A new species of *Carebara* Westwood (Hymenoptera: Formicidae) and taxonomic notes on the genus

Una nueva especie de *Carebara* Westwood (Hymenoptera: Formicidae)
y y notas taxonómicas sobre el género

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Abstract. A new ant species, *Carebara coqueta* sp. nov. from Colombia, is described, based on the soldier and worker castes. *Carebara semistriata* Fernández is considered a junior synonym of *Carebara reina* Fernández (syn. n.). *Carebara guineana* is proposed as a new name for *Oligomyrmex silvestrii* Santschi, 1914.

Key words: *Carebara coqueta*, new species, Neotropics, taxonomic notes

Resumen. Se describe una nueva especie de hormiga, *Carebara coqueta* n. sp. de Colombia, basada en soldado y obrera. *Carebara semistriata* Fernández se coloca como sinónimo menor de *Carebara reina* Fernández (n. sin.). *Carebara guineana* se propone como nuevo nombre para *Oligomyrmex silvestrii* Santschi, 1914.

Palabras clave: *Carebara*, nueva especie, Neotrópico, notas taxonómicas.

Introduction

The recent revision of the myrmicine ant genus *Carebara* Westwood for the Western Hemisphere (Fernández 2004) broadened the generic limits of this name with the incorporation of *Oligomyrmex*, *Paedalgus*, *Afroxylidris* and *Neoblepharidatta*, as synonyms of *Carebara*. The genus in its new sense was split in three sections, the *concinna*, *lignata* and *escherischia* species groups. The first one, the *concinna* species group, corresponds to the concept of *Oligomyrmex*; the second, the *lignata* species group to the traditional *Carebara* s. str., and the *escherischia* species group to *Paedalgus*. The first two groups are probably paraphyletic taxa, with only the *escherischia* species group apparently monophyletic (Bolton and Belshaw 1993). This paper includes the description of a new species along with some other taxonomic changes and comments.

Materials and Methods

Measurements were made using a micrometer in a Nikon SMZ 2T stereomicroscope at 80X magnifications, with a fiber ring lamp. All measurements are in mm: HL - Head length: Maximum length, in full face view, from the apex of the clypeal apron to the middle of vertex; HW - Head width: Maximum width in full face view; SL - Scape length (excluding basal condyle and neck), in straight line distance; PW - Pronotal width: Maximum width across pronotum in dorsal view; WL - Weber’s length: In lateral view of mesosoma, the line from posteroverentral corner of mesosoma to farthest point on anterior face of pronotum; GL - Gaster length: In lateral view, the line from anterior edge of first gastral tergum to posteriormost point; TL - Total length (HL + Mandible length + WL + Petiole length + Postpetiole length + GL); CI - Cephalic index: HW/HL; SI - Scape index: SL/HW.

Collections

IAvH. Insect Collection, Instituto Humboldt, Claustro de San Agustín, Villa de Leyva, Colombia.

INBio. Instituto Nacional de Biodiversidad, San José, Costa Rica.

**Taxonomic section**

*Carebara lignata* species complex

This complex comprises those dimorphic and monomorphic *Carebara* whose minor workers are always eyeless. In the *Carebara* revision (Fernández 2004) the name of the group was incorrectly written as “*Carebara concinna* species complex” in the heading of the section of this group in the page 211, the name must be changed to *Carebara lignata* species complex.

*Carebara coqueta* new species

(Fig. 1)

Description (major worker). Head longer than broad, posterior border semicircularly

Figure 1. *Carebara coqueta* new species. Major worker head (left, HW 0.48 mm), mesosoma, petiole and postpetiole in lateral view (top); head of minor worker in full face view (lower right, HW 0.26 mm). Scale bar 0.5mm

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excised, sides straight, parallel. Masticatory border with five stout teeth. Clypeus narrow, medial portion slightly concave. Frontal triangle well-defined. Frontal lobes somewhat continued posteriorly as short longitudinal rugae. Scapes very short. Ocelli and eyes absent. In lateral view mesosoma flat, mesonotum slightly higher, propodeum lower. Pronotal suture feebly impressed dorsally. Metanotum narrow. Dorsal face of propodeum sloping and then curving into the posterior face, without spines or angles. Propodeal spiracle relatively large, rounded, close to metapleural gland bulae. Petiole with short peduncle, lateral swellings and ventrally with strong spine. Postpetiole in posterior view campanuliform, ventrally with anterior carinae. Body smooth, somewhat shining. Head, promesonotum, sides of pronotum and mesopleura with longitudinal rugae. Metapleuron, propodeum, petiole and postpetiole (except dorsal sides) with fine reticulation. Pubescence very sparse over body except propodeum. Long hairs (about 0.04 mm or longer): between frontal lobes, then continued posteriorly, the eyes, always present, are reduced to a few ommatidia and the ergatoid condition. The minor workers of the Carebara (that is, the lignata species group) might be associated in some way with the enigmatic Paedalgus sensu Bolton & Bell (1993). The head is slightly narrower anteriorly, the eyes, always present, are reduced to a few ommatidia and the propodeum is very short. In the treatment of the species of this complex (Fernández 2004) there is an error in the description of the species of this complex whose limits and variation are not well understood, additionally, the minor workers are practically useless for species identification. Thus, I think that is better to postpone a key to species until more material (with soldiers and minor workers associated) are studied.

Longino (2004) calls attention to the paucity of samples of Carebara (lignata group) with both workers and soldiers. In other myrmicine ants like Pheidole or Solenopsis it is not difficult to find workers and soldiers in the field, which suggests that soldiers of Carebara are not present in the same foraging strata as workers. This suggests that, to obtain soldiers of Carebara, we need to dig in the soil or look for them in rotten logs (Longino 2004). The fact that many museums only have minor workers of the typical Carebara (that is, the lignata species group) could be due to the reason pointed out above, and in reality all of the species of this complex may be dimorphic. The exasperating monotony of the minor workers of the lignata species group (some of them only 0.90 mm long!) makes it desirable to obtain and to study collections that include soldiers, besides females and males. If my prediction is correct, and all the species of the lignata group possess major workers (although difficult to collect), it should be possible to revise the group on a global scale.

Finally, I want to call attention to the interesting intercaste phenomenon in this group. Kusnezov (1952) and Wheeler (1925) pointed out and described cases of intermediates between major workers (soldiers) and females. The great plasticity in the external attributes of the soldiers of the lignata species group (such as the presence / absence of ocelli and eyes, and vestigial alary sclerites) make this an ideal group for the study of the evolution of caste intergradations; as proposed by Baroni Urbani and Passera (1996), who suggest that in some cases the soldier developed not from the worker, but from the female (see Ward 1997 for a reply).

Escherischi species complex

The species in this complex (except by the enigmatic C. intermedia Fernández) correspond to the previously recognized genus Paedalgus sensu Bolton & Bell (1993). The head is slightly narrower anteriorly, the eyes, always present, are reduced to a few ommatidia and the propodeum is very short. In the treatment of the species of this complex (Fernández 2004) there is an error in the description of Carebara reina; moreover, new recent evidence throw suspicion on the validity of Carebara semistrigata as good species. For these reasons, it is included the complete description of C. reina, below.

Carebara reina Fernández


Eyes reduced to 1 ommatidium. Lamellae of metapleural lobes low. Dorsum of head densely sculptured with very small,
shallow foveolate punctures, broadly separated; mid dorsum to almost all of promesonotum with dense, fine longitudinal striations mixed with scattered small punctures, periphery of promesonotum, dorsal and posterior face of propodeum and petiole densely reticulated. Postpetiopile and gaster smooth and shining. Scapes, dorsum of head, promesonotum and legs with appressed pubescence, denser on head. Body nearly naked of long hairs, with only few (about 0.05 mm) distributed as follows: four on clypeal area; two on each frontal lobe; two on head (each one near occipital corner), eight on promesonotum, two on propodeum, none on legs; two on petiole, four on postpetiopile, several on first tergal dorsum. Body brown, appendages lighter, most of gaster dark brown.

**Female, male**: Unknown

**Distribution.** Nicaragua to Colombia (Bolivar, Valle del Cauca).

**New records**: 2 workers, COSTA RICA, Cartago, 4 km S Turrialba, 9°54'N 83°39'W, 550 m, 13 may 1987, J. Longino No. 1644-S, INBio CR100 2280244; 1 worker, COSTA RICA, Limón, Hitoy-Cerere Biological Reserve, 9°40'N 83°39'W, 550 m, 13 may 1987, J. Longino No. 1644-S, INBio CR100 2280244; 1 worker, COSTA RICA, Limón, Hitoy-Cerere Biological Reserve, 9°40'N 83°39'W, 550 m, 13 may 1987, J. Longino No. 2760-S, INBio CR1001, 280880.

**Comments.** John Longino (2004) correctly notes an incongruence in part of the description of *Carebara reina*, and observes that the extension of the longitudinal striation on the promesonotal dorsum of *C. reina* and *C. semistriata* is a variable attribute, and I support his opinion, based on new material. The type material of *C. reina* has a distribution of erect hairs clearly as in the description above. Since in this group of species the hair patterns are the most reliable trait to recognize species. I accept the weakness of the striation extension as a good trait and I place *C. semistriata* as junior synonym of *C. reina*.

The key for the species in this complex (Fernández 2004) should be modified as follow:

9. Mid and hind tibiae without standing hairs .................................. 10

9’. Mid and hind tibiae with standing hairs (Southwestern Colombia) ....

10. Standing hairs: none on dorsum of head, four in promesonotum, none on propodeum, two on first tergum of gaster (Colombia, Trinidad, Peru, Brazil) ......................... C. striata

10’. Standing hairs: two in head dorsum, eight in promesonotum, two in propodeum, several in first tergum of gaster (Nicaragua, Costa Rica, Colombia) ................................. *C. reina*

**Carebara inca** Fernández

Originally described from workers from Peru, Longino (2004) records this species for first time for Central America.

New record: 1 w, COSTA RICA, Puntarenas, Osa, Rancho Quemado, 8°42'N 83°33'W, 2-300m, 15 dec 1990, J. Longino No. 2760-S, INBio CR1001, 280880.

**Final note**

Gary Alpert (Museum of Comparative Zoology, Cambridge) and Barry Bolton (The Natural History Museum, London) alerted me to an unresolved junior secondary homonym between *Carebara silvestrii* Santschi and *Aneleus silvestrii* Santschi. The name *Carebara guineana* is proposed as new name for *Carebara silvestrii* Santschi 1914:362.

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**Literature cited**


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