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Discovery of a new species of Dryinidae (Hymenoptera: Chrysidoidea) from the Republic of the Congo

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ABSTRACT

A new species, *Dryinus lesianus* n. sp., is described from the Republic of the Congo, Lesio-Louna Park. Changes to the key to the Afrotropical species of the genus *Dryinus* are provided.

KEYWORDS: Hymenoptera, Chrysidoidea, Dryinidae, parasitoids, pincer wasps, Afrotropical, Republic of the Congo, identification key, new species.

RÉSUMÉ

Une nouvelle espèce, *Dryinus lesianus*, est décrite de la République du Congo. La clé des espèces Afrotropicales du genre *Dryinus* est changée.

MOTS-CLÉS: Hyménoptères, parasitoïdes, region Afrotropicale, République du Congo, clé d'identification, espèce nouvelle.

INTRODUCTION

The Dryinidae (Hymenoptera: Chrysidoidea), commonly known as pincer wasps, are parasitoids and often also predators of Hemiptera Auchenorrhyncha (Guglielmino *et al.* 2013).

As regards the pincer wasps, the Republic of the Congo (= Congo-Brazzaville) is one of the less studied countries of the Afrotropical Region. Only seven species of Dryinidae are in fact listed from that country in the monograph by Olmi *et al.* (2019). The unique listed species are *Anteon evertsi* Olmi, 1989, *A. kivuanum* (Benoit, 1951*c*) (Anteoninae); *Bocchus mkomazianus* Olmi, 2005 (Bocchinae), *Dryinus mayogo* (Benoit, 1950*b*), *D. turneri* Olmi, Copeland & Guglielmino, 2015, *D. ugandanus* (Olmi, 1984) (Dryininae) and *Gonatopus incognitus* Olmi, 1984 (Gonatopodinae). This situation contrasts strongly with the 66 species reported from the close and larger Democratic Republic of the Congo (= Congo-Kinshasa), well studied by Benoit (1950*a*, *b*, 1951*a–c*, 1953), Olmi (1984) and more recently by Olmi *et al.* (2019).

In 2020, we examined Dryinidae collected in the Republic of the Congo by Michael Sharkey (Department of Entomology, University of Kentucky, Lexington, USA) and Yves Braet (Royal Belgian Institute of Natural Sciences, Brussels (Belgium). This study resulted in the discovery of a new species described below.

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MATERIALS AND METHODS

The description follows the terminology used by Olmi *et al.* (2019). The reported measurements are relative, except for the total length (head to abdominal tip, excluding antennae and sting), which is expressed in millimetres. The following abbreviations are used in the descriptions: POL – the distance between the inner edges of the two lateral ocelli, OL – the distance between the inner edges of a lateral ocellus and the median ocellus, OOL – the distance from the outer edge of a lateral ocellus to the compound eye, OPL – the distance from the posterior edge of a lateral ocellus to the occipital carina, TL – the distance from the posterior edge of an eye to the occipital carina. The term 'disc of metapectal-propodeal complex' is used here in the sense of Kawada *et al.* (2015); it corresponds to the term 'dorsal surface of propodeum' *sensu* Olmi (1984). The term 'propodeal declivity' *sensu* Kawada *et al.* (2015) used here corresponds to the term 'posterior surface of propodeum' *sensu* Olmi (1984). The names of veins of the forewing are used here in the sense of Olmi *et al.* (2019). The 'stigmal vein *sensu* Olmi (1984) is named here the 'second radial-radial sector crossvein & radial sector vein (2r-rs&Rs)'. The term 'ADOs' (= Antennal Dorsal Organs) is used here in the sense of Riolo *et al.* (2016); it corresponds to the term 'rhinaria' *sensu* Olmi (1984). According to Riolo *et al.* (2016), ADOs are sensory structures that might mediate the antennal responses to vibratory stimuli. As far as we know, they are present in antennae of dryinid females attacking Fulgoromorpha (Olmi 1994).

The types of all Afrotropical species of *Dryinus* were previously examined by the authors. The specimens studied in this paper are deposited in the collection of the DAFNE Department, University of Tuscia, Viterbo, Italy (DAF).

TAXONOMY

Genus *Dryinus* Latreille, 1804

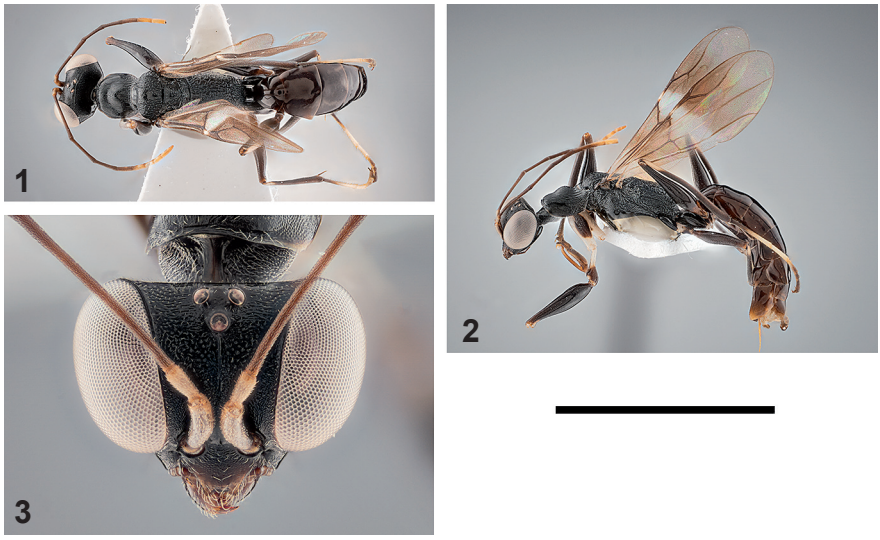
Dryinus lesianus n. sp.

(Figs 1–3, 9)

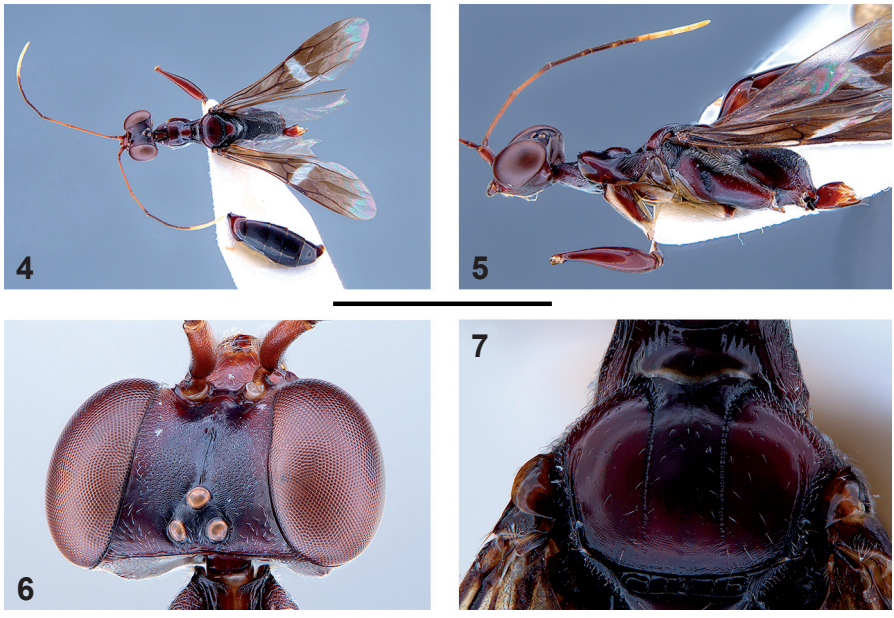
LSID: urn:lsid:zoobank.org:act:E0B8F079-2E0C-45F7-9F47-194F3851A0B1.

Etymology: The species is named after Lesio-Louna Park, where the type series was collected.

Diagnosis: Female of *Dryinus* with head and mesosoma almost totally black (Figs 1, 2); temple absent (Fig. 3); head with posterior margin of vertex almost straight, very slightly excavated (Fig. 3); occipital carina incomplete (Fig. 1); lateral ocelli not touching occipital carina (Fig. 3); head (dorsally viewed) with lateral ocelli located in front of imaginary straight line joining posterior edges of eyes (Fig. 3); mesoscutum with lateral regions sculptured by many irregular longitudinal keels and median region punctate, unsculptured among punctures (Fig. 1); protarsomere 1 less than twice as long as 4; protarsomere 5 with very long apex (Fig. 9); enlarged claw slightly shorter than protarsomere 5, with one big subapical tooth (Fig. 9).

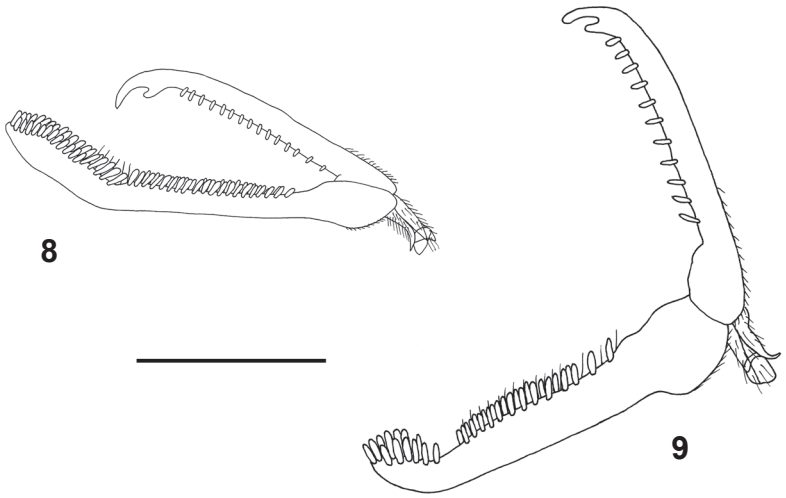


Figs 1–3: Female holotype of *Dryinus lesianus* n. sp., habitus in dorsal (1) and lateral (2) views, and head in frontal view (3). Scale bar = 4.4 mm for Figs 1, 2, and 1.0 mm for Fig. 3.



Figs 4–7: Female holotype of *Dryinus inexpectatus* Guglielmino & Olmi: (4) habitus in dorsal view; (5) head and mesosoma in lateral view; (6) head in dorsal view; (7) mesoscutum. Scale bar = 8.9 mm for Fig. 4, 4.3 mm for Fig. 5, 1.2 mm for Fig. 6, and 1.1 mm for Fig. 7.

Description: Female (Figs 1, 2). Fully winged; body length 4.6–7.7 mm (holotype 6.2 mm). Head black, except anterior margin of clypeus testaceous; antenna brown, except antennomeres 7–10 whitish and ventral side of scape and pedicel whitish; mesosoma black; metasoma brown; legs brown, except part of coxae and trochanters whitish, proximal extremities of tibiae and part of tarsus whitish. Antenna clavate; antennomeres in following proportions: 13:6:45:26:28:13:10:9:9:12; ADOs present in antennomeres 5–10. Head (Fig. 3) shiny, punctate, unsculptured among punctures, partly slightly rugose; occipital carina incomplete, present only behind and on sides of lateral ocelli, laterally not reaching eyes, not present on temple and on lateroventral side of head; frontal line complete; clypeus bidentate; occipital carina incomplete, laterally not reaching eyes; lateral ocelli not touching occipital carina; posterior margin of vertex very slightly excavated (Fig. 3); temple absent; ocellar ratio: POL:OL:OOL:OPL = 3:2:9:1; greatest breadth of lateral ocelli longer than OPL (3:1). Pronotum (Figs 1, 2) shiny, unsculptured, except many longitudinal keels on dorsal and lateral regions; pronotum crossed by two deep transverse furrows; posterior collar short; pronotal tubercle not reaching tegula. Mesoscutum (Fig. 1) shiny, with lateral regions sculptured by many irregular longitudinal keels; median region shiny, punctate, unsculptured among punctures. Notauli incomplete, reaching about 0.7× length of mesoscutum. Mesoscutellum and metanotum shiny, punctate, unsculptured among punctures. Metapectal-propodeal disc reticulate rugose, slightly longer than propodeal declivity (25:21); propodeal declivity reticulate rugose, without longitudinal keels. Mesopleuron punctate, unsculptured among punctures. Metapleuron sculptured by many transverse keels. Fore wing with two large dark transverse bands; distal part of stigmal vein (2r-rs&Rs) slightly curvilinear,



Figs 8, 9: Chelae of holotypes of *Dryinus inexpectatus* Guglielmino & Olmi (8) and *D. lesianus* n. sp. (9). Scale bars = 0.4 mm for Fig. 5 and 0.3 mm for Fig. 6

much longer than proximal part (21:13). Protarsomeres in following proportions: 27:3:8:20:33. Protarsomeres 2 and 3 produced into hook. Enlarged claw (Fig. 9) with one large subapical tooth and one row of 11 lamellae. Protarsomere 5 (Fig. 9) with two rows of about 24 lamellae; apex with approximately 20 lamellae. Tibial spurs 1/1/2.

Male. Unknown.

Holotype: ♀ **Republic of the Congo:** Pool Department, Abio, Lesio-Louna Park, 3°06.020'S 15°31.440'E, 330 m, 23–30.ix.2008, MT, Sharkey & Braet (DAF).

Paratypes: Republic of the Congo: 2♀ same label data as holotype but 16–23.ix.2008; 2♀ Pool Department, Iboubikro, Lesio-Louna Park, 3°16.196'S 15°28.267'E, 330 m, 15–22.ix.2008, Sharkey & Braet; 6♀ same label data but ix.2008 (2♀), 24.ix–6.x.2008, MT1 (3♀), 1–8.ix.2008, MT1 (1♀) (all DAF).

Hosts: Unknown.

DISCUSSION

Dryinus females were divided for the sake of convenience by Olmi (1993) and Olmi *et al.* (2019) into four groups based on the following characters:

Group 1: enlarged claw not reduced, much longer than arolium, with one subapical tooth, never with one broad apical lamella; notauli at least partly present.

Group 2: enlarged claw not reduced, much longer than arolium, with one subapical tooth, never with one broad apical lamella; notauli absent.

Group 3: enlarged claw not reduced, much longer than arolium, without subapical tooth or with at least two subapical teeth; rarely with only one subapical tooth, then with one very broad apical lamella.

Group 4: enlarged claw greatly reduced, approximately as long as or slightly longer than arolium.

Based on its diagnosis, *Dryinus lesianus* n. sp. belongs to Group 1 of *Dryinus* and is close to *D. inexpectatus* Guglielmino & Olmi, 2014, described from Madagascar. Following its description, the key to the females of the Afrotropical species of Group 1, published by Olmi *et al.* (2019), should be modified by replacing couplet 44 as follows:

44 Occipital carina incomplete (Figs 1, 6); protarsomere 5 with very long apex (Figs 8, 9) (Olmi *et al.* 2019: fig. 133B)..... 44'
– Occipital carina complete; protarsomere 5 with shorter apex (Olmi *et al.* 2019: fig. 125C)..... 45
44' Mesoscutum completely weakly granulated (Fig. 7); protarsomere 5 with very long apex (Fig. 8)..... *D. inexpectatus* Guglielmino & Olmi
– Mesoscutum with lateral regions sculptured by many irregular longitudinal keels and median region punctate, unsculptured among punctures (Fig. 1); protarsomere 5 with less long apex (Fig. 9)..... *D. lesianus* n. sp.

In the Afrotropical Region, there are only first three groups of *Dryinus* present; group 4 is absent being limited to the Nearctic and Neotropical regions. Group 1 has

included 39 species (Olmi *et al.* 2019) and is the most diverse (groups 2 and 3 include in fact only 4 and 14 species, respectively). Following the description of *D. lesianus* n. sp., group 1 grows now to 40 species. Most of them are broadly distributed in the Afrotropical Region. On the other hand, endemism is very rare in the Dryinidae (Olmi *et al.* 2019). For this reason, we presume that *D. lesianus* n. sp. is not endemic to the Republic of the Congo, but should have a broader distribution, including at least the neighbouring countries. The knowledge of the hosts should be useful to understand the possible distribution range of the new species, but unfortunately they are unknown. The situation is not unique, as in group 1 the hosts of only five species out of 40 are known in the Afrotropical Region (Guglielmino *et al.* 2013; Olmi *et al.* 2019). These hosts belong to the Dictyopharidae, Flatidae, Lophopidae, Ricaniidae and Tropiduchidae (Hemiptera: Fulgoromorpha) (Guglielmino *et al.* 2013).

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