

## A NEW SUB-FOSSIL SCORPION OF THE GENUS *MICROCHARMUS* LOURENÇO, 1995 FROM MALAGASY COPAL (SCORPIONES, MICROCHARMIDAE)

Wilson R. Lourenço

Muséum national d'Histoire naturelle, Département de Systématique et Evolution, USM 0602, Section Arthropodes (Arachnologie), CP 053, 57 rue Cuvier 75005 Paris, France. – arachne@mnhn.fr

**Abstract:** *Microcharmus henderickxi* sp. n., the second known sub-fossil scorpion from Malagasy copal, is described. This is the third record of a sub-fossil scorpion in copal. The copal specimen was collected in the mines of the region of Sambava, Antsiranana province, in north-eastern Madagascar. It belongs to the genus *Microcharmus* Lourenço, 1995, a group of scorpions only recently reported and described from Madagascar and now represented by 15 extant species.

**Key words:** Scorpiones, Microcharmidae, *Microcharmus*, copal, Madagascar.

**Un escorpión subfósil nuevo del género *Microcharmus* Lourenço, 1995 del copal de Madagascar (Scorpiones, Microcharmidae)**

**Abstract:** Se describe *Microcharmus henderickxi* sp. n., el segundo escorpión subfósil conocido del copal malgache. Esta es el tercer hallazgo de escorpiones subfósiles en copal. La muestra de copal se recogió en las minas de la región de Sambava, provincia de Antsiranana, en el noreste de Madagascar. Perteneció al género *Microcharmus* Lourenço, 1995, grupo de escorpiones que se ha citado y descrito de Madagascar hace poco tiempo y que está representado por 15 especies vivientes.

**Key words:** Scorpiones, Microcharmidae, *Microcharmus*, copal, Madagascar.

**Taxonomy/ Taxonomía:** *Microcharmus henderickxi* sp. n.

### Introduction

Although finds fossil scorpions in resins, in particular in amber, have become more common in recent years (Lourenço & Weitschat, 2005a; Lourenço *et al.*, 2005), records from copal remain extremely rare. The only two species previously found in copal are *Palaeogrosphus copalensis* (Lourenço, 1996), a buthid from the Province of Antsiranana (Diego-Suarez), Madagascar, and *Chactas pleistocenicus* Lourenço & Weitschat, 2005, a chactid from Penia Blanca, Province of Santander in Colombia (Lourenço, 1996, 2000; Lourenço & Weitschat, 2005b).

In this note a short description is proposed for a new representative found in Malagasy copal. It belongs to the genus *Microcharmus* Lourenço, 1995 and to the family Microcharmidae Lourenço, 1996. Although some authors place it in the family Buthidae C. L. Koch, 1837 (Volschenk *et al.*, 2008), this polemic question remains open to discussion. The genus *Microcharmus* is endemic to Madagascar and was represented up to now by 15 extant species (Lourenço *et al.*, 2006).

### Material and methods

The specimen investigated was obtained by Hans Henderickx. It is enclosed in an oval piece of clear, yellowish copal (43 mm long by 31 mm wide), containing numerous bubbles. Illustrations and measurements were made with the aid of a Wild M5 stereomicroscope with a drawing tube (camera lucida) and an ocular micrometer. The piece is conserved in the personal collection of Hans Henderickx (Mol, Belgium). The drawings are semi-schematic, being

partly an interpretation of what was observable. For more details about Malagasy amber see Bosselaers (2004).

### *Microcharmus henderickxi* sp. n.

**DIAGNOSIS:** Very slender scorpion, measuring only 11 mm in total length (see morphometric values after the description). Pectinal tooth count 11-11; fulcra absent. Sternum pentagonal. Granules on the dentate margins of the pedipalp chela fingers arranged in 6-7 slightly oblique rows. Subaculear tooth absent. Trichobothriotaxy A- $\alpha$  (alpha) (Vachon, 1974, 1975). Geographically close to *Microcharmus variegatus* Lourenço, Goodman & Fisher, 2006, from which it can be distinguished a smaller overall size (10.45 mm, versus 16.40 for the female of *M. variegatus*), and distinct morphometric values (see Lourenço *et al.*, 2006).

**ETYMOLOGY.** Patronym in honour of Mr Hans Henderickx, who facilitated the study of the type specimen.

**DESCRIPTION:** **Female holotype**, Madagascar, Province of Antsiranana, from mines in the Sambava area, XII/2008 (collector unknown). Deposited in the personal collection of Hans Henderickx (Mol).

**Coloration:** The general colour of the copal resin is pale yellow. The specimen, however, shows a darker coloration, being of a general reddish-brown.

**Morphology:** Carapace with moderately marked granulation; anterior margin with a weak concavity. Carinae obsolete; furrows inconspicuous. Median ocular tubercle dis-

tinctly on anterior third of the carapace; median eyes separated by one ocular diameter. Three pairs of lateral eyes. Sternum pentagonal. Mesosoma with tergites moderately granular. Median carina moderate to weak on all tergites. Tergite VII pentacarinata. Venter: genital operculum divided longitudinally, each plate having a more or less suboval shape. Pectines small; pectinal tooth count 11-11; basal middle lamellae of the pectines not dilated; fulcra absent. Sternites weakly granular, with round spiracles; VII with a few granules and vestigial carinae. Metasoma: segments I to III with 10 carinae, crenulate; segment IV with eight carinae, crenulate; dorsal carinae on segments I-IV with one posterior spinoid granule; intercarinal spaces weakly granular. Segment V rounded, with five carinae. Telson with a very elongated, pear-like shape, smooth with strong setation; aculeus short, weakly curved; subaculear tooth absent. Cheliceral dentition not well observable, but of buthoid type –Note: Details of the teeth cannot be observable, but the general buthid type YES- (Vachon, 1963). Pedipalps: femur pentacarinata; patella with seven weakly marked carinae; internal face of patella with 4-5 spinoid granules; chela with vestigial carinae; all faces weakly granular. Fixed and movable fingers with 6-7 slightly oblique rows of granules; two accessory granules present at the base of each row; extremity of fixed and movable fingers with three long and sharp denticles. Trichobothriotaxy: orthobothriotaxy A- $\alpha$  (Vachon, 1974, 1975). Legs: tarsus with fine setae ventrally; pedal spurs reduced; tibial spurs absent.

**Morphometric values** (in mm) of female holotype. Total length, 10.45 (excluding telson). Carapace: length 1.53; anterior width 0.93; posterior width 1.60. Mesosoma length 3.26. Metasoma length 5.66. Metasomal segment I: length 0.86; width 0.93. Metasomal segment V: length 1.86; width 0.86; depth 0.80. Telson length 1.86; vesicle: width 0.53; depth 0.60. Pedipalp: femur length 1.26, width 0.40; patella length 1.66, width 0.60; chela length 2.20, width 0.40; movable finger length 1.53.

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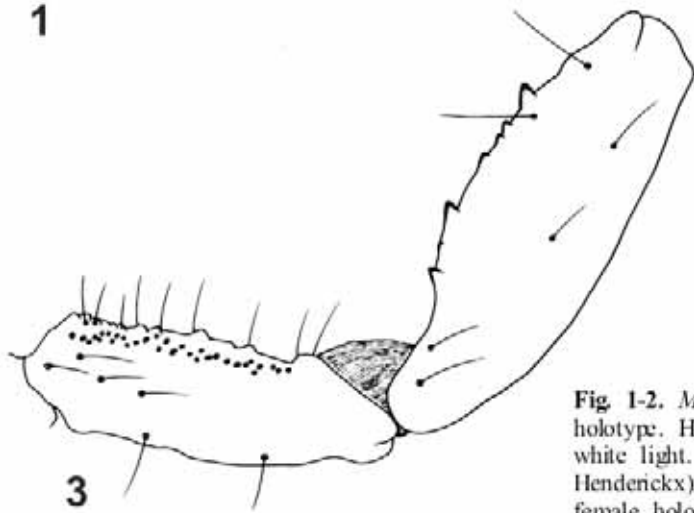
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Fig. 1-2. *Microcharmus henderickxi* sp. n., female holotype. Habitus, dorsal aspect. 1. Under normal white light. 2. Under ultra-violet light (photos H. Henderickx). Fig. 3. *Microcharmus henderickxi* sp. n., female holotype. Femur and patella, dorsal aspect, showing trichobothria.