *Lolium perene*, *Medicago sativa*, *Lotus* spp., *Trifolium* spp., *Bromus wildenowii*, *Dactylis glomerata*, *Festuca* spp., *Digitaria sanguinalis*, *Panicum repens*. The moth feeds on flowers of *Agapanthus praecox* Willd. ssp. *orientalis* Leighton,

Rhododendron, *Trifolium*, *Oxalis pes-caprae*, *Eriobotrya japonica* (Thunb.), also *Malus* spp. and *Vitis*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa - including Ilhéu da Praia, Flores, Corvo), Madeira, Canary Islands, Portugal, Spain, Italy, France, Greece, N- and S-America, USA, S-Europe, parts of Africa and W-Asia. Migrant in Europe and North America. Holarctic. Cosmopolitan.

It is present in the Azores, particularly in Flores island, since the beginning of the 17th century.

ADDITIONAL RECORDS: São Miguel - all over the island (in pasture grasses), all seasons 1995 and 1996; Santa Maria - all over the island (in pasture grasses), 11-12.11.96; Faial - all over the island (in pasture grasses), 01-19.08.96, 06-07.11.96; Pico - all over the island (in pasture grasses), 07-08.08.96; São Jorge - all over the island (in pasture grasses), 08.08.96.

REFERENCES: Chagas, 1646; Godman, 1870; Warren, 1905; South, 1894; Rebel, 1917, 1940; Carthy, 1957; Bacallado & Pinker, 1982; Anunciada, 1983; Carvalho, 1991, 1982; Carneiro, 1982; Stoetzel, 1989; Tavares, 1989; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Carter, 1992; Araújo, 1994; Vieira, 1994a; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Vieira, 1995; Carvalho *et al.*, in press.

Subfamily NOCTUINAE LATREILLE, 1809

Genus *NOCTUA* LINNAEUS, 1758

160. *Noctua pronuba* (LINNAEUS, 1758)

SYNONYMY: *Agrotis pronuba* Linn., *Triphaena pronuba* L..

COMMON NAMES: Large yellow underwing.

HOST RECORDS: Polyphagous; *Cucurbita*, *Lactuca sativa*, *Solanum tuberosum*, *Allium cepa*, *Datura*, *Citrus lanatus*, *Cucumis sativus*, *Lycopersicon esculentum*, *Beta vulgaris*, *Nicotiana tabacum*, *Vitis*, Poaceae, *Trifolium*, *Passiflora*, *Plantago*, *Convolvulus*, *Chrysanthemum*, *Freesia*, *Viola*, *Gladiolus*, *Primula*, wild plants, shrubs.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Flores, Corvo), Madeira, Porto Santo, Canary Islands, Portugal, Spain, Europe, recently recorded for Canada. Palaearctic, excepting boreal polar region.

ADDITIONAL RECORDS: São Miguel - all over the island, all seasons 1995 and 1996; Faial - Varadouro and Caldeira, 01-19.08.96; Pico - São Mateus, 07-08.08.96.

REFERENCES: Warren, 1905; Rebel, 1940; Carthy, 1957; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1982, 1983; Carneiro, 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Carter, 1992; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vieira, 1984a; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Silva *et al.*, 1995b; Carvalho *et al.*, in press.

161. *Noctua atlantica* (WARREN, 1905)

SYNONYMY: *Agrotis atlantica* Warr.. *Rhyacia atlantica* Warr.. *Triphaena atlantica* Warr..

DISTRIBUTION: Azores (São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo). Endemic.

ADDITIONAL RECORDS: São Miguel - Remédios and Lagoa do Congro, Spring-Summer 1995 and 1996; Faial - Varadouro and Caldeira, 11-12.08.96; Pico - Ribeiras, 07.08.96.

REFERENCES: Warren, 1905, 1909-1914; Rebel, 1917, 1940; Draudt, 1938; Pinker, 1971; Carvalho, 1982; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Vieira & Tavares, 1995; Carvalho *et al.*, in press.

162. *Noctua carvalhoi* (PINKER, 1983)

SYNONYMY: *Sineugraphe carvalhoi* Pinker.

DISTRIBUTION: Azores (Terceira, Pico, Faial, São Jorge). Endemic.

REFERENCES: Pinker, 1983; Meyer, 1991b; Vieira & Pintureau, 1991, 1993; Vieira & Silva, 1994; Carvalho *et al.*, in press.

Genus *XESTIA* HÜBNER, [1821]163. *Xestia c-nigrum* (LINNAEUS, 1758)

SYNONYMY: *Agrotis c-nigrum* L.. *Amathes c-nigrum* L. (Carthy, 1957; Carneiro, 1982).

COMMON NAMES: Spotted cutworm, setaceous hebrew character.

HOST RECORDS: Polyphagous; *Solanum tuberosum*, *Allium cepa*, *Brassica oleracea*, *Brassica napus*, *Lycopersicum esculentum*, *Beta vulgaris*, *Nicotiana tabacum*, *Vitis*, *Zea mays*, *Triticum aestivum*, Poaceae, *Medicago sativa*, *Passiflora*, *Plantago*, *Rumex*, *Sonchus*, *Salix repens*, *Vaccinium*, *Senecio vulgaris*, *Stellaria*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Europe, Portugal, Spain, France, UK, Romania, Turkey, N-Africa, Asia, India, China, Japan, W-Indonesia, N-America, USA. Holarctic.

ADDITIONAL RECORDS: São Miguel - Relva, Lagoa and Lagoa do Congro, all seasons 1995 and 1996; Santa Maria - Paúl, September 1996; Faial - Varadouro, 01-19.08.96; Pico - Ribeiras, 07.08.96.

REFERENCES: Warren, 1905; Rebel, 1917, 1940; Carthy, 1957; Calle, 1982; Carvalho, 1981, 1982; Carneiro, 1982; Sousa, 1991; Meyer, 1991b; Vieira & Pintureau, 1991; Bin-Cheng Zhang, 1994; Carter & Hargreaves, 1994; Vieira, 1994a; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Silva *et al.*, 1995b; Carvalho *et al.*, in press.

Genus *PERIDROMA* HÜBNER [1821]164. *Peridroma saucia* (HÜBNER, [1808])

SYNONYMY: *Agrotis saucia* Hb.. *Agrotis margaritosa*. *Agrotis saucia* ab. *margaritosa*

Hw.. *Lycophotia saucia* Hb.. *Rhyacia saucia* Hbn..

COMMON NAMES: Variegated cutworm, pearly unserwing.

HOST RECORDS: Polyphagous; *Lactuca sativa*, *Allium cepa*, *Datura*, *Brassica oleracea*, *Brassica napus*, *Lycopersicum esculentum*, *Beta vulgaris*, *Vitis*, Poaceae, Leguminosae, *Passiflora*, *Plantago*, *Rumex*, *Sonchus*, *Chrysanthemum*, *Nicotiana*, *Trifolium*, *Medicago sativa*, *Zea mays*, *Melilotus indica*, *Mentha*, *Solanum tuberosum*, *Sorghum bicolor*, *Glycine max*, *Helianthus annuus*, *Nicotiana tabacum*, *Nicotiana rustica*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Ilhéu de Vila Franca do Campo, Terceira, Pico, Faial, São Jorge, Graciosa, Flores, Corvo), Madeira, Porto Santo, Canary Islands, Cape Verde, Portugal, Spain, S-Europe, UK, USA. Cosmopolitan, except for Oriental tropics and Australasia; cosmopolitan; holarctic.

ADDITIONAL RECORDS: São Miguel - Relva, Lagoa and Lagoa do Congro, all seasons 1995 and 1996; Santa Maria - Almagreira, 11.11.96; Faial - Varadouro, 01-19.08.96; Pico - São Mateus, 07.08.96.

REFERENCES: Godman, 1870; South, 1894; Warren, 1905; Rebel, 1917, 1940; Nyström, 1958; Bacallado & Pinker, 1982; Calle, 1982; Carvalho, 1981, 1982, 1983; Meyer, 1991b; Baez, 1993; Vieira & Pintureau, 1991, 1993; Carter, 1992; Bin-Cheng Zhang, 1994; Vieira, 1994a; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Vieira, 1995; Silva *et al.*, 1995b; Carvalho *et al.*, in press.

Genus *AGROTIS* OCHSENHEIMER, 1816

165. *Agrotis ipsilon* (HUFNAGEL, 1766)

COMMON NAMES: Black cutworm, greasy cutworm, "rosca".

HOST RECORDS: Polyphagous; *Cucurbita*, *Lactuca sativa*, *Bambusa*, *Solanum tuberosum*, *Spinacea oleracea*, *Cicer arietinum*, *Allium cepa*, *Daucus carota*, *Brassica oleracea*, *Citrus lanatus*, *Cucumis melo*, *Fragaria chiloensis*, *Brassica napus*, *Brassica rapa*, *Cucumis sativus*, *Glycine max*, *Lycopersicum esculentum*, *Lufa cylindrica*, *Beta vulgaris*, *Gossypium*, *Humulus lupulus*, *Nicotiana tabacum*, *Helianthus annuus*, *Ranunculus*, *Viola*, *Zea mays*, *Triticum aestivum*, *Amaranthus*, *Asclepias*, *Atriplex*, *Chenopodium*, *Barbarea*, *Beinsera gummifera*, *Datura*, *Digitaria*, *Carduris*, *Malva*, *Paspalum*, *Taraxacum*, *Vaccinium*, *Mentha*, *Ricinus*, *Rumex*, *Solanum nigrum*, *Stachys arvensis*, etc..

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, Pico, Faial, São Jorge, Flores), Madeira, Canary Islands, Portugal, Spain, Italy, France, Europe, Asia, Egypt, Africa, Australasia, New Zealand, Africa, India, Taiwan, North and Central America, Mexico, USA. Cosmopolitan.

ADDITIONAL RECORDS: São Miguel - Lagoa and Lagoa do Congro, all seasons excepting Winter 1995 and 1996.

REFERENCES: Bacallado & Pinker, 1982; Carvalho, 1981, 1982; Calle, 1982; Stoetzel, 1989; Vieira *et al.*, 1990; Sousa, 1991; Meyer, 1991b; Baez, 1993; Vieira & Pintureau,

1991, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Silva *et al.*, 1995b; Carvalho *et al.*, in press.

166. *Agrotis segetum* (DENIS & SCHIFFERMULLER, 1775)

SYNONYMY: *Agrotis segetum* S.V.. *Scotia segetum* Schiff.. *Euxoa segetum* S.V..

COMMON NAMES: Common cutworm, turnip moth, "rosca".

HOST RECORDS: Polyphagous; *Cucurbita*, *Lactuca sativa*, *Solanum tuberosum*, *Allium cepa*, *Daucus carota*, *Brassica*, *Citrus lanatus*, *Cucumis melo*, *Cucumis sativus*, *Lycopersicon esculentum*, *Beta vulgaris*, *Thea sinensis*, *Cichorium intybus*, *Nicotiana tabacum*, *Nicotiana glauca*, *Vitis*, *Zea mays*, *Triticum aestivum*, *Trifolium*, *Amaranthus*, *Carduus*, *Chenopodium*, *Malva*, *Bambusa*, *Pastinaca sativa*, *Asparagus*, *Spinacea oleracea*, *Cicer arietinum*, *Citrus lanatus*, *Brassica rapa*, *Glycine max*, *Lufa cylindrica*, *Gossypium*, *Sesamum indicum*, *Thea sinensis*, some young fruit plants, *Epilobium*, *Erodium*, *Leontodon*, *Linaria*, *Paspalum*, *Passiflora*, *Plantago*, *Poligonum*, *Potentilla reptans*, *Primula*, *Rhinantus*, *Rumex*, *Salix*, *Senecio vulgaris*, *Sinapsis*, *Sonchus*, *Stellaria media*.

DISTRIBUTION: Azores (Santa Maria, São Miguel, Terceira, São Jorge, Graciosa, Flores, Corvo), Madeira, Selvagem Grande, Canary Islands, Cape Verde, Portugal, Spain, Italy, France, Europe, Russia, Asia, India, Japan, Africa, Malaysia, Indonesia. Palearctic.

ADDITIONAL RECORDS: São Miguel - Relva, Lagoa and Lagoa do Congro, Summer 1995 and 1996.

REFERENCES: Godman, 1870; South, 1894; Warren, 1905; Rebel, 1917, 1940; Bensaúde, 1926c; Bacallado, 1972; Bacallado & Pinker, 1982; Calle, 1982; Carneiro, 1982; Carvalho, 1982, 1983; Lima, 1982; Sousa, 1991; Vieira & Pintureau, 1991, 1993; Bin-Cheng Zhang, 1994; Vieira & Silva, 1994; Vives Moreno, 1994; Vieira & Tavares, 1995; Silva *et al.*, 1995b; Carvalho *et al.*, in press.

DISCUSSION

The Azorean Lepidoptera fauna has been studied since the middle of the 19th century, but in some islands is still poorly known, because in general the visitors have been mainly interested in some of them, and these have been consequently more explored than others. The visitors surveys have given a notable contribution to the knowledge of Micro and Macrolepidoptera. However, in many cases uncertain or wrong data have been published, what might have been caused by the dispersion of the available data and the associated difficulties in developing a precise knowledge of the already identified species. In fact, from 166 listed species and subspecies, only 149 are confirmed for the whole archipelago. Comparing these data with that published by VIEIRA & PINTUREAU (1993), it was found that the number of confirmed species or subspecies decreased (149 instead

of 161) while the percentage of endemic ones is closely maintained (22.8% instead of 21.5%).

As a result of our short surveys at São Miguel, Santa Maria, Pico, Faial and São Jorge islands, during 1995-1996, 56 confirmed species and subspecies were found, belonging to the families Tineidae (1), Gracillariidae (1), Yponomeutidae (1), Cosmopterigidae (1), Gelechiidae (1), Choreutidae (1), Pyralidae (6), Pieridae (2), Nymphalidae (9), Lycaenidae (1), Geometridae (2), Sphingidae (5), and Noctuidae (25). While two taxa constitute a new record for the Azores (*C. gnidiella* and *T. exsiccata*), six are new records for different islands: São Miguel (*C. gnidiella*), Faial (*T. exsiccata*, *C. aurantiaca* and *C. parietariae*), Pico (*C. parietariae* and *V. atalanta*), Flores (*M. stellatarum*).

The majority of the listed species have a large geographic insular and continental distribution. In relation with the Azorean confirmed species (149), we list 51 species and subspecies from Santa Maria, 94 from São Miguel, 18 from Ilhéu de Vila Franca do Campo, 106 from Terceira, 67 from Pico, 68 from Faial, 52 from São Jorge, 50 from Graciosa, 61 from Flores, and 28 from Corvo. Of these species, about 88 (59.1%), 103 (69.1%), 34 (22.4%), 5 (3.4%) and 87 (58.4%) and 19 (12.8%) are recorded in Portugal mainland, Madeira, Porto Santo, Selvagem Grande, Canary Islands and Cape Verde, respectively.

Concerning both physical features of the Azorean islands, pointed out by BORGES (1992), and the known distribution of Azorean Lepidoptera per island, we found that the total number of species and subspecies is related ($\text{Log}(\text{total species}) = 2.56 + 0.302 * \text{Log}(\text{area})$; $R^2 = 0.81$) and significantly correlated ($r = 0.90$, $p = 0.0003$) with the size of the island. On the other hand, total number of species is not correlated with distance from mainland, altitude or geological age ($p > 0.05$).

Of the 149 species, about 80 species (54%) can be regarded as "autochthonous", of which about 46 (31%) can be considered as native and as well established outdoors in the wild. The majority of non endemic elements are cosmopolitan *s. l.* and palaeartic *s. l.* (about 26.9% and 27%, respectively) while other biogeographical elements are less represented (holarctic 6.7%, tropical/subtropical 8.1%, macaronesian 6.04%, nearctic 1.34%, afrotropical/ethiopian 1.34%).

However, on the whole the Azorean lepidoptera fauna has more affinity with that of the European mainland than with the American continent (CARTHY, 1957); in particular, the endemic species are fundamentally palaeartic (SOUSA, 1985b). Many of the species are widespread by reason of their ability to migrate (e.g. Noctuids species) or are introduced from time to time with imported plant material and can survive only in very narrow conditions, or live mainly in the Azorean farm buildings, like some Pyralid pests of stored products. In particular, the endemic elements will be of greatest interest to the conservationist, for they have their particular habitat preferences and some of these (e.g. *Hipparchia*) are subject to pressures which could lead to a reduction in their numbers or even loss from Azorean fauna.

ADDENDUM

Since the termination of the present work, new information concerning Lepidoptera has come to hand which has to be taken into account mainly to help in the completion of the catalogue of the species inhabiting the studied region.

i) A new record will be added before a superfamily Yponomeutoidea:

Family PHYLLOCNISTIDAE HERRICH-SCHÄFFER, 1857

Genus *PHYLLOCNISTIS* ZELLER, 1848

21. *Phyllocnistis citrella* STANTON, 1856[@]

COMMON NAMES: Citrus leaf miner, "mineira dos citrinos".

HOST RECORDS: Species of *Citrus*, and other Rutaceae.

DISTRIBUTION: Azores (Santa Maria - 1996[@], São Miguel - 1997[@]), Madeira (1995), Portugal (Algarve, 1994), Spain (1993), Sardegna (1994), Oman, Sudan, Saudi Arabia, South East Asia, China, Korea, Japan, Indonesia, Papua New Guinea, Philippines, northern Australia, India. Almost Cosmopolitan with South East Asiatic origin. Recently (in 1996, 1997), the citrus leafminer was accidentally introduced into Azores (Santa Maria) on *Citrus* plants coming from Coimbra (C. Bastos, pers. comm.).

ADDITIONAL RECORDS: Santa Maria: Almagreira and others sites closed to vila do Porto, in November 1996 and during 1997 (C. Bastos, pers. comm.); Almagreira, Feteira, Ribeira do Engenho, 19-21.11.97 (V. Vieira, pers. obs.). São Miguel: Ponta Delgada and Rabo de Peixe, Spring-Autumm 1997 (A. O. Soares, pers. comm.), Ponta Delgada at University of the Azores, 23.11.97 (V. Vieira, pers. obs.).

REFERENCES: Vives Moreno, 1994; Bin Cheng Zhanz, 1994; Carvalho & Aguiar, 1997.

ii) The species *Cosmopterix parietariae* M. Hering (Cosmopterigidae) (larvae feeding on *Parietaria* sp. at Vila do Porto, in Novembro de 1996, V. Vieira, pers. obs.) and "traça oriental do pessegueiro" *Cydia molesta* (Busk) Tortricidae (C. Bastos, pers. comm.) are new records for Santa Maria island.

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Index

A

abruptella 8
 Acalla 18
 acanthodactyla 32
 Acantholeucania 55
 Acherontia 44
 Acleris 18
 acorina 54
 Acrolepia 12
 acuminatella 29
 acuta 15
 adspersella 12
 aequidentella 23
 aequidentellus 23
 aequipennalis 28
 Aglossa 24
 Agonopteryx 14
 Agrius 43
 Agrotis 58
 albatella 25
 Albinia 24
 albipalpella 18
 alfalfiela 18
 aliena 24
 Alucita 17, 32
 Amathes 57
 Amblyptilia 32
 amina 8
 ANACAMPSINAE 18
 Anacampsis 18
 Anagasta 26
 angustea 29
 anthyllidella 18
 Apomyelois 25
 Aproaerema 18
 aquella 26
 archippus 39
 ARCTIIDAE 45
 ARCTIINAE 45
 ARGYNNINAE 36
 Argyresthia 12
 ARGYRESTHIINAE 12
 argyrogrammos 16
 Argyroploce 20
 aristaeus 37

armiger 50
 armigera 50
 asinalis 30
 Asopia 24
 atalanta 34
 atlantica 7, 57
 atlanticella 12
 atomosella 7
 atropos 44
 aurantiaca 11
 aurifera 47
 Autographa 49
 azorensis 33, 40
 azorica 40
 azorina 37
 azorinus 37

B

Bactra 19
 baeticus 39
 barbara 38
 Bedellia 14
 BEDELLIIDAE 14
 bicruris 55
 bipartitella 8
 bipunctiella 9
 bistrigella 11
 bjerkandrella 22
 BLASTOBASIDAE 15
 BLASTOBASINAE 15
 Blastobasis 15
 Boarmia 40
 boeticus 39
 BOMBYCIDAE 43
 BOMBYCOIDEA 43
 Bombyx 43
 Botys 29
 Brachmia 18
 Bradyrrhoa 28
 brassicae 33
 Brotolomia 52

C

c-nigrum 57
 cabrali 53
 Cadra 27

- caecimaculalis 29
 cahireitella 27
 caldeirense 38
 Caloptilia 11
 Calymnia 50
 Campptogramma 41, 42
 caprealis 24
 Caradrina 51
 cardui 35
 Carpocapsa 21
 carvalhoi 57
 casazzar 24
 Catarhoe 42
 CATALINAE 47
 cautella 27
 celerio 45
 cenjonatura 38
 centrostrigaria 42
 cephalonica 23
 ceratoniae 25
 cerealella 17
 cerella 23
 Cerostoma 13
 chalcites 48
 chalcytes 48
 chariclea 33
 Chauliodus 23
 Chiloides 20
 Chloridea 50
 Choerocampa 45
 CHOREUTIDAE 22
 CHOREUTINAE 22
 Choreutis 22
 chrysippus 39
 chrysitis 49
 Chrysodeixis 48
 Chutapha 53
 Cidaria 41
 citrella 61
 citri 12
 Clavigesta 21
 Cleora 40
 coecimaculalis 29
 Coenocalpe 41
 Coleophora 14
 COLEOPHORIDAE 14
 COLIADINAE 33
 Colias 33
 conciliatella 14
 conciliatellus 14
 constanti 14
 convolvuli 43
 conulvuli 43
 Corecra 23
 Coremia 42
 COSMOPTERIGIDAE 16
 COSMOPTERIGINAE 16
 Cosmopterix 16
 costaestrigalis 46
 Cosymbia 40
 CRAMBINAE 27
 crocea 33
 croceus 33
 crocicapitella 8
 Crocidosema 20
 Croesus 33
 cruciferarum 13
 Cryptoblades 24
 Ctenoplusia 48
 cuprealis 24
 custodiata 42
 Cyclophora 40
 Cydia 21
 Cynthia 35
- D**
- Danaida 39
 DANAINAE 39
 Danais 39
 Danaus 39
 Daphnis 44
 daplidice 34
 daucella 23
 daucellus 23
 defectella 27
 Deilephila 44
 Deiopeia 45
 defineatalis 29
 deluccae 7
 Depressaria 14
 DEPRESSARIIDAE 14
 DEPRESSARIINAE 14
 Depressarioides 14
 desertarum 15
 desertella 8
 Diachrysia 49
 Diasemia 31
 Diasemiopsis 31
 Dicestra 54
 DICHOMERINAE 18
 dubiella 9

E

Ectomyeloides 25
 edusa 33
 elutella 26
 Emmelina 32
 Enarmonia 21, 22
 Endothenia 20
 ENNOMINAE 40
 Enomene 27
 Epermenia 23
 EPERMENIIDAE 23
 EPERMENIINAE 23
 EPERMENIOIDEA 23
 Ephestia 26
 Ephippiphora 22
 Epinephele 36
 eplastriana 22
 Eubolia 42
 Euceris 22
 Euchromius 27
 Eucosma 20
 Eudarcia 7
 Eudonia 29
 Eudorea 28, 29
 Eudoria 28
 Eumichtis 53
 Euphyia 42
 Eupithecia 42
 Euplexia 52
 Euplocamus 10
 eurinella 9
 Evergestis 27
 exigua 51
 exsiccata 47
 extranea 55

F

farinalis 24
 fascialis 31
 fayalensis 14
 ferrugalis 30
 ferruginalis 30
 ferruginea 50
 ferruginella 8
 flava 10
 fluviata 41
 fortunata 40
 frequentella 29
 fumiculella 27
 furnasi 53

fuscella 9
 fuscipunctella 9

G

Galgula 50
 Galleria 23
 GALLERIINAE 23
 gamma 49
 Gelechia 16
 GELECHIIDAE 16
 GELECHIINAE 16
 GELECHIOIDEA 14
 gentiana 20
 gentianaeana 20
 gentianana 20
 GEOMETRIDAE 40
 GEOMETROIDEA 40
 GLAPHYRIINAE 27
 GLYPHIPTERIGIDAE 13
 GLYPHIPTERIGINAE 13
 Glyphipterix 13
 Glyphodes 31
 gnidiella 24
 Gnorimoschema 16
 Gracilaria 11
 Gracillaria 10
 GRACILLARIIDAE 11
 GRACILLARIINAE 11
 granti 40
 Graphania 54
 Grapholitha 21, 22
 Gymnoscelis 42

H

Hadena 55
 HADENINAE 54
 Helicoverpa 50
 HELIOTHINAE 50
 Heliothis 50
 Hellula 27
 heparana 19
 Herse 43
 HIEROXESTINAE 10
 Hieroxestis 10
 Hipparchia 37
 Hippotion 45
 Histriosphinx 44
 Homoeosoma 25
 hyalinella 8
 hybridalis 30

Hydrebria 50
 Hydriomena 42
 Hymenia 31
 Hypaena 46
 Hypena 46
 HYPENINAE 46
 Hypenodes 46
 HYPENODINAE 46
 Hyphantidium 26
 Hypolimnas 36

I

imella 8
 inaequata 41
 incertella 15
 infuscatella 18
 interlinealis 29
 interpunctella 26
 interrupta 53
 IPIMORPHINAE 50
 ipsilon 58

J

janira 36
 jorgense 38
 jurtina 36

K

klimeschi 14
 kuehniella 26

L

Lampides 39
 lancealana 19
 lanceolana 19
 Laphygma 51
 Larentia 41
 LARENTIINAE 41
 Laspeyresia 21, 22
 latirupa 42
 Laverna 10
 leplastriana 22
 Leucania 55
 Lichenovora 7
 lignea 15
 ligniferella 10
 ligustri 44
 limbirena 48
 Lita 16
 LITHOCOLLETINAE 11

littoralis 51
 litura 51
 lividalis 46
 lombardica 8
 longistriatella 13
 loreyi 55
 lucipara 52
 Luffia 7
 luscinata 42
 lutensis 28
 luteusalis 28
 LYCAENIDAE 39
 LYCAENOIDEA 39
 Lycophotia 58
 Lyonetia 14
 Lythocolletis 11

M

Macroglossa 45
 MACROGLOSSINAE 44
 Macroglossum 45
 maculata 13
 maculipennis 13
 maderae 22
 maderensis 15, 37, 40
 Mamestra 55
 Maniola 36
 margaritosa 57
 Margarodes 31
 Margaronia 31
 martialis 30
 Mecyna 30
 mediata 42
 MEESSINAE 7
 Megaceraea 15
 Melanchra 54
 melanographa 28
 Melissoblyptes 23
 mellonella 23
 mercurella 29
 Mesapamea 54
 messaniella 11
 meticulosa 52
 micalis 22
 miguelensis 37
 minima 38
 minusculella 13
 missippus 36
 moeniella 7
 molesta 21
 monodactyla 32

monodactylus 32
 Monopis 8
 mori 43
 murariella 9
 Myelois 25
 myricae 12
 MYRMECOZELINAE 7
 Mythimna 55

N

naevana 20
 napi 34
 nephelomima 12
 nerii 44
 nesiotica 25
 ni 47
 Niditinea 9
 nigricantella 8
 nigripunctella 7
 nimbella 25
 Noctua 56
 noctuella 30
 NOCTUIDAE 46
 NOCTUINAE 56
 NOCTUOIDEA 45
 Nomophila 30
 Nonagria 52
 nonagrioides 52
 numeralis 29
 Nycterosea 41
 NYMPHALIDAE 34
 NYMPHALINAE 34
 NYMPHALOIDEA 34

O

obsitalis 46
 obsoleta 50
 obstipata 41
 obstitialis 46
 occidentalis 27, 38
 ocella 27
 ocellus 27
 Oebia 27
 oecophorella 16
 Oegoconia 18
 OEGOCONIINAE 18
 Oeneis 37
 Oenophila 10
 ogilviata 42
 ohshimai 37
 Oidaematophorus 32

Oinophila 10
 oleae 12
 oleellus 12
 oleracea 55
 Oletheutes 20
 OLETHREUTINAE 19
 oliiviella 12
 omoscopa 10
 operculella 16
 Opogona 10
 orichalcea 47
 Orthonama 41
 Oxygrapha 18, 19

P

palaestrica 8
 pallorella 14
 Palpita 31
 panchalcella 10
 Pandemis 19
 Papilio 34
 PAPILIONOIDEA 33
 paranensis 42
 Pararotruda 25
 parietariae 16
 partita 50
 pasquayana 19
 pellionella 9
 Pempelia 27
 penkleriana 22
 periculosa 53
 Peridroma 57
 Peronea 18, 19
 PEXICOPHINAE 17
 Phalaena 13, 21, 23, 24, 31, 32
 Phibalapteryx 42
 Phlogophora 52
 phoenicis 25
 Phoxopterus 20
 Phthorimaea 16
 Phyalapteryx 41
 PHYCITINAE 24
 Phycitodes 25
 PHYLLOCNISTIDAE 61
 Phyllocnistis 61
 Phyllonorycter 12
 Phytometra 47, 48
 picoensis 37
 PIERIDAE 33
 PIERINAE 33
 Pieris 33

- Pionea 29, 30
 Platyedra 17
 Platyptilia 32
 plebejana 20
 Plemyria 42
 plexippus 39
 Plodia 26
 plumipes 10
 Plusia 47, 49
 PLUSIINAE 47
 Plutella 13
 PLUTELLIDAE 13
 PLUTELLINAE 13
 poecilella 9
 Polia 54
 Polyammatus 39
 polygrammata 41, 42
 POLYOMMATINAE 39
 Polyommatus 39
 pomonana 21
 pomonella 21
 Pontia 34
 Porpe 22
 Praeaces 7
 praematura 10
 PRAYDINAE 12
 Prays 12
 pretiosana 22
 Prodenia 51
 pronuba 56
 Protoparce 43
 Pseudaletia 55
 pseudonimbella 25
 pseudonimbellum 25
 PSYCHIDAE 7
 PSYCHINAE 7
 pterodactylus 32
 Pterolonche? 15
 PTEROPHORIDAE 32
 PTEROPHORINAE 32
 PTEROPHOROIDEA 32
 Pterophorus 32
 pulchella 45
 pumilata 42
 puppillaria 40
 putaminana 21
 putaminanna 21
 PYRALIDAE 23
 PYRALINAE 24
 Pyralis 24, 31
 PYRALOIDEA 23
 Pyrameis 34, 35
 Pyrausta 24, 30
 PYRAUSTINAE 29
 Pyroderces 16
- Q**
- quadripuncta 18
- R**
- ramburialis 31
 rapae 34
 rebeli 7
 recurvalis 31
 Recurvaria 17
 Rhodometra 41
 Rhopobota 20
 Rhyacia 57, 58
 rubiginosella 15
 ruffasciata 42
- S**
- sacchari 10, 52
 sacraria 41
 salebrosella 15
 sancta-helenae 10
 SATYRINAE 36
 Satyrus 36, 37
 saucia 57
 schalleriana 18
 Schrankia 46
 Scoparia 28
 scoparia 13
 SCOPARIINAE 28
 scoriella 28
 Scotia 59
 Scotorithra 40
 scriptella 16
 segetum 59
 Selania 22
 semele 37
 semiimplalis 28
 sericaria 26
 sericarium 26
 Sesamia 52
 SESIOIDEA 22
 signatana 20
 Silkworm 43
 Sineugraphe 57
 Sirrotroga 17
 Sitotroga 17

solanella 16
 somnulentella 14
 Spectrobates 25
 SPHINGIDAE 43
 SPHINGINAE 43
 Sphinx 44
 Sphix 43
 splendana 22
 Spodoptera 51
 Spoladea 31
 spretella 9
 Stigmatophora 16
 Steganoptycha 20
 stellatarum 45
 stenota 28
 STERRHINAE 40
 storai 54
 subcervinella 10
 subcinerea 17
 sylvestrana 21
 SYMMOCIDAE 18

T

tapetiella 8
 tapetzella 8
 Tathorhynchus 47
 Tebenna 22
 Tenaga 7
 Tephroclystia 42
 thecophora 7
 Thysanoplusia 47
 Tinaena 9
 Tinea 9
 TINEIDAE 7
 TINEINAE 8
 TINEOIDEA 7
 Tineola 9
 tortix 19, 22
 TORTRICIDAE 18
 TORTRICINAE 18
 TORTRICOIDEA 18
 Trichophaga 8
 Trichoplusia 47
 trifolii 54
 Triphaena 56

U

Udea 29
 undalis 27
 unionalis 31
 unipuncta 55

unipunctana 20
 Utetheisa 45

V

v-flava 10
 v-flavum 10
 Vanessa 34
 variegana 19
 venosana 20
 versicolorella 28
 versurella 14
 vilella 17
 virginiensis 35
 vuteria 52

W

whitei 53
 Witlesia 29
 wollastoni 53

X

xanthographela 15
 Xanthorhoe 41
 Xestia 57
 xylostella 13

Y

YPONOMEUTIDAE 12
 YPONOMEUTOIDEA 12

Z

Zinckenia 31