

**REDESCRIPTION OF *BRACHYAULAX CYANEOVITTA*
(WALKER) (HETEROPTERA: SCUTELLERIDAE)**

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ABSTRACT: *Brachyaulax cyaneovitta* (Scutelleridae: Scutellerinae) was described from China by Walker (1867), and this genus is known so far from five species. It is distinguished by its small (almost 0.5x as *Scutellera* spp.) odoriferous orifice and abdominal furrow reaching only up to second abdominal segment. The present study describes the female of *B. cyaneovitta* along with its genitalia and the morphometrics of the essential taxonomic characters. *B. cyaneovitta* can be distinguished by head, pronotum, metathoracic scent gland, abdomen etc., which are illustrated herein.

KEY WORDS: *Brachyaulax cyaneovitta*, Scutelleridae, redescription, female genitalia.

Brachyaulax (Heteroptera: Scutelleridae) was first described by Stal (1871) with its type species as *B. rufomaculata* from Philippines. This genus is closely related to *Scutellera* Lamarck but can be distinguished in its small sized (almost 0.5x as that of *Scutellera* spp.) odoriferous orifice and ventral abdominal furrow reaching only upto second abdominal segment. This genus presently has five species viz., *cyaneovitta* (Walker), *kukenthali* Breddin, *majuscula* Distant, *oblonga* (Westwood) and *rufomaculata* Stal among which only *B. cyaneovitta* and *B. oblonga* are recorded from India. These are very similar, difficult to distinguish leading to confusions in their species identities. *B. cyaneovitta* was first described from China by Walker (1867) as *Scutellera cyaneovitta*; in 1899, Distant synonymized it with *B. oblonga* (described from Java). Distant (1902) in his monograph on the Hemiptera of erstwhile British India including Ceylon and Burma, recognized *B. oblonga* as the lone widely distributed species in South and Southeast Asia, and recorded its occurrence from several localities in India, continental Southeast Asia and the Malay Archipelago. Esaki (1926) considered the synonymy proposed by Distant (1899) as erroneous; also Hoffman (1935a,b) treated *B. cyaneovitta* as a distinct species. Finally, Tsai and Redei (2010) after examining a syntype of *B. oblonga*, and holotype of *B. cyaneovitta* concluded that these are distinct.

Despite these conclusions, the distinction of *B. cyaneovitta* and its description remains inadequate, especially in terms of morphometrics of essential taxonomic characters and female genitalia. Hence an attempt was made to fulfill this gap and define the species in its entirety to enable its authentic identification and the details are presented herein.

MATERIALS AND METHODS

Material for the study is from the National Pusa Collection (NPC), Division of Entomology, IARI, New Delhi. The external morphology was studied and line diagrams prepared with Nikon SMZ 10 stereozoom microscope, fitted with an ocular and stage micrometer. The genitalia were studied after treatment of abdomen in 10% KOH for 30 min to soften it, opening the same with fine needle on the lateral sides, extracting the genitalic structure, and boiling in 10% KOH for 5 min at 100° C. These genitalic structures were studied under Nikon MZ 10 and Leica MZ 16 A stereozoom microscopes. The terminology is after Pendergrast (1957), Scudder (1959) and Mc Donald (1966). The measurements are in mm, head breadth measured across eyes, and that of scutellum and abdomen at base.

Abbreviation used in figures: Dsd: Distal spermathecal duct; Dsf: Distal flange; Evp: Evaporatorium; Ey: Eye; Fr: Furrow; Gnx: Gonocoxa; Oc: Ocellus; Ost: Ostiole; Pr: Peritreme; Prf: Proximal flange; Prt: Paratergite; Psd: Proximal spermathecal duct; Sd: Spermathecal duct; Spb: Spermathecal bulb; scales of magnifications as in illustrations, each scale shown equals to 1.0 mm.

RESULTS

Brachyaulax cyaneovitta (Walker, 1867)

(Fig. 1)

Scutellera cyaneovitta Walker, 1867: 16; Distant 1899:35

Tectocoris oblonga Westwood, 1837: Distant 1902: 52

Scutellera amethystine Germar, 1839: Ho, 2003: 195

Redescription

General Colour (Fig. 1) greenish or violaceous blue with black spots dorsally; antenna, sternum, femora, tibia and all tarsal segments black; labium, coxa and trochanter brown, lateral margins of pronotum, lateral margins and a central basal patch to the ventral abdomen irregularly reddish ochraceous.

Head (Fig. 2A) declivent, length (3.5) and breadth (3.7) subequal, lateral margins sinuate, tylus surpasses jugal lobes, preocular region 2.2x as longer post ocular; interocellar distance 2.1x to interocular while ocellus placed 0.8 apart from eye; a black spot from apex to base in the central lobe and a spot around each eye present, and eyes protruding laterally. **Antennae** (Fig. 2B) five segmented, attached ventrally, near to eyes, first segment (1.0) never reach beyond apex of the head and it is subequal to third (1.05), second smallest amongst all and also less than 0.5x as the first; fourth 1.2x as third while fifth longest and almost 3.5x as long as second and total length 5.3. **Labium** (Fig. 2C) four segmented, extends upto second abdominal segment, first smallest (0.9), second largest (1.95) and almost 2.2x to previous one, third and fourth measure 1.05 and 1.25, respectively, and total length 5.15.

Thorax with pronotum (Fig. 2D) having its anterior margin straight, breadth across anterior angles subequal to that at middle (3.8) while that at posterior angles 1.53x as that at the middle, and its anterior angles subquadrate while posterior ones obtuse. Surface before discal area depressed, large and deep punctures at anterior margin and in depressed area, six black spots arranged in two transverse series, the posterior one largest and small hairs present near to

marginal area laterally. **Scutellum** (Fig. 2E) covers whole of the abdomen, 1.55x long as breadth at base; ten spots on the surface, three basal, middle one linear and elongated, two before middle, sometimes attached to the lateral margins and sometimes connected, two small and lateral, sometimes connected with the preceding, two a little before apex, sometimes connected and one apical with apex rounded. **Metathoracic scent gland** (Fig. 2F) orifice spherical, peritreme transverse, slightly curved medially, grooved throughout the length, evaporatorial surface sulcated or wrinkled, and widely extending to mesopleuron. Anterior margin of prosternum concave medially, and with a deep groove resting labium. **Legs** (Fig. 2H, 2I and 2J) have no taxonomic information, its measurements of length of fore, middle and hind femora 2.1, 2.8 and 3.2, respectively, while that of fore, middle and hind tibia 2.5, 2.8 and 3.6, respectively, tarsi with three segments, second smallest, first and third subequal and almost 2x as long the second.

Abdomen (Fig. 2G) 1.25x as long as broad, median furrow upto second segment to hold the labium in resting condition, and with a greenish or bluish-black subquadrate spot in each segment more towards lateral area.

Female genitalia (Fig. 2K and 2L) with ovipositor having eighth paratergite triangular and of moderate size, its postero-lateral angle projecting posteriorly, ninth small and lobe like, first gonocaxa large, its posterior margin medially sinuted, and bear small hairs on its posterior margin. **Spermathecal** bulb elongate with apical end rounded, proximal and distal flanges vasiform, pump region short, distal duct 0.5x as thick as proximal, its dilation large and balloon shaped.

Male genitalia already described by Kumar (1964).

Material examined: INDIA: South India, Valparai, 1♀, 5.vi.1998, G. Ravindra coll.

Distribution: India (Assam), Myanmar.

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Figure 1. *Brachyaulax cyaneovitta* (Walker, 1867)

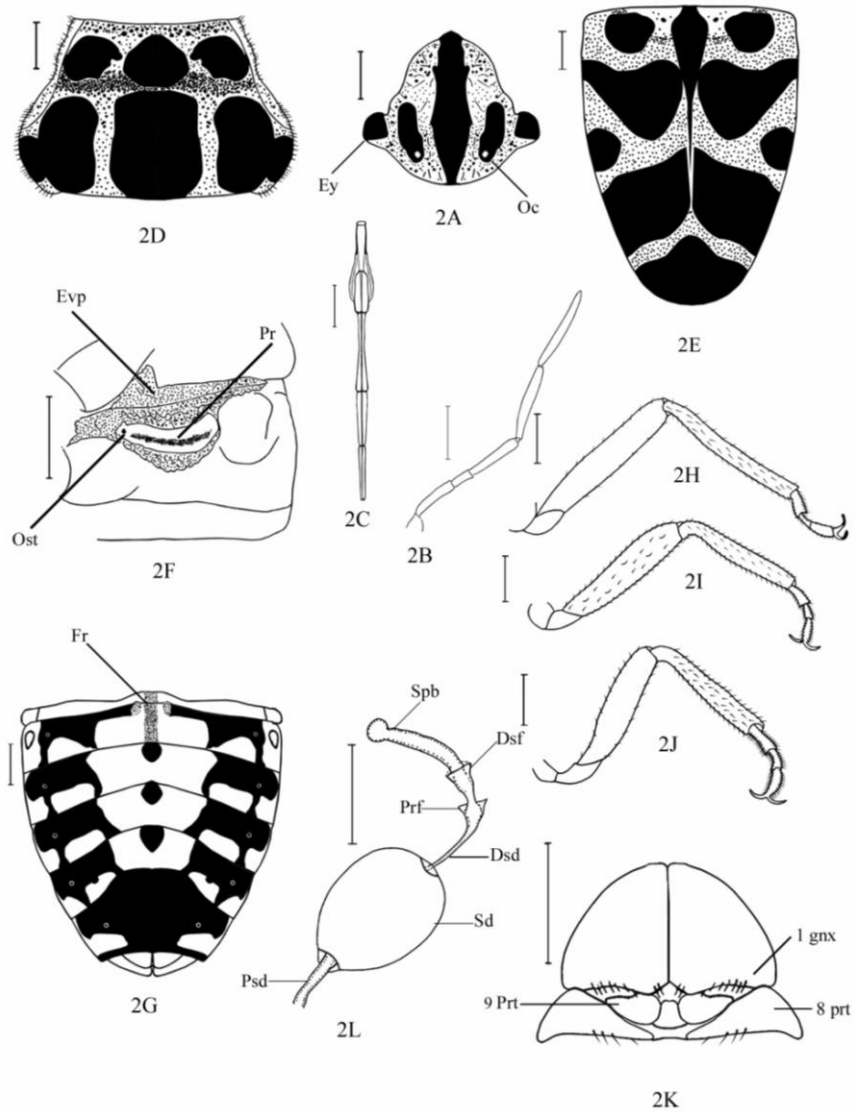


Figure 2A-2L: 2A. Head, 2B. Antenna, 2C. Labium, 2D. Pronotum, 2E. Scutellum, 2F. Metathoracic scent gland, 2G. Hind leg, 2H. Middle leg, 2I. Fore leg, 2J. Abdomen ventral, 2K. Ovipositor, 2L. Spermatheca.