



First record of *Acrida acuminata* Stål, 1873 (Orthoptera: Acrididae: Acridinae) from India with description of its female genitalia

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Abstract

The genus *Acrida* includes 41 species worldwide of which 7 species are reported from India. The female specimen of *Acrida acuminata* Stål, 1873 was collected from Himachal Pradesh, which is recorded for the first time from India. An opportunity is taken to redescribe and illustrate the female including its genitalia.

Keywords: grasshoppers, short-horned, slant-faced, Western Himalaya

Introduction

The genus *Acrida* Linnaeus, 1758 belongs to the family Acrididae and includes 41 species worldwide (Cigliano *et al.*, 2023). Gupta & Chandra (2019) catalogued 7 species of *Acrida* from different biogeographic regions of India. Based on male and female specimens, *Acrida acuminata* was described by Stål (1873) from South Africa. Although Bolivar (1893) synonymised it as *Tryxalis (Tryxalis) acuminata*, Kirby (1902) validated it again. Sjostedt (1931) described a new species, *Acrida acuminata* variety *histrionica* from Africa. In 1953, Dirsh & Uvarov synonymised it as *Acrida acuminata*. In his revision of the genus *Acrida*, Dirsh (1954) redescribed *Acrida acuminata*. Steinmann (1963) also included *Acrida acuminata* in key to species but till now its female genitalia is not studied. Therefore opportunity is taken to redescribe and illustrate the female including its genitalia.

Materials and methods

The specimen used in the present study was collected from Himachal Pradesh, India, part of the Western Himalayan Biogeographic zone, during a survey conducted in connection with a major research project entitled “Studies on biosystematics and biodiversity of Acridoidea (Orthoptera) in northern states of India” in 2010. For the study of morphology and genitalia, the collected specimen was processed following the method of Kumar *et al.* (2018). Identification of species was done with the help of key and diagnosis provided by Dirsh (1954) and Steinmann (1963). Photographs of specimens were taken with Nikon digital camera (D-7000) and other figures were taken with a digital camera attached to a Leica stereo-zoom microscope (Leica M205A). The specimen was deposited in the National Zoological Collection of the Zoological Survey of India, Kolkata, India (NZSI).

Results

Family Acrididae Macleay, 1821
Subfamily Acridinae Macleay, 1821
Tribe Acridini Macleay, 1821
Genus *Acrida* Linnaeus, 1758
***Acrida acuminata* Stål, 1873**

(Figs 1–2)

Acrida acuminata Stål, 1873: 97 (Syntype – Male and female; Southern Africa; deposited in NHRS Stockholm); Kirby, 1902: 95; Dirsh & Uvarov, 1953: 231; Dirsh, 1954: 126; Johnston, 1956: 654; Steinmann, 1963: 403; Dirsh, 1965: 401; Johnston, 1968: 286; Picker *et al.* 2005: 96.

Material examined. India, Himachal Pradesh, Solan, 03.XI.2010, 1♀, on grasses, Coll. H. Kumar.

Redescription

Female (Figure 1A). Antennae (Figure 1H) 18 segmented, shorter than head and pronotum together; head (Figure 1B) strongly elongated, from above and in profile moderately widened, as long as or slightly shorter than pronotum; frons (Figure 1F) oblique, in profile weakly incurved. Fastigium of vertex (Figure 1B) long, lateral sides parallel, longer than wide, apex rounded; shorter than eye length in top view. Width of vertex between the anterior margins of eyes more than 5.9 times wider than the frontal ridge between the antennal sockets. Eyes elongated oval, maximum diameter of an eye more than 2.0 times longer than the vertex between the anterior margins of eyes. Frontal ridge (Figure 1D) very narrow and deeply sulcated with high lateral carina reaching up to the clypeus. Lateral carinae of pronotum (Figure 1C) almost straight, parallel, transverse sulcus beyond the

middle of pronotal disc, posterior margin of pronotum acute angular and pointed, sides incurved; lower ventral margin of pronotum straight (Figure 1G). Mesosternal lobes (Figure 1E) rounded interspace longer than wide; metasternal pits separated. Elytra strongly surpassing the apex of hind knee, strongly narrow, apex pointed. Wing shorter than elytra, very narrow. Lateral lobe of hind knee (Figure 1J) short and acute, upper lobe broader than lower one; upper internal lobe longer (Figure 1I) than the external; median projection weak. Hind tibiae shorter than the hind femur with 28 spines on both outer and inner margins, inner spur on inner side of hind tibia (Figure 1K) two times longer than external one. Arolium (Figure 1L) medium.

Genitalia. Supra-anal plate (Figs. 1M, 2A) broadly angular, much wider than long with obtusely rounded apex; cercus conical, shorter than supra-anal plate, one and a half times as long as wide, with obtuse apex. Subgenital plate (Figs. 1N, 2B) long, posterior margin trilobate median lobe slightly longer lateral lobes, posterior margin setose; egg-guide broad and short, apex rounded. Spermatheca (Figure 2C) with apical diverticulum long and cylindrical, preapical diverticulum slightly longer than apical diverticulum, sac-like with a protuberance in basal third. Ovipositor (Figs. 1O, 2D), dorsal valve broader, much shorter than lateral apodeme, more than two times longer than wide, apical tip blunt; ventral valve broad, apical tip curved and obtuse; mesial valve dilated apically with obtuse apex.

Male. Not collected.

Measurements (in mm). Length of body: 63.5; length of head: 11.4; length of pronotum: 11.7; length of antennae: 22.13; length of tegmina: 59.9; length of hind femur: 40.7; length of hind tibia: 37.2.

Distribution. India: Himachal Pradesh. *Elsewhere:* Africa.



Figure 1. *Acrida acuminata* Stål, 1873. Female. A. Dorsal view, B. Dorsal view of head, C. Dorsal view of pronotum, D. Frontal ridge, E. Ventral view of sternum, F. Lateral view of head, G. Lateral view of pronotum, H. Antenna, I. Dorsal view of hind knee lobe, J. Lateral view of hind knee lobe, K. Dorsal view of apex of hind tibia, L. Dorsal view of hind arolium, M. Dorsal view of abdominal apex, N. Ventral view of abdominal apex, O. Lateral view of abdominal apex.

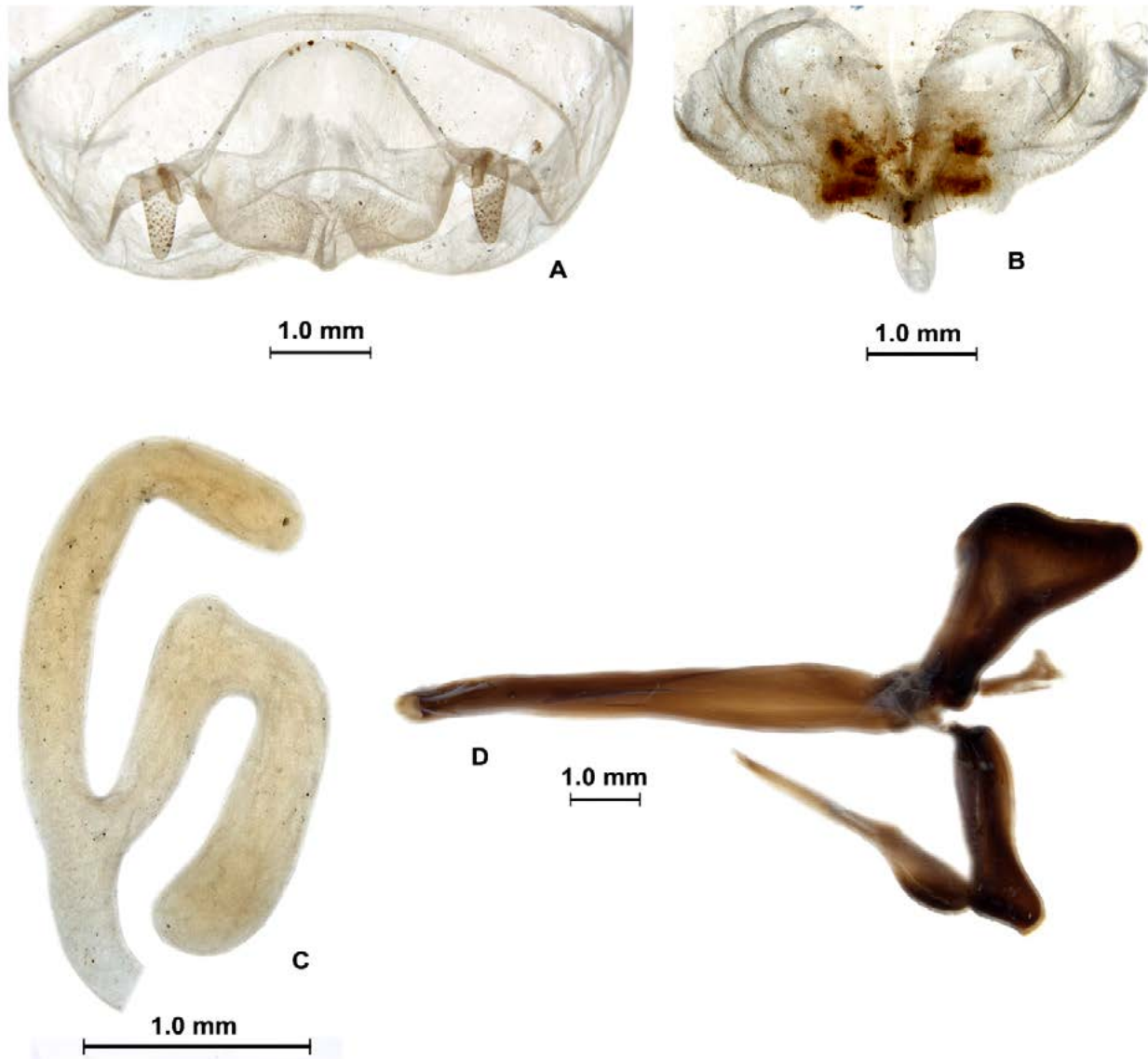


Figure 2. *Acrida acuminata* Stål, 1873. Female. A. Supra-anal plate, B. Subgenital plate, C. Spermatheca, D. Ovipositor.

Acknowledgements

The authors are highly thankful to the Director, Zoological Survey of India, Kolkata for providing the necessary facilities and encouragement. We wish to extend our gratitude to

the Department of Science and Technology, New Delhi for providing financial assistance during the tenure of a major research project (Ref. No. SR/SO/AS 32/2008) being carried out on biosystematics and biodiversity of Acridoidea (Orthoptera) in North India”

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