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***COPELATUS MAHAJANGA* SP. NOV.  
FROM MADAGASCAR**  
(Insecta Coleoptera Dytiscidae)

**Abstract**

*Copelatus mahajanga* sp. nov. from north-western Madagascar is described and illustrated. It belongs to the *irinus*-group, *assimilis*-subgroup. The new species could be recognised by the unusual shape of the penis.

Key-words. Dytiscidae, *Copelatus irinus*-group, new species, Madagascar.

**Riassunto**

[*Copelatus mahajanga* nuova specie del Madagascar]

Si descrive *Copelatus mahajanga* nuova specie di Dytiscidae del Madagascar nord-occidentale; esso appartiene al gruppo *irinus*, sottogruppo *assimilis*, cioè ha le elitre con una stria submarginale e sei strie dorsali, di cui la prima è presente solo nella metà distale dell'elitra. Si riconosce soprattutto per la forma insolita dell'edeago. La serie tipica comprende 4 maschi e 4 femmine; l'olotipo maschio si trova nella collezione entomologica del Museo Nazionale di Praga.

**Introduction**

The genus *Copelatus* Erichson, 1832 represents the most speciose genus of Copelatinae, a subfamily of predaceous water beetles (Dytiscidae). NILSSON (2001) listed 433 species worldwide. Additional Afrotropical species were recently described by BAMEUL (2003) and BILARDO & ROCCHI (2002, 2004). Altogether 22 species of *Copelatus* were recorded from Madagascar (ROCCHI 1991). The modern systematic revision of the genus still missing, the most recent comprehensive work for Afrotropical fauna is "Revision des Hydrocanthares d'Afrique" by GUIGNOT (1961). A check-list of Afrotropical and Madagascan species, with the drawings of aedeagi of most species, was published by NILSSON et al. (1996).

The study of *Copelatus* material recently collected by a Czech entomologist in north-western Madagascar, and housed in the collection of the National Museum in Prague, revealed the species new to science which is described below.

***Copelatus mahajanga*** sp. nov. (Figs 1- 4)

**Type locality.** Madagascar, Mahajanga Distr., Mahajanga env. [ca. 15°43'S, 46°18'E]

**Type material.** Holotype ♂ (National Museum, Prague), labelled: “MADAGASCAR 1996, Mahajanga Distr., Mahajanga env., Dec. 1-10., I. Janiš leg.”, “HOLOTYPE, COPELATUS, mahajanga sp. nov., F. Pederzani & J. Hájek det. 2005”. Paratypes 3 ♂♂ and 4 ♀♀: same label data as holotype (2 ♂♂ and 3 ♀♀ deposited in the National Museum, Prague; 1 ♂ and 1 ♀ deposited in coll. Pederzani, Ravenna). Each paratype is provided with a red label similar to that of the holotype, except “PARATYPE” instead of “HOLOTYPE”, the respective sex symbol and collection number.

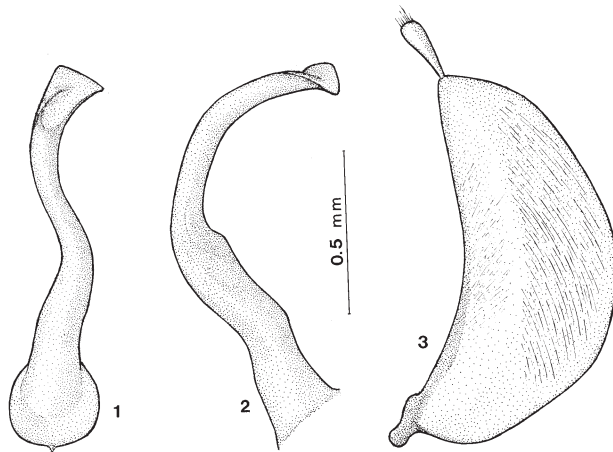
**Description.** Length: 5.40–6.05 mm (mean value 5.67 mm); width: 2.80–3.20 mm (mean value 3.00 mm). Holotype: length 5.65, width 3.00 mm.

Oblong, oval, brown and ferrugineous.

Head ferrugineous, paler in front, finely microreticulate and punctate, between eyes with two shallow depressions.

Pronotum dark brown, paler at sides, finely reticulate, with very small scattered punctures, except in the anterior submarginal series of larger punctures, and with a few larger punctures at the sides of base; no striolae in either sex.

Elytra dark ferrugineous, paler at sides, with testaceous-ferrugineous, broad, transverse band at base and indistinct dark pattern along the striae and medially between suture and stria 2. Elytral surface finely reticulate and punctate, with six



Figs. 1-3 - *Copelatus mahajanga* sp. nov., male paratype: 1. penis in dorsal view; 2. penis in lateral view, from the left; 3. right paramere.



Fig. 4 – *Copelatus mahajanga* sp. nov., male paratype: habitus.

well impressed discal striae and one fairly long submarginal stria. First stria starting at about the middle of elytron or a little before; other striae starting more or less at base; submarginal stria starting about at middle; all striae approaching the apex of elytron, but the second and fourth a little shorter.

Ventral side brown ferruginous, finely reticulate and punctate. Legs, antennae and palpi ferruginous to testaceous.

Male. Protibia modified, widened in front, strongly angled after base, with several long spines on the outer side in distal half. Tarsomeres 1-3 of fore and middle legs enlarged, with pads of numerous setae. Penis distinctive, in dorsal view bisinuate, of almost constant width, widened at apex; in lateral view almost straight in basal half and regularly curved after middle; apex of penis asymmetrical, obliquely flattened (Figs 1, 2). Parameres broad, of similar shape and size, but right paramere (Fig. 3) covered by long and fine striolations, except at base, near apex and the middle, while the left paramere is poorly striolate, almost shining.

Female. Somewhat smaller than male. Upper side microsculptured as in male, without striolae. Legs not modified.

**Distribution.** Known so far only from the type locality.

**Bionomy.** Not known, collected most probably at light.

**Etymology.** Named after the type locality; noun in apposition.

### Differential diagnosis

*Copelatus mahajanga* sp. nov. (Fig. 4) belongs to Guignot's *irinus*-group, *assimilis*-subgroup (GUIGNOT, 1961). Although that group includes several difficult species, fairly similar in dorsal aspect, the unusual structure of the aedeagus permits an easy separation of *C. mahajanga* sp. nov. from the others. The penis of *Copelatus hardenbergi* J. Balfour-Browne, 1950, from central and southern Africa, is bisinuate as well, but contrary to *C. mahajanga* sp. nov., it is bisinuate in lateral view and almost regular in dorsal view, and lacks the obliquely flattened tip of penis.

*Copelatus pardii* Rocchi, 1990 from Kenya has broad parameres and bisinuate penis, but of different shape (Fig. 1 in ROCCHI, 1990), and cannot be taken for *C. mahajanga* sp. nov.

The new species is closely related to another, yet undescribed, *Copelatus* from Illubabor province of Ethiopia, whose penis is similar and even more irregularly bisinuate than in *C. mahajanga* sp. nov., but they undoubtedly belong to different taxa<sup>1</sup>. For further comparisons with the numerous *Copelatus* species of *assimilis*-subgroup described up to 1995, see the figures in NILSSON et al. (1996).

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<sup>1</sup> The senior author had the opportunity to see a male of this distinctive species, which will be described later by A.N. Nilsson and/or S. Rocchi.

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