

First record of the genus *Colpopyga* SEMENOV-TIAN-SHANSKIJ, 1954 from the Ethiopian Region, with description of a new species (Insecta: Hymenoptera: Chrysididae)

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Abstract

The genus *Colpopyga* SEMENOV-TIAN-SHANSKIJ, 1954 is recorded from sub-Saharan Africa for the first time. A new species, *Colpopyga madli* sp.n., is described from Cameroon.

Key words: Elampini, taxonomy, cuckoo wasps, new species, Cameroon.

Zusammenfassung

Die Gattung *Colpopyga* SEMENOV-TIAN-SHANSKIJ, 1954 wird zum ersten Mal aus Afrika südlich der Sahara nachgewiesen. Eine neue Art, *Colpopyga madli* sp.n., wird aus Kamerun beschrieben.

Introduction

Colpopyga SEMENOV-TIAN-SHANSKIJ, 1954 is a small genus of cuckoo wasps including four Palaearctic species: *C. flavipes* (EVERSMANN, 1858), *C. auriventris* MERCET, 1904, *C. temperata* LINSENMAIER, 1959, *C. nesterovi* ROSA, 2017 and at least a Nearctic one: *C. crassa* (BOHART in BOHART & KIMSEY, 1978) (ROSA 2017). The genus was previously known for Northern Africa (LINSENMAIER 1959; ROSA 2017) and not yet for sub-Saharan Africa (MADL & ROSA 2012).

Colpopyga was synonymised with *Hedychridium* ABEILLE DE PERRIN, 1878 by LINSENMAIER (1959) and its members were included in the *H. flavipes* species group (LINSENMAIER 1968). BOHART & KIMSEY (1978, 1982) described three species, *Hedychridium crassum* BOHART in BOHART & KIMSEY, 1978, *H. incisum* BOHART in BOHART & KIMSEY, 1978 and *H. purum* KIMSEY in BOHART & KIMSEY, 1978, which were included in the *H. crassum* species-group, later recognised analogous to the Palaearctic *H. flavipes* species-group (KIMSEY & BOHART 1991). I could examine specimens of *H. crassum* only and did not include the other two Nearctic species waiting for the examination of their types or other material (ROSA 2017).

However, NOSKIEWICZ & LORENCOWA (1963) and other authors (see the list in ROSA 2017) considered *Colpopyga* a valid genus based on the modified structure of the female metasoma, in particular of the cone-shaped T3 and the modified structure of the internal sterna and terga. Finally, molecular data published by PAULI et al. (2019) placed

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Colpopyga on a monophyletic clade with a clear affinity with the genus *Holopyga* DAHLBOM, 1854 rather than with the genus *Hedychridium*.

Material and Methods

Photographs were taken with a photo camera Olympus E-M1 Mark II with the Olympus Zuiko 60mm objective and a Mitutoyo 5x M Plan Apo, stacked with the software Helicon Focus (ver. 7.6) and processed with Adobe Photoshop CS6 software program.

The morphological terminology follows KIMSEY & BOHART (1991) and ROSA (2017). The following abbreviations are used in the descriptions: F1, F2, F3 – flagellomeres 1, 2, 3; MOD – mid-ocellar diameter; MS – malar space, the shortest distance between the base of the mandible and the margin of the compound eye; OOL – oculo-ocellar line, the shortest distance between the lateral ocellus and the compound eye; P – pedicel; PD – puncture diameter; POL – the shortest distance between posterior ocelli; T1, T2, T3 – metasomal terga 1, 2, 3; l/w = relative length to width.

Taxonomic part

Order Hymenoptera, Family Chrysididae, Subfamily Chrysidinae, Tribe Elampini

Genus *Colpopyga* SEMENOV-TIAN- SHANSKIJ, 1954

Colpopyga SEMENOV-TIAN-SHANSKIJ, 1954: 137.

Colopyga: KIMSEY & BOHART 1991: 181, incorrect subsequent spelling.

Type species: *Hedychrum flavipes* EVERS-MANN, 1858, by original designation.

Diagnosis. The genus *Colpopyga* is characterised by the female metasoma highly modified and flattened in lateral view; the T3 is elongate, cone-shaped; the structure of internal terga and sterna is modified, highly elongated; the male T3 is dimorphic, evenly rounded; the male genitalia are weakly pigmented; in both sexes, the flagellomeres are elongate, cylindrical, with F1 at least twice as long as broad; the propodeal tooth (= posterior propodeal projection) is spiniform; the legs are largely or entirely non-metallic, yellow; the tegulae are non-metallic brown; the apical margin of T3 has a narrow hyaline-brownish rim, usually medially emarginate; the transverse frontal carina is faint; the face has sparse erect setae; the malar spaces are less than 1 MOD; the scapal basin is shallow, medially cross-ridged; the mandible is tridentate; the inner surface of the mid and hind tibia is without pits; the medial vein of forewing is arched; the tarsal claw bears a single submedian, perpendicular tooth.

Remarks. The Palearctic species of *Colpopyga* can be distinguished from members of the genus *Hedychridium* by the sexual dimorphic structure of T3, which is cone-shaped in females and normally rounded in *Hedychridium*; in both sexes, the T3 is medially emarginated and continuous in *Hedychridium*. However, the female of the new African species is apico-medially continuous. The metasomal sterna are entirely metallic in *Colpopyga* and usually non-metallic in *Hedychridium*, at most with a median

metallic spot, yet fully metallic in some African groups, e.g. the *dybowskii* group. In *Colpopyga* the female internal sterna and terga have a peculiar shape (see NOSKIEWICZ & LORENCOWA 1963), are noticeably elongated and different from those of *Hedychridium*; pinned female specimens usually have the long ovipositor fully exerted. The male genital capsule is weakly pigmented and elongated. Members of this genus, with the sole exception of *C. auriventris* which is bicolour, can be easily distinguished from *Hedychridium* by the uniform metallic body colouration which contrasts with the entirely or largely non-metallic yellow legs; for this reason, they are commonly named “yellow-legged cuckoo wasps” (ZETTEL 2017). African *Hedychridium* may have equal body colour, nevertheless the shape of the female T3, the shape of the internal segments and the length of flagellomeres allow an easy separation of the two genera. *Colpopyga* is separated from African *Holopyga* by the shape of the tarsal claws, with a short median tooth (vs. multidentate); fore wing with gently curved median vein (vs. strongly arched and angulate), unmodified mesopleuron (vs. strongly angulate).

Hosts. Unknown.

Colpopyga madli sp.n. (Figs 1A–B, 2A–D, 3A, 3C)

Holotype. ♀, Cameroon: Maroua Cam. Nonvll. [Guido Nonvillers] , x.1968/ *Hedychridium* <handwritten by Zimmermann> / Keine Discoidalzelle! <handwritten by Zimmermann> / red label. Type deposited at the Naturhistorisches Museum Wien, Vienna.

Description. Body length 5.5 mm (Figs 1A, 1B).

Head. OOL = $2.2 \times \text{MOD}$; POL = $2.9 \times \text{MOD}$; MS = $0.3 \times \text{MOD}$; relative length of P:F1:F2:F3 = 1.0:1.4:1.2:1.0. Frons and vertex with small-sized and contiguous punctures ($0.2\text{--}0.3 \times \text{MOD}$); posterior ocelli with wide, impunctate, and partially wrinkled postero-lateral area ($1.0 \times \text{MOD}$) (Fig. 2B); in frontal view, punctures between scapal basin and eye gradually decreasing from frons to clypeus (Fig. 2A); scapal basin medially with weak, transverse microridges. Ocellar triangle obtuse, without line connecting posterior ocelli; ocelli sunken. Flagellomeres cylindrical: F1 length 3.0 times breadth. Mandibles tridentate. Subantennal space $0.7 \times \text{MOD}$.

Mesosoma. Pronotum with even, contiguous punctures, slightly larger than those on vertex, without interspaces. Mesoscutum postero-medially with larger punctures ($0.4 \times \text{MOD}$), with narrow polished interspaces between punctures; notauli formed by narrow subrectangular foveae, confluent with punctures of median area of mesoscutum; parapsidal lines fully developed as thin line (Fig. 2B). Mesoscutellum with similar punctuation, with wider and shining interspaces. Metascutellum with foveate-reticulate punctures. Propodeal teeth spiniform, acute, outward directed, and slightly pointing backward. Forewing medial vein distinctly bent. Second tarsomere of hindleg thicker and shorter than third, 0.8 times long (Fig. 3C).

Metasoma. T1 and T2 with deep punctures, smaller dorsally ($0.2 \times \text{MOD}$) (Fig. 1B), denser and larger laterally (up to $0.5 \times \text{MOD}$) (Fig. 1A); intervals between punctures polished, with scattered tiny punctures; T3 with denser, deeper punctures, postero-laterally larger, more or less aligned (Fig. 3A); posterior margin with hyaline rim, apico-medially continuous (Fig. 3A); T2 and T3 with weak median longitudinal carina (Fig. 2C).

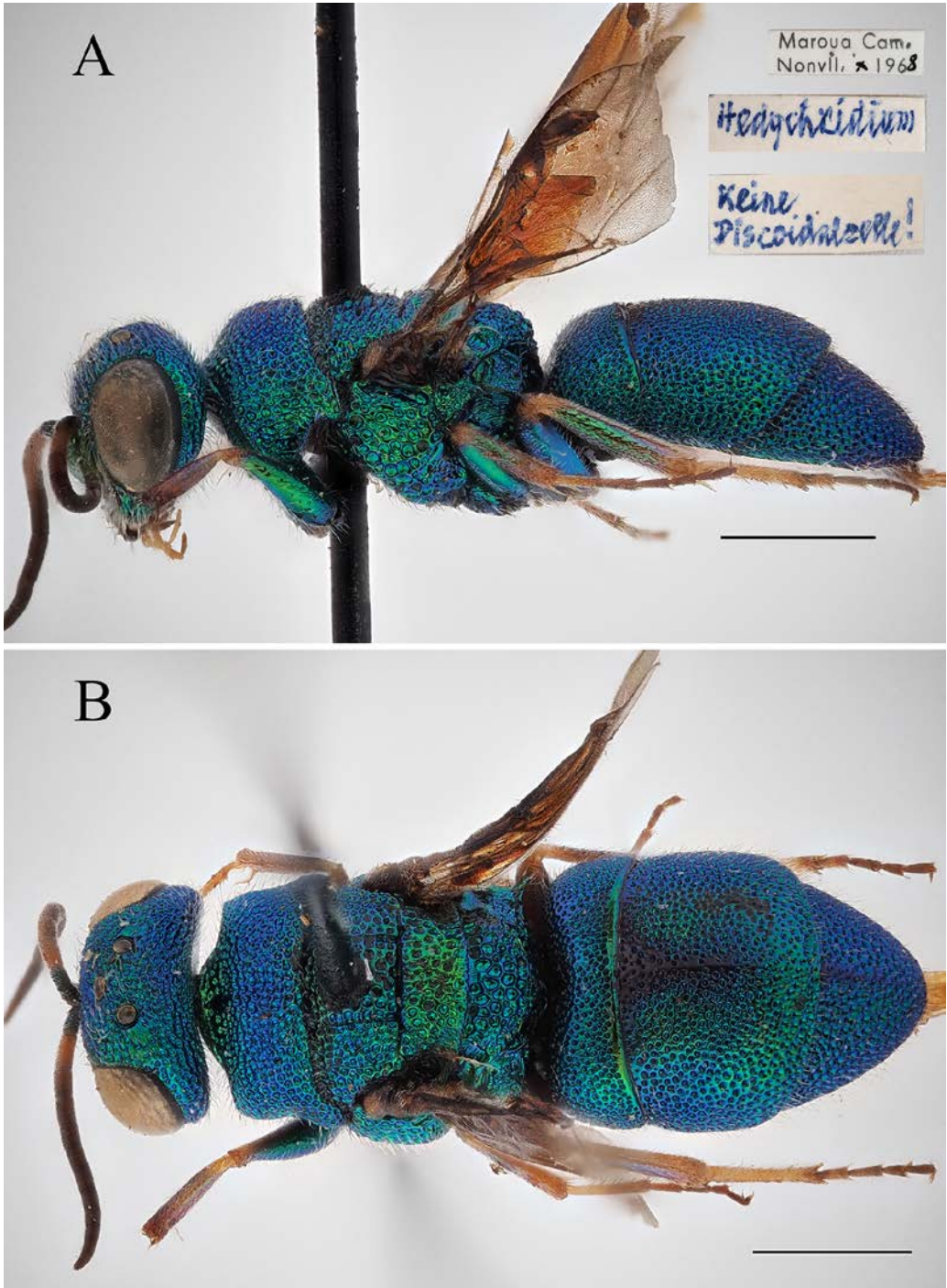


Fig. 1: *Colpopyga madli* sp.n., holotype, ♀: (A) Habitus, lateral view; (B) habitus, dorsal view. Scale bars: 1 mm.

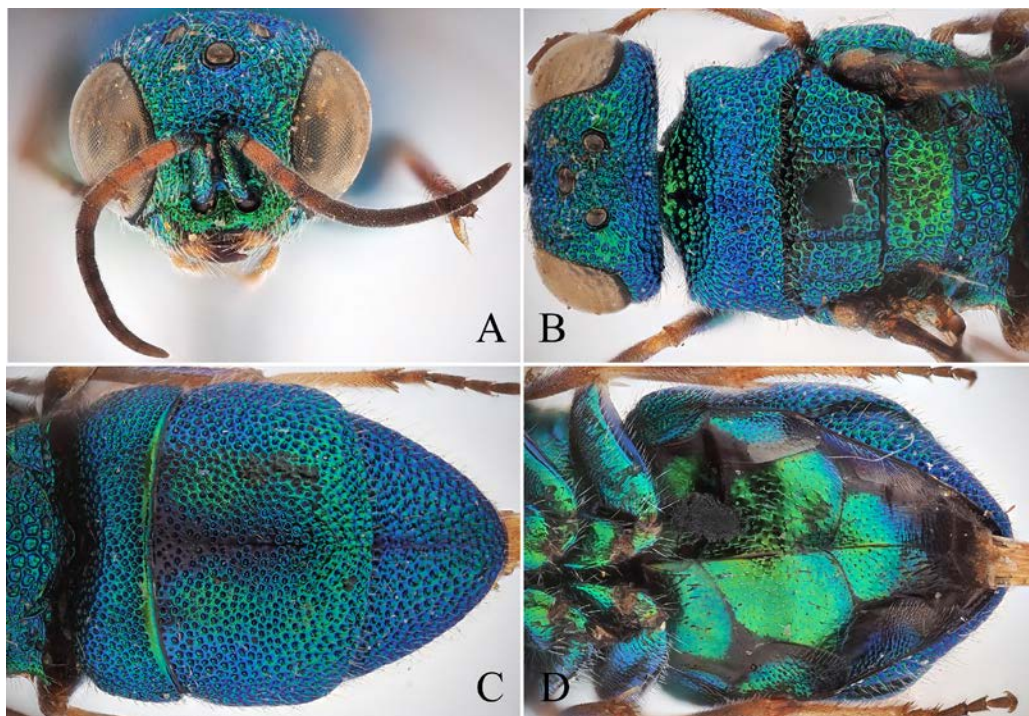


Fig. 2: *Colpopyga madli* sp.n., holotype, ♀: (A) Head, frontal view; (B) Head and mesosoma, dorsal view; (C) Metasoma, dorsal view; (D) Mesosoma, ventral view.

Colouration. Body metallic green to blue; on T2 darker blue to black anteriorly and along median longitudinal carina; T3 darker blue on longitudinal median carina; metasoma ventrally metallic green (Fig. 2D); scape, and pedicel metallic green, F1-F3 foxy red, other flagellomeres brown (Fig. 2A). Mandible basally metallic green, medially yellowish, and apically brown. Coxa, trochanter and femur metallic green, tibia reddish, its outer side with bluish lustre; basitarsomere of mid- and hindleg light yellow to whitish, other tarsomeres brown. Wings apparently infusate, but partially covered by a layer of glue.

Vestiture. Body dorsally covered with short, whitish setae (less or around $1.0 \times \text{MOD}$); on metasomal terga, posteriorly and laterally with slightly longer setae ($> 1.5 \times \text{MOD}$), short setae also on coxae and femora. Face laterally, malar spaces and mandibles covered with appressed, silvery setae (Fig. 2A).

Male unknown.

Etymology. The specific epithet *madli* (masculine noun in genitive case) is dedicated to Michael Madl, expert hymenopterist of the Vienna Museum, author of key publications on the African fauna, including the checklists of the Ethiopian and Malagasy Chrysididae.

Distribution. Cameroon (Far North Region).

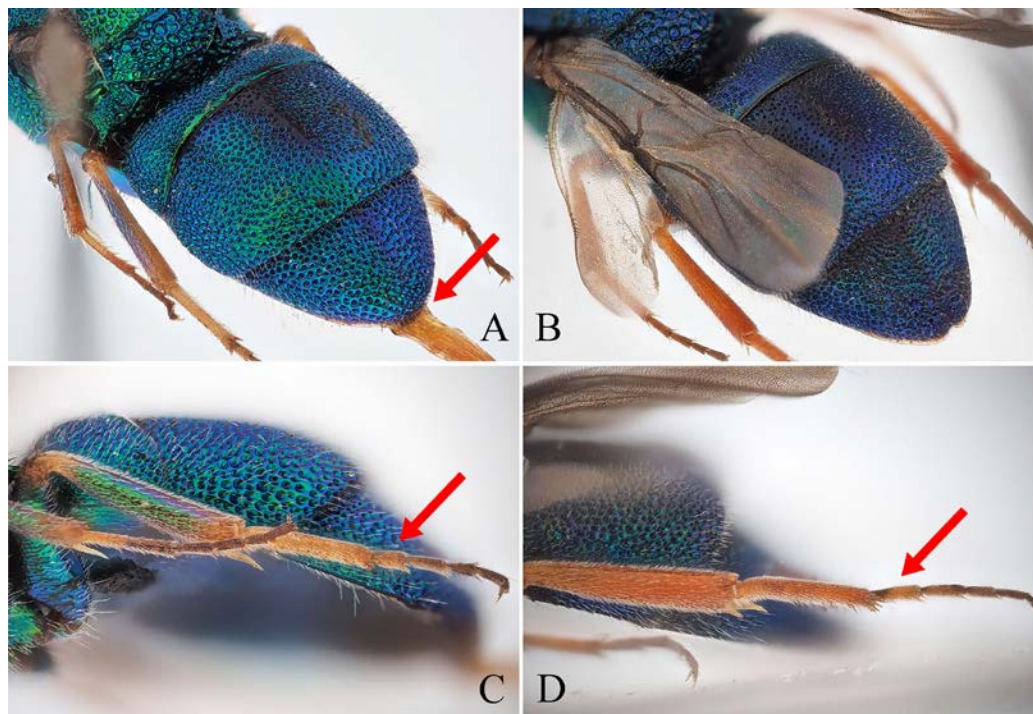


Fig. 3: (A–B) metasoma, postero-lateral view: (A) *Colpopyga madli* sp.n., holotype, ♀, arrow pointing at the continuous apical margin of T3; (B) *C. flavipes*, ♀. (C–D) hindleg, lateral view, arrows pointing at the second tarsomere: (C) *Colpopyga madli* sp.n., holotype, ♀; (D) *C. flavipes*, ♀.

Comparative diagnosis. *Colpopyga madli* sp.n. is separated from the Mediterranean *C. flavipes* and *C. temperata* (LINSENMAIER, 1959) by the continuous apical margin of the T3, without median emargination (Fig. 3A) (vs. emarginated, Fig. 3B); pronotum with even, contiguous punctures, without intervals (vs. double punctate); mesoscutum with polished intervals between punctures, without small punctures, dots and wrinkles; second tarsomere of the hindleg shorter than the third (Fig. 3C) (vs. longer or as long as the third, Fig. 3D); basitarsus of mid- and hindleg light yellow to whitish (vs. reddish); external side of tibiae metallic blue to green (vs. non-metallic reddish).

Acknowledgements

I am grateful to Dominique Zimmermann and Manuela Vizek (Naturhistorisches Museum Wien, Austria, NHMW) for the loan of unidentified cuckoo wasps from the Stephan Zimmermann collection; to Sabine Gaal-Haszler (NHMW) for her editorial opinions; to Michael Madl (NHMW) and Marek Halada (České Budějovice, CZ) for the review of the manuscript.

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Zeitschrift/Journal: [Annalen des Naturhistorischen Museums in Wien](#)

Jahr/Year: 2023

Band/Volume: [125B](#)

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Artikel/Article: [First record of the genus Colpopyga Semenov-Tian-Shanskij, 1954 from the Ethiopian Region, with description of a new species \(Insecta: Hymenoptera: Chrysididae\) 37-43](#)