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0910

A new species of *Brachycerocoris* Costa  
(Hemiptera: Heteroptera: Pentatomidae: Podopinae)  
from the Philippines

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A new species of *Brachycerocoris* Costa  
(Hemiptera: Heteroptera: Pentatomidae: Podopinae)  
from the Philippines

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**Abstract.** A new species, *Brachycerocoris woodruffi* Eger, is described from Mindanao Island, Philippines. The new species is described, illustrated and compared to the two other species of *Brachycerocoris* Costa occurring in the Philippines, *B. dromedarius* (Vollenhoven) and *B. davidii* Roca-Cusachs and Salini.

**Key words.** Taxonomy, *Brachycerocoris woodruffi*, Oriental region, new taxon, *Brachycerocoris camelus*, *Brachycerocoris dromedarius*, *Brachycerocoris davidii*, *Brachycerocoris petrii*.

**ZooBank registration.** urn:lsid:zoobank.org:pub:5C7A885F-E0BA-414E-90AA-954B909CF30B

## Introduction

*Brachycerocoris* Costa belongs to the *Brachycerocoris* group of the Podopinae (Rider et al. 2018) and is represented in Africa by three species, *B. afer* Stål 1876, *B. congoanus* Schouteden 1905, and *B. patrizii* Mancini 1939. The genus has historically contained just two species in the Oriental region, *B. camelus* Costa 1863, described from China, and *B. dromedarius* (Vollenhoven 1863), described from Tondano, Sulawesi. Distant (1902) added Sri Lanka to the distribution of *B. camelus* and provided a description and illustration. Subsequent authors reported *B. camelus* from the Indian states of Karnataka and Tamil Nadu (Ramachandra Rao 1920; Chatterjee 1934; Chandra 1953; Schaefer 1997), while Rider and Zheng (2005) added to the known distribution of *B. camelus* in China. Schaefer et al. (1996) provided descriptions and illustrations of the two Oriental species known at that time, adding Mindoro, Philippines to the distribution of *B. dromedarius*. Salini and Roca-Cusachs (2021) recently reviewed the genus in the Oriental region and described two new species, *B. davidii* Roca-Cusachs and Salini from Mindanao, Philippines and *B. petrii* Salini and Roca-Cusachs from Karnataka State, India. They also reported *B. dromedarius* from Luzon, Philippines and Sumba Island, Indonesia and suggested that the records of *B. camelus* from India and Sri Lanka may actually refer to *B. petrii*.

While examining Philippine material in the University of Georgia Collection of Arthropods in Athens, GA, USA, I encountered several specimens of *Brachycerocoris* from the Philippines, including a single specimen of an apparently undescribed species with a distinctive pygophore. This species is here described, illustrated, and compared to other Philippine species of the genus.

## Materials and Methods

Type repositories are as follows: University of Georgia Collection of Arthropods, Athens, GA, USA (UGCA), Florida State Collection of Arthropods, Gainesville, FL, USA (FSCA), and the collection of the senior author, Tampa, FL, USA (JEEC). Label data are transcribed as they appear on the label. If there was more than one label, label position is indicated by 1), 2), etc., with 1) being closest to the body. The internal genitalia of the single male holotype were not dissected.

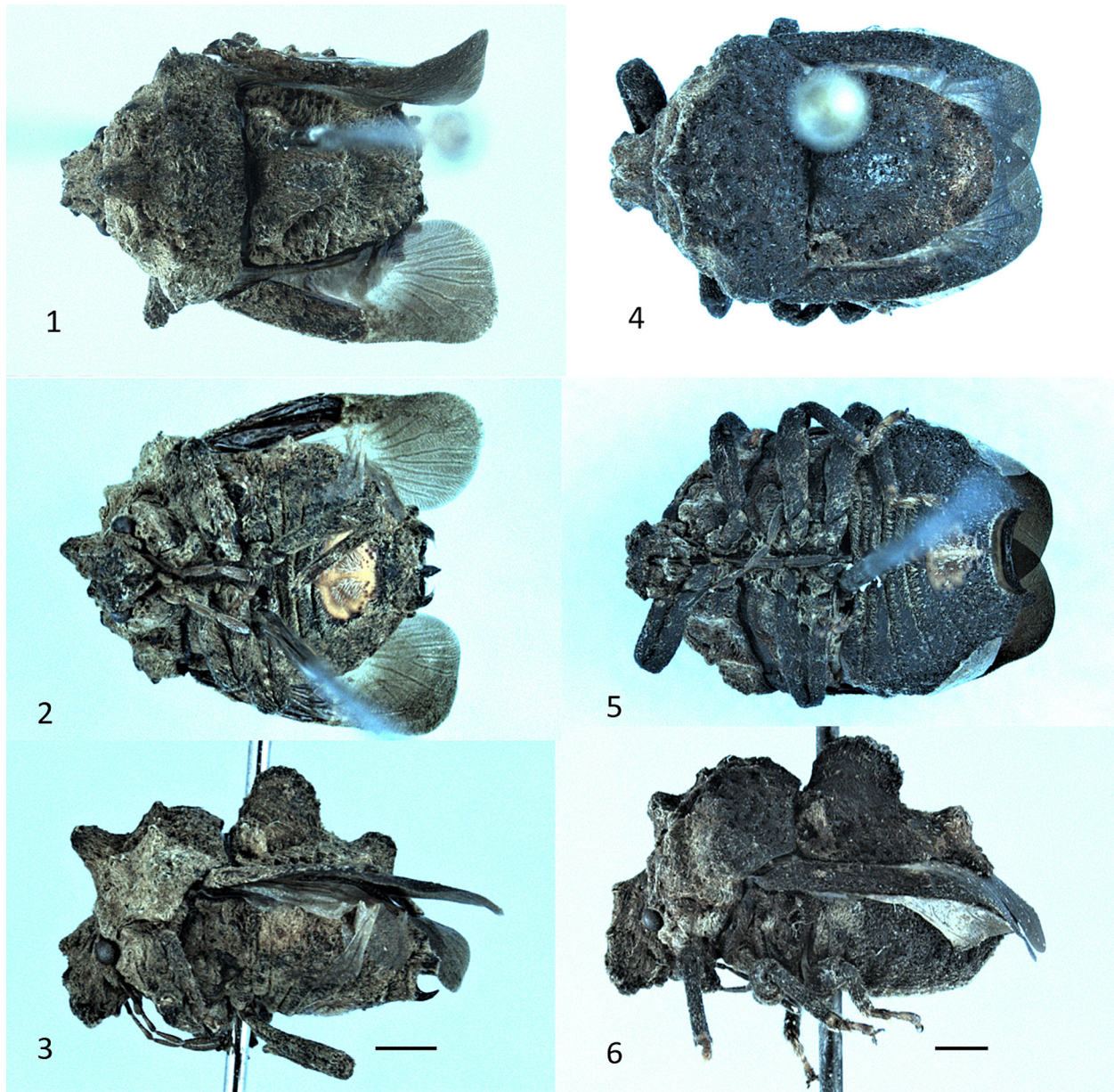
Photographs were taken with a Leica DMC6200 digital camera attached to a Leica Z16 APO Macroscope and stacked using Leica software. All measurements are given in mm. Terminology follows Salini and Roca-Cusachs (2021).

***Brachycerocoris woodruffi* Eger, new species**

(Fig. 1-3, 7-9)

**Type material.** **Holotype** ♂, 1) PHILIPPINE IS., Mindanao, Agusan del Norte Province, Esperanza, April 2016, Ismael Lumawig. 2) ex: Cecil L. Smith collection, donated to UGCA Museum (deposited in FSCA). Holotype is missing the right paramere and the left metathoracic leg is glued to an insect point immediately below the specimen.

**Diagnosis.** Small (<6.00 long); tubercles on head, pronotum and scutellum pronounced, particularly the largest pronotal tubercle; mesial tubercle on scutellum slightly shorter than wide; posterior face of pygophore with large cusp at each dorsolateral angle and large acute spine present medially on ventral margin.



**Figures 1–6.** *Brachycerocoris* spp. habitus. 1–3) *Brachycerocoris woodruffi*, holotype. 4–6) *Brachycerocoris dromedarius*, male, pygophore removed. 1, 4) Dorsal view. 2, 5) Ventral view. 4, 6) Lateral view. Dimensional lines equal 1.0 mm.

**Description.** Relatively small (5.80 long) (Fig. 1–3); most of body covered with dense brown to gold adpressed setae, resulting in dark to light brown color above and below; integument below setae generally dark brown to black when exposed, but usually hidden by thick covering of setae; most punctation not clearly visible due to dense covering of setae; following areas generally lighter in color than the rest of the body: broad area anteriorly and laterally on pronotum, area around fovea in basal angles of scutellum, abdominal ventrites laterally and large area mesially on abdominal ventrites V–VII.

Head 1.65 long, 1.60 wide across eyes, 1.20 wide before eyes, interocular distance 1.20, interocellar distance 0.60; head strongly declivent; lateral margins of mandibular plates concave, each curving outward subapically into well-developed tooth, apices of mandibular plates somewhat declivent before these teeth and converging to cover apex of clypeus; median tubercles on mandibular plates well developed; clypeus with small elevated longitudinal ridge basally; disc of head with large well-developed tubercle midway between eyes; thin elevated ridge present above ocelli; thin, black submarginal area devoid of setae running from just before each ocellus to point corresponding to about middle of eye. Bucculae lobate posteriorly, completely enclosing first rostral segment; rostrum reaching to or just beyond metacoxae, dark brown with light brown areas between segments, sparsely setose, length of segments II–IV: 0.65, 0.40, 0.40. First antennal segment dark brown, thin, thicker mesially, curving inward, remaining segments lighter brown, straight; segments II and III cylindrical with sparse, pale, short setae, segments IV and V somewhat flattened, densely setose; length of segments I–V: 0.50, 0.20, 0.30, 0.45, 0.65.

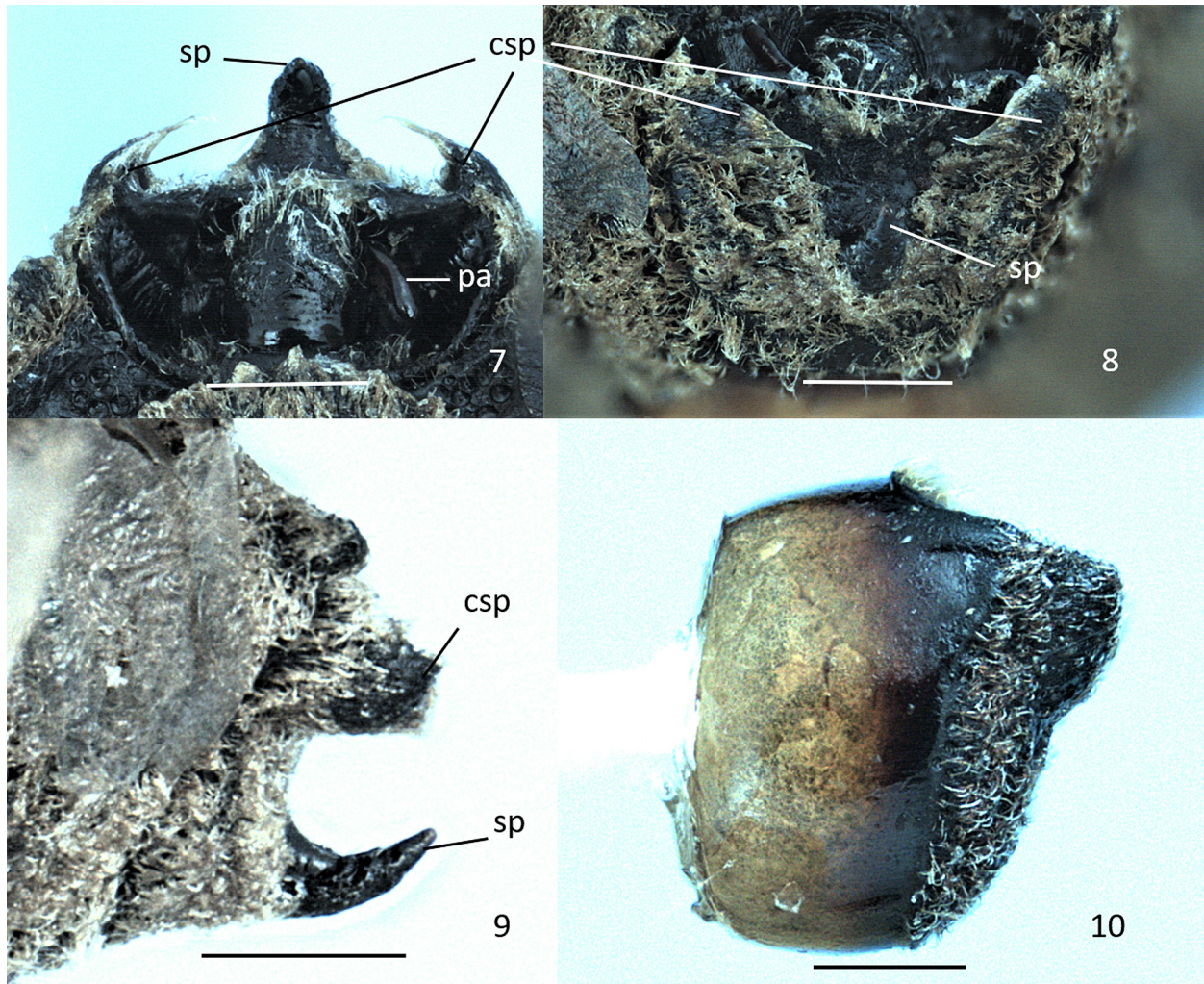
Pronotum 2.40 long, 4.00 wide; anterior margin concave; anterolateral margins sinuous, broadly convex mesially; humeral angles developed into short, acute spines; posterolateral margins broadly convex; posterior margin sinuous, shallowly concave laterally, convex mesially. Cicatrices tuberculate, outlined by thin black band devoid of setae; additional low tubercle present postero-laterad of cicatrices. Anterior half of pronotum with large mesial tubercle about 0.60 high, this connected to anterior and posterior margins of pronotum by low, thin ridge. Posterior portion of pronotum traversed between humeri by row of 6 tubercles, one above each humeral spine, and two about evenly spaced between humeri and meson on either side, middle two largest, about 0.20 high. Scutellum 3.20 long, 2.80 wide at base, roughly triangular but with apex broadly rounded; medial triangular area present on anterior margin contains one globose tubercle at each anterolateral corner and one large laterally compressed tubercle at posterior margin of triangular area, this tubercle about 0.90 high and 1.10 wide at base, provided with arcuate crest divided medially by longitudinal impression, each side of crest denticulate; moderately large tubercle present medially about  $\frac{1}{3}$  of scutellar length from apex. Coria somewhat quadrate in shape, elongate; membrane darker distally than proximally, veins mostly parallel, a few with single branches. Thoracic pleura appearing somewhat mottled brown in color, depending on density of setae; metathoracic ostiole small, thin and elongate; ostiolar peritreme elevated, wrinkled basally, lighter in color and somewhat circular apically; evaporative area small, confined to metapleuron, devoid of setae and wrinkled. Thoracic sternites broadly and shallowly sulcate, provided with scattered adpressed brown setae.

Connexivum black, coarsely punctured, lacking setae. Abdominal ventrites III–VII each provided with moderately produced pointed tubercle at each posterolateral angle; spiracles located in small tubercles; trichobothria paired, located in small glabrous area; ventrites II–III lighter colored laterally than remainder of segments. Large, round, mostly glabrous, stramineous area present mesially on ventrites V–VII, continued by small glabrous spots mesially on ventrites III–IV; this area provided with setose glandular patches on each side of ventrites VI–VII, these surrounded by and separated medially by pale glabrous cuticle; sparse, large, brown, setose punctation present posteriorly on ventrite VII in stramineous area.

Exposed portion of pygophore semicircular in dorsal view (Fig. 7); posterior face provided with a large blunt cusp (Fig. 7–9, csp) with dense, inwardly directed tuft of setae at each dorsolateral angle; large, acute spine (Fig. 7–9, sp) present mesially on ventral surface, curving dorsad; cusps and spine connected by black area devoid of setae which forms a roughly triangular area (Fig. 8). Dorsal rim of genital cup thin, elongate, not extending over proctiger; lateral walls of genital cup ridged; proctiger simple, with low transverse ridges and densely setose posteriorly; parameres (Fig. 7, pa) only partially visible, but crown appearing cylindrical, elongate, blunt apically.

**Distribution.** Known only from the holotype collected on the island of Mindanao in the Philippines.

**Etymology.** This species is named in memory of Robert Woodruff, a friend and colleague, in recognition of his efforts supporting the collection at FSCA and his numerous contributions to insect systematics in general.



**Figures 7–10.** *Brachycerocoris* spp. 7–9) *Brachycerocoris woodruffi*, holotype. 7) Pygophore, dorsal view. 8) Pygophore, caudal view. 9) Pygophore, lateral view. 10) *Brachycerocoris dromedarius* pygophore, lateral view. Abbreviations: csp = cusps at dorsolateral angles of pygophore, pa = paramere, sp = spine on posterior face of pygophore. Dimensional lines = 0.5 mm.

**Biology.** Unknown for this species, but plants associated with *B. camelus* are *Lantana camara* L. (Verbenaceae) (Ramachandra Rao 1920), *Canthium didymium* Roxb. (Rubiaceae), *Pterolobium hexapetalum* (Roth) Santapau and Wagh (as *P. indicum* A.Rich.) (Fabaceae), *Santalum album* L. (Santalaceae), and *Ziziphus oenoplia* (L.) Mill. (Rhamnaceae) (Chatterjee 1934) and *Vitex negundo* L. (as *V. incisa* Lam.) (Lamiaceae) (Hoffmann 1935). The types of *B. petrii* were collected from *Vitex trifolia* L. (Lamiaceae) (Salini and Roca-Cusachs 2021). These or related plants might serve as hosts for *B. woodruffi*.

**Comments.** The key to Oriental species of *Brachycerocoris* provided by Salini and Roca-Cusachs (2021) can be modified to allow recognition of *B. woodruffi* by adding the following couplet:

- 2a. Tubercles on the head, pronotum, and scutellum more pronounced, particularly the largest pronotal tubercle; pygophore bearing a large, acute spine medially on the ventral surface (Fig. 9) . . . . . *B. woodruffi* Eger, new species  
 — Tubercles on the head, pronotum, and scutellum considerably less pronounced; pygophore lacking a large, acute spine medially on the ventral surface (Fig. 10) . . . . . 3

The medial spine and cusps at the dorsolateral angles on the posterior face of the pygophore are distinctive and will readily separate males of *B. woodruffi* from all other Oriental species of *Brachycerocoris*. *Brachycerocoris woodruffi* is much smaller (5.80 long) than either *B. dromedarius* or *B. davidii*; *B. dromedarius* is 6.00 long according to Schaefer et al. (1996) but two specimens I have seen from the Philippines (see notes below) are 8.10 (male) and 7.40 (female) long, much larger than *B. woodruffi*. Salini and Roca-Cusachs (2021) give 8.50 as the length of *B. davidii*. In addition to the external genitalia, *B. woodruffi* differs from *B. dromedarius* by having the tubercles on the head, pronotum and scutellum a little more pronounced, particularly the largest pronotal tubercle (Fig. 4–6). It is possible that *B. woodruffi* is simply the male of *B. davidii*, but the large mesial tubercle on the scutellum looks nothing like that of *B. davidii*, being a little shorter than wide ( $2 \times$  longer than wide in *B. davidii*), and the large mesial tubercle on the pronotum and the posterior tubercle on the scutellum both appear to be more developed in *B. woodruffi* than in *B. davidii*.

**Additional information on *B. dromedarius*** (Fig. 4–6, 10). I have seen two specimens of *B. dromedarius* from the Philippines. The label data are as follows: 1♂ 1) PHILIPPINE IS: Eastern Luzon, Aurora Prov., Sierra Madre, Dingalan, July 2017, I. Lumawig. 2) ex: Cecil L. Smith collection, donated to UGCA Museum (UGCA); 1♀ PHILIPPINE IS: E. Luzon, Aurora Prov., Dingalan, Sierra Madre, Mar. 2019, Ismael Lumawig (JEEC). These label data are similar to those given by Salini and Roca-Cusachs (2021) for this species.

Measurements for these two specimens of *B. dromedarius* are as follows (male/female): body length 8.10/7.40; head length 2.30/2.20; head width across eyes 2.20/2.00; interocular distance 1.60/1.40; interocellar distance 0.80/0.70; length of antennal segments I–V: 0.60/0.70; 0.25/0.25; 0.50/0.45; 0.70/0.60; 0.95/--; length of rostral segments II–IV 1.10/1.20; 0.60/0.80; 1.20/0.95; pronotum length 3.40/3.00; pronotum width 5.30/4.70; scutellum length 4.00/3.60; scutellum width at base 3.90/3.40.

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