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RHOPALOCERA AND HETEROCERA (INSECTA, LEPIDOPTERA) OBSERVED IN FOUR ISLANDS OF THE AZORES

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ABSTRACT. A list of butterflies and moths, collected and/or observed by the authors at São Miguel, Pico, Faial and São Jorge, islands of the Azores Archipelago, in 1992 is presented. The material was collected all around the year in São Miguel and during part of the Summer on the other islands. As a result of this survey, 44 confirmed species were found, one of which, for the first time for the Azores and 13 are new records for different islands: Faial (one), Pico (four), São Jorge (six) and São Miguel (two).

RESUMO. Apresenta-se a lista de borboletas e traças capturadas e/ou observadas pelos autores, em 1992, em São Miguel, Pico, Faial e São Jorge, ilhas do Arquipélago dos Açores. A prospecção no campo foi realizada ao longo do ano na ilha de São Miguel, mas apenas durante uma parte do Verão nas outras ilhas. Foram encontradas 44 espécies, sendo uma delas mencionada pela primeira vez para os Açores, enquanto 13 constituem novas citações para diferentes ilhas: Faial (uma), Pico (quatro), São Jorge (seis) e São Miguel (duas).

INTRODUCTION

The Lepidoptera of the Azorean Islands, an archipelago located in the North Atlantic Ocean, consisting of nine islands (Corvo, Flores, Faial, Pico, Graciosa, São Jorge, Terceira, São Miguel and Santa Maria) distributed between 36° 55' and 39° 42' N latitude and between 25° and 31° 30' W longitude, have been studied by many authors, namely: DROUET (1861), GODMAN (1870), WARREN (1905), WALKER (1931), LE CERF (1935), REBEL (1940), CARTHY (1957), MARSDEN & WRIGHT (1967), PINKER (1971, 1983), KUDRNA (1975), STEINIGER (1976), CARNEIRO (1982), ANUNCIADA (1983), OEHMIG (1983), GUIMARÃES (1982), SOUSA (1982, 1985, 1991), CARVALHO (1982, 1984, 1992), GARDNER *et al.* (1988), HIGGINS & RILEY (1988), MEYER (1991a, b), VIEIRA (1989), VIEIRA *et al.* (1990), TAVARES *et al.* (1991), VIEIRA & PINTUREAU (1991, 1993).

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regular fieldwork, and have made excursions to the islands of São Jorge (27 June - 04 July 1992), Faial and Pico (05 - 08 August 1992), in order to survey Lepidoptera species considered as agricultural pests. In the present paper, new records for the archipelago or individual islands are given.

METHODS

During fieldwork at São Miguel, São Jorge, Pico and Faial, several techniques were used to collect Lepidoptera specimens: (i) for the noctuids, an adapted Pensilvania light-trap, with TLD 15 W/05 lamp, fed by a 12 V battery coupled to a transformer; or a sex pheromone trap; (ii) for diurnal moths and butterflies, an entomological net; (iii) for larval instars, the beating tray method and/or the direct observation of different host plants (in pastures, corn-fields, tomato-fields, other vegetable crops and endemic plants).

Lepidoptera families and species are listed and named, in general, according to LERAUT (1980), CARVALHO (1982, 1992) and MEYER (1991a, b). For each species, the place and date of capture is given.

The list presents every species observed or collected, including those that are either new to the Archipelago (marked with two asterisks (**)) or individual islands (marked with one asterisk (*)). Those species that were observed but not collected are marked with #.

LIST OF THE LEPIDOPTERA SPECIES

Family LYONETIIDAE

Opogona sacchari (BOJER, 1856)

São Miguel: Relva and São Vicente Ferreira (Summer -Autumn 1992).

Family GRACILLARIDAE

Phyllonorycter myricae DESCHKA, 1976

*São Jorge: Urzelina (01 July 1992). São Miguel: Ferraria (Spring-Summer 1992).

Family YPONOMEUTIDAE

Argyresthia atlanticella REBEL, 1940

São Jorge: Pico do Areeiro (January 1992). São Miguel: Lombadas and Ferraria (April-December 1992), Salto do Cavalo (01 July 1992), Lagoa do Fogo (July 1992).

Family CHOREUTIDAE

Tebenna bjerkanrella (THUNBERG, 1874)

São Jorge: Canada do Cruzeiro (28 June 1992); Fajã dos Cubres (02 July 1992). Pico: Ribeiras (07 August 1992). São Miguel: Chã da Macela (Summer 1992).

Family PIERIDAE

Colias crocea (GEOFFROY in FOURCROY, 1785)

São Miguel: Relva, Cerrado dos Bezerros, Lagoa do Congro and Ponta Delgada (all seasons 1992). São Jorge: Canada do Cruzeiro (28 June 1992); Cacena, Canada da Cancela and Fajã do Ouvidor (29 June 1992). Faial: Santa Barbara and Varadouro (05, 06, 08 August 1992).

Pieris brassicae azorensis REBEL, 1917

São Miguel: all over the island (all seasons 1992). Pico: Madalena and Lajes (07 August 1992). Faial: Santa Barbara and Varadouro (05, 06, 08 August 1992). São Jorge: Urzelina and Canada do Cruzeiro (28 June 1992); Manadas, Cacena, Fajã dos Vimes, Calheta and Topo (29 June 1992); Canada da Cancela, Norte Pequeno and Fajã do Ouvidor (30 June 1992); Fajã dos Cubres (02 July 1992).

Family LYCAENIDAE

Lampides boeticus (LINNAEUS, 1767)

São Miguel: Relva, Cerrado dos Bezerros, Lagoa do Congro, Ponta Delgada, Ferraria and Sete Cidades (all seasons, except Winter). Faial: Santa Barbara and Varadouro (05, 06, 08 August 1992). São Jorge: Cacena, Fajã dos Vimes and Urzelina (29 June 1992); Fajã dos Cubres (02 July 1992).

Family NYMPHALIDAE

Vanessa atalanta (LINNAEUS, 1758)

*São Jorge: Urzelina and Fajã dos Cubres (02 July 1992). São Miguel: Relva and Ponta Delgada (10 October 1992); Goreana (21 October 1992).

Cynthia cardui (LINNAEUS, 1758)

*São Miguel: Relva and Ponta Delgada (Spring-Summer 1992).

Family SATYRIDAE

Hypparchia miguelensis (LE CERF, 1935)

#São Miguel: Lagoa das Empadadas; Salto do Cavalo - Furnas (July-September).

Family PYRALIDAE

Udea ferrugalis HÜBNER, 1796

São Miguel: all over the island (all seasons 1992). Faial: Santa Barbara and Caldeira (05, 06 August 1992). Pico: Ribeiras (07 August 1992); Piedade (25 August 1992). São Jorge: Urzelina and Toledo (28 June 1992); Cacena, Urze, Piquinho da Urze, Santo Antão and Topo (29 June 1992).

Hymenia recurvalis (FABRICIUS, 1775)

São Miguel: Ponta Delgada (Summer-Autumn 1992).

Palpita unionalis HÜBNER, 1796

São Miguel: Ferraria (Spring-Summer 1992); Remédios (02 September 1992); Relva (30 September 1992). São Jorge: Norte Grande (01 July 1992).

Pyralis farinalis LINNAEUS, 1758

São Miguel: Ribeira Grande and Ponta Delgada (July 1992). São Jorge: Urzelina (28 June 1992).

Family PTEROPHORIDAE

Amblyptilia acanthodactyla HÜBNER (1813)

*São Miguel : Ponta Delgada (06 November 1992).

Family GEOMETRIDAE

Cyclophora azorensis (PROUT, 1920)

São Miguel: Ferraria and Lombadas (July-December 1992).

Rhodometra sacraria (LINNAEUS, 1758)

São Miguel: Relva (01 August 1992).

Gymnoscelis rufifasciata (HAWORTH, 1809)

São Miguel: Ponta Delgada (Julho 1992). *São Jorge: Urzelina (28 June 1992)

Ascotis fortunata azorica (PINKER, 1971)

São Miguel: Lombadas and Ferraria (March-November 1992); Lagoa do Congro (22, 30 April 1992). São Jorge: Fajã dos Vimes (29 June 1992); Urzelina (28 June 1992).

Family SPHINGIDAE

Agrius convolvoli LINNAEUS, 1758

São Miguel: Relva, Remédios and Lagoa do Congro (Summer 1992). *Pico: Piedade (25 September 1992).

Acherontia atropos (LINNAEUS, 1758)

*São Jorge: Urzelina (27 June 1992). São Miguel: Remédios (11 June 1992).

Hippotion celerio (LINNAEUS, 1758)

São Miguel: Lagoa do Congro (April 1992).

Family NOCTUIDAE

Agrotis segetum (DENIS & SCHIFFERMULLER, 1775)

São Miguel: Relva (04 August, 18 August, 23 September 1992); Remédios (18 August, 11 September 1992); Lagoa do Congro (18 August 1992).

Agrotis ipsilon (HUFNAGEL, 1766)

Faial: Horta (05, 06 August 1992). Pico: Ribeiras (07 August 1992). *São Jorge: Velas (27 June 1992), Pico Maria Pires (29 June 1992). São Miguel: Relva (10 December

1992), Lagoa and Lagoa do Congro (pheromone traps - all seasons 1992).

Noctua atlantica (WARREN, 1905)

Faial: Caldeira (05 August 1992). São Jorge: Urzelina (29 June 1992). Pico: Ribeiras (07 August 1992). São Miguel: Relva, Remédios and Lagoa do Congro (Spring-Summer 1992).

Noctua pronuba (LINNAEUS, 1758)

Faial: Caldeira (05 August 1992). São Jorge: Pico Maria Pires (29 June 1992); Velas (27 June 1992). Pico: Ribeiras (07 August 1992); Piedade (25 September 1992). São Miguel: Relva, Remédios and Lagoa do Congro (all seasons 1992).

Peridroma saucia (HÜBNER, 1808)

Pico: Piedade (25 September 1992). São Jorge: Pico Maria Pires (29 June 1992); Velas (27 June 1992). São Miguel: Relva, Remédios and Lagoa do Congro (all seasons 1992).

Xestia c-nigrum (LINNAEUS, 1758)

Faial: Horta (08 August 1992). São Jorge: Velas (27 June 1992); Pico Maria Pires (29 June 1992). Pico: Ribeiras (07 August 1992); Piedade (25 September 1992). São Miguel: Relva, Remédios and Lagoa do Congro (all seasons 1992).

*****Dicestra trifolii*** HUFNAGEL, 1766

***São Miguel**: Relva (pheromone traps, Spring-Autumn 1992).

Heliothis armigera (HÜBNER, 1808)

São Miguel: Relva and Remédios (August-September 1992) and Lagoa (pheromone traps, Spring-Autumn 1992).

Mythimna unipuncta (HAWORTH, 1809)

Faial: Caldeira (05 August 1992); Horta (08 August 1992). São Jorge: Velas (27 June 1992); Pico Maria Pires (29 June 1992). Pico: Ribeiras (07 August 1992); Piedade (25 August 1992). São Miguel: all over the island (all seasons 1992).

Sineugraphe carvalhoi PINKER, 1983

Faial: Horta (05 August 1992). Pico: Ribeiras (07 August 1990).

Phlogophora cabrali PINKER, 1971

São Jorge: Pico Maria Pires (03 July 1992). Pico: Ribeiras (07 August 1992). São Miguel: Lagoa do Congro (March-April 1992).

Phlogophora interrupta (WARREN, 1905)

Faial: Caldeira (05 August 1992). Pico: Ribeiras (07 August 1992). São Miguel: Lagoa do Congro (Spring-Summer 1992).

Phlogophora meticulosa (LINNAEUS, 1758)

São Jorge: Velas (26 June 1992). Pico: Ribeiras (07 August 1992); Piedade (25 September 1992). São Miguel: Remédios (all seasons 1992).

Mesapamea storai (REBEL, 1940)

Faial: Caldeira (05 August 1992). São Jorge: Pico Maria Pires (26 June 1992); Pico

das Caldeirinhas (29 June 1992). Pico: Ribeiras (07 August 1992). São Miguel: Lagoa do Congro (March-April 1992).

Sesamia nonagrioides LEFEBVRE, 1827

*Faial: Caldeira (05 August 1992). *Pico: Ribeiras (07 August 1992); Piedade (25 September 1992). *São Jorge: Urzelina (28 June 1992); Manadas (01 July 1992). São Miguel: Relva and Remédios (August-September 1992).

Spodoptera littoralis (BOISDUVAL, 1833)

São Miguel: Relva and Ginetes (Summer-Autumn 1992).

Galgula partita (GUENEE, 1852)

*Pico: Ribeiras (07 August 1992); Piedade (25 June 1992). Faial: Caldeira (05 August 1992). São Jorge: Vela's (27 June 1992); Pico Maria Pires (29 June 1992). São Miguel: all over of the island (all seasons 1992).

Autographa gamma (LINNAEUS, 1759)

São Jorge: Velas (27 June 1992); Pico Maria Pires (29 June 1992); Piquinho da Urze (01 July 1992). São Miguel: Relva, Remédios and Lagoa do Congro (Summer-Autumn 1992).

Trichoplusia orichalcea (FABRICIUS, 1775)

Faial: Horta (08 August 1992). São Jorge: Pico Maria Pires (29 June 1992). *Pico: Ribeiras (07 August 1992); Piedade (25 September 1992). São Miguel: Relva and Remédios (Summer-Autumn 1992).

Ctenoplusia limbirena (GUENEE, 1852)

Faial: Caldeira (05 August 1992). Pico: Ribeiras (07 August 1992). São Miguel: Relva and Remédios (Summer-Autumn 1992).

Chrysodeixis chalcites (ESPER, 1789)

Pico: Piedade (25 September 1992). São Miguel: Relva and Remédios (Summer-Autumn 1992).

Hypena obsitalis (HÜBNER, 1811-1813)

São Miguel: Lagoa do Congro (15 April 1992); Ponta Delgada (10 September 1992).

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