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BASICEROS SCAMBOGNATHUS (BROWN, 1949) N. COMB., WITH THE FIRST WORKER AND MALE DESCRIPTIONS, AND A REVISED GENERIC DIAGNOSIS (HYMENOPTERA: FORMICIDAE: MYRMICINAE)

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ABSTRACT

We propose the synonymy of the monotypic neotropical myrmicine (Basicerotini) ant genus Creightonidris *Brown with* Basiceros *Schulz, and describe for the first time the worker and male of* B. scambognathus *n. comb., known thus far only by alate gynes. We also provide information on the distribution of this species, a revised diagnosis for* Basiceros, *and a revised key to workers and gynes of this genus. The few known data on the biology of* B. scambognathus *are summarized.*

KEYWORDS: ants, Basicerotini, *Creightonidris, Basiceros,* key, synonymy, worker and male description.

INTRODUCTION

The myrmicine ant tribe Basicerotini Brown includes seven nominal genera: *Basiceros, Creightonidris, Eurhopalothrix, Octostruma, Protalaridris, Rhopalothrix,* and *Talaridis* (Bolton, 2003). Brown (1949) recognized these genera as distinct from Dacetini; although these ants are similar in appearance due to convergence in characters held in common by members of both tribes (Brown & Kempf, 1960). Basicerotini has a strongly disjunct distribution, occurring in the New World (primarily Neotropical, with one species in Florida, USA) and in the Melanesian region (Australia, New Caledonia, Fiji, Samoa, Papua New Guinea, Solomon Islands Borneo, Malaysia, Indonesia, Singapore, Palau, Brunei, and the Philippines). Brown & Kempf (1960) also studied basicerotine material from Botel Tobago Island just off southern Formosa.

All basicerotine species come from predominantly mesic habitats, particularly from the leaf-litter and superficial soil layers. Colonies are monogynous and relatively small, nesting in natural cavities, fallen twigs, empty dry fruits or rotten wood. Workers forage alone, mostly preying upon a wide range of soft bodied arthropods and their larvae (Hölldobler & Wilson, 1990). According to Brown (1974), "the adults move very slowly, and they feign death for long periods when disturbed, rivaling the attine *Apterostig-*

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ma in their ability to escape detection by this means in the forest gloom". Weber (1950) recorded a worker of *B. singularis* carrying a dead termite in Guyana, and Brown (1974) found headless termites inside a nest of the same species in Diamantino, Mato Grosso, Brazil.

Baroni Urbani & De Andrade (1994) synonymized Dacetini as well as Phalacromyrmecini under Basicerotini, and synonymized all subtribal names accepted at the time. Bolton (1995a) revived Basicerotini from synonymy of the then so-called Dacetonini and, in 1998, listed and commented the apomorphies of the Dacetini tribe group and its components, including the Basicerotini, which he considers as monophyletic.

Creightonidris is a monotypic basicerotine genus established by Brown (1949), based on a single alate gyne. In the revision of Basicerotini (Brown & Kempf, 1960), *Creightonidris* was recognized as a valid genus by the authors based mainly on its very specialized and aberrant mandibles, although they also recognized its close relation to *Basiceros.* The only species of the genus, *C. scambognatha,* has been known up to now from very few alate gynes and a single not yet formally described worker (Castilho *et al.,* in press), captured exclusively in central-north Brazil (Delabie, 2000) and south Venezuela (Lattke, 1991).

However, since the original description by Brown (1949) and the revision by Brown & Kempf (1960), several undescribed males of *C. scambognatha* from different localities have accumulated in the Museu de Zoologia da USP ant collection (MZSP), from which two series also have some alate gynes. It was possible to associate males and gynes by comparing mainly the wing venation, the sculpture pattern, and considering the information on the specimens labels (Dietz, 2004).

Dietz (2004), in his Basicerotini revision, suggested the synonymy of *Creightonidris* with *Basiceros,* based on the comparison of the then undescribed *C. scambognatha* males with males of *Basiceros* species, especially as to the wing venation pattern and on the analysis of other characters variation among basicerotine ants. Our study of the second *C. scambognatha* worker ever found and here presented, corroborates Dietz´s proposal.

Virtually nothing is known about the biology of *C. scambognatha.* The only dealate gyne, collected in southern Goiás, Brazil, and maintained in artificial conditions, died some weeks after confinement in the laboratory of the MZSP (Brandão, unpubl. observations). More recently (June, 2006), a party, including one of us (RMF), collected the second worker of this species in the leaf litter of a semi-deciduous lowland forest in the Estreito county, Maranhão state (near the border with Tocantins state) in central Brazil.

The aim of this work is to establish formally the synonymy of *Creightonidris* with *Basiceros,* and add new information on its diagnosis. We take this opportunity to describe for the first time the male and the worker castes of *Basiceros scambognathus* and to record new information regarding the distribution and biology of this species.

MATERIAL AND METHODS

Although *Creightonidris scambognatha* has been considered one of the rarest Neotropical ant species, we were able to find specimens in different collections, as follows:

ANIC: Australian National Insect Collection, CSIRO, Canberra, Australia.
INPA: Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil.
MCZC: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA.
MZSP: Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil.
PSWC: Philip S. Ward Personal Collection, University of California, Davis, California, USA.

Morphological terms follow Brown & Kempf (1960) and Dietz (2004). Reproductive females are here called "gynes", as suggested by De Andrade & Baroni Urbani (1999). The measurements and indexes adopted are: TL total length, HL head length, HW head width, ML mandible length, SL scape length, CW Weber's length, HFL hind femur length, CI cephalic index (HW x 100/HL), and SI scape index (SL x 100/HW). All measurements are given in mm.

Photographs taken under the MZSP scanning electron microscope (SEM) (LEO 440®) were used to record morphological details of a gyne and a male of *B. scambognathus.* The specimens were previously cleaned in acetone, critical-point dried in a Balzer (Bal-Tec® CPD 030), and sputtered over with gold (Bal-Tec® SCD 050). After that, the specimens were mounted on the tip of metallic triangles using silver glue and then fixated on stubs for the electron microscopy. The images were obtained under several magnifications, according to the size of the specimen and/or structure observed. Finally, the images were

edited (Adobe PhotoShop 7.0®) to enhance some brightness and contrast details.

Geographic coordinates were obtained from ENCARTA World Atlas® and the distribution map generated by ArcView 3.2 GIS®.

RESULTS

Basiceros Schulz, 1906

Meranoplus (in part) Fr. Smith 1858:195.

Ceratobasis Fr. Smith 1860:78 (junior homonym of *Ceratobasis* Lacordaire, 1848:362 Coleoptera).

Basiceros Schulz 1906:156 (replacement name for *Ceratobasis; Meranoplus singularis* type species by monotypy); Wheeler & Wheeler, 1954:112-113 (larvae description); Brown & Kempf, 1960:171-172 (worker and gyne diagnosis); Brown, 1974:132 (worker, gyne and larvae diagnosis, male description; distribution and biology); Bolton, 2003:183-184 (taxonomic history).

Aspididris Weber, 1950:3 (*A. militaris* type species by monotypy), junior synonym of *Basiceros* Schulz: Brown, 1974:132.

Creightonidris Brown 1949:89 (*C. scambognatha* type species by monotypy), *new synonym.*

Worker: Size relatively medium (TL between 4,9 and 8,7 mm). Reddish to dark-brown in color. Integument thick and in general densely sculptured; foveolate over head disc, mesosoma with conspicuous deep to shallowly set punctuation, densely punctate over most or all the gaster. Pilosity conspicuous and bizarre; subdecumbent hairs abundant, spatulate, squamiform or plumose; erect abundant or sparse hairs clavate or stout and truncate. Labrum with fine sensorial hairs.

Head trapezoidal, triangular or rounded posteriorly; posterior and lateral head borders always visible and clearly distinct, and either rounded or crested, or else combined into curving, continuous or near continuous crest around posterior margin of head. Dorsal surface of head flattened to depressed, slightly convex in some species. Mandibles sub-porrect, triangular to subtriangular, with straight, opposable, multidenticulate masticatory borders; apical portion from straight to strongly bent ventrally; basal portion flat and smooth to moderately convex and sculptured in frontal view; blade narrowed near insertion, the resulting peduncle either partly exposed or entirely hidden beneath clypeus, interspace between basal mandibular margin and anterior clypeal border present to absent in varying degrees. Eyes relatively well developed (ocular index ca 11). Antennal scape flattened, broad, and lobate at the basal portion; funiculus moderately clavate with 11 segments.

Mesosoma usually robust. Metanotal groove present. Propodeal teeth always triangular in lateral view, lamelliform, short, more or less acute, and connected to each other by a transverse carina. Petiole pedunculate and usually with ventral carina bearing one or more teeth. Gastric dorsum with a median longitudinal strip slightly impressed or devoid of pilosity. According to Brown (1974) *Basiceros* has 5 Malpighian tubules.

Gyne: Like conspecific worker, with modifications expected for myrmicine gynes. Ocelli present. Prescutum usually longer than wide; notauli from almost indistinct to shallowly depressed; parapsidial lines shinning and usually indistinct from surrounding sculpture, deep to shallow parapsides; prescutellum with central area indistinct, scuto-scutellar sulcus from deeply to shallowly impressed or almost indistinct, with transversal rugulae varying in number; lateral wing of prescutellum projecting postero-ventrally as a more or less developed hook-like structure; scutellum square-like or semicircular, with its posterior half always sloped down, posterior border concave. Metanotum median elevation bears a pair of specialized setae. Forewing with distinct and strongly colored stigma; longitudinal veins Sc+R, SR, M+Cu, and A present; SR extends distally beyond stigma as tubular vein for most of its length; M and Cu also extend distally, initially as tubular veins, then as spectral veins almost reaching distal wing border; cross vein M+Cu either absent, as an appendix of M or complete, thus forming open or closed M1 cells; anal vein connected to M+Cu near branching point, either before, at or after. Hind wing with Sc+R extending shortly beyond point where they connect to M, which extends as tubular vein as much as Sc+R and then continues as spectral vein to wing distal border; basally M+Cu does not continue as tubular vein beyond junction with Anal vein, which is connected halfway to M and Cu branching point; tubular part of Cu is a mere stub, continuing as spectral vein distally; 5 sub-median hamuli present.

Male (modified from Brown, 1974): Slightly smaller and more slender than conspecific gynes. Color black with appendages somewhat lighter. Integument very finely and densely punctate, opaque or nearly so, including legs, mandibles and antennae. Head vertex with overlying loose rugulae, especially behind compound eyes and around ocellar triangle; loose rugulation also on alitrunk, especially on posterior half of mesonotum

and sides of propodeum. In some species parts of mesopleura smooth and shining, or rugulose. Pilosity composed of fine tapered hairs, golden brown in color, mostly erect or suberect on body, but also appressed on gaster and clypeus in some species; mandible, antennae and leg hairs becoming shorter, more abundant and decumbent passing from base to apex of these appendages.

Head broadest across large bulging eyes (situated at or slightly in front of head mid-length) rather suddenly narrowed in front of eyes and tapering moderately anterad; median vertex and ocelli prominent. Mandibles relatively developed, subtriangular, with curved outer borders converging rapidly in apical half; gently down curved and weakly convex dorsal faces. Masticatory borders bearing 8-12 serial teeth. Mandibles petiolate or not, when closed leaving or not a space between anterior border of clypeus and mandibles; in general labrum shape as in conspecific workers. Clypeus broad, truncate or rounded in front, extending to level of frontal lobes; its antero-lateral lobes concave, free margin with thin, sharp, yellowish edge, transverse or concave in front and rounded-divergent on sides. Frontal area variably distinct, semicircular or transverse, more or less impressed; rugose or carinate in the middle, and relatively well delimited behind by an arched carina or rugulae that tend to connect the two frontal lobes. Frontal lobes prominent and projecting forward, laterad and dorsad, their free margins rounded sharply in front and broadly laterad, antennal insertions located on their ventral faces. Lateral bases of lobes continued laterad as sharply raised arching carinae running close near the eye on each side, and then curving forward to bound deeply excavated, subreniform antennal scrobes bounded in front by cariniform posterior borders of lateral wings of clypeus. Posterior vertex bordered along cervical limit by lamelliform margin bearing short longitudinal costulae; space between this and posterior ocelli either steep or gradual, depending on whether head is much drawn out behind or not. A continuous, or nearly continuous, sharp but irregular, ventro-lateral carina extends from the posterior corner of head to mandibular insertion, bordering subrectangular area of cheek between eye and mandibular insertion, and bounded mesad by carinate outer scrobe margin. Antennae long and slender with 13 segments. Scape very short, only about twice as long as broad, its base oblique, with the more acutely rounded angle on outside, and obtuse angle inside, tapered towards truncate apex; a little thicker than remaining segments. Antennal segments 2 and 3 (counting from base) only about half as long as scape; succeeding segments all much longer than broad; apical segment longest; antennal segments 8 and 9 somewhat twisted, virtually making the antenna turns around its axis.

Alitrunk robust; prescutum with more or less distinct antero-median carina; notauli shallow to deep and complete, with transversal costulae. Parapsidial furrows shaped as fine shining lines; parapsides more or less impressed behind, but each with sharp, raised postero-lateral margin (hyaline in some species). Prescutellum separated from scutellum by an impression or transverse row of punctures, or else middle part impressed and not distinct from scutellum; lateral wings of prescutellum with laterally marginate, posteriorly pointed process or blunt hook-like structure. Scutellum much narrower than prescutellum, forming elongate near-semicircle as seen from above, free borders marginate, but postero-median portion concave; posterior aspect broadly in an inverted Y- or U. Metanotum narrow, with blunt median tumosity. Propodeum with dorsal face flat, rectangular, steeply sloping posterad, separated from rectangular declivitous face by transverse carina. As seen laterally, dorsal and declivitous faces of propodeum meeting at obtuse angle; declivity marginate on each side.

Petiole clavate, with anterior peduncle and long, low, rounded node, usually bent slightly downward near base of posterior peduncle; spiracles papillose and prominent. Postpetiole broader than long in dorsal view and slightly broader posteriorly than anterad and broader than petiole; rounded above, sternum with shallow depression; attached to gaster by its full width. Gaster with first segment occupying most of its length; four visible apical segments subequal in length. Genital capsule slender; parameres slightly broadened, bluntly rounded and curved mesad at apices, but tapered to a blunt end as seen laterally; volsellae sock-shaped, as usual in Myrmicinae; pygidium and subgenital segment unremarkable, with moderately narrowly rounded apical margins.

Legs slender, tibiae of middle and hind pairs without apical spurs; tarsal claws slender and simple. Wings brownish, with opalescent bluish reflections. Forewing veined as in the gynes. Cross vein m-cu absent, present as a spur from M, or as a complete crossvein. Hind wing with only two longitudinal tubular veins issuing from median cell (apical abscissa of R and cu), with the tip of Sc branching off from fused Sc+R (Rf1 lacking). Anal loop (A+Cu-a) short, without a spur of A, but as a folded line instead; 5-9 submedian hamuli.

Larva (after Wheeler & Wheeler, 1954): Moderately stout; thorax and first two abdominal segments not

constricted to form a long "neck". Of the two types of denticulate hairs, the larger one has a fine, tapered, not hook-liked apex.

Revised key to *Basiceros* workers and gynes:

1. Occipital margin of head rounded, forming a continuous or nearly continuous raised crest 2
– Occipital margin of head trapezoidal or subrectangular, not forming a continuous crest 3
2. In full-face view, crest continuous around posterior part of vertex and separated from median convexity of vertex by a broad, uninterrupted sulcus parallel to the crest ..... *B. militaris*
– Crest medially emarginate and confluent at this point with median convexity of vertex ..... *B. disciger*
3. Mandible subtriangular, strongly bent ventrally and with the outer borders straight basally; anepisternum deeply depressed ..... *B. scambognathus*
– Mandible triangular, not strongly bent ventrally, outer borders usually convex basally; mesopleura at the same level as the surrounding surface 4
4. Head nearly as broad as long with the occipital lobes rounded; in frontal view, intermandibular space much shorter than the half length of mandibles; gaster with few specialized hairs longer than the basal pilosity 5
– Head distinctly longer than broad with the occipital lobes angulated; in frontal view, intermandibular space broad, with about half length of the mandibles; gaster densely covered with specialized hairs longer than the basal pilosity 6
5. Petiolar node and postpetiole totally covered with dense pilosity; petiolar node well developed and subrectangular in dorsal view; ventral carina of petiole with many developed teeth of different shapes ..... *B. conjugans*
– Petiolar node and postpetiole weakly covered with pilosity; petiolar node subcylindrical in dorsal view to almost obsolete; ventral carina of petiole with a single developed tooth at the anterior portion of peduncle ..... *B. convexiceps*
6. Basal portion of mandibles with dense pilosity formed by whitish squamiform hairs; ventral carina of petiole with a short edge at the anterior portion of peduncle ..... *B. singularis*
– Basal portion of mandibles smooth and shiny; ventral carina of petiole with a well developed edge at the anterior portion of peduncle, followed by smaller denticles of different shapes ..... *B. manni*

***Basiceros scambognathus* (Brown) n. comb.**

(Figs. 1-4)

Creightonidris scambognatha Brown, 1949:89. Holotype gyne, BRAZIL: Goiás, Campinas, x.1935 (Schwarzmeier) (MZSP) [examined]. Brown & Kempf, 1960:178, figs. 5, 8, 10 (genus revision, type locality); Kempf, 1972:80 (catalogue); Lattke, 1991:59 (record in Venezuela); Bolton, 1995a:1049 (census); Bolton, 1995b:146 (catalogue); Delabie, 2000:272 (distribution); Bolton, 2003:184 (synoptic classification); Castilho *et al.,* in press. (distribution); *new combination.*

Meranoplus singularis Smith, 1858:195, pl. 13, figs. 6, 7 (only the gyne). Holotype gyne: BRAZIL: Amazonas: Tefé (formerly known as Ega), no date, (no collector) [not examined].

Ceratobasis singularis Smith, 1860:78, pl. 4, figs. 12, 13 (only the gyne).

Worker: HW 1.13; HL 1.25, CI 92.31; ML 0.46; SL 0.96, SI 83.33; WL 1.52; HFL 1.30; TL 6.00. Color dark brown, appendages somewhat lighter; mesopleuron, petiolar peduncle and gaster with ferruginous areas. Mandibles smooth and shining with minute scattered punctures; inner surface of antennal scrobes with transversal rugulation over fine punctuation; surface of head rugulose, the rugae forming a loose net with deep cells, with whole integument finely punctuated; lateral face of pronotum and anterior coxae with gross punctuation, pronotal disc with punctuation and loose net of rugulae; mesopleuron, metapleuron, petiolar node, postpetiole and surface of the gaster feebly shining and rather smooth, with abundant punctures. Dorsum of head, laterobasal mandibular area, mesosomal dorsum, petiole, postpetiole and first gastral sternite with small, whitish, subapressed and apressed spatulate hairs; hairs dense on head and antennal scapes, less abundant on mesosoma, waist and gaster; appendages with abundant cream-colored subapressed spatulate hairs directed apically and becoming gradually finer towards tarsi; posterior part of head, dorsum of mesosoma, posterolateral corner of pronotum, abdominal segments II-VII with fairly abundant short, erect, strongly clavate whitish-golden hairs; distinct group of long filiform hairs project from labrum; pygidium with short erect hairs.

Head subtriangular. Mandible long and subtriangular; external margin of basal portion almost parallel; apical portion slightly longer than the basal one, external border strongly convergent with the apex of the other mandible, and nearly straight mas-

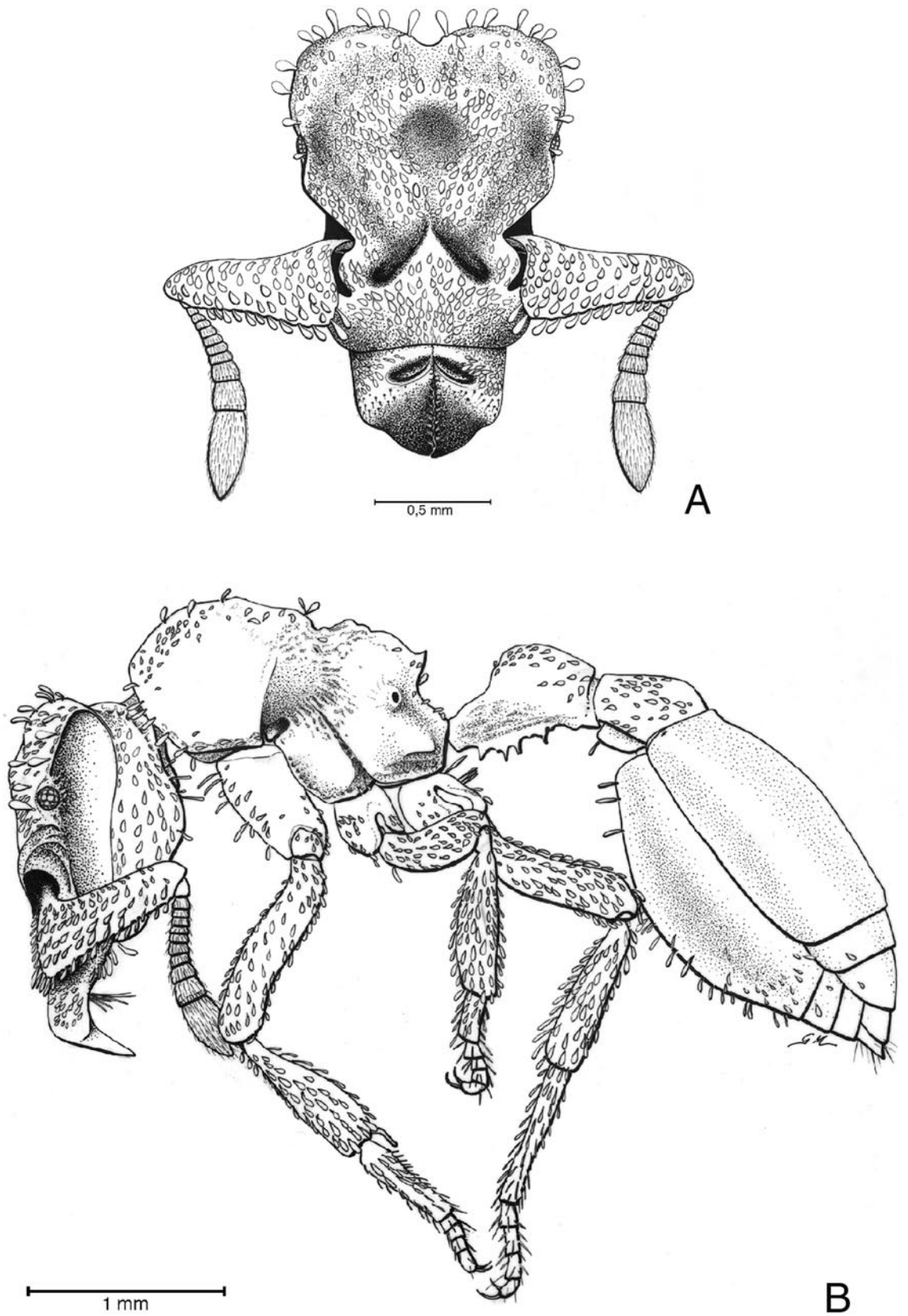


FIGURE 1. *Basiceros scambognathus,* worker; **a)** head in full-face view; **b)** body in profile.

ticatory border; apical portion almost perpendicularly bent ventrad at mid-length; basal portion moderately convex in side view; a deep transverse-oblique, convex groove almost divides the basal mandibular disc in two, running from the masticatory margin to at least halfway across the mandible and ending shallowly there, the grooves converging with the groove in the opposing mandible at the juncture of the two masticatory borders to form a broad V with an obtuse, posteriorly directed, apex. Central disc of clypeus convex, its anterior border very shallowly and broadly emarginate or concave; anterior portion of head capsule deeply impressed compared with clypeus, forming two transverse-oblique grooves deeper anterad and meeting apically to form a broad inverted V. Triangular area indistinct, glabrous; no space between clypeus and mandibles when closed. Central portion of cephalic dorsum raised as large circular swelling with deep concavity in center forming thick ring. Posterior head margin with shallow and broad medial concavity; occipital lobes rounded and slightly projected. Eye relatively small (ca five facets at maximum diameter) and placed far back, just on the dorsal margin of antennal scrobe; scrobe deep, running full length of cephalic side; scape flattened and strongly lobed basad by projection of anterior margin, apical

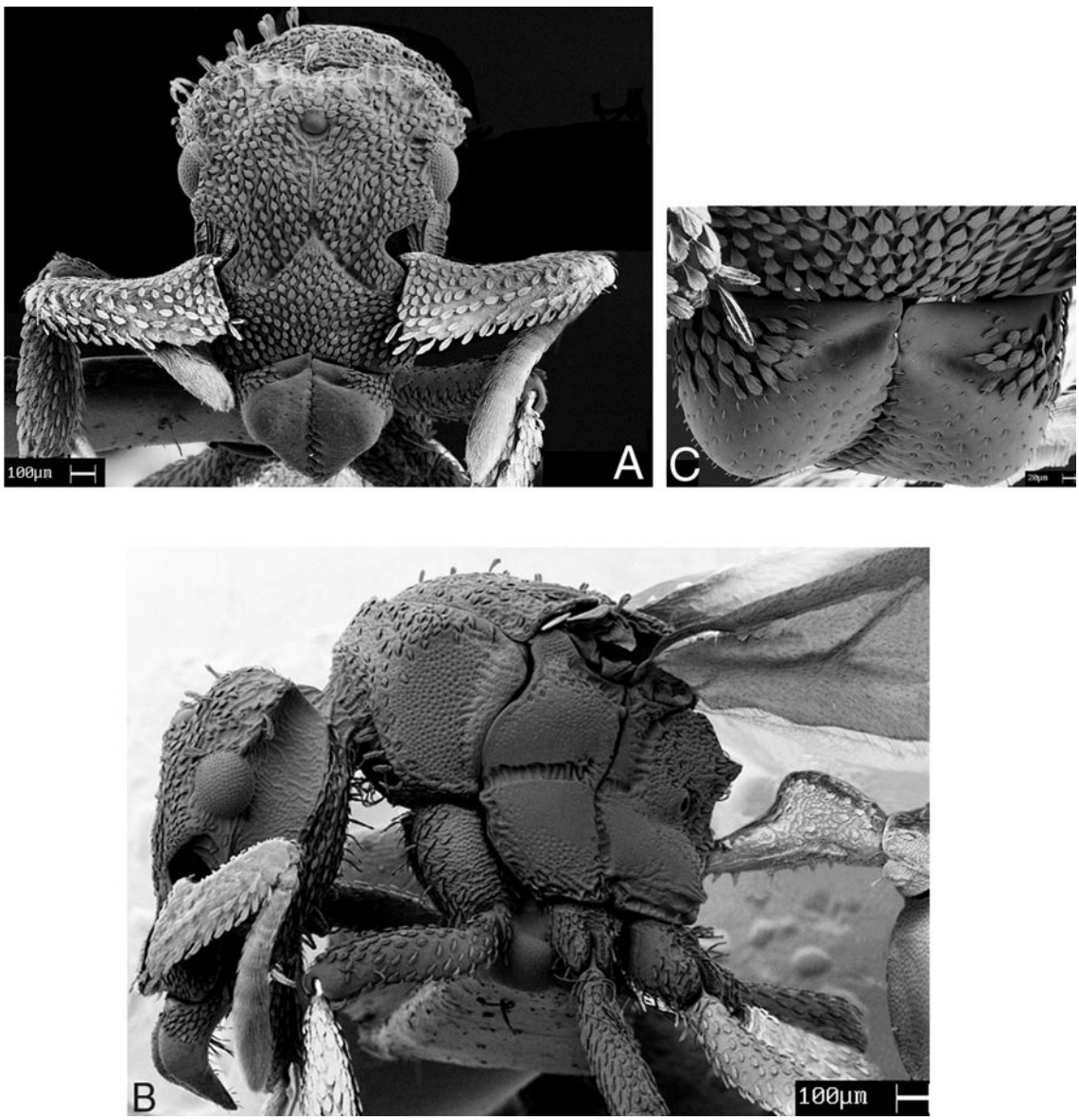
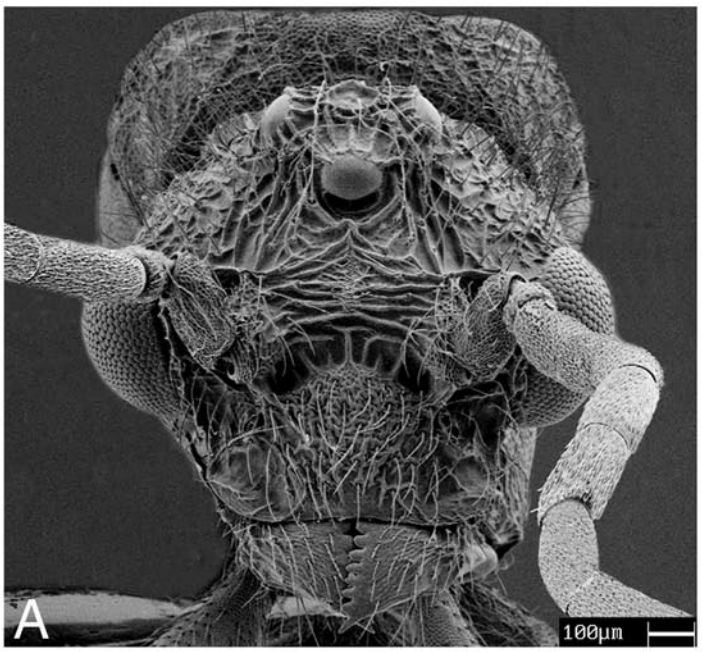


FIGURE 2. *B. scambognathus,* gyne; **a)** head in full-face view; **b)** body in profile; **c)** detail of the mandibular groove in full frontal view.

segment of funiculus longer than four preceding segments.

Mesosoma robust, promesonotum only moderately convex dorsally; anepisternum set lower than the adjacent surface; metanotal groove deeply impressed; propodeal spines very short and subtriangular; propodeal spiracle wide open, relatively projected laterad and directed posteriorly.

Petiole pedunculate, slightly arched, with a prominent and thick node which is nearly longer than the peduncle, node with steep anterior and gently sloping postero-dorsal faces, peduncle ventrally



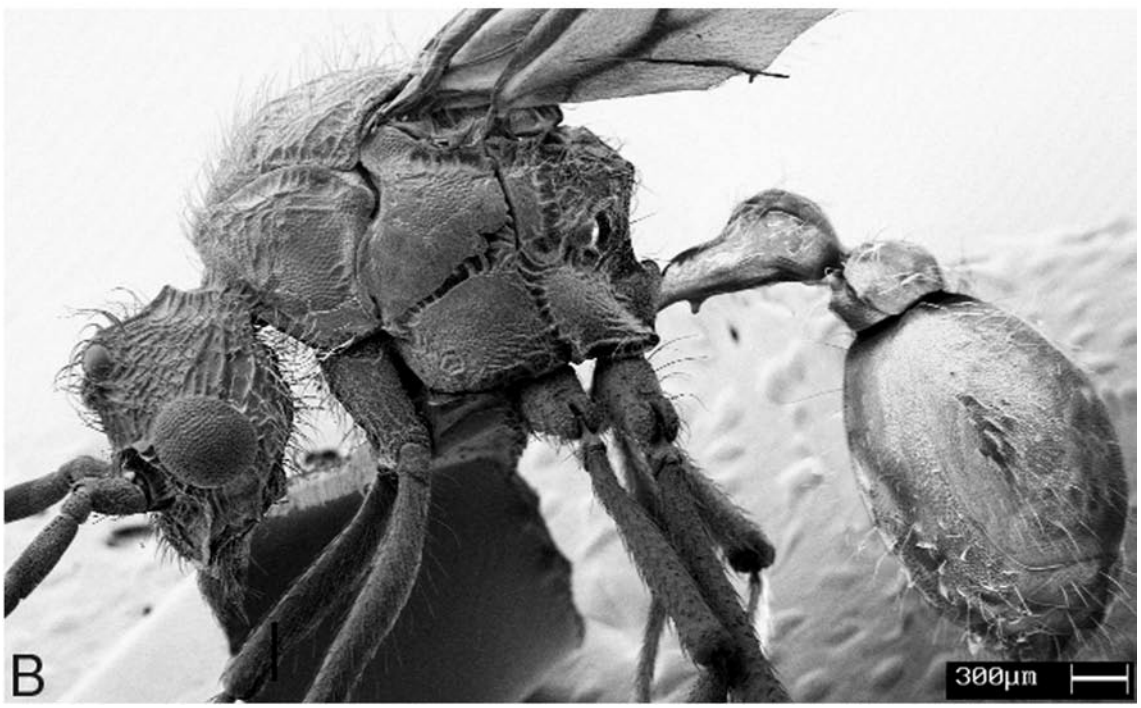


FIGURE 3. *Basiceros scambognathus,* male; **a)** head in full-face view; **b)** body in profile.

carinate with a series of small, acute projected denticles. Postpetiole subequal in length to the petiolar node, low in profile with a long, flat, sloping dorsal face which raises to a low rounded apex posteriorly and then drops slightly to its juncture with the gaster; seen from above, the petiole is narrower than postpetiole and is oblong in shape, while the postpetiole is subtrapezoidal, as broad behind as long, the sides diverging posteriorly and then very slightly narrowed so that it is attached to gaster by nearly its entire breadth. Gaster long and oval, its anterior border semicircularly excised to receive the postpetiole; first gastric segment forming the great bulk of the gaster.

Gyne: Holotype (n=3): HW 1.25 (1.16-1.24); HL 1.42 (1.34-1.42), CI 88 (87); ML 0.42 (0.39-0.41) MI 30 (29); SL 1.09 (1.04-1.09), SI 87 (88-90); WL 1.84 (1.85-1.88); HFL 1.30 (HFL 1.28-1.31); TL 7.00 (6.93-7.03). Like worker, with the modifications expected from myrmicine gynes. A complete description of the gyne was given by Brown (1949) in the original description of *Creightonidris*. Additional information is given above in the reviewed diagnosis of *Basiceros*.

Male: (n=4): HW 0.87-1.00; HL 1.04-1.15, CI 84-87; ML 0.20-0.23, MI (0.19-0.20); WL 1.63-1.87; HFL 1.23-1.37. Color dark brown with somewhat ferruginous areas. Body sculpture basically rugosepunctate, except for central discs of anepisternum and katepisternum which are smooth and shiny; head covered with scattered irregular rugae; alitrunk with sparse rugae on dorsal surface of promesonotum, inferior portion of mesopleuron, propodeum and petiole; broad punctures shallowly set on lateral surfaces of alitrunk and waist, but slightly finer on gaster. Long filiform whitish hairs cover body, densely arranged on head, dorsum of promesonotum and gaster.

Mandibles triangular, as broad as long, stout with 10 subconical teeth, the third and fourth ones broader than the others; apical tooth directed outwards and slightly distant from subapical one; external margins of mandibles strongly convex at basal portion and straight to nearly concave towards apex. Head rounded in shape. Ocelli placed almost laterally in the median elevation of occipital border, central ocellus preceded by deep cleft. A deep groove is present along posterior border of clypeus at space between eyes. Central disc of the clypeus raised and forming distinct circular area, lateral portions somewhat lower, anterior margin straight to slightly concave. Eyes very large. Antennal scrobes shallow and limited posteriorly by high nucal carina.

In dorsal view, prescutum nearly as broad as long; notauli shallowly impressed; antero-median portion of prescutum with a smooth and shining triangular area; parapsidial furrows extending beyond prescutum mid-length; parapsides broad and relatively deep; prescutellum visible medially in dorsal view; lateral wings of prescutellum subtriangular, with acute and well developed postero-lateral hook; scutoscutellar groove broad and deep with 2-4 transversal rugae; scutellum twice as broad as long and divided by longitudinal groove medially. Propodeum bluntly angulated in side view, not bearing teeth or lamellae.

In lateral view, petiolar node subrectangular with rounded angles; in dorsal view node is rounded; subpetiolar spines varying from present and small to virtually absent. Postpetiole subtrapezoidal with posterior border convex and broader than anterior one. Gaster long and oval.

Comments

The aberrant mandible and depressed anepisternum of Basiceros scambognathus separate this species from the related Basiceros singularis. Originally, B. singularis was described by Smith (1860) based on a worker and a gyne. However, the gyne is a typical B. scambognathus, while the worker seems to be unrelated as judging from the figures (the type specimens are lost). This situation was only solved with the description of the genus Creightonidris by Brown in 1949, when he provided further details.

In the description of the holotype gyne, the value of TL is stated as being 7.4 mm; Brown & Kempf (1960) made an amendment to this measure stating that the specimen has the gaster dilated in around 0.4 mm; thus, the value here presented should be considered the correct measure.

A complete diagnosis of *Basiceros* was given by Brown & Kempf (1960) and Brown (1974). In the present paper we offer a supplement to the latter in order to include the features of *B. scambognathus* n. comb. We add information regarding the shape of the head and mandibles, and describe in more detail the structure of the gyne's mesosoma.

All apomorphies of the Basicerotini defined by Bolton (2003) hold true for the specimens of *B. scambognathus* we examined.

Unfortunately we were aware of recent material collected by colleagues only during the final revision process of the present paper. They were: a gyne collected at Nossa Senhora do Livramento county, northern Pantanal in Mato Grosso, Brasil, and the

worker collected in a secondary Atlantic Forest area in Lençóis, Bahia, Brasil (12°33'S 41°23'W) (Castilho *et al.* in press). Both specimens were obtained from leaf litter samples using Winklers extractors.

Distribution

Until now, *B. scambognathus* is known only from the Brazilian largest biomes (Amazon Forest, Cerrado, and Atlantic Forest) and for a single locality in south Venezuela, near the border with Brazil (see map in Fig. 4). Its apparently discontinuous distribution and scattered records may reflect inappropriate collecting techniques due to our ignorance of the species biology.

Biology

B. scambognathus is one of the most obscure taxa of neotropical ants and virtually nothing is known about its biology. Very few specimens are represented in the world's ant collections, most of them are alate gynes and males, captured in widely spaced localities.

Brandão collected the first dealate *B. scambognathus* gyne in Uruaçú, Goiás state, in 1995, and attempted to maintain it in artificial conditions in order

FIGURE 4. Distribution map of *Basiceros scambognathus*.

to obtain workers or males and to record its behavior. Unfortunately, the specimen died some weeks after confinement and the only piece of information we were able to gather is that the captive gyne accepted termite workers as food in the laboratory. Interestingly, this individual was found dead within the fungus garden of an *Atta sexdens* artificial nest in the same lab, so we can not rule out the possibility that *B. scambognathus* lives inside *Atta* nests (or another fungus grower ant), which could explain the difficulty to find this species in nature, and in part its status of rarity.

The second worker collected up to now was recovered alive along with other ants, several different terrestrial arthropods, and soil particles from a leaf litter sample. Once in a plastic recipient, the worker feigned death upon disturbance, in typical *Basiceros* style, remaining so for several minutes, and reassuming movement quite slowly. Also as expected for a basicerotine ant, the body of the worker was tightly covered by a layer of dried soil (Hölldobler & Wilson, 1986). From the same sample we recovered also several workers of an unidentified *Apterostigma* and many *Blepharidatta conops* workers.

Examined material: no locality, no date (no collector), [Gift from B. Bolton (BMNH) #59 74] (1 Gyne) (ANIC). BRASIL: Amapá: Amaparí, 8-10.xi.1993 (W. França), [Tucano-2] (1 Male) (INPA); (F.F. Ramos) (1 Male) (INPA); (N. Bittencourt) (1 Male) (INPA); 9-10.xi.1993 (A. Pena) (1 Male) (INPA); 10-14.xi.1993 (F.F. Ramos) (1 Male) (INPA). Amazonas: Estirão do Equador, Rio Javari, ix.1979 (Alvarenga) (1 Gyne, 1 Male) (MZSP); N of Manaus, Reserva Ducke, 22-26.xi.1966 (no collector), [Malaise trap] (3 Males) (MZSP); 14.viii.1981 (C.B. Fairchild & J.A. Rafael), [Malaise] (1 Male) (INPA); 28.ix.1981 (J.A. Rafael), [Malaise] (1 Male) (INPA). Bahia: Maracás, Fazenda Maria Inácia, 24-29.xi.1990 (Brandão; Diniz & Oliveira) (1 Male) (MZSP). Goiás: Serra da Mesa, Colinas do Sul (14°01'S 48°12'W), 2-15.xii.1995 (Silvestre; Dietz & Campaner), [Cerrado] (1 Male) (MZSP); Jataí, xii.1972 (F.M. Oliveira), [#8911] (1 Gyne) (MZSP). Maranhão: Estreito, Fazenda Itaueras (6°31'54"S 47°22'16"W), 12-22.vi.2006 (R.R. Silva & R.M. Feitosa) (1 Worker) (MZSP). Mato Grosso: Sinop (12°31'S 55°37'W), x.1974 (M. Alvarenga), [#12306] (1 Gyne) (MZSP); [#12307] (6 Males) (MZSP); (Alvarenga & Roppa), [#12517] (1 Male) (MZSP); [#12551] (1 Gyne) (MZSP); [#12552] (4 Males) (MZSP); Vila Vera, x.1973 (M. Alvarenga), [#10253] (6 Males) (MZSP). Pará: Santarém Novo, Fazenda Jaburu, 7-9.i.1993 (J. Dias) (1 Male) (INPA); Igarapé-Açú, i.1949 (Gonçalves) (1 Gyne) (MCZC). Rondônia: 62 km S of Ariquemes, Fazenda Rancho Grande (10°32'S 62°48'W), 12-22.xi.1991 (E.M. Fisher) (3 Males) (PWRD). Roraima: Ilha de Maracá, Rio Uraricoera, 18-28.viii.1987 (J.A. Rafael *et al.*) (1 Male) (INPA).

Resumo

No presente trabalho, propomos a sinonimia do gênero monotípico neotropical de formigas mirmicíneas (Basicerotini) Creightonidris Brown sob Basiceros Schulz e descrevemos pela primeira vez a operária e o macho de Basiceros scambognathus comb. n., conhecida até agora somente por rainhas aladas. Apresentamos dados sobre a distribuição dessa espécie, uma nova diagnose para Basiceros e uma chave atualizada para identificação de operárias e gines do gênero. Os poucos dados conhecidos sobre a biologia de B. scambognathus são sumarizados.

Palavras-chave: formigas, Basicerotini, *Creightonidris, Basiceros,* chave, sinonímia, descrição de operária e macho.

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REFERENCES

Baroni Urbani, C. & De Andrade, M.L. 1994. First description of fossil Dacetini ants with a critical analysis of the current classification of the tribe (Amber collection Stuttgart: Hymenoptera, Formicidae. VI: Dacetini). *Stuttgarter Beiträge zur Naturkunde* serie B (Geologie und Paläontologie), 198:1-65.

Bolton, B. 1995a. *A New General catalogue of the Ants of the Word.* Harvard University Press, Cambridge, Massachusetts. 504pp.

BOLTON, B. 1995b. A taxonomic and zoogeographical census of the extant ant taxa. *Journal of Natural History,* 29:1037-1056.

BOLTON, B. 1998. Monophyly of the dacetonine tribe-group and its component tribes (Hymenoptera: Formicidae). *Bulletin of the Natural History Museum London* (Entomology), 67(1):65-78.

BOLTON, B. 2003. Synopsis and Classification of Formicidae. *Memoirs of the American Entomological Institute,* 71:1-370.

BROWN JR., W.L. 1949. Revision of the ant tribe Dacetini: IV. Some genera properly excluded from the Dacetini, with the establishment of the Basicerotini, new tribe. *Transactions of the American Entomological Society,* 75:83-96.

BROWN JR., W.L. & KEMPF, W.W. 1960. A world revision of the ant tribe Basicerotini. *Studia Entomologica,* 3:161-250.

BROWN JR., W.L. 1974. A supplement to the revision of the ant genus *Basiceros*. *Journal of the New York Entomological Society,* 82:131-140.

CASTILHO, A.C.C.; DELABIE, J.H.C.; MARQUES, M.I.; ADIS, J. & MENDES, L.F. Registros novos da formiga criptobiótica *Creightonidris scambognatha* Brown (Hymenoptera, Formicidae). *Neotropical Entomology,* in press.

DE ANDRADE, M.L. & BARONI URBANI, C. 1999. Diversity and adaptation in the ant genus *Cephalotes,* past and present. *Stuttgarter Beiträge zur Naturkunde,* serie B (Geologie und Paläontologie), 271:1-889.

DELABIE, J.H. 2000. *Creightonidris scambognatha* (Hymenoptera: Formicidae: Basicerotini) in the Atlantic forest biome, east of Bahia, Brazil. *Revista de Biologia Tropical,* 48:272-273.

DIETZ, B.H. 2004. *Revisão sistemática da tribo Basicerotini (Hymenoptera: Myrmicinae).* Ph. D. Thesis. Universidade de São Paulo, São Paulo, Brazil. 245pp.

HÖLLDOBLER, B. & WILSON, E.O. 1986. Soil-binding pilosity and camouflage in ants of the tribes Basicerotini and Stegomyrmecini. *Zoomorphology,* 106:12-20.

HÖLLDOBLER, B. & WILSON, E.O. 1990. *The Ants.* Belknap Press of the Harvard University Press, Cambridge, Massachusetts.

KEMPF, W.W. 1972. Catálogo abreviado das formigas da Região Neotropical. *Studia Entomologica (n.s.),* 10:353-360.

LATTKE, J.E. 1991. Estudios de hormigas de Venezuela (Hymenoptera: Formicidae). *Boletín de Entomología Venezolana,* 6:57-61.

SMITH, F. 1858. *Catalogue of Hymenopterous Insects in the Collection of the British Museum, 6 Formicidae.* British Museum. London. 216pp.

SMITH, F. 1860. Descriptions of new genera and species of exotic Hymenoptera. *Journal of Entomology,* 1:65-84.

WEBER, N.A. 1950. New Trinidad Myrmicinae, with a note on *Basiceros* Schulz (Hymenoptera, Formicidae). *American Museum Novitates,* 1465:1-6.

WHEELER, G.C. & WHEELER, J. 1954. The ant larvae of the myrmicine tribes Basicerotini and Dacetini. *Psyche,* 61:112-113.

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