Systematics, Morphology and Biogeography

_Nectarinella manauara_, new species and record of the genus from Brazilian Amazonia (Hymenoptera, Vespidae, Polistinae)

Orlando Tobias Silveira*, José Nazareno Araujo dos Santos-Junior

Museu Paraense Emílio Goeldi, Coordenação de Zoologia, Belém, PA, Brazil

**A R T I C L E   I N F O**

Article history:
Received 30 March 2016
Accepted 9 May 2016
Available online 31 May 2016
Associate Editor: Marcel Hermes

Keywords:
Epiponini
Neotropical
Range extension
Reserva D'uke
Social wasp

**A B S T R A C T**

_Nectarinella manauara_ **sp. nov.** is described, representing the first record of the genus from Brazilian Amazonia. Its description raises richness for _Nectarinella_ from two to three species, and extends the range of characteristics for the genus, especially in terms of body size and color patterns. Discovery of the new species may shed new light into the knowledge of phylogenetic relationships between _Nectarinella_ and other closely related genera.

© 2016 Sociedade Brasileira de Entomologia. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

**Introduction**

_Nectarinella_ Bequaert, 1938, is a small Neotropical genus of swarming polistine social wasps with only two previously described species. It was created as a subgenus of _Chartergus_ Lepeltier, 1836, for a species from Panama described by Dover (1925) as _Nectarina championsi_. More recently, the taxon was raised to the genus level by Richards (1978). Part of the past instability in genus level assignment of _Nectarina championsi_ was of a nomenclatural nature, related to problems involving the taxonomic “meaning” of names like _Chartergus_ and _Parachartergus_ von Lhering, 1904, rather than a question of properly acknowledging the phylogenetic affinities of the species (see Bequaert, 1938, 1944). _Nectarinella_ is part of the _Pseudopolybia-Leipomeles_ epiponine clade, more closely related to _Chartergellus_ Bequaert, 1938 (Carpenter, 1991; Wenzel and Carpenter, 1994). The genus presents palpal formula 5–3 and nest architecture of the astelloyctarous type (Richards, 1978). Characteristics of the male genitalia of _Nectarinella_ (and other related genera) were studied by Carpenter and Mateus (2004). The Mesoamerican species was the sole known representative of the genus until the publication of the paper by Mateus and Noll (1997) describing _Nectarinella xavantinensis_ from Mato Grosso State in central Brazil. This widely disjunct distribution of the genus suggested that representatives could be found in regions in-between in the South American continent. The new species here described, from central Brazilian Amazonia, fulfills that expectation, as well as extends the range of characteristics for the genus, especially in terms of body size and color patterns.

**Material and methods**

The new _Nectarinella_ species was compared to specimens of both _Nectarinella championsi_ (Costa Rica, Rio Grande, 8/xii/1990, Carpenter & Wenzel; MPEG) and _Nectarinella xavantinensis_ (Brazil, Mato Grosso, Nova Xavantina, 06/xi/1997, Mateus & Noll; MPEG). Paratypes of the latter species (MZSP) were also examined. The specimens were studied using ZEISS SV-11 and LEICA MZ-16 dissecting stereomicroscopes; photographs were made using a LEICA DFC-420 digital camera coupled to those microscopes. The following ratios are used in description of proportions of some body parts: H/WCL (height and width of clypeus); POL:OOL (postocellar and ocello-ocular distances); L/WMS (length and width of mesocutum).

**Abbreviations for specimen repositories** are as follows: Instituto Nacional de Pesquisas da Amazônia (INPA); Museu Paraense Emílio Goeldi (MPEG); Museu de Zoologia da Universidade de São Paulo (MZSP).

**Results**

_Nectarinella manauara_ **sp. nov.**

(Figs. 1–4)

* Corresponding author.
E-mail: orlando@museu-goeldi.br (O.T. Silveira).

http://dx.doi.org/10.1016/j.rbe.2016.05.001
0085-5626/© 2016 Sociedade Brasileira de Entomologia. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Description (Female). Very small, wing length 4.3 mm. Head (Figs. 1 and 2) wider than high; palpal formula 5–3; mandible outer surface largely flattened; clypeus wider than high, ratio H/WCL 0.75, lateral margin sinuate, performing above a continuous regular curve, and very narrowly separated from eye, apex narrow, weakly truncate, almost rounded, ventro-lateral indentation shallow, corresponding adjacent inner lobe weakly prominent; tentorial pit as close to antennal socket as to eye margin; interantennal area roundly and strongly bulging; ocelli forming an equilateral triangle, widely separated from eyes (POL:OOL a fraction less than 0.5); malar space wide (Fig. 1); occipital carina vestigial, developed as weak dorsal or dorso-lateral remnants (Fig. 2, red arrow); gena in lateral view narrowing above; pronotum (Figs. 3 and 4) very short, with lateral fovea located far below and close to ventral angle, fovea bordered in front by a short, low, but quite sharp margin; pronotal dorsal carina obtuse, not at all sharp, not strongly projecting forward, but otherwise quite well-developed and descending laterally to near the fovea (Figs. 3 and 4); pronotal anterior margin with a narrow lamella and with short central retreating sector; mesoscutum (Fig. 3) nearly circular, wider than long, ratio L/WMS 0.8, with distinct margin laterally opposite regula; mesopleuron without mesepisternal sulcus (Fig. 4); scutellum as a swollen transversal block with posterior surface vertical; metanotum completely vertical, barely visible from above, posterior margin with a shallow, curved contour; propodeum vertical, central area flat without forming noticeable cavity, but with lateral extremities slightly swollen; propodeal valve rather wide (not at all linear), with rounded subtriangular shape; hind wing with 1cu1 much shorter than cu-a.

Sculpture. Integument of head and mesosoma generally smooth and shining, with variably scattered medium-sized punctures; metasoma duller with fine, regular, dense punctuation; clypeus with very sparse and shallow medium-sized punctures, frons with a slightly more pronounced pattern, with punctures more deeply impressed, similar patterns observable on mesoscutum (often separated there by 1–2 diameters) and scutellum, mesopleuron also similar with denser punctuations on scrobal sulcus; metanotum smooth, unpunctured; propodeum
with weak punctuation only on sides; metasoma without any large punctures.

Vestiture. Most of face and dorsal two-thirds of clypeus with appressed whitish pubescence; vertex, frons and ventral margin of clypeus with sparse short erect hairs, longer hairs on clypeus (Fig. 1); eyes bare; similar patterns of decumbent and erect hairs on entire body, metasoma with erect hairs tending to be located near hind margin of terga and sterna.

Color. Dark brown, darker on head and dorsal section of mesosoma, lighter on mandible, clypeus, antenna, and metasoma; pale whitish marks as follows: circular marginal pattern on clypeus, paired marks on supracylpeal plate and interantennal area between antennal sockets, inner orbits rather widely, genal stripe widening below pronotal carina, elongated mesepisternal mark, lateral marks on mesoscutal margin adjacent to tegula and axillar region, narrow transversal anterior mark on scutellum and scutellar crest, narrow anterior mark on metanotum, axillar region and anterior face of fore coxa, elongated mark on fore tibia, apical spot on mid and hind femora and ventral metapleural plate, minute lateral mark on propodeum and lateral margin of metasomal tegum I, anterior band on tegum II, distal bands near posterior margin of terga II to VI, with associated small irregular lateral marks on terga III to V, most of the visible areas on sterna II to V.

Male unknown.
Nest unknown.

Etymology: the specific epithet manauara means “inhabitant of, or related to the Brazilian city of Manaus”.

Discussion

The outstanding differences between Nectarinella manauara sp. nov. and congenere species refer to the very small size (ca. 30% smaller) and dark brown color of the former, contrasting with the yellow ground patterns of both Nectarinella championi and Nectarinella xavantinensis. The addition of these two aspects as a first step of the key provided by Carpenter & Mateus (2004) would suffice to diagnose the new species (see below). Additionally, the lateral margin of the clypeus is more strongly curved above and its separation from the eye narrower (comparing Figs. 1 and 6), with apex rounded truncated rather that definitely rounded. The tentorial pit is equidistant from the clypeal margin and the antennal socket (being slightly closer to the latter in the other two species). The interantennal area is rather similar to that of Nectarinella xavantinensis in being strongly bulging, but does not form a V-shaped protuberance. The pronotal carina is more like that of Nectarinella championi, being not very sharp, with the humeral region being less raised and less projecting than in Nectarinella xavantinensis. The mesoscutal punctuation of Nectarinella manauara sp. nov. is less dense, and the integument more shining than in both congenere species.

Nectarinella manauara sp. nov. is a small species that could be easily confused by the untrained eye with the species of Leipomeles Möbius, 1856 previously recognized as the separate genus Marimbonda Richards, 1978; the color pattern “brown with whitish marks” reinforces this general similarity. It can be distinguished from Leipomeles, however, by having the metanotum completely vertical and barely visible from above, metasomal tegum I significantly shorter, ca. 0.3 × as long as wide (ca. 0.9 × in L. pusillus), and occipital carina reduced to faint dorsal remnants. It is also different from species of Marimbonda in terms of the length of the hind wing cross-vein 1cu1 (being much shorter than cu-a). However, in that particular Leipomeles group, the pronotal carina descends at sides to a point well below the pronotal tubercle, being in this respect similar or intermediary in respect to the condition observed in Nectarinella (see Fig. 4). In more typical Leipomeles species, such as dorsata (Fabricius, 1804) and spilogaster (Cameron, 1912), the pronotal carina is more similar to that observed in Chartergellus, which does not descend much further at sides.

The absence of an occipital carina has been considered the main feature shared by Nectarinella and Chartergellus, distinguishing them from Leipomeles (and Marimbonda), as for example in the generic key of Richards (1978). This character was also recognized as a synapomorphy of (Chartergellus + Nectarinella) by Carpenter (1991) and Wenzel and Carpenter (1994). Close examinations of Nectarinella championi (from Costa Rica; Fig. 5) and Nectarinella xavantinensis showed that they retain dorsal traces of the occipital carina as in Nectarinella manauara sp. nov (Fig. 2), while no vestiges of the carina can be seen in Chartergellus. Strictly, this character may still be considered evidence of a sister group relationship between these genera if treated as a transformation series. Discovery of the male, larva and nest of Nectarinella manauara sp. nov. is expected to produce additional information relevant to the study of phylogenetic relationships between Nectarinella and other related genera.

Key to species of Nectarinella (based on Carpenter and Mateus, 2004)

1. Size very small, wing length 4.3 mm; color pattern dark brown with pale whitish marks; Brazil, Amazonas . . . Nectarinella manauara sp. nov.
2. Size distinctly larger, wing length more than 5.0 mm; ground color mostly yellow . . . 2.
3. Frons elevated above antennae, forming a V-shaped protuberance; humeri produced forward in acute angle in dorsal view; clypeus wider than high; metasomal ground color brownish; Brazil, Mato Grosso . . . Nectarinella xavantinensis Mateus & Noll.
4. Frons flat above antennae; humeri little produced in dorsal view; clypeus about as wide as high; metasomal ground color ochraceous. Costa Rica, Panama, Colombia . . . Nectarinella championi (Dover).

Conflicts of interest

The authors declare no conflicts of interest.

Acknowledgments

We are grateful to curators of the INPA and MZSP collections for making possible the study of Nectarinella specimens. We also thank Dr. James M. Carpenter (AMNH) for reading a previous version of the manuscript.

References