

**GRYLLIDAE (INSECTA : ORTHOPTERA) FROM JAVADI HILLS, TAMIL NADU,
INDIA**

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Javadi Hills in the North Arcot District of Tamil Nadu remained unsurveyed for unknown reasons until the Zoological Survey of India began surveying it in October, 1982. No species of the Family Gryllidae has so far been recorded from the Javadi Hills. The present paper deals with collections made largely during the February-March, 1983 survey in which the present author participated. One species is recorded here for the first time from India, in addition to 12 other species belonging to 10 genera.

Javadi Hills lie in the rain-shadow area of the Eastern Ghats complex. The hills are mainly undulating, with a few peaks. They enjoy a moderate to cool climate almost throughout the year, and winters tend to be very cold. Day temperature in summer ranges around 32°-35°C, while that in winter may be about 20°C or less. Winter nights are quite chill, with the temperature touching 15°C or less. Rainfall in Javadi Hills, which is contributed by both SW and NE monsoons, ranges between 850 and 900 mm, and is equally distributed.

The kinds of soil met with in the Javadi Hills are sandy, red loam and Kalleri soil. Tropical dry evergreen forest and dry deciduous forest are met with, especially in the Veerappanur and Pattaraikkadu Reserved Forest areas, from where most of the Gryllid collections were made.

I. Subfamily : GRYLLINAE

1. *Gryllus bimaculatus* De Geer

- 1773. *Gryllus bimaculatus* De Geer, *Mem. Ins.*, 3 : 521.
- 1961. *Gryllus bimaculatus*, Chopard, *Eos*, 37 : 269.
- 1967. *Gryllus bimaculatus*, Chopard, *Orth. Cat.*, 10 : 49.
- 1969. *Gryllus bimaculatus*, Chopard, *Fauna Ind. Grylloidea*, 2 : 35.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♀, Pudur (Pattaraikkadu)—alt. 580 m, 5.iii.1983 (*M. Vasanth* coll.).

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Sikkim, W Bengal, Bihar, Uttar Pradesh, Himachal Pradesh, Punjab, Jammu & Kashmir, Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Karnataka, Andhra Pradesh, Tamil Nadu, Pondicherry,

S. Andaman and Nicobar Islands ; PAKISTAN ; SRI LANKA ; BURMA ; MALAYSIA ; SINGAPORE ; NEPAL ; Tropical Africa.

Remarks : This widely distributed species has been recorded earlier from other localities in Tamil Nadu (Palni and Nilgiri Hills, Tiruchirapalli, Coimbatore). It does not appear to be very abundant in Javadi Hills. The lone female specimen collected was found below a large rock where the soil was very wet.

2. *Gryllodes sigillatus* (Walker)

1869. *Gryllus sigillatus* Walker, *Cat. Derm. Salt. Br. M.*, 1 : 46.

1877. *Gryllodes sigillatus*, Saussure, *Mem. Soc. Geneve*, 25 : 210.

1967. *Gryllodes sigillatus*, Chopard, *Orth. Cat.*, 10 : 108.

1969. *Gryllodes sigillatus*, Chopard, *Fauna Ind. Grylloidea*, 2 : 85.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♂, 2 ♀, Kanaru stream-alt. c 510 m, 26.ii.1983 ; 1 ♂, 1 ♀, Vannanthurai-alt. 590 m, 27.ii.1983 (*M. Vasanth* coll.).

Distribution INDIA : Assam, Meghalaya, Manipur, W Bengal, Bihar, Orissa, Uttar Pradesh, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, Maharashtra, Madhya Pradesh, Karnataka, Kerala, Andhra Pradesh, Tamil Nadu, Andaman and Nicobar Islands ; SRI LANKA ; MALAYSIA ; PAKISTAN.

Remarks : Vasanth (in press) has recorded this species for the first time from Meghalaya and Manipur. In Tamil Nadu this species has so far been recorded from Madurai, Nilgiri and Palni Hills.

3. *Platygyryllus brunneri* (Saussure)

1877. *Gryllus brunneri* Saussure, *Mem. Soc. Geneve*, 25 : 170.

1961. *Platygyryllus brunneri*, Chopard, *Eos*, 37 : 276.

1964. *Platygyryllus brunneri*, Randell, *Canad. Ent.*, 96 : 1598.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♂, 1 ♀, Theerthakanaru Odugathur-alt. 410 m, 21.iv.1984 (*K. R. Rao & pty.* coll.) ; 2 ♂, 3 ♀, Kanaru stream-alt. c 510 m, 26.ii.1983 ; 8 ♂, 11 ♀, Vannanthurai-alt. 590 m, 27.ii.1983 ; 4 ♂, 3 ♀, Motlapattu-600 m, 26.ii.1983 ; 8 ♂, 11 ♀, Vannanthuria alt. 590m, 22.ii.1983 ; 4 ♂, Kondikalluru-alt. 580 m, 6.iii.1983 ; 8 ♂, 3 ♀, Bheemamaduvu-alt. 500 m, 24.ii.1983 & 1.iii.1983 (*M. Vasanth* coll.).

Distribution : INDIA : Bihar, Orissa, Uttar Pradesh, Himachal Pradesh, Rajasthan, Madhya Pradesh, Tamil Nadu ; BANGLADESH ; MOROCCO.

Remarks : This is, by far, the most abundantly represented species in the Javadi Hills collections, and is recorded for the first time from Eastern ghats. South of Madhya Pradesh, it has been recorded only from Coimbatore in Tamil Nadu. A large population of this species was existant at Vannanthurai during the end of February, 1983, under dry leaf litter, and in cracks in the caking mud. At this spot no other Gryllid species was available in the leaf litter.

4. *Modicogryllus confirmatus* (Walker)

1859. *Acheta confirmata* Walker, *Ann. Mag. nat. Hist.*, (3) 4 : 221.
 1869. *Gryllus confirmatus*, Walker, *Cat. Derm. Salt. Br. M.*, 1 : 371.
 1961. *Modicogryllus confirmatus*, Chopard, *Eos*, 37 : 272.
 1967. *Modicogryllus confirmatus*, Chopard, *Orth. Cat.*, 10 : 80.

Material examined : Tamil Nadu : N. Arcot Dist. : 3 ♂, Bheemamaduvu-alt. 500 m, 1.iii.1983 ; 3 ♂, 2 ♀, Kanaru stream-alt. 510 m, 26.ii.1983 & 9.iii.1983 ; 2 ♂, 2 ♀, Vannanthurai-alt. 590 m, 27.ii.1983 ; 4 ♂, 1 ♀, Motlapattu-alt. 600 m, 25.ii.1983 ; 1 ♂, Madikkaru-alt.600 m, 28.ii.1983 (*M. Vasanth* coll.).

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Manipur, W Bengal, Bihar, Orissa, Uttar Pradesh, Haryana, Rajasthan, Maharashtra, Madhya Pradesh, Karnataka, Tamil Nadu, Andaman and Nicobar Islands ; NEPAL ; BANGLADESH ; BURMA ; SRI LANKA ; PAKISTAN ; MALAYSIA ; THAILAND ; CHINA ; IRAN.

Remarks : Earlier, this species was known only from Madurai in Tamil Nadu.

5 *Teleogryllus mitratus* (Burmeister)

1838. *Gryllus mitratus* Burmeister, *Handb. Ent.* 2 : 34.
 1869. *Gryllus testaceus*, Walker, *Cat. Derm. Salt. Br. M.*, 1 : 38 (Primary homonym of *Gryllus testaceus* De Geer, 1773).
 1961. *Teleogryllus testaceus*, Chopard, *Eos*, 37 : 277.
 1980. *Teleogryllus mitratus*, Townsend, *J. nat. Hist.*, 14 : 158.

Material examined : Tamil Nadu : N. Arcot Dist. : 3 ♂, 2 ♀, 4 nymphs, Pudur (Pattaraikkadu) -alt. 580 m, 5.iii.1983 ; 7 ♂, 2 nymphs, Vannanthurai -alt. 590 m, 27. ii. 1983 ; 2 ♀, Kanaru stream-alt. c 510 m, 26.ii.1983 ; 1 ♂ 4 nymphs, Kondikalluru alt. 580 m, 6.iii.1983 ; 2 ♂, 1 ♀, Motlapattu - alt. 600 m, 25.ii.1983 (*M. Vasanth* coll.).

Distribution : INDIA : Meghalaya, Assam, W. Bengal, Bihar, Orissa, Uttar Pradesh, Madhya Pradesh, Karnataka, Tamil Nadu, Kerala, Andaman and Nicobar Islands ; SRI LANKA ; NEPAL ; BURMA ; MALAYSIA ; SINGAPORE ; INDONESIA ; THAILAND ; BORNEO ; INDO-CHINA ; PHILIPPINES ; TENASSERIM ; CHINA ; VIETNAM.

Remarks : Practically all the specimens were collected from the wet soil under large rocks embedded in dry stream beds.

The present species is actually what was earlier known as *Teleogryllus testaceus* (Walker) (*vide* Townsend, 1980).

In Tamil Nadu, the present species has so far been recorded from Tiruchirapalli and Coimbatore. Its present record from Javadi Hills is, perhaps, the first from the eastern ghats.

6. *Velarifictorus asperus* (Walker)

1869. *Gryllus aspersus* Walker, *Cat. Derm. Salt. Br. M.*, 1 : 39.
 1931. *Scapsipedus aspersus*, Chopard, *Bull. Raffles Mus.*, 6 : 130.
 1964. *Velarifictorus aspersus*, Randell, *Canad. Ent.*, 96 : 1587.

Material examined : Tamil Nadu : N. Arcot Dist. : 2 ♂, Pattaraikkadu, 8.iii.1983 (M. Vasanth coll.).

Distribution : INDIA : Arunachal Pradesh, Meghalaya, W. Bengal, Uttar Pradesh, Jammu, Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu ; SRI LANKA ; BURMA ; MALAYSIA : SINGAPORE ; INDONESIA (Java) ; BORNEO ; ANNAM ; HONG KONG ; CHINA.

Remarks : The two specimens were collected from a crack in caking mud made moist by water trickling from a water pump nearby. They were located by their calling sound. Interestingly, neither of the specimens has excavated mandibles as is usually seen in the males of the species.

Vasanth (in press) has recorded it for the first time from Tamil Nadu.

II. Subfamily : NEMOBIINAE

7. *Pteronemobius fascipes* (Walker)

1869. *Eneoptera fascipes* Walker, *Cat. Derm. Salt. Br. M.*, 1 : 67.

1931. *Pteronemobius fascipes*, Chopard, *Bull. Raffles Mus.*, 6 : 134.

1967. *Pteronemobius fascipes*, Chopard, *Orth. Cat.*, 10 : 169.

Material examined : Tamil Nadu : N. Arcot Dist : 2 ♂, 1 ♀, Kondikalluru -alt. 580 m, 6.iii.1983 ; 2 ♂, 1 ♀, Kanaru stream -alt. c 510 m, 26.ii.1983 ; 1 ♂ (head missing), 3 ♀, Bheemamaduvu -alt. 500 m, 1.iii.1983 (M. Vasanth coll.).

Distribution : INDIA : Assam, Manipur, Arunachal Pradesh, Meghalaya, W. Bengal, Sikkim, Bihar, Orissa, Uttar Pradesh, Himachal Pradesh, Haryana, Jammu & Kashmir, Maharashtra, Goa, Madhya Pradesh, Karnataka, Kerala, Tamil Nadu ; SRI LANKA ; SINGAPORE ; BURMA ; INDONESIA (Java).

Remarks : The present species is distributed virtually throughout the Indian Union. The earlier records of this species from Tamil Nadu are from Tindivanam and Tiruchirappalli.

8. *Pteronemobius taprobanensis* (Walker)

1869. *Trigonidium taprobanense* Walker, *Cat. Derm. Salt. Br. M.*, 1 : 102.

1924. *Pteronemobius javanus*, Chopard, *Rec. Ind. Mus.*, 26 : 182.

1925. *Pteronemobius taprobanensis*, Chopard, *Ann. Mag. nat. Hist.*, (9) 15 : 507.

1969. *Pteronemobius taprobanensis*, Chopard, *Fauna Ind. Gryllodea*, 2 : 163.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♀, Kondikalluru -alt. 580 m, 6.iii.1983 (M. Vasanth coll.).

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, W. Bengal, Bihar, Orissa, Madhya Pradesh, Rajasthan, Maharashtra, Tamil Nadu, Andaman and Nicobar Islands ; BANGLADESH ; SRI LANKA ; BURMA ; MALAYSIA ; INDONESIA.

Remarks : This is the first record from the Eastern ghats. It was earlier recorded

from the Western ghats (Nilgiris in Tamil Nadu). Vasanth (in press) recorded it first from Manipur and Meghalaya.

9. *Paranemobius pictus* (Saussure)

1877. *Pseudonemobius pictus* Saussure, *Mem. Soc. Geneve.* 25 : 67.

1925. *Paranemobius pictus*, Chopard, *Ann. Mag. nat. Hist.*, (9) 15 : 506.

1969. *Paranemobius pictus*, Chopard, *Fauna Ind. Grylloidea*, 2 : 174.

Material examined : Tamil Nadu : N. Arcot Dist. : 3 ♂, 3 ♀, 4 nymphs, Bheemamaduvu -alt. 500 m, 24.ii.1983 ; 1 ♀, Vannanthurai -alt. 590 m, 27.ii.1983 ; 2 ♂, 5 ♀, 3 nymphs, Kanaru stream -alt. c 510 m, 26.ii.1983 & 9.iii.1983 (*M Vasanth* coll.).

Distribution : INDIA : Bihar, Madhya Pradesh, Maharashtra, Kashmir, Karnataka, Kerala, Tamil Nadu ; SRI LANKA.

Remarks : This agile, moisture-loving Nemobiine was collected from boulders in streams, where large populations of several age-groups were found accumulated on the face of the boulder near stagnant water. In one locality, i.e. Bheemamaduvu, a good number of them was found on the walls of a pit containing stagnant water. The species was so far unknown from the Eastern ghats, although there are records from Western ghats.

III. Subfamily : OECANTHINAE

10. *Oecanthus indicus* (Saussure)

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

1966. *Oecanthus indicus*, T. J. Walker, *Florida Ent.*, 49 (4) : 268.

1968. *Oecanthus indicus*, Chopard, *Orth. Cat.*, 12 : 432.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♀, Vannanthurai -alt. 590 m, 27.ii.1983 (*M. Vasanth* coll.).

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, W. Bengal, Bihar, Orissa, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu, Andaman Islands ; SRI LANKA ; MALAY ARCHIPELAGO ; PHILIPPINES.

Remarks : The single female specimen of the present species was collected from an *Ipomea* plant (Fam : Convolvulaceae).

This species, and the subfamily to which it belongs, were first recorded from Assam and Meghalaya by Vasanth (in press). The previous records of this species from Tamil Nadu are from the Nilgiris, Kodaikanal and Coimbatore.

IV. Subfamily : TRIGONIDIINAE

11. *Anaxipha rufonotata* Chopard

1931. *Anaxipha rufonotata* Chopard, *Ark. Zool.*, (A) 23, No. 9 : 12.

1969. *Anaxipha rufonotata*, Chopard, *Fauna Ind. Grylloidea*, 2 : 279.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♂, Bheemamaduvu -alt. 500 m, 24.ii.1983 (*M. Vasanth* coll.).

Distribution : INDIA : Tamil Nadu ; MALAYSIA ; MDONESIA (Sumatra).

Remarks : The present species is recorded for the first time from India. Its earlier records are from Sumatra, from where it was originally described, and Malaysia.

Although the genitalia of the specimen studied is identical with that figured by Chopard (1969), the four reddish lines on the head, and the row of reddish spots on the posterior margin of the pronotum which, apparently, have given the species its name, are absent. The present specimen is quite akin to *A. longipennis* (Serville) in its external characteristics. It is micropterous.

12. *Trigonidium cicindeloides* Rambur

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

1968. *Trigonidium cicindeloides*, Chopard, *Orth. Cat.*, 12 : 340.

Material examined : Tamil Nadu : N. Arcot Dist. : 2 ♀, Odugathur, Utharakaveri Aru-alt. 300 m, 23.iv.1984 (K. R. Rao and G. Thirumalai coll.) ; 1 ♂, 1 ♀, Kondikalluru-alt. 580 m, 6.iii.1983 (M. Vasanth coll.).

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, W. Bengal, Bihar, Orissa, Himachal Pradesh, Maharashtra, Goa, Karnataka, Tamil Nadu, Andaman Islands ; SRI LANKA ; NEPAL ; BURMA ; MALAYSIA ; widely distributed from S. Europe to S. Asia and all over Africa.

Remarks : There is a view among a section of modern Gryllid-taxonomists that the present species and the following one, viz., *T. humberianum* (Saussure) should be regarded merely as two subspecies of *T. cicindeloides* Rambur. The present author also subscribes to this view as it is felt that the differences between the two species are not only too insignificant, but also limited to a few external characters, the genitalia being identical.

13. *Trigonidium humberianum* (Saussure)

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

1925. *Trigonidium humberianum*, Chopard, *Ann. Mag. nat. Hist.*, (9) 15 : 525.

1968. *Trigonidium cicindeloides humberianum*, Chopard, *Orth. Cat.* 12 : 342.

Material examined : Tamil Nadu : N. Arcot Dist. : 1 ♀, Odugathur, Utharakaveri Aru-alt. 300 m, 23.iv.1984 (K. R. Rao and G. Thirumalai coll.) ; 1 ♂, 1 ♀, Vannanthurai-alt. 590 m, 27.ii.1983 (M. Vasanth coll.).

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, W. Bengal, Bihar, Orissa, Madhya Pradesh, Gujarat, Maharashtra, Kerala, Tamil Nadu ; SRI LANKA ; MALAYSIA ; widely distributed in the Oriental Region.

Remarks : This species has been hitherto recorded from only one locality in Tamil Nadu, viz., Coimbatore. It was first recorded from Arunachal Pradesh, Manipur and Meghalaya by Vasanth (in press).

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