

# B O C A G I A N A

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### THREE NEW SPECIES OF ICHNEUMONIDAE (INSECTA, HYMENOPTERA) FROM MADEIRA

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With 2 figures.

**SUMÁRIO.** Três espécies novas de Ichneumonidae : *Zoophthorus rufithorax*, *Campoletis (Campoletis) madeirae* e *Diadegma (Nythobia) flavoclypeatum*, são descritas a partir de material colhido em várias localidades por M. W. R. de V. e E. M. Graham.

**ABSTRACT.** Three new species of Ichneumonidae : *Zoophthorus rufithorax*, *Campoletis (Campoletis) madeirae*, and *Diadegma (Nythobia) flavoclypeatum*, are described from material collected in several localities in Madeira by M. W. R. de V. and Mrs. E. M. Graham.

The three species described below were taken by M. W. R. de V. Graham and his wife during their visits to Madeira in 1982, 1985 and 1987. Thought to be possibly undescribed, they were sent to Dr. K. Horstmann for his opinion. He considered them to be new and kindly agreed to prepare descriptions. The text has been prepared by Horstmann and the figures were drawn by Graham.

The abbreviation BMNH is used for British Museum (Natural History). A number enclosed in brackets and immediately preceding a date indicates that of the collecting tube for the day in question. Thus in the case of the holotype of *Zoophthorus rufithorax*, '(3) 22.vii.1985' indicates the third sample taken on that day. This method was regularly adopted in order to segregate samples taken in different habitats or at different times of the day and details are recorded in Graham's MS journal.

We wish to thank Dr. M. G. Fitton (BMNH) for sending the type of

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*Stiboscopus thoracicus* Ashmead, and the material of the new species, to the senior author.

***Zoophthorus rufithorax* sp. n.**

( Figs. 1 - 6 )

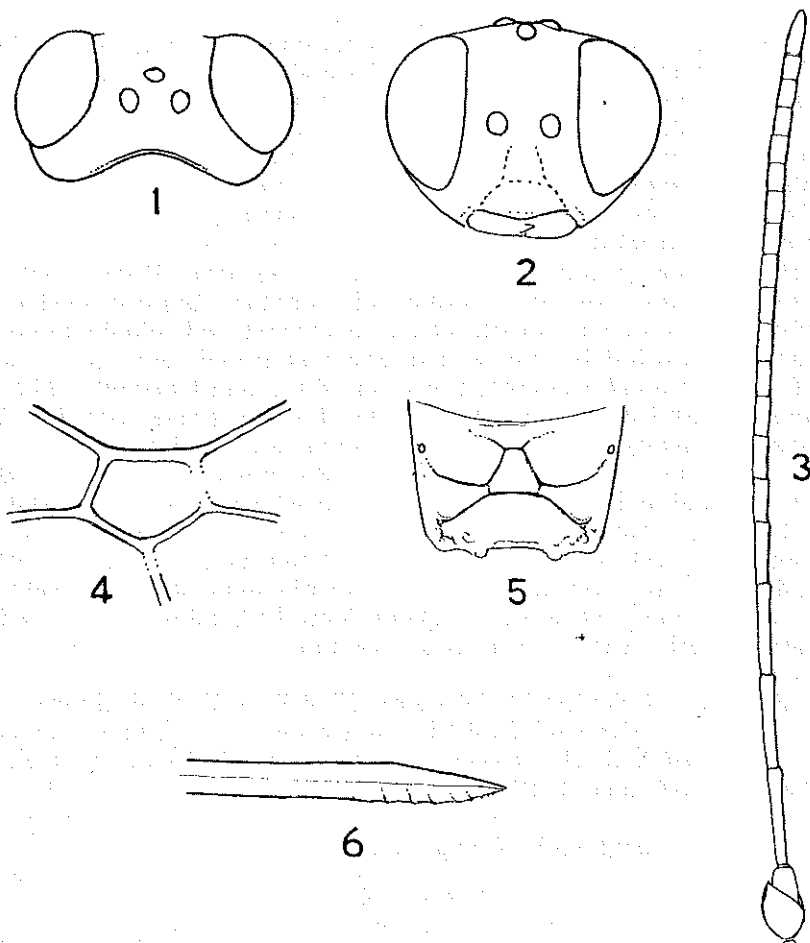
This species is provisionally placed in *Zoophthorus* Förster. It is characterized by a rather weak median longitudinal ridge traversing the groove behind the pronotal collar, and by the lack of longitudinal carinae on the propodeum. In both characters it agrees with *Acrolyta* Förster, but it differs from this genus in having the apical truncation of the scape not strongly oblique, the flagellum of the female not at all fusiform or flattened below, the median longitudinal ridge of the pronotum not so strong, and the dorsal carinae of the petiole lacking. Because *Zoophthorus* also contains species with a weak median longitudinal ridge of pronotum (e. g., *bridgmani* Schmiedeknecht) or with the longitudinal carinae of propodeum lacking (e. g., *plumbeus* Thomson), the new species is placed here.

*Zoophthorus rufithorax* may belong to the same genus or species group as *Hemiteles maculithorax* Ashmead and *Indovia decorata* Seyrig. Both species were placed by Townes (1970 : 65) in a genus of the subtribe Mastrina (under the incorrect name *Stiboscopus* Förster), which was synonymized with *Zoophthorus* Förster by Horstmann (1978 : 67), also in the subtribe Mastrina, but placed by Carlson (1979 : 397) under the name *Indovia* Seyrig in the subtribe Acrolytina, near *Acrolyta* Förster.

The new species differs from all known European species both of *Acrolyta* and of *Zoophthorus* in having the thorax and the propodeum red coloured.

♀. Head strongly constricted behind the eyes (Fig. 1). Face slightly wider than frons (Fig. 2). Clypeus somewhat rounded basally, flat in the apical half, punctate basally and smooth apically, with the apical margin thin, acute and rounded forward, without an indication of a tooth. Face with a dense punctation and some longitudinal wrinkles, for the greater part dull, but shining centrally. Frons coriaceous and dull centrally, with fine transverse wrinkles, somewhat punctate and more shining laterally. Vertex and upper parts of temples with transverse wrinkles. Lower parts of temples with fine punctation on a smooth background. Malar space 0.8 times as wide as the basal width of mandible. Upper tooth of mandible slightly longer than lower tooth. Genal carina joining oral carina at a short distance above base of mandible. Antennae with 20 - 21 segments. Scape with the apical truncation 40 - 50 degrees from the transverse. Flagellum (Fig. 3) filiform, very slender, all segments longer than wide and cylindrical.

Thorax for the greater part coriaceous and dull. Pronotum with a rather weak median longitudinal ridge and submedian pit-like impressions. Epomia lacking. Mesoscutum partly with fine transverse wrinkles. Notauli strong anteriorly, fading out at the basal third of mesoscutum. Scutellar



Figs. 1-6.—1, *Zoophthorus rufithorax* sp. n., holotype ♀, head in dorsal view ; 2, the same, head in frontal view ; 3, the same, antenna ; 4, the same, areolet of front wing ; 5, the same, propodeum ; 6, the same, apex of ovipositor in profile.

groove with longitudinal striae ; scutellum shining, weakly coriaceous and with fine punctation. Speculum shining, weakly coriaceous. Mesopleura partly with fine longitudinal wrinkles. Sternaulus reaching about 0.6 the distance to middle coxa. Postpectal carina broadly interrupted sublaterally. Areolet with the second intercubitus absent or weakly indicated (Fig. 4). Second recurrent vein distinctly inclivous, with two bullae. Nervellus intercepted, distinctly inclivous. Legs rather stout, hind femora 3.1 times as long as wide. Tarsal claws as long as arolium, not pectinate. Propodeum

coriaceous, with complete transverse carinae, but with the median longitudinal carinae partly and the lateral longitudinal carinae totally lacking (Fig. 5). Gaster coriaceous and dull for the greater part, but with the apical parts of the segments rather smooth and shining. First segment of gaster rather stout, rounded dorsally, without dorsal carinae, with the dorsolateral carinae divergent from base to apex, and with the sternite not reaching the spiracles. Epipleura of second segment about six times as long as wide (difficult to see in the types). Ovipositor straight, with a weak nodus and rather strong teeth (Fig. 6).

Head black. Antennae black, brownish at base. Palpi, small spots at the base of mandibles, hind corners of pronotum, tegulae, axillary sclerites of wings, front and middle coxae, and front and middle trochanters and trochantelli whitish. Thorax and propodeum red, only some sutures black. Front and middle femora, tibiae and tarsi, and hind legs yellow, the hind femora with brown markings apically, the hind tibiae with dark brown markings subbasally and apically. Last segments of all tarsi black. Pterostigma dark brown. Gaster red, the first segment black basally and laterally, the second and third segments with black spots basally and laterally.

Holotype : Head 1.00 mm wide. Thorax 1.46 mm long, 0.77 mm wide (mesoscutum). First segment of gaster 0.60 mm long. Postpetiole 0.27 mm long, 0.42 mm wide. Second segment 0.47 mm long, 0.72 mm wide. Hind tibiae 1.11 mm long. Front wings 3.4 mm long. Ovipositor sheaths 1.26 mm long. Body length (without ovipositor) 3.8 mm.

♂. Unknown.

Material : Holotype ♀, Madeira, 3 km E. of João do Prado, (3) 22. vii. 1985 (M. de V. Graham) (BMNH). Paratypes : 1 ♀, same locality, and captor, 3.viii.1987 (coll. Horstmann) ; 1 ♀, levada da Serra do Faial, 3.viii. 1987 (Mrs. E. M. Graham) (BMNH).

### ***Campoletis (Campoletis) madeirae* sp. n.**

(Figs. 7-9)

In a key to the European and North and Central Asian species of the subgenus *Campoletis* Förster s. str. (Horstmann, 1979 : 197 f.) the new species keys out at *C. rectangulator* Aubert. This species differs from *C. madeirae* in having the ovipositor sheaths longer than the first segment of gaster, the middle and hind femora black, and the hind tibiae white in the middle.

♀. Head strongly constricted behind the eyes (Fig. 7). Face slightly narrower than frons. Clypeus rounded frontally and apically, not well separated from the face, with the apical margin somewhat produced forward centrally, but rounded all over and without a tooth. Malar space 0.8 times as wide as the basal width of mandible. Genal carina obliterated ventrally, ending a long distance above the base of mandible. Antennae with 29-30 segments, the penultimate segments 1.2 times as wide as long.

Head coriaceous, dull, the temples somewhat shining.

Thorax coriaceous, with a very fine punctation which is partly indistinct. Lateral parts of pronotum striate ventrally. Epomia short. Speculum coriaceous, somewhat shining centrally. Impression before the speculum without or with very fine striae. Pre- and postpectal carinae both complete, without peculiarities. Legs slender, hind femora 4.5 times as long as wide. Tarsal claws not longer than the arolium, distinctly pectinate basally. Areolet regular, with the second recurrent vein inclivous, the second discoidal cell with an acute angle in the outer lower corner (75 - 80 degrees). Nervulus well separated from the basal vein. Postnervulus with the subdiscoideus well below the middle (Fig. 8). Nervellus vertical, with the discoidella in its ventral fourth. Propodeum coriaceous, dull, rounded, completely areolated, but with no strong carinae. Area superomedia longer than wide, closed apically but with the apical carina more or less obliterated centrally (Fig. 9). Area petiolaris not or very indistinctly impressed, with a few indistinct transverse striae. Gaster coriaceous basally, more shining apically. Petiole with deep glymmae. Postpetiole rounded dorsally and laterally. Apical tergites of gaster not incised dorsally. Ovipositor rather straight, sheaths shorter than first segment of gaster.

Black. Palpi, mandibles (except teeth), tegulae, axillary sclerites of wings, front and middle trochanters and all trochantelli yellow. Front and middle coxae, femora, tibiae and tarsi red. Hind coxae, trochanters, femora and tibiae reddish brown, the coxae dark brown or black basally, the tibiae dark brown subbasally and apically. Hind tarsi dark brown. Pterostigma dark brown. Apical segments of the gaster (from the second) reddish brown apically and laterally.

Holotype : Head 1.18 mm wide. Thorax 2.20 mm long, 0.97 mm wide (mesoscutum). First segment of gaster 1.10 mm long. Postpetiole 0.39 mm long, 0.46 mm wide. Second segment 0.91 mm long, 0.86 mm wide. Hind tibiae 1.65 mm long. Front wings 4.7 mm long. Ovipositor sheaths 0.61 mm long. Body length (without ovipositor) 6.3 mm.

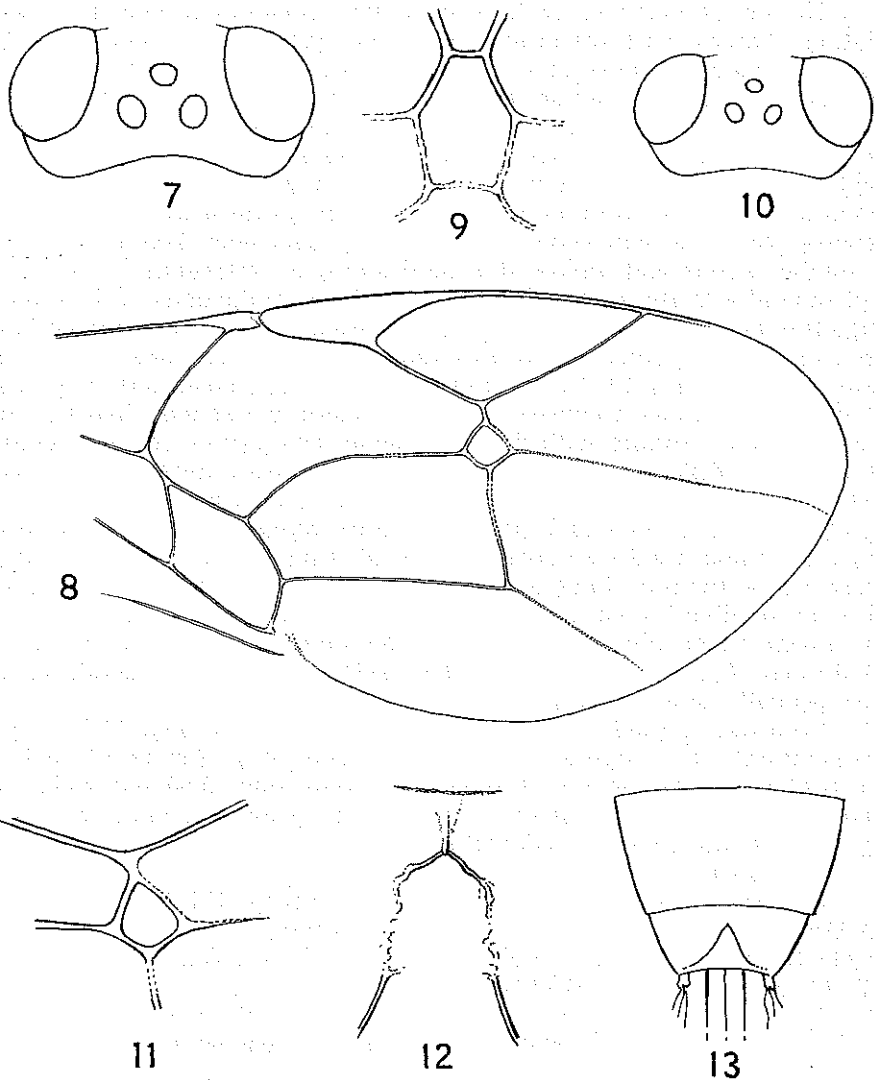
♂. Unknown.

Material : Holotype ♀, Madeira, Queimadas, (2) 11.viii.1982 (Mrs. E. M. Graham) (BMNH). Paratypes : 1 ♀, Madeira, Cruzinhas do Fanal, 28. vii.1982 (M. de V. Graham) (coll. Horstmann) ; 1 ♀, Caramujo, (1) 30.vii. 1987 (M. de V. Graham) (BMNH).

### **Diadegma (Nythobia) flavoclypeatum** sp. n.

( Figs. 10 - 13 )

In a key to the European species of *Diadegma* Förster (Horstmann, 1969 : 421 ff.) the new species keys out at *D. specularis* (Thomson). This species, and the other species of the *Diadegma armillatum* group, differ from *D. flavoclypeatum* in having the propodeum more completely areolated, the clypeus and the hind coxae black, and the hind tibiae with white



Figs. 7-13.—7, *Campoletis madeirae* sp.n., holotype ♀, head in dorsal view ; 8, the same, distal part of front wing ; 9, the same, area superomedia. 10, *Diadegma flavoclypeatum* sp.n., holotype ♀, head in dorsal view ; 11, the same, areolet of front wing ; 12, the same, area superomedia ; 13, the same, apical segments of gaster in dorsal view.

markings. Among the other species of *Diadegma* known from Madeira up to now (Horstmann, 1980 : 131 f.), the new species is characterized by a combination of the following features : Speculum coriaceous. Areolet regular, with the second recurrent vein near the middle. Propodeum incompletely areolated. Ovipositor sheaths slightly shorter than the hind tibiae. Clypeus yellow apically. Hind coxae red. Hind tibiae sordid yellow on the outer side, with indistinct dark markings subbasally and apically.

♀. Head strongly constricted behind the eyes (Fig. 10). Face slightly narrower than frons. Clypeus rounded frontally and apically, not well separated from the face. Malar space 0.6 times as wide as the basal width of mandible. Teeth of mandibles subequal. Antennae with 28 segments, the penultimate segments as long as wide. Head coriaceous, dull, the vertex and the temples more shining.

Thorax coriaceous, dull, with a very fine, partly indistinct punctation. Lateral parts of pronotum with fine striae ventrally. Speculum coriaceous all over, somewhat shining. Impression before the speculum with very fine striae. Legs slender, hind femora 4.1 times as long as wide. Tarsal claws hardly longer than the arolium, inconspicuously pectinate at base only. Areolet regular, with the second recurrent vein near the middle (Fig. 11). Nervellus slightly reclivous. Propodeum coriaceous, dull, incompletely areolated, with the area basalis, the costulae and parts of the lateral carinae of the area superomedia lacking. Area superomedia somewhat longer than wide (as far as can be seen), not closed apically (Fig. 12). Area petiolaris very indistinctly impressed. Gaster coriaceous, dull basally, shining apically. Glymmae large. Postpetiole rounded dorsally and laterally. Apical margin of the sixth segment of gaster not incised, that of the seventh segment sharply incised dorsally (Fig. 13). Ovipositor slender, somewhat upturned, with a sharp dorsal incision subapically.

Black. Palpi, mandibles (except teeth), apical half of clypeus, underside of scape and pedicel, hind corners of pronotum (inconspicuously), tegulae, axillary sclerites of wings, front and middle coxae and front and middle trochanters and trochantelli yellow. Hind coxae, hind trochanters and trochantelli and all femora pale red. All tibiae and tarsi sordid yellow, the hind tibiae with indistinct dark brown markings subbasally and apically, the hind tarsi darkened for the greater part. Pterostigma brownish. Apical segments of the gaster (from the third) dark red laterally and apically.

Holotype : Head 0.93 mm wide. Thorax 1.70 mm long, 0.69 mm wide (mesoscutum). First segment of gaster 0.83 mm long. Postpetiole 0.33 mm long, 0.33 mm wide. Second segment 0.71 mm long, 0.55 mm wide. Hind tibiae 1.35 mm long. Front wings 3.8 mm long. Ovipositor sheaths 1.29 mm long. Body length (without ovipositor) 4.4 mm.

♂. Unknown.

Material : Holotype ♀, Madeira, Chão dos Balcões (pine wood), (4) 17.viii.1985 (M. de V. Graham) (BMNH). Paratype ♀, Ribeira das Calas, (2) 3.viii.1987 (M. de V. Graham) (coll. Horstmann).

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