

A further new species of the genus *Microananteris* Lourenço, 2003, from French Guiana (Scorpiones, Buthidae)

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Abstract. – Subsequently to the recent descriptions of two new species of the humicolous micro-buthid genus *Microananteris* Lourenço, 2003, one more new species was found in French Guiana and is described here. The new description is based on three adult specimens, one female and two males collected not underground, but from the soil surface, using intensive night search with the use of UV lights. The geographic distribution of the genus *Microananteris* remains limited to the only territory of French Guiana.

Résumé. – Une nouvelle espèce supplémentaire pour le genre *Microananteris* Lourenço, 2003, de Guyane française (Scorpiones, Buthidae). Peu après les récentes descriptions de deux nouvelles espèces humicoles des micro-Buthidae appartenant au genre *Microananteris* Lourenço, 2003, une nouvelle espèce supplémentaire a été collectée en Guyane française et est décrite à présent. La description est basée sur trois exemplaires adultes, une femelle et deux mâles collectés à la surface du sol organique, suite à une chasse intensive à l'aide de lampes UV. La distribution géographique des espèces connues du genre *Microananteris* reste limitée au seul territoire de la Guyane française.

Keywords. – Scorpion, taxonomy, morphology, humicolous.

The discovery of the humicolous scorpion genus *Microananteris* Lourenço, 2003, in French Guiana remained rather confidential for a long period of time (LOURENÇO, 2003). In account of the very small size of the *Microananteris* species, which are soil dwellers, the collection of the first specimen was only possible with the use of extraction methods such as Berlese.

Subsequently to the description of the first *Microananteris* species, the validity of the genus was rejected by some authors such as BOTERO-TRUJILLO & NORIEGA (2011), who synonymized it with *Ananteris*. The conclusions of BOTERO-TRUJILLO & NORIEGA (2011) were obviously biased by a number of imprecisions, which were clearly exposed by LOURENÇO (2011) and again confirmed by LOURENÇO (2021). Consequently, these aspects will not be further discussed in this complementary note. The recent publication of two other new species, equally from French Guiana, brought new support to the validity of this genus (LOURENÇO, 2021). Very recently, the collecting of three more adult specimens of *Microananteris*, once again from the central region of French Guiana, allows the confirmation of yet a new species. The total number of known species is now raised to four. Up to now, the genus remains endemic to French Guiana (fig. 1). An identification key to species of *Microananteris* is proposed.

MATERIAL AND METHODS

Illustrations and measurements were produced using a Wild M5 stereo-microscope with a drawing tube (camera lucida) and an ocular micrometer. Measurements (in mm) follow

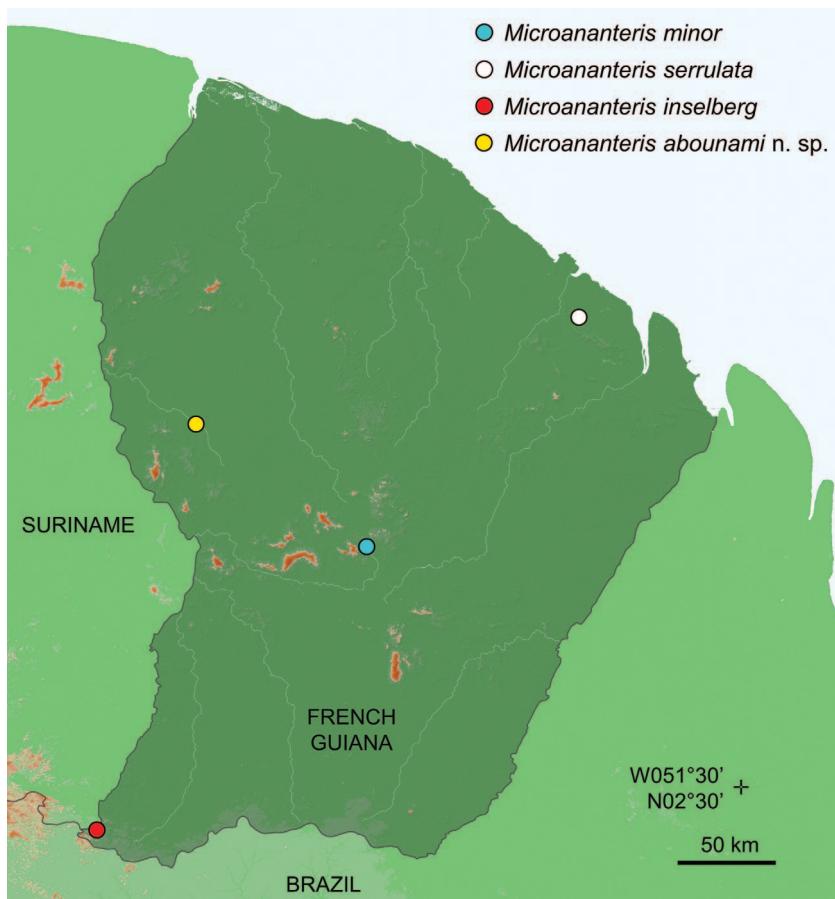


Fig. 1. – Map of French Guiana showing the known distribution of the *Microananteris* species.

STAHNKE (1970), trichobothrial notations VACHON (1974), morphological terminology mostly HJELLE (1990), and chelicerae dentition VACHON (1963). The two specimens used in the present description were collected during the night with the use of ultra-violet lights. The material related to the new species described here will be deposited in the Muséum national d'Histoire naturelle (MNHN), Paris, and in the personal collection of J. Chevalier.

TAXONOMY

Family **Buthidae** C. L. Koch, 1837

Genus ***Microananteris*** Lourenço, 2003

Microananteris Lourenço, 2003: 1151. Type species: *Microananteris minor* Lourenço, 2003, by monotypy.

Revised diagnosis. – Small scorpions, when compared with the average size of a large number of species of micro-buthid genera; the total length of the four known species ranges from 13.07 to 17.41 mm in total length (see table I). *Microananteris* is characterized among several micro-buthoids and in particular in relation to the genus *Ananteris* Thorell, 1891, by the presence of very small pectines, with the most distal tooth rounded and the most proximal absent; the total number of teeth ranges from 10 to 11 in both sexes; the structure of the peg

sensillae of the pectines is distinct, showing a rounded structure instead of the spatula-like structure observed for *Ananteris* species. Spiracles have a semi-oval shape. The sternum is subpentagonal. Telson is more to globular in shape and the aculeus is short. Trichobothriotaxy; orthobothriotaxy type A-β (VACHON, 1974, 1975). Tibial spurs developed on leg IV but reduced on leg III.

Ecology. – The species of the genus *Microananteris* are exclusively known from humid forests of French Guiana and correspond to possible endemic elements of the soil fauna.

Table I. – Morphometric values (in mm) of the female holotypes of *Microananteris* species and female holotype and one male paratype of *Microananteris abounami* n. sp.

	<i>M. minor</i> ♀	<i>M. serrulata</i> ♀	<i>M. inselberg</i> ♀	<i>M. abounami</i> n. sp. ♀	<i>M. abounami</i> n. sp. ♂
Total length	13.90	14.00	13.07	17.41	13.73
Carapace:					
– Length	1.70	1.80	1.60	2.27	1.80
– Anterior width	1.20	1.07	0.93	1.40	1.07
– Posterior width	1.80	1.73	1.53	2.20	1.67
Mesosoma length	3.70	4.07	2.93	4.80	3.47
Metasomal segment I:					
– Length	0.90	0.80	0.87	1.07	0.93
– Width	1.10	1.13	1.07	1.47	1.07
Metasomal segment II:					
– Length	1.00	0.87	0.93	1.13	1.00
– Width	1.10	1.07	0.93	1.33	1.07
Metasomal segment III:					
– Length	1.10	1.00	1.00	1.20	1.00
– Width	1.20	1.07	0.93	1.33	1.07
Metasomal segment IV:					
– Length	1.20	1.2	1.27	1.60	1.20
– Width	1.10	1.07	0.94	1.27	1.07
Metasomal segment V:					
– Length	2.10	2.13	2.20	2.67	2.13
– Width	1.10	1.07	1.00	1.27	1.13
– Depth	0.90	0.87	0.80	1.20	1.00
Telson length:	2.20	2.13	2.27	2.67	2.20
Vesicle:					
– Width	0.90	0.87	0.80	1.07	0.80
– Depth	0.80	0.80	0.67	0.93	0.67
Pedipalps:					
– Femur length	1.40	1.40	1.40	1.80	1.40
– Femur width	0.40	0.53	0.33	0.60	0.47
– Patella length	1.80	1.87	1.80	2.27	1.80
– Patella width	0.60	0.60	0.53	0.80	0.60
– Chela length	2.20	2.27	2.13	2.80	2.20
– Chela width	0.40	0.47	0.33	0.53	0.40
– Chela depth	0.40	0.53	0.40	0.47	0.34
Movable finger:					
– Length	1.60	1.73	1.60	2.07	1.67

Microananteris abounami n. sp. (fig. 2-11)

<http://zoobank.org/96F49BD7-520B-48B8-AEA8-0F5C152A723A>

HOLOTYPE: ♀, French Guiana, Papaïchton, Gros Saut, Grand Abounami (4.162734°N 53.999708°W), 17-28.XI.2021 (*J. Chevalier leg.*), dense humid forest of low altitude (fig. 12); in litter of organic soil (collected during the night with the intensive use of UV lights), deposited in MNHN.

PARATYPES: 2 ♂, *idem* holotype, deposited in MNHN and in the personal collection of Johan Chevalier (JCPCS-21-M1.).

Diagnosis. – Total length (including telson) 17.41 and 13.73 mm respectively for female holotype and male paratype (see table I); these values define the new species as bigger than the other known species. Anterior margin of carapace straight. Small pectines with 10-10 and



Fig. 2-3. – *Microananteris abounami* n. sp., female holotype, habitus. – 2, Dorsal view. – 3, Latero-ventral view.

11-11 teeth for female holotype and both male paratypes respectively. Spiracles with a semi-oval shape. Telson with a few granulations laterally, better marked on female. Dorsal carinae of metasomal segments II-IV with moderately marked spinoid granules which do not form serrulas. Trichobothria: *et* and *est* on chela fixed finger located between trichobothria *dt* and *db*; *i* trichobothrium of patella largely proximal in relation to *d_s*; femur trichobotrium *d_s* distal in relation to *e₁* (fig. 6-11).

Description based on female holotype and both male paratypes. – Measurements in table I.

Coloration. Basically brownish-yellow, symmetrically marbled with dark brown, producing an overall spotted appearance. Prosoma: carapace yellow, largely covered with brown spots; eyes surrounded by black pigment. Mesosoma: brown-yellow with confluent yellow stripes. Metasomal segments I to V yellow with several pale brown spots; segment V with slightly better marked spots ventrally. Telson: vesicle yellow to reddish-yellow without spots; aculeus yellow at the base and reddish at the tip. Venter globally yellow to pale yellow. Chelicerae yellow with variegated spots over the entire surface; better marked anteriorly; fingers yellow with reddish-yellow teeth. Pedipalps yellow densely marked with brownish spots which are more strongly marked on the femur and patella; chela slightly paler than patella; fingers brownish with the rows of granules slightly reddish. Legs yellow densely marked with brownish spots.

Morphology. Carapace moderately granular; anterior margin straight. Anterior median superciliary and posterior median carinae weak. All furrows moderate to weak. Median ocular tubercle distinctly anterior to the centre of carapace; median eyes separated by approximately 0.60 to 0.70 of one ocular diameter. Three pairs of lateral eyes. Sternum subpentagonal. Mesosoma: tergites moderately to strongly granular in female. Median carina moderate to weak in all tergites. Tergite VII pentacarinate. Venter: genital operculum divided longitudinally, each plate having a more or less sub-oval shape. Pectines small; pectinal tooth count 10-10 in female and 11-11 in both males; most proximal tooth reduced to absent; basal middle lamellae of the pectines not dilated; fulcra absent. Sternites smooth to weakly granulate with short



Fig. 4-5. – *Microananteris abounami* n. sp., male paratype, habitus. – 4, Dorsal view. – 5, Ventral view.

semi-oval spiracles; sternites III to V with two longitudinal marked furrows, better marked on male; VII with fine granulations and vestigial carinae. Metasomal segments I and II with 10 carinae, crenulate; segments III-IV with 8 carinae, crenulate; dorsal carinae with moderately spinoid granules not forming serrulas; intermediate carinae complete on segments I and II; intercarinal spaces moderately granular; segment V rounded and with five carinae moderately marked. Telson with a “pear-like” shape, and some granulations better marked on female; ventral carinae well-marked; aculeus very short and moderately curved; subaculear tooth strong and almost rhomboid. Cheliceral dentition characteristic of the family

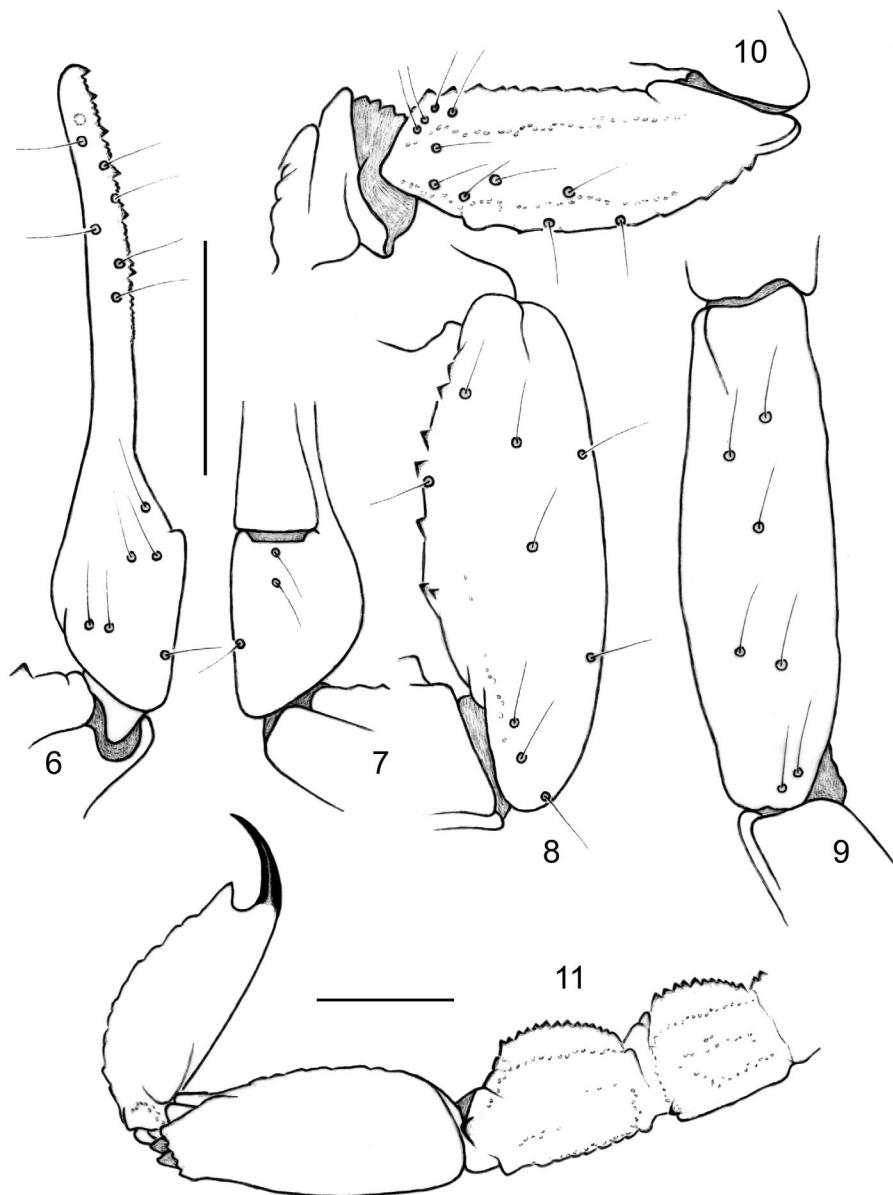


Fig. 6-11. – *Microananteris abounami* n. sp., female holotype. – 6-10, Trichobothrial pattern: 6-7, chela, dorso-external and ventral aspects; 8-9, patella, dorsal and external aspects; 10, femur, dorsal aspect. – 11, Metasomal segments III-V and telson, lateral aspect (scale bars = 1 mm).

Buthidae (VACHON, 1963); fixed finger with two moderate basal teeth; movable finger with two very weak basal teeth; ventral aspect of both finger and manus with dense, long setae. Pedipalps: femur pentacarinate; patella and chela with a few vestigial carinae; internal face of patella with a 5-6 vestigial granules; all faces weakly granular, almost smooth. Fixed and movable fingers with 6-6 almost linear rows of granules; two accessory granules present at the base of each row; extremity of movable fingers with three accessory granules. Trichobothriotaxy; orthobothriotaxy A-β (see also diagnosis; VACHON, 1974, 1975). Legs: tarsus with very numerous fine median setae ventrally. Tibial spurs developed on leg IV but reduced on leg III.

Etymology. – The specific name is placed in apposition to the generic name and refers to the Abounami River, located near to the site of collection of the new species.

Relationships. – Although the site of collection of the new species is geographically closer to that of *Microananteris minor*, the new species seems to show more morphological affinities with *M. serrulata* Lourenço, 2021. The new species can however be distinguished from all the other known species by a combination of characters: (i) a bigger overall size (see table I), (ii) anterior margin of carapace straight, (iii) mesosomal tergites moderately to strongly granular in female, (iv) dorsal carinae of metasomal segments II-IV with moderately marked spinoid granules, but not forming true serrulas, (v) trichobothria: *et* and *est* on chela fixed finger located between trichobothria *dt* and *db*; *i* trichobothrium of patella largely proximal in relation to *d_s*; femur trichobothrium *d_s* distal in relation to *e_f*.

KEY TO THE KNOWN SPECIES OF *MICROANANTERIS*

1. Dorsal carinae of metasomal segments II to IV with weakly marked spinoid granules; femur trichobothrium *d_s* and *e_f* aligned at the same level or with *d_s* slightly distal in relation to *e_f* 2
– Dorsal carinae of metasomal segments II to IV with moderately to strongly marked spinoid granules; femur trichobothrium *d_s* distal in relation to *e_f* 3
2. Anterior margin of carapace with a weak median concavity; sternite VII with weak carinae and granulations *Microananteris minor* Lourenço
– Anterior margin of carapace straight; sternite VII with a few granules but without carinae *M. inselberg* Lourenço
3. Dorsal carinae of metasomal segments II-IV with strongly marked granules, forming serrulas ...
..... *M. serrulata* Lourenço
– Dorsal carinae of metasomal segments II-IV with moderately marked granules, not forming serrulas *M. abounami* n. sp.

ECOLOGICAL COMMENTS

The forest formation where the new *Microananteris* was collected is situated in Papaïchton, nearby the site of Gros Saut and distant some hundreds of meters of the Grand Abounami River (fig. 12). The collection site is however sufficiently elevated to be free of any impact from the river. Studies conducted by the team of the *Office National des Forêts*, show that the zone is mainly constituted by hill-forests which are composed of species such as *Eschweilera spp.*, *Eperua spp.* and *Dicorynia guianensis* Amshoff (GUITET *et al.*, 2015). The substract is mainly composed by Acrisoils.

Although the other known species of *Microananteris* have exclusively been collected with the use of extraction methods, the new species described here was collected by direct observation of some better visible zones of the litter, with the use of ultra-violet lights. The collecting period, during the second half of November, corresponds to the end of the dry season in French Guiana and was marked by some abundant rain, which may explain the higher activity of some species such as the new *Microananteris*.



Fig. 12. – Dense humid forest of low altitude at Gros-Saut, in the *Parc amazonien de Guyane*, type locality of *Microananteris abounami* n. sp. The precise site of collection is near to Gros Saut, close to the Grand Abounami river. (Photo by J. Chevalier).

The other species also collected in the same site correspond mainly to elements of a classical scorpion fauna frequently found in forested zones of French Guiana (CHEVALIER, 2021). Family Buthidae C. L. Koch, 1837: *Ananteris guyanensis* Lourenço & Monod, 1999; *Tityus (Archaeotityus) silvestris* Pocock, 1897; *Tityus (Atreus) obscurus* (Gervais, 1843). Family Chaetidae Pocock, 1893: *Auyantepuia* sp.; *Broteochactas delicatus* (Karsch, 1879); *Brotheas gervaisii* Pocock, 1893; *Brotheas granulatus* Simon, 1877; *Hadrurochactas schaumii* (Karsch, 1880).

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