



NEW RECORDS OF ACRIDOIDEA (INSECTA : ORTHOPTERA) FROM UTTARAKHAND, INDIA

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INTRODUCTION

Acridoidea is one of the most sought after superfamilies of the order Orthoptera. Short-horned grasshoppers are included in the superfamily Acridoidea. They constitute an interesting and agriculturally important group of insects. They are moderate in size, but range from less than 10 mm to 65 mm. The form of body shape, head and thorax are diverse; antennae are filiform but sometimes ensiform; tarsi three segmented; hind femora long, slender and thick towards base and adapted for leaping; wings are either fully developed or reduced or absent; forewings in the form of leathery tegmina; hind wings fan like; male external genitalia complex, symmetrical and concealed, when not in use, by the enlarged ninth abdominal sternum (Subgenital plate). Male of most of these insects produce sound by different methods; female, generally, do not produce sound. They are also well adapted for flight since both direct and indirect muscles work together during flight movements thus explaining the reason that these insect can cover long distances during swarming conditions that mainly result from overcrowding and scarcity of food.

The most notable work on Indian grasshoppers was made by Kirby (1914) and mentioned 329 species belonging to 124 genera under 8 subfamilies. Tandon and Shishodia (1995) listed 97 species distributed over 11 families of

Acridoidea, Grylloidea, Tettigonoidea and Tridactyloidea of Orthoptera from Western Himalaya (Uttarakhand). Tandon *et al.* (1976) dealt with 12 species under 12 genera and 2 families of Acridoidea from Tons Valley. Tandon and Shishodia (1976) have given an account of 16 species under 15 genera and 2 families of Acridoidea from Grahwal region of Uttarakhand. Singh and Bhargava (1979) have given an inventory of 34 species of Orthoptera which includes 28 species of Acridoidea from Corbett Tiger Reserve. Mandal *et al.* (2010) have given an account of 64 species distributed under 48 genera and 2 families of Acridoidea from Uttarakhand.

The present paper deals with 3 new records of Acridoidea under three genera and 2 families from the state, Uttarakhand. Classification followed here is according to Uvarov (1966) and Shishodia *et al.* (2010).

TAXONOMIC ACCOUNT

Order ORTHOPTERA

Superfamily ACRIDOIDEA

Family 1. PYRGOMORPHIDAE

Genus 1. *Poecilocerus* Serville, 1831

1. *Poecilocerus pictus* (Fabricius)

1775. *Gryllus pictus* Fabricius, *Systema entomologica systemis Insectorum classes, ordines, genera, species, adjectis synonymis, locies. Flensburg et Leipzig* : 289.

1966. *Poekilocerus pictus* : Ambar, *Sind Univ. Sci. Res. Journal, Karachi*:1.
1914. *Poekilocerus pictus*: Kirby, *Fauna Brit. India, Orth.,(Acrididae)*:172.
2007. *Poekilocerus pictus* : Mandal & Yadav, *State Fauna Series, 5 : Fauna of Andhra Pradesh, Part 3, Zool. Surv. India*, :190.

Material examined : Distt. Dehradun : Rishikesh, 2 , 26.ix.1969, coll. A. Singh & party.

Diagnostic characters : Body large in size with finely rugose integument; head and pronotum with faint median carina; antennae blue black with yellow beyond the basal third of their length; lateral carinae of pronotum obsolete.

Distribution : India : Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

Elsewhere : Afghanistan, Bangladesh, Nepal and Pakistan.

Remarks: Tandon and Shishodia (1995) listed only three species of the family Pyrgomorphidae in a list of 97 species of Orthoptera from Western Himalaya (Uttarakhand). Mandal *et al.* (2010) have given an account of 5 species of the family Pyrgomorphidae in Fauna of Uttarakhand.

This species is one of the most colorful grasshoppers of India and commonly known as Ak grasshopper. They feed on *Calotropis* sp. (Ak plants) especially *C. procera*, however it is known to attack many crops, vegetables and fruit plants. The color in nymphs as well as adults is bright and warning and is explained due to the presence of toxic alkaloids present in *Calotropis* they feed on.

Family 2. ACRIDIDAE

Key to Subfamilies

1. Prosternal process usually absent; if present, then antenna ensiform and body strongly elongate *Oedipodinae*
- Prosternal process always present; antenna and body variable.....*Catantopinae*

Subfamily OEDIPODINAE

Genus 2. *Scintharista* Saussure, 1884

2. *Scintharista notabilis pallipes* Uvarov

1870. *Quiroguesia notabilis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 745.
1941. *Scintharista notabilis pallipes* Uvarov *Proc. R. ent. Soc. London*, 10B(6): 96.
1985. *Scintharista notabilis pallipes* : Bhowmik, *Rec. zool. Surv. India, Occ. Pap. No.*, 78 : 40.
2007. *Scintharista notabilis pallipes* : Saini & Mehta, *Bionotes*, 9(3) : 76.

Material examined : Distt. Dehradun : Bengal Gad, 3 , 15.x.1966, Coll. A. Singh & party; Dharagad, 1 , 15.x.1966, Coll. A. Singh & party.

Diagnostic characters : Fastigium concave and without median carinule; pronotum convex, anterior margin bent on head, posterior margin angulate; tegmen with narrow light bands-1st from the base, and the 2nd (median) dark band are nearly or entirely fused jointly occupying the basal half of tegmen; wing base light pinkish, narrow light dark brown band present from costa to anal angle, apex with dark spots; hind tibia with dark-colored ring at knee joint.

Distribution : India : Himachal Pradesh, Punjab and Rajasthan.

Elsewhere: Afghanistan, Baluchistan and Iran.

Remarks: Tandon and Shoshodia (1995) listed 13 species of the subfamily Oedipodinae from Western Himalaya. Mandal *et al.* (2010) have given an account of 12 species of the subfamily Oedipodinae in fauna of Uttarakhand. Earlier this species has been recorded from only above mentioned three states and the species has limited distribution (Shishodia *et al.* 2010).

Subfamily CATANTOPINAE

Genus 3. *Choreodocus* Bolivar, 1914

3. *Choreodocus robustus* (Serville)

- 1839, *Acridium robustum* Serville, *Ins. Orth.*, : 647.
1914. *Heteracris robusta* : Kirby, *Fauna Brit, India, Orth.*, : 262.
1921. *Choreodocus robustus* : Uvarov, *Trans. ent. Soc. Lond.*, 69 : 109.

1990. *Choreodocus robustus* : Bhowmik *et al.* *Rec. zool. Surv. India*, **86** : 222.

Material examined : Distt. Dehradun : Chakrata, Tiuni, 1, 18.x.1966, Coll. A. Singh & Party.

Diagnostic characters : Moderately long; antennae filiform, median segments almost twice as long as wide; fastigium rounded in front; frontal ridge flat, narrowing between antennae, gradually widening towards clypeus; median carina of pronotum cut by all the three transverse sulci; prosternal tubercle gradually tapering apically, weakly incurved and pubescent; tegmina extending well beyond posterior knee, without spots; supra-anal plate tongue shaped, apex broadly rounded; subgenital plate gradually tapering apically; cerus wide, thick, strongly compressed, incurved and downcurved.

Distribution : Arunachal Pradesh, Andhra Pradesh, Assam, Haryana, Himachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim, Tripura, Uttar Pradesh and West Bengal.

Elsewhere: Bangladesh.

Remarks: Tandon and Shoshodia (1995) listed 5 species of the subfamily Catantopinae from Western Himalaya. Mandal *et al.* (2010) have also given an account of 5 species of the subfamily Catantopinae in Fauna of Uttarakhand. However,

the above authors have not mentioned *Choreodocus robustus* from Uttarakhand. The locality, Tiuni (Chakrata) from where one female specimen was collected is at the border of state Himachal Pradesh from where this species has already been reported.

This species prefers mixed vegetation and attacks paddy fields once it starts growing towards maturity. The nymph appears towards the end of May and adults start appearing in the first week of August. It has single annual generation.

SUMMARY

Three species of Acridoidea *i.e.*, *Poecilocerus pictus* (Fabricius), *Scintharista notabilis pallipes* Uvarov and *Choreodocus robustus* (Serville) under two families have been recorded for the first time from the state Uttarakhand.

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