

## Chalcidoidea of the Canary Islands (Hymenoptera)

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ABSTRACT: Ninety species of Chalcidoidea, found on the Canary Islands, are listed. Deviating colour patterns which occur in some species on the islands are mentioned. The morphology of Cirrospilus setipes Askew and Pteromalus canariensis (Janzon) is discussed. Sympiesis femorata sp. n. and Mesopolobus adrianae sp. n. are described.

Key words: Canary Islands, Chalcidoidea, Sympiesis femorata sp. n., Mesopolobus adrianae sp. n.

RESUMEN: El autor presenta una lista de 90 especies de Chalcidoidea para las Islas Canarias. Se discuten las divergencias en colores que aparecen en algunas especies de las islas, así como también características morfológicas de Cirrospilus setipes Askew y Pteromalus canariensis (Janzon). Se describen dos especies nuevas: Sympiesis femorata sp. n. y Mesopolobus adrianae sp. n. Palabras clave: Islas Canarias, Chalcidoidea, Sympiesis femorata sp. n., Mesopolobus adrianae sp. n.

### INTRODUCTION

The Canary Islands are often united with Madeira, Azores and the archipelago of Cabo Verde to the "Eastern atlantic islands" or "Macaronesia". The flora and fauna of Madeira and the Canary Islands have a strong affinity to the continental palaeartic. Moreover these islands have many species in common. On the contrary, at least the entomofauna of Cabo Verde has a more afrotropical relationship.

Except for Madeira, "Macaronesia" is poorly studied in respect to its Chalcidoid fauna. FERRIERE (1960) listed 17 chalcids from Cabo Verde. In the last few years Ir. T. van Harten has sent me many samples of Chalcidoidea from these islands. Less than half of the species is known from the palaeartic. The others belong to the afrotropical fauna or are cosmopolitan. Some of the species are imported from the new world.

Substantial contributions to a checklist of Madeiran species have been published by CRAHAM (1975-1985) and ASKEW (1982).

KIRBY (1885) was the first to mention Chalcidoidea from the Canary Islands: Hockeria (?) canariensis Kirby and Chalcis wollastoni Kirby. BAEZ E ORTEGA (1978) listed another 41 species recorded in literature. Thereafter are described Elachertus lasiodermæ Hedqvist, 1977, Cuancheria compressithorax Hedqvist, 1978, Monodontomerus canariensis Hedqvist, 1979, Cleonymus canariensis Hedqvist, 1983, Pteromalus canariensis (Janzon, 1979). In 1985 Chr. Hansson mentioned Chrysocharis nephereus (Walker). Recently (1984) I described Pteromalus ellisorum and, in cooperation with CRAHAM (1986), Spilomalus atlanticus.

The list of Chalcidoidea from the Canary Islands presented here is largely based on samples collected by B. van Aartsen, M. Báez, A.C. & W.N. Ellis, G. Kruseman, B.J. Lempke, G. Ortega and myself.

The specimens are deposited in the collections of the Museo Insular de Ciencias Naturales in Santa Cruz de Tenerife (MISC), the Instituut voor Taxonomische Zoologie (Zoologisch Museum) in Amsterdam (ITZA), and in my own collection (MJG). Other symbols used are:

\* = also found on Madeira; I,II, etc. collected in January, February, etc.

#### CHALCIDIDAE

\*Brachymeria minuta (L.)

A common palaeartic species.  
Tenerife III, IV (ITZA, MJG).

Dirhinus hesperidum (Rossi)

Mediterranean.  
Tenerife IV (MJG).

Proconura nigripes (Fonscolombe) (= Invreia nigripes (Fonsc.))

Circummediterranean and central european.  
Tenerife X (MJG).

Hockeria bifasciata Walker

In warmer parts of Europe.  
Tenerife II, III; La Palma VII (MJG).  
Four females of the forma erdoesi Boucek 1951, have been found on Tenerife in II (MJG).

#### ENCYRTIDAE

\*Aphidencyrus aphidivorus (Mayr)

A european parasite of aphids.  
Tenerife IV, V (MJG).

Cerchysiella planiscutellum (Mercet) (= Zeteticontus planiscutellum Mercet according to NOYES & HAYAT, 1984).

Tenerife II (MJG).

Charitonus andalusicus Mercet

Until now known from the type specimen (Spain, Almería) only.  
Tenerife III (MJG).

\*Cheiloneurus eleaans (Dalman)

Palaeartic.  
Tenerife III, IX; Comera I, La Palma VII; Gran Canaria IV (MJG, ITZA).

\*Erycynus strigosus (Walker)

European.  
Tenerife III, Comera I, II; La Palma VII (MJG).

\*Homalotvloidea dahlbomii (Westwood)

Western Europe.  
Tenerife III; Comera II (MJG).

Isodromus punctipes (Howard)

Distribution uncertain because of confusion with other species.  
Tenerife X (MJG).

\*Metanotia maderensis (Walker)

Circummediterranean.  
Comera I (MJG).

Monodiscus intermedium (Mayr)

Mediterranean and central european.  
Tenerife II (MJG).

Procheiloneurus cabrerai Mercet

Tenerife.  
Tenerife II (MJG).

#### EULOPHIDAE

For remarks on biology and distribution of euphids I refer to BOUCEK & ASKEW (1968).

\*Di cladocerus westwoodii Westwood  
Tenerife IV; Gomera II (MJG).

\*Dialvophus crassinervis Erdos  
Tenerife IV; La Palma VII (MJG).

\*Diglyphus eleonora Graham  
Known from Madeira only.  
Tenerife III, IV; La Palma VII (MJG).

\*Diglyphus isaea (Walker)  
Tenerife I-IV; Comera I; La Palma VII; Gran Canaria IV (MISC, ITZA, MJG).

\*Hemiptarsenus unguicellus (Zett.)  
Tenerife VI; La Palma VII (MISC, MJCI).

\*Necremnus artynes (Walker)  
Tenerife III; Comera II; La Palma VII (MJG).

Necremnus folia (Walker)  
Tenerife III (MJG).

Necremnus metallarus (Walker)  
Tenerife I-III; Comera I, II (MISC, ITZA, MJC).

Necremnus tidius (Walker)  
Tenerife III, IV (MJG).

(Erdös)

Tenerife II; Lanzarote II (MJG).

\*Phaenacalis pectinicornis (L.)

Tenerife III; La Palma VII (MJG).

Sympiesis femorata sp. n.

Female, colour: dark blue, antennae dark brown, scapus ventrally yellow. Coxae and femora except knees, concolorous with body. Knees, tibiae and first tarsal segments light yellow. Second and third tarsal segments more or less infuscate, last segments brown.

Wings with a faint brown streak from speculum to end of stigmal vein. This streak tends to be darker towards stigma.

Caster dark blue, segments 2-5 with coppery reflections.

Morphology: head finely alutaceous. Toruli placed at or just above lower level of eyes. Antennae (fig. 1) with scapus reaching level of middle ocellus. Length of gena : length of eye = 2.1-2.5. Eyes with short scattered pubescence. Anterior margin of clypeus truncate. Thorax 1.6-1.8 times as long as broad; pronotum and mesoscutum regularly reticulate. Parapsidal grooves very faintly indicated in frontal half only. Midlobe of mesoscutum with two rows of three black hairs each. Scutellum somewhat longer than broad (10:9), more finely reticulate than mesoscutum; frenum alutaceous. Metascutellum twice as long as broad, its length about 1/3 of scutellum, shiny, only slightly alutaceous. Propodeum evenly sloping, shiny, slightly alutaceous with a median carina. Callus with 7 long white bristles.

Forewing (fig. 2): underside of costal cell with one complete hairrow and some additional hairs in apical third, upper surface with row of about 9 hairs on apical part. Basal vein with complete hairrow, speculum closed, basal cell partly so. Underside of fore wing, besides normal pubescence with row of strong hairs. This hairrow runs from the level of mid of marginal vein to the basal vein and lies near the wing veins.

Legs slender, combined length of hind femur and tibia nearly reaching end of gaster. Caster 1.55-1.75 times as long as thorax, last three segments distinctly alutaceous, first tergites smooth.

Length 2.3-2.7 mm.

Male: Coloration as in female except scapus, which is totally bluish-black; the hind tibiae, which are dark brown in apical 1/4 and the hyaline wings.

The antennal branches (fig. 3) have rather long outstanding bristles.

Length 1.45-1.85 mm.

Biology: unknown.

Holotype: female "España, Islas Canarias. La Palma, AC & VN Ellis, Montaña de Taqoja, 45 Km NNW Santa Cruz, 1000 m, 18.VII.1985"; ITZA. Paratypes: 1 ♀ & 2 ♂♂, La Palma (MJG), 2 ♀♀, Comera (MISC).

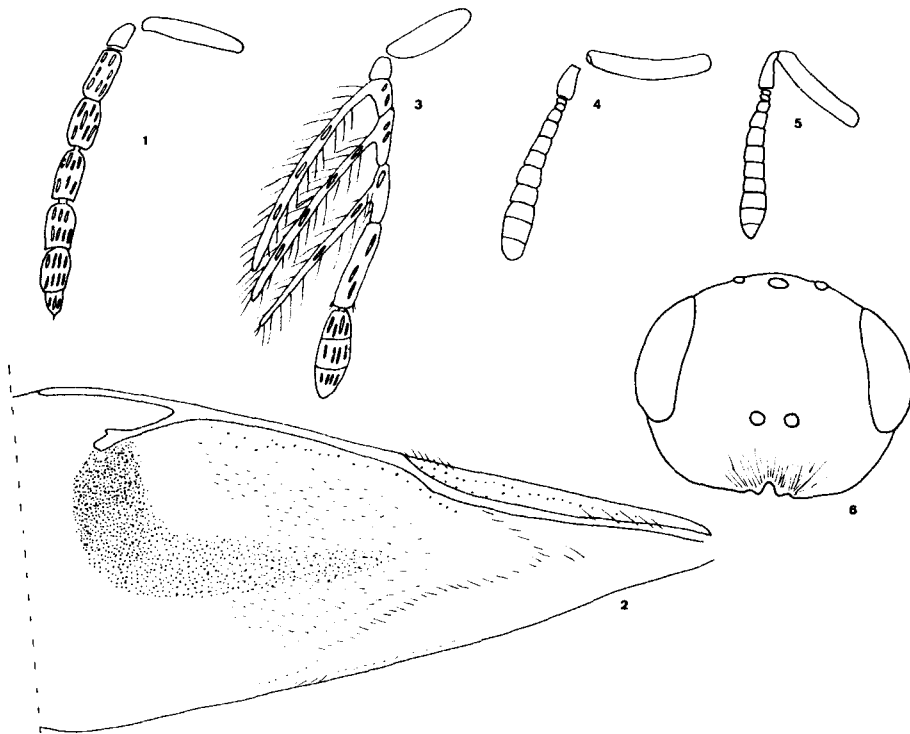


Fig. 1-3 *Symptosis femorata* sp. n., 1: left antenna ♀, holotype; 2: left forewing ♀ paratype; 3: left antenna ♂, Fig. 4-6 *Mesopobus adrianae* sp. n., 4: left antenna ♀, paratype; 5: left antenna ♂; 6: head ♀, paratype.

*S. femorata* n. sp. is one of the species with rather elongate gaster and runs in BOUCEK's (1959) key to *S. gordius* (couplet 16). However, *gordius* has a propodeum which is gibbous and ends in a more or less distinct neck. The general colour of *gordius* is golden green. The sometimes infuscate hind femora of *aordius* differ markedly from the dark blue metallic hind femora of *S. femorata*.

I have not seen *S. helveticus* Szelenyi, 1977, which is another slender species. According to the description that species has a "reticulation on scutellum, postscutellum and propodeum distinctly denser than on mesoscutum". In *femorata* both postscutellum and propodeum are nearly smooth. Moreover the coloration, especially that of the legs, is different.

*Symptosis aordius* (Walk.)  
La Palma VII (MJG).

*Symptosis gregori* Boucek  
Tenerife II; Lomera I (MJG)

*Elachertus isadas* (Walk.)  
Tenerife I; Gomera IX (MJG).

\**Elachertus olivaceus* (Thomson)  
Tenerife III; Lanzarote II (MJG).

\**Elachertus tumidiscapus* Askew  
Described from Madeira.  
Tenerife XII (MISC, MJG).

\**Cirrospilus pictus* (Nees) (f. *atlanticus* Askew)

ASKEW (1982) mentioned this form from Madeira and Tenerife. The 4 specimens seen by Askew have 4 mesonotal setae. The 5 specimens in my collection all have 6.  
Tenerife I, II; La Palma VII (MJG).

\**Cirrospilus setipes* Askew

Described after 1 female from Madeira.  
La Palma VII; Gran Canaria III (MJG).

I have recognized the species from the description, though the Canarian specimens may give rise to some doubt. ASKEW (1982) separated *setipes* from *pictus* by differences in colour shape of gaster and peculiar setae on hind legs.

I saw 6 specimens of *C. pictus* from the Canary Islands and compared them with 9 specimens of what I think to be *setipes* Askew. Although all 15 specimens have black setae on tibiae and basitarsi of hind legs, I think they belong to different species. I regard as *C. setipe* the more slender specimens which have the last gastral tergite narrower: breadth : length = 1.1-1.3 (in *pictus* 1.8-2.0), a yellow metanotum and a dark macula on hindfemur. An additional character lies in the ratio tibia : basitarsus of the hind legs, which is 4.4-5.1 in *setifer* and 5.6-7.0 in *pictus*.

*Diaulinopsis arenaria* (Erdős)

Tenerife III; Lomera I, II; La Palma VII (ITZA, MJG).

Specimens of several species on the Canary Islands are differently coloured than continental specimens. This difference in colour can be markedly constant in the island specimens and sometimes applies to specimens from both Madeira and the Canary Islands as is shown in *Cirrospilus pictus* f. *atlanticus* Askew. *D. arenaria* (Erdős) is another example. The specimens mentioned here are nearly black with only slightly metallic reflections. The mediterranean ones are bluish green.

\**Miotropis unipuncta* (Nees)

Tenerife I (MJG).

*Euplectrus bicolor* (Swederus)

Tenerife III; La Palma VII (MJG).

*Euplectrus flavipes* (Fonscolombe)

Tenerife X (MJG).

\**Euderus albitarsis* (Zetterstedt)

Tenerife I-IV, IX, X; Lomera VI; La Palma VII; Gran Canaria III, IV (ITZA, MISC, MJG).

In his work on Euderinae BOUCEK (1963) noted the uncertainty in the identity of the different forms of this species. The problem is not resolved yet. The numerous specimens from the Canary Islands are of one single variety which is morphologically not different from continental specimens I saw. What is said under *Diaulinopsis arenaria* holds for this *Euderus* as well. Only one colour variety seems to occur; the specimens are more bluish than continental specimens.

Recently I reared *E. albitarsis* as an ectoparasite on larvae of *Myopites nigripes* (Dipt. Tephritidae) (det. B. van Aartsen) in flowerheads of probably *Schizogyne sericea* collected on Tenerife by J.P. Duffels.

\**Achrysocharoides parva* (Delucchi)

Tenerife XI (MISC, MJG).

\**Chrysocharis chilo* (Walker)

Tenerife I-IV; Lomera I; Gran Canaria III (MISC, MJG).

\**Chrysocharis gemma* (Walker)

Gran Canaria III (MISC).

*Chrysonotomyia formosa* (Westwood)

Tenerife I, III; La Palma VII (MJG).

*Omphale clypealis* (Thomson)

Lanzarote II (MISC, MJG).

\**Pediobius acantha* (Walker)

La Palma VII (MJG).

\**Pediobius bruchicida* (Rondani)

Tenerife I-IV; Lomera I; La Palma VII; Gran Canaria IV (MISC, MJG).

\*Aprostocetus asperulum (Graham)  
Described from Madeira.  
Tenerife II, IV, VI; Comera I, II; La Palma VI, VII (ITZA, MISC, MJCI).

Tetrastichus diffardii Silvestri  
Tenerife XI, XII (MISC).

Quadrastichodes eucalypti (Timberlake)  
La Palma VII (MJG).

#### EUPELMIDAE

Eupelmus morodori Bolivar  
Mediterranean.  
Tenerife I, III, IV; Comera II; La Palma VII; Gran Canaria III, IV (ITZA, MISC, MJG).

Macroneura muellneri (Ruschka)  
Palaeartic.  
Tenerife I, III; Comera I (MJG).

Neanastatus turneri Ferrière  
Described from one female which originated from S. Africa. I have not seen the type but the specimens fit the description exactly.  
Tenerife I-III; Gran Canaria IV (MJG).

#### EURYTOMIDAE

Bruchophagus aspilus (Walker)  
Palaeartic.  
Gran Canaria IV (MJG).

Sycophila mellea (Curtis)  
Palaeartic.  
Gran Canaria IV (MJG).

#### PTEROMALIDAE

For remarks on biology and distribution see CRAHAM (1969); records not in there are included in this list.

\*Asaphes suspensis (Nees)  
Tenerife III, IV (MJG).

Asaphes vulgaris Walker  
Comera I, II; Gran Canaria IV (ITZA, MJG).

\*Halticoptera circulus (Walker)  
Tenerife II, IV; Comera I; Lanzarote II; La Palma VII (MJG, ITZA).

Syntomopus incisus Thomson  
Tenerife II (MJG).

Ammeia pulchella Delucci  
Described from Morocco. Distributed in the Mediterranean.  
La Palma VII (MJG).

\*Systasis angustula Graham  
Tenerife IV, X (MJG).

\*Systasis basiflava Craharn  
Madeira.  
Tenerife I-IV; Gomera I; Lanzarote II; Gran Canaria IV (ITZA, MJG).

Systasis parvula Thomson  
Lanzarote II (ITZA).

Colotrechnus viridis (Masi)  
Lanzarote II, Fuerteventura IV (MJG).

Catolaccus ater (Ratzeburg)  
Gran Canaria III (MJG).

Coelopisthia extenta (Walker) (= Kranophorus extensus (Walker))  
Fuerteventura IV (MJG).

Coelopisthia pachycera Masi (= Kranophorus pachycerus (Masi))  
La Palma VII (MJG).

Conomorium oatulum (Walker)  
Tenerife I, X; Comera I (MJG, misc).

Dinaroides spillopterus Masi  
Tenerife I, II; Comera I; Gran Canaria III, IV (MJG).

Homoporus fulviventris (Walker)  
La Palma VII (MJG).

\*Makaronesa ?basicyanea (Walker)  
Described from Madeira.  
Tenerife I, II, X (MJG).

Only the lectotype is known until now. I have two females which may belong to this species, but the body is dark blue green with slight golden shine instead of "gilded green" (WALKER, 18721 and the legs are light coloured instead of fulvous (CRAHAM, 19831).

\*Makaronesa obscurioes Craharn  
Mentioned from Madeira only.  
Tenerife I (MJG).

Makaronesa obumbrata (Walker)  
Mentioned from Madeira only.  
Tenerife I (MJG).

Mesopolobus adrianae sp. n.

Female. Colour: Head and thorax dark blue in smaller specimens (1.3-1.9 mm). Larger females (exceeding 2.5 mm) vary from bluegreen to bright green. Specimens with a length of 1.6 mm and more have golden reflections, which are more intense with increasing length. One of the largest has a totally coppery thorax.  
Antennal scapus and funiculus segments light brown; area around attachment on proximal ends and clava brown.

Legs apart from coxae light yellow, the fore legs tending to testaceous. Last tarsal segments of mid and hind legs brown, tarsi of fore legs sometimes brownish. In darker, middle sized and smaller specimens the legs tend to be darker.

Tegulae light brown, wing veins yellow apically to brownish proximally.  
Caster blue to green, strongly coppery on middle segments.

Morphology: Head dorsally 2.0-2.2 times as broad as long, temples short, about 1/7 of eye, frontally seen the head is 1.2-1.3 times as broad as high; oral fossa : gena = 2.1-2.2. Clypeus strongly incised (fig. 6); toruli inserted very slightly above level of lower eyeline. Antennae (fig. 41) scapus somewhat shorter than length of eye (0.8-0.9), length of pedicellus + flagellum : breadth of head = 0.65 : 0.78. Eye twice as long as gena. POL : OOL = 2.5-2.8. Thorax 1.3-1.5 times as long as broad. About 0.9 times as wide as head. Pronotum long, its length about 1/3 as long as mesoscutum, sharply margined in front, dorsal surface strongly reticulate. Sides of pronotum reticulated as dorsum, with a deep fovea, frontal margin with a very sharp and high carina.

Meshes of reticulation on midlobe of mesoscutum and scutellum smaller than those on pronotum. Scutellum as long as broad.  
Middle area of propodeum faintly reticulate, shiny, twice as long as broad; median carina incomplete, plicae complete; spiracles oval, touching metanotum.  
Hind femur 3.0-3.7 times as long as broad with obsolete incision in front margin.  
Wings with sparse pubescence, costal cell with a few hairs on underside only, basal cell and basal vein bare. speculum large, extending till stigmal vein. Costal cell : marginal vein : stigmal : postmarginal = 31 : 17 : 11 : 10.

Caster 1.7-1.9 times as long as broad, less broad than thorax and shorter than head and thorax together.  
Length: 1.3-2.8 mm.

Male: Colour as in females. The golden reflections occur in specimens down to 1.7 mm. Antennal scapus testaceous. pedicellus dorsally and anelli light brown. Funicle segment 1-4

testaceous; 5th segment darkened in most specimens. 6th funicle segment and clava dark brown.

Morphology: In general as in females. Antennae (fig. 5) more distinctly clavate; except in largest specimens the first funicle segment is anelliform and not more than half as long as second segment which is quadrate.

Temples 1/3-1/4 of eye; oral fossa about 3 times as long as gena and widened between mandibular base and gena. The bottom of this enlargement is membranous.

Length: 1.2-2.3 mm.

Biology: One specimen is reared from *Myopites niarescens* Beck. (Diptera, Tephritidae). A few have been reared from inflorescences of *Launea arborescens*, and are probably parasites of a trypetid fly. Many specimens are swept from the same *Launea* species.

Holotype (deposited in ITZA): ♀, "España, Islas Canarias, Tenerife, M.J. Gijswijt", "El Abri-go, IV-1984, from inflorescenc. *Launea arboresc.*"

Paratypes 99 ♂♂ and 84 ♀♀. España, Islas Canarias, Tenerife I-IV, X; Comera IV, VI; Gran Canaria IV (MISC, ITZA, MJG).

The short postmarginal vein in combination with the large speculum postbasale leads the user of GRAHAM's key (1969) to *Dibrachys* c.s. In the key to genera in couplet 25 this species should be mentioned. In the key to the males the species runs to couplet 169.

Except for this character *M. adrianae* sp. n. is a *Mesopolobus* in all aspects. It is distinguished from the other species of the genus by the short postmarginal vein and the sharply carinated lateral fore margins of the pronotum.

I dedicate this species to my wife, who has encouraged me in entomology for more than 30 years.

*Norbanus tenuicornis* Boucek  
Mediterranean.

Gran Canaria IV (MJG).

*Pachyneuron aenea* (Masi)

Tenerife III, IV; Lanzarote II (MJG).

\**Pachyneuron formosum* Walker

Tenerife III, IV; La Palma VIII (MJG, ITZA).

\**Pachyneuron groenlandicus* (Holgrem)

Lanzarote II, VI; Fuerteventura V (ITZA).

\**Pachyneuron aphidis* (Bouché)

Tenerife III, IV; Comera II; Gran Canaria IV (ITZA)

*Pseudocatolaccus nitescens* (Walker)

Tenerife III; Gran Canaria IV (ITZA).

\**Pteromalus ametrus* Craham

Madeira.

Tenerife IV, X (MJG). Reared from *Acanthiophilus walkeri* Wollaston (Diptera, Tephritidae) by B. van Aartsen.

*Pteromalus canariensis* (Janzon)

Tenerife IV, X (MJG).

*Habrocytus canariensis* Janzon, 1977 was described after one female, reared from stems of *Aravranthemum frutescens* in April. My attempt in 1978 to rear the species from the host-plant failed. Sweeping on the plant in localities all over Tenerife in March and April did not result in any *Pteromalus*. Dr. Janzon in Lund was so kind to lend me the type specimen, which appeared conspecific with *Pteromalus* specimens from Tenerife in my collection. The species does not belong to the species-group *sequester* as stated by JANZON (1977), but to the *albipennis* group: the clypeus is not incised as far as in *sequester* and allies and the propodeum is not smooth. The propodeum has the typical shape of the species of the *albipennis* group, with the posterior parts of the plicae strongly convergent. The shape of the thorax can be mistaken from the description: the pronotum length of the holotype is not 1/16 of the mesonotum length but 1/6. The colour of the holotype is bluish whilst most females in my collection are more greyishblue.

The males assigned to this species are blue as the holotype. The species is closely related to *P. alternipes* Walker.

*Pteromalus ellisorum* Gijswijt

Described from Lanzarote.

Tenerife (MISC); Gran Canaria IV (ITZA).

\**Pteromalus integer* (Walker)

Tenerife II (MJG).

*Pteromalus ?intermedius* (Walker)

Tenerife IV; Lanzarote II (MJG).

\**Pteromalus speculifer* (Graham)

Madeira.

Comera I (MJG).

*Stenoselma nigrum* Delucchi

Tenerife II, III, X; Comera I; Lanzarote II (ITZA, MJG).

#### TETRACAMPIDAE

*Epiclerus panvas* (Walker)

Comera I (MJG).

The females of this species are bronze whilst European females are green.

*Epiclerus temenus* (Walker)

Tenerife IV, X (MJG).

*Platynocheilus cuprifrons* (Nees)

Tenerife II, III; Lanzarote II (ITZA, MJG).

#### TORYMIDAE

\**Torvmoides kiesenwetteri* (Mayr) (= *Dimeromicrus kiesenwetteri* (Mayr) acc. to Boucek)

Tenerife III, La Palma VII; Fuerteventura IV; Gran Canaria IV (MJG, ITZA).

?\**Podagrion pachymerum* (Walker)

Gran Canaria IV (MJG).

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