

## A new species of *Paraphysiana* (Hemiptera: Cicadellidae: Neocoelidiinae) from French Guiana

With 12 figures

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### Summary

A new species of *Paraphysiana* CHIAMOLERA, CAVICHIOLI & ANDERLE (2003), *P. marquescostae* spec. nov., is described and illustrated. The new species can be distinguished from the other species of the genus by the following characteristics: (1) pygofer with a pair of inner dorsal processes; (2) pygofer with a pair of inner ventral processes are curved dorsally and twisted apically.

### Key words

Description, Neotropical Region, leafhopper, taxonomy

### Zusammenfassung

Eine neue Art der Gattung *Paraphysiana* CHIAMOLERA, CAVICHIOLI & ANDERLE (2003), *P. marquescostae* spec. nov., wird beschrieben und dargestellt. Die beschriebene Art kann von den anderen Arten der Gattung durch folgende Merkmale unterschieden werden: (1) letztes Abdominalsegment dorsal mit einem Paar innerer Fortsätze; (2) letztes Abdominalsegment ventral mit einem Paar innerer Fortsätze, die dorsal gekrümmt und apikal verdreht sind.

### Introduction

Neocoelidiinae is a small subfamily of Cicadellidae, comprising 174 species in 33 genera (GONÇALVES et al. 2012, MARQUES-COSTA & CAVICHIOLI 2012). The subfamily is restricted to the New World. *Paraphysiana* CHIAMOLERA, CAVICHIOLI & ANDERLE (2003) is a monotypic genus that was proposed for *P. diminuta* CHIAMOLERA, CAVICHIOLI & ANDERLE, 2003 from Amazonas State, Brazil.

*Paraphysiana* can be easily distinguished from other genera of Neocoelidiinae by the following set of characteristics: (1) head without carena between crown and face; (2) male pygofer with inner ventral process; (3) subgenital plates entirely fused to each other; (4) aedeagus subcylindrical; (5) paraphysis long (CHIAMOLERA et al. 2003). According to a cladistic analysis based on morphological data (MARQUES-COSTA & CAVICHIOLI 2012), *Paraphysiana* is the sister group of *Deltocoelidia* KRAMER,

1961, supported by three homoplastic apomorphies: (1) head, in lateral view, with apex rounded; (2) frontogenal sutures not reaching the ocelli; and (3) metatibiae with anteroventral row (AV) of setae absent on basal third. In this paper, a new species, *P. marquescostae* **spec. nov.**, is described based on a single male specimen collected in French Guiana, which is deposited in the Coleção Entomológica Professor José Alfredo Pinheiro Dutra (DZJR), Rio de Janeiro.

## Material and Methods

For the analysis of the genital structures, the abdomen was removed and placed in hot 10 % KOH, following OMAN (1949). Genitalia were washed for 5–10 minutes in hot water and placed on a concave slide with glycerin for examination and preparation of photographs. The genitalia were stored in a small vial with glycerin and pinned to the specimen's pin. Photographs were taken with a camera attached to a Leica stereomicroscope, using the image stacking software CombineZP. Illustrations were made with a stereoscopic microscope with a *camera lucida* attached. The morphological terminology follows mainly DIETRICH (2005), except for the head sclerites (HAMILTON 1981, MEJDALANI 1998). The terms for the leg chaetotaxy follow RAKITOV (1997).

## Taxonomy

*Paraphysiana marquescostae* **spec. nov.**  
(Figs 1–12)

**Type-locality:** Petite Montagne Tortue, French Guiana.

**Material examined:** Male holotype: "FRENCH GUIANA: Petite Montagne Tortue P11\04°19'14.1N-052°14'27.5W\24.XI.2010\ Lamarre G. Leg" "White sand forest\ Vitre trap (V12)" (DZJR).

**Diagnosis:** Forewings (Fig. 4) with five dark brown maculae near inner margin; male pygofer (Fig. 5) with inner dorsal processes in apical half and inner ventral processes, twisted at apex; subgenital plates (Figs 6, 7) with dorsal apical tooth; connective (Fig. 8) T-shaped; styles (Figs 8, 9) with apex bifid, chela-shaped; aedeagus (Fig. 10) tubular, without process.

**Length:** Male holotype: 5.9 mm.

**General color:** Body (Figs 11, 12) with ground color pale yellow. Crown, face, pronotum and mesonotum (Figs 1–3) unmarked. Forewings (Fig. 4) yellow hyaline; orange band adjacent to inner margin, extending from basal angle to clavus apex; five dark brown maculae near inner margin, three on clavus and two on corium,

on brachial cell and inner anteapical cell; apex fuscous. Legs (Figs 11, 12) pale yellow.

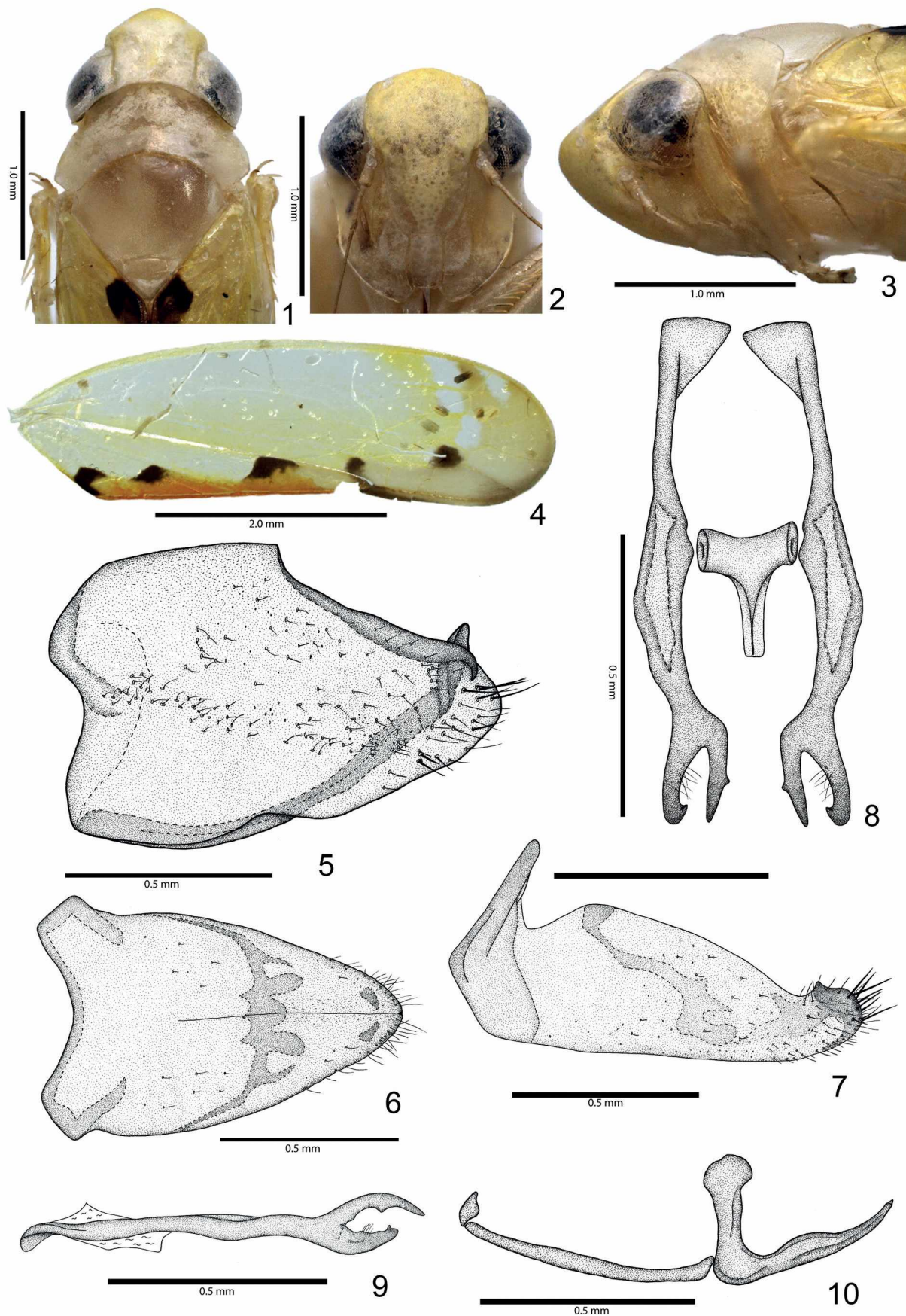
**External morphology:** Crown (Fig. 1) about as long as wide; flattened. Pronotum (Figs 1, 3) about 2.7 times wider than long; posterior margin concave. Mesonotum (Fig. 1) about as long as wide. Forewings (Fig. 4) with venation indistinct except apically; with three anteapical cells and four apical cells; appendix narrow, extending to first apical cell.

**Male genitalia:** Pygofer, in lateral view (Fig. 5), approximately triangular, higher basally and slightly tapering towards apex; with two pairs of inner processes: one pair longer, slender and sclerotized, adjacent to ventral margin, extending from base to apex of pygofer, with apices twisted and acute, and one dorsal pair shorter, extending from base of anal tube to apex of pygofer, apices sclerotized and hook-shaped; few short setae distributed on apical third. Subgenital plates extending to apex of pygofer; fused medially to the valve; completely fused to each other; in ventral view (Fig. 6), approximately triangular, enlarged at base and narrowing toward apex; dorsal surface with sclerotized longitudinal band in middle third, where the styles are attached; apex rounded, with several fine setae; in lateral view (Fig. 7), with pre-apical dorsal tooth. Connective, in dorsal view (Fig. 8), T-shaped, approximately 1/3 of length of styles; articulated to base of paraphysis. Styles (Figs 8, 9) long and slender; apex chela-shaped, dorsal branch more slender, with median tooth on lateral inner margin, ventral branch more robust, with dorsal apical tooth. Paraphysis (Fig. 10) long, almost twice the length of aedeagus; connecting anteroventral portion of connective to atrial region of aedeagus. Aedeagus (Fig. 10) with tubular shaft bent dorsoanteriorly; apex acute; dorsal apodeme nearly as long as shaft; gonophore apical. Anal tube membranous, without processes.

Female unknown.

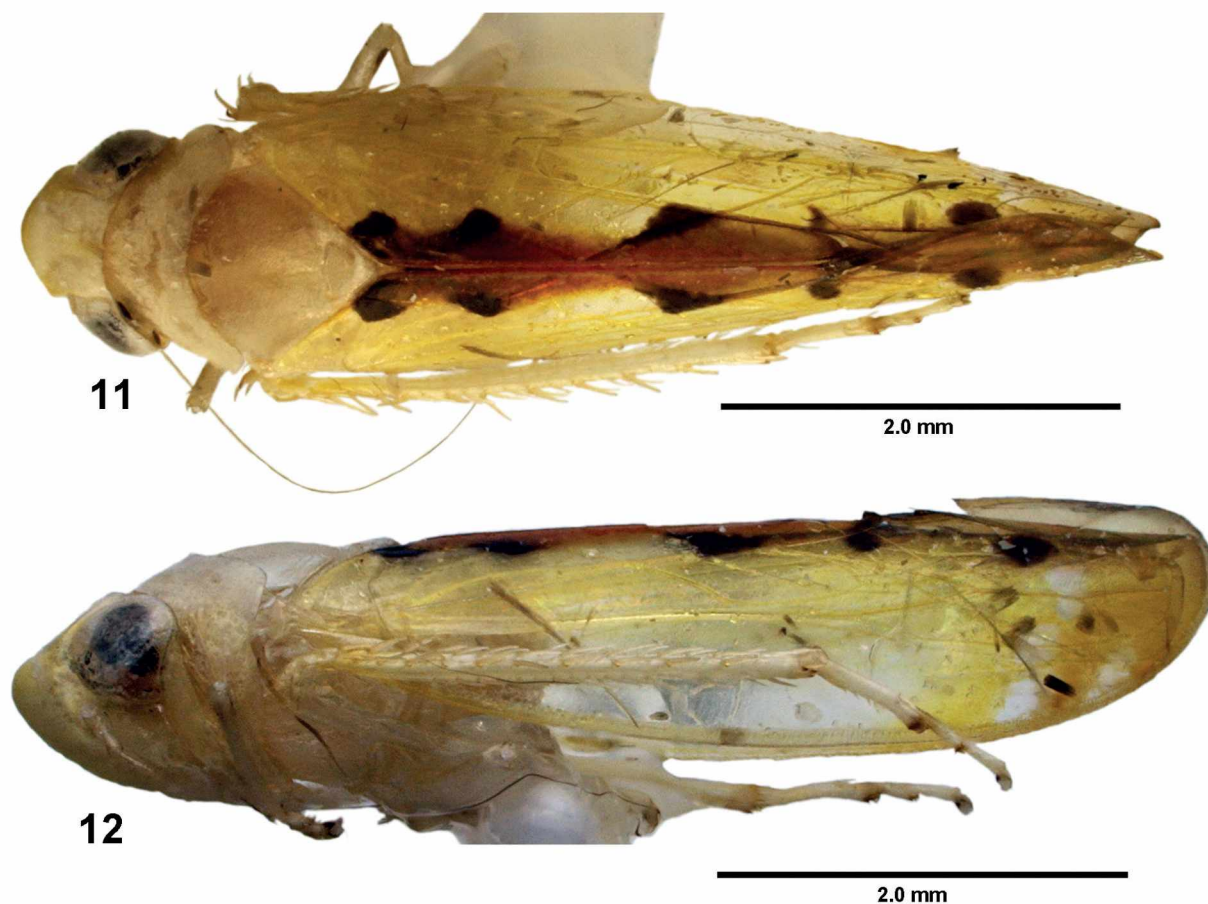
**Etymology:** The species name is a tribute to Dr. Ana Paula Marques-Costa, due to her contribution to the knowledge of Cicadellidae, especially Neocoelidiinae, and also due to a great friendship and for introducing the first author of this paper to the study of the group.

**Notes:** *Paraphysiana marquescostae* **spec. nov.** can be easily distinguished from *P. diminuta* by the characters of the male pygofer. The new species has a pair of inner dorsal processes (Fig. 5) on the male pygofer, which is absent in *P. diminuta*. Furthermore, the inner ventral processes of the pygofer in *P. marquescostae* are curved dorsally and twisted apically, while in *P. diminuta* the inner ventral processes are approximately straight and not twisted.



Figs 1–10: *Paraphysiana marquescostae* spec. nov., male holotype. 1, anterior portion of body, dorsal view. 2, head, frontal view. 3, anterior portion of body, lateral view. 4, forewing. 5, pygofer, lateral view. 6, subgenital plates, ventral view. 7, subgenital plates, lateral view. 8, connective and styles, dorsal view. 9, style, lateral view. 10, aedeagus, connective and paraphysis, lateral view.





Figs 11–12: *Paraphysiana marquescostae* spec. nov., male holotype: 11, body in dorsal view. 12, body in lateral view.

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