

**MADEIRA INSECTS : A REVISED LIST OF ICHNEUMONIDAE
(HYMENOPTERA) WITH ADDITIONS, DESCRIPTION OF A
NEW SPECIES OF ACLASTUS FÖRSTER, AND OF THE HITHERTO
UNKNOWN FEMALE OF DICHROGASTER MADEIRAE (ROMAN).**

By M. W. R. DE V. GRAHAM *

With 2 figures

ABSTRACT. The author presents a list of Ichneumonidae for the Madeira archipelago, including all those recorded by previous writers, with the addition of 34 species mainly collected by the author and his wife. One new species, *Aclastus macrops*, is described, also the hitherto unknown female of *Dichrogaster madeirae* (Roman). *Ophion atlanticus* Roman, originally described as a subspecies of *O. obscurus* (F.), is raised to species rank. The total number of species now recorded from the Madeira archipelago is 102. Notes on Wollaston's systems of colour-coding and numbering are included. A list of localities visited by the author and his wife is given, with remarks on their topography and flora.

RESUMO. O autor apresenta uma lista de Ichneumonidae para o Arquipélago da Madeira incluindo todas as espécies previamente assinaladas por outros autores, com a adição de 34 espécies principalmente colhidas pelo autor e sua mulher. Uma nova espécie, *Aclastus macrops* é descrita bem como a até agora desconhecida fêmea de *Dichrogaster madeirae* (Roman). *Ophion atlanticus* Roman, originalmente descrita como uma subespécie de *O. obscurus* (F.) é elevada à categoria de espécie.

O total de espécies desta família encontradas até à data no Arquipélago da Madeira é de 102. São feitas notas acerca dos sistemas de código de coloração e numeração de Wollaston. É dada uma lista das localidades visitadas pelo autor e sua mulher, com observação acerca da sua topografia e vegetação.

INTRODUCTION

Our knowledge of Madeiran Ichneumonidae is chiefly due to papers by Wollaston (1858), Roman (1938), Hellén (1949, 1961) and Horstmann (1980b, 1980c). During the past forty years the taxonomy of this family

* 5 Salisbury Crescent, Oxford OX2 7TJ, U. K..

has undergone radical changes, due especially to the admirable work on world genera by Townes (1969, 1970a, 1970b, 1971, 1983) and re-examination of the types of many European and some Madeiran species by Frilli (1973, 1976), Aubert (1968, 1981), Horstmann (1968, 1969, 1980b, 1980c) and Fitton (1976, 1982, 1985). All these works are indispensable for a study of Madeiran species.

The author and his wife have more recently collected a number of Ichneumonidae in Madeira, including most of those species already recorded, plus some new to the list. It seems useful at this stage to collate previous records, adjusting the nomenclature where possible in the light of recent research, and to list the additions. The present paper is intended only as a very modest contribution to the subject, with the realization that more work needs to be done on some species.

The following abbreviations are used for depositories : BMNH, British Museum (Natural History) ; UM, University Museum, Oxford. The names of the author and his wife are abbreviated to M. de V. G. and E. M. G. respectively.

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HISTORICAL REVIEW

Wollaston (1858) described 8 species of Ichneumonidae from Madeira, but 1 falls into synonymy (*Bassus albovarius*). Morley (1912, 1913) mentioned 7 other species, of which 3 (*Paniscus ocellaris*, *Enicospilus du-*

bius and *E. repentinus*) were misidentified and later described as new by Roman (1938). Roman revised most of the species recorded previously and added 33 to the list (2 identified only to genus), including 13 new species, and renamed *Paniscus ocellaris* sensu Morley as *maltractatus*. Hellén (1949) added 10 species, 2 being new to science and (1961) 9 more of which 3 were new. Two of his species described in 1949 (*Omorga longiventris* and *Angitia rufiventris*) had preoccupied names and were later renamed by Aubert and Horstmann respectively. Horstmann (1980b) described 4 new Madeiran species of *Diadegma* and added a further species, *D. aculeatum* Bridgman.

The number of valid species included in the foregoing lists is 68. In the present paper 34 are added (15 identified only to genus) making a total of 102. Thus the number which Roman (1938 : 3) surmised might be found has now been exceeded. One would expect others to turn up, particularly in Phygadeuontinae and Campopleginae. Two groups are conspicuous by their absence : Ctenopelmatinae and Tryphoninae (apart from Phytodietini), which parasitize sawflies, the latter being represented by extremely few species in Madeira.

WOLLASTON'S COLOUR-CODING AND NUMBERING OF SPECIMENS

(1) Colour-coding.

A key to this is contained in the first drawer of that part of the Wollaston Madeira collection housed in UM, Oxford. Carded specimens taken on the main island of Madeira normally have a number on the lower surface of the card. Specimens taken on other islands of the archipelago have either (carded specimens) a coloured line at the bottom edge of the card or (pinned specimens) a small coloured ticket on the pin. The colours are as follows :

Blue : Porto Santo.

Red : Deserta Grande.

Yellow : Ilhéu Chão (Northern Deserta).

Black : Bugío (Southern Deserta).

A few specimens in the collection carry what appears to be contradictory information on their labels. For example, some bear both a tiny blue ticket (indicating Porto Santo) and a label 'Madeira. Wollaston'. The blue tickets were placed on the specimens by Wollaston himself and therefore give the correct data. The labels 'Madeira. Wollaston' were added after accession by BMNH and in such cases 'Madeira' should be interpreted in a broad sense (as Madeira- group or archipelago).

(2) Wollaston's numbering system.

I have mentioned above Wollaston's custom of writing numbers on the lower surface of the cards bearing his specimens. These numbers undoubtedly refer to localities. Wollaston's manuscript list of his Coleoptera in University Museum, Oxford, contains a series of numbers from 1 to 1177, each number accompanied by the name of the species to which

it refers and the locality where the specimen was captured (see Smith & Graham, 1982 : 253). Many carded Hymenoptera in Wollaston's collection bear such numbers ; the lowest number is 999 and the highest 1818 but there are many gaps in the series. It is clear that Wollaston had a separate series of numbers for his Hymenoptera as they do not correspond with those of the Coleoptera series. Unfortunately any key to the Hymenoptera numbers which may have existed appears to have been lost. The localities corresponding to some numbers can be identified because he published precise localities for certain species ; for example the number 1075 on the card of *Clinocentrus divisus* Wollaston indicates Funchal as the locality ; 1132 on that of *Misoleptus maderensis*, Pecegueiros ; 1177 for *Clinocentrus anticus*, Santana ; 1232 for *Exetastes peregrinus*, Pico Ruivo. Some consecutive numbers probably refer to the same locality. Other numbers could refer to one of two or three different localities mentioned for the species in Wollaston's papers, still others cannot be identified. However, knowing the habitat preferences of various species, it is possible to surmise at least the area and probable elevation of the unknown localities.

TOPOGRAPHY AND FLORA OF LOCALITIES VISITED

Enghoff's paper (1982) contains useful remarks on the general topography of Madeira and on the localities studied. Similar information is noted below for localities visited by the author and his wife.

- Abra (bay), ca. 70 m. ; close-cropped pasture, thistles (*Cynara*, *Galactites*), *Juncus* in gullies.
- Achada do Teixeira, 1450 m. ; groves of *Erica arborea*, bracken, grass, herbs.
- Balcões do Ribeiro Frio, 800 m. ; relict laurisilva with varied herb-layer, grasses.
- Bica da Cana, 1530 m. ; groves of *Erica arborea* with much *Pteridium aquilinum*, in places a close-cropped sward of fine grasses with some herbs.
- Boca do Risco, 400 m. ; *Pinus* and *Acacia* woods, *Myrica faya*, *Erica arborea*, *E. scoparia*, grasses, herbs.
- Caldeirão Verde, 900 m. ; basin near waterfall, open on NW side ; grasses, herbs, including several endemics, *Sambucus maderensis*, bracken, ferns.
- Canhas (between village and Paul da Serra), ca. 1000 m. ; Woods of *Eucalyptus* and *Pinus*, grasses and herbs, on S. facing slope.
- Canical, 100 m. ; *Hyparrhenia* and other grasses, herbs, on SE facing slope.
- Caramujo, 1250 m. ; *Erica arborea*, bracken.
- Chão dos Balcões, 1450 m. ; very dry plateau with grasses, sparse herbs, pinewood.
- Chão de Ribeira, 420 m. ; elevated, cultivated level with cabbage and other vegetable crops ; at north end, scrub of *Myrica*, *Erica* and *Ly-tanthus*.

- Cruzinhas do Fanal, 1270 m. ; *Erica arborea* scrub with relicts of laurisilva. Curral das Freiras, 600 m. ; herbs and grasses near cultivated terraces. Curral dos Romeiros, 800 m. ; *Pinus* and *Quercus robur*, relicts of laurisilva, shrubs, rich herb-layer, grasses (mostly *Brachypodium*), in shade. Small stream, water-tank.
- Encumeada de São Vicente, 700 m. ; relict of laurisilva, some *Castanea*, bushes, ferns, herbs.
- Fajã da Nogueira, 800 m. ; shady laurisilva with *Ocotea foetens*, *Laurus azoricus*, *Erica*, bracken and other ferns, *Juncus effusus*, fairly rich herb-layer.
- Fajã da Ovelha, 650 m. ; *Eucalyptus*, *Castanea*, *Erica* and other shrubs, grasses, herbs.
- Fanal de Baixo, 970 m. ; relict laurisilva with sparse carpet, mainly ferns. Fanal de Cima, 1100 m. ; shady relict laurisilva with *Ocotea foetens*, *Erica arborea*, very sparse carpet, mainly ferns.
- Fonte da Pedra, on western slope of Ribeira da Janela, ca. 950 m. ; *Erica arborea*, *Vaccinium padifolium*, some *Clethra arborea*, *Pteridium aquilinum*, *Rubus ulmifolius* ; higher up a level grassy area with some *Ulex*.
- Ilhéu Chão, 110 m. ; for notes on the flora see Graham (1986 : 30-31).
- João Delgado, ridge on western edge, mainly on the old path leading down to Seixal, between 1200 and 1400 m. ; dense scrub of *Erica*, *Vaccinium*, *Sarothamnus* and bracken, sparse herb-layer ; lower down a relict of laurisilva.
- João do Prado (site 3 km. east of), 100 m. ; plantations of *Quercus rubra* and *Pinus*, some *Eucalyptus*, *Erica arborea*, fairly rich herb-layer, much grass (*Brachypodium silvaticum* dominant).
- Lagoa of Santo da Serra (near), 650 m. ; pine and eucalyptus plantations, grasses and herbs in clearings.
- Levada da Ribeira do Inferno, below Caramujo, ca. 1150 m. ; relict laurisilva with rich vegetation including numerous endemic shrubs and herbs.
- Levada da Serra do Faial (especially the section between Cabeço dos Galos in the north to near João Frino in the south), ca. 800 m. ; *Eucalyptus globulus* and *Pinus* plantations, some planted *Quercus robur*, *Erica*, *Ulex*, *Sarothamnus*, bracken and ferns, much *Brachypodium silvaticum* and other grasses, varied herb-layer.
- Lombada das Vacas, towards Topo, ca. 800 m. ; high ridge with degraded relicts of laurisilva including some *Clethra* and *Persea*, *Vaccinium*, *Euphorbia mellifera*, ferns, thin herb-layer, *Brachypodium* and other grasses.
- Machico, Rocha Alta, 470 m. ; *Erica* scrub, *Eucalyptus*, *Euphorbia piscatoria*, grasses and herbs.
- Montado dos Pecegueiros, 1100-1400 m. ; steep north facing slope, at lower levels with dense laurisilva, *Ocotea foetens*, *Clethra arborea* and ferns, very sparse carpet ; at higher level much *Erica arborea*, *Brachypodium silvaticum* and some herbs.

- Pico Ruivo, 1862 m. ; *Erica arborea*, *E. scoparia*, *E. maderensis*, grasses, herbs.
- Porto Novo, 50 m. ; grasses, herbs, *Euphorbia piscatoria*, *Opuntia*.
- Prainha, 25 - 100 m. ; vegetation similar to that of Abra.
- Queimadas, 900 m. ; forest with Lauraceae, some planted *Quercus robur*, herbs including much *Hydrangea*, ferns, grasses including *Brachypodium silvaticum*.
- Rabaçal, 1050 m. ; relict laurisilva with *Erica* and other shrubs, ferns, varied herbaceous carpet, grasses (especially *Festuca donax* and *Brachypodium*), liverworts.
- Ribeira das Cales, 1450 m. ; *Erica arborea* grove, bracken, grasses, herbs.
- Ribeiro Bonito, 700 m. ; laurisilva with fine *Ocotea foetens* (Til), *Laurus*, *Persea*, *Clethra*, many endemic herb species but in the most remote part sparsely carpeted (mostly ferns, mosses, *Brachypodium silvaticum*).
- Santa Cruz, Ribeira da Boaventura, 30 m. ; *Acacia*, grasses, herbs.
- São Martinho, Pico das Arrudas, 260 m. ; grasses, especially *Hyparrhenia hirta*, bushes of *Rhus coriaria* and *Lytanthus salicinus* ; *Galactites*, various herbs including some garden escapes, *Opuntia*.
- Terreiro da Luta, 900 m. ; shady eucalyptus forest with moderate herb layer.
- Vinte e Cinco Fontes and levada leading thereto, 1050 m. ; relict laurisilva, many ferns, moderately rich herb layer, rushes.

LIST OF SPECIES

Pimplinae

Scambus monticola Roman

Described by Roman (1938 : 13 - 14) from 3 ♀ ♀ taken by Lundblad at Rabaçal and 1 ♂ 2 ♀ ♀ from Wollaston's collection ; Fitton (1976 : 355, under *Ephialtes lineatus* and *E. linearis*) has made some comments on the Wollaston material. I have found another ♀ collected by Wollaston and labelled 'Madeira' in UM, Oxford. Lindberg also took this species at Queimadas, Porto Moniz and 'Pte. Barro' (Hellén, 1961 : 37).

New records. São Martinho, 1 ♀, 8.v.1980 ; Curral dos Romeiros, 1 ♂, 11.v.1980, 1 ♀, 15.v.1980 (E. M. G.), 1 ♂, 2 ♀ ♀, 20.vii.1982 ; 3 km E. of Poiso, 1 ♂, 1.viii.1982 ; Casa do Rabaçal, in window, 1 ♂, 29.vii.1982 ; levada da Serra do Faial, near João Frino, 1 ♂, 10 ♀ ♀, 23.viii.1985 (M. de V. G.).

Dolichomitus lateralis (Wollaston)

Recorded by Wollaston (1858 : 22, as *Ephialtes lateralis*) from 'Cruzinhas, Pecegueiros, &c.'. There are 3 ♀ ♀ (lectotype and paralectotypes) in BMNH (Fitton, 1976 : 355). The species does not appear to have been retaken by later collectors.

Tromatobia lineata (Wollaston)

Recorded by Wollaston (1858 : 22, as *Ephialtes lineatus*) from 'Cruzinhas, &c.'. Transferred to *Tromatobia* by Roman (1938 : 3). There are 3 ♀ ♀ from Wollaston's collection in BMNH, one of which was selected as lectotype by Fitton (1976 : 355). The 2 paralectotypes belong to *Scambus monticola* Roman. There are no further records.

Zaglyptus rufus (Hellén)

Described by Hellén (1949 : 9, as *Zaglypta rufa*) from specimens of both sexes (number not stated) taken in the Canary Islands of Tenerife, Tacoronte, by Frey, Los Mercedes by Storå, and Gomera, Hermigue, by Storå.

New to Madeira : Fonte da Pedra, near Achadas da Cruz, 1 ♀, 15.viii.1987 (E. M. G.) ; 1 km east of Espigão Amarelo, on the cliff-path from Boca do Risco to Porto da Cruz, 2 ♂ ♂, 22.viii.1987 (M. de V. G.).

The Madeiran ♀ differs in colour from Hellén's description in having all the segments of the abdomen black-margined posteriorly, also in having a pair of yellow facial spots just below the antennal toruli. The Madeiran ♂ ♂ also have the abdominal segments black-margined. Our Madeiran ♀ resembles in colour the southern European *Z. rufescens* (Fonscolombe) which may be a form of *multicolor* (Gravenhorst) but it differs in having the temples in dorsal view of the head somewhat curved instead of nearly straight in outline.

Clistopyga linearis (Wollaston)

Recorded by Wollaston (1858 : 22-23, as *Ephialtes linearis*) from 'Ribeiro Frio, &c.'. Transferred to *Clistopyga* by Roman (1938 : 3). The ♀ lectotype (designated by Fitton) and 2 ♂, 2 ♀ paralectotypes are in BMNH (Fitton, 1976 : 355) ; one ♂ paralectotype, however, belongs to *Scambus monticola* Roman.

New record. Boca do Risco, 1 ♀, 27.vii.1985 (M. de V. G.).

Zatypota percontatoria (Müller)

Female (apparently only one) recorded by Hellén (1961 : 37, as *Polyphincta percontatoria*) as having been taken by Lindberg at 'Valparaiso' [evidently Vale Paraíso, west of Camacha].

New records. Cural dos Romeiros, 1 ♀, 13.v.1980, 1 ♀, 15.v.1980 (M. de V. G.). These have the thorax mainly red and tergites 1 to 4 of the abdomen partly reddish but do not appear to differ otherwise from European *percontatoria*. Hellén (1961 : 37) gave this form the name 'var. *madeirensis*'.

Coccygomimus dorsalis (Wollaston)

Described by Wollaston (1858 : 23, as *Lissonota dorsalis*) from 'sylvan spots (Cruzinhas, Ribeiro Frio, Sta. Anna, &c.) of intermediate and lofty elevations'. Lectotype ♂ and 4 paralectotype ♂♂ in BMNH (Fitton, 1976 : 356), also 3 ♀♀ which Fitton does not regard as paralectotypes. In the Wollaston Madeiran collection in UM, Oxford, I have found 2 other ♂♂ numbered '1094' and '1175' which must be further paralectotypes ; the collection also contains a ♀ labelled 'Madeira'. The species was transferred to *Pimplidea* by Roman (1938 : 12) and to *Pimpla* by Fitton (1976 : 356). The application of the name *Pimpla* to the present genus is not accepted by some workers, such as Carlson who employs the name *Coccygomimus* (Carlson, 1979 : 316).

The present species was also found by Lindberg at Poiso, Rabaçal, Serra de Água, Valle de Paraiso and Queimadas (Hellén, 1961 : 37). My wife and I have collected it at Rabaçal and in the Fanal, also at Curral dos Romeiros, near Santo da Serra, near Encumeada de São Vicente, Ribeiro Bonito, Ribeira das Cales and Achada do Teixeira (in groves of *Erica arborea*), Lombada das Vacas, and on the summit of Pico Ruivo. It appears to be, next to *Scambus monticola*, the commonest endemic species of Pimplinae.

C. instigator (F.)

First taken in Madeira by Wollaston (1 ♂ in BMNH) later by Lundblad (see Roman, 1938 : 3, as *Pimplidea instigator*).

New record. Curral dos Romeiros, 1 ♀, 9.viii.1985 (M. de V. G.).

C. turionellae (L.)

Roman (1938 : 12) recorded, under the name *Pimplidea moraguesi* (Schmiedeknecht), 2 ♀♀ taken by Lundblad at Rabaçal.

There has been much discussion as to the exact status of *moraguesi*. Aubert (1969 : 94) treated both it and *P. freyi* Hellén (1949) as synonyms of *turionellae* (L.). Horstmann (1969 : 403) who examined the holotype of *moraguesi*, regarded it as a subspecies of *turionellae*. The nominotypical form of *turionellae*, occurring in Europe, has the coxae and scutellum black. Both *moraguesi* and *freyi* have all coxae red ; the scutellum is more or less reddish in *moraguesi* but black in *freyi*. Gupta (1983 : 28) claimed that *moraguesi* should be regarded as a species distinct from *turionellae* on the basis of its coarser body sculpture and a difference in the ratio POL : OOL.

On comparing European *turionellae* with *moraguesi* from the Mediterranean area and North Africa, the colour distinctions noted above appear to hold good, but those of body sculpture and ratio POL : OOL, although valid for most specimens, do not seem to be absolutely clear-cut.

The same conclusions apply to *freyi* from the Canary Islands. Both *turionellae* and *moraguesi* have been reared from the same host-species, the Gypsy moth (*Lymantria dispar*). Provisionally therefore I follow Horstmann in regarding *moraguesi* as a subspecies of *turionellae*.

In BMNH there is a ♀ of the (?) subspecies *freyi* Hellén, collected by Wollaston, bearing a tiny red ticket and accompanied by a lepidopterous pupa case. The red ticket indicates either Deserta Grande, or Gomera in the Canary group (most probably the latter).

T r y p h o n i a e

Phytodietus (Phytodietus) ericeti Roman

Described by Roman (1938 : 15-16) from a single ♂ taken at Caramujo by Lundblad and not recorded since. This handsome species is presumably endemic and I was fortunate enough to find the undescribed female.

New records. Fajã da Nogueira, 1 ♀, 24.vii.1985 ; Queimadas, 1 ♀, 10.viii.1985 ; Fonte da Pedra, 1 ♀, 15.viii.1987 (M. de V.G.). These females agree with the characters given by Roman for the male except that the petiolar segment of the abdomen is only about 1.5 times as long as apically broad, the following segments being transverse ; the ovipositor sheaths are about as long as the hind tibia ; the antennae have 38-39 segments.

Netelia testacea (Gravenhorst)

The extant syntypes of *Ophion (Paniscus) testaceus* Gravenhorst in BMNH and UM, Oxford, will be examined critically but not by the present author as it is outside the scope of his work. Meanwhile the species is identified following the views of Tolkanitz (1981 : 115-117) who treats it in a relatively broad sense, with *melanurus* (Thomson), *opaculus* (Thomson), *ocellaris* (Thomson), *fuscicarpus* (Kokuyev), *desertus* (Kokuyev), *maltractatus* (Roman), and *ocellaris* subsp. *ambiguator* Aubert as synonyms.

A short account of the references involving Madeiran material which appears to belong to *testacea* may be useful. Morley (1913 : 116) misidentified specimens as *Paniscus ocellaris* Szépligeti [not *ocellaris* of Thomson]. Roman (1938 : 17) noted the error and proposed *Paniscus maltractatus* as a replacement name for Morley's supposed *ocellaris*. He based his description of *maltractatus* on material captured by Lundblad, 9 ♂♂ and 13 ♀♀ at Rabaçal, 1 ♂ and 1 ♀ at Caramujo. No holotype was designated but a male was designated lectotype by Delrio (1975 : 49). Hellén (1949 : 16) mentioned other specimens taken by Storå at Funchal. He also recorded, as *Paniscus testaceus*, specimens of both sexes taken at the Monte by Frey, describing them as having narrowed temples, black ocellar triangle, matt mesoscutum and yellow abdomen.

Aubert (1968 : 99) described a subspecies of *Netelia ocellaris* (Thomson) under the name *ambiguator*, recording it from several localities in Europe, North Africa, and Israel. Later (*in* Delrio, 1971, *Addendum* : 70) he put *ambiguator* in synonymy with *maltractatus* (Roman).

Delrio (1975 : 49) placed *desertus* Kokuyev, *maltractatus* Roman and *ocellaris* subsp. *ambiguator* Aubert as synonyms of *fuscicarpus* (Kokuyev) after examining the type material of these three species. They were later synonymized, together with other names which I have mentioned above, with *testacea* (Gravenhorst), by Tolkantz (1981 : 115-117). This author considered that too much importance had been attached to variable characters such as the degree of convergence of the temples, colour of ocellar triangle, matt or subpolished surface of mesoscutum and mesopleuron, degree to which the nervulus is postfurcal, and colour of abdomen.

New records. Madeira : Prainha, 1 ♂, 30.xii.1972 ; Machico, Rocha Alta, 1 ♀, 1.i.1973 ; Encumeada de São Vicente, 1 ♀, 18.v.1980 (M. de V. G.). Deserta Grande, 1 ♂ bearing a small red ticket (indicating Deserta Grande) in Wollaston collection, BMNH ; Madeira, unlocalized, 2 ♀ ♀ in the same collection. Madeira, unlocalized, 4 ♀ ♀ in the part of Wollaston's Madeira collection in UM, Oxford, one labelled '*Paniscus inquinatus*' [a Gravenhorst species, the identity of which is uncertain] ; this evidently represents further material of '*ocellaris* Szépl.' which Morley (1913 : 116) stated to have been taken in Madeira by Wollaston. Madeira, unlocalized, 1 ♀ in BMNH bearing a circular label with the figures ⁴⁵/₉₀ ; the register of accessions for 1845 shows that this was a single hymenopteron included in a batch of insects presented by Mrs. Hope. Morley (1913 : 116), referring to '*ocellaris* Szépl.', stated that '... both Wollaston and Mrs. Hope took it in Madeira'. I can find no evidence that Mrs. Hope visited Madeira and it seems likely that she received the specimen from some collector other than Wollaston (who did not visit the island until 1847).

N. ? *ahngeri* (Kokuyev)

Paniscus madeirensis Morley, 1913 : 115.

This species was described by Morley from 2 ♂ ♂ and 2 ♀ ♀ taken by Wollaston and in BMNH. These specimens bear a tiny blue ticket which indicates the locality of capture as Porto Santo (not the main island of Madeira as their labels 'Madeira. Wollaston' might suggest). No additional material has come to light.

Delrio (1975 : 70) published a note referring to *Paniscus madeirensis* Morley. This states 'Nous n'avons pas vu voir les types. Peut-être s'agit-il d'un synonyme de *N.* [*Netelia*] *ahngeri* Kok.'. I have examined the syntypes of *madeirensis*, which run to *ahngeri* (Kokuyev) in Delrio's key (1975) to west Palaearctic *Netelia* ; moreover, they agree with his redescription of that species. It is probable that his conclusion regarding

the synonymy is correct, but as I am not a specialist in this group I prefer not to make a definite statement.

Phygadeuontinae (= Gelinae of Townes)

Townes (1970 : 4) remarked of this subfamily '... many additional genera will eventually be needed, as the collecting and study of the species proceeds'. The species recorded here fit well enough into existing genera.

Acrolyta Förster

In spite of the extensive work carried out by Townes on the classification of World Gelinae (= Phygadeuontinae), a number of taxonomic problems still exist. This is particularly the case with the subtribe (Acrolytina) to which the four following species apparently belong, hence their generic placing is very tentative.

Acrolyta alticola (Roman)

Described by Roman (1938 : 9-10, as *Astomaspis alticola*) from specimens collected by Lundblad at Rabaçal and Caramujo.

New records. Near Santo da Serra, 1 ♀, 31.xii.1972 ; Alagoa do Fanal, 1 ♀, 28.vii.1982 ; Rabaçal, on way to Vinte e Cinco Fontes, 1 ♂, 24.v.1980 (M. de V. G.) ; Rabaçal, 2 ♀ ♀, 29.vii.1985 (E. M. G.) ; 3 km east of João do Prado, 1 ♀, 5.viii.1985 ; Fanal de Cima, 1 ♀, 19.viii.1985 ; Balções do Ribeiro Frio, 1 ♂, 21.viii.1985 ; between Boca da Encumeada and Pico do Ferreiro, on path to Torrinhas, 1 ♀, 19.viii.1987 (M. de V. G.).

A. sp.

About 3 km east of João do Prado, 1 ♀, 22.vii.1985 ; Curral dos Romeiros, 1 ♀, 26.vii.1985 (M. de V. G.). A handsome species with thorax and abdomen mainly red. Dr. Horstmann informs me that it may be placed provisionally in *Acrolyta*.

A. ? pluricinctus (Roman)

Described by Roman (1938 : 8-9, as *Astomaspis pluricinctus*) from a single ♀ taken by Lundblad at Rabaçal.

New record. Levada da Serra do Faial, near João Frino, 1 ♀, 23.viii.1985 (M. de V. G.). This fine species differs in several small characters from the two preceding species.

A. ? ericeti (Roman)

Described by Roman (1938 : 10-11, as *Hemiteles ericeti*) from specimens collected by Lundblad at Rabaçal and Caramujo.

New records. Curral dos Romeiros, 1 ♀, 20.vii.1982 ; Ribeira das Cales, 4 ♂♂, 17.viii.1985, 1 ♀, 26.vii.1985 ; lombo on western side of Ribeira de João Delgado, 2 ♀♀, 28.vii.1987 (M. de V. G.). The species is evidently associated with cloud-zone forest.

Pending a revision of this difficult group, I am placing *ericeti* provisionally in *Acrolyta* although it differs in some respects from species which are currently referred to that genus.

Lysibia nana (Gravenhorst)

New to Madeira : near Lagoa of Santo da Serra, 2 ♂♂, 5.viii.1982 (E. M. G.), 1 ♀, 7.viii.1982 (M. de V. G.).

This species has been recorded from the Canary Islands by Hellén (1949 : 7, as *Astomaspis fulvipes*) and also from the Azores. It is widely distributed in the Palaearctic region.

['*Hemiteles* near *fasciatus* Thomson'

Recorded by Hellén (1961 : 37) from Porto Santo. The systematic position of this species needs further study].

Aclastus gracilis (Thomson)

The ♂ was said to have been taken by Lindberg at Queimadas (Hellén, 1961 : 37). The following probably belong to *gracilis*, though it is desirable to confirm the presence of the species by finding females : Montado dos Pecegueiros, 1 ♂, 3.viii.1982 (M. de V. G.) ; Curral dos Romeiros, 1 ♂, 22.vii.1985 (E. M. G.) ; Fajã da Nogueira, 1 ♂, 24.vii.1985 ; Lombada das Vacas, 2 ♂, 11.viii.1985 ; Caldeirão Verde, 1 ♂, 13.viii.1985 (E. M. G.).

A. solutus (Thomson)

The male was recorded from Madeira by Roman (1938 : 3).

New records. Curral dos Romeiros, 2 ♀♀, 11.v.1980, 1 ♂, 13.v.1980, 1 ♂, 15.v.1980 (M. de V. G.), 4 ♂♂, 23.vii.1982 (E. M. G.), 1 ♂, 26.vii.1985 ; 3 km E. of João do Prado, 1 ♂, 1.viii.1982 (M. de V. G.).

Aclastus macrops sp. n.

♀ Very near *eugracilis* Horstmann (1980 : 139, 148 - 149) but differs as follows. Head in dorsal view (Fig. 1) with eyes even larger, their apparent length about 2.5 times the length of the temples, the latter rather more strongly convergent. Antenna with 26 - 30 segments ; flagellum even more slender than in *eugracilis*, segments 3 to 5 taken together 16 - 18 times as long as broad. Propodeum with area superomedia about as long as broad, with nearly parallel sides. Forewing veins well-defined, except the second

recurrent which is fairly distinct only below the second bulla, otherwise obsolescent ; pterostigma brown with a paler longitudinal discal streak which extends over about the proximal half of the stigma. Postpetiole 1.2-1.4 times as long as its apical breadth. Ovipositor sheaths 1.5-1.9 times the length of tergite 1. Length (excluding ovipositor) 3-4 mm. Fore and mid tarsi infusate, hind tibiae and tarsi mainly black.

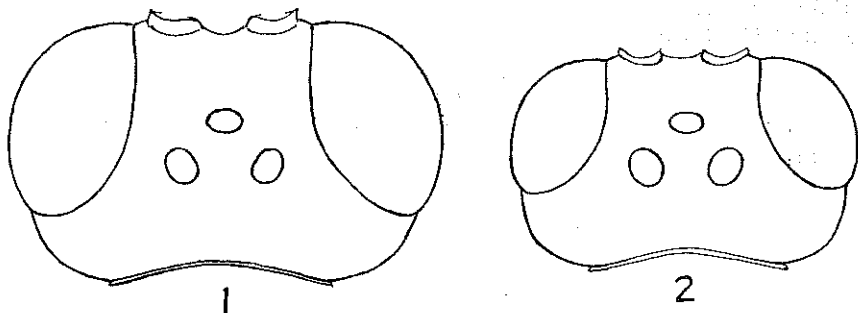


Fig. 1. — *Aclastus macrops* sp. n., holotype female, head in dorsal view. Fig. 2. — The same, paratype male, head in dorsal view.

♂ Like the ♀ but with eyes (Fig. 2) smaller, in dorsal view only about 1.5 times as long as the temples, the latter more rounded and therefore less convergent. Antenna with 27-28 segments ; postanellus about 5 times as long as broad, distal flagellar segments 1.6-1.7 times as long as broad.

Holotype ♀, Madeira, Ribeiro Bonito, near São Jorge, 14.viii.1985 (M. de V. Graham) (BMNH).

Paratypes. Queimadas, 1 ♂, 11.viii.1982, 1 ♀, 10.viii.1985 (E. M. & M. de V. G.) ; Fajã da Nogueira, 1 ♂, 24.vii.1985 ; Lombada das Vacas, 1 ♂, 11.viii.1985 ; between Queimadas and Caldeirão Verde, 1 ♂, 13.viii.1985 ; Ribeiro Bonito, 1 ♂, 2 ♀♀, 14.viii.1985 ; Fanal de Cima, 1 ♂, 19.viii.1985 ; Fanal de Baixo, 1 ♂, 19.viii.1985 (M. de V. G.) (retained provisionally in author's collection).

This species may be endemic ; it is associated with laurisilva at moderate and high elevations. *A. eugracilis* is said to occur in coastal areas and has been found in Sweden, Germany and Italy.

The above description of *macrops* was written primarily to clarify its characters in my own mind and I then sent it to Dr. Klaus Horstmann, the expert on *Aclastus*, as I thought that he might wish to describe the species. In his reply he said that he did not plan to work further on *Aclastus* at present and generously suggested that I should describe *A. macrops*.

A. sp.

This species is known to me only in the ♀ sex, which is brachypterous. I have examined the following material. Madeira, unlocalised : 2 ♀ ♀ from Wollaston's collection, labelled '1434' and '1536' respectively (BMNH) ; localities to which these numbers refer cannot at present be identified. Fanal de Cima, 1 ♀, 19.viii.1985 ; Curral dos Romeiros, 1 ♀, 11.v.1980 ; Montado dos Pecegueiros, 2 ♀ ♀, 3.viii.1982 ; between Queimadas and Caldeirão Verde, 1 ♀, 13.viii.1985 (M. de V. G.).

I sent my notes on this species to Dr. Horstmann, who informed me that he intended to describe it as part of his current work on the brachypterous Cryptinae (= Phygadeuontinae). My own material has therefore been sent to him for inclusion in his description.

Dichrogaster madeirae (Roman)

Described rather briefly by Roman (1938 : 11 - 12, as *Brachycephalus madeirae*) from 2 ♂ ♂ taken by Lundblad at Caramujo. The species was transferred to *Dichrogaster* by Townes (1983 : 116) who gave further notes on the male and included it in his key to males of the *aestivalis* group (1983 : 105).

I have captured males on several occasions since 1982 but only this year (1987) was I fortunate enough to find the unknown female. A description of the latter follows below.

♀. Frons slightly shiny, its alutaceous sculpture weaker than in *modesta* (Grav.) so that the piliferous punctures stand out more distinctly (much as in the ♀ of *diatropus* Townes). Ocelli rather large ; POL 1.6 - 2.0 OOL (less in small, greater in larger specimens) ; OD (ocellar diameter) about equal to OOL. Antennae usually with 26 - 28 segments but only 25 in one very small ♀ ; second flagellar segment 2.55 - 2.9 times as long as thick, following segments decreasing in length with segment 14 or 15 and following quadrate. Mesoscutum moderately shiny (but rather less so than in *diatropus*), surface between the punctures nearly smooth except for a trace of weak alutaceous sculpture on the front part in some specimens. Scutellum strongly carinate laterally for about half its length, then more finely so almost to posterior margin. Mesopleuron not polished but with some alutaceous sculpture between the punctures which are relatively strong ; there are also several striae in the upper part. Metapleuron rugulose ventrally but with distinct punctures in upper 0.33 - 0.5. Punctures on tergite 2 of abdomen very variable, very small to minute, those on its median part usually separated by 1.5 - 2 times their diameter but in one ♀ by hardly more than their diameter. Hind femur 3.5 - 3.7 times as long as broad.

Black. Clypeus red, mandibles reddish-testaceous with tips blackish. Antennal scape red beneath ; flagellum reddish beneath at least in proximal third but sutures between the segments tending to be infuscate,

especially in the distal part of the antenna. The following parts of thorax red : pronotum mainly to wholly ; sometimes prosternum posteriorly ; mesoscutum (except occasionally a small triangular mark touching the scuto-scutellar suture) ; scutellum ; mesopleuron mainly to wholly, sometimes also lateral parts of mesosternum ; metapleuron sometimes. The sides of the propodeum are sometimes obscurely reddish. Postpetiole sometimes reddish posteriorly ; tergite 2 rather indefinitely reddish behind the thyridia and sometimes also posteriorly ; tergite 3 sometimes indefinitely reddish at sides anteriorly ; hind margin of tergite 2 and usually those of the following tergites, with a shiny testaceous border. Legs red ; hind coxae occasionally infuscate dorsally ; hind tibiae more or less infuscate distally, especially on their dorsal surface ; hind femora sometimes dark at tips, or with a dark dorsal stripe ; fifth tarsal segment and claws fuscous, occasionally the other tarsal segments slightly infuscate. Tegulae reddish to brown ; wings weakly to moderately infumate but without a darker fascia beneath the pterostigma. Length of body 3.6 - 5 mm. (including ovipositor sheaths 4.7 - 6 mm.).

The ♀ much resembles that of *modesta* (Gravenhorst) but that species differs in having the frons almost matt, its granulate-alutaceous sculpture relatively strong so that the punctures are less distinct ; mesoscutum relatively dull, with distinct alutaceous sculpture between the punctures, especially on the anterior part where it is matt ; mesopleuron polished and smooth, with smaller and sparser punctures, striae in upper part weaker ; antennae usually with 24 - 25 segments ; hind femora stouter (3.3 times as long as broad according to Townes). The clypeus is black, or pale only anteriorly ; mesoscutum and scutellum often black though sometimes more or less red, occasionally wholly so ; hind legs red with at most tips of tibiae, and the tarsi, infuscate.

The ♂ of *madeirae* has antennae 24 - 26 (usually 26-) segmented. Mesoscutal and mesopleural sculpture as in ♀ but punctures of tergite 2 tending to be larger and closer together.

Body black with less extensive red coloration than in ♀. Clypeus mainly to wholly red, also mandibles mainly and scape beneath. Pronotum sometimes red only laterally though usually mainly to wholly. Mesoscutum varying from wholly black to red with a black triangular spot in front of the scutoscutellar suture. Scutellum red. Mesopleuron sometimes more or less red only in upper part but often red as far as the sternauli. Legs tending to be darker than in ♀, hind coxae often mainly or wholly black, hind femora often black-striped dorsally, tibiae sometimes black with only inner aspect obscurely reddish. Tegulae reddish-testaceous to black. Wings more strongly infumate than in ♀, tending to be very dark in distal third. Rarely the thorax is as extensively red as in the most highly coloured females.

The variation in proportions of the second flagellar segment of the ♀ is noteworthy because in other species it appears to be relatively constant.

A ♂ specimen in BMNH mentioned by Townes (1983 : 116) was taken on 21.viii.1954 by a member of the Durham University Madeira Expedition. The following are new records. Vinte e Cinco Fontes, 1 ♂, 27.vii.1982 ; Curral dos Romeiros, 1 ♂, 22.vii.1985 ; Fajã da Nogueira, 3 ♂ ♂, 24.vii.1985 ; Rabaçal, 1 ♂, 29.vii.1985 ; 5 km. above Canhas, on road to Paul da Serra, 1 ♂, 1.viii.1985 ; massif of Lombada das Vacas, 1 ♂, 11.viii.1985 ; Queimadas, 2 ♀ ♀, 21.vii.1987 ; levada da Serra do Faial, 1 ♀, 23.vii.1987 ; Boca do Risco, 2 ♂ ♂, 24.vii.1987, 1 ♂, 1 ♀, 22.viii.1987 ; Ribeira das Cales, 1 ♀, 3.viii.1987 ; Balcões do Ribeiro Frio, 1 ♂, 2 ♀ ♀, 8.viii.1987 ; Jardim da Serra, 1 ♂, 18.viii.1987 (M. de V. G.).

Species of *Dichrogaster* are parasites of Neuroptera Chrysopidae, attacking the cocoons. The exact host or hosts of *madeirae* are unknown. I took some of the specimens recorded above from Boca do Risco in company with adults of *Atlantochrysa pseudoatlantica* (Tjeder) which might be a host of *madeirae*.

D. diatropus Townes

New to Madeira. São Martinho, 1 ♀, 9.viii.1985 (M. de V. G.). I have compared this specimen with some Palaearctic syntypes of *diatropus* and believe it to be conspecific. In Townes' key to females of the *aestivalis*-group (1983 : 107) it runs to couplet 8 and *diatropus*, agreeing with the diagnosis 'second flagellar segment 2.4 as long as wide'. It should be noted that in his description of *diatropus* Townes (1983 : 114) the second flagellar segment of the female is given as '2.6 as long as wide'. I assume that the latter figure is a typographical error. [See also note under *D. tenerifae* below].

D. tenerifae (Hellén)

Described by Hellén (1949 : 7, as *Brachycephalus tenerifae*) from Tenerife. Later (1961 : 37) he recorded the species from Porto Santo in the Madeira group. Townes (1983 : 115) examined only the Canary Islands material, so the record from Porto Santo needs checking. Incidentally Townes (1983 : 115) remarked of *tenerifae* 'Very similar to *diatropus* and possibly not specifically distinct from *diatropus*'. The nominotypical form of *tenerifae* has thorax black with only the hind corner of the pronotum fulvous, abdomen reddish with some infuscation on all the segments. A form *thoracicus* Hellén (also from Tenerife) has the thorax mainly red and the abdomen reddish with only tergites 4-7 black. The specimen which I have recorded above as *diatropus* Townes is coloured much as in the nominotypical form of *tenerifae*. Possibly this is a case analogous to that of *Coccygomimus turionellae*, which has forms (possibly subspecies) in the Canary Islands and Madeira, differing somewhat in coloration. Further collecting and study of *diatropus* and *tenerifae* in these islands is desirable in order to elucidate their exact status.

***Gelis longicauda* (Thomson)**

New to Madeira : just E. of João do Prado, 1 ♀, 22.vii.1985 ; Fajã da Ovelha, 1 ♀, 7.viii.1985 (M. de V. G.).

Some ♂♂ which we took at Fajã da Nogueira and Ribeira das Cales may also belong to this species.

***G.* sp. ? near *spinula* (Thomson)**

New to Madeira. Curral dos Romeiros, 3 ♀♀, 20.vii.1982 ; São Martinho, 1 ♀, 20.vii.1985 (M. de V. G.).

A winged ♂ taken at Curral dos Romeiros, 11.v.1980 may be conspecific with the above ♀♀ as it has the deep malar sulcus and dark legs. The mesosternum of the ♀ is extremely short. It is not possible to apply definitive names to this and the two following species, as Palaearctic *Gelis* are badly in need of revision.

***G.* sp. indet. 1**

Machico, Rocha Alta, 1 ♂, 1.i.1973, 1 ♀, 5.i.1973 (M. de V. G.). Superficially resembles the preceding species, the ♀ having black body and very dark legs ; but both sexes differ from it in having superficial malar sulcus and genal carina meeting oral carina a short distance above the base of the mandible. The ♀ has a moderately long mesosternum. It therefore belongs to a different species-group.

***G.* sp. indet. 2**

Fanal de Cima, 1 ♀, 19.viii.1985 (M. de V. G.).

A very slender species with thorax about 2.3 times as long as broad. Abdomen longer than head plus thorax and fully 2.5 times as long as broad ; mesoscutum as long as broad, subtriangular ; dorsal face of propodeum slightly shorter than mesoscutum, transverse carina of propodeum present medially but obsolete laterally ; scutellum small but distinct ; median length of mesosternum about two-thirds that of mid coxae ; wings absent ; malar sulcus obsolete, genal carina meeting oral carina well above base of mandible ; antennae slender, 21-segmented with first flagellar segment (postanellus) hardly longer than second and 4 times as long as broad, following segments decreasing gradually in length but even the penultimate slightly longer than broad ; abdomen subpolished, with very sparse indistinct pubescence ; spiracles of tergite 2 separated by about their diameter from the lateral margin, epipleura very narrow ; projecting part of ovipositor sheaths very slightly longer than hind tibia. Body with excessively fine alutaceous sculpture, face, frons and thorax nearly matt, body black ; antennae reddish at base, gradually darkening to fuscous at tips ; legs pale reddish ; ovipositor sheaths light brown. Length without ovipositor 3 mm. ; including ovipositor 3.8 mm.

I have 3 ♂♂ which show some characters suggesting that they might be conspecific with the above ♀.

Mastrus rufulus (Thomson)

Curral dos Romeiros, 1 ♀, 11.v.1980 (M. de V. G.). No species of this genus has hitherto been recorded from Madeira. The specimen was sent to Dr. Klaus Horstmann for his opinion and I am grateful to him for the above identification.

Ethelurgus sp.

Curral dos Romeiros, 1 ♂, 13.v.1980, 1 ♂, 15.v.1980 : Balcões do Ribeiro Frio, 1 ♂, 21.viii.1985 (M. de V. G.). Fajã da Nogueira, 1 ♀, 11.viii.1987 (E. M. G.).

This genus has not previously been recorded from Madeira. The Madeiran species belongs to the *vulnerator*-group and appears to be near *politus* Townes, described from India, China and Japan, to judge from his description (Townes, 1983 : 135-136). At first I felt hesitant about my generic placing of the above males because they do not have the transverse groove near the front margin of the clypeus characteristic of female *Ethelurgus*. However, I find that males of *vulnerator* also lack the groove. Further I note that Carlson (*in* Krombein *et al.*, 1979 : 416) states 'Males of *Ethelurgus* will not key to the subtribe Ethelurgina in Townes (1970) because only the females have the apical margin of the clypeus impressed'.

Charitopes areolaris (Thomson)

New to Madeira : Curral dos Romeiros, 1 ♀, 11.v.1980, 1 ♀, 15.v.1980 ; Casa do Rabaçal, 1 ♀, in window, 29.vii.1982 ; Boca do Risco, 1 ♀, 27.vii.1985 (M. de V. G.).

I have identified *areolaris* on the basis of the 'lectotype' published by Horstmann (1979 : 298), following Fitton (1982 : 35) who, however, pointed out that Horstmann's selection was invalid.

? **Stibeutes** sp.

Curral dos Romeiros, 1 ♂, 13.v.1980 (E. M. G.), 1 ♂, 22.vii.1985 (M. de V. G.).

Theroscopus hemipterus (F.)

New to Madeira : Curral dos Romeiros, 3 ♂♂, 11.v.1980 (E. M. G.), 1 ♂, 23.vii.1982, 1 ♂, 22.vii.1985 (M. de V. G.) ; Fajã da Nogueira, 2 ♂♂, 24.vii.1985 (E. M. G.), one of these a dwarf, 3.2 mm., with mainly black legs

and abdomen with only anterior half of tergites 2 and 3 reddish. These parts are much more extensively red in the other Madeiran specimens.

Phygadeuon posticus (Wollaston)

Described by Wollaston (1958 : 22, as *Hemiteles postica*), apparently from a single female, the holotype. Transferred to *Phygadeuon* by Roman (1938 : 2). The holotype in BMNH (see Fitton, 1976 : 356) has been examined.

New records. Curral dos Romeiros, 2 ♂♂, 15.v.1980 (E. M. G.) ; Jardim da Serra, 2 ♀♀, 18.viii.1987 (M. de V. G.). I compared these females with the holotype. The above males (hitherto unknown) are certainly conspecific with the females ; they have mandibles, antennal scape and pedicel beneath, white ; tegulae yellow.

Provisionally I accept the name *posticus* as valid, though subsequent research might show it to be a synonym of some earlier name.

P. sp. indet.

Curral dos Romeiros, 1 ♂, 15.v.1980 (E. M. G.) ; Terreiro da Luta, 1 ♂, 7.viii.1982 (M. de V. G.). These males differ from those of *posticus* in having antennae and tegulae black, legs black with only fore tibiae pale, abdomen black. It is not possible at present to identify this species.

Stilpnus ? gagates (Gravenhorst)

New to Madeira : Curral dos Romeiros, 4 ♂♂, 20.vii.1982 (M. de V. G.). These appear very similar to European *gagates* and probably belong to that species, which has been recorded from the Canary Islands and the Azores (Hellén, 1949 : 8).

Trychosis legator (Thunberg)

The species was first taken in Madeira at Rabaçal by Lundblad and recorded as '*Goniocryptus* cf. *legator* Thunb.' by Roman (1938 : 7). Later it was found by Lindberg at Poiso and Queimadas (Hellén, 1961 : 37). New records. Near Lagoa of Santo da Serra, 1 ♂, 1.viii.1982 ; just east of João do Prado, 1 ♂, 26.vii.1985 : 5 km. N. of Canhas, 1 ♂, 1 ♀, 1.viii.1985 (M. de V. G.) ; Monte, 1 ♀, iii.1901 (H. B. Gray) (in UM, Oxford).

Cryptus F. (= *Itamoplex* Forster)

The vexed question of the validity of *Cryptus* Fabricius is still unsettled. Provisionally I follow the usage of Carlson (1979, in Krombein *et al.* : 316, 462) whose reasoning seems carefully thought out and consistent.

Cryptus lundbladi Roman

Described by Roman (1938 : 6-7) from material of both sexes collected by Lundblad at Rabaçal and Caramujo. The species was later taken by Lindberg on Ilhéu Chão (Desertas) and at Poiso (Hellén, 1961 : 37). In the BMNH collection there are 3 pinned ♀ ♀ taken by Wollaston. I can add two new records. Ribeira das Cales, 1 ♀, 3.viii.1987 ; Fajã da Nogueira, 1 ♀, 11.viii.1987 (M. de V. G.).

Roman (1938 : 7) mentioned some differences between the male of *lundbladi* and that of *subspinosus* Smits van Burgst (1913 : 332) which was described from the male only, captured in the vicinity of Tunis. I have compared females of *lundbladi* with those of *subspinosus* and conclude that they are distinct. In ♀ *lundbladi* the mesoscutum is subpolished, with distinct alutaceous sculpture between its punctures ; the mesopleuron is finely rugulose, except the speculum which is punctate ; the inner and outer orbits both have a thin whitish streak, whilst there are white streaks in front of and below the base of the forewing, and a whitish spot on the scutellum. In ♀ *subspinosus* the mesoscutum is polished, without alutaceous sculpture ; the speculum is impunctate or nearly so ; the inner and outer orbital white marks are reduced or even absent, there are no whitish marks near the base of the forewing, whilst the scutellum is black..

Incidentally van Rossem (1969 : 354) mentioned that two of the ♂ syntypes of *subspinosus* were then missing and suggested that they might have been given to Schmiedeknecht. Roman, however, appears to have seen one of them (1938 : 7) and it seems possible that he retained it.

Banchinae

Banchus insulanus Roman

Described from 1 ♀ taken by Lundblad at Vinte e Cinco Fontes (Roman, 1938 : 18). Also found by Frey at Ribeiro Frio (Hellén, 1949 : 13, as '♂') and by Lindberg at Queimadas (Hellén, 1961 : 37). Fitton (1985 : 13) points out that the '♂' referred to by Hellén in 1949 proves to be a ♀ ; he also states that the material referred to by Hellén in his 1961 paper cannot be found. I am able to give a new record from the locality mentioned by Hellén in 1961 : Queimadas, 1 ♀, 14.v.1980 (M. de V. G.).

Campopleginae

Campoplex praeoccupator Aubert

Taken by Storå at Funchal and the Monte and described, as *Omorga longiventris*, by Hellén (1949 : 17-18). The name *longiventris* was preoccupied, hence present species was renamed *praeoccupator* by Aubert (1947 : 60). New records. Fonte da Pedra, 1 ♀, 15.viii.1987 ; near Boca

do Risco, on cliff path towards Espigão Amarelo, 2 ♀ ♀, 22.viii.198 (M. de V. G.).

C. faunus Gravenhorst

New to Madeira : São Martinho, 1 ♀, 20.vii.1985 (M. de V. G.).

Campoletis viennensis (Gravenhorst)

Taken by Lundblad and recorded, as '*Sagaritis holmgreni* Tschek' by Roman (1938 : 23). In BMNH there are 2 ♀ ♀ and 1 ♂ from Wollaston's Madeira collection which appear to belong to this species ; they bear numbers 1078, 1079 and (the ♂) 1095 on the undersides of their cards, referring to localities which cannot at present be determined. Recorded from Tenerife, as *Sagaritopsis subdentata*, by Hellén (1949 : 17). *S. subdentata* was synonymized with *Campoletis viennensis* by Horstmann (1980 : 122).

New records. Alagoa do Fanal, 1 ♂, 28.vii.1982 ; near Lagoa of Santo da Serra, 1 ♂, 5.viii.1982 ; Chão de Ribeira, 1 ♀, 7.viii.1985 ; Ribeira das Cales, 2 ♀ ♀, 17.viii.1985, in *Erica*-grove ; 3 km E. of João do Prado, 1 ♀, 17.viii.1985 (M. de V. G.).

C. sp.

Cruzinhas do Fanal, 1 ♀, 28.vii.1982 ; Queimadas, 1 ♀, 11.viii.1982 (E. M. G.) ; Lombada das Vacas, 1 ♀, 11.viii.1985 ; Fanal de Cima, 1 ♀, 19.viii.1985 (M. de V. G.).

This species has a hardly developed clypeal tooth as in *viennensis* (*Ecphoropsis*) but a very short ovipositor, with other differences. Dr. Horstmann considers it to be an undescribed species.

Casinarina sp.

The genus has not hitherto been recorded from Madeira. São Martinho, 1 ♀, 20.vii.1985 ; between Prainha and Abra, 1 ♀, 27.vii.1985 ; Desertas, Ilhéu Chão, 1 ♀, 25.viii.1985 (M. de V. G.).

This species is very close to *tenuiventris* (Gravenhorst) as defined by Townes' figure (1970, Fig. 147), Gupta's redescription (1983 : 63-64) and specimens so determined in BMNH. The ♀ differs from that of *tenuiventris* in having POL about twice OOL (only ca. 1.5 in *tenuiventris*), distal segments of flagellum tending to be very slightly transverse (instead of quadrate to slightly elongate), sculpture of mesoscutum and scutellum slightly finer, mandibles with a testaceous spot. I have seen a conspecific ♀ in BMNH, determined by Perkins as *latifrons* Holmgren, but it does not quite agree with Holmgren's description of *latifrons*, which has been regarded, following Thomson (1887 : 1101) as a synonym of *tenuiventris*. I cannot find another name for it.

Nepiera collector (Thunberg)

Originally recorded from Madeira by Roman (1938 : 3, as *Nepiera collector*). Further records were Areeiro, Queimadas, Serra de Água, Ribeira Brava and Carrical [sic] (Hellén, 1949 : 38).

New records. Machico, Rocha Alta, 1 ♀, 8.i.1973 ; forest, 3 km E. of Poiso, 1 ♂, 2 ♀ ♀, 1.viii.1982, 2 ♀ ♀, 7.viii.1982 ; Fanal de Baixo, 1 ♀, 30.vii.1985 (M. de V. G.). The species is widely distributed in the Palaearctic.

Delopia peregrina (Wollaston) comb. n.

Described by Wollaston (1858 : 22, as *Exetastes peregrinus*) from his own material collected in Madeira. In BMNH there are 5 specimens of *peregrinus*, the ♀ lectotype and 3 ♂ 1 ♀ paralectotypes (Fitton, 1976 : 356). I have found a further syntype, a ♀ in the Wollaston Madeira collection in UM, Oxford, labelled '*Exetastes peregrinus*' ; it should be regarded as a further paralectotype.

Fitton (1976 : 356) transferred *peregrinus* to *Dusona*. This is now regarded as an isolated genus restricted to New Zealand and other species currently placed in *Dusona* should be transferred to the genus *Delopia* Cameron (see Gauld, 1984 : 269).

This species was also taken by Lundblad at Caramujo and Feiteiras (Roman, 1938 : 3, as *Campoplex peregrinus*) and by Lindberg on Pico Ruivo (Hellén, 1961 : 38, as *Dusona peregrina*).

New records. Alagoa do Fanal, 1 ♀, 28.vii.1982 ; Cruzinhas do Fanal, 1 ♂, 28.vii.1982 ; Fanal de Baixo, 1 ♀, 30.vii.1985 ; levada da Serra do Faial, near João Frino, 1 ♂, 23.viii.1985 ; Fonte da Pedra, 1 ♀, 15.viii.1987 (M. de V. G.). Roman (1938 : 22) considered that [*Campoplex*] *angustatus* Thomson, 1887 was a synonym of *peregrinus*. The two are close but Hinz (1977 : 47-48) compared their respective lectotypes and showed that *peregrinus* differs from European *angustata* in having temples slightly longer and less convergent behind eyes, genal carina not elevated, prepectal carina hardly elevated (not bidentate).

Enytus Cameron

Townes (1970 : 160, 177) and Gauld (1984 : 272) treated *Enytus* as distinct from *Diadegma* Förster. Horstmann (1969 : 414) discussed reasons for not regarding *Enytus* as of generic rank. Later (1980b : 126-128, 131) he treated it as a subgenus of *Diadegma* and assigned 4 Madeiran species to it. In a further paper (1986 : 147) he revised his opinion and accorded generic rank to *Enytus* in agreement with the majority of recent authors. He distinguished the two genera thus [my translation of the original German] :

Diadegma : areolet of wing closed and / or hind tibiae with outer surface basally and medially whitish to yellow, subbasally and apically dark.

Enytus : areolet open ; hind tibiae either wholly red, or only apically, or both basally and apically, dark (never pale basally and dark subbasally).

I naturally follow the concensus of opinion, as the above characters seem to work well (although the distinction in colour-pattern of the hind tibiae is subtle and needs careful observation).

The four Madeiran species of *Enytus* are endemic and constitute a 'species-swarm'. The characters given by Horstmann (1980b) for distinguishing these species work well, though the areolation of the propodeum in *nitidiventris* is rather variable, the petiolar area being sometimes defined laterally. An interesting feature, common to all four species, is the pilosity of the face, temples, mesoscutum and sides of thorax, which in fresh females has a slight brassy or pale golden tint instead of being white or silvery as in other species. The pilosity of males is similar except that of the face which is longer and denser, white or hardly tinged with golden.

***Enytus homonymator* (Aubert) comb. n.**

This species was originally described by Roman (1938 : 24 - 25, as *Angitia (Inareolata) variegata*) from material taken by Lundblad at Rabaçal and Caramujo. The syntypes of *variegata* later proved to represent a mixture of more than one species and, in order to fix the name Horstmann (1980 : 122) designated a ♀ from Rabaçal as lectotype. As *Angitia variegata* Roman was preoccupied by *A. variegata* Szépliget, the former was renamed *homonymator* by Aubert (1960 : 64).

Some specimens recorded as '*Omorga mutabilis* Holmgren' by Roman (1938 : 3) belong to *homonymator* (see Horstmann, 1980 : 132).

New records. Montado dos Pecegueiros, 1 ♀, 3.viii.1982 (M. de V. G.) ; Queimadas, 1 ♀, 11.viii.1982 (E. M. G.) ; Lombada das Vacas, 1 ♂, 11.viii.1985 (M. de V. G.) ; Fanal de Cima, in Til-forest, several ♂♂ and ♀♀, 19.viii.1985 (E. M. & M. de V. G.) ; Balcões do Ribeiro Frio, 1 ♀, 21.viii.1985 ; levada da Serra do Faial, 2 ♀, 23.viii.1985 (M. de V. G.).

Horstmann (1980 :) did not mention the number of antennal segments in *homonymator*. Our ♀♀ have 26 - 27 (- 28 in one specimen) segments, ♂♂ have (29 -) 30 - 32.

***E. ericeti* (Horstmann) comb. n.**

Recorded from Caramujo and Rabaçal (Horstman, 1980 : 126).

New records. Montado dos Pecegueiros, 2 ♀♀, 3.viii.1982 ; Rabaçal, 1 ♀, 29.vii.1985 ; Fanal de Baixo, 6 ♀♀, 30.vii.1985 (M. de V. G.).

Horstmann (1980 : 126) gives the number of antennal segments in the ♀ as 25. All our specimens have this number except one dwarf from Montado dos Pecegueiros which has only 23.

E. madeirae (Horstmann) **comb. n.**

Taken at Rabaçal and Caramujo by Lundblad, material included amongst that recorded by Roman (1938 : 24 - 25) as *Angitia variegata*. Recognized as a distinct species by Horstmann (1980 : 128).

New records. Encumeada de São Vicente, 1 ♀, 18.v.1980 ; Rabaçal, 1 ♀, 29.vii.1985 (M. de V. G.).

E. nitidiventris (Horstmann) **comb. n.**

Described by Horstmann (1980 : 128) from syntypes of *Angitia variegata* taken by Lundblad at Rabaçal and Caramujo.

New records. Cruzinhas do Fanal, 2 ♀ ♀, 28.vii.1982 ; Fanal de Cima, 3 ♀ ♀, 28.vii.1982, 3 ♀ ♀, 19.viii.1985 ; Alagoa do Fanal, 1 ♀, 28.vii.1982 ; Montado dos Pecegueiros, 3 ♂ ♂, 2 ♀ ♀, 3.viii.1982 ; Achada do Teixeira, many ♂ ♂ and ♀ ♀, 10.viii.1985 ; Ribeira das Cales, many ♂ ♂, 2 ♀ ♀, 17.viii.1985 (M. de V. G.).

Horstmann (1980 : 128) gives the number of antennal segments in the ♀ as 24, in ♂ as 28. Most of our ♀ ♀ have 24 but two have only 23 ; our ♂ ♂ have 27 or 28.

Diadegma Förster**D. (Nythobia) aculeatum** (Bridgman)

Recorded from Madeira by Horstmann (1980 : 132, 133).

D. (N.) basale Horstmann

Described by Horstmann (1980 : 129) from material collected by Lundblad at Caramujo, Feiteiras and Rabaçal (recorded by Roman (1938 : 3) as *Angitia chrysosticta* Gmelin) ; and 1 ♀ collected by Storå at Ribeiro Frio (recorded by Hellén (1949 : 19) as *A. chrysosticta*).

New records. Fajã da Nogueira, 1 ♀, 25.vii.1982 ; 5 km. N. of Canhas, 1 ♀, 1.viii.1985 ; near Lagoa of Santo da Serra, 1 ♀, 17.viii.1985 ; Fanal de Cima, 1 ♀, 19.viii.1985 (M. de V. G.). In BMNH there is a ♂ taken by the Durham University Expedition at Encumeada, 3.viii.1954.

D. (N.) nigriscapus Horstmann

Originally collected by Frey and Storå at Ribeiro Frio and described as a new species, *Angitia rufiventris*, by Hellén (1949 : 20). Horstmann (1980 : 123, 132) transferred *rufiventris* Hellén to *Diadegma*, where it is preoccupied by *rufiventris* (Gravenhorst), hence he renamed it *nigriscapus*.

There appear to be no further records.

D. (N.) semiclausum (Hellén)

First taken by Storå in the Azores and described, as *Angitia semiclausa*, by Hellén (1949 : 20). Transferred to *Diadegma* by Horstmann (1980 : 123).

New to Madeira : Chão de Ribeira, 1 ♀, 7.viii.1985 ; levada da Serra do Faial, 1 ♀, 23.viii.1985 (M. de V. G.).

Horstmann (1969 : 451) described a new species, *D. eucerophaga*. Later (1980 : 123) he synonymized it with *semiclausum* (Hellén), noting incidentally that the areolet of the forewing was reduced in size in the two syntypes of *semiclausum* seen by him, but that this could be regarded as within the range of variation of *eucerophaga*. Both of the Madeiran ♀♀ taken by me have a small areolet.

D. semiclausum is the most important parasite of the crucifer pest moth *Plutella xylostella* (L.) (= *maculipennis* Curtis) ; see Horstmann (1969 : 451, under *eucerophaga*).

D. (N.) sp.

Ribeira das Cales, 1 ♀, 7.viii.1985 ; Chão dos Balcões, in pinewood 1 ♀, 17.viii.1985 (M. de V. G.). Dr. Horstmann informs me that it belongs to the *armillatum*-group of *Diadegma*, near *hispanicum* Horstm. and *neocephalum* Horstm. Both the localities mentioned are at a high altitude which suggests that the species might be an endemic.

Hyposoter corpulentus (Roman)

Described by Roman (1938 : 25, as *Anilasta corpulenta*) from 1 ♂ and 1 ♀ taken at Rabaçal by Lundblad (the ♂ a partial gynandromorph).

New records. Levada da Serra do Faial, near João Frino, 1 ♀, 23.viii.1985 (M. de V. G.). In BMNH there are 2 ♂♂ taken at Caramujo, 9.viii.1954, by the Durham University Madeira Expedition.

This species has also been collected in Tenerife (1 ♀ in BMNH). Horstmann (1980 : 123) transferred *corpulenta* to *Hyposoter* and designated a lectotype for the species.

Cremastinae

Temelucha decorata (Gravenhorst)

First recorded from Madeira by Roman (1938 : 26, as '*Cremastus ornatus* Szépl. var. *madeirae* nov. '), the record based on 2 ♀♀ taken at Rabaçal and 1 ♂ at Caramujo, by Lundblad.

Šedivý (1968 : 261) synonymized *ornatus* Szépligetii with *decorata* (Gravenhorst). The same author stated (1971 : 17) that *Temelucha ornata* subsp. *africator* Aubert (1965 : 68) and *Cremastus ornatus* var. *madeirae*

Roman were colour forms of *decorata*, and that *C. interruptor* var. *flavopictus* Aubert (1958 : 164) was another synonym of *decorata*. Some species of *Temelucha* appear to be very widely distributed, with considerable colour variation which has given rise to much confusion. Our Madeiran specimens agree in colour, apart from a little variation, with the description given by Roman (1938 : 26) of his var. *madeirae*.

New records. Curral dos Romeiros, 2 ♀ ♀, 20.vii.1982 (E. M. G.), 2 ♀ ♀, 23.vii.1982, 1 ♂, 26.vii.1985 (M. de V. G.) ; Fanal, 1 ♂, 28.vii.1982 ; near Lagoa of Santo da Serra, 1 ♀, 7.viii.1982 ; 3 km E. of Poiso, 3 ♀ ♀, 12.viii.1985 ; Ribeira das Cales, 1 ♀, 26.vii.1985, 2 ♂, 1 ♀, 17.viii.1985 ; Chão dos Balcões, amongst pines, 4 ♂ ♂, 2 ♀ ♀, 17.viii.1985 ; levada da Serra do Faial, 2 ♂ ♂, 23.viii.1985 (M. de V. G.). Thus the species appears to be widely distributed in Madeira, as it is in the Palaearctic (Morocco, Mediterranean region, most of Europe, the USSR).

Tersilochinae

Aneucleis incidens (Thomson)

This species appears to be widespread in Madeira. We have found it at São Martinho, Curral dos Romeiros, near Santo da Serra, near Encumeada de São Vicente, and Rabaçal. A ♀ taken at Rabaçal by Lundblad and recorded as *Isurgus* sp. by Roman (1938 : 3) is stated by Hortsman (1980 : 212) to be *Aneucleis incidens*.

Ophiononae

Ophion atlanticus Roman, stat. nov.

Roman (1938 : 18-19) described this as '*O. obscurus atlanticus* n. subsp.' from 2 ♀ ♀ and 3 ♂ ♂ collected at Rabaçal, and 1 ♂ at Caramujo, by Lundblad. He remarked that it differed from the typical form in having the whitish markings of the thorax paler and obsolete, and the second sector of the radius [*Rs*] evenly curved with the convexity towards the costal margin. These features exactly correspond with those of a ♀ taken by me at Rabaçal, 29.vii.1985, which I am sure must be *atlanticus*. It is not a form of *obscurator* (F.) (= *obscurus* F.). Superficially it is very like *parvulus* Brauns, from which it differs in having vein *Rs* rather more strongly and evenly curved, proximal segments of flagellum slightly longer, only segment 14 and following segments about twice as long as broad, thorax with (rather weak) pale stripes on mesoscutum. Provisionally I adopt the name *atlanticus* Roman for this species, though a subsequent revision of Palaearctic *Ophion* may show that it has an earlier synonym.

O. sp. indet.

A male from Wollaston's collection (Madeira, unlocalized) stands in BMNH under the name '*obscurus atlanticus* Roman'. It is not the form

described as *atlanticus* by Roman (see the preceding species). In fact it is extremely close to the widespread Palaearctic species *obscurator* (F.) (= *obscurus* F.). It differs from European males of that species in having the lateral ocelli slightly closer together and not quite so close to the eyes, malar space a little longer, about 0.7 breadth of postanellus, inner orbits, below the emargination at level of antennal toruli, hardly at all convergent, body very extensively marked with yellowish-white, including the petiole and posterior third of the postpetiole.

Roman mentioned (1938 : 2) that '*Ophion obscurus* F.' had been recorded from Madeira by Morley, whose record he was unable to verify. Possibly the male specimen discussed above represents Morley's '*obscurus*'.

Hellén (1949 : 16) recorded '*obscurus*' from the Canary Islands. It will be necessary to re-examine that material, also the Wollaston male from Madeira, when a revision of Palaearctic *Ophion* is made.

Elucidário Madeirense, 1 : 152 has a curious note under 'Bicho de Lameiro (*Ophion obscurus*)'. From the nesting habits attributed to this insect it is clear that it cannot be an ichneumonid, but probably a *Sceliphron*.

Enicospilus Stephens

This genus is represented in the Palaearctic by few species, though by a large number in the Ethiopian region. Gauld & Mitchell (1978 : 4) remarked 'A number of species of *Enicospilus* have been recorded from Morocco, Madeira and the Canary Islands (Roman, 1938). None of these have ever been recorded from the Ethiopian Region, but the possibility of their occurrence along the coast of the extreme north-west of the region cannot be discounted as there is very little material in collections from the coast of Africa between Morocco and Sierra Leone.'

Enicospilus faciator Roman

Described from a single female taken at Funchal by Lundblad (Roman, 1938 : 19). He considered that this was the species wrongly determined as *repentinus* Holmgren by Morley (1912 : 42). In BMNH there are 4 specimens taken by Wollaston, each bearing a tiny blue ticket (indicating Porto Santo as the locality of capture) ; two are ♀ ♀, the other two probably ♂ ♂ (abdomens missing). They no doubt represent Morley's '*repentinus*'.

E. atrodecoratus Roman

Described from males and females collected by Lundblad at Rabaçal and Caramujo (Roman, 1938 : 20 - 21). Roman pointed out that this species

had been misidentified by Morley (1912 : 42) as *dubius* Tosquinet. In BMNH there is a ♀ collected in Madeira by Wollaston and identified as *dubius* by Morley.

New record. Caramujo, 1250 m., 1 ♂, 1 ♀, 8.viii.1954 and 25.vii.1954 (Durham University Madeira Expedition).

E. obtusangulus Roman

Described from both sexes taken by Lundblad at Rabaçal (Roman, 1938 : 21). He stated that this his species ran in identified keys to the European *merdarius* Gravenhorst which, according to Morley, should occur in Madeira [I cannot find this reference in Morley's papers].

E. striatipleuris Roman

Described from a single male taken in Madeira by T. Becker (Roman, 1938 : 22).

New records. The following are in BMNH : Funchal, 1 ♂, 9.iv.1896 (Oldfield Thomas) ; 'Madeira, 1800 feet', 1 ♂, 1 ♀, 17.x.1921 (G. H. Wilkins, British Museum Shackleton-Rowett Expedition).

This species has also been taken in the Canary Islands.

Mesochorus vittator (Zetterstedt)

Males collected by Storå in Ribeiro Frio were recorded by Hellén (1949 : 14). Hellén later (1961 : 38) decided that he had misidentified Storå's specimens and referred them to *stigmator* (Thunberg (= *pallidus* Brischke) ; he also added a further record, a ♀ taken by Lindberg at Queimadas.

All the specimens collected by us and noted below are *vittator* although they differ from most European specimens in having the thorax mainly to almost wholly reddish and the petiolar segment of the abdomen less extensively black. The petiolar segment is dark basally in all of them, while the hind tibiae have a dark basal ring as well as the apical infuscation ; the hairs of the mesoscutum arise from very small punctures. I am sure that the species recorded by Hellén under the names 'stigmator' and *vittator* must be the same. *M. stigmator* differs from *vittator* in having the petiolar segment whitish or pale yellowish basally, the hind tibiae have no dark basal ring and the hairs of the mesoscutum arise from minute warts.

The following are new records of *vittator*. Rabaçal, on the way to Vinte e Cinco Fontes, 1 ♀, 24.v.1980 ; Queimadas, 1 ♀, 11.viii.1982 (E. M. & M. de V. G.) ; Ribeira das Cales, 1 ♀, 26.vii.1985 ; Lombada das Vacas, 1 ♀, 11.viii.1985 ; 3 km E. of Poiso, 2 ♂♂, 17.viii.1985 ; Balcões do Ribeiro Frio, 3 ♂♂, 21.viii.1985 ; levada da Serra do Faial, 1 ♂, 23.viii.1985 (M. de V. G.).

The Madeiran specimens agree with the detailed redescription of *vittator* given by Dasch (1971 : 139 - 141). The species is widely distributed in Europe, Asia and North America and has a very wide range of hosts.

***M. curvulus* Thomson**

Collected by Frey at Santo da Serra and recorded by Hellén (1949 : 14).

New records. Curral dos Romeiros, 1 ♀, 11.v.1980 (E. M. G.), 1 ♀, 15.v.1980, 1 ♂, 20.vii.1982 (M. de V. G.) ; Encumeada de São Vicente, 1 ♀, 18.v.1980 ; near Terreiro da Luta, 2 ♀ ♀, 7.viii.1982 ; Vinte e Cinco Fontes, 1 ♀, 27.vii.1982 ; Fajã da Nogueira, 2 ♀ ♀, 24.vii.1985 (M. de V.G.).

Madeiran specimens are light in colour, the head being testaceous with the occipital surface, ocellar triangle and frons dark ; pronotum often more or less testaceous ; fore and mid coxae, or all coxae, testaceous.

The species is widespread in Europe and North America.

***Stictopisthus* sp.**

Levada da Serra do Faial, between Santo da Serra and João Frino, 1 ♂, 23.viii.1985 (M. de V. G.).

This genus has not previously been taken in Madeira. Hellén (1949 : 14) recorded both sexes of *S. bilineatus* (Thomson) from the Canary Islands. The above Madeiran ♂ disagrees in several respects with the redescription of *bilineatus* given by Dasch (1971 : 273, 285) who, however, had not seen Thomson's original material.

Metopiinae

***Hypsicera curvator* (Fabricius)**

There are 7 ♀ ♀ of this species from Wollaston's collection in BMNH ; they bear the numbers 1230, 1137 and 1606 on the underside of their cards. Dr. Fitton kindly drew my attention to these specimens, which I had overlooked.

***Triclistus lativentris* Thomson**

Roman (1938 : 16) recorded a single ♀ taken by Lundblad at Ra-baçal.

***Exochus* ? *erythronotus* Gravenhorst**

New to Madeira : Boca do Risco, in pinewood, 1 ♂, 27.vii.1985 (M. de V. G.).

Oxytorinae (= Microleptinae of Townes)

Oxytorinae occur especially in very moist habitats and the high-level laurisilva of Madeira may well hold other species besides those noted here.

Plectiscidea sodalis (Förster)

New to Madeira : Queimadas, 1 ♀, 14.v.1980 ; Fajã da Nogueira, 1 ♀, 24.vii.1985 ; Curral dos Romeiros, 1 ♀, 9.viii.1985 (M. de V. G.).

Aperileptus lineatocollis Hellén

Originally described from the Canary Islands. Hellén (1961 : 37) recorded the capture by Lindberg of the ♀ at Ribeiro Frio.

New records. Curral dos Romeiros, 1 ♀, 20.vii.1982 (E. M. G.) ; Queimadas, 2 ♂♂, 2 ♀♀, 11.viii.1982 (E. M. G.), 1 ♂, 1 ♀, 10.viii.1985 ; Ribeiro Bonito, 2 ♀♀, 15.viii.1985 ; Balcões do Ribeiro Frio, 2 ♂♂, 3 ♀♀, 21.viii.1985 (M. de V. G.).

Megastylus maderensis (Wollaston)

The male was described by Wollaston (1858 : 21-22, as *Misoleptus maderensis*) and was taken at Lombo [= Montado] dos Pecegueiros. Wollaston's collection contains only one male, which is regarded as holotype by Fitton (1976 : 356).

Hellén (1949 : 12-13) noted (as *Myriarthridea maderensis*) other males collected by Storå at the Monte.

During our visit to the remote area of Lombada dos Pecegueiros, on 3rd August 1982 (see Graham, 1983 : 11-13) I captured 4 ♂♂ of *maderensis*, which I have compared with the holotype from the same locality. The species was transferred to *Megastylus* (with a query) by Fitton (1976 : 356). These males have the unique structure of the antennal scape characteristic of *Megastylus*, but males of this genus are poorly known and it is not possible to say whether *maderensis* is the same as any other species described from Europe.

Microleptinae

Microleptes has hitherto been included in Oxytorinae but Wahl (1986 : 126) has shown that it should be placed in a separate subfamily.

Microleptes sp.

Lundblad captured a male at Rabaçal which Roman (1938 : 16-17) recorded as *Miomeris* sp.. *Miomeris* is now regarded as a synonym of *Microleptes*.

Some of the characteres mentioned by Roman for the above male indicate that it was a *Microleptes* (nervulus postfurcal, nervellus intercepted, first flagellar segment shorter than second, the latter emarginate externally, antennae with only 17 segments). He stated (1938 : 17) that the hind tibiae had only one apical spur, whereas *Microleptes* has two spurs ; however, the hind tibia of *Microleptes* has a dense apical fringe, beneath which the second, shorter spur is sometimes concealed, so probably he overlooked it. His mention of roughly sculptured propodeum, lacking costulae, suggest a possible affinity with the European *aquisgranensis* (Förster) but this has only the hind coxae black, whereas Roman's statement (1938 : 17) 'Hüften ... ganz schwarz' seems to imply that all the coxae of Lundblad's male were dark.

Orthocentrinae

Orthocentrus fulvipes Gravenhorst

New to Madeira. Levada da Serra do Faial, 1 ♀, 3.viii.1987 (M. de V. G.). This agrees with Aubert's diagnosis (1976 : 12) and Townes' figure of the ♀ (1971, fig. 197).

O. marginatus Holmgren

Hellén (1949 : 15) stated that the male of this species had been taken at the Monte by Storå. Aubert (1976 : 21) noted 'Hellén le signalait de Madère d'après un ♂ qui devrait être vérifié'.

O. monilicornis Holmgren

Recorded by Hellén (1949 : 15) from a male taken by Frey at Raçaçal. Aubert (1976 : 21) remarked 'signalé enfin de Madère par Hellén, 1949, d'après un ♂ qui devrait être révisé'.

Stenomacrus affinitor Aubert

This species was known for many years as 'affinis Zetterstedt' but Horstmann (1968 : 314) showed that this was a misidentification because Zetterstedt's type specimen of *affinis* belonged to *Hypsicera* (= *Metacoelus*) in the subfamily Metopiinae. Aubert (1981 : 145) therefore described *affinis* of authors (not of Zetterstedt) as a new species, *affinitor*.

S. affinitor is new to Madeira : Santa Cruz, Ribeira da Boaventura, 2 ♀ ♀, 5.i.1973 ; Queimadas, 4 ♀ ♀, 11.viii.1982 ; Vinte e Cinco Fontes, 3 ♀ ♀, 27.vii.1982 ; Curral dos Romeiros, 1 ♀, 15.v.1980 ; 5 km. above Canhas, 1 ♀, 1.viii.1985 (M. de V. G.). This appears to be a fairly common species in Europe.

S. ? caudatus Holmgren

New to Madeira : Machico, Rocha Alta, 1 ♂, 1.i.1973 ; Curral dos Romeiros, 1 ♂, 15.v.1980 (E. M. G.) ; Lombada das Vacas, 1 ♂, 11.viii.1985 ; Fanal de Cima, 1 ♂, 19.viii.1985 (M. de V. G.). These specimens are very close to European males of *caudatus* but have the antennal flagellum rather more slender and the legs somewhat darker.

S. sp.

New to Madeira : Rabaçal, 1 ♀, 6.viii.1987 (E. M. G.). It does not appear to fit any of the described European species.

Plectiscus impurator Gravenhorst

New to Madeira : Machico, Rocha Alta, 1 ♀, 5.i.1973 ; Curral dos Romeiros, 2 ♀ ♀, 11.v.1980, 1 ♂, 1 ♀, 13.v.1980, 1 ♂, 5 ♀ ♀, 15.v.1980 ; near Terreiro da Luta, 2 ♀ ♀, 7.viii.1982 (M. de V. G.).

This species is widely distributed in Europe. Madeiran specimens appear to differ in no way from European ones.

Diplazontinae**Syrphoctonus coloratus** (Hellén) **comb. n.**

Described from specimens taken at Ribeiro Frio by Frey (Hellén, 1949 : 13, as *Diplazon (Homocidus) coloratus*).

New record. Curral dos Romeiros, 1 ♀, 26.vii.1985 (M. de V. G.).

Diplazon laetatorius (F.)

First recorded from Madeira by Wollaston (1858 : 23, as *Bassus albovarius* Wollaston). Transferred to *Diplazon* by Roman (1938 : 3). It was later taken in Ribeira Brava by Frey (Hellén, 1949 : 13).

New records. Near Lagoa of Santo da Serra, 1 ♀, 17.viii.1985 ; Ribeira das Cales, 2 ♀ ♀, 26.vii.1985 ; Queimadas, 1 ♀, 10.viii.1985 (M. de V. G.).

A widely distributed species, occurring in most parts of the Old World, also in both North and South America. It usually reproduces by thelytoky. Dasch (1964) stated that males are not known to occur outside the Nearctic region.

Promethes sulcator (Gravenhorst)

First recorded for Madeira by Hellén (1949 : 14) from specimens collected at Funchal and Ribeira Brava by Storå, and at Porto Novo by

Frey. Lindberg later captured specimens at Queimadas, São Vicente, Serra de Água, Ribeira Brava, Prazeres, Caniçal and Faial (Hellén, 1961 : 38).

New records. São Martinho, 1 ♀, 10.v.1980 ; near Lagoa of Santo da Serra, 1 ♂, 5.viii.1982 ; 3 km. E. of Poiso, 1 ♀, 7.viii.1982 ; Queimadas, 1 ♀, 9.viii.1982 (M. de V. G.), 1 ♀, 11.viii.1982 (E. M. G.) ; near Boca do Risco, 1 ♂, 27.vii.1985 (M. de V. G.).

Widely distributed (Eurasia and North America).

Ichneumoninae

Aoplus madeirae Hellén

One ♀, the holotype, taken by Lindberg at Serra de Água between 16. and 19.vii.1957 (Hellén, 1961 : 36).

Crytea sanguinator (Rossius)

First taken in Madeira, at Rabaçal, by Lundblad (Roman, 1938 : 5, as *Melanichneumon sanguinator*). It was also found by Lindberg, at Queimadas in 1957, and at Fonte da Pedre [Pedra] in 1959 (Hellén, 1961 : 36).

New record. Curral dos Romeiros, 1 ♂, 9.viii.1985 (M. de V. G.).

Stenobarichneumon sp.

São Martinho, 1 ♂, 20.vii.1985 (E. M. G.) ; Boca do Risco, 1 ♂, 27.vii.1975 (M. de V. G.).

The genus has not hitherto been recorded from Madeira. This species somewhat resembles the ♂ of *basiglyptus* (Kriechbaumer) but has mesoscutum between the punctures smooth and polished ; area super-omedia broader than long, propodeal spines large and conspicuous ; face and clypeus wholly white ; prosternum, mesosternum partly, lines on pronotal collar, sides of pronotum in front of wing, along the epicnemium and below the tegula, and a large square mark on the scutellum, white ; abdomen wholly red, or only slightly darker at base of petiole. I am not able to find a name for it at present.

Homotherus locutor (Thunberg)

New to Madeira. Machico, Rocha Alta, 1 ♀, 8.i.1973, 1 ♀, 12.v.1980 ; Queimadas, 2 ♂♂, 14.v.1980 ; near Lagoa of Santo da Serra, 1 ♂, 5.viii.1982, 1 ♀, 7.viii.1982 ; Fajã da Nogueira, 1 ♀, 24.vii.1985 ; levada da Serra do Faial, 1 ♂, 23.viii.1985 (M. de V. G.).

Ichneumon nubigenus Roman

Described from several ♂♂ and ♀♀ taken by Lundblad at Rabaçal (Roman, 1938 : 4-5). Collected also at the Monte by Storå (Hellén, 1949 : 3) and near Encumeada and Queimadas by Lindberg (Hellén, 1961 : 35).

New records. In BMNH there are 2 ♂♂ and 2 ♀♀ collected by Wollaston in Madeira. Curral dos Romeiros, 1 ♀, 13.v.1980 (M. de V. G.); 2 km. east of Encumeada, on path to Torrinhas, 1 ♀, 19.viii.1987, swept from a tuft of the grass *Deschampsia argentea* Lowe growing on a damp cliff (M. de V. G.).

***I. sarcitorius* L.**

The ♂ was collected at Santo da Serra by Storå (Hellén, 1949 : 3) ; and at Serra de Água, Sarajao [? Garajau] and Curral das Freiras by Lindberg (Hellén, 1961 : 35). In UM, Oxford there are 3 ♀♀ in Wollaston's collection, one labelled '*Ichneumon sarcitorius*' ; also a ♀ taken 25.xii.1900 at 'Grand Curral' [Curral das Freiras] by E. S. Goodrich.

Widely distributed : Eurasia, China, North Africa.

***I. xanthorius* Forster**

Both sexes were collected by Lindberg in 1957 : from Vale de Paraíso, Poiso, Queimadas, Pico Ruivo and Serra de Água (Hellén, 1961 : 35-36).

***Ctenichneumon hermaphroditus* Taschenberg**

Both sexes collected at Rabaçal, ♀ on Paul da Serra, by Lundblad (Roman, 1938 : 4) ; at Poiso by Panelius (Hellén, 1961 : 36). Gardner & Classey (1960 : 205) took 1 ♀ at Palheiro Ferreiro.

New record. Prainha, 1 ♂, 30.xii.1972 (M. de V. G.).

***Amblyteles armatorius* (Forster)**

Collected at Rabaçal and Caramujo by Lundblad (Roman, 1938 : 4) ; at Funchal by Storå and at Porto Novo by Frey (Hellén, 1949 : 4). In UM, Oxford there are 2 ♂♂ (one labelled '*Ichneumon fasciatorius*') in Wollaston's Madeira collection.

New records. 'Grand Curral' [Curral das Freiras], 4 ♀♀, 25.xii.1900 (E. S. Goodrich) (UM, Oxford) ; Curral das Freiras, 1 ♂, 9.v.1980, 1 ♂, 22.v.1980 ; Curral dos Romeiros, 1 ♂, 13.v.1980 ; Pico Ruivo de Santana, at summit, 1 ♀, 22.vii.1982 (M. de V. G.).

A widespread and common species in Europe ; sometimes occurs at high elevations, occasionally in large numbers (see Graham, 1978 : 170). It is also found in the Canary Islands and Azores.

***Linycus exhortator* (F.)**

Collected at Rabaçal by Lundblad (Roman, 1938 : 5, as *Platylabus exhortator*) ; and in Ribeira Brava by Lindberg (Hellén, 1961 : 36).

New records. Balcões de Ribeiro Frio, 1 ♂, 21.vii.1982 ; between Cruzinhas and Fanal, 1 ♂, 28.vii.1982 ; Terreiro da Luta, 1 ♂, 7.viii.1982 ; Fajã da Nogueira, 1 ♀, 24.vii.1985 ; Curral dos Romeiros, 1 ♂, 22.vii.1985, 1 ♂, 26.vii.1985 ; Chão dos Balcões, 2 ♂♂, 17.viii.1985 ; Fanal de Cima, 1 ♀, 19.viii.1985 (M. de V. G.). These specimens are similarly coloured to European ones, having the propodeum, and often the scutellum and metanotum partly, red.

Apaeticus balearicus Kriechbaumer

Female (s) taken by Lindberg at Serra de Água between 16. and 19. vii.1957 (Hellén, 1961 : 36).

New record. Near Pousada dos Vinháticos, south of Encumeada, 1 ♀, 18.v.1980 (M. de V. G.). This is not far from the locality where it was taken by Lindberg.

Heterischnus (Rhexidermus) nigricollis (Wesmael)

Male taken at São Vicente by Lindberg, 1. or 2.vii.1957 (Hellén, 1961 : 36).

Dicaelotus ? fitchi Perkins

New to Madeira. Curral dos Romeiros, 1 ♀, 11.v.1980, 1 ♀, 15.v. 1980 (E. M. G.) ; near Pousada dos Vinháticos, 1 ♀, 18.v.1980 ; 3 km. E. of Poiso, 2 ♂♂, 2 ♀♀, 1.viii.1982 ; Chão dos Balcões, 1 ♀, 17.viii.1985 (M. de V. G.).

Species of this group of *Dicaelotus* are difficult to identify but after comparing the above Madeiran specimens with European material determined by Perkins I believe that they are probably determined correctly. The Madeiran ♂♂ have only 25 or 26 antennal segments (29 in ♂ *fitchi* according to Perkins). Two ♀♀ have a yellowish (but not white) spot at the base of the hind tibia. They thus approach the Irish ♀♀ which Perkins (1953 : 160) noted as a distinct form but could not distinguish specifically from *fitchi*. The Madeiran ♂♂ are smaller than those of *fitchi* seen ; possibly this explains their having fewer antennal segments.

D. pumilus (Gravenhorst)

Roman (1938 : 5) recorded a single ♀ taken by Lundblad at Rabaçal. I have not seen this specimen and have no further records.

Dicaelotus montanus (de Stefani)

Roman (1938 : 6) described a ♀ from Rabaçal, taken by Lundblad between 17.vii.1935 and 4.viii.1935, as a form of this species ('Var. *atlan-*

ticus nov.'). The nominotypical ♀ from Sicily was described by de Stefani (1885 : 187, as *Phaeogenes montanus*) as having legs and abdomen wholly red whereas the form *atlanticus* has the hind legs mainly infuscate and the abdomen black with hind margins of the segments red.

Aubert (1958 : 141) described a form of the ♀ from Austria which had the apical part of the abdomen black and which he considered to be a transition to the form *atlanticus*. He also described the unknown male of *montanus* from specimens taken in southern France ; these had the first tergite black, tergites 3 to 6 black with their edges red, the following tergites red.

Recently we have found other specimens in Madeira : Ribeira das Cales, 1450 m., in a grove of *Erica arborea*, 1 ♂, 17.viii.1985, 6 ♂♂, 1 ♀, 3.viii.1987 (M. de V. G.), 3 ♂♂ (E. M. G.). The ♀ agrees with Roman's description of form *atlanticus* but has even darker legs with the fore and mid femora slightly infuscate. The ♂♂ differ from Aubert's description of nominotypical *montanus* in having the abdomen black with the hind margin of each tergite red and thus apparently represent the form *atlanticus*.

Diadromus (Thyraeella) collaris (Gravenhorst)

The ♀ of this species was taken at Ribeira Brava by Lindberg, 1.vii.1957 according to Hellén (1961 : 36).

The species is a common parasite of the pest moth of crucifers, *Plutella xylostella* (L.) (= *maculipennis* (Curtis)).

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