

***Canopyana vateriae* gen. nov. and sp. nov.—A leafhopper breeding on *Vateria indica* and a new record of *Bhatia distanti* (Hemiptera: Cicadellidae: Selenocephalinae) from south India**

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Abstract

Canopyana **gen. nov.** with *Canopyana vateriae* **sp. nov.** as type species is described and illustrated. The new species was collected on *Vateria indica* L. (Dipterocarpaceae) while canopy was being sampled in Karnataka. The new genus is similar to *Kutara* Distant but differs in differently placed antennal bases, shape of the head and the male genitalia. *Bhatia distanti* Zhang and Webb previously known only from Sri Lanka is recorded for the first time from Western Ghats of India.

Key words: Cicadellidae, Selenocephalinae, Canopy sampling, *Canopyana* gen. nov.

Introduction

The subfamily Selenocephalinae is one of the smaller subfamilies of leafhoppers (Cicadellidae), containing around 60 genera and 300 species in the Old World (Zhang and Webb, 1996; Viraktamath, 1998). They breed on trees, shrubs and herbs. Zhang and Webb (1996) recognized three tribes in the subfamily Selenocephalini, Paraboloponini and Drabescini; and they “found no single diagnostic character (which is not present in some other subfamily) to define” the Selenocephalinae. Dietrich (2005) considered Paraboloponinae and Selenocephalinae as synonyms of Deltocephalinae along with other subfamilies recognized by Oman *et al.* (1990) as distinct subfamilies: namely, Eupelicinae, Koebeliinae and Penthimiine. However, in the present study, Paraboloponini is considered to be a tribe of the subfamily Selenocephalinae following Zhang & Webb (1996).

Viraktamath (1998) revised the tribe Paraboloponini for the Indian subcontinent and recognized 13 genera and 37 species. During recent field studies in Western Ghats, two

species of Paraboloponini were collected. One of them was *Bhatia distanti* Zhang and Webb and the other a new species belonging to a new genus, which are described here. A series of specimens of the new species was collected during canopy sampling of the tree, *Vateria indica* L. (Dipterocarpaceae) by one of the authors (YBS). The details of the methods of canopy sampling and the locality have been described in Srinivasa *et al.* (2004).

The types of the new taxa will be deposited in the University of Agricultural Sciences, Bangalore (UASB), The Natural History Museum, London (BMNH), US National Museum of Natural History, USA (USNM), National Pusa Collection, Indian Agricultural Research Institute, New Delhi (NPC), and the Zoological Survey of India, Kolkata, India (ZSI).

Canopyana gen. nov.

Type species: *Canopyana vateriae* sp. nov.

Small (4.4–5.5 mm long), yellowish brown leafhoppers with brown spots on head and thorax.

Head including eyes wider than pronotum, anterior margin faintly rimmed and transversely striated. Ocelli on margin slightly more than own diameter from corresponding eye. Disc of vertex obliquely striated, with anterior margin slightly longer medially than next to eyes, sulcate subapically. Face including eyes broader than long, lateral frontal sutures reaching ocelli, transclypeal suture present. Clypellus broader apically than at base. Antennae situated somewhat at level with upper margin of eye in facial view, longer than half body length; antennal pit encroaching onto clypeus. Pronotum transversely striated, side margins short, carinate. Fore tibia with dorsal surface rounded, setal formula 2+4. Hind femur with apical setal formula 2+2+1. Hind tibial setal formula R_1 21±2, R_2 10±1, R_3 18±2. Hind basitarsomere with three platellae on the apical transverse row. Forewing with claval veins connected by a cross vein and also with a cross vein between outer claval vein and claval suture, inner anteapical cell open basally.

Male pygophore longer than high, with dorsal process arising from caudo-dorsal angle. Valve transverse, straplike. Subgenital plate triangular without macrosetae, with a mesal marginal sclerotization in basal region. Style short and broad. Connective Y-shaped, straight, with stem more than twice as long as arm. Aedeagus with a basal ventral process, shaft tubular with apical gonopore, dorsal apodeme short and sclerotized.

Female seventh sternum medially produced. Second pair of gonapophysis with cutting edge confined to distal 0.25 area, each teeth with serrated margin.

Remarks: *Canopyana* externally resembles some species of *Carvaka* Distant but differs in having a cross vein both between claval veins and outer claval vein and claval suture (in *Carvaka* only the outer claval vein is connected to claval suture by a cross vein).

In Zhang & Webb (1996), *Canopyana* keys to *Kutara* Distant with difficulty but differs from *Kutara* as follows:

| Character | <i>Kutara</i> Distant | <i>Canopyana</i> gen. nov. |
|----------------|---|---|
| Head | With prominent rim; without oblique striae on vertex, 0.33 or less as long as median length of pronotum | With weak rim, with oblique striae on vertex, half as long as median length of pronotum |
| Antennal base | Slightly above mid length of corresponding eye in facial view | Almost at level with upper margin of corresponding eye in facial view |
| Male genitalia | | |
| Pygophore | Without process | With a dorso-caudal process |
| Aedeagus | With apical spinelike extension but without basal ventral process | Without spinelike apical extension but with a basal, ventral process |
| Gonopore | Subapical | Apical |

***Canopyana vateriae* sp. nov.**

Figs 1–8

Pale brownish yellow with a few small dark brown spots on head and thorax. Area along dorsal margin of each ocellus, a short transverse submarginal spot on either side of median line on vertex, antennal pit, a few short lines along facial sutures, a spot on gena below eye, lateral curved short stripes on frontoclypeus, fuscous. Forewing with dark brown spots as shown in Fig.2; cross vein and adjacent area on claval veins white. Thoracic pleura yellow with dark brown patches. Spots at bases of each seta on legs dark brown.

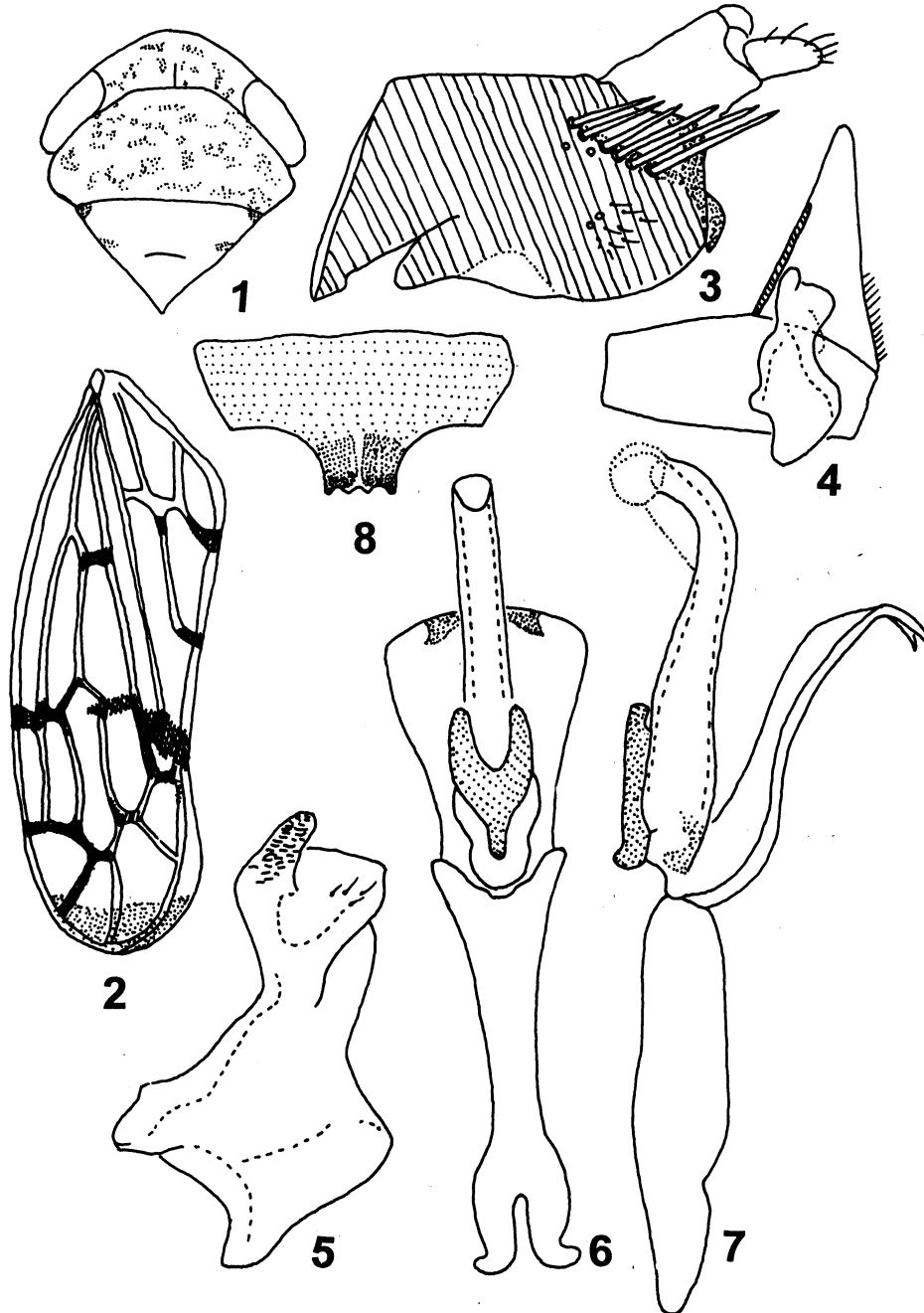
Male genitalia: Pygophore elongate, ventral margin slightly excavated in middle, caudal margin rounded with a sinuate process arising on caudodorsal angle; an oblique row of long setae near caudodorsal margin. Subgenital plate with a few short marginal hairlike setae, mesal margin sclerotized in basal 0.66. Style stout, anterior half broader, apophysis with lateral platelike expansion, along mesal margin rugulose. Aedeagus articulated with connective, dorsal apodeme short Y-shaped and well sclerotized, with a hoodlike ventral process, this apically bifid with fingerlike extension, shaft cylindrical, gonopore apical, surrounded by a membranous area.

Female genitalia: Seventh sternum broader than long, caudal margin medially produced, with four lobes on caudal margin.

Measurements: Male 4.5 (4.4–4.7) mm long and 1.6 (1.6–1.7) mm wide across eyes. Female 5.0 (4.8–5.3) mm long and 1.8 (1.7–1.9) mm wide across eyes.

Material examined: Holotype ♂, INDIA: Karnataka: Makuta near Virajpet, 26.vi.2003, ex *Vateria indica*, Y.B. Srinivasa, canopy sampling (UASB). Paratypes: 10 ♂, 14 ♀ (of these 4 ♂, 7 ♀ in ethanol) data as for holotype (BMNH, NPC, UASB, USNM, ZSI).

Remarks: *Canopyana vateriae* resembles some species of *Carvaka* from which it can be differentiated by the claval venation and very distinctive male genitalia.



FIGURES 1–8. *Canopyana vateriae* sp. nov. 1. Head and thorax; 2. Forewing; 3. Male pygophore, lateral view; 4. valve, style and subgenital plate, dorsal aspect; 5. Style, dorsal view; 6, 7. Connective and aedeagus, dorsal and lateral views, respectively; 8. Female seventh sternum.

***Bhatia distanti* Zhang and Webb**

Bhatia distanti Zhang and Webb, 1996: 13, Figs. 112–116; Viraktamath, 1998: 171, Figs 249–251.

Material examined: 1 ♂, INDIA: Karnataka: Mudigere, 12.viii.1989, at light, V.V. Belavadi (UASB).

Remarks: This species was earlier known only from Sri Lanka and has been recorded from India for the first time. The male from Mudigere has a lemon yellow head and thorax. It lacks the dark brown spots found in the holotype specimen from Sri Lanka. The forewings are however, brown with prominent dark brown veins and some of the cross veins are marked with dark brown patches. The spots on clavus are present. The cells have the median areas infuscated with dark fuscous. The specimen measures 6.2 mm long and 2.0 mm wide across eyes. However, the male genitalia are identical with those of the holotype.

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