

Research Article

A New Species of *Dikrella* Oman, 1949 (Hemiptera: Cicadellidae: Typhlocybinae) Found on *Caryocar brasiliense* Cambess. (Caryocaraceae) in Minas Gerais State, Brazil

Luci Boa Nova Coelho,^{1,2} Germano Leão Demolin Leite,³
and Elidiomar Ribeiro Da-Silva⁴

¹ Laboratório de Entomologia, Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Estado do Rio de Janeiro, Caixa Postal 68044, 21944-970 Rio de Janeiro, RJ, Brazil

² Programa de Pós-Graduação em Biodiversidade Neotropical, Universidade Federal do Estado do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

³ Universidade Federal de Minas Gerais, Instituto de Ciências Agrárias, Caixa Postal 135, 39404-547 Montes Claros, MG, Brazil

⁴ Laboratório de Insetos Aquáticos, Departamento de Zoologia, Instituto de Biociências, Universidade Federal do Estado do Rio de Janeiro, 22290-240 Rio de Janeiro, RJ, Brazil

Correspondence should be addressed to Luci Boa Nova Coelho; lucibncoelho@gmail.com

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A new species of *Dikrella* is described and figured based on specimens from Minas Gerais, Southeastern Brazil. The new species is diagnosed by the process of pygofer and the general form of aedeagus. Adult males, females, and also nymphs were found on pequi tree, suggesting that *Dikrella caryocar* n. sp. has its full life cycle in this plant.

1. Introduction

The genus *Dikrella* Oman (Dikraneurini) includes 40 species and occurs in the United States, Mexico, Costa Rica, Cuba, Puerto Rico, Panama, Ecuador, Colombia, Bolivia, and Brazil [1–6]. In Brazil there are records of *Dikrella fumida* (Osborn) from Santa Catarina, *D. albonasa* (McAtee) from Mato Grosso do Sul, *D. aculeata* Coelho & Nessimian, *D. reticulata* Coelho & Nessimian, and *D. spinifera* Coelho & Nessimian from Minas Gerais [1, 6–9]. Studying the relationships of insects with pequi tree or souari nut (*Caryocar brasiliense* Cambess., Caryocaraceae), a new species of *Dikrella* was found [10]. According to Leite et al. [11] the species is classified as constant, occurring throughout the year, and more abundant in summer and autumn. The species is found sucking seedlings with potential to become a pest in commercial crop of *C. brasiliense*.

2. Material and Methods

The study was developed in a savannah ecosystem (“Cerrado”) in Montes Claros municipality, north of Minas Gerais State, Brazil (43°55′7.3″W; 16°44′55.6″S; altitude 943 m a.s.l.). The climate and vegetation characteristics are considered in Leite et al. [10, 11].

To study the morphology of the genital apparatus it was necessary to remove the abdomen and dip it in a warmed solution of 10% KOH (modified from Oman [12]). The genitalia structures were sunk in glycerin jelly to make the illustrations [13]. The terminology was based on Young [14], except for the wings [15] and female genitalia [16, 17]. The type-specimens are deposited in the Coleção Entomológica Professor José Alfredo Pinheiro Dutra, Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro (DZRJ), Rio de Janeiro, RJ, Brazil.



FIGURE 1: *Dikrella caryocar* n. sp, male: habitus (latero dorsal).

3. Results and Discussion

Dikrella caryocar n. sp. (Figures 1–3). Total length 2.7–2.9 mm. General color light green (Figure 1). Crown longer medially than next to eyes; distinct suture until just beyond half the length of crown, marked with brown at base; small smoky brown spot on each side of median line, near anterior margin. Face with small brown spot near anterior margin, between midline and inner margin of each eye. Pronotum about twice wider than long, slightly longer than median length of crown; margin of laterobasal angles not exceeding width of head; anterior margin with three irregular dark spots; lateral margin with an elongated irregular light brown spot linked to a yellowish brown spot in central region on each side of median line; a dark brown macula near each lateral angle and a black spot at middle of posterior margin. Mesonotum brown with dark brown spot on each side of median line. Scutellum pale yellow with brown longitudinal band on each side of the median line; apex with black spot. Forewing (Figure 2(a)) translucent green with big yellow spots; oval spots finely outlined with brown in apical and subapical cells; small red spots concentrated near CuP and two larger, also red, in claval area; apex of CuP and end external SmR with small brown spot. Hind wing (Figure 2(c)) with vein CuA₂ originating from point slightly more basal than MP₂. Abdominal apodeme (Figure 2(d)) long, parallel margins and apex rounded, reaching fifth segment.

Male genitalia (Figures 2(e)–2(m)): subgenital plate rather broad and triangular in ventral view (Figure 2(e)), and long in lateral view (Figure 2(f)), with apex upturned and rounded, exceeding pygofer apex; outer margin with a median dark brown lobe, from this a fold (towards inner margin of preapical region) also marked with dark brown till half width of plate; four macrosetae in outer margin, one more basal and three most apical to lobe, continued by small and robust setae till apex; microsetae present throughout surface of apical curvature. Pygofer (Figure 2(g)) elongated with five robust setae in ventroapical region; process (Figure 2(h)) elongated, dorsal in origin, with median curvature forming two branches; basal branch extending to posterior margin till ventral curve, marked by a large lateroventral tooth; apical branch free, directed posteriorly, thinner, with three small teeth on apical region, apex acute. Style (Figures 2(i) and 2(j)) elongated, preapical region curved, apex acute; preapical lobe well developed, broadly rounded, with group of five setae. Connective “Y” shape (Figure 2(k)), main stem shorter than lateral arms. Aedeagus (Figures 2(l) and 2(m)) with atrial complex developed, stem robust and laterally compressed to

well-developed dorsal apodeme; tubular, slender, membranous dorsal extension (about 1/3 of stem size) coating gonoduct; pair of robust processes proceeding the main stem, with bases fused next base of membranous extension; processes apex thin and curved dorsally.

Female genitalia (Figure 3): posterior margin of seventh sternite (Figure 3(a)) with median globular prominence and each side folds forming an embossed “V” shape. Pygofer (Figure 3(b)) with nine macrosetae in ventral margin, three smaller macrosetae in posterior margin. Valvulae I (Figure 3(c)) with dorsal margin crenulated, curved towards ventral margin, apical region abruptly tapered, apex acute. Valvulae II (Figures 3(d) and 3(e)) with apical region conspicuously curved, apex narrow and rounded; right and left valvulae II asymmetrical; left valvulae (Figure 3(d)) smaller, with small rounded teeth in dorsal margin; right valvulae (Figure 3(e)) with strong teeth in dorsal margin decreasing in size towards apex. Valvulae III (Figure 3(f)) covered by short setae; three longer setae regularly spaced in ventral margin.

3.1. Studied Specimens. Holotype (male): Montes Claros, Minas Gerais State, Brazil (43°55'7.3"W; 16°44'55.6"S; altitude 943 m a.s.l.), 16/xi/2007, G.L.D. Leite leg. (DZRJ); paratypes (4 males, 10 females), same data of holotype (DZRJ).

3.2. Etymology. *Karuon*, Ancient Greek for “nut,” “kernel”; *kará*, Ancient Greek for “head,” referring to the generic epithet of pequi tree.

3.3. Comments. The color of the specimens (Figure 1) can be changed with time of conservation to a pale green or yellow. Brown spots on head and thorax may be more reddish or yellowish. No differences were found between male and female in body size. Fore wings show a variation in the studied specimens of *Dikrella caryocar* n. sp.; the base of apical cell 3 should be sessile or pedunculated (Figures 2(a) and 2(b)). This variation was found in males and females.

In male specimens the process of pygofer is robust and has a characteristic shape (Figure 2(g)) differentiated from its congeners. Aedeagus (Figures 2(l) and 2(m)) is quite unique in general shape and not similar to any other species of *Dikrella*.

In lateral view the subgenital plate (Figure 2(f)) of males of *D. caryocar* n. sp. resembles that of *D. angustella* Ruppel and DeLong and *D. venella* Ruppel and DeLong [3] by its elongated shape and rounded curved apices. The presence of a rounded lobe can differentiate the new species from

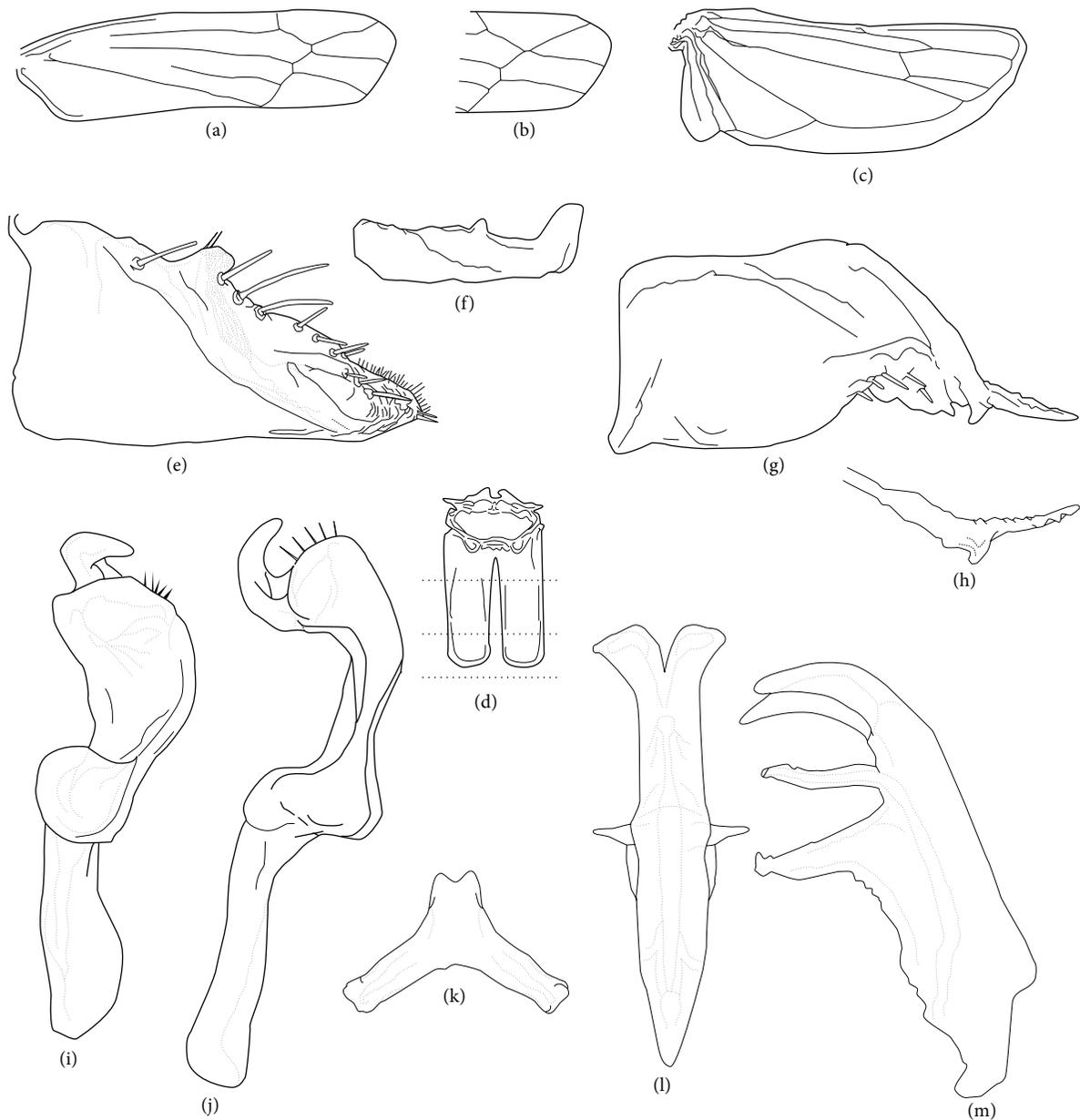


FIGURE 2: *Dikrella caryocar* n. sp., male: (a) fore wing; (b) fore wing showing a variation in base of third apical cell; (c) hind wing; (d) abdominal apodeme; (e) subgenital plate (ventrolateral); (f) subgenital plate (lateral); (g) pygofer (lateral); (h) process of pygofer (dorsoposterior); (i) style (ventral); (j) style (lateral); (k) connective (ventral); (l) aedeagus (ventroposterior); and (m) aedeagus (lateral).

D. angustella and *D. venella*. Also in subgenital plate the lobe in outer margin should superficially resembles structures present in *D. venella* Ruppel and DeLong, *D. bimaculata* Ruppel and DeLong, *D. mella* Ruppel and DeLong, and *D. nigrinota* Ruppel and DeLong [3], but in those species the prominence is in shape of one or two spines.

Adult males and females were found, as well as different nymphal instars, demonstrating that pequi tree is an ideal host for development and maintenance of the species, further suggesting that *D. caryocar* n. sp. has its full cycle in this plant.

Disclosure

The species was recorded in ZooBank under the number urn:lsid:zoobank.org:pub:0A2D5238-8998-48E7-A884-34DB31281385. The new names included in this paper are available under the International Code of Zoological Nomenclature. This work and the nomenclatural acts it contains have been registered in ZooBank. ZooBank Life Science Identifier (LSID) for this publication is urn:lsid:zoobank.org:pub:XXXXXXX. The LSID registration and any associated information can be viewed in a web browser by adding the LSID to the portal “<http://zoobank.org/>.”



FIGURE 3: *Dikrella caryocar* n. sp. (female genitalia): (a) seventh sternite (ventral); (b) pygofer (lateral); (c) valvulae I; (d) valvulae II (left); (e) valvulae II (right); (f) valvulae III.

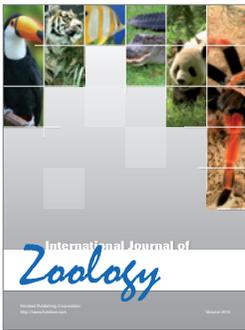
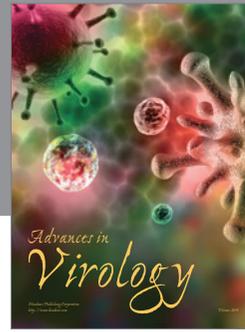
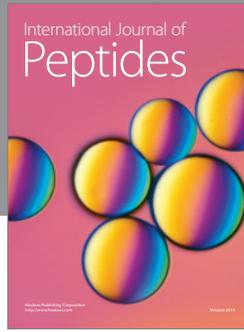
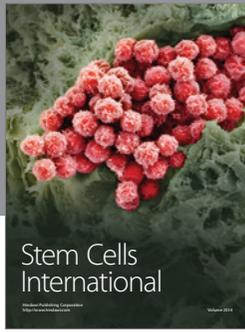
Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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