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Annotated list of the butterflies, skippers, and burnets from Portugal in the collection of the National Natural History Museum (Museum Bocage) in Lisbon, Portugal, prior to the March 1978 fire (Lepidoptera: Papilionoidea, Zygaenoidea)

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Abstract

An annotated list concerning most of the representatives of superfamilies Papilionoidea and Zygaenoidea (Lepidoptera) from Portugal deposited in the National Natural History Museum (Museum Bocage) in Lisbon, Portugal the 28th March 1978, when it was almost completely consumed by the fire, is presented. It is based in a non-published study held by the former co-author when she achieved a scientific probation under the orientation of the fourth co-author (†). The "Querci' Collection", also destroyed by this disaster, is excluded as it has been previously studied and the results published; further, most of the specimens of genera like to *Melitaea* Fabricius, 1807 (Nymphalidae) could not be identified due to inexistence of specialized bibliography. Samples concerning 1272 specimens included in 79 species are reported. The district and circumscription, as well as the UTM 10 X 10 kilometres coordinates of each one of the collecting localities are reported and the present-day conservation status of each one of the species / subspecies in Portugal is referred. For each species, data on the host plants of the caterpillars are provided.
KEY WORDS: Lepidoptera, Papilionoidea, Zygaenoidea, Museum Bocage, 1978 fire, Portugal.

Lista anotada de las mariposas diurnas y zigaenas de Portugal en la colección del Museo Nacional de Historia Natural (Museo Bocage) antes del incendio de 1978 (Lepidoptera: Papilionoidea, Zygaenoidea)

Resumen

Se presenta una lista detallada de la mayoría de los Lepidoptera de Portugal de las superfamilies Papilionoidea y Zygaenoidea que se encontraban en depósito en el Museo Nacional de Historia Natural (Museo Bocage), en Lisboa, Portugal, en el momento del incendio de la noche del 28 marzo de 1978, que destruyó la casi totalidad de esta Institución. Se toma como base el trabajo jamás publicado, presentado por la primera coautora en 1972, como resultado de un periodo de prueba científico orientado por el cuarto coautor (†). Se excluyen los datos referentes a la "Colección Querci", también destruida pero ya antes estudiada en su grande mayoría, los ejemplares de los géneros similares a *Melitaea* Fabricius, 1807 (Nymphalidae), no han podido ser identificados. Se citan los registros de 1.272 ejemplares pertenecientes a 79 especies. Para cada localidad de captura se señala el distrito, el concejo y las coordenadas UTM 10 X 10 kilómetros y se señala el actual estatus de conservación en el país de cada una de las especies / subespecies. Se presentan las plantas nutricias de las orugas para cada especie referida.
PALABRAS CLAVES: Lepidoptera, Papilionoidea, Zygaenoidea, Museo Bocage, incendio 1978, Portugal.

Lista anotada das borboletas diurnas e das ziguenas de Portugal da coleção do Museu Nacional de História Natural (Museu Bocage) antes do incêndio de 1978
(Lepidoptera: Papilionoidea, Zygaenoidea)

Resumo

Apresenta-se uma lista anotada da maioria dos Lepidoptera de Portugal das superfamílias Papilionoidea e Zygaenoidea que se encontravam em depósito no Museu Nacional de História Natural (Museu Bocage), em Lisboa, Portugal, aquando do incêndio que destruiu quase completamente esta instituição na noite de 28 de março de 1978. É baseada num trabalho nunca publicado, apresentado pela primeira coautora sénior em 1972 como resultado de um estágio científico orientado pelo quarto coautor (†). Excluem-se os dados referentes à "Coleção Querci", também destruída, mas já antes estudada; na sua maioria, os espécimes de géneros afins de *Melitaea* Fabricius, 1807 (Nymphalidae), não puderam ser identificados. São referidos os registos de 1272 exemplares pertencentes a 79 espécies. Para cada localidade de captura é referido o distrito, o concelho e as coordenadas UTM 10 X 10 quilómetros, e é assinalada o atual estatuto de conservação em Portugal de cada uma das espécies / subespécies. São apontadas as plantas-hospedeiras das larvas para cada espécie referida.

PALAVRAS CHAVES: Lepidoptera, Papilionoidea, Zygaenoidea, Museu Bocage, Incêndio 1978, Portugal.

Introduction

The collections deposited in the ancient Museu Nacional de História Natural - Zoologia (Museu Bocage - MB), were in their huge majority reduced to ashes the night of the 28th March 1978, when a violent fire almost completely destroyed also its zoological Library, the Geological and Mineralogical Museum, the associated laboratories, the researchers and docents cabinets and most of the areas of the Faculty of Sciences building located in the "Escola Politécnica" (then associated institutions), as those that were occupied by the Chemical, Physics and Mathematics Departments. The rare non-destroyed remains belong to the today Museu Nacional de História Natural e da Ciência, re-structured and re-born in the very same building.

Among the lost zoological collections, are those correspondents to the whole content of the entomological collection - the surviving non-burned insect samples are sporadic. In what the lepidopterans are concerned, all the existing material disappeared, including abundant never studied samples from quite diverse origins (many tropical), one big series from the Brazilian Amazonia (many boxes with some thousands of specimens yet in paper envelopes), all the "Querci Collection" (a completely identified reference collection of the European Lepidopterological fauna) and the never identified whole collection of the butterflies from Portugal. The aim of the present note, held ca half a century ago before the fire by the former co-author, then yet single to provide the result of the study of the lost collection concerning the Portuguese representatives of superfamilies Papilionoidea and Zygaenoidea (the Hesperiidae were, further, treated as the representatives of a superfamily as their own, the Hesperioidea, today considered under the morphologically and genetically points of view, as part of the Papilionoidea - HEIKKILÄ *et al.*, 2012). Some species of Melitaeini (Nymphalidae, Nymphalinae) were excluded, as that time their identification remained impossible due to the lack of specialized bibliography. A total of 1272 specimens belonging to 79 species were studied. A list of the main contributions relatives to cresonimy, collecting localities and host-plants for the Portuguese butterflies, skippers and burnets was also presented concerning the papers published in the first six decades of the 20th century, namely by: FERREIRA-DE-SOUSA (1929a, 1929b); MENDES-DE-AZEVEDO (1902, 1904, 1909, 1912, 1913a, 1913b, 1934); CARNEIRO-MENDES (1950); MONTEIRO (1956, 1957, 1959); NOBRE & BRAGA, (1942); QUERCI (1931, 1932); SEABRA (1939); SILVA-CRUZ (1935); SILVA-CRUZ & GONÇALVES (1943, 1945, 1950); SILVA-CRUZ & WATTISON (1929, 1931); VIELLEDENT (1905); WATTISON (1928); and ZERKOKITZ (1946). More detailed bibliographic lists and caterpillars' hostplants were presented only much later, due to

MARAVALHAS (2003) and to CORLEY (2015), integrating, then, also the more recent publications, held from the 1970 on.

Material and methods

The studied material from Alburitel and Vila Nova de Ourém was collected by J. A. Quartau during 1966 and the samples collected in Carrazede (Paialvo, Tomar) and Cumeira (Juncal, Porto de Mós) were obtained the 1970 by the third co-author. There is no information about the collectors of the great majority of the samples though part of them, dating from the decades around 1950, were certainly gathered by the last co-author, at that time Naturalist of the MB where he was the responsible by the entomological collection. He was, further, the leader of the first Entomological Scientific Training held in the seventies, including those of the two first co-authors.

The original spelling of the capture localities is maintained, according to what was registered in the labels; for each species, the samples will be sequenced by alphabetical order, first the district (the Administrative Province, in capitals), after the Circumscription, the locality and, at last, the collecting date; when there is no collecting date specimens are noted as nd and when sexes were not determined as ex. Otherwise, some species were identified as part of genera today considered as not valid or with today non-accepted identifications, and then the taxonomic corrections will be presented according to MARAVALHAS (2003) and CORLEY (2015). A list of the UTM 10 X 10 kilometres coordinates of the reported localities is presented (Table I). For each species the abundance and occurrence in Portugal is noted according to MARAVALHAS (2003), as well as its conservation status species / subspecies will be marked with * when menaced and with ** when very rare and / or almost extinct in the country. The status of *Euchloe tagis* was revised according to MARABUTO (2008).

Taxonomy

PAPILIONOIDEA
HESPERIIDAE
PYRGINAE

Carcharodus baeticus (Rambur, 1839) **

Material examined: ESTREMADURA, Campos de Alcobaça, 1 ex., VIII-1948, det. sub *Erynni*s.

The Southern Marbled Skipper is extinction-menaced in Portugal. Very localized, this skipper is known in the Lisbon area and in the Algarve, though its occurrence in the east, close to the Spanish border, is possible - mainly in the Baixo Alentejo province. The main menaces relatives to its survival in the country are the fires as well as the environmental degradation due to several other causes. Caterpillars are known on *Marrubium* and *Ballota* (Fabaceae).

Spialia sertorius (Hoffmanseg, 1804)

Material examined: RIBATEJO, Carrazede, Paialvo, 2 ex., VII-1970, det. as *Hesperia sao*.

Red Under-wing Skipper remains common and dispersed along Portugal. Caterpillars feed on *Rubus*, *Sanguisorba* and *Potentilla* (Rosaceae).

Pyrgus onopordi (Rambur, 1839)

Material examined: TRÁS-OS-MONTES and ALTO DOURO, Vidago, 1 ♂, 16-VIII-1878, det. sub *Hesperia*.

A scattered taxon, the Rosy Grizzled Skipper remains frequent in Portugal, where its range is disjoint: it flies along dry barren lands, north from the Mondego valley and in the central and south of the Setúbal Peninsula, (it disappeared, however, from the most urbanized littoral areas due to the modifications induced to the environment and to the inherent changes in the local flora). At the

European level, its populations become progressively more rarefied. Caterpillars occur on species of *Malva* and of *Malope* (Malvacea).

HESPERIINAE

Thymelicus lineola (Ochsenheimer, 1808) *

Material examined: Baixo Alentejo, Telhada, Almodovar, 1 ♂, 29-VI-1932. Ribatejo, Carrazede, Paialvo, 1 ♀, VII-1970. Trás-os-Montes and Alto Douro, Serra do Reboredo, Moncorvo, 2 ♂♂, 27-VI-1942.

The Essex Skipper seems to be moderately menaced, especially due to the environmental degradation, though its presence remains known all along the country. Caterpillars occur on several Gramineae (Poaceae).

Thymelicus acteon (Rottenburg, 1775) *

Material examined: Ribatejo, Carrazede, Paialvo, 3 ♂♂, 4 ♀♀, VII-1970.

The species is moderately menaced in Portugal, where it is far from frequent, though distributed all along the country. The species is vulnerable along most of the European countries from where it is known. Caterpillars occur on Poaceae, mainly on *Bromus*.

PAPILIONIDAE
PARNASSIINAE

Zerynthia rumina (Linnaeus, 1758) *

Material examined: Beira Alta, Pinhel, 1 ex., 1881; Serra do Caramulo, 1 ♂, 2 ♀♀, 1890. Beira Litoral, Arredores de Coimbra, 1 ex., 1880. Estremadura, Lisboa, 1 ♀, 26-V-1879; Tapada, 2 ♂♂, 2 ♀♀, 10-III-188; 2 ♂♂, 27-III-1882; 1 ex., 24-II-1883; 1 ♀, 12-IV-1883. Trás-os-Montes and Alto Douro, Serra do Reboredo, 1 ex., 1890.

The Southern Festoon is moderately menaced in Portugal, particularly due to the progressive degradation of the natural vegetation of the barren lands and of the trail margins. Moreover, the caterpillars monophagy, as they feed exclusively on *Aristolochia longa* L.(Aristolochiaceae).

PAPILIONINAE

Papilio machaon Linnaeus, 1758

Material examined: Algarve, Ribeira de Quarteira, nd., 1 ♀. Alto Alentejo, Évora, 1 ♂, 1 ♀, IV-1955; 1 ex, nd. Beira Alta, Margens do Rio Dão, 1 ex., 1890. Estremadura, Campos de Alcobaça, 1 ♀, 1948; Lisboa, 1 ♂, 1 ♀, 19-V-1879; 1 ♀, II-1967. Ribatejo, Alburitel, 2 ♂♂, 30-VIII-1966; 1 ♂, 02-IX-1966; Vila Nova de Ourém, 2 ♂♂, 03-IX-1966.

The Swallowtail remains common along Portugal, even in uncultivated plots and in gardens around villages and towns. Caterpillars occur on *Ruta* (Rutaceae) and *Foeniculum* and on carrots (Apiaceae).

Iphiclides feisthamelii (Duponchel, 1832)

Material examined: Beira Alta, Margens do Vouga (Beira Alta), 2 ♀♀, 1895, nd., 4 ♂♂, 2 ♀♀, 2 exs.; Serra do Caramulo, nd., 1 ♂. Beira Baixa, Vale da Pereira, 1 ♂, 12-VI-1933; 2 ♂♂, 13-VI-1933. Beira Litoral, Buçaco, nd., 1 ex.; Coimbra, nd., 1 ♂. Estremadura, Sanguinhal, 1 ♂, VIII-1947. Ribatejo, Alburitel, 1 ♂, 02-IX-1966, Carrazede, Paialvo, 1 ♂, VII-1970. Trás-os-Montes and Alto Douro, Bragança, nd., 2 ex., nd. - all det. as *I. podalirius*.

The Southern Swallowtail is yet a common species along the country, easy to spot even in the big towns where it flies all over the year except for the coldest months. However, the strict dependence of

its caterpillars from fruit-trees (originally the blackthorn, today the plum-tree, peach-tree and pear-tree) and the increasing use of pesticides in these trees are potential menaces to its future in Portugal. Caterpillars occur on several Rosaceae, as *Crataegus*, *Prunus spinosa* L. and several cultivated trees as peach *Prunus persica* (L.) Stokes and pear-trees (*Pyrus communis* L.).

PIERIDAE
DISMORPHIINAE

Leptidia sinapis (Linnaeus, 1758)

Material examined: BEIRA LITORAL, Buçaco, 1 ♀, 30-VIII-1878. RIBATEJO, Abrantes, 1 ex., 09-VI-1933. TRÁS-OS-MONTES and ALTO DOURO, Vidago, 1 ♂, 1 ♀, 16-VIII- 1878; 1 ♀, 25-VIII-1878; 1 ♀, 28-VIII-1878; 1 ex., 02-IX-1879.

The Wood White is dispersed, but not menaced in the country. Caterpillars occur on *Lathyrus*, *Lotus* and *Vicia faba* (L.) (Fabaceae).

PIERINAE

Anthocaris cardamines (Linnaeus, 1758)

Material examined: ESTREMADURA, Tapada da Ajuda, 3 ♀♀, 12-IV-1883; 3 ♀♀, 7-III-1887.

The Orange remains known in Portugal from its northern half (northwards from Estremadura Province) and in Monchique; it is more common inland due to the urbanization and intensive agriculture particularly performed in the littoral areas. Caterpillars occur on Brassicaceae as *Cardamine*, *Sinapis* and *Sisymbrium*.

Euchloe tagis (Hübner, [1804]) **

Material examined: ALTO ALENTEJO, Herdade de Font'Alva, Barbacena, 1 ex., 09-VI-1936. ESTREMADURA, Alfeite, 1 ♂, 07-III-1883, 1 ♀, 12-III-1883, 1 ♂, 14-III-1884, 1 ♂, 23-III-1887; 1 ♀, 01-IV-1887, 1 ♂, 17-IV-1887, 1 ♀, 19-IV-1887. MINHO, Gerez, nd., 2 ♂♂ (?).

The first specimens of the Portuguese Dappled White, *E. tagis*, were collected by the German botanist Count of Hoffmanseg, who stayed in Portugal from 1797 to 1799 and performed local studies on the Portuguese flora and fauna as reported by Hübner (in QUERCI, 1931). They were obtained in the "Southern bank of the Tagus River, front of Lisbon, in sandy flowered meadows among vineyards, close to Almada, Cacilhas and Cova da Piedade". These specimens were later sent to Hübner, who in 1804 describes *Papilio tagis*. It is possible to see, so, that in the beginning of the XIX century the species range extended over a wider area at the Tagus southern bank; its presence in the Alto Alentejo (a sample from Barbacena) dates from the thirties of the XX century.

The correction of the identification of the 2 ♂♂ from the Gerez Mountains was rectified by the third co-author before the 1978 fire. The real presence of this species in the northern Portugal could never be confirmed by other captures, though it seems quite improbable that a typically calcicolous and almost monophagy species (caterpillars in Portugal in Brassicaceae - species of *Iberis* and *Biscutella* only) was found in a granitic area, suggesting so, a mislabelled sample.

E. tagis shall be nowadays restricted to the Estremadura' top of the Arrábida Mountain but it is still found in Alto Alentejo and Beira Litoral (MARABUTO, 2008); it seems progressively menaced of extinction in Portugal due to the ongoing reduction of its range, caused mainly by fires.

Euchloe belemia (Esper, 1800)

Material examined: ALTO ALENTEJO, Herdade de Font'Alva, Barbacena, 1 ♂, 09-VI-1936. ESTREMADURA, Queluz, 1 ♂, 25-V-1877; Tapada, 1 ♂, 24-III-1883. MINHO, Gerez, nd., 2 ♂♂.

The Green Striated White is common along Portugal, with the only exception of its northernmost area. Caterpillars occur on *Iberis* and *Sisymbrium* among other Brassicaceae.

Aporia crataegi (Linnaeus, 1758) *

Material examined: MINHO, Serra do Gerez, nd., 2 ex.

The Black Veined White is considered as moderately vulnerable in Portugal due to its reduced range in the country (north and northeast country, and eastern Algarve). Caterpillars feed on *Crataegus*, *Prunus spinosa* L. and several fruit-bearer trees (Rosaceae).

Pieris brassicae (Linnaeus, 1758)

Material examined: ALTO ALENTEJO, Évora, 4 ♀♀, IV-1955. BEIRA LITORAL, Coimbra, 1 ♀, 1878. ESTREMADURA, Tapada da Ajuda, 2 ♂♂, 1887. RIBATEJO, Abrantes, 1 ♂, 09-VI-1933; 1 ♀, 1950. Alburitel, 1 ♂, 28-VIII-1966.

The Large White is one of the commonest butterfly species in Portugal, being often quite abundant particularly where the caterpillars' hostplants grow (especially cultivated cruciferous like the cabbages and turnips (*Brassica*, Brassicaceae) to which they may cause economical damages.

Pieris rapae (Linnaeus, 1758)

Material examined: BAIXO ALENTEJO, Telhada, Almodovar, 1 ♂, 29-VI-1932; Serra d'Aire, Almodovar, 1 ♂, 30-VI-1932; Vascão, 2 ♂♂, 2 ♀♀, 02-VII-1932. BEIRA ALTA, Cabeçudo, Cernache do Bonjardim, 1 ♂, 28-VIII-1963; Fagilde, 1 ♂, 1 ♀, 17-VI-1933; 1 ♀, 17-VII-1933; Margens do Vouga (Beira Alta), 2 ♀♀, 1886; Serra da Estrela, 2 ♂♂, 1 ♀, 1871. BEIRA LITORAL, Coimbra, 1 ♀, 1878; nd., 2 ♂♂, Praia de Mira, margens da Lagoa, 1 ♂, VII-1950. ESTREMADURA, Belém, 1 ♂, VIII-1883; Lisboa, nd., 1 ♀; Peniche, 1 ♀, 06-IX-1941. MINHO, Caldelas, 1 ♂, VIII-1932. Gerez, 1 ♀, 16-IX-1941. RIBATEJO, Abrantes, 1 ♂, 09-VI-1933; Alburitel, 1 ♀, 21-X-1966; Carrazede, Paialvo, 6 ♂♂, 3 ♀♀, VII-1970. TRÁS-OS-MONTES and ALTO DOURO, Serra do Reboredo, Moncorvo, 1 ♂, 27-VI-1942.

Like the previous species, the Small White is very common where caterpillars have abundant cultivated cruciferous, namely again cabbages and turnips. Caterpillars occur on the same hostplants than those of *P. brassicae* (L.) and on Resedaceae, though they seem even polyphagous; it may cause damages to the cultivated plants.

Pieris napi (Linnaeus, 1758)

Material examined: BEIRA ALTA, Beira Alta, no locality, nd., 1 ♂; Margens do Vouga, Beira Alta, 1 ♂, 1890. BEIRA LITORAL, Buçaco, 1 ♂, 22-VIII-1879; 1 ♂, 26-VIII-1879; 1 ♂, 03-VIII-1881, nd., 1 ♀; Arredores de Coimbra, 1 ♂, I-1880, nd.; 1 ♂. ESTREMADURA, Tapada da Ajuda, Lisboa, 1 ♂, 1887. TRÁS-OS-MONTES and ALTO DOURO, Serra do Reboredo, Moncorvo, 1 ♂, 27-VI-1942.

As it was assigned relatively to the two previous species, the Green-veined White is quite common and with the same diet, though it flies exclusively northwards from the Tagus River valley and in the Monchique area, in Algarve. The caterpillars occur on *Brassica*, *Sinapsis* and *Iberis* (Brassicaceae).

Pontia daplidice (Linnaeus, 1758)

Material examined: ALGARVE, Serra de Monchique, 1 ♀, X-1951. ALTO ALENTEJO, Herdade Font'Alva, Barbacena, 1 ♂, 09-VI-1936. BEIRA ALTA, Serra do Caramulo, 1 ♂, VIII-1880; Beira Alta, margens do Vouga, 8 ♂♂, 4 ♀♀, 1885; Beira Alta, no locality, nd., 2 ♀♀. BEIRA LITORAL, Praia de Mira, pinhal, 1 ♂, VII-1950; Id, Praia de Mira, margens da Lagoa, 1 ♀, VII-1950. ESTREMADURA, Alfeite, 1 ♂, VIII-1883; Almarinho, Algueirão, 1 ♀, 17-VI-1938; Belém, 1 ♂, 18-VIII-1883; Berlengas, 1 ♀, VIII-1932; Engenho, Marinha Grande, 1 ♀, VI-1938; Tapada da Ajuda, 3 ♂♂, 2 ♀♀, 1887; Sanguinhal, 1 ♂, 06-VIII-1947. TRÁS-OS-MONTES and ALTO DOURO, Horta da Vilariça, 1 ♀, IX-1940; Vidago, 1 ♂, 14-VIII-1878.

The Bath White is common in Portugal, where it remains known all along the country. Caterpillars are known to occur on *Reseda* (Resedaceae) and on several Brassicaceae genera (*Sinapis*, *Cardamine*, *Sisymbrium*).

COLIADINAE

Colias croceus (Geoffroy, 1785)

Material examined: Algarve, Barranco do Velho, 2 ♂♂, 1 ♀, 01-VII-1932; 1 ♀, X-1932; 1 ♂, X-1952; Km 3 da estrada da Praia do Castelejo, Vila do Bispo, barranco, 1 ♀, 14-X-1958. Alto Alentejo, Évora, 1 ♂, IV-1955. Baixo Alentejo, Vila do Campo, Milfontes, 1 ♀, 06-VIII-1941. Beira Litoral, Buçaco, 1 ♂, 18-VIII-1879; Valega, 1 ♀, 15-VIII-1950 (?). Estremadura, Campos de Alcobaça, 1 ♀, VIII-1948; Queluz, 1 ♂, 25-V-1877; Lagoa Azul, Linhó, 1 ♀, 15-VI-1938. Ribatejo, Abrantes, 1 ♂, 09-VI-1933; Alburitel, 1 ♀, 8-VIII-1966. Trás-os-Montes and Alto Douro, Horta da Vilariça, 1 ♂, 1 ♀, IX-1940.

Common all along Portugal, the Clouded Yellow is known as migratory. Caterpillars are known to occur on several Leguminosae as *Trifolium*, *Medicago* and *Lotus*.

Gonepteryx cleopatra (Linnaeus, 1767) *

Material examined: Baixo Alentejo, Vila Nova de Milfontes, bosque, 3 ♂♂, 07-VII-1941; 1 ♂, 09-VIII-1941; Id, canal, 1 ♂, 1 ♀, 07-VIII-1941. Beira Litoral, Coimbra, nd., 2 ♂♂, 1 ♀. Estremadura, Lagoa Azul, Linhó, 3 ♂♂, 15-VI-1938.

The Cleopatra occurs along the country except for reduced areas in the Minho and Trás-os-Montes. The crescent destruction of the natural biotopes, especially of open areas inside forest, and the increasing eucalyptation seem to be the main factors responsible by its progressive rarefaction and to its recent status of vulnerable. Caterpillars are monophagous on *Rhamnus alaternus* L. (Rhamnaceae).

Gonepteryx rhamni (Linnaeus, 1758)

Material examined: Beira Alta, Margens do Rio Dão, nd., 1 ♂; Serra do Caramulo, margens do Vouga, 1 ♂, 1890. Estremadura, Engenho, Marinha Grande, 1 ♀, VI-1938.

The Brimstone is not uncommon in Portugal, except for Alto and Baixo Alentejo. The monophagous caterpillars occur on the *Frangula alnus* Mill. (Rhamnaceae).

LYCAENIDAE
RIODININAE

Hamearis lucina (Linnaeus, 1758) **

Material examined: Trás-os-Montes and Alto Douro, Serra do Reboredo, nd., 2 ♂♂.

The Duke of Burgundy Fritillary is in danger of extinction in Portugal, being evident the decline of its populations along the remaining Europe where it is known; its range is quite localized in the country (isolated spots in Trás-os-Montes and Minho) being its populations scarce and strictly dependent of the presence of appropriate biotopes. Its caterpillars are monophagous on *Primula* spp. (Primulaceae).

LYCAENINAE

Lycaena phlaeas (Linnaeus, 1761)

Material examined: Algarve, Barranco do Velho, 2 ex., 01-VII-1932. Baixo Alentejo, Aljustrel, 1 ex., 25-VI-1932; 2 ex., 28-VI-1932; Almodovar, mata, 7 ex., 28-VI-1932; Sines, 2 ex., 03-VIII-1966; Vascão, 2 ex., 02-VII-1932; Vila Verde de Ficalho, 2 ex., 13-VII-1963. Beira Alta, 1 ex., Guarda, nd., Beira Alta, no locality, 6 ex., 1886; nd., 3 ex. Beira Litoral, Buçaco, 2 ex., 12-VIII-1878; 1 ex., 1886. Coimbra, nd., 2 ex. Estremadura, Almarinho, Algueirão, 1 ex., 17-VI-1938; Lisboa, nd., 2 ex. Sanguinhal, 1 ex., VIII-1947; Setúbal, 2 ex., 30-V-1958; Serra de Sintra, 1 ex., 03-VI-1970: Tróia, 2 ex., 14-VII-1941. Ribatejo, Cumeira, Juncal, 1 ex., VII-1970. Trás-os-Montes and Alto Douro, Serra do Reboredo, Moncorvo, 6 exs., 27-VI-1942.

The Small Copper is known all along the Palearctic and Nearctic Regions and is quite common in

Portugal. It flies also in the Madeira Island. Caterpillars are known on *Rumex acetosa* L. and *R. acetosella* L. (Polygonaceae).

Lycaena tityrus (Poda, 1761) *

Material examined: BEIRA ALTA, Beira Alta, margens do Vouga, 13 ex., 1886; Beira Alta, no locality, 19 ex., 1886. All the specimens, det. sub *Heodes*.

The Sooty Copper seems to be vulnerable in Portugal, particularly due to the natural biotopes' degradation caused by the progressively rich soils. It flies along most of the Palearctic Region, from the Iberian Peninsula to central Asia, but in Portugal it is restricted to the north and central-north area and to part of the Sado River basin. Caterpillars occur on *Rumex* genera (Polygonaceae).

Lycaena alciphron (Rottenburg, 1775)

Material examined: BEIRA ALTA, Fagilde, 1 ex., 17-VI-1933; Beira Alta, no locality, nd., 1 ex. BEIRA LITORAL, Buçaco, nd., 2 ex. ESTREMADURA, Lisboa, nd., 1 ex. All the specimens det. sub *Heodes*.

The Purple-shot Copper seems not rare in Portugal though most of the populations known in the lower areas are in a quite evident decline due to eucalyptation, intensive agriculture and urbanism. In Portugal, is known in several spots (more frequently, in the higher areas) one in the northern third of the country (except for the extreme north-western), one in the central-east and a third, small population in the Serra de Monchique. Like the preceding species, the caterpillars feed on *Rumex acetosa* L. and *R. acetosella* L. (Polygonaceae).

THECLINAE

Tomares ballus (Fabricius, 1787) **

Material examined: BAIXO ALENTEJO, Beja, nd., 1 ♂, 1 ♀.

The Provence Hairstreak is in extinction risk in Portugal, being today present in the Algarve and in a corridor from Trás-os-Montes to Estremadura and Alto Alentejo (areas with Mediterranean influence). Remaining European populations (Southern France and Spain) are also menaced. The progressive decreasing of its populations is connected with the degradation of the natural biotopes. Caterpillars occur, associated with ants, on *Astragalus lusitanicus* Lam., *Trifolium cherlri* L., *Lotus hispidus* Desf. ex DC in Lam & DC and *Onobrychis* spp. and other Fabaceae.

Laeosopis roboris (Esper, 1793)

Material examined: BEIRA BAIXA, Vale da Pereira, 2 ex., 13-VI-1933. BEIRA LITORAL, Coimbra, nd., 2 ex. RIBATEJO, Carrazede, Paialvo, VII-1970, 5 ex. PROV. ?: No locality, 1 ♀, 18-V-1970 (?).

The Spanish Purple Hairstreak is a common species in Portugal, absent only from its most north-western littoral area, north-west from the Mondego River. Its caterpillars are associated *Fraxinus angustifolia* Vahl. (Oleaceae), but not assisted by ants. Its range extends to the south-western France.

One isolated female labelled *Agrodiaetus damon* ([Dennis & Schiffermüller], 1775]) "Lisboa ?" (Estremadura), 18-V-1870 is considered to belong, really, to the present species; obtained by Cândido Mendes, it was assigned by SILVA-CRUZ & GONÇALVES (1950) as *Lycaena damon*. *Agrodiaetus damon* is known from Central Europe; it is discontinuously reported from the Iberian Peninsula till the Madrid latitude and clearly eastwards from this town (ARCE-CRESPO *et al*., 2004, reports Cuenca), being typical from steppes, exposed slopes and dry meadows. We are quite sure that the identification of this Portuguese sample, do not correspond to reality. Indeed, all the specimens a posteriori studied and eventually similar were correctly identified as *Laesopis roboris*.

Callophrys rubi (Linnaeus, 1758)

Material examined: BEIRA LITORAL, Coimbra, nd., 1 ex. ESTREMADURA, Alfeite, nd., 1 ex. RIBATEJO, Azambuja, nd., 1 ex. PROV. ?: Caldas, nd., 1 ex.

The Green Hairstreak is common and dispersed all along the country. The caterpillars are

polyphagous and known to occur on Fabaceae, among others, on *Echinospartum*, *Dorycnium*, *Medicago*, *Genista* and *Cytisus* genera.

Satyrium esculi (Hübner, [1804])

Material examined: Beira Alta, Beira Alta, margens do Vouga, 2 ex., 1890; Beira Alta, no locality, 2 ex., 03-VI-1960. Beira Litoral, Coimbra, nd., 3 ex. Luso, 1 ex., 02-VII-1879; nd., 1 ex.; Praia de Mira, margens da Lagoa, 1 ex., VII-1950. Estremadura, Alfeite, VI-1883, 2 ex.; Almarinho, Algueirão, 2 ex., 17-VI-1938; Serra de Sintra, nd., 1 ex. Ribatejo, Abrantes, 1 ex., 09-VI-1933.

The False Ilex Hairstreak, dispersed along the continental Portugal, seems represented by stable populations which remain relatively abundant despite the impact of the forest fires and the implementation of monocultures. Caterpillars, assisted by *Camponotus* ants, occur on *Quercus coccifera* L. and *Q. rotundifolia* Lam. (Fagaceae).

POLYOMMATINAE

Lampides boeticus (Linnaeus, 1767)

Material examined: Beira Alta, Beira Alta, margens do Vouga, 2 ♂♂, 1 ♀, 1890; Beira Alta, no locality, nd., 1 ♂, 2 ♀♀. Beira Litoral, Coimbra, nd., 1 ♂; Valega, 1 ♂, 15-VI-1850 (?). Estremadura, Cumeira, Juncal, 1 ♀, VII-1970. Ribatejo, Carrazede, Paialvo, 2 ♂♂, 2 ♀♀, VII-1970.

The Pea Blue is eventually the most cosmopolitan among the species known to fly in Portugal. It is polyvoltine (probably with three annual generations) opposite to the condition in many other Lycaenidae. The species is common and quite dispersed along the country. The caterpillars are strongly polyphagous; accompanied by ants, they occur inside pods of several Fabaceae, namely on *Adenocarpus*, *Colutea*, *Pisum*, *Lupinus* and *Genista* genera and they may attack pea plantations if not treated.

Leptotes pirithous (Linnaeus, 1767)

Material examined: Algarve, Barranco do Velho, 4 ♂♂, 01-VII-1932; Ribeira de Quarteira, nd., 2 ♂♂; Trajecto da casa Pinhal do Corvo, 1 ♂, 1 ♀, IX-1966. Baixo Alentejo, Vascão, 1 ♂, 02-VII-1932. Beira Alta, Beira Alta, margens do Vouga, 3 ♀♀, 1890; Serra da Estrela, nd., 1 ♂. Beira Alta, no locality, nd., 1 ♂, 1 ♀. Beira Baixa, Cabeçudo, Cernache de Bonjardim, 1 ♀, 28-VIII-1963. Beira Litoral, Coimbra, nd., 2 ♂♂, 1 ♀. Luso, 1 ♂, 09-VIII-1878. Estremadura, Alfeite, 1 ♂, IX-1878; Lisboa, nd., 2 ♂♂; Cumeira, Juncal, 1 ♀, VII-1970. Trás-os-Montes and Alto Douro, Horta da Vilariça, 1 ♂, IX-1940. All identified sub *Syntarucus*.

The Common Zebra Blue is a polyvoltine species very common and widely distributed along Portugal, where it is not rare even in urban parks and gardens in the big towns. Caterpillars occur on several Fabaceae like *Astragalus*, *Medicago*, *Melilotus* and *Ulex* genera.

Zizeeria knisna (Trimen, 1862) **

Material examined: Algarve, Trajecto da casa Pinhal do Corvo, 1 ex., IX-1966. Estremadura, Lisboa, 1 ex., VIII-1883. Ribatejo, Carrazede, Paialvo, 1 ex., VII-1970.

Despite its huge range in the tropical savanna of the Old World, the African Grass Blue is uncommon in Portugal, where its presence depends of the existence of damp areas and valleys of unpolluted brooks. Caterpillars feed on *Trifolium*, *Medicago* (Fabaceae) and *Oxalis* (Oxalidaceae).

Cupido minimus (Fuessly, 1775) **

Material examined: Trás-os-Montes and Alto Douro, Bragança, nd., 1 ex.

The Little Blue is quite rare in Portugal being irregularly distributed and localized (area of Lisbon, parts of the Estrela Mountain and parts of the Gerez and Montesinho), but its cartography needs to be completed. Its progressive rarity shall be the result of the forest fires, of the decline of the forests and of

the expansion of agriculture. Caterpillars occur inside the flowers and very young pods of *Anthylis vulneraria* L. and *Astragalus* spp. (Fabaceae).

Celastrina argiolus (Linnaeus, 1759)

Material examined: Baixo Alentejo, Vascão, 1 ♀, 02-VII-1932. Beira Alta, Beira Alta, margens do Vouga, 7 ♂♂, 3 ♀♀, 1890; Beira Alta, no locality, 2 ♂♂, 1886; nd., 2 ♂♂. Beira Litoral, Coimbra, nd., 2 ♂♂, 1 ♀. Estremadura, Alfeite, 1 ♂, VIII-1877. Trás-os-Montes and Alto Douro, Horta da Vilariça, 1 ♂, IX-1940; Serra do Reboredo, Moncorvo, 1 ♂, 27-VI-1942.

The Holly Blue is common along the country, though it seems to be progressively less frequent in many areas, especially due to the environmental degradation (fires, eucalyptation, pollution, agriculture expansion). Caterpillars are quite polyphagous being known especially on *Hedera* (Hederaceae), *Arctium* (Astraceae), *Ilex* (Aquifoliaceae) and *Genista* (Fabaceae).

Glaucopsyche melanops (Boisduval, 1828)

Material examined: Estremadura, Caneças, 1 ♂, 31-V-1870. Trás-os-Montes and Alto Douro, Bragança, nd., 1 ♂; Serra do Reboredo, nd., 1 ♂.

The Black-eyed Blue flies all along Portugal and despite its only annual generation and even considering the progressive urbanization and the environmental degradation is still relatively frequent, especially in the north and central country. The caterpillars, accompanied by ants, occur on several Fabaceae, namely *Dorycnium*, *Cytisus*, *Lotus*, *Ulex* and *Trifolium* genera.

Plebejus argus (Linnaeus, 1758)

Material examined: Beira Alta, Beira Alta, margens do Vouga, 10 ♂♂, 1890; Serra do Caramulo, nd., 1 ♂; Serra da Estrela, nd., 1 ♂; Beira Alta, no locality, 1 ♂, 1886; Id, nd., 5 ♂♂, 3 ♀♀. Beira Litoral, Luso, 2 ♂♂, 26-VII-1878; Buçaco, nd., 1 ♂, 1 ♀. Estremadura, Lisboa, nd., 6 ♂♂, 5 ♀♀.

Common mainly northwards from the Tagus River basin, the Silver-studded Blue is known also in the Algarve, where it is however, clearly less abundant. Caterpillars are polyphagous and occur on association with ants on quite diverse hostplants, like *Cistus libanotis* (Cistaceae), *Halimium*, *Trifolium*, *Astragalus*, *Ulex* and *Coronilla* genera (Fabaceae).

Aricia cramera (Eschscholtz, 1775)

Material examined: Algarve, Barranco do Velho, 1 ex., 01-VII-1932. Baixo Alentejo, Almodovar, Ribeira de Oeiras, Rocha da Moura, 1 ex., 27-VI-1932; Almodovar, mata, 1 ex., 28-VI-1932; Sines, 1 ex., 03-VIII-1966; Vascão, 4 ex., 02-VII-1932; Vila Verde de Ficalho, 1 ex., 13-VII-1963. Beira Alta, Oliveira de Frades, nd., 2 ex.; Beira Alta, no locality, 6 ex., 1886; nd., 3 ex. Estremadura, Belém, VIII-1883, 1 ex. Cumeira, Juncal, 2 ex., VII-1970; Serra de Sintra, 1 ex., 03-VI-1960. Minho, Vizela, nd., 2 ex. Ribatejo, Carrazede, Paialvo, 4 ex., VII-1970. Trás-os-Montes and Alto Douro, Horta da Vilariça, 1 ex., IX-1940.

Common in several areas of Portugal, the Spanish Brown Argus flies from north to south of the country. It is, however, more and more affected by fires, urbanization and pollution. Caterpillars occur, among other hostplants, on *Helianthemum* (Cistaceae), *Erodium* and *Geranium* genera (Geraniaceae).

Polyommatus icarus (Rottenburg, 1775)

Material examined: Algarve, Barranco do Velho, 7 ♂♂, 2 ♀♀, 01-VII-1932; Ribeira de Quarteira, nd., 1 ♀; Vila Real de Santo António, dunes, 1 ♀, 30-V-1934. Alto Alentejo, Évora, nd., 2 ♂♂. Baixo Alentejo, Serra d'Aire, Almodovar, 1 ♂, 30-VI-1932. Beira Alta, Beira Alta, margens do Vouga, 15 ♂♂, 1890; Serra da Estrela, nd., 1 ♂. Beira Litoral, Buçaco, 1 ♂, 30-VIII-1879. Estremadura, Almarinho, Algueirão, 1 ♀, 17-VI-1938; Cumeira, Juncal, 2 ♂♂, VII-1970; Lisboa, nd., 2 ♂♂. Ribatejo, Alburitel, 1 ♂, 2 ♀♀, 02-IX-1966; Carrazede, Paialvo, 13 ♂♂, 6 ♀♀, VII-1970.

The Common Blue is still relatively common along the country. Caterpillars occur on several Fabaceae, as *Trifolium*, *Lotus*, *Medicago* and *Ononis* genera.

Polyommatus bellargus (Rottenburg, 1775) *

Material examined: Beira Alta, Beira Alta, margens do Vouga, 1 ♂, 1890; Margens do Vouga, nd., 1 ♂. Estremadura, Campos de Alcobaça, 1 ♂, VIII-1948. Ribatejo, Azambuja, nd., 2 ♂♂. All the samples were identified under *Lysandra*.

Not so widely distributed along Portugal like the previous one and quite dispersed (it lacks in the north-western and north-eastern country and in the western portion of Baixo Alentejo), the Adonis Blue is moderately menaced, particularly due to the monocultures increasing, to the implementation of the intensive agriculture and to the subsequent use of pesticides. Caterpillars occur on *Trifolium*, *Hippocrepis* and *Coronilla* genera (Fabaceae).

NYMPHALIDAE
SATYRINAE

Pararge aegeria (Linnaeus, 1758)

Material examined: Baixo Alentejo, Telhada, Almodovar, 1 ♂, 29-VI-1932; Vila Nova de Milfontes, canal, 2 ♂♂, 1 ♀, 07-VIII-1941. Beira Alta, Caldelas, 1 ♂, VIII-1932; Pinhel, 1 ♂, 1881; Beira Alta, no locality, nd., 1 ♂. Beira Litoral, Coimbra, nd., 1 ♂. Estremadura, Cumeira, Juncal, 7 ♂♂, VII-1970. Ribatejo, Alburitel, 1 ♀, 02-IX-1966. Trás-os-Montes and Alto Douro, Horta da Vilariça, 1 ♂, IX-1940.

The Speckled Wood is very abundant and dispersed along the country; it flies in the continent Portugal and in the marginal low areas of the Madeira Island. Caterpillars occur on Poaceae, as those of genera *Agropyrum*, *Piptatherum*, *Poa* and *Triticum*.

Lasiommata megera (Linnaeus, 1767)

Material examined: Algarve, Monchique, Picota, 3 ♂♂, 05-X-1951. Baixo Alentejo, Vascão, 1 ♀, 02-VII-1932. Beira Alta, Serra da Estrela, 1 ♂, 1881; nd., 1 ♂. Beira Litoral, Coimbra, nd., 1 ex. Minho, Gerez, 1 ♂, 16-X-1941. Ribatejo, Carrazede, Paialvo, 8 ♂♂, VII-1970.

The Wall Brown is common in Portugal, where it flies all along the country. Caterpillars are known on several genera of Poaceae, like *Aegilops*, *Brachipodium*, *Dactylis*, *Poa* and *Stipa*.

Lasiommata maera (Linnaeus, 1758)

Material examined: Beira Alta, Pinhel, 1 ♂, 1881; Beira Alta, no locality, nd., 4 ♂♂, 2 ♀♀. Estremadura, Lisboa, nd., 1 ♂, 1 ♀.

Tough with a somewhat more restrict range in Portugal than the previous species (it flies today in the northernmost third of the territory and in the Lisbon-Setúbal- Grândola area), the Large Wall Brown in not menaced. Like all the representatives of the subfamily, the caterpillars feed on gramineae, being known to occur, among others, on species of *Glyceria*, *Festuca*, *Lolium*, *Poa* and *Triticum*.

Coenonympha arcania (Linnaeus, 1761) *

Material examined: Beira Alta, Beira Alta, margens do Vouga, 7 ♂♂, 1886.

The Pearly Heath is vulnerable in Portugal particularly due to the environmental degradation; its range in the country is restricted to the northern area. Its reported capture at the Vouga riverbanks will correspond to its southernmost limit in the country. Caterpillars occur on *Melica* and *Poa*.

Coenonympha dorus (Esper, 1782)

Material examined: Algarve, Barranco do Velho, 1 ♂, 1 ♀, 01-VII-1932. Beira Alta, Beira Alta, margens do Vouga, 2 ♂♂, 1 ♀, 1886; Serra da Estrela, 1 ♂, 1881; Beira Alta, no locality, nd., 1 ♀. Beira Litoral, Coimbra, nd., 1 ♂, 1 ♀. Estremadura, Alfeite, 1 ♂, VI-1889; Lisboa, nd., 1 ♂.

The Dusky Heath is abundant in the north and central country is not so common in the south, and is not menaced in Portugal, though remains stressed because of the implementation of the monocultures and as result of the forest fires, particularly due to the destruction of the xerothermic bushes and

meadows. Caterpillar's hostplants are herbs of genera *Agrotis*, *Brachypodium*, *Festuca*, *Carex* and *Stipa*.

Coenonympha pamphilus (Linnaeus, 1758)

Material examined: ALGARVE, Barranco do Velho, 1 ex., 01-VII-1932. BAIXO ALENTEJO, Almodovar, mata, 1 ♀, 28-VI-1932, 1 ex.; Vascão, 1 ex., 02-VII-1932. BEIRA ALTA, Serra do Caramulo, 3 ex., 1885; Serra da Estrela, nd., 1 ex.; Beira Alta, margens do Vouga, 37 ex., 1886; 1890, 1 ex.; Beira Alta, no locality, nd., 5 ex. Fagilde, 1 ex., 16-VI-1933; Guarda, nd., 1 ex. BEIRA BAIXA, Vale da Pereira, 1 ex., 12-VI-1933. BEIRA LITORAL, Coimbra, nd., 2 ex. RIBATEJO, Carrazede, Paialvo, VII-1970, 2 ex.

As it happens with the previous species, the Small Heath is dispersed by the country along areas with herbaceous xerothermic vegetation; however, the ecological pressure of the monocultures and the forest fires contribute to its clear rarefaction or its extinction in several areas. Caterpillars are reported to occur on *Poa annua* L., *Nardus stricta* L. and *Cynosurus cristatus* L. (Poaceae).

Pyronia tithonus (Linnaeus, 1767)

Material examined: ALGARVE, Barranco do Velho, 3 ♂♂, 01-VII-1932. BAIXO ALENTEJO, Vila Nova de Milfontes, bosque, 1 ♂, 07-VII-1941. BEIRA ALTA, Serra da Estrela, 1 ♂, 1 ♀, 1881; Id, nd., 1 ♀; Beira Alta, margens do Vouga, 16 ♂♂, 1♀, 1886; Beira Alta, no locality, nd., 3 ♂♂. BEIRA BAIXA, Cabeçudo, Cernache de Bonjardim, 1 ♂, 1 ♀, 28-VIII-1963. BEIRA LITORAL, Coimbra, nd., 1 ♀. ESTREMADURA, Cumeira, Juncal, 5 ♂♂, VII-1970. RIBATEJO, Carrazede, Paialvo, 1 ♂, VII-1970. TRÁS-OS-MONTES and ALTO DOURO, Serra do Reboredo, Moncorvo, 1 ♂, 25-VI-1942.

The Spanish Gatekeeper or Hedge Brown is common especially northwards from the Tagus basin, and is usually more visible along blackberry thickets and on the dry and not very close forest margins. It is not yet vulnerable though the forest monocultures, particularly the eucalyptation, clearly contribute to the decline of its populations. Caterpillars occur on several Gramineae species of *Brachypodium*, *Festuca*, *Milium* and *Poa* genera.

Pyronia cecilia (Vallantin, 1894)

Material examined: ALGARVE, Barranco do Velho, 3 ♂♂, 01-VII-1932; Chão Cavalar, 1 ♂, 2 ♀♀, 02-IX-1966. ALTO ALENTEJO, Herdade de Font'Alva, Barbacena, 2 ♂♂, 09-VI-1936. BAIXO ALENTEJO, Beja, nd., 2 ♀♀; Lopitos, Moura, 1 ♂, 11-VII-1963; Vila Nova de Milfontes, farol, 1 ♀, 08-VII-1941. BEIRA ALTA, Serra da Estrela, 1 ♀, 1881; Id, nd., 1 ♂; Beira Alta, margens do Vouga, 1 ♂, 1886; Beira Alta, no locality, nd., 1 ♂. BEIRA BAIXA, Vale da Pereira, 1 ♂, 12-VI-1933. BEIRA LITORAL, Coimbra, nd., 1 ♀. DOURO LITORAL, Arouca, 1 ♀, 01-IX-1967. ESTREMADURA, Bombarral, Estrada das Barreiras, 2 ♀♀, 05-VIII-1947; Campos de Alcobaça, 1 ♀, VIII-1948; Cumeira, Juncal, 1 ♂, VII-1970. RIBATEJO, Alburitel, 3 ♀♀, 28-VIII-1966; Carrazede, Paialvo, 9 ♂♂, 4 ♀♀, VII-1970. PROV. ?: No locality, 1 ♂, 1 ♀, 21-VI-1970.

The Southern Gatekeeper is common and widely distributed along Portugal. Caterpillars are known on *Brachypodium*, *Deschampsia* and may occur also on wheat (*Triticum*).

Pyronia bathseba (Fabricius, 1793)

Material examined: BEIRA LITORAL, Coimbra, 1 ♂, 1878; nd., 2 ♀♀. ESTREMADURA, Tróia, 2 ♀♀, 14-VII-1941; 1 ♀, 21-VI-1970. TRÁS-OS-MONTES and ALTO DOURO, Horta da Vilariça, 1 ♂, 1 ♀, IX-1940.

This Gatekeeper, with a Mediterranean range, seems to occur without problems along most of the country (it lacks in the north-western littoral); it is, however, restricted in Europe to Portugal, Spain and southern France. Caterpillars occur on several Poaceae.

Maniola jurtina (Linnaeus, 1758)

Material examined: ALGARVE, Chão Cavalar, 2 ♀♀, 02-IX-1966. ALTO ALENTEJO, Herdade de

Font'Alva, 8 ♂♂, 2 ♀♀, 09-VI-1936. BAIXO ALENTEJO, Almodôvar, 1 ♂, 28-VI-1932; Telhada, Almodôvar, 1 ♀, 29-VI-1932; Vila Verde de Ficalho, 1 ♂, 13-VII-1963. BEIRA ALTA, Fagilde, 1 ♂, 16-VI-1933; Serra do Caramulo, margens do Vouga, 2 ♂♂, 1890; Serra da Estrela, 2 ♂♂, 1881; nd., 1 ♂; Beira Alta, margens do Vouga, 4 ♂♂, 3 ♀♀, 1886; Beira Alta, no locality, nd., 1 ♀. BEIRA BAIXA, Vale da Pereira, 1 ♂, 13-VI-1933. BEIRA LITORAL, Coimbra, 1 ♀, 1878; nd., 4 ♀♀. ESTREMADURA, Engenho, Marinha Grande, 1 ♀, VI-1938; Lagoa Azul, 1 ♀, Linhó, 15-VI-1938; 1 ♀, 16-VI-1938; Ribeira da Marateca, 1 ♀, 03-VI-1964. RIBATEJO, Abrantes, 1 ♂, 09-VI-1933; Alburitel, 1 ♀, 28-VIII-1966; 1 ♀, 02-IX-1966; Carrazede, Paialvo, 1 ♂, 21-VI-1970; 2 ♂♂, 1 ♀, VII-1970. TRÁS-OS-MONTES and ALTO DOURO, Horta da Vilariça, 1 ♂, IX-1940; Serra de Bornes, 1 ♂, 07-VIII-1961; Serra do Reboredo, Moncorvo, 2 ♂♂, 1 ♀, 27-VI-1942. PROV. ?: Santa Clara, 2 ♀♀, 22-V-1971; Id., 2 ♀♀, 26-V-1971.

The Meadow Brown is common along the country, even in peri-urban areas; causes of this range are certainly the caterpillars' polyphagia (Poaceae) and the bivoltine cycle. Caterpillars are known on *Brachypodium*, *Elymus*, *Poa* and *Stypa* genera among other herbs.

Hyponephele lycaon (Rottenburg, 1775) *

Material examined: BEIRA ALTA, Serra do Caramulo, margens do Vouga, 1 ♀, 1890; Serra da Estrela, 2 ♂♂, 5 ♀♀, 1881.

The Dusky Meadow Brown seems to be vulnerable in Portugal, where its range, though not completely known, shall be reduced and localized (an interior strip between the Estrela Mountain, the Gerez and Bragança), with an isolated (?) population in the Estremadura calcareous massif. Caterpillars feed on species of *Bromus*, *Festuca* and *Stypa* genera (Poaceae).

Melanargia lachesis (Hübner, 1790)

Material examined: BEIRA ALTA, Fagilde, 4 ♂♂, 16-VI-1933; 2 ♂♂, 17-VI-1933. ESTREMADURA, Cumeira, Juncal, 1 ♂, VII-1970. RIBATEJO, Abrantes, 1 ♂, 09-VI-1933. TRÁS-OS-MONTES and ALTO DOURO, Serra do Reboredo, Moncorvo, 12 ♂♂, 1 ♀, 27-VI-1942 + (det. as *M. lachesis* var. *geresiana*). BEIRA ALTA, Fagilde, 1 ♂, 1 ♀, 16-VI-1933; 1 ♂, 17-VI-1933. RIBATEJO, Abrantes, 1 ♀, 09-VI-1933; Carrazede, Paialvo, 3 ♂♂, 1 ♀, VII-1970. TRÁS-OS-MONTES and ALTO DOURO, Serra do Reboredo, Moncorvo, 2 ♂♂, 10 ♀♀, 27-VI-1942.

The Iberian Marbled White, one of the marbled whites, is widely distributed in Portugal and quite common along most of the country (except for the southern Alentejo and Algarve). Caterpillars are known to occur on several Gramineae species of *Brachypodium*, *Bromus*, *Dactylis*, *Festuca* and *Poa* genera.

Melanargis ines (Hoffmansegg, 1804)

Material examined: ESTREMADURA, Tróia, 1 ♂, 13-V-1941.

The Spanish Marbled White is known as sparsely distributed along central and southern Portugal and in the xerothermic Douro; despite not menaced, some populations are in decline due to urbanization, others due to the rural fires. Caterpillars are known to occur on species of genera *Brachypodium*, *Bromus* and *Stypa* (Poaceae).

Satyrus actaea (Esper, 1781) *

Material examined: BEIRA ALTA, Serra da Estrela, 2 ♂♂, 2 ♀♀, 1881. PROV. ?: No locality, nd., 1 ♂.

The Black Satyr is vulnerable mainly due to the rural fires, occurring only in high altitude. Caterpillars occur only on *Brachypodium phoenicoides* (L.) Roem. & Schult., *Bromus unioloides* Kunth and *Festuca iberica* (Hackel) K. Richt. (Poaceae).

Hipparchia alcyone ([Denis & Schiffermüller], 1775)

Material examined: BEIRA ALTA, Margens do Rio Dão, 3 ex., 1890; Beira Alta, margens do Vouga, 29 ex., 1886; Serra do Caramulo, margens do Vouga, 1 ex., 1890; Serra da Estrela, 4 ex., 1881; Beira

Alta, no locality, nd., 2 ex. Beira Baixa, Vale da Pereira, 1 ex., 13-VI-1933. Beira Litoral, Buçaco, 2 ♂♂, 1 ♀, 18-VII-1878; nd., 2 ex.

The Rock Grayling is known from the northern half of Portugal only, though it may be locally quite common. The caterpillars are known to feed on some Poaceae as *Arrhenaterum elatius* (L.) P. Beauv. ex J. Presl. & C., Presl., *Brachypodium pinnatum* (L.) Beauv. and a few species of *Festuca* (*F. ampla* Hack., *F. paniculata* (L.) Schinz & Thell. and *F. ovina* L.).

Hipparchia semele (Linnaeus, 1758)

Material examined: Beira Litoral, Buçaco, 1 ♂, II-1878. Trás-os-Montes and Alto Douro, Serra do Reboredo, Moncorvo, 1 ♂, 1 ♀, 27-VI-1942.

The Common Grayling is frequent in the northern half of Portugal and rare southwards from the Tagus River; the littoral areas urbanization and the eucalyptation are the main menaces to the stability of some of its populations. Caterpillars occur on gramineae of genera *Arrhenaterum*, *Brachypodium*, *Deschampsia*, *Festuca* and *Poa*, though it may also occur on wheat (*Triticum aestivum* L.).

Hipparchia statilinus (Hufnagel, 1766)

Material examined: Algarve, Chão Cavalar, 1 ♀, 02-IX-1966. Beira Alta, Beira Alta, margens do Vouga, 6 ♂♂, 6 ♀♀, 1886; Margens do Vouga, 1 ♂, 3 ♀♀, 1886; 1 ♀, 1887; Serra do Caramulo, 1 ♀, 1890; Serra da Estrela, 2 ♂♂, 3 ♀♀, 1881; nd., 1 ♂. Beira Baixa, Cabeçuco, Cernache de Bonjardim, 1 ♀, 28-VIII-1963. Beira Litoral, Buçaco, nd., 2 ♂♂; Valega, 1 ♀, 15-VIII-1950 (?). Estremadura, Bombarral, estrada das Barreiras, 1 ♂, 1 ♀, 05-VIII-1947. Trás-os-Montes and Alto Douro, Serra de Bornes, 1 ♂, 07-VIII-1961.

The Tree Grayling flies especially in areas with quercin forests and is more common northwards from the Tagus River. The eucalyptation, once it replaces areas originally covered by *Quercu*s species, led some populations to extinction. Caterpillars occur on several Poaceae, as on species of *Avenula*, *Bromus*, *Brachypodium*, and *Festuca* genera.

Hipparchia fidia (Linnaeus, 1767)

Material examined: Beira Alta, Beira Alta, margens do Vouga, 1 ♂, 2 ♀♀, 1886. Beira Litoral, Buçaco, 2 ♀♀, 01-VIII-1878; Coimbra, nd., 1 ♂, 1 ♀. Estremadura, Bombarral, estrada das Barreiras, 1 ♂, 05-VIII-1947; Mafra, 1 ♂, 25-VII-1965. Trás-os-Montes E Alto Douro, Serra do Reboredo, Moncorvo, 1 ♂, 27-VI-1942. All the specimens were identified sub *Pseudotergumia*.

The Striped Grayling flies along most of Portugal (not in the inner areas of Alto and Baixo Alentejo) and, despite it is the genus species with a wider range in the country is never abundant. As it happens with other Satyrinae, its populations are progressively less common due to the habitat destruction, particularly associated to forest fires and eucalyptation. Caterpillars occur on species of *Brachypodium*, *Cynodon*, *Festuca*, *Piptatherum*, *Poa* and *Stipa* genera (Poaceae).

Brintisia circe (Fabricius, 1775)

Material examined: Trás-os-Montes and Alto Douro, Serra do Reboredo, Moncorvo, 2 ♀♀, 27-VI-1942.

The Great Banded Grayling associated to clearings of open oak woods with Poaceae. The stability of its populations depends so, from a correct environmental management, avoiding forest fires, eucalypt plantations and other extensive cultures. Caterpillars occur on distinct gramineae, as species of genera *Anthoxantum*, *Arrhenaterum*, *Brachypodium*, *Bromus* and *Festuca*.

CHARAXINAE

Charaxes jasius (Linnaeus, 1767)

Material examined: Algarve, Picota, Serra de Monchique, 1 ♂, 05-X-1951. Estremadura, Alfeite, 1 ♀, 29-IV-1880; 1 ♀, VI-1883; 1 ♂, 04-V-1884; nd., 1 ♂, 1 ♀. Minho, Serra do Gerez, nd., 1 ♂, 1 ♀.

The Strawberry-tree Butterfly, which caterpillars are completely dependent of this plant (they are monophagous on the strawberry tree (*Arbutus unedo* L., Ericaceae), occurring along most of Portugal mainly in its western part. The largest among the Portuguese (and European) butterflies is, however, much more common in the south, where the host-plant woods cover wider extensions. It is not menaced, but the forest fires and growing urbanization, especially in areas where it was common led to the decline of part of its populations.

NYMPHALINAE

Vanessa atalanta (Linnaeus, 1758)

Material examined: Beira Alta, Serra do Caramulo, margens do Vouga, 1 ex., 1890. Beira Litoral, Coimbra, 1 ex., 19-VII-1871; 1 ex., 23-VII-1871; nd., 1 ex.; Luso, 1 ♂, 1 ♀, 23-IX-1879; 2 ♀♀, 24-IX-1879. Estremadura, Lisboa, 1 ♀, 17-XI-1871; 1 ♂, 15-X-1877; 1 ♀, 16-X-1877; 1 ex., 17-X-1877; 1 ex., 19-X-1877.

Known on the Palearctic and Nearctic Regions, the Red Admiral is very common in Portugal along the continent, as well as in the Madeira and Azores Archipelagous. It is often visible even in the urban gardens in the big towns. Caterpillars occur on species of *Parietaria* and *Urtica* genera (Urticaceae).

Vanessa cardui (Linnaeus, 1758)

Material examined: Baixo Alentejo, Vila Nova de Milfontes, bosque, 1 ex., 07-VII-1941; 1 ex., 08-VII-1941; Id, paiol, 1 ex., 08-VII-1941; Vila do Campo, Milfontes, 1 ex., 06-VIII-1941. Beira Alta, Serra do Caramulo, margens do Vouga, 4 ex., 1890; Serra da Estrela, 1 ♂, 1881; Beira Alta, no locality, nd., 1 ex. Estremadura, Engenho, Marinha Grande, 2 ex., VI-1938; Sintra, nd., 1 ex.; Tapada, 1 ♀, 24-II-1883; 1 ex., VII-1885. Ribatejo, Abrantes, 1 ex., 09-VI-1933. Trás-os-Montes and Alto Douro, Horta da Vilariça, 2 ex., IX-1940; Serra do Reboredo, Moncorvo, 5 ex., 27-VI-1942.

The Painted Lady, cosmopolite, is quite common along the country. The caterpillars are polyphagous, occurring several low plants, as species of the genera *Arctium*, *Carduus*, *Onopordum* (Asteraceae), *Malva* (Malvaceae), and *Urtica* (Urticaceae).

Inachis io (Linnaeus, 1758) *

Material examined: Beira Alta, Guarda, 1 ex., 09-VI-1881; 1 ♀, 11-VI-1881.

Moderately menaced, the Peacock Butterfly though never common in Portugal, is more frequent northwards from the Mondego River valley and the Serra da Estrela (the southern registrations concern migrants). The extensive agriculture and the concomitant increase of the use of pesticides are certainly responsible by the decline of the populations of this univoltine species. The caterpillars occur on species of *Urtica* genera (Urticaceae).

Aglais urticae (Linnaeus, 1758) *

Material examined: Beira Alta, Serra da Estrela, 1 ex., 1881. PROV.?: Douro, 1 ♂, 1 ♀, 02-V-1880; 1 ♀, 03-V-1880; 1 ♂, 04-V-1880; 2 ♂♂, 05-V-1880, 2 ex., 06-V-1880; 2 ex., nd.

The Small Tortoiseshell is vulnerable in Portugal; restricted in the country to the central-northern and northern areas, it is bivoltine. Where it occurs, mainly in the inland high areas, its populations may be abundant. Like in the preceding species, the caterpillars feed on nettles, especially on *Urtica dioica* L. (Urticaceae).

Polygonia c-album (Linnaeus, 1758) *

Material examined: Beira Alta, Beira Alta, margens do Vouga, 3 ex., 1890; Margens do Vouga, nd., 2 ex.; Beira Alta, no locality, nd., 1 ♂. Beira Litoral, Coimbra, nd., 1 ex. Estremadura, Lisboa,

nd., 1 ex. TRÁS-OS-MONTES and ALTO DOURO, Bragança, nd., 1 ex. Vidago, 1 ♂, 16-VIII-1878; PROV. ?: Beira, nd., 1 ex.

Though vulnerable, the Comma seems to remain relatively common locally and is known in the northern half of Portugal. The polyphagous caterpillars occur on a variety of hostplants, among others *Urtica* (Urticaceae), *Prunus spinosa* L. (Rosaceae), *Ulmus* (Ulmaceae), *Populus* (Salicaceae), *Corylus avelana* L. (Corylaceae) and *Humulus lupulus* L. (Moraceae).

Nymphalis antiopa (Linnaeus, 1758) *

Material examined: BEIRA ALTA, Serra do Caramulo, 1 ex., 1888; nd., 1 ex.; Beira Alta, no locality, 1 ex., nd.

Considered as vulnerable in Portugal, the Camberwell Beauty is scarce and occurs only in the northern part of the country; its rarity may be related to its life cycle (univoltine), to the caterpillars food-regimen and to the environmental degradation. Caterpillars occur on species of the genera *Salix* and *Populus* (Salicaceae), *Betula* (Betulaceae), and *Ulmus* (Ulmaceae).

Nymphalis polychloros (Linnaeus, 1758) *

Material examined: ALTO ALENTEJO, Évora, nd., 1 ♂. BEIRA ALTA, Beira Alta, no locality, 1 ex., 1890. BEIRA LITORAL, Entre Coimbra e a Lousã, nd., 1 ♀. ESTREMADURA, Ajuda, 1 ♀, VII-1883; nd., 1 ♂. Lisboa, Jardim Botânico, 1 ♀, 18-VI-1962; 1 ex., 20-VI-1964. RIBATEJO, Bemposta, 1 ♀, V-1887.

The Large Tortoiseshell is vulnerable in Portugal, especially due to the habitat loss, particularly by the expansion of the eucalypt along wide areas and by the increasing use of pesticides in the orchards of several fruit-trees (cherry, ginger, plums) where caterpillars may feed. The species is somewhat more common in the northern part of the country because of its preference by hilly areas. Besides the orchards, the caterpillars occur also on the species of the genera *Ulmus* (Ulmaceae), *Salix* and *Populus* (Salicaceae) and *Celtis* (Cannabaceae).

Euphydryas aurinia (Rottenburg, 1775)

Material examined: BEIRA ALTA, Serra do Caramulo, 1 ♂, 1888, 1 ex. Lagos - Beira, 1 ♀, 05-V-1881; 1 ♂, 09-V-1881. BEIRA LITORAL, Buçaco, nd., 1ex. PROV.?: Caldas, 1 ♀, nd.

This Marsh Fritillary is not menaced in Portugal, being known all along the continent. The polyphagous caterpillars are known to occur on species of *Lonicera*, *Succisa* (Caprifoliaceae), *Plantago lanceolata* L. (Plantaginaceae) and *Scabiosa* (Dipsacaceae).

Melitaea cinxia (Linnaeus, 1758) *

Material examined: TRÁS-OS-MONTES and ALTO DOURO, Bragança, nd., 1 ♂.

Vulnerable, the Glanville Fritillary is restricted in Portugal to the northern and central-northern areas, what corresponds to its Southern range limit; the environmental alterations resulting from the forest fires and from the expansion of the cultivated areas and simultaneous increase of the pesticide use, shall be the main reasons of the progressive decline of its populations in Portugal, as well as all along remaining Europe. Caterpillars occur on species of the genera *Plantago* (Plantaginaceae), *Hieracium*, *Centaurea* (Asteraceae) and *Veronica officinalis* L. (Scrophulariaceae).

Melitaea phoebe ([Dennis & Schiffermüller], 1775)

Material examined: BEIRA ALTA, Beira Alta, no locality, 2 ♂♂, 1885 1 ex.; nd., 1 ♀. TRÁS-OS-MONTES and ALTO DOURO, Bragança, 1 ♀, 1 ex., nd.

The Knapweed Fritillary is not specially menaced along Portugal, though its presence mainly in dry meadows in hilly areas (central and north part of the country and western littoral from the Lisbon region to the Southern Alentejo) suffers with the progressive eucalyptation and, as it happens with all

the remaining species, with the cumulative habitat destruction caused by fire. Caterpillars are known on a wide variety of hostplants, as species of the genera *Centaurea* (Asteraceae), *Plantago* (Plantaginaceae), *Digitalis* (Scrophulariaceae) and *Cistus* (Cistaceae).

Melitaea trivia ([Dennis & Schiffermüller], 1775) *

Material examined: Beira Alta, Caramulo, 1 ♀, 23-VII-1885.

The vulnerable Lesser Spotted Fritillary, the smaller of the *Melitea* species, is vulnerable and restricted to the central-northern and north-eastern part of the country; its progressive rarity is related not only with its reduced range in Portugal, but also to the decreasing area of non-plotted soils, to the forest fires and to reforestation mainly by exotic species. Caterpillars occur on species of the genera *Verbascum*, *Linaria* (Scrophulariaceae) and *Plantago*, (Plantaginaceae).

Melitaea didyma (Esper, 1778) *

Material examined: Beira Baixa, Vale da Pereira, 1 ♂, 13-VI-1933. Estremadura, Lisboa, nd., 1 ♀, 1 ex. Trás-os-Montes and Alto Douro, Vidago, 1 ♂, 1 ♀, 16-VIII-1878.

Vulnerable in Portugal, the Spotted Fritillary seems to be uncommon and restricted from medium to high altitude areas along the interior central and northern country (it extends, however, to the Arrábida Mountain and there is an isolated spot in the Algarve); the decline of its populations seems especially the result of the annual forest fires, of the eucalyptation and to the increasing area occupied by the monocultures. Caterpillars occur on several herbaceous, like species of the genera *Linaria* (Scrophulariaceae), *Plantago* (Plantaginaceae) and *Digitalis* (Scrophulariaceae).

LIMENETIDINAE

Limenitis reducta Staudinger, 1901*

Material examined: Beira Alta, Margens do Rio Dão, 2 ♂♂; nd. Serra do Caramulo, margens do Vouga, 19 ♂♂, 1 ♀, 1890.

Vulnerable in Portugal, the Southern White Admiral is known in forest habitats, mainly on the gallery-forests of the central-north and north of the country. Pollution, forest fires, increasing of monocultures and the resulting habitat loss are certainly the causes of the decline of its populations in the country. Caterpillars occur on *Lonicera* (Caprifoliaceae) only.

HELICONIINAE

Argynnis paphia (Linnaeus, 1758) *

Material examined: Beira Alta, Beira Alta, margens do Vouga, 13 ex., 1885; Margens do Vouga, 1 ex., 1890; 3 ex., nd.; Serra do Caramulo, margens do Vouga, 1 ex., 1890. Minho, Gerez, 2 ex., 1883; 2 ex., nd.

The Silver-Washed Fritillary, known in Portugal northwards from the Douro River only, is considered as vulnerable in the country especially due to habitat destruction and to its monophagy - indeed, the caterpillars feed exclusively on *Viola* sp. (Violaceae).

Argynnis pandora ([Dennis & Schiffermüller], 1775)

Material examined: Beira Alta, Beira Alta, no locality, 1 ♂, 1890; 1 ♂, nd. Beira Litoral, Buçaco, 2 ♂♂, 17-VII-1878; 1 ♂, 25-VII-1878; Coimbra, nd, 1 ♂. Estremadura, Campos de Alcobaça, 1 ♂, VIII-1948. Trás-os-Montes and Alto Douro, Serra do Reboredo, Moncorvo, 1 ♂, 27-VI-1942. All the specimens were identified sub *Pandorina*.

The Cardinal is known from the Tagus River basin northwards and in the Algarve, being frequent inland and rare elsewhere. Like the preceding species, caterpillars occur exclusively on *Viola* sp. (Violaceae).

Argynnis aglaja (Linnaeus, 1758) **

Material examined: MINHO, Gerez, 1 ♂, 1883; 1 ♂, nd.

Orophile and univoltine, the Dark Green Fritillary is strongly menaced of extinction in Portugal, particularly due to its reduced range in the country (only the northern area, throughout Gerez and Trás-os-Montes) and to the environmental degradation mainly due of forest fires, the knock-out of the natural forest and the destruction of the surrounding meadows. Further, the caterpillars are monophagic on *Viola tricolor* (Violaceae).

Argynnis adippe ([Dennis & Schiffermüller], 1775) *

Material examined: BEIRA ALTA, Beira Alta, margens do Vouga, 5 ex., 1890; Beira Alta, no locality, 8 ex., 1885. BEIRA LITORAL, Buçaco, 1 ♂, 17-VII-1878; 1 ♂, 25-VII-1878; 1 ♂, 15-VII-1879; Coimbra, nd., 3 ♀♀. MINHO, Caldas de Vizela e arrabaldes, nd., 1 ♀. TRÁS-OS-MONTES and ALTO DOURO, Serra do Reboredo, Moncorvo, 1 ex., 27-VI-1942.

The High Brown Fritillary is known only from the northernmost third of Portugal and by an isolated population in Monchique (known only from the 200 m de altitude on); moreover, the species is univoltine and monophagous on genera *Viola* (Violaceae).

Issoria lathonia (Linnaeus, 1758)

Material examined: BEIRA ALTA, Fagilde, 1 ex., 16-VI-1933; Serra do Caramulo, 1 ex., 1888: Serra da Estrela, 1 ♂, 1881: Beira Alta, no locality, 1 ♂, 2 ♀♀, 1885; 2 ex, 1890, 2ex.; nd., 1 ♀. BEIRA BAIXA, Castelo Branco, 10-VI-1933, 1ex. BEIRA LITORAL, Buçaco, 1 ♂, 27-VII-1878; 1 ♂, 05-VIII-1881. ESTREMADURA, Lisboa, nd., 1ex. TRÁS-OS-MONTES and ALTO DOURO, Bragança, nd., 1 ♂, 2 ex.; Serra do Reboredo, Moncorvo, 4 ex., 27-VI-1942; PROV.?: Beira, nd., 1 ♀. All the specimens identified sub *Argynnis*.

Disperse and frequent in the country northern half and along Algarve, the Queen of Spain Fritillary is a trivoltine species that occurs mainly in wastelands where the caterpillars feed exclusively on genera *Viola* (Violaceae)

Boloria selene ([Dennis & Schiffermüller], 1775) *

Material examined: BEIRA ALTA, Serra do Caramulo, 2 ex., 1888; Beira Alta, no locality, 1 ex., 1890.

Vulnerable in Portugal, the Small Pearl-bordered Fritillary is known in the country exclusively north from the Mondego River valley, being its populations always above the 200 m altitude. The species is especially menaced by the forest fires, by the introduction of exotic forest trees, by the implementation of agriculture as well as by other causes that imply the biotope modification. Caterpillars feed species of the genera *Viola* (Violaceae) and *Fragaria* (Rosaceae).

ZYGAENOIDEA
ZYGAENIDAE

Zygaena (Agrumenia) fausta (Linnaeus, 1767)

Material examined: BEIRA LITORAL, Coimbra, 2 ex., 1878, det. sub *Zygaena*.

The Auspicious Burnet or Chalk Burnet' caterpillars feed on species of the genera *Coronilla* (Fabaceae).

Zygaena (Zygaena) trifolii (Esper, 1783)

Material examined: BEIRA ALTA, Beira Alta, margens do Vouga, 29 ex., 1885; Vouzela, nd., 1 ex. Beira Alta, no locality, 2 ex, nd. ESTREMADURA, Próximo de Vale de Gatos, 1 ex., IV-1966; Serra de Sintra, 2 ex., 03-VI-1960 - all det. sub *Zygaena*.

The caterpillars of the Five-Spot Burnet are known on *Lotus* (Fabaceae).

Discussion

Among the 79 taxa represented in the disappeared studied series that was the aim of the present contribution, 29, so, ca. 36% concerned species which Portuguese populations are reported as subjected to some degree of menace.

Indeed, seven among the studied species, are currently considered rare or even extinct in Portugal: they concern one Hesperiidae, one Pieridae, four Lycaenidae and one Nymphalidae, namely *Carcharodus baeticus*, *Euchloe tagis*, *Hamearis lucina*, *Tomares ballus*, *Zizeeria knisna*. *Cupido minimus* and *Argynnis aglaja*; otherwise, twenty two further species are reported, also according to MARAVALHAS (2003) as menaced: these are the cases of two Hesperiidae, one Papilionidae, two Pieridae, three Lycaenidae and fifteen Nymphalidae, namely *Thymelicus lineola*, *Thymelicus action*, *Zerynthia rumina*, *Aporia crataegi*, *Gonepteryx cleopatra*, *Lycaena tityrus*, *Polyommatus bellargus*, *Coenonympha arcania*, *Hyponephele lycaon*, *Satyrus actaea*, *Inachis io*, *Aglais urticae*, *Polygonia c-album*, *Nymphalis antiopa*, *Nymphalis polychloros*, *Melitaea cinxia*, *Melitaea trivia*, *Melitaea didyma*, *Limenitis reducta*, *Argynnis paphia*, *Argynnis adippe, Boloria selene*. Part of them have in Portugal their southern (those common to Europe and many also to Asia - the Euro-Siberian taxa) or northern (those common to Northern Africa and/or to Southern-Europe - the Mediterranean taxa) and are known as with declining populations also in the remaining countries from where they are known in Europe, such as *Carcharodus baeticus*, *Euchloe tagis*, *Hamearis lucina* and *Tomares ballus* as well as of *Zizeeria knisna*, this one quite common, however, along the Afrotropical and Madagascan Regions.

The extensive fires that affected Monchique area, in Algarve, may compromise the real previously known range of some species in the southern Portugal: These are the cases, eventually among others, of the local scarce known samples of *Anthocaris cardamines*, *Lycaena alciphron* and *Argynnis adippe*, this last one known in the southern Portugal by an isolated population exactly from the Monchique mountain. The same must be considered about the lepidopterofauna of several other areas in Central and Northern Portugal relatively to the extended areas burned in the last decade, especially but not only in what those in the provinces of Minho, Trás-os-Montes and Beiras; indeed, the fires in protected areas have a substantial pressure in the insects populations - as they have in all the components of the ecosystem - since they affect areas with a suddenly disrupted equilibrium. Further, the large extensions of monocultures of economical important trees like the pine (*Pinus pinaster* Ait.) and the eucalyptus, usually covering the areas where the great fires occur, and also of the expansion of infesting plants like the acacias and, in the littoral dunes, *Carpobrotus* among others, clearly contribute to the modifications on butterflies' populations and to the reduction of the number of species ranges in our country. The same must be said relatively to the increasing urbanization in coastal areas, the use and overuse of pesticides and the general climatic changes.

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Table I.– Alphabetically ordered list of the collecting localities of the studied samples, irrespective district, circumscription and UTM 10 X10 kilometres coordinates.

Locality	District	Circumscription	UTM
Abrantes	Santarém	Abrantes	29SND66
Ajuda - see Lisboa	—-	—-	—-
Alburitel	Santarém	Tomar	29SND48
Alfeite	Setúbal	Almada	29SMC87
Almarinho (Algueirão)	Lisboa	Sintra	29SMC79
Almodovar, Ribeira de Oeiras, Rocha da Moura	Lisboa	Sintra	29SNB??
Almodovar, mata	Beja	Almodôvar	29SNB85
Arouca	Aveiro	Arouca	29TNF63
Azambuja	Santarém	Azambuja	29SND12
Barranco do Velho	Faro	Loulé	29SNB92
Beira	?	?	?
Beira Alta	?	?	?
Beja	Beja	Beja	20SPC00
Belém - see Lisboa	—-	—-	—-
Bemposta			29SMD80
Berlengas	Leiria	Peniche	29SNM56
Bombarral, estrada das Barreiras	Leiria	Bombarral	29SMD84
Bragança	Bragança	Bragança	29TPG83
Buçaco	Aveiro	Mealhada	29TNE56
Cabeçudo (Cernache do Bonjardim)	Castelo Branco	Sertã	29TNE44
Caldas	?	?	?
Caldelas	Braga	Amares	29TNG51
Campos de Alcobaça	Leiria	Alcobaça	29SND07
Caneças	Lisboa	Loures	29SNC89
Caramulo	Viseu	Tondela	29TNE79
Carrazede	Santarém	Tomar	29SND47
Castelo Branco	Castelo Branco	Castelo Branco	29SPE20
Chão Cavalar (Algarve)	Faro	?	?
Coimbra	Coimbra	Coimbra	29TNE45
Coimbra à Lousã	Coimbra	?	?
Cumeira	Leiria	Porto de Mós	29SND08
Douro	?	?	?
Engenho (Marinha Grande)	Leiria	Marinha Grande	29SNE00
Évora	Évora	Évora	29SNC96
Fagilde	Viseu	Mangualde	29TPE09
Gerez	Braga	Terras do Bouro	29TNG62
Guarda	Guarda	Guarda	29TPE48
Herdade de Font'Alva (Barbacena)	Portalegre	Elvas	29SPD41
Horta da Vilariça	Bragança	Mogadouro	?
Lagoa Azul / Linhó	Lisboa	Sintra	29SMC69
Lagos (Beira)	?	?	?
Lisboa	Lisboa	Lisboa	29SMC88
Lopitos (Moura)	Beja	Moura	29SDC32
Luso	Aveiro	Mealhada	29TNE57
Mafra	Lisboa	Mafra	29SMD71
Margens do Rio Dão	?	?	?

Margens do Vouga (Beira Alta)	?	?	?
Oliveira de Frades	Viseu	Oliveira de Frades	29TNF60
Peniche	Leiria	Peniche	29SMD65
Picota (Serra de Monchique)	Faro	Monchique	29SNB43
Pinhal do Corvo (Algarve)	Faro	?	?
Pinhel	Guarda	Pinhel	29TPF61
Praia do Castelejo (Vila do Bispo)	Faro	Vila do Bispo	29SNB00
Praia de Mira (margens da Lagoa)	Aveiro	Mira	29TNE27
Praia de Mira (pinhal)	Aveiro	Mira	29TNE27
Queluz	Lisboa	Sintra	29SMC79
Ribeira da Marateca	Setúbal	Palmela	29SNC47
Ribeira de Quarteira	Faro	Loulé	29SNB70
Sanguinhal	Leiria	Bombarral	29SMD84
Santa Clara	?	?	?
Serra d'Aire (Almodovar)	Beja	Almodôvar	29SNB84
Serra de Bornes	Bragança	Macedo de Cavaleiro	?
Serra do Caramulo	Viseu	Tondela	29TNE96
Serra do Caramulo, margens do Vouga	Viseu	Tondela	29TNF07
Serra da Estrela	Guarda	?	?
Serra do Gerez - see Gerez	—-	—-	—-
Serra de Monchique	Faro	Monchique	29SNB33
Serra do Reboredo (Moncorvo)	Bragança	Torre de Moncorvo	?
Serra de Sintra	Sintra	Sintra	29SMC69
Setúbal	Setúbal	Setúbal	29SNC06
Sines	Setúbal	Sines	29SNC01
Tapada (da Ajuda) - see Lisboa	—-	—-	—-
Telhada (Almodovar)	Beja	Almodôvar	29SNB85
Troia	Setúbal	Grândola	29SNC06
Vale de Gatos	Setúbal	Seixal	29SNC97
Vale da Pereira	Castelo Branco	Castelo Branco	29SPE20
Valega	Aveiro	Ovar	29TNF32
Vascão (rio)	Beja	Mértola	?
Vidago	Bragança	Chaves	29TPG11
Vila de Campo (Milfontes)	Beja	Odemira	29SNB27
Vila Nova de Milfontes	Beja	Odemira	29SNB17
Vila Nova de Ourém	Santarém	Ourém	29SND39
Vila Real de Santo António	Faro	Vila Real de Santo Antonio	29SPB41
Vila Verde de Ficalho	Beja	Serpa	29SPC40
Vizela	Braga	Vizela	29TNF57
Vouzela	Viseu	Vouzela	29SNF70