

# First record of the genus *Africophilus* GUIGNOT, 1948 from Central Africa, with description of a new species from Gabon (Coleoptera: Dytiscidae: Laccophilinae)

A. BILARDO, S. ROCCHI & M.A. JÄCH

## Abstract

The genus *Africophilus* GUIGNOT, 1948 (Coleoptera: Dytiscidae: Laccophilinae) is recorded from Central Africa for the first time. *Africophilus gabonicus* sp.n. from Gabon, and its habitat are described. The new species is well characterized by the shape of the aedeagus. A checklist (including distribution data) of all species of *Africophilus* known until now is provided. *Africophilus differens* OMER-COOPER, 1969 and *A. stoltzei* HOLMEN, 1985 are recorded for the first time from Togo resp. South Africa.

**Key words:** Coleoptera, Dytiscidae, Laccophilinae, *Africophilus*, new species, Central Africa, Gabon, checklist, habitat.

## Introduction

A total of 18 species of the laccophiline genus *Africophilus* GUIGNOT, 1948 has been described so far. These 18 species are distributed in West Africa, southern Africa, East Africa, and Madagascar. Remarkably, the genus was not recorded from Central Africa so far.

On occasion of a collecting trip to Gabon (January/February 2019) the third author managed to collect five specimens of *Africophilus*, which turned out to belong to a new species, which is described below.

The species of *Africophilus* are quite similar to each other in size, shape and coloration. The aedeagi, however, are rather distinctive and sometimes intricately shaped, enabling safe identification, which was already pointed out by OMER-COOPER (1965): “the separation of the species is difficult and depends ultimately upon differences in the aedeagi ...”.

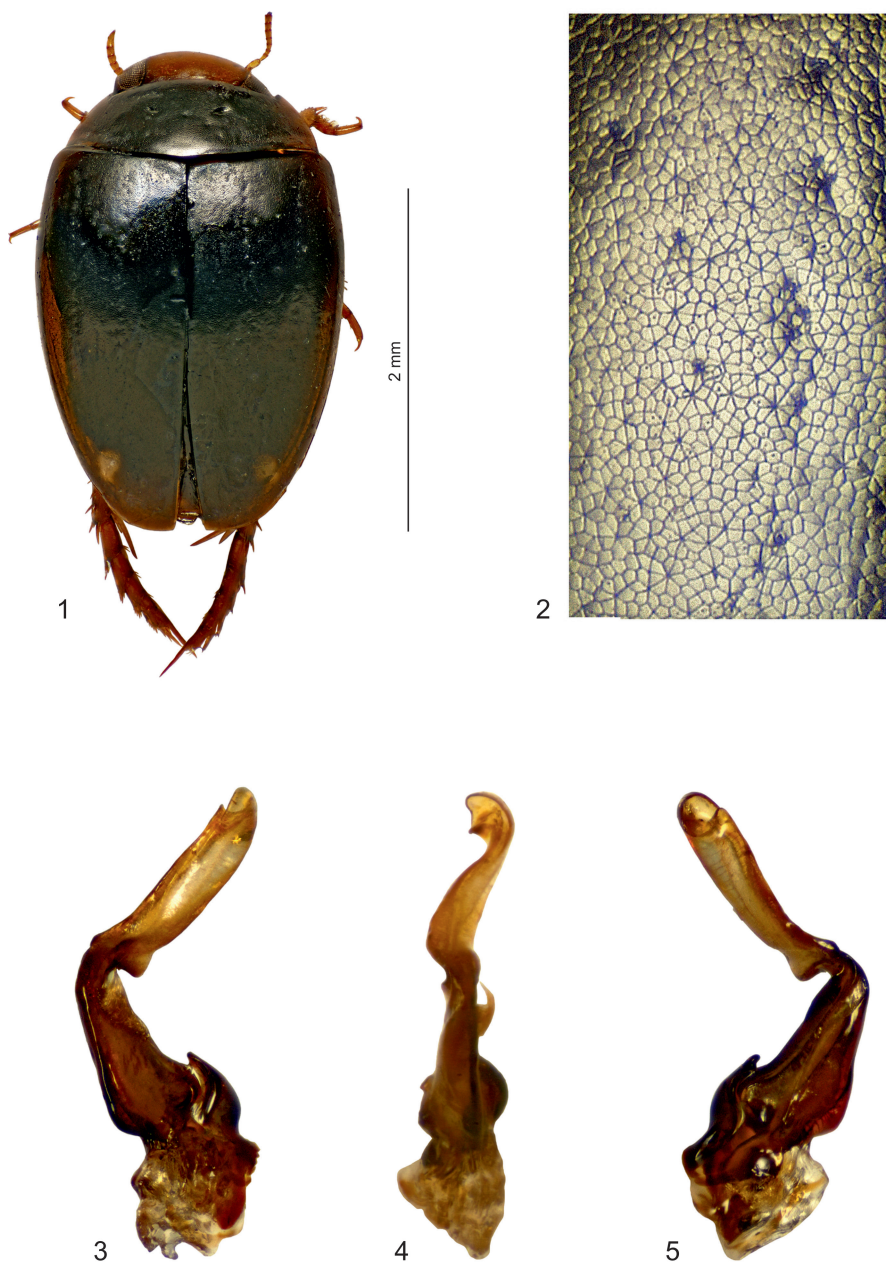
Acronyms and abbreviations:

NMW	Naturhistorisches Museum Wien, Austria
L	Total body length
Lp	Length of penis
L/W	Ratio of total length and greatest width
W	Greatest body width

## *Africophilus gabonicus* sp.n.

**TYPE LOCALITY** (Figs. 8–9): Hygropetric rock cliff near roadside fountain, ca. 37 km SE Lambaréné, road N1 between Lambaréné and Fougamou, ca. 0°56'59"S 10°28'38"E, 120 m a.s.l., Moyen Ogooué Province, western Gabon.

**TYPE MATERIAL:** **Holotype** ♂ (NMW): “♂”, “GABON 1.II.2019 Moyen Ogooué Prov. ca. 37 km SE Lambaréné 0°56'59"S 10°28'38"E 120 m, hygropetric leg. M.A. Jäch (GA 10)”. **Paratypes** (NMW): 4 ♀♀: same locality data as holotype.



Figs. 1–5: *Africophilus gabonicus*, holotype, 1) habitus, 2) microsculpture on left elytron, 3–5) aedeagus in 3) left lateral view, 4) dorsal view, 5) right lateral view.

**DIAGNOSIS:** This species is easily recognizable due to the characteristic shape of the aedeagus (Figs. 3–5): distinctly bisinuous in dorsal view, in lateral view rectangularly bent at middle; apical half somewhat flattened.

Habitus as in Fig. 1. Head microreticulate, entirely reddish (holotype) or posteriorly darkened (paratypes). Pronotum microreticulate, piceous with reddish sides; hind angles distinctly produced. Elytra microreticulate (Fig. 2), with scattered punctation, piceous with one pair of small yellow subapical spots, in basal half with three longitudinal rows of small punctures. Antennae, palpi and legs testaceous.

Ventral side ferruginous. Male: sternite VI more or less symmetrical, with a very strong median prominence at posterior margin; sternite VII with semicircular impression bordered by strong curved hooks, posterior margin asymmetrically bilobed (Fig. 6); female: last two sternites not concave, posterior margin not sinuous (Fig. 7).

Size: Holotype (♂), L: 2.73 mm, W: 1.66 mm, L/W: 1.64, Lp 0.89 mm; paratypes (♀ ♀), L: 2.69–2.84 mm, W: 1.73 mm, L/W:  $2.84/1.73 = 1.64$  (L and L/W were measured in a single specimen, i.e., the only specimen in which the elytra are not gaping).

Aedeagus (Figs. 3–5) in dorsal view bisinuous, with a tuft of more or less fused bristles (forming a hook) on left margin of basal half, in lateral view rectangularly bent at middle.

Female genitalia: We could not find any significant characters distinguishing the female genitalia of *Africophilus gabonicus* from those of the other species of the genus.

**HABITAT:** All specimens were collected from a film of water on a hygropetric rock cliff next to a roadside fountain (Figs. 8–9). The collected specimens were confined to a rather small area of about 150 cm<sup>2</sup>. No specimens were found in other wet parts of the rock or in the small pools and the wet mud and gravel at the bottom of that vertical cliff.

The specimens were remarkably difficult to collect due to their astounding jumping abilities (see also OMER-COOPER & OMER-COOPER 1957 and SANFILIPPO & FRANCISCOLO 1988). When they were forced to leave the water – they jumped off like flea beetles (Chrysomelidae: Alticini), and it was then impossible to find them again. More than five specimens escaped in this way. Inside the film of water, the specimens moved jerkily when they got disturbed.

The following animal species were found submerged in the same film of water together with *Africophilus gabonicus*:

Coleoptera: Hydrophilidae: *Agraphydrus* sp., *Helochaeres* spp. (2 species); Psephenidae: *Afropsephenoides ? marlieri* BASILEWSKY, 1959 (3 larvae, 1 pupal skin).

Crustacea: unidentified crabs.

Amphibia: *Petropedetes* sp.

**DISTRIBUTION:** So far known only from the type locality.

**ETYMOLOGY:** The epithet, *gabonicus* (= pertaining to Gabon), is a Latinized adjective.

### Discussion

*Africophilus gabonicus* belongs to the species with strongly apomorphic characters (e.g., pronotal hind angles distinctly produced, aedeagus more or less rectangularly bent in lateral view, male sternites VI–VII highly modified). However, the shape of the penis, which is distinctly bisinuous in dorsal view, distinguishes the new species from all other known species of this group.



1 mm



Figs. 6–7: *Africophilus gabonicus*, abdomen, ventral view, 6) male, 7) female.





Fig. 8: Type locality of *Africophilus gabonicus*, total view, M. Madl (left) and Doni (right), rectangle showing approximate collecting area on vertical rock cliff.

It can be assumed that more species and more localities of *Africophilus* will be found in Central Africa in the future, especially if more collecting will be carried out in the rainy season. It was pointed out by SANFILIPPO & FRANCISCOLO (1988) that typical habitats of *Africophilus* (e.g., the type locality of *A. cesii* SANFILIPPO & FRANCISCOLO, 1988) can dry up completely during the dry season.

#### Checklist of the species of *Africophilus*, including distribution data (in chronological order)

- 1 *inopinatus* GUIGNOT, 1948 – Ivory Coast (GUIGNOT 1948) [type species]
- 2 *pauliani* LEGROS, 1950 – Madagascar (LEGROS 1950)
- 3 *nesiotes* GUIGNOT, 1951 – Madagascar (GUIGNOT 1951); Benin [“Dahomey”]<sup>1</sup> (GUIGNOT 1959); Guinea [“Guinée française”] (GUIGNOT 1959); Malawi [“Nyasaland”]; South Africa; Zimbabwe [“South Rhodesia”] (OMER-COOPER 1965); Sierra Leone (FRANCISCOLO & SANFILIPPO 1990)
- 4 *jansei* OMER-COOPER & OMER-COOPER, 1957 – South Africa; Eswatini (‘‘Swaziland’’) (OMER-COOPER & OMER-COOPER 1957)

<sup>1</sup> An “allotype” was recorded from “Dahomey” [Benin] by GUIGNOT (1959: 593). However, since the description of *Africophilus nesiotes* was based on a single specimen from Madagascar, this female cannot be regarded as allotype. Apart from this, identifications of single females of *Africophilus* must be regarded as highly doubtful.



Fig. 9: Type locality of *Africophilus gabonicus*, close up, showing microhabitat and living specimen (enlarged).

- 5 *congener* OMER-COOPER, 1969 – Malawi (OMER-COOPER 1969)
- 6 *differens* OMER-COOPER, 1969 – Nigeria (OMER-COOPER 1969); Togo (5 exs. (NMW), Région des Plateaux, Préfecture de Kloto, forêt de Missahoé, ca. 340 m a.s.l., ca. 6°56'52"N 0°35'49"E, waterfall in primary forest, including hygropetric habitats, 9.II.2006, leg. Komarek & Houngué (27), det. Bilardo & Rocchi 2014) [first record for Togo]
- 7 *josi* OMER-COOPER, 1969 – Nigeria (OMER-COOPER 1969)
- 8 *basilewskyi* BILARDO, 1976 – Tanzania (BILARDO 1976)
- 9 *stoltzei* HOLMEN, 1985 – Tanzania (HOLMEN 1985); South Africa (3 exs. (NMW), KwaZulu-Natal, 20 km W Port Shepstone, Oribi Gorge near Paddock, 30°45'S 30°15'E, 12.III.1997, leg. Hess & Heckes (30), det. Bilardo & Rocchi 2014) [first record for South Africa]



- 10 *uzungwai* HOLMEN, 1985 – Tanzania (HOLMEN 1985)
- 11 *cesii* SANFILIPPO & FRANCISCOLO, 1988 – Sierra Leone (SANFILIPPO & FRANCISCOLO 1988)
- 12 *montalentii* SANFILIPPO & FRANCISCOLO, 1988 – Sierra Leone (SANFILIPPO & FRANCISCOLO 1988)
- 13 *walterrossii* SANFILIPPO & FRANCISCOLO, 1988 – Sierra Leone (SANFILIPPO & FRANCISCOLO 1988)
- 14 *bartolozzii* ROCCHI, 1991 – Madagascar (ROCCHI 1991)
- 15 *omercooperae* FRANCISCOLO, 1994 – Sierra Leone (FRANCISCOLO 1994)
- 17 *sanfilippoi* FRANCISCOLO, 1994 – Sierra Leone (FRANCISCOLO 1994)
- 16 *sinuaticauda* FRANCISCOLO, 1994 – Sierra Leone (FRANCISCOLO 1994)
- 18 *jaechi* BILARDO & ROCCHI, 2014 – Madagascar (BILARDO & ROCCHI 2014)
- 19 *gabonicus* BILARDO, ROCCHI & JÄCH, 2020 – Gabon

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Armando BILARDO

Via De Amicis 29, I – 21012 Cassano Magnago (Varese), Italy (arbilardo@gmail.com)

Saverio ROCCHI

Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione di Zoologia "La Specola", Via Romana 17, I – 50125 Firenze, Italy (rocchisaverio@gmail.com)

Dr. Manfred A. JÄCH

Naturhistorisches Museum Wien, Burgring 7, A – 1010 Wien, Austria (manfred.jaech@nhm-wien.ac.at)