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**Notes on West African *Methles*. 1.
Rediscovery of *Methles freyi* Guignot, 1953
and description of the male**

(Insecta Coleoptera Dytiscidae)

Riassunto

[*Note sui Methles dell'Africa Occidentale. 1. Riscoperta del Methles freyi Guignot, 1953 e descrizione del maschio*]

Si segnala il ritrovamento in Senegal di vari esemplari di *Methles freyi* Guignot, descritto nel 1953 sull'unico esemplare femmina finora conosciuto. Si descrive il maschio della specie.

Abstract

New records of *Methles freyi* Guignot are reported from Senegal. The species was described in 1953 on one female, the only specimen known up to now. The male is described and figured.

Key words: *Methles freyi*, Dytiscidae, male allotype, Senegal.

GUIGNOT (1953) described *Methles freyi* on the basis of a unique female specimen from Kindia, Guinea, and published a more detailed description in a subsequent paper (GUIGNOT, 1954). To the best of our knowledge, no taxonomic remark or faunal record followed the original description of this species. Quite recently, we received a set of several male and female specimens of a very small *Methles* collected in the Niokolo-Koba National Park (Senegal).

The females perfectly fit Guignot's original description of *M. freyi*, except in the length, being a little smaller than stated by GUIGNOT (l.c.). However, the features of *M. freyi* are so peculiar, that we have no doubt to assign our material to that species.

As the male of *M. freyi* was never described, we have decided to depict it and illustrate its genitalia relying, quite obviously, on the above mentioned set of specimens.

The specimens from Senegal were collected in association with other *Methles* spp. including a new taxon that will be described later in this journal.

***Methles freyi* Guignot, 1953**

Type material: Type locality: Kindia (Guinea). Length of the holotype ♀: 2.8



Figs 1-2. *Methles freyi* Guignot from Niokolo-Koba National Park, Senegal.

1: male (length = 2.55 mm); 2: female (length = 2.42 mm).

mm, after GUIGNOT (l.c.) (not seen). Type depository: Museum G. Frey, Tutzing (Germany) (NILSSON, 2013).

Material from Senegal: 49 male exx. and 27 female exx. collected in the Niokolo-Koba National Park, (Poste de Niokolo, District of Tambacounda, Senegal), N 13°01', W 12° 43', November 2011, leg. Philippe Moretto. The material is conserved in the collections of the authors, in coll. Rocchi (Museo Zoologico de "La Specola", Florence, Italy), coll. Bilardo (Cassano Magnago, Italy) and coll. ZSM (München, Germany). The photos of male (fig. 1) and female (fig. 2) were taken from specimens in coll. Pederzani; the SEM photos were taken from a male specimen in coll. Schizzerotto; the figure of penis (fig. 5) is based on a male specimen in coll. Schizzerotto, which bears the red label "allotype"⁽¹⁾.

Redescription on material from Senegal: Length: 2.33 to 2.60 mm, mean length 2.47 mm, ($\sigma = 0.07$ mm); width 0.93 to 1.09 mm, mean width 1.03 mm ($\sigma = 0.05$ mm). Strongly elongate, rather flat, with almost parallel sides, apex of elytra acuminate, shiny and distinctly microreticulate. A distinct pronoto-elytral angle.

Head pale brown with small darker areas behind eyes, distinctly microreticulate but non-punctate.

¹ Although the "allotype" is not regulated by the Code and has no name-bearing function (Recomm. 72A) it still deserves special attention, being the specimen which the description of male is based on.

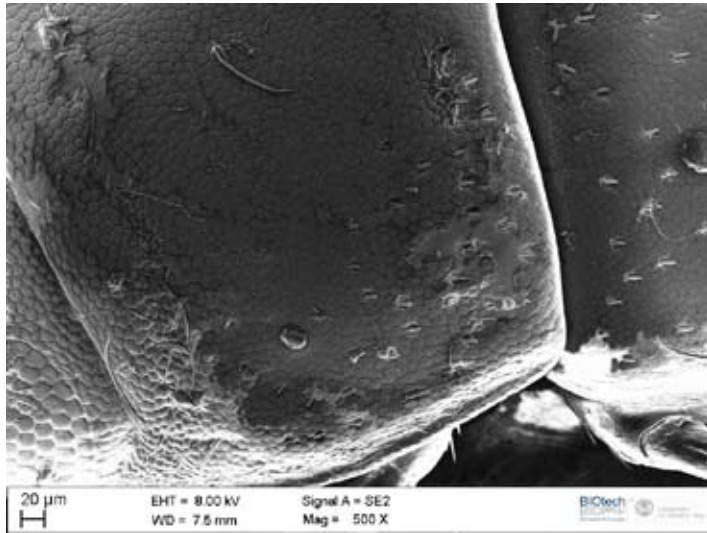


Fig. 3. *Methles freyi* Guignot (male). SEM photo of the left basal angle of pronotum, showing the left side of pronotum and the latero-basal puncturation with the robust backward bristle in the punctures.

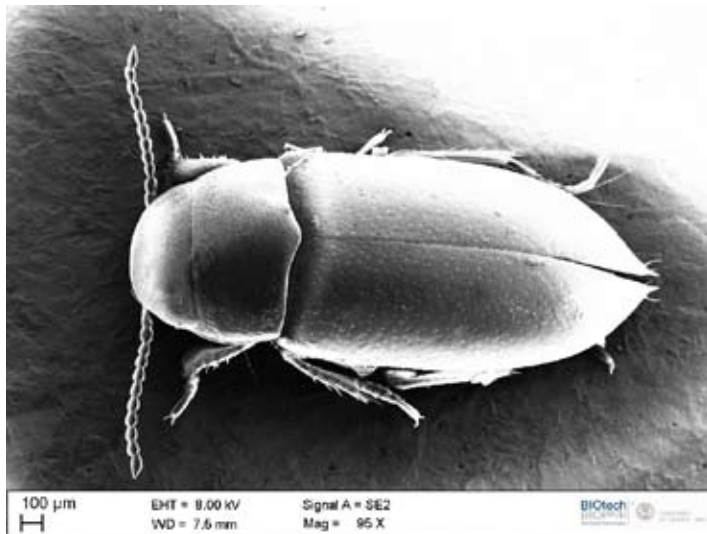


Fig. 4. *Methles freyi* Guignot (male). SEM photo showing the elytral puncturation and the slightly widened pro- and mesotarsi.

Pronotum pale brown with a vague anterior darker area and irregular spots on the disk. At its maximum width usually narrower than maximum width of elytra. At their anterior one third, the sides of the pronutum appear gently rounded towards

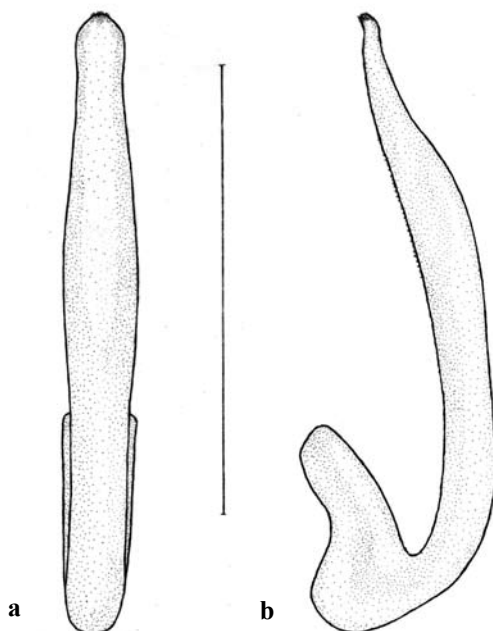


Fig. 5. *Methles freyi* Guignot. Outline of the penis. 5a: dorsal view; 5b: lateral view (measure bar = 0.5 mm).

the head, while posteriorly they are far less curved or even straight (in females) and slightly converging towards the elytra. Surface distinctly microreticulate, like the head, but the posterior corners bear several quite wide and impressed punctures, each puncture with a robust backward bristle (fig. 3).

Elytra basically pale brown, but their distal third somewhat darker. Surface of elytra strongly microreticulate and bearing several, moderately dense, rather wide punctures, less impressed than those at the base of pronotum. Apex obviously acuminate.

Underside pale brown, microreticulate and non-punctate. Epipleurae shiny and non-microreticulate. Prosternal process ovate with rimmed sides. Metacoxal process deeply incised. Legs testaceous. Protarsi, mesotarsi and metatarsi pentamerous.

Male: Habitus as in fig. 1. First three segments of protarsi and mesotarsi slightly widened. Protarsal claws hook shaped, rather short and enlarged; the outer one slightly larger. The SEM photo of fig. 4 shows details of the microsculpture and the shape of pro- and mesotarsi.

Penis, in dorsal view, quite long and rather narrow, progressively widening up

to the apical part, which restricts a bit and takes up about one fifth of the overall length of penis. Apical part of penis (in dorsal view) spoon shaped and bearing several small spinous setae on its border, more evident at the apex (fig. 5a). A row of less dense and a bit smaller spinous setae is present on each side of the penis in its distal half, giving the appearance of a serrulate lateral margin. In lateral view, the penis is strongly sloped toward the basis, with rather narrow parallel sides, up to the apical part which tapers to a rounded and ventrally slightly swelling apex (fig. 5b). All in all, the apical part of penis, in lateral view, looks like a swan's head. Basis of penis quite large with a sinuous outline of both distal and proximal margin. Parameres alike, trapezium shaped, bearing a very long and thin, lance shaped apical lobe; the parameres are not figured as they do not show peculiar specific characters.

Female: Habitus as in fig. 2. Besides sexual differences, the female is a little bit narrower and more parallel sided than male. We were not able to find genital characters suitable for diagnostic purpose.

Ecology: The ecology of *M. freyi* is unknown as the specimens we studied where collected at light.

Remarks: This species is unmistakable for its length and the features of pronotum, as stated by GUIGNOT (1954) «Par sa taille exiguë, la forme et la ponctuation des côtés du pronotum l'espèce se distingue aisément des autres *Methles* africains». For that reason and for the lack of taxonomically important characters in the female genitalia of specimens from Senegal, we did not study the female holotype of the species.

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