

**New species and new records of Afrotropical Ophioninae
(Hymenoptera: Ichneumonidae)**

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Abstract – Two new species of Ophioninae (Hymenoptera: Ichneumonidae) are described from the Afrotropical region: *Dicamptus johanssoni* sp. nov. from Congo, and *Euryophion titanius* sp. nov. from Liberia and Congo. Additionally, *Dicamptus bantu* Delobel, 1976 is reported for the first time from Guinea, *Euryophion pisinnus* Gauld et Mitchell, 1978 from Tanzania, and *Rhopalophion discinervus* (Morley, 1926) from Congo.

Key words – *Dicamptus*, *Euryophion*, *Rhopalophion*, species description, distribution

INTRODUCTION

Since the last revision of Afrotropical Ophioninae (Hymenoptera: Ichneumonidae) by GAULD & MITCHELL (1978) only a few papers were published regarding their taxonomy and biogeography (e.g., ROUSSE & VILLEMANT 2012, ROUSSE & VAN NOORT 2014), and most likely several undescribed taxa remain to be discovered in the region (GAULD & MITCHELL 1978). In the present paper, based on material stored in the Hungarian Natural History Museum, Budapest (HNHM), two new species of Ophioninae are described from the Afrotropical region: *Dicamptus johanssoni* sp. nov. from Congo, and *Euryophion titanius* sp. nov. from Liberia and Congo. Additionally, *Dicamptus bantu* Delobel, 1976 is reported for the first time from Guinea, *Euryophion pisinnus* Gauld et Mitchell, 1978 from Tanzania, and *Rhopalophion discinervus* (Morley, 1926) from Congo.

The taxonomy and nomenclature of Ichneumonidae follow YU & HORSTMANN (1997) and YU *et al.* (2016); complete nomenclatural histories of mentioned taxa are not repeated here, since they are listed in detail in these references. Morphological terminology follows primarily GAULD & MITCHELL (1978), considering some minor updates in GAULD (1991) and GAULD *et al.* (1997). For convenient use the following terminological explanations from GAULD

& MITCHELL (1978) are given: lower face refers to the part of the face below the insertions of antennae including clypeus, but excluding labrum; its width refers to the minimum distance between inner eye orbits, and the length is the distance from the mid-apical margin of clypeus to the level of antennal insertions (i.e., lower level of toruli). Additionally, the various morphological indices used by GAULD & MITCHELL (1978) are explained below. Identifications were based on KIRBY (1896), CAMERON (1906), MORLEY (1912, 1926), SEYRIG (1935), ROMAN (1943), DELOBEL (1976), GAULD & MITCHELL (1978), ROUSSE & VILLEMANT (2012), ROUSSE & VAN NOORT (2014), VAN NOORT (2021), and on a re-examination of adequate type materials (at least from scientific quality photos). The specimens were identified by the author using a Nikon SMZ645 stereoscopic microscope, and are deposited in HNHM. Taxa are listed alphabetically.

Abbreviations – Morphological indices from GAULD & MITCHELL (1978) (“/” marks division):

AI = alar index of fore wing = length of *1m-cu* between *2m-cu* and distal margin of bulla / length of *3rm*

CI = cubital index of fore wing = length of *Cu1* between *1m-cu* and *Cu1a* / length of *Cu1b*

DI = discoidal index of fore wing = greatest distance between *Cu1a* and *1m-cu* measured at 90° to *Cu1a* / length of *Cu1a* between *Cu1* and *2m-cu*

FI = frontal index of head = maximum diameter of median ocellus / distance between eyes through maximum diameter of median ocellus

ICI = inter-cubital index of fore wing = length of *3rm* / length of *M* between *3rm* and *2m-cu*

NI = nervellar index of hind wing = length of *Cu1* between *cu-a* and *M* / length of *cu-a*

SDI = second discoidal index of fore wing = length of first abscissa of *Cu1a* / length of *Cu1* between *Rs&M* and *1m-cu*

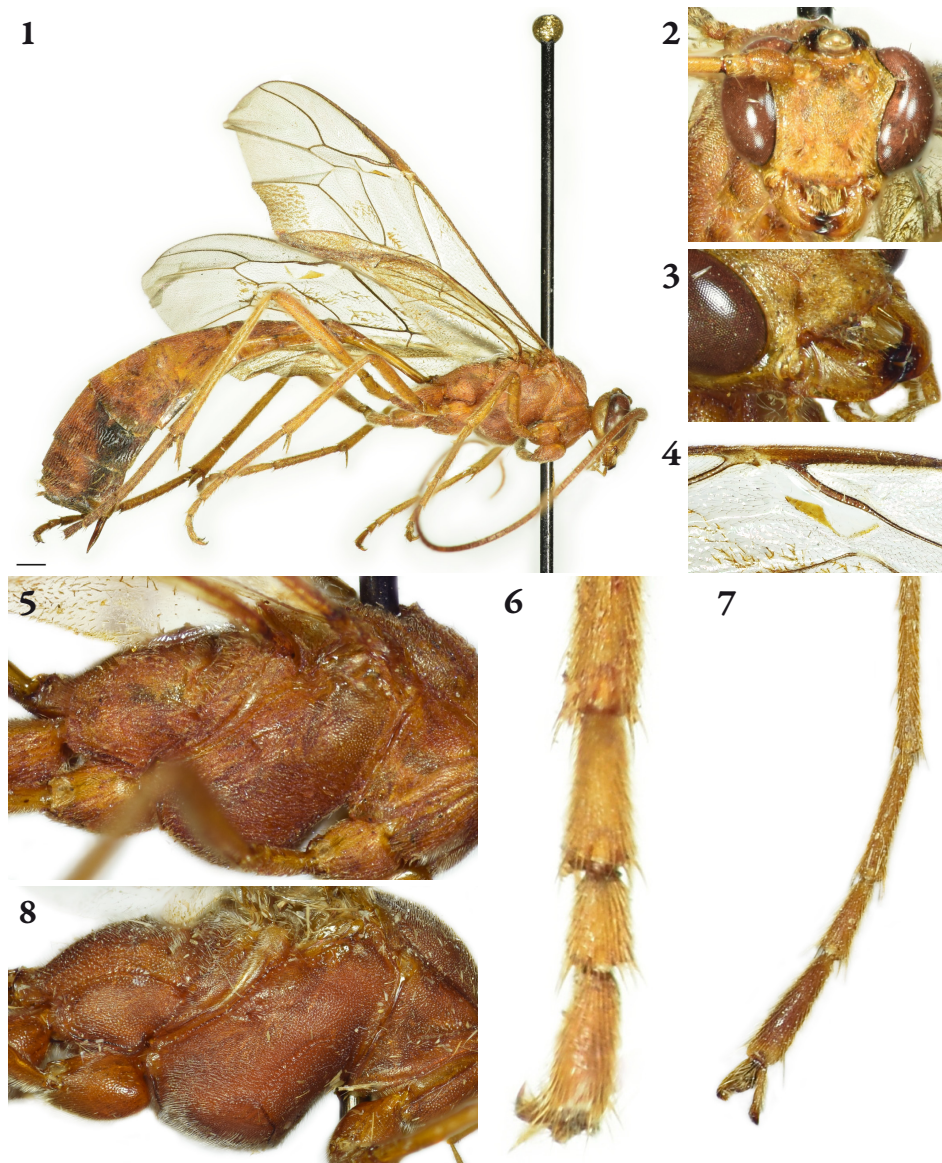
RESULTS

Dicamptus bantu Delobel, 1976

Material examined – One female, Guinea, Grandes Chutes, 15.IX.–25.X.1966, leg. K. Ferencz.

Remarks – First record for Guinea. This species was described from the Central African Republic and is known from Angola, Democratic Republic of Congo, Nigeria and Uganda (GAULD & MITCHELL 1978). The new record represents its westernmost locality in Africa.

Dicamptus johanssoni sp. nov.
(Figs 1–6)



Figs 1–8. Figs 1–6: *Dicamptus johanssoni* sp. nov., holotype, 1 = habitus (scale bar = 1 mm), 2 = head, frontal view, 3 = mandible, 4 = alar sclerites, 5 = mesosoma, 6 = distal tarsomeres of fore leg; Figs 7–8: *Dicamptus braunsii* (Kriechbaumer, 1894), 7 = distal tarsomeres of fore leg, 8 = mesosoma (photos by Zoltán Vas)

Type material – Holotype: female, “Congo, Brazzaville, Orstom park, light trap, 25.XII.1963, leg. S. Endrödy-Younga, No. 513”; specimen pinned, Id. No. HNHM-HYM 155622. – The holotype is deposited in HNHM.

Diagnosis – The new species can be identified among the Afrotropical *Dicamptus* species by the combination of the following character states: fourth tarsomere of fore tarsus conspicuously short and stout, 1.5× as long as wide; third tergite subquadrate in profile, its posterior depth subequal to its length; posterior ocellus separated from eye by about 0.4× its diameter; gena in dorsal view 0.6× as long as eye width, roundly narrowed behind eyes; mandible with an indistinctly weak groove from proximal corner to centre; discosubmarginal cell with proximal and distal sclerites; body reddish orange, terminal tergites of metasoma ventrolaterally partly dark brownish, inter-ocellar area black.

Description – Female (Figs 1–6). Body length ca. 20 mm, fore wing length ca. 15 mm.

Head: Antenna little longer than fore wing, with 65 flagellomeres; first flagellomere 4× as long as its apical width, 1.5× as long as second flagellomere; 20th flagellomere 1.7× as long as wide; preapical flagellomeres distinctly longer than wide. Head transverse, subpolished, lower face coarsely, moderately strongly punctate, gena with weak, indistinct punctures. Ocelli moderately large, posterior ocellus separated from eye by about 0.4× its diameter, FI = 0.4. Inner eye orbits indented, subparallel. Gena in dorsal view 0.6× as long as eye width, roundly narrowed behind eyes; gena in profile 0.7× as wide as eye. Occipital carina complete, reaching hypostomal carina distinctly before base of mandible. Frons slightly impressed above toruli, indistinctly carinate. Lower face as wide as long. Clypeus 2× as wide as long, in profile convex, apical margin subtruncate, sharp. Labrum widely triangular. Malar space 0.4× as long as basal width of mandible. Mandible strong, not twisted, only slightly narrowed towards apex, with an indistinctly weak groove extending from proximal corner to centre, the groove bearing long hairs; mandibular teeth about equal. Maxillary palpus 5-segmented, labial palpus 4-segmented.

Mesosoma: Mesosoma subpolished, closely punctate. Mesoscutum in profile convex, ca. 1.4× as long as wide; notaulus not developed. Scuto-scutellar groove wide and deep. Scutellum weakly convex in profile, with lateral carinae. Epicnemial carina incomplete, pleural part obsolescent and hardly discernible, dorsally missing, ventral part (i.e., behind fore coxae) distinct. Posterior transverse carina of mesosternum complete. Submetapleural carina complete, anteriorly distinctly expanded. Pleural carina of propodeum obsolescent; propodeal spiracle large, strongly elongate, ca. 5× as long as wide. Propodeum abruptly declivitous in profile, posteriorly little impressed, anterior transverse carina present as a central vestige, posterior transverse carina missing, posterior area finely reticulate. Fore wing: AI = 1.1; CI = 0.6; ICI = 0.6; SDI = 1.2; *Rs+2r* sinuous, its distal half thickened; discosubmarginal cell with a glabrous fenestra, bearing a triangular proximal sclerite and an elongate distal sclerite; *1m-cu* abruptly bowed, without

ramellus; *cu-a* proximal to *Rs&M* by ca. 0.15× its length, moderately inclivous. Hind wing: NI = 2.1; *Rs* about straight, not thickened; 9 hamuli on *RI*, hamuli similar to each other in length and shape; marginal cell evenly hirsute. Legs, except tarsomeres, rather elongate and slender; coxae weakly, closely punctate, hind coxa in profile 2× as long as deep; hind trochantellus in dorsal view 0.2× as long as wide; hind femur in profile 8.5× as long as deep, distally slightly and evenly widened. Fore tibia with numerous long, strong spines on anterior surface; fore tibial spur with a vestigial membranous flange behind macrotrichial comb; fourth tarsomere of fore tarsus conspicuously short and stout, 1.5× as long as wide. Hind tibia 1.3× as long as hind femur, distally slightly widened; inner spur of hind tibia ca. 0.4× as long as first tarsomere of hind tarsus, flattened, with an internal row of long, dense hairs. Outer hind tarsal claw long and moderately curved, with ca. 10 long, closely spaced pectinae.

Metasoma: Metasoma compressed. Second tergite with epipleuron turned under (i.e., folded in, deflexed), in profile 4× as long as its posterior depth; thyridium elongate oval, its distance from anterior margin of tergite 1.4× as long as its length. Second sternite with anterior margin little behind petiolar spiracle. Third tergite in profile subquadrate, its posterior depth subequal to its length. Ovipositor sheath shorter than posterior depth of metasoma; ovipositor strong, shortly acute, without dorsal preapical notch.

Colour: Reddish orange, terminal tergites of metasoma ventrolaterally partly dark brownish; inter-ocellar area black. Wings subhyaline.

Male: Unknown.

Distribution – Congo.

Etymology – The new species is named to honour Niklas Johansson, a Swedish taxonomist of Ophoninae.

Remarks on identification – The new species is somewhat similar to *Dicamptus braunsii* (Kriechbaumer, 1894), a widespread Afrotropical species of the genus; however, it can be readily distinguished from this species by the couplet below.

Distal tarsomeres of fore leg stout, fourth tarsomere 1.5× as long as wide, third tarsomere less than 2.5× as long as wide (Fig. 6); third tergite in profile subquadrate, 1.1× as long as its posterior width; mandible with an indistinctly weak groove from proximal corner to centre; pleural part of epicnemial carina ventrally obsolescent and hardly discernible, dorsally missing (Fig. 5); propodeum in profile abruptly declivitous (Fig. 5)

..... *Dicamptus johanssoni* sp. nov.

- Distal tarsomeres of fore leg distinctly elongate, fourth tarsomere ca. 2.5–3.0× as long as wide, third tarsomere more than 3× as long as wide (Fig. 7); third tergite in profile distinctly elongate, more than 1.5× (1.55–1.75×) as long as its posterior width; mandible with a distinct, strong groove from proximal corner to centre; pleural part of epicnemial carina distinct, only its dorsalmost part more or less obsolescent (Fig. 8); propodeum in profile evenly rounded, dorsally convex (Fig. 8) *Dicamptus braunsii* (Kriechbaumer, 1894)

By using the identification keys of GAULD & MITCHELL (1978) and ROUSSE & VAN NOORT (2014), the new species keys out with *Dicamptus neavei* Gauld et Mitchell, 1978, due to its stout fourth tarsomere of fore tarsus and subquadrate third tergite. However, the new species can be easily distinguished from this species by the couplet below.

- Ocelli moderately large, posterior ocellus separated from eye by about 0.4× its diameter; gena not swollen behind eyes; mesosoma without blackish colouration, inter-ocellar area black *Dicamptus johanssoni* sp. nov.
- Ocelli strongly reduced, posterior ocellus separated from eye by about 2× its diameter; gena strongly swollen behind eyes; mesosoma extensively blackish, inter-ocellar area reddish
..... *Dicamptus neavei* Gauld et Mitchell, 1978

Euryophion pisinnus Gauld et Mitchell, 1978

Material examined – Three females, Tanzania, Usambara Mts, Ngoa near Mazinde, at brook, 800 m, 12.I.1988, leg. A. Vojnits, No. 36.

Remarks – First record for Tanzania. This species was only known from Kenya previously (GAULD & MITCHELL 1978).

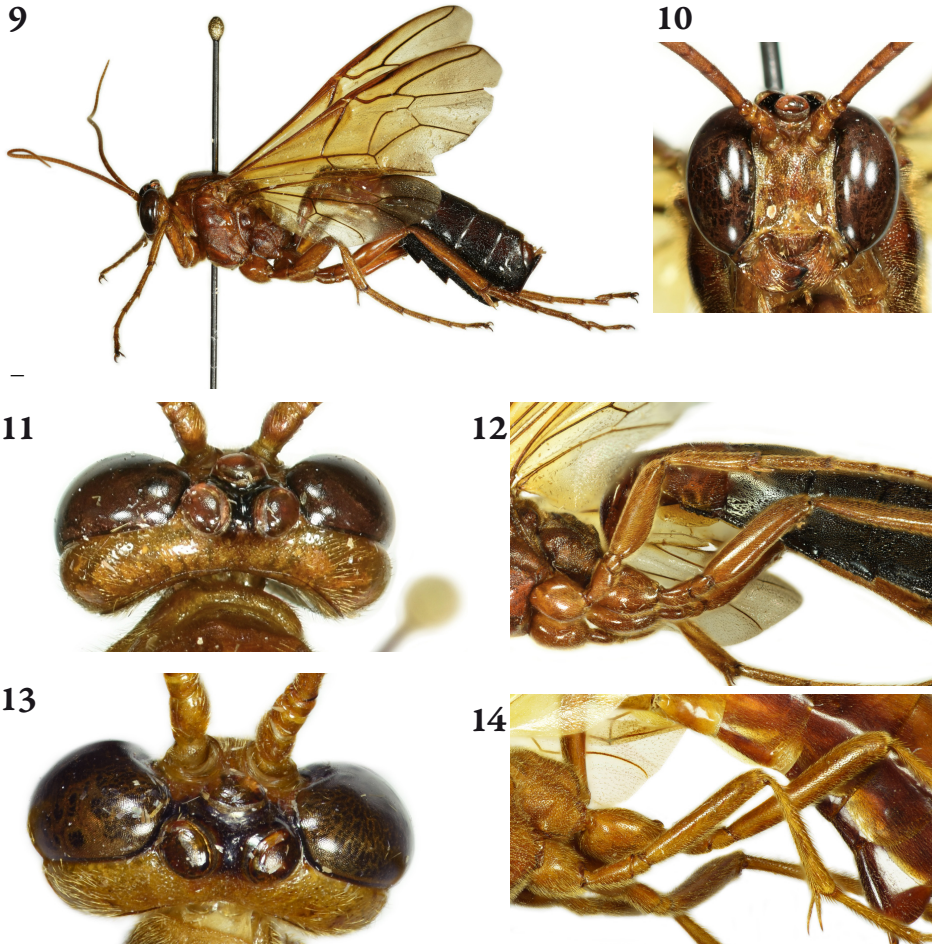
Euryophion titanius sp. nov.

(Figs 9–12)

Type material – Holotype: female, “Liberia, Nimba Mountains, Grassfield FDA office, 7°29’31”N, 8°34’54”W, 493 m, 2021.04.10–21., leg. Sz. Sáfaián”; specimen pinned, Id. No. HNHM-HYM 155620. Paratype: female, “Congo, Brazzaville, Orstom park, light trap, 31.XII.1963, leg. S. Endrődy-Younga, No. 566”; specimen pinned, Id. No. HNHM-HYM 155621. – The holotype and the paratype are deposited in HNHM.

Diagnosis – The new species can be identified among all known *Euryophion* species by the combination of the following character states: maxillary palpus 4-segmented; second tergite with epipleuron pendant; lower face 0.85–0.90× as wide as long; gena swollen, in dorsal view 0.5–0.6× as long as eye width, weakly narrowed behind eyes, in profile 0.8–1.0× as wide as eye; legs conspicuously stout, in profile middle femur 3.2–3.6×, hind femur 4.4–4.5× as long as deep; body orange-brown with metasoma extensively darkened, inter-ocellar area black, wings yellowish with more or less infuscate patches.

Description – Female (Figs 9–12). Body length ca. 30–33 mm, fore wing length ca. 25–26 mm.



Figs 9–14. Figs 9–12: *Euryophion titanius* sp. nov., holotype, 9 = habitus (scale bar = 1 mm), 10 = head, frontal view, 11 = head, dorsal view, 12 = middle and hind femora; Figs 13–14: *Euryophion latipennis* (Kirby, 1896), 13 = head, dorsal view, 14 = middle and hind femora (photos by Zoltán Vas)

Head: Antenna shorter than fore wing, with 50 flagellomeres; first flagellomere $3.9\times$ as long as its apical width, $1.9\times$ as long as second flagellomere; 20th flagellomere $1.6\times$ as long as wide; preapical flagellomeres distinctly longer than wide. Head transverse, polished to subpolished, distinctly punctate, closely on face above clypeus, sparser on clypeus and gena. Ocelli large, posterior ocellus almost touching eye, FI = 0.6. Inner eye orbits indented, about parallel. Gena in dorsal view $0.5\text{--}0.6\times$ as long as eye width, swollen, weakly, roundly narrowed behind eyes; gena in profile swollen, $0.8\text{--}1.0\times$ as wide as eye. Occipital carina

complete; mediodorsal part narrowly obsolescent and upturned, forming a triangle; ventral part little weakened, reaching hypostomal carina distinctly before base of mandible. Frons impressed above toruli, not carinate. Lower face $0.85\text{--}0.90\times$ as wide as long. Clypeus $1.7\times$ as wide as long, in profile flat with apical margin slightly out-turned, apical margin weakly convex, sharp. Labrum triangular, apically obtuse. Malar space less than $0.1\times$ as long as basal width of mandible. Mandible large, not twisted, only slightly narrowed towards apex, outer surface moderately closely punctate with long hairs, mandibular teeth subequal. Maxillary and labial palpi 4-segmented.

Mesosoma: Mesosoma polished to subpolished, closely punctate. Mesoscutum in profile abruptly rounded, ca. $1.3\times$ as long as wide; notaulus not developed. Scuto-scutellar groove wide and deep. Scutellum convex in profile, without lateral carinae. Epicnemial carina incomplete, pleural part obsolete, ventral part present. Posterior transverse carina of mesosternum absent except at lateral extremities. Submetapleural carina complete, anteriorly distinctly expanded. Pleural carina of propodeum at least anteriorly obsolescent; propodeal spiracle large, strongly elongate, ca. $5\times$ as long as wide. Propodeum abruptly rounded in profile, posteriorly little impressed, anterior transverse carina almost completely obsolete, posterior transverse carina discernible but weak. Fore wing: AI = 0.65; CI = 0.55; ICI = 1.8–1.9; DI = 0.4; *Rs+2r* proximally abruptly curved and thickened before reaching pterostigma; discobasal cell with a glabrous area in extreme anterior corner; *Im-cu* more or less evenly bowed, without ramellus; *cu-a* distal to *Rs&M* by ca. $0.2\times$ its length, strongly inclivous. Hind wing: NI = 1.3–1.5; *Rs* slightly curved, not thickened; 9–13 hamuli on *R1*, hamuli similar to each other in length and shape; marginal cell proximally with a glabrous area. Legs conspicuously stout; coxae weakly, moderately closely punctate, hind coxa in profile $1.3\text{--}1.4\times$ as long as deep; hind trochantellus in dorsal view $0.1\times$ as long as wide; middle femur in profile $3.2\text{--}3.6\times$ as long as deep; hind femur in profile $4.4\text{--}4.5\times$ as long as deep. Fore tibia with numerous long, strong spines on anterior surface; fore tibial spur without membranous flange behind macrotrichial comb. Inner spur of hind tibia ca. $0.45\times$ as long as first tarsomere of hind tarsus, flattened, with an internal row of long, dense hairs. Outer hind tarsal claw long and moderately curved, with 9–11 long, closely spaced pectinae.

Metasoma: Metasoma stout, moderately compressed. Second tergite with epipleuron pendant, in profile only slightly longer than its posterior depth; thyridium oval, its distance from anterior margin of tergite about as long as its length. Second sternite with anterior margin before petiolar spiracle. Ovipositor sheath shorter than posterior depth of metasoma, with dense pubescence on lower half.

Colour: Orange-brown, metasoma extensively brownish to blackish; interocellar area black. Wings yellowish with more or less infuscate patches along veins of fore wing and glabrous area of hind wing.

Male: Unknown.

Distribution – Liberia and Congo.

Etymology – The specific epithet *titanius* is the masculine form of the Latin adjective *titanus*, -a, -um meaning titanic; it refers to the large and robust body of the new species.

Remarks on identification – The new species appears to be closely related to *Euryophion latipennis* (Kirby, 1896) and *Euryophion nigripennis* Cameron, 1906, all of them characterised by 4-segmented maxillary palpi and pendant epipleuron of second tergite. By using the identification key of GAULD & MITCHELL (1978) the new species keys out with *E. latipennis*, due to sharing the features of narrower (longer than wide) lower face and black inter-ocellar area. It also shares some characteristics with *E. nigripennis*, such as the somewhat darker colouration of body, and more swollen gena (although gena of *E. nigripennis* is still somewhat shorter than that of the new species (cf. GAULD & MITCHELL (1978: fig. 62)). Colouration of wings of the new species is more or less intermediate, somewhat more infuscate than in *E. latipennis*, but distinctly lighter and more yellowish than in *E. nigripennis*. GAULD & MITCHELL (1978) stated that more material would be necessary to reliably confirm the validity of the latter two species. This paper is not aimed to form any taxonomic decision regarding the status of *E. latipennis* and *E. nigripennis*; following GAULD & MITCHELL (1978)'s decision they are treated here as separate species (which, in my opinion, might be correct). However, this argument might not affect the specific status of *E. titanius* sp. nov., as the new species can be readily distinguished from both mentioned species by its more robust body, and especially by its conspicuously stout legs: middle femur less than 4×, hind femur at most 4.5× as long as deep in profile, while in the other two species femora are distinctly more elongate, middle and hind femora are at least 5× (in the case of hind femur up to 6.5×) as long as deep in profile (cf. Figs 12, 14). Additionally, the new species can be easily distinguished from *E. latipennis* by its distinctly longer and more swollen gena (gena in dorsal view 0.5–0.6× as long as eye width, weakly narrowed behind eyes, in profile 0.8–1.0× as wide as eye; while in *E. latipennis* gena in dorsal view 0.35–0.40× as long as eye width, distinctly narrowed behind eyes, in profile 0.6× as wide as eye) (cf. Figs 11, 13). Apart from the structure of middle and hind femora mentioned above, *E. titanius* sp. nov. can be easily distinguished from *E. nigripennis* by its narrower lower face (0.85–0.90× as wide as long), stouter flagellomeres (20th flagellomere 1.6× as long as wide), FI (= 0.6), wing venation characteristics (ICI = 1.8–1.9, NI = 1.3–1.5), and black inter-ocellar area; in *E. nigripennis* lower face little wider than long, 20th flagellomere 0.9× as long as wide, FI = 0.45–0.50, ICI = 1.35–1.55, NI = 0.65–1.0, and inter-ocellar area reddish.

Rhopalophion discinervus (Morley, 1926)

Material examined – One female, Congo, Brazzaville, res. Lefinie [= Léfini Reserve], 24.XI.1963, leg. J. Balogh & A. Zicsi; one female, same locality and collectors, 13.I.1964.

Remarks – First record for Congo. This species was described from South Africa and is widely distributed in the Afrotropical region (GAULD & MITCHELL 1978).

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