

*Afrospathius trjapitzini* sp.n., the second species of the rare  
Afrotropical genus *Afrospathius* Belokobylskij et Quicke, 2000  
(Hymenoptera: Braconidae: Doryctinae)

*Afrospathius trjapitzini* sp.n. — второй вид редкого  
афротропического рода *Afrospathius* Belokobylskij et Quicke, 2000  
(Hymenoptera: Braconidae: Doryctinae)

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КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Braconidae, Doryctinae, *Afrospathius*, новый вид, Афротропическая область.

ABSTRACT. A new species, *Afrospathius trjapitzini* sp.n., from the Republic of Congo is described and illustrated. This is the second species of the rare Afrotropical genus *Afrospathius* Belokobylskij et Quicke, 2000 which has been recently described from Senegal. A key for the two known species of *Afrospathius* is given.

РЕЗЮМЕ. Описывается и иллюстрируется новый вид *Afrospathius trjapitzini* sp.n. из Республики Конго. Это второй вид редкого афротропического рода *Afrospathius* Belokobylskij et Quicke, 2000, недавно описанного из Сенегала. Дается ключ для определения двух известных видов рода *Afrospathius*.

### Introduction

Subfamily Doryctinae is one of the very diverse and morphologically peculiar taxa of parasitic wasps in the Afrotropical Region, but information about this group is incomplete at the genus and particularly at the species level [Belokobylskij & Quicke, 2000; Belokobylskij, 2005, 2013]. At present, more than 40 doryctine genera are recorded for this zoogeographic region [Yu et al., 2012].

One of the original genera of the tribe Spathiini, *Afrospathius* Belokobylskij et Quicke, 2000, has been recently described from Senegal [Belokobylskij & Quicke, 2000]. This is the first member of the previously Neotropical subtribe Psenobolina [Belokobylskij, 1992] that is recorded in the Old World fauna. All genera belonging to the subtribe Spathiina (*Hemispithius* Belokobylskij et Quicke, 2000, *Parana* Nixon,

1943, *Paraspathius* Nixon, 1943, *Spathius* Nees, 1819 and possibly *Toka* Nixon, 1943) from the Old World have brachial cell of the fore wing closed apico-posteriorly by brachial vein, whereas in the members of Psenobolina this cell is open and brachial vein absent. *Afrospathius* is superficially similar to *Spathioplites* Fischer, 1962 from the monotypic Afrotropical subtribe Spathioplitina, but distinctly differs from it by having brachial cell open (closed in *Spathioplites*), acrosternite of first segment distinctly longer than half of the first tergite (shorter than half in *Spathioplites*), metacarp complete and distinctly sclerotised (absent at least in distal half and very faintly sclerotised in *Spathioplites*), antenna filiform (subclavate in *Spathioplites*), frons without lateral protuberances (with distinct lateral protuberances in *Spathioplites*), hind tibia with spines on dorsal side (without spines in *Spathioplites*), and hind coxa with basoventral corner and tubercle (without basoventral corner and tubercle in *Spathioplites*).

The only type species of the genus *Afrospathius*, *A. dispar* Belokobylskij et Quicke, 2000 has been described from Western Africa (Senegal). The discovery of the second new species of this genus, now from central part of the tropical territories of this continent (Republic of Congo) is therefore very interesting.

This paper and the name of the new species are dedicated to the famous Russian chalcidologist, Professor Vladimir Alexandrovich Trjapitzin, in honour of his 85-year jubilee.

Terminology used for morphological descriptions generally follows Belokobylskij & Maetô [2009], except for wing venation nomenclature that follows Belokobylskij & Tobias [1998] and Belokobylskij & Maetô [2009]. Photographs were taken with a Leica IC 3D

digital camera that was mounted on a Leica MZ16 microscope and using the Leica Application Suite® imaging system. All photographs and figures were edited with the program Adobe Photoshop®. Holotype of the new species is deposited in the Musee royal de l'Afrique centrale (Tervuren, Belgium; MRAC).

### Taxonomic part

*Afrospathius* Belokobylskij et Quicke, 2000

Belokobylskij & Quicke, 2000: 130; Yu et al., 2012.

Type species: *Afrospathius dispar* Belokobylskij et Quicke, 2000

#### DIAGNOSTIC CHARACTERS OF THE GENUS.

*Head* (Figs 2–4) not depressed; vertex distinctly and sharply convex medially, with steep and posteriorly declivous surface. Ocelli arranged in triangle with base larger than its sides. Eyes glabrous or covered with very short and rather dense setae. Occipital carina complete dorsally, fused or not fused below with hypostomal carina and obliterated on short distance. Malar suture absent. Postgenal bridge narrow. Maxillary palpi long, 6-segmented; labial palpi 4-segmented, their third segment long. Scape of antenna without apical lobe and basal constriction, its ventral margin (lateral view) shorter than dorsal margin. First flagellar segment subcylindrical, longer than second segment. *Mesosoma* (Figs 5, 6). Neck of prothorax very short. Pronotal carina fine or very fine and situated submedially, not fused with posterior margin of pronotum; pronope absent. Mesonotum (lateral view) highly, strongly, linearly and inclivously elevated above prothorax; upper border of mesoscutum sharp anteriorly. Mesoscutum distinctly protruding forwards, with rounded anterolateral corners. Notauli almost completely absent, sometimes very shallow in anterior third. Sternaulus shallow, but distinct, long, weakly curved, crenulate with granulation. Prepectal carina distinct and complete, wide below, laterally continuing up to upper margin of sternaulus. Postpectal carina absent. Metanotum (lateral view) without median tooth or carina. Propodeum without areas delineated by carinae, with three to seven longitudinal carinae in its mediobasal half and usually with single transverse carina; lateral tubercles weak or medium-sized, distinct, subpointed; propodeal bridge absent. *Wings* (Figs 7–9). Anterior margin of fore wing with dense and short semi-erect setae along its entire length. Radial vein arising from or slightly behind middle of pterostigma. Radial cell distinctly shortened; metacarp as long as or weakly longer than pterostigma. Both radiomedial veins present in female; second radi-

omedial vein absent in male. Recurrent vein interstitial or slightly antefurcal. Discoidal cell petiolate. Basal and recurrent veins subparallel or diverging posteriorly. Mediocubital vein strongly curved toward anal vein in posterior half. Nervulus postfurcal. Brachial cell open apico-posteriorly. Hind wing with 3 hamuli. Radial cell without additional transverse vein. Medial cell narrow, not widened towards apex, about 0.3 times as long as hind wing. Nervellus present. Submedial cell long. First abscissa of mediocubital vein 1.1–1.7 times longer than second abscissa. Recurrent vein rather long, curved towards base of wing, colourless. Hind wing of male with stigma-like enlargement. *Legs* (Figs 1, 12). All tibiae distinctly thickened. Fore and middle tibiae with sparse or dense small spines arranged in almost single row. All femora with very shallow or almost indistinct anterodorsal protuberances. Hind coxa small, with basoventral corner and tooth. Hind femur elongate-oval. Hind tibia without spines along outer side. Basitarsus of hind tarsus 0.6–0.8 times as long as second to fifth segments combined. *Metasoma* (Figs 10, 11, 13, 14). First tergite petiolate, rather long and wide (dorsal view). Acrosternite of first segment 0.60–0.75 times as long as first tergite. Dorsople of first tergite very fine. Second tergite with fine V- or U-shaped pale shallow furrows. Suture between second and third tergites distinct, weakly curved medially, with weak sublateral breaks and long lateral sections. Third tergite without furrows and areas. Second to sixth tergites with separate laterotergites. Fifth tergite not or weakly enlarged, shorter than or equal to fourth tergite. Apical part of ovipositor with two very small dorsal nodes and serrate ventrally. Ovipositor sheath longer than metasoma. Male genitalia without volsellar apodema; dorsal bridge and basal lobe of basal ring present.

CONTENT. Two species, *A. dispar* Belokobylskij et Quicke, 2000 (Senegal) and *A. trjapitzini* sp.n. (Congo).

DISTRIBUTION. Afrotropical Region.

#### *Afrospathius trjapitzini* sp.n.

Figs 1–14.

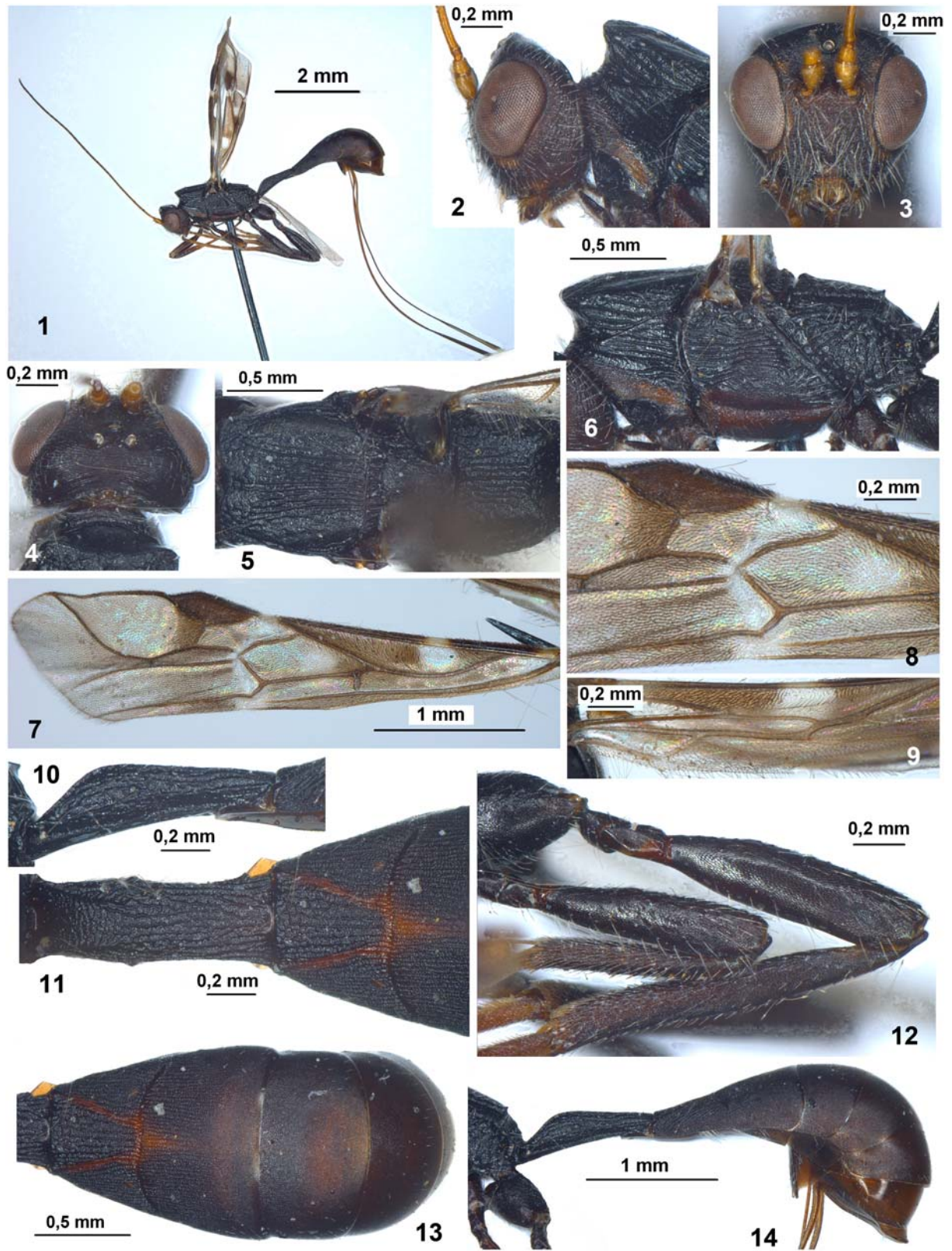
TYPE MATERIAL. Holotype: ♀, Republic of Congo, "Coll. Mus. Congo, Basoko, I – 1949, P.L.G. Benoit" (MRAC).

DESCRIPTION. Female. Body length 6.1 mm; fore wing length 3.7 mm.

Head width 2.1 times its median length, 1.2 times width of mesoscutum. Head behind eyes (dorsal view) distinctly roundly narrowed. Transverse diameter of eye (dorsal view) 2.7 times longer than temple. Ocelli rather small, in a triangle with base 1.4 times its sides. POL 1.6 times Od, 0.5 times OOL; Od 0.3 times OOL.

Figs 1–14. *Afrospathius trjapitzini* sp.n. (holotype, ♀). 1 — habitus, lateral view; 2 — head and anterior part of mesosoma, lateral view; 3 — head, front view; 4 — head, dorsal view; 5 — mesosoma, dorsal view; 6 — mesosoma, lateral view; 7 — fore wing; 8 — median part of fore wing; 9 — basal part of hind wing; 10 — petiole, lateral view; 11 — petiole and second metasomal tergite, dorsal view; 12 — hind leg; 13 — metasoma without petiole, dorsal view; 14 — metasoma, lateral view.

Рис. 1–14. *Afrospathius trjapitzini* sp.n. (голотип, ♀). 1 — габитус, вид сбоку; 2 — голова и передняя часть мезосомы, вид сбоку; 3 — голова, вид спереди; 4 — голова, вид сверху; 5 — мезосома, вид сверху; 6 — мезосома, вид сбоку; 7 — переднее крыло; 8 — средняя часть переднего крыла; 9 — базальная часть заднего крыла; 10 — стебелек, вид сбоку; 11 — стебелек и второй тергит метасомы, вид сверху; 12 — задняя нога; 13 — метасома без стебелька, вид сверху; 14 — метасома, вид сбоку.



Eyes almost without emargination opposite to antennal sockets, weakly directed forwards (lateral view), 1.3 times as high as broad. Malar space 0.4 times height of eye, 0.8 times basal width of mandible. Face weakly convex, its minimum width 0.9 times eye height and equal to height of face and clypeus combined. Hypoclypeal depression width 0.6 times distance from depression to eye, 0.4 times width of face. Tentorial pits small. Head below eyes (front view) strongly and almost linearly narrowed. Hypostomal flange narrow.

Antennae slender, filiform, more than 29-segmented (apical segments missing). Scape 1.3 times longer than its maximum width. First flagellar segment 7.3 times longer than its apical width, 1.1 times longer than second segment. Subapical segments about 4.0 times longer than their width.

Mesosoma elongate, its length 2.0 times maximum height. Mesoscutum (dorsal view) weakly and widely concave medially on anterior sharp margin, its maximum width 1.1 times median length. Prescutellar depression shallow, rather long, with six distinct carinae, medially 0.2 times as long as scutellum. Scutellum weakly convex, with fine lateral carinae, 1.1 times longer than its maximum width. Subalar depression wide, shallow, widely transversely striate, with very fine reticulation between striae. Propodeum (lateral view) distinctly and curvedly narrowed toward apex.

Wings. Fore wing about 4.0 times longer than its maximum width. Pterostigma 3.2 times longer than wide. Metacarp 1.15 times longer than pterostigma, 2.3 times longer than distance from apex of radial cell to apex of wing. First radial abscissa distinctly oblique, 0.8 times as long as maximum width of pterostigma. First and second radial abscissae forming very obtuse angle. Second radial abscissa 2.1 times longer than first abscissa, 0.4 times as long as the distinctly curved third abscissa, 1.2 times longer than first radiomedial vein. Second radiomedial cell narrow and rather long, 3.3 times longer than its width, 0.8 times as long as the rather wide brachial cell. First medial abscissa sinuate. Recurrent vein weakly antefurcal, 0.9 times as long as first radiomedial vein. Discoidal cell rather long and narrow, about 3.0 times longer than wide. Basal and recurrent veins distinctly diverging. Distance from nervulus to basal vein 0.7 times nervulus length; nervulus straight and perpendicular to cubital vein. Hind wing 5.5 times longer than wide. Medial cell about 15.0 times longer than its maximum width. First abscissa of medio-cubital vein 1.7 times longer than second abscissa. Recurrent vein strongly desclerotised, weakly curved, distinctly oblique towards base of wing, almost interstitial.

Legs. Fore tarsus 1.5–1.7 times longer than fore tibia. Hind coxa 1.6 times longer than its maximum width, 0.9 times as long as propodeum. Hind femur 4.1 times longer than wide. All tibiae thickened. Hind tarsus 1.2 times as long as hind tibia. Hind basitarsus not thickened, without distinct ventral keel. Second tarsal segment 0.45 times as long as basitarsus, 1.8 times longer than fifth segment (without pretarsus).

Metasoma 1.7 times longer than head and mesosoma combined. Petiole dorsally rather evenly and strongly convex, widest submedially (lateral view), weakly and almost linearly widened from base to apex (dorsal view), without convex median area. Length of petiole 2.5 times its apical width, 1.5 times length of propodeum; its maximum apical width 1.3 times minimum basal width. Median length of second tergite equal to its basal width, 0.7 times median length of third tergite. Median length of second and third tergites combined 2.5 times basal width of second tergite, 1.2 times their maximum width. Ovipositor sheath 1.5 times longer than metasoma, 0.9 times as long as body, about 3.0 times longer than mesosoma, 1.4 times longer than fore wing.

Sculpture and pubescence. Vertex densely longitudinally striate, densely granulate in anterior third at level of ocelli. Frons densely granulate, with additional rugosity in anterior half. Face densely granulate, with additional oblique striation below. Temple densely vertically striate, with fine and dense additional granulation between striae, only granulate below. Mesoscutum densely and finely granulate, with distinct and weakly curved longitudinal striation on long and wide median area, rugose-granulate in anterior fifth. Scutellum densely granulate with additional lateral reticulation. Mesopleuron with distinct and coarse longitudinal striae in upper half, granulate-coriaceous and partly with rugosity in lower half. Metapleuron widely rugose-areolate, with fine and dense granulation. Propodeum densely longitudinally striate in median half, rugose-granulate laterally, without longitudinal median and lateral carinae and transverse median carina. Hind leg densely and finely granulate or granulate-coriaceous, dorsal part of hind coxa undulately and subtransversely striate. Petiole with dense longitudinal anastomosing striae and with dense fine reticulation and granulation between striae, transverse striate with granulation in basal quarter. Second tergite entirely and third tergite in basal 0.6–0.7 distinctly and densely striate with dense and fine granulation or reticulation between striae. Third tergite in posterior one-third and fourth to sixth tergites entirely very densely and finely granulate. Vertex laterally with dense, short and semi-erect pale setae, with sparse or very sparse setae in medioanterior half and glabrous in medioposterior half. Mesoscutum with sparse, semi-erect and short pale setae laterally and submedially, glabrous on wide sublateral and narrow median areas. Metapleuron mainly glabrous. Hind tibia dorsally with short, rather dense and semi-erect pale setae; their length about 0.3 times maximum width of hind tibia.

Colour. Body dark reddish brown to black, head reddish around eyes and antennal sockets; lower part of pronotum and sternauli reddish brown, metasoma in posterior third dark reddish brown to reddish brown. Palpi entirely dark reddish brown. Antennae yellow to light reddish brown basally, all median segments dark, but pale basally and apically. Tegula dark reddish brown

to black. Legs mainly dark reddish brown to black, fore femur yellowish apically, all tarsi light reddish brown with dark fifth segment. Ovipositor sheath light reddish brown in basal half, reddish brown to almost black in apical half. Fore wing distinctly maculate. Pterostigma entirely dark brown.

**Male.** Unknown.

KEY TO SPECIES OF THE GENUS *AFROSPATHIUS*

1. Head width 1.6 times its median length. First flagellar segment 6.0–6.5 times longer than its apical width. Mesosoma 1.7–1.8 times longer than its maximum height. Basal and recurrent veins of fore wing weakly diverging. Metasoma 1.1–1.2 times longer than head and mesosoma combined. Petiole distinctly widened from base to apex, its length 1.5–1.7 times apical width. Median length of second tergite 0.6–0.8 times its basal width. Ovipositor sheath 0.9–1.0 times as long as fore wing. Legs mainly light reddish brown or reddish brown. Body shorter, 3.0–4.3 mm ..... *A. dispar* Belokobylskij et Quicke, 2000
- Head width 2.1 times its median length (Fig. 4). First flagellar segment 7.3 times longer than its apical width (Fig. 2). Mesosoma 2.0 times longer than its maximum height (Fig. 6). Basal and recurrent veins of fore wing distinctly diverging posteriorly (Fig. 7). Metasoma 1.7 times longer than head and mesosoma combined (Fig. 1). Petiole weakly widened from base to apex, its length 2.5 times apical width (Fig. 11). Median length of second tergite equal to its basal width (Fig. 11). Ovipositor sheath 1.4 times longer than fore wing (Fig. 1). Legs mainly dark reddish brown to black (Fig. 12). Body longer, 6.1 mm ..... *A. trjapitzini* **sp.n.**

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