



Redescription of female *Palaciosia khandalensis* Bolívar, 1930 (Orthoptera: Acrididae: Calliptaminae)

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ABSTRACT: Eightytwo years after its description, female specimens of *Palaciosia khandalensis* Bolívar, 1930 were discovered at a new locality. Opportunity is taken to redescribe and illustrate the female including its genitalia with its distribution. © 2018 Association for Advancement of Entomology

KEY WORDS: Endemic, genitalic structures, taxonomy, redescription, Western Ghats, India

INTRODUCTION

The genus *Palaciosia* was established by Bolívar (1930) for the species *khandalensis* from Khandala in the Maharashtra state of India. The genus belongs to subfamily Calliptaminae Jacobson (1905) which includes 93 valid species in 12 genera globally (Cigliano *et al.* 2018). *Palaciosia* is a monotypic genus and endemic to Western Ghats of India, a globally accepted biodiversity hot spot (Myers, 2000). After Bolívar (1930), there are no published data reporting on new findings of this species. Therefore, till now this species is known from type locality only. No detailed study of the female genitalia has been carried out so far. Eightytwo years after the first description, fresh specimens of this species were collected. In the present paper, the female of this species is redescribed and illustrated along with its genitalic structures.

MATERIALS AND METHODS

The specimens were collected from Maharashtra state in India during a survey conducted out in connection with a major research project entitled “Diversity of Acridoidea (Orthoptera) in different parts of Western Ghats of India” in 2012. The specimens collected were processed following the method of Usmani (2009) and Kumar and Usmani (2015). Morphological measurements were done by using a vernier calipers. Figure 1A was taken by an Olympus SLR digital camera and figure 1B to 1M were obtained by a digital camera attached to a Nikon stereozoom microscope. Figure 2 to 5 were obtained by using a drawing tube attached to a Nikon stereozoom microscope. Scaling was done by using an ocular micrometer. The dissected female genitalic structures were kept in vials containing glycerine and pinned under the specimens. The terminology used for external

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morphology follows Uvarov (1966) and for female genitalia Slifer (1939) and Agarwala (1952). Identification was done with help of the description given by Bolivar (1930). All the specimens are deposited in the Zoological Museum of the Aligarh Muslim University, Aligarh, India (ZDAMU).

RESULTS AND DISCUSSION

Genus *Palaciosia* Bolívar, 1930

Palaciosia Bolivar, 1930, Eos, 6: 375 (Type species: *Palaciosia khandalensis* Bolívar, 1930); Jago, 1967: 401; Otte, 1995: 158; Yin, Shi and Yin, 1996: 494; Shishodia, Chandra and Gupta, 2010: 25.

Diagnosis: Body of medium size; integument finely dotted; antennae long and filiform; fastigium of vertex obtusely rounded; frons reclined and smooth but slightly punctate; frontal ridge broad and flat; pronotum weakly tectiform, dorsum crossed by three transverse sulci, median and lateral carinae distinct, lateral carinae diverging towards posterior end of pronotum, although their maximum separation is found in the mesozona; metazona longer than prozona, posterior margin rounded with a median incision; prosternal process wide and transverse; mesosternal interspace open; tegmina lateral, scale-like with rounded apex; hind femur short and moderately robust; arolium of medium size.

Palaciosia khandalensis Bolívar, 1930

Palaciosia khandalensis Bolívar, 1930. Eos, 6: 378 (holotype - male; India: Maharashtra, Bombay, Khandala; deposited in MNCN Madrid, Spain); Otte, 1995: 158; Shishodia, Chandra and Gupta, 2010: 25.

Redescription (Female): Body (Fig. 1A) robust and slightly compressed. Antennae (Fig. 1E) 24 segmented, as long as or slightly shorter than head and pronotum together. Head (Fig. 1F) obtusely rounded, shorter than pronotum. Eyes oval in shape, maximum diameter of eye longer than the interocular distance. Fastigium of vertex (Fig. 1B) declining, wider than long, shorter than eye length, flat with slight depression, lateral carinae obtuse, median carinula absent, apex obtusely rounded.

Vertex convex without any carinula; width of vertex between the eyes much wider than the frontal ridge between the antennal sockets. Fastigial foveolae absent. Frontal ridge (Fig. 1C), in side view, slightly convex; margins diverging below the middle ocellus, never reaching up to the clypeus. Pronotum (Fig. 1B) longer than wide, lateral carinae parallel in prozona, separated backwards in mesozona and again parallel in metazona, prozonaless punctate than metazona, posteroventral angle obtusely rounded. Prosternal process (Fig. 1H) with roundly truncated apex. Mesosternal lobes (Fig. 1D) rounded and mesosternal interspace wider than long, margins rounded; metasternal lobes almost contiguous. Tegmina (Fig. 1G) reaching to middle of 1st abdominal segment. Hind femur with upper carina serrated while lower carina smooth, slightly reaching to tip of abdomen, lower apical lobe (Fig. 1I) rounded. Hind tibia cylindrical, shorter than hind femur; hind femora with 8 outer and 9 inner spines; inner pair of spurs longer than external spurs (Fig. 1J).

Genitalia: Supra-anal plate (Fig. 1K, Plate 1) broadly angular, as long as wide, basal dorsal half with narrow median longitudinal groove, apex obtusely conical; cerci short and conical, slightly longer than wide with obtuse apex. Subgenital plate (Fig. 1L, Plate 1-3) smooth and convex; posterior margin forming an acutely angled projection in the middle. Spermatheca (Fig. 4) with tubular apical and pre-apical diverticulum; pre-apical diverticulum long and narrow, longer than apical diverticulum, with slightly bulging apex. Ovipositor (Fig. 5) with dorsal valve broad with slightly serrated external edge, more than three times longer than wide, shorter than lateral apodeme, curved apically with blunt apex; ventral valve narrower than dorsal valve with apical tip curved and blunt; medial valve slightly dilated apically with truncated apex.

Materials examined: INDIA, Maharashtra, Nashik, Anjaneri, 19.93995N, 73.592749E, 3 ♀, 20-x-2012, on grasses (Coll. by H. Kumar).

Measurements (length in mm): Female: Body: 33.69; Pronotum: 7.15; Antenna: 11.60; Tegmina: lobiform; Hind Femur: 18.36.

Distribution: India: Maharashtra.

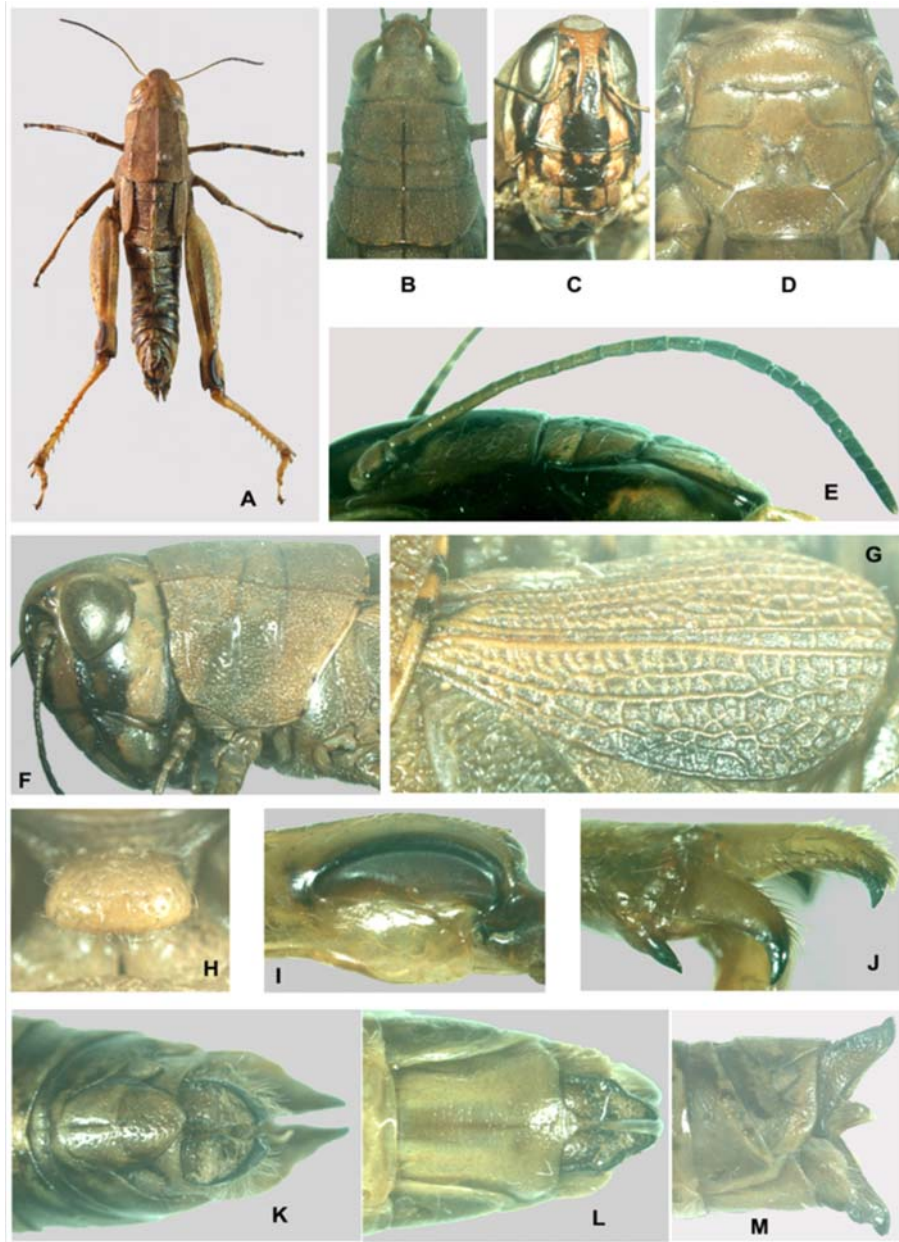


Fig.1 (A–M). *Palaciosia khandalensis* Bolívar, female. A– dorsal view; B–Dorsal view of head and pronotum; C–Frontal ridge; D–Ventral view of sternum; E–Antenna; F– lateral view of head & pronotum; G–tegmen; H–Prosternal process; I– hind knee; J– hind tibial spur; K– dorsal view of abdominal apex; L– ventral view of abdominal apex; M– lateral view of abdominal apex

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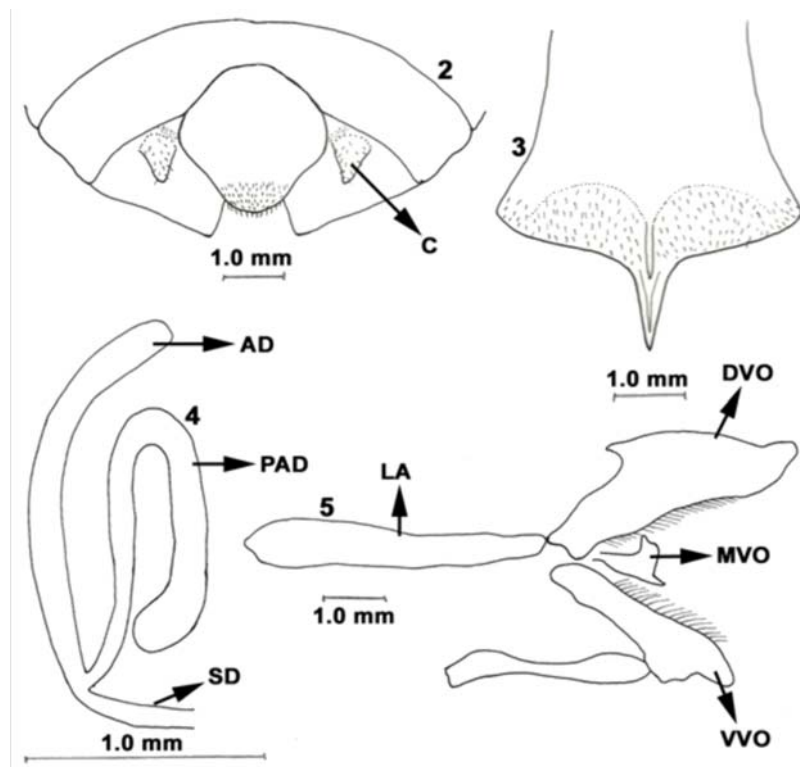


Plate 1 (2–5). *Palaciosia khandalensis* Bolívar, female.

2– supra-anal plate; 3–subgenital plate; 4–spermatheca; 5– ovipositor.

Abbreviations: C– cercus; AD– apical diverticulum; PAD– pre-apical diverticulum; SD–spermathecal duct; LA– lateral apodeme; DVO– dorsal valve of ovipositor, MVO– median valve of ovipositor; VVO– ventral valve of ovipositor.

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