



Revision of the genus *Alkindus* Distant (Hemiptera: Heteroptera: Thyreocoridae: Corimelaeninae)

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Abstract

The neotropical genus *Alkindus* Distant is revised based on morphological characters (general morphology, including the external scent efferent system and leg structures, and external genital morphology). The male of *Alkindus crassicosta* Horvath is here described for the first time. Illustrations, an adapted key to species, and a compiled list of plants associated with both species are provided. Distribution records are expanded to include Guatemala and Brazil (Roraima) for *Alkindus atratus* Distant and Brazil (Santa Catarina) for *A. crassicosta*.

Key words: taxonomy, morphology, genitalia, Neotropical region, scanning electron microscopy

Introduction

The genus *Alkindus* was described by Distant (1889) for a single species, *Alkindus atratus*, based on a male and a female from Panama. He considered *Alkindus* allied to *Thyreocoris* Schrank at that time considered a senior synonym of the Neotropical genera *Corimelaena* White and *Galgupha* Amyot & Serville. According to Distant (1889), *Alkindus* and *Thyreocoris* share characters of general structure, but differ in the shape and size of the head. Horvath (1919) described a second species, *Alkindus crassicosta*, based on a female from Brazil (São Paulo).

Distant (1889) included *Alkindus* in the family Pentatomidae, subfamily Cydninae. Lethierry & Severin (1893) placed it within the subfamily Corimelaeninae (Pentatomidae) removing it from the subfamily Cydninae. Horvath (1919) treated the group as the subfamily Thyreocorinae of the Cydnidae and recognized two tribes: Canoparia and Thyreocoraria, including *Alkindus* among the latter. McAtee and Malloch (1928) excluded the Canoparia from Thyreocorinae, and the same authors (McAtee & Malloch 1933), in their broad revision of the group, recognize *Alkindus* within the Thyreocorinae, a subfamily of the Pentatomidae. Dolling (1981) recognized Thyreocorinae and Corimelaeninae as subfamilies of Cydnidae; *Alkindus* was included in Corimelaeninae. Lis (2006) considered both Thyreocorinae and Corimelaeninae as subfamilies of Thyreocoridae.

McAtee and Malloch (1933) redescribed the genus and both species, and included a key to separate the species of *Alkindus*. In the same paper, distribution records of *A. atratus* were expanded to Mexico, Nicaragua, Aruba, Curaçao, Venezuela, Costa Rica, and Colombia. Becker and Grazia-Vieira (1971) identified 125 specimens (60 males and 65 females) of *A. atratus* from Venezuela. Maes (1994) included this species in the catalog of the Pentatomoidea from Nicaragua, recording it also from Honduras and El Salvador. Grazia *et al.* (1999) and Grazia and Schwertner (2011) included *A. crassicosta* in the checklist of the Pentatomoidea from the state of São Paulo, Brazil, based on literature data. Klein *et al.* (2013) recently recorded *A. crassicosta* from the state of Rio Grande do Sul, Brazil. Biological data are not available, except for records of plants associated with *Alkindus* spp. (Table 1).

The status (family vs. subfamily) and the name of the group (Thyreocoridae vs. Corimelaenidae) have been intensely disputed (e.g. Leston 1953; Rolston & McDonald 1979; Stys & Davidová 1979; Dolling 1981; Ahmad & Moizuddin 1982; Froeschner 1988), but its composition has remained almost unchanged (McAtee & Malloch

female and male, respectively; anterior margin of sternite VII broadly rounded in female and narrowly rounded to slightly angulate in male, posterior margin broadly rounded in male and angulate and ventrally projected at middle in female. Lateral bristles absent. Based solely on the absence of such bristles, the specimens of *A. crassicosta* would key to the genus *Pericrepis*, because McAtee & Malloch (1933) mistakenly consider the presence of lateral bristles as characteristic of the genus *Alkindus*.

Male genitalia (Figs. 15, 16, 31). Ventral exposure of pygophore shorter than in *A. atratus*, about 0.2 times the length of urosternite VII, punctate, with median transverse striations. Ventral rim broadly concave, almost subrectilinear at median 3/5, not covering the proctiger.

Measurements (n=5). Total length 4.1 (3.0–4.6) ± 0.6; head length 0.8 (0.8–0.9) ± 0.1, width 1.9 (1.8–1.9) ± 0.0; eye width 0.3 ± 0.0; interocular distance 1.3 (1.3–1.4) ± 0.0; anteocular length 0.3 (0.3–0.4) ± 0.0; length of antennal segments: I—0.4 ± 0.0; II—0.1 (0.1–0.2) ± 0.0; III—0.2 (0.2–0.3) ± 0.0; IV—0.3 (0.3–0.4) ± 0.0; V—0.4 (0.4–0.5) ± 0.0; pronotal length 1.4 (1.3–1.4) ± 0.0, width 2.9 (2.8–3.0) ± 0.1; scutellar length 2.7 (2.5–3.0) ± 0.2, width 2.3 (2.3–2.4) ± 0.0; abdominal width 2.7 (2.6–2.9) ± 0.1; corium length 1.9 (1.7–2.2) ± 0.2; rostrum length 1.5 (1.5–1.7) ± 0.1.

Female genitalia (Figs. 11, 12). Gonocoxites 8 more elongate than in *A. atratus*; mesial margins strongly projected ventrally, especially at anterior and median third, projection evanescent posteriorly; mesial margins about 1.1 times the length of abdominal sternite VII at midline and 1.4 times the length of posterior margins of gonocoxites 8.

Measurements (n=2). Total length 4.8 (4.7–4.8) ± 0.1; head length 0.9 (0.9–1.0) ± 0.1, width 2.0 ± 0.0; eye width 0.3 ± 0.0; interocular distance 1.5 ± 0.0; anteocular length 0.4 ± 0.0; length of antennal segments: I—0.5 ± 0.0; II—0.2 ± 0.0; III—0.3 ± 0.0; IV—0.4; V—0.5; pronotal length 1.5 (1.4–1.5) ± 0.1, width 3.1 ± 0.0; scutellar length 3.0 (2.9–3.0) ± 0.1, width 2.6 ± 0.0; abdominal width 2.9 (2.9–3.0) ± 0.1; corium length 2.2 (2.2–2.3) ± 0.0; rostrum length 1.7 (1.6–1.8) ± 0.1.

Distribution. Brazil (States of São Paulo, Santa Catarina, and Rio Grande do Sul). Provinces 51 and 53, according to Morrone (2006) (Fig. 32).

Type material (photographs examined). Holotype ♀. Labels: 1) Brasília, S. Paulo; 2) *crassicosta* det. Horvath (HNHM).

Material examined. BRAZIL, **Santa Catarina:** Maracajá, 1 ♂, 21-X-2005, Bertolin, T. col. (UFRG); **Rio Grande do Sul:** Triunfo, 1 ♂, 20/X/1977, H. A. Gastal leg. (MCNZ); Eldorado do Sul, 3 ♂, 12.05.2010, Joana Klein col. (UFRG); Barra do Quaraí, Fazenda Espinilho, 2 ♀, 1ª varredura, campo, 10/I/2004, Bunde; Schwertner cols. (UFRG).

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