

THE GRYLLOIDEA (ORTHOPTERA) OF TRIPURA, INDIA

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INTRODUCTION

Chopard (1969) studied the Grylloid fauna of India and adjacent countries but probably he did not have any material from Tripura. This particular part of India has remained unexplored so far as its Grylloid fauna is concerned. Recently some collections of Grylloidea were made by Dr. V.C. Agarwal and party (1969, 1972 and 1973) and one of the authors (M.S. Shishodia) of Zoological Survey of India. Most of the present collections were made from cultivated fields, thick forests, grasses, foliage, fallen or cut trees, understones; others from light traps operated in or near the base of foot hills. The material has been studied by us and it comprises altogether 19 species and one subspecies, distributed over 11 genera and five families of Grylloidea. The present paper adds one new species of Trigonidiidae, remaining all the species are new records for Tripura. The type specimens of the new species are deposited in the Zoological Survey of India.

It is certain, however, that many new species remain to be discovered from this virgin zone and further collection in the region, will enrich the known fauna.

Family GRYYOTALPIDAE

1. *Gryllotalpa africana* Beauvois

1805. *Gryllotalpa africana* Beauvois, *Ins. Afr. Amer.*, : 229.

1869. *Gryllotalpa fossor* Scudder, *Mem. Peabeody Ac. Sc.*, 1 : 21.

1969. *Gryllotalpa fossor*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 8.

Material examined : Ampoi, 17. i. 1971, V.C. Agarwal (1 ♂); Teliamura (Forest Rest House), 10. xi. 1974, M.S. Shishodia (1 ♀); Teliamura (Golabari), 11. xi. 1974, M.S. Shishodia (1 ♀); Teliamura (Korilong), 13. xi. 1974, M.S. Shishodia (1 ♂).

Remarks : Restricted to tropical Asia and Africa. This species is very common in India.

2. *Gryllotalpa hirsuta* Burmeister

1838. *Gryllotalpa hirsuta* Burmeister, *Handb. Ent.*, 11 : 739.

1969. *Gryllotalpa hirsuta*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 12.

Material examined : Kumarghat, 26. xii. 1972, V.C. Agarwal (1 ♀).

Remarks : The female specimen from Tripura agrees with the description given by

Chopard (1931, 1969). The species is being reported for the first time from India. It has been known earlier from Malaya, Sumatra, Java, and Borneo.

Family GRYLLIDAE

3. *Modicogryllus confirmatus* (Walker)

1859. *Acheta confirmata* Walker, *Ann. nat. Hist.*, (3) 4 : 221.

1969. *Modicogryllus confirmatus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 58.

1964. *Modicogryllus confirmatus*, Randall, *Can. Ent.*, 96 : 1584.

Material examined : Kumarghat, 29. xii. 1972, V.C. Agarwal (1 ♂); Ambassa, 1. i. 1973, V.C. Agarwal (1 ♂); Udaipur (Garjee), 7. xi. 1974, M. S. Shishodia (1 ♂); Teliamura (Forest Rest House), 10-12. xi. 1974, M. S. Shishodia (2 ♀♀).

Remarks : Chopard (1969) has described the species in detail. Recently Randell (1964) studied the male genitalia. The above male specimens agree well with the published description. A well distributed species in India and is also reported from Nepal, Bangladesh, Burma, Malaya, Thailand, Philippines and Israel.

4. *Modicogryllus* sp.

Material examined : Udaipur (Garjee), 7. xi. 1974, M. S. Shishodia (1 ♀).

Remarks : In the absence of male specimens it has not been possible to fix the specific identity.

5. *Loxoblemmus detectus* (Serville)

1839. *Platyblemmus detectus* Serville, *Ins. Orth.*, : 356.

1969. *Loxoblemmus detectus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 123.

Material examined : Teliamura (Bramachara), 10. xi. 1974, M.S. Shishodia (1 ♂); Teliamura (Kunjmura), 14. xi. 1974, M.S. Shishodia (1 ♀); Ambassa (Forest Rest House), 16. xi. 1974, M.S. Shishodia (1 ♀); Manu (Jamir Chera), 25. xi. 1974, M.S. Shishodia (1 ♂).

Remarks : The description by Chopard (1969) is comprehensive. Specimens before us agree well with the description of Chopard but differ in having, much longer labial palpi. Bhowmik (1969) reported that mirror in *L. detectus* is not divided but here the mirror is divided as referred by Chopard (1969).

The species is well distributed in northern and eastern India. It has also been reported from Sri Lanka, Malaya and Java.

6 a. *Loxoblemmus equestris* Saussure

1877. *Loxoblemmus equestris* Saussure, *Mem. Soc. Geneva*, 25 : 252.

1969. *Loxoblemmus equestris*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 122.

Material examined : Teliamura (Forest Rest House), 11. xi. 1974, M. S. Shishodia

(1 ♂); Udaipur (Garjee), 4. xi. 1974, M. S. Shishodia (1 ♂).

Remarks : The above specimens agree with the description of Chopard (1969). A well distributed species in India. Also known from China, Japan, Burma, Malaya, Celebes and Sri Lanka. Captured at light.

6 b. *Loxoblemmus equestris manipurensis* Bhowmik

1969. *Loxoblemmus equestris* Var. *manipurensis* Bhowmik, *Zool. Anz.*, 182 : 150.

Material examined : Udaipur (Garjee Rest House), 4. xi. 1974, M. S. Shishodia (1 ♂ and 3 ♀♀); Teliamura (Bramachara), 10. xi. 1974, M. S. Shishodia (1 ♀); Ambassa (Forest Rest House), 16. xi. and 19. xi. 1974, M. S. Shishodia (1 ♂ and 1 ♀).

Remarks : The above specimens agree with the description of the variety described by Bhowmik (1969) from Manipur. Captured at light. It is raised to subspecies level.

7. *Loxoblemmus* sp.

Material examined : Teliamura (Bramachara), 10. xi. 1974, M. S. Shishodiag, (1 ♀).

Remarks : Black in colour, brachypterous. In the absence of male it is not possible to identify upto specific level.

8. *Pteronemobius indicus* (Walker)

1869. *Nemobius indicus* Walker, *Cat. Derm. Salt. Brit. Mus.*, 1 : 58.

1969. *Pteronemobius indicus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 159.

Material examined : Udaipur (Garjee Rest House), 4. xi. 1974, M. S. Shishodia (2 ♀♀); Teliamura (Forest Rest House), 10. xi. 1974, M. S. Shishodia (2 ♂♂); Ambassa (Forest Rest House), 16, 19-20. xi. 1974, M. S. Shishodia (1 ♀ and 2 ♂♂).

Remarks : *Pteronemobius indicus* is a widely distributed species in the Oriental region. From India, Chopard (1969) has reported this species from Bombay, Madras, Coimbatore and Assam(Ledo); Tandon and Shishodia (1972) from Assam (North Lakhimpur) and Arunachal Pradesh (Siang and Kambang). Most of the specimens were caught at light.

9. *Pteronemobius concolor* (Walker)

1871. *Eneoptera concolor* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 *Suppl.* : 10.

1969. *Pteronemobius concolor*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 160.

Material examined : Udaipur (Garjee Forest House), 4. xi. 1974, M. S. Shishodia (1 ♂ and 5 ♀♀); Teliamura (Forest Rest House), 16, 19. xi. 1974, M.S. Shishodia (4 ♂♂ and 2 ♀♀); Manu, 23. xi. 1974, M. S. Shishodia (1 ♂).

Remarks : Specimens from Tripura agree with the description of Chopard (1969),

but differ in being comparatively darker. A widely distributed species in Tropical Asia; from India it is reported from Assam, West Bengal, Orissa, Tamilnadu, Maharashtra and Great Nicobar Island. Specimens were collected at light.

10. *Pteronemobius taprobanensis* (Walker)

1869. *Trigonidium taprobanensis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 1 : 102.

1969. *Pteronemobius taprobanensis*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 163.

Material examined : Agartala (Dak Bunglow), 11. xi. 1969, V C. Agarwal (1♂); Agartala (Forest Rest House), 31. x. 1974, M. S. Shishodia (1♀); Udaipur, Garjee (Forest Rest House), 4. xi. 1974 (1♂ and 2♀♀); Teliamura (Forest Rest House), 10-11. xi. 1974, M. S. Shishodia (5♂♂ and 5♀♀); and 14. xi. 1974, M. S. Shishodia (2♀♀); Ambassa (Forest Rest House), 16, 19. xi. 1974, M. S. Shishodia (2♂♂); Ambassa (Garo basti), 21. xi. 1974, M. S. Shishodia (1♂).

Remarks : It is a very widely distributed species in India and Indo-Malayan subregion. Tandon and Shishodia (1972) found the species in Arunachal Pradesh on dry river beds and on vegetation. Present series of specimens were collected from grasses and at light.

11. *Pteronemobius fascipes* (Walker)

1869. *Eneoptera fascipes* Walker, *Cat. Derm. Salt. Brit. Mus.*, 1 : 67.

1969. *Pteronemobius fascipes*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 164.

Material examined : Agartala (Chandmari), 10. xi. 1969, V C. Agarwal (1♂); Ampy, 17. i. 1971, V. C. Agarwal (1♀); Agartala (M.B.B. College campus), 1. xi. 1974, M. S. Shishodia (1 ♀).

Remarks : A well distributed species in India, Sri Lanka, Malaya, Singapore, Java and Burma. Tandon and Shishodia (1972) found the species on dry river beds, wild vegetation and under the falled log of wood in Arunachal Pradesh. The specimens from Tripura were mostly collected at light and from grasses.

12. *Pteronemobius novarae* (Saussure)

1877. *Nemobius novarae* Saussure, *Mem. Soc. Geneve*, 25 : 83.

1969. *Pteronemobius novarae*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 162.

Material examined : Ambassa, 1. i. 1973, V C. Agarwal (1♀), at light.

Remarks : A single female from Tripura agree well with the description given by Chopard (1969), but differs in being smaller in size and in colouration. Previously known in India from Madhya Pradesh. It is recorded for the first time from north eastern India. It has also been reported from Thailand, Malaya and Java.

Family OECANTHIDAE

13. *Oecanthus indicus* Saussure

1878. *Oecanthus indicus* Saussure, *Mem. Soc. Geneve*, 25 : 454.

1969. *Oecanthus indicus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 267.

Material examined : Fatik Roy, 29. xii. 1972, V. C. Agarwal (1 ♀).

Remarks : Previously recorded in India from Maharashtra, Bihar, Arunachal Pradesh, Karnataka, Tamilnadu, Kerala and Andaman Islands. Also known from China, Japan, Malaya, Philippines and Sri Lanka.

Family TRIGONIDIIDAE

14. *Homoeoxipha lycoides* (Walker)

1869. *Phyllopalpus lycoides* Walker, *Cat. Derm. Salt. Brit. Mus.*, 1 : 71.

1969. *Homoeoxipha lycoides*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 275.

Material examined : Udaipur (Garjee Rest House), 6. xi. 1974, M. S. Shishodia (2 ♂♂ and 1 ♀) at light; Manu (Dhumachera), 24. xi. 1974, M. S. Shishodia (1 ♂).

Remarks : The specimens from Tripura agree with the description of Chopard (1969), but differ in having anterior and middle femora blackish and in the shape of anterior margin of pronotum. A widely distributed species in the Indo-Australian region; it has been reported earlier from India in Bihar, Assam, Arunachal Pradesh, Tamilnadu and Karnataka (Mysore).

15. *Anaxipha tripuraensis* sp. nov.

Male : Size small. Head of small size, yellowish brown, without ornamentation, convex above, a little wider than cephalic margin of pronotum; occiput, cheeks light brown; mandibles, labium with brown tinge; maxillary palps pale yellow; 5th joint of palpi triangular; antennae yellow; eyes almost rounded, protruding; frontal rostrum a little narrow than first antennal segment.

Thorax : Pronotum slightly constricted in front; anterior margin weakly convex; posterior margin straight; disc convex with few setae on head; lateral lobes concolorous, with feebly sinuated inferior margin; anterior angles rounded. Legs yellowish, pubescent; anterior femora perforated on both sides; posterior femora moderately thick with three spines on each margin. Elytra reaching almost the apex of abdomen, very pale yellow, almost transparent; elytral mirror almost twice as long as wide; lateral field almost transparent with three veins.

Abdomen : Visible segments yellow; cerci long, pale brown; genitalia as figured (figs. 1 & 2).

Measurements (in mm) : Length of body without wings, 6.00; length with wings, 10.00; length of pronotum, 1.00; length of posterior femora, 4.00; length of elytra, 4.00.

Female : Differs from male in general colouration in being rufous. Head brownish. Disc of pronotum with a fine yellow median line; posterior dorsal margin of pronotum with row of fine hairs. Elytra extending upto the apex of abdomen, weakly convex; dorsal field light brown with 4 straight veins. Ovipositor distinctly curved upwards; apical valves occupying half the total length, margin finely denticulated.

Measurements (in mm) : Length of body without wings, 5.5; Length of body with wings, 10.00; Length of pronotum, 1.5; Length of posterior femora, 4.00; Length of elytra, 4.00; Ovipositor, 2.00.

Material : Holotype, 1 ♂; Tripura : Teliamura (Forest Rest House), 10.xi.1974, M.S. Shishodia (Z.S.I Reg. No. 7424/H5).

Remarks : This species comes closer to *Anaxipha longipennis* (Serville), but differs in having elytral mirror twice as long as wide, female elytra with 4 veins in the dorsal field, maxillary palpi (5th segment) and in the shape of male genitalia.

16. *Cyrtoxiphoides* sp.

Material examined : Ambassa, 16.xi.1974, M. S. Shishodia (1♀).

Remarks : In the absence of male specimen it is not possible to fix the identity of the species. The genus is being recorded for the first time from Indian limits. Previously recorded from Tropical Africa, Australia and Sri Lanka.

17 a. *Trigonidium cicindeloides* Rambur

1839. *Trigonidium cicindeloides* Rambur, *Fauna Andal.*, 2 : 39.

1925. *Trigonidium cicindeloides*, Chopard, *Ann. Mag. Nat. Hist.*, (9) 15 : 525.

1969. *Trigonidium cicindeloides*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 304.

Material examined : Ambassa, 4.i.1973, V.C. Agarwal (1♂ & 1♀), 16.xi.1974, M.S. Shishodia (1♂ and 1♀); Agartala (M.B.B. College Campus), 1.xi.1974 M.S. Shishodia (1♂ and 1♀); Udaipur (Garjee), 5.xi.1974, M.S. Shishodia, (1♂ and 4♀♀), 6.xi.1974, M.S. Shishodia (1♀), 7.xi.1974, M.S. Shishodia (3♂♂ and ♀); Fatik Roy, 29.xii.1972, V.C. Agarwal (8♂♂ and 6♀♀); Teliamura, (Bramachara), 10.xi.1974, M.S. Shishodia (3♂♂); Manu (Mainama), 23.xi.1974, M.S. Shishodia (4♂♂ and 7 ♀♀).

Remarks : The specimens from Tripura agree well with the description but some specimens are chestnut brown instead of black.

A well distributed species from South Europe to South Asia and all over Africa. In India, it was so far recorded from Bihar, Arunachal Pradesh, West Bengal and Andaman Islands. The specimens were collected from grasses under the trees.

17 b. *Trigonidium humbertianum* (Saussure)

1878. *Homoeoxiphus humbertianum* Saussure, *Mem. Soc. Geneve.*, 25 : 468.

1969. *Trigonidium humbertianum*, Chopard, *Fauna of India, Orth.* 2 *Grylloidea* : 305.

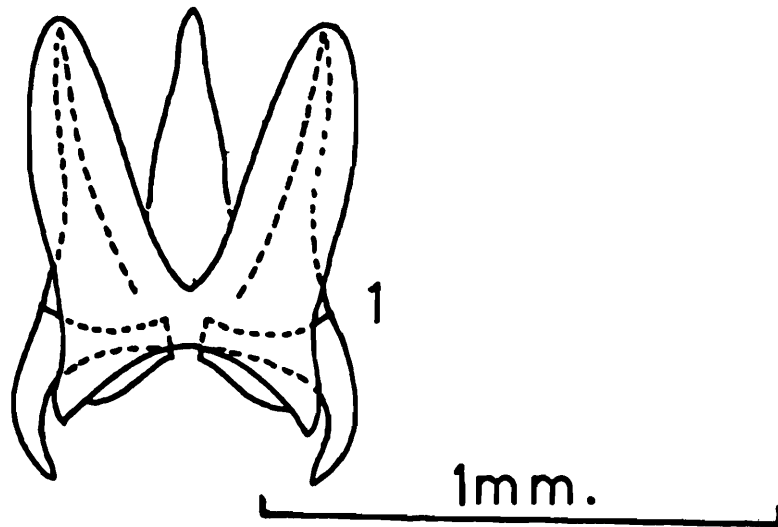


Fig. 1. Dorsal view of ♂ genitalia of *Anaxipha tripuraensis*.

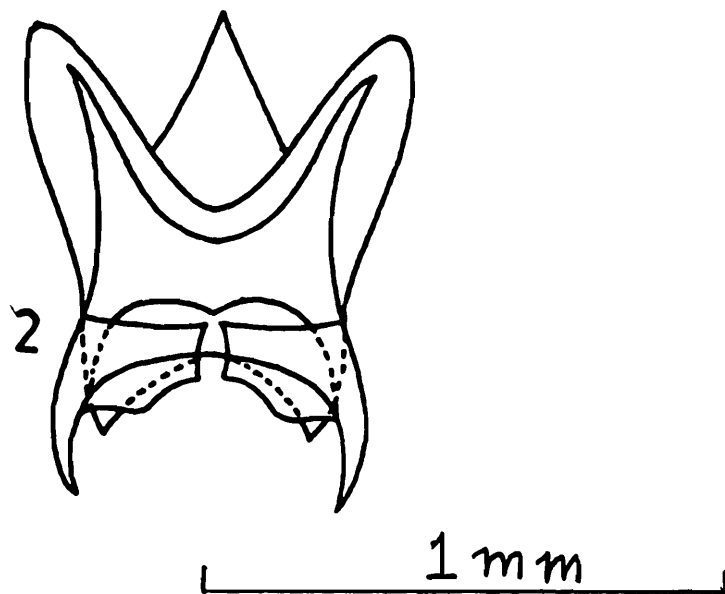


Fig. 2. Ventral view of ♀ genitalia of *Anaxipha tripuraensis*.

Material examined : Manu (Chailengta), 23.xii.1972, V. C. Agarwal (1 ♂), Fatik Roy, 29.xii.1972, V. C. Agarwal (2 ♂♂ and 2 ♀♀); Agartala, 31.x.1974, M.S. Shishodia (2 ♂♂); Ambassa, 16.xi.1974, M.S. Shishodia (2 ♀♀, 2♂♂).

Remarks : The specimens from Tripura agree well with Chopard (1969) description but differ slightly in colouration of pronotum. A very widely distributed species in the Oriental region; from India it was so far reported from maharashtra, Bihar, Assam, Orissa, Tamil Nadu and Kerala.

Family ENEOPTERIDAE

18. *Madasumma* sp.

Material examined : Ambassa (Harinchara), 19.xi.1974, M.S. Shishodia (1♀).

Remarks : In the absence of male it has not been possible to fix the identity of the species.

19. *Euscyrthus hemelytrus* (Haan)

1842. *Gryllus (Eneoptera) hemelytrus* Haan, *Temminck Verhandel, Orth.* : 231.

1969. *Euscyrthus hemelytrus*, Chopard, *Fauna of India Orth. 2 Grylloidea* : 392.

Material examined : Udaipur (Garjee), 4.xi.1974, M.S. Shishodia (5 ♀♀), 8.xi.1974, M.S. Shishodia (1 ♂); Agartala (Bhangshala), 2.xi.1974, M.S. Shishodia (1 ♂ and 1 ♀); Teliamura (Bramachara), 10.xi.1974, M.S. Shishodia (1 ♀); Ambassa (Garo Basti), 2.xi.1974, M.S. Shishodia (1 ♂ and 1 ♀).

Remarks : The specimens from Tripura agree well with description of Chopard (1969), but differ in size and colour. A wide spread species in the Oriental region and was so far reported from West Bengal and Assam in India. It is also known from Australia.

SUMMARY

The present paper deals with the Grylloidea from Tripura, India. The collection comprises 19 species. *Anaxipha tripuraensis* is new to Science. *Gryllotalpá hirsuta*. Burmeister is a new record from India and the remaining are of interest from the point of geographical distribution. All are new records from Tripura. Notes on distribution of each species are also given.

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