ADDITIONS TO TWO SPECIES OF GRASSHOPPERS (ACRIDIDAE: ORTHOPTERA)

H. K. Bhowmik

and

P. Halder

Zoological Survey of India, Calcutta

(With 19 Figures)

ABSTRACT

Description of the previously undescribed male of Chororodocus robustus (Ser., 1839) (Eyprepocnemidinae) and redescriptions of the species, Epistaurus sinetyi Bol., 1902 (Optacridinae) are given. The differential diagnosis of the species are also given.

INTRODUCTION

While preparing the consolidated faunal information of grasshoppers (43 species and subspecies) from West Bengal it is found that one species of them, Chororodocus robustus, described previously only on females contains male specimens which are yet unpublished. Similarly the species, Epistaurus sinetyi, though described on both the sexes, is inadequately known. So the opportunity is utilized for describing the former and redescribing the latter. Their differential diagnosis with related species are also pointed out.

W. B. stands for West Bengal.

All the collections were made by the authors.

DESCRIPTION

1. Chororodocus robustus (Serville, 1839)

(Figs. 1-10)

Acridium robustum Serville, 1839. Ins. Orth., 647. no. 7.
Choroedocus robustus, male.

Figs. 1 & 2. Profile, dorsal and lateral respectively.

Fig. 5. Elytron.

Epistaurus sinetyi, male.

Fig. 11. Profile, dorsal.

collected comprising of both sexes, from the Eastern Himalaya. Moreover, previously collected material whose locality is mentioned as Calcutta have been examined. Hence the opportunity of describing the male on modern taxonomical trend is utilised here.

Description of male: Body moderately large, shape slender (Figs. 1, 2). Antennae longer than head and pronotum together; filiform, median segments almost twice as long as wide. Head short, slightly obtuse, occiput short; fastigium of vertex short,
about as long as wide, shallowly concave, obtusely rounded in front, with a median carinula reaching occiput and in profile sloping down into frontal ridge; frontal ridge flat, surface with punctation, narrowest between antennae and gradually widening towards clypeus, convex in profile; facial carina strong and straight; interocular distance slightly wider base of fastigium of vertex; eyes prominent, lateral, strongly narrow.
Elongate. Pronotum weakly tectiform with prominent median carina intersected by all three transverse sulci and with less prominent and slightly divergent lateral carinae which are obliterated in metabaza due to coarse punctuation; prozona slightly less than twice as long as metabaza; lateral pronotal lobes with transverse sulci as usual, surface punctured. Prosternal tubercle (Fig. 4) cylindrical, gradually tapering apically, weakly incurved and pubescent; mesosternal interspace about one third width of a mesosternal lobe, innermargin of latter arcuate; metasternal furcal suture distinct (Fig. 3). Tegmen (Fig. 5) extending well beyond hind knees, almost 4½ times as long as wide, venation as usual. Abdomen with tympanum closed and last two tergites fused and hind margin of last tergite with a pair of small rounded projections medially (Fig. 6). Supraanal plate large, tongue-shaped, in basal half sulcated medially and shallowly depressed laterally, apex broadly rounded (Fig. 7). Subgenital plate gradually tapering apically, distinctly upcurved, hairy, with truncate apex. Ceri very remarkable (Fig. 8): laterally compressed, incurved strongly expanded and widening distally with leaf-like obtuse angular tip. Epiphallus as figured (Figs. 9, 10). Posterior femora rather slender. Posterior tibiae slightly shorter than posterior femora, with 10-11 internal and 12-13 external spines. Arolium well developed, longer than claws.

Colouration: General colouration agrees fairly well with the description of the female as give by Serville (1839), Walker (1870) (as Heteracris ducalis) and Kirby (1914) (as Heteracris robusta) with the following exceptions: antennae yellowish; prosternal tubercle greenish yellow; elytron with veins and veinlets in yellow, membrane semitransparent, postcubital area and venal vein 1 green; hand wing bluish basally; posterior tibia coral red with yellowish white-black tipped tibial spines.

Measurements (in mm): Length of body 43-45; head length 4.25-5.1; maximum width of head 4.5-5.1; interocular distance 1.95-2; antennal length 18-19; pronotal length 8-8.55; maximum width of pronotum 5-6; minimum width of pronotum 3.1-4; length of prozona 4.65-5; length of metabaza 3.15-3.75; length of tegmen 35-37; maximum width of tegmen 6.25-7.1; length of post femur 26-27; length of post tibia 23-24.1.

Differential diagnosis: 1. Resembles those of other two Indian species, C. illustris

Measurements (in mm):

<table>
<thead>
<tr>
<th>Body parts</th>
<th>♂</th>
<th>♀</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of body</td>
<td>13.0-13.5</td>
<td>15.0-17.5</td>
<td>12.0-15.0</td>
</tr>
<tr>
<td>Length of head</td>
<td>1.0-1.5</td>
<td>2.0-2.2</td>
<td>—</td>
</tr>
<tr>
<td>Antenna</td>
<td>7.0-7.5</td>
<td>6.5-7.0</td>
<td>—</td>
</tr>
<tr>
<td>Pronotum (a) L. of prozona</td>
<td>2.0-2.2</td>
<td>2.5-2.7</td>
<td>3.0-4.0</td>
</tr>
<tr>
<td>(b) L. of metabaza</td>
<td>1.5-1.7</td>
<td>1.75-1.9</td>
<td>—</td>
</tr>
<tr>
<td>Tegmen</td>
<td>11.0-11.2</td>
<td>13.0-13.2</td>
<td>9.0-12.0</td>
</tr>
<tr>
<td>Posterior femur</td>
<td>9.0-9.2</td>
<td>10.0-10.2</td>
<td>7.5-10.0</td>
</tr>
<tr>
<td>Posterior tibia</td>
<td>8.0-8.5</td>
<td>9.25-9.5</td>
<td>—</td>
</tr>
</tbody>
</table>
(Walker, 1870) and *O. capensis* (Thunberg, 1815) in having body rather compressed laterally; frontal ridge flat, slightly widened towards clypeus and narrowed near fastigium of vertex; pronotum with somewhat tectiform median carina, lateral ones being obsolete in metazona; tegmen and wing long and narrow; anal segment of male abdomen posteriorly inflated; and, male cercus with broadened, compressed and rounded apex.

2. Unspotted tegmina different from those of *C. illustris* and *O. capensis* (both of them with small or large, black or brown spots and points in tegmina).

3. Strongly infumated (except inner margin) wings somehow resemble that of *illustris* (where it is slightly infumated towards fore-margin and apex) and different from greyish hyaline wing of *capensis*.

4. Male subgenital plate resembles *capensis* with truncate apex. In *illustris* it is conical.

5. Coral—red colouration of hind tibiae different from those of *capensis* (yellowish) and *illustris* (purplish blue).

6. Unique in form of male cercus (white leaf-like obtuse angular tip).

7. Epiphallus differs from that of other species.

**Discussion**: An endemic species of the eastern India. The difference of colouration noted in this communication (which is identical for both the sexes) is due perhaps the present study is based on fresh specimens whereas previous workers examined the dried up material.

2. **Epistaurus sinetyi** Bolivar, 1902

(Figs. 11-19)


**Material**: W. B.: 1♂; Andul, Howrah; 12.9.78. 1♀; Botanical Garden, Howrah; 14.3.80. 2♂, 3♀; Mukutmanipur, Bankura; 22-23. 9. 81.

**Remarks**: The species was described from South India (Trichinopoly). Later Uvarov (1927) recorded it from Sri Lanka. So it is a new record for W. B.

**Redescription**: Males: Size small (Fig. 11). Body pilose. Head very small, less than half length of pronotum; occiput very small; fastigium of vertex extended before eyes, longitudinally tricarinated with truncate apex, median carinula continued behind to occiput and pronatal median carina; fastigium limited posteriorly by transverse carina between eyes (Fig. 12), latter, lateral, projected, approximating in middle and raised more than level of head and pronotum. Frontal ridge narrowest beyond fastigial end, widest in between antennae, more than double width of fastigial width and then gradually converged towards clypeus; finely but closely punctured, in profile, not so convex as in spp. of *Euoptacra*, shallowly sulcated, carinae being somewhat prominent (Fig. 14). Antennae filiform, 20 to 21 segmented, longer than head and pronotum taken together; scape largest, 2nd to 7th segments narrowest, then gradually thickened. Pronotum tectiform due to well marked median carina, interrupted by posterior transverse sulcus only, punctured; prozona longer than metazona, latter with posterior margin angular (Fig. 13). Prosternal tubercle short, pyramidal (apex spine-like); mesosternal lobes with rounded inner margin; metasternal lobes separated (Fig. 15). Tegmen a little longer than abdomen, opaque throughout, more so in basal half with thick reticulation. Wing as long as tegmen. Posterior femur stout with filiform apical portion. Posterior tibia with 10 to 11
Fig. 12. Head, dorsal, showing transverse carina (T.) in between eyes.
Fig. 13. Pronotal disc, dorsal.
Fig. 14. Face, frontal view (E—eye; F—frontal ridge; A—antenna).
Fig. 15. Meso- and metasternal plates.
Fig. 16. Supra-anal plate.
Fig. 17. Anal cercus, lateral (same scale as fig. 16).

*Epistaurus sinetyi*, female.

Fig. 18. Meso- and metasternal plates.
Fig. 19. Anal cercus, lateral (Figs. 12, 13, 14, 15, 18, and 19 same scale)
internal and 9 to 10 external spines. Tympa-
nurn closed. Abdomen carinated medially.  
Supra-anal plate (Fig. 16) more or less tongue-
shaped, with apex broadly angulate, shallowly  
sulcated in basal half; subgenital plate navi-
cular, with rounded apex; cercus longer than  
supraanal plate, conical, incurved and acute  
at apex (Fig. 17).

**Females :** Identical with males except  
differing in the following minor features:—  
Size a little longer. Posterior tibia with 10  
internal and 9 external spines. Meso- and  
metasternal plates somewhat different (fig. 18).  
Valves of ovipositor coarsely impress—  
punctate; anal cercus short, compressed  
basad and acute apically (Fig. 19).

Trifasciate colouration of posterior femur  
undetectable.

**Colouration :** General colouration dark-
brown. Antennae brownish, apical segments  
darkened. Tegmen dark-brownish with spots  
which are hardly detectable. Wing vermillion-
red basad with margins infuscated. Posterior  
femur yellowish, in males trifasciated. Post-
terior tibia brownish basad, followed by a pale  
till defined yellowish ring, thereafter reddish;  
spines black tipped. Posterior metatarsus  
dark-brown. Abdomen brown to dark-
brownish; only a few scattered spots visible  
in females, in males not noticeable.

The colouration of the specimens at hand  
differ in two points from that of the descrip-
tion of types which are stated to be “Pale  
reddish and wings yellowish hyaline”.

**Differential diagnosis :** 1. Resembles that  
of other oriental species, *E. aberrans* Brunner,  
1893, known so far from Burma, in having  
vertex longitudinally carinated, with a very  
unique transverse carina between eyes; frontal  
ridge round, arched basad, widest between  
antennae, shallowly sulcated; tectiform  
median carina of pronotum traversed by  
posterior sulcus only and fully developed  
tegmen with truncated apex.

2. Unique in form of red abdomen with  
spots on either side of median line, trifasica-
ted posterior femora, male with tongue-shaped  
supra-anal plate with apex broadly angulate  
and with conical and incurved anal cerci.  
In *aberrans* abdomen brown, post femora  
distinctly bifasciated, male supra-anal plate  
quadrate and cerci curved, deflexed and  
pointed at apices.

3. Colouration of wing (red) different  
from that of *aberrans* (yellowish).

**Discussion :** It is yet a little known species  
and reported so far to occur in isolated areas  
such as Tamil Nadu, Sri Lanka and West  
Bengal.

**Acknowledgements**

Our sincere thanks are due to Dr. B. K.  
Tikader, Director, Zoological Survey of India,  
for facilities provided to carry out the  
work, to late Prof. D. N. Raychaudhuri  
of Calcutta University for critically going  
through the manuscript, to Dr. N. D. Jago,  
PSO i/c Acridid taxonomy, London, for  
confirming the identification of *E. sinetyi*, to  
Shri A. K. Chanda, Artist, for inking the  
drawings and to Miss Kujur for typing the  
mss.

**References**

Bolivar, I. 1902. Les Orthopteres de St.  
Joseph's College, a Trichinopoly (Sud  
1' Inde). 3 me partis. *Annls. Soc. ent,  
Fr.*, 70 : 580-635, 9 pls.


