

ADDITIONS TO TWO SPECIES OF GRASSHOPPERS
(ACRIDIDAE : ORTHOPTERA)

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(With 19 Figures)

ABSTRACT

Description of the previously undescribed male of *Choroedocus robustus* (Ser., 1839) (Eyprepocnemidinae) and redescription of the species, *Epistaurus sinetyi* Bol., 1902 (Coptacridinae) 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one species of them, *Choroedocus robustus*, described previously only on females contains male specimens which are yet unpublished.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 redescrining 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. *Choroedocus robustus* (Serville, 1839)
(Figs. 1-10)

Acridium robustum Serville, 1839. *Ins. Orth.*, 647.
no. 7.

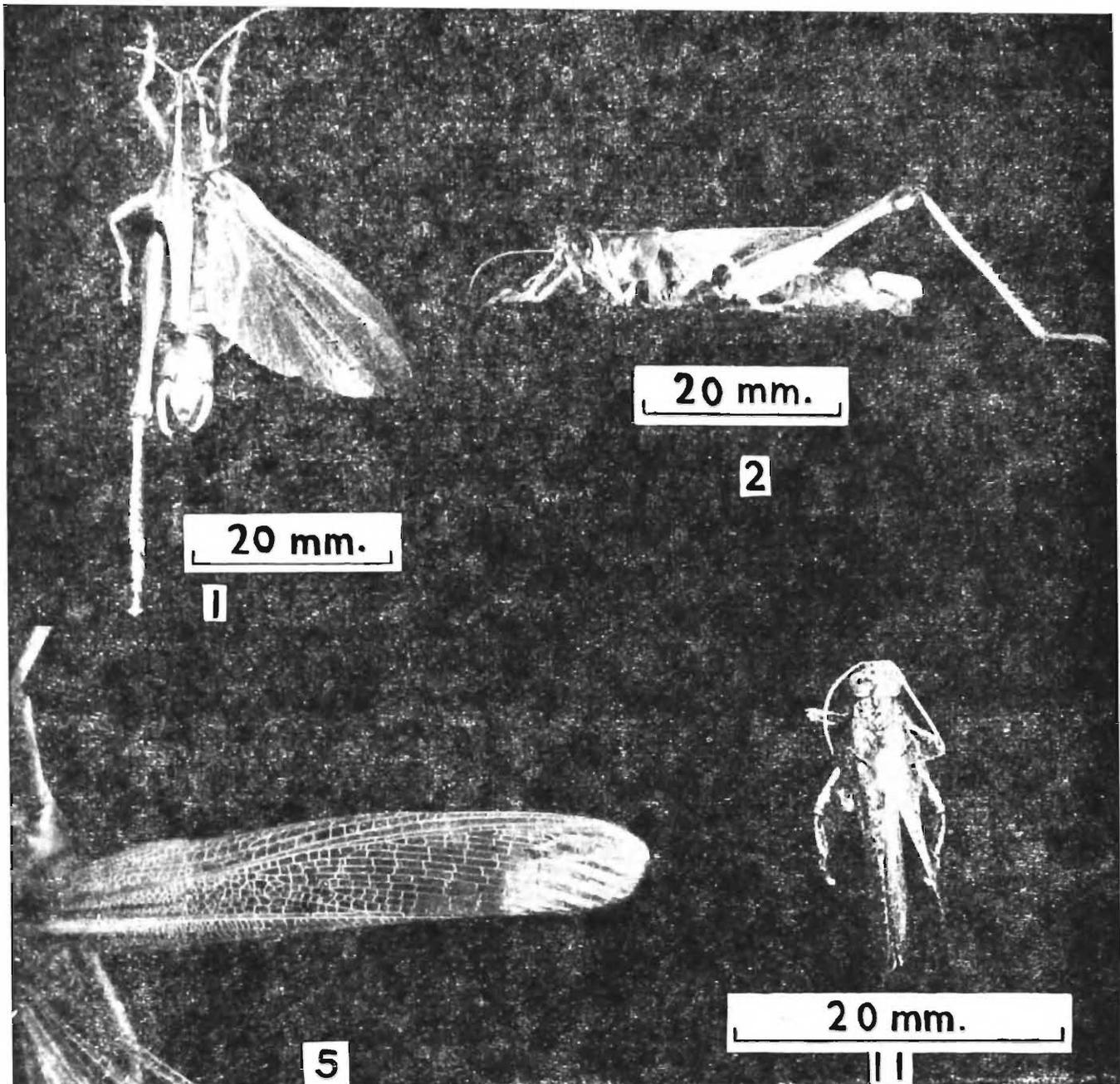
Heteracris ducalis Walker, 1870. *Cat. Derm. Salt. Br. Mus.*, 4 : 663, 665.

Heteracris robusta : Kirby, 1914. *Fauna British India, Orth.*, 1 : 262.

Choroedocus (?) *robustus* : Uvarov, 1921. *Trans. R. ent. Soc. Lond.*, 69 (1 & 2) : 109.

Material : W. B. : 4 ♂, 3 ♀ ; Naxalbari, Darjeeling ; 11-12.9.74. 1 ♀ ; Suklapara, Jalpaiguri ; 29.8.1975. 1 ♂ ; Bhutan Ghat, Jalpaiguri ; 6.9.1975. 1 ♂, 3 ♀ ; Calcutta, (old collection).

Remarks : The species seems to be a very rare one because since its description from Sylhet : Assam (now Bangladesh), though its systematic position has been changed repeatedly, no additional material information has been added. Serville (1839) described the species, on female, basing mainly on colouration. Uvarov (1921) put the species doubtfully in the present genus because he had no male specimen before him. However, he placed it rightly in the present genus. Recently good number of specimens were



Chorodocus 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,

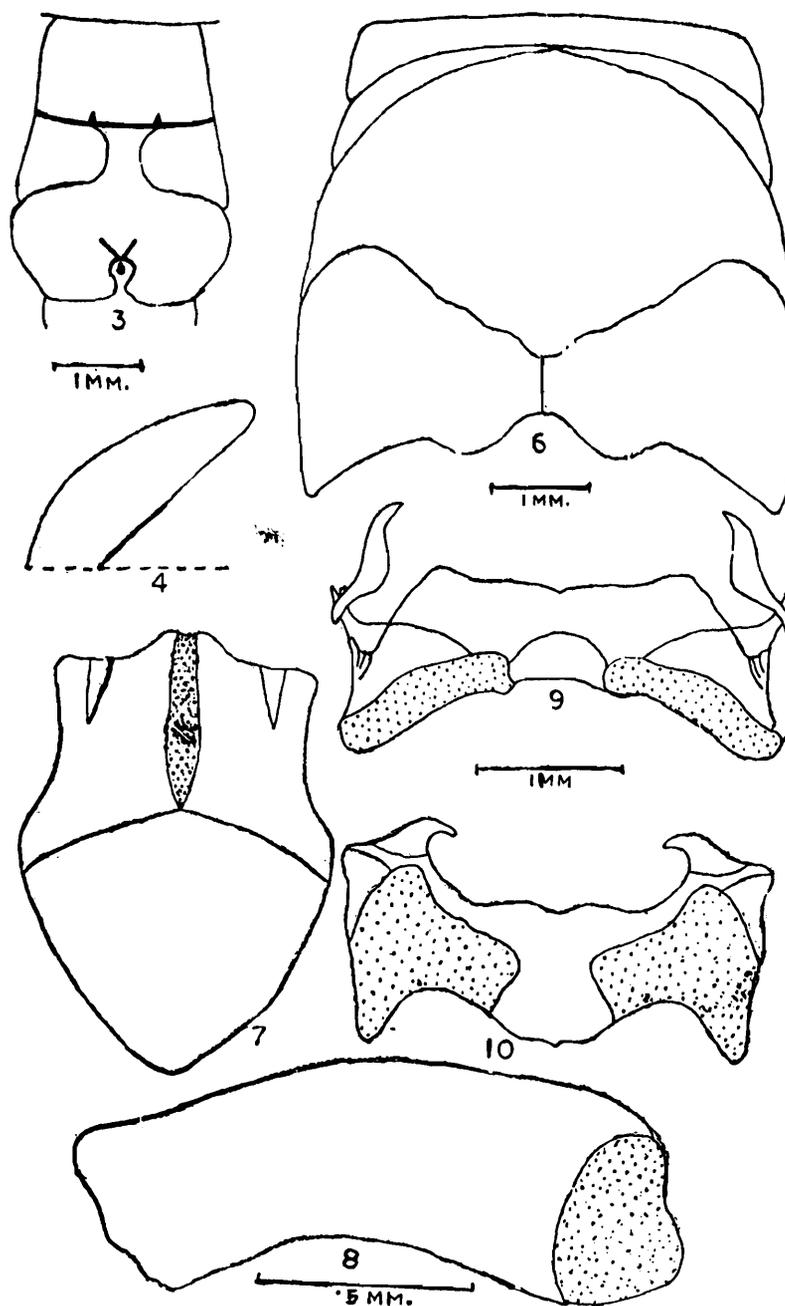


Fig. 3. Meso- and metasternal plates.
 Fig. 4. Prosternal tubercle, lateral (same scale as Fig. 3).
 Fig. 6. Last abdominal tergite.
 Fig. 7. Supra-anal plate (same scale as fig. 6).
 Fig. 8. Anal cercus.
 Figs. 9 & 10. Epiphallus, dorsal and ventral respectively (same scale).

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

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 metazona due to coarse punctation; prozona slightly less than twice as long as metazona; 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 $4\frac{1}{2}$ 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. Cerci 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 vannal 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 4-5.1; 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 metazona 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) :

Body parts	♂	♀	Type
Length of body	13.0-13.5	15.0-17.5	12.0-15.0
Length of head	1.0-1.5	2.0-2.2	—
Antenna	7.0-7.5	6.5-7.0	—
Pronotum (a) L. of prozona	2.0-2.2	2.5-2.7	3.0-4.0
(b) L. of metazona	1.5-1.7	1.75-1.9	
Tegmen	11.0-11.2	13.0-13.2	9.0-12.0
Posterior femur	9.0-9.2	10.0-10.2	7.5-10.0
Posterior tibia	8.0-8.5	9.25-9.5	—

(Walker, 1870) and *C. 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 *C. 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 foremargin 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

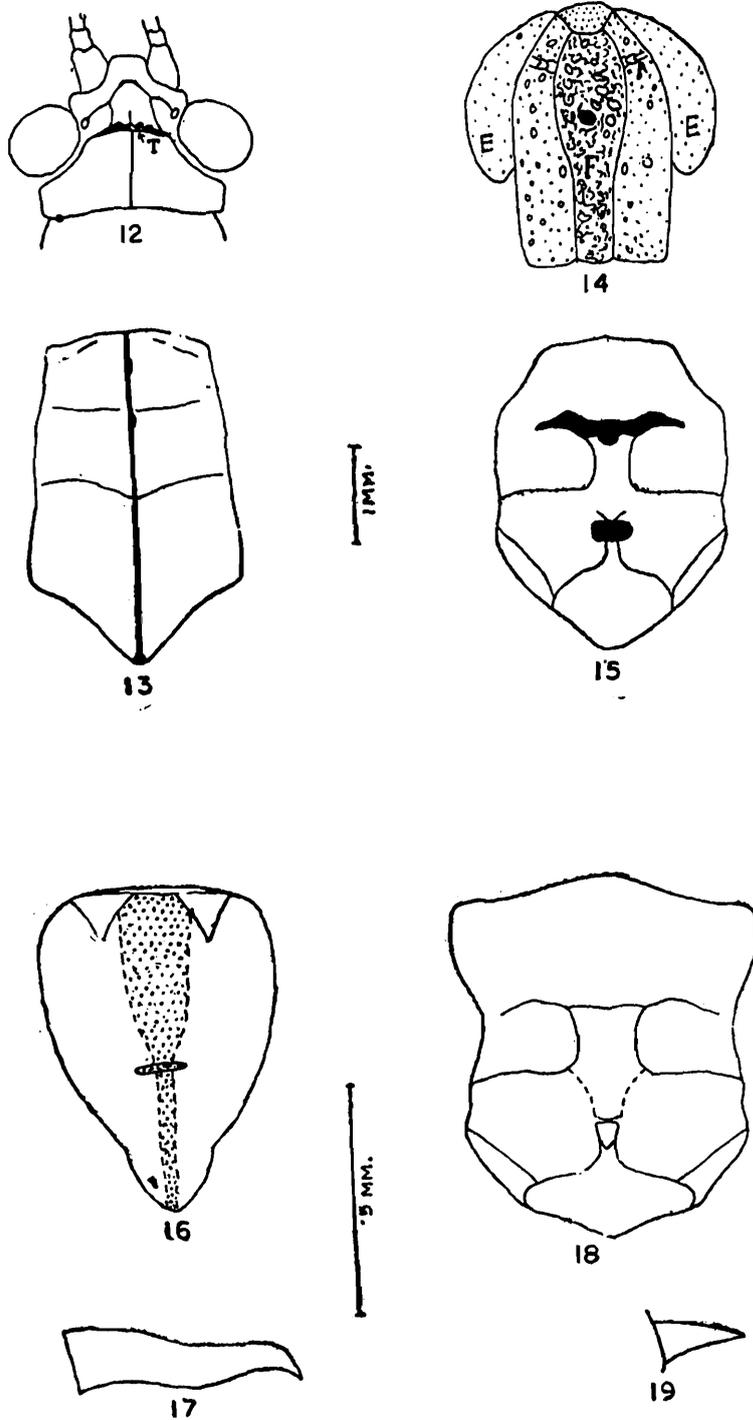
(Figs. 11-19)

Epistaurus sinetyi Bolivar, 1902. *Annls Soc. ent. Fr.*,
70 : 623.

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 pronotal 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 *Eucoptacra*, 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. Tympanum 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 navicular, with rounded apex; cercus longer than supraanal plate, conical, incurved and acuta 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. Posterior tibia brownish basad, followed by a pale ill 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 description 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, trifasciated 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 indistinctly 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.

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