

A new genus and new species of the tribe Caliscelini Amyot & Serville (Hemiptera, Fulgoroidea, Caliscelidae, Caliscelinae) from southern India

Vladimir M. Gnezdilov^{*,1} and Chandrashekharaswamy A. Viraktamath²

¹ Zoological Institute, Russian Academy of Sciences, Universitetskaya nab.1, 199034 St. Petersburg, Russia

² Department of Entomology, University of Agricultural Sciences GKVK, 560 065 Bangalore, India

Abstract

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Formiscurra gen. n., with the type species *Formiscurra indicus* sp. n., of the tribe Caliscelini is described and illustrated from southern India.

Key Words

Taxonomy

Oriental Region

Introduction

The family Caliscelidae Amyot & Serville is a world-wide distributed group, with diverse fauna in the Oriental Region represented by two subfamilies with three tribes. Most part of Oriental caliscelids belong to the subfamily Ommatidiotinae Fieber (*sensu* Gnezdilov & Wilson 2006; Gnezdilov 2008a, 2011), the tribes Augilini Baker and Adenissini Dlabola. The new genus described below belongs to the subfamily Caliscelinae Amyot & Serville, the tribe Caliscelini Amyot & Serville. In India this tribe is represented by three genera with four species, excluding the new species described in this paper, namely, *Bulbonaso tapirifacies* (Parshad, 1981), *Chirodisca eximia* (Stål, 1859), *Rhinogaster albivenosa* Fennah, 1949, and *R. sinuata* Menon & Parshad, 1961.

Material and methods

The terminology of the head and the body follows Emeljanov (1995). Photographs of the specimens were made using Leica MZ95 with Nikon video camera SMZ 1500 and Leica M205C with video camera Leica DFC425, images are produced using the software ACT-2U Combine Z5 and Adobe Photoshop. The drawings of male

genitalia are made using Camera lucida attached to Leica microscope.

Type material is deposited in the University of Agricultural Sciences, Bangalore, India (UASB), the National Pusa collection, Indian Agricultural Research Institute, New Delhi, India (NPC), the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZIN), and the Zoologisches Museum, Humboldt Universität, Berlin, Germany (ZMHB).

Results

Caliscelidae Amyot & Serville, 1843

Caliscelinae Amyot & Serville, 1843

Caliscelini Amyot & Serville, 1843

***Formiscurra* gen. n.**

Type species. Formiscurra indicus sp. n.

Diagnosis. Metope and coryphe joint at angle close to 180° (in lateral view) (Figs 1–2, 4, 6). Metope lacking intermediate carinae. Scape short, cylindrical. Pedicel elongate, cylindrical, with sensory organs and long acuminate latero-apical process slightly longer than pedicel itself (Figs 1, 3, 5, 7). Pedicel with long flagellum. Rostrum reaching apices of hind coxae, with short apical segment. Eyes large, each with triangular callus infront

* Corresponding author, e-mail: vmgnezdilov@mail.ru

of pedicel. Ocelli absent. Postclypeus large, without carinae. Coryphe transverse, without carinae, anterior margin weakly convex, posterior margin nearly straight (Figs 3, 5, 7). Paradiscal fields linear. Paranotal lobes wide, rounded, without carinae. Mesonotum twice as long as pronotum medially. Forewings reaching hind margin of abdominal tergite III, with venation obscure excluding well visible Radius and Median with common stem (Figs 1–2, 4, 6). Legs not foliate. Each hind tibia with large single lateral spine medially and 5 apical spines. First and second metatarsomeres each with only 2 lateroapical spines. First metatarsomere 1.2 times as long as second metatarsomere, with a pad of short and thick setae ventrally.

Male (Figs 1–5). Head, body including fore wings, and legs covered by long hairs. Lower part of metope and upper part of postclypeus forming large bulb-shaped elongate process twice as long as head (Figs 1–5). Lateral keels of metope smooth below the eyes, reaching metopoclypeal suture. Scape with apical margin weakly convex externally. Margins of coryphe keeled. Pronotum without carinae. Mesonotum with lateral carinae converging posteriorly (Fig. 3). Forewings saddle-shaped, concave (Figs 1–2, 4). Abdomen convex, sinuate in lateral view, sternites III–VI with hind margins acutely angulately concave, sternite VII with hind margin widely concave.

Male genitalia (Figs 8–11). Pygofer narrow, hind margin with a process on each side (in lateral view)

(Fig. 8). Anal tube narrowing apically (in dorsal view). Phallobase enlarged apically (in lateral view), dorso-lateral lobes with concave margin under the aedeagal hooks (Fig. 10). Aedeagus with pair of long equal ventral hooks (Figs 9–10). Style with long and narrow capitulum (Fig. 11).

Female (Figs 6–7). Head excluding coryphe, legs, abdominal sternites, and gonoplacs covered by long hairs. Lower part of metope and upper part of postclypeus forming long cylindrical process slightly flattened laterally (Figs 6–7). Lateral keels of metope visible only above the antennae. Pronotum and mesonotum with weak median carina. Forewings straight (in lateral view) (Fig. 6). Abdomen weakly convex in lateral view. Abdominal sternite III with hind margin widely concave, sternites IV–VI with hind margins acutely angulately concave, sternite VII with hind margin convex with median concavity. Anal tube wide, narrowing apically. Anal column short.

Etymology. Generic name is derived from the combination of Latin “Formica” – ant and “Scurra” – clown. Masculine in gender.

Comparison. New genus is well distinguished from other caliscelid genera by peculiar bulb-shaped process on metope in male and long cylindrical process on metope in female (Figs 1–7).

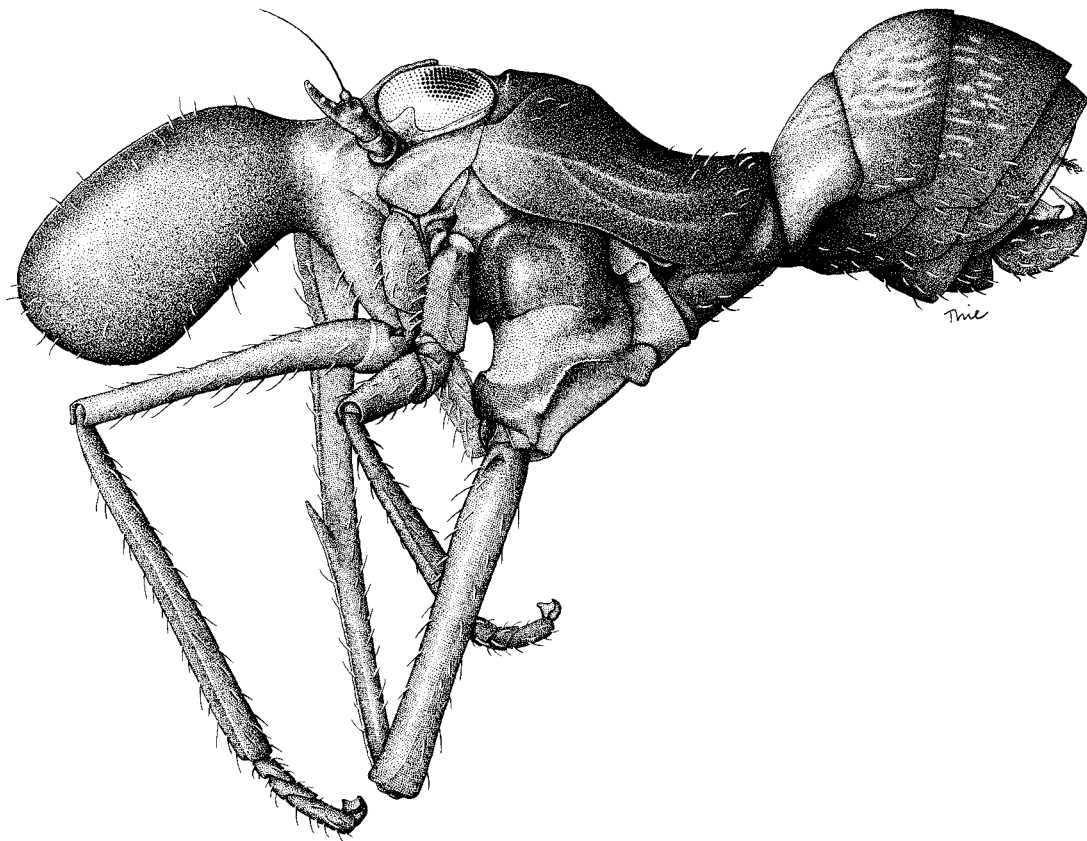


Figure 1. *Formiscurra indicus* gen. et sp. n., male, lateral view (by O. Thie).



Figures 2–7. *Formiscurra indicus* gen. et sp. n.; **2, 4.** Male, lateral view, 4.8–5.1 mm; **3, 5.** Same, dorsal view; **6.** Female, lateral view, 5.0 mm; **7.** Same, dorsal view.

Formiscurra indicus sp. n.

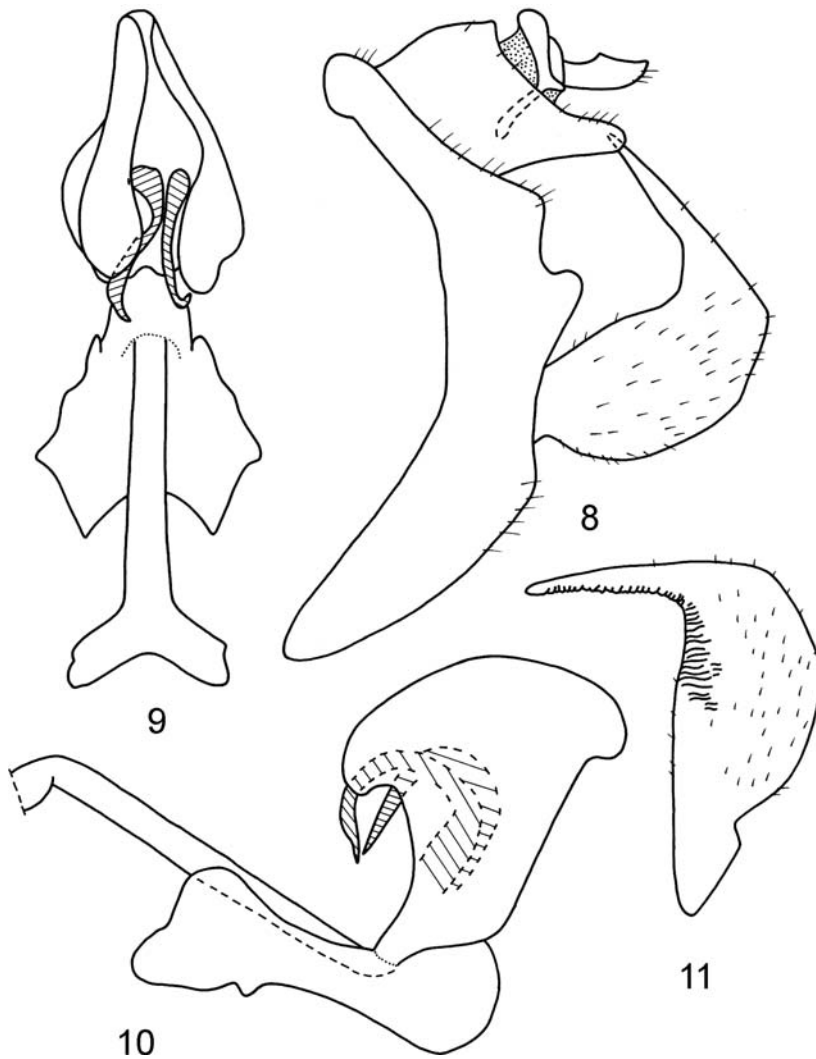
Figures 1–11

Type material. Holotype, ♂, India: Karnataka, Bangalore, GKVK, 3.VII.2006, ex *Panicum* sp., N. Kenchegowda leg. (UASB).

Paratypes. India: Karnataka: 4 ♂, 1 ♀, as holotype (UASB, ZMHB); 2 ♂, Bangalore, 916 m, 27.V.2000, Prathapan leg. (ZIN, NPC); 1 ♂, Bangalore, 20.VII.2005, M. Shobharani leg. (ZMHB); 1 ♂, Bangalore, 17.VIII.2006, N. Kenchegowda leg. (UASB); 1 ♀, Bangalore, 12°5′ N 77°35′ E, 930 m, 14.VII.2010, sweepnet, Yeshwanth leg. (UASB); 1 ♂, Bangalore, 12°58′ N 77°14′ E, 930 m, 1.IX.2010 (UASB); 1 ♂, Bangalore, Hessarghatta, 19.XI.2009, ex pigeon pea, Yeshwanth leg. (UASB); 2 ♂, Sidlaghatta, 7–24.VII.1976, B. Mallik leg. (UASB); 1 ♂, Nagarhole, 16.I.1978, C. A. Viraktamath leg. (ZIN). Tamil Nadu: 2 ♂, Mettupalayam, 22.VII.2008, C.A. Viraktamath leg. (UASB); 1 ♂, 2 ♀, Dindigul, Gandhigram, 10°16.695′ N 77°56.18′ E, 331 m, 18.X.2010, ex grasses, Yeshwanth leg. (NPC, UASB, ZIN); 1 ♂, 1 ♀, same data except sweepnet, A. N. Reddy leg. (UASB). Andhra Pradesh: 1 ♂, Guvvalucherru, 13°5′ N 79°2′ E, 24.X.2008, light trap, T. Nagaraju leg. (UASB).

Description. *Male* (Figs 1–5). As mentioned for the genus. General coloration from light brown yellowish to dark brown or black. Dorsal surface of the metopial bulb black. Each fore wing with elongate white spot along the claval suture medially (Figs 2–5). Hind angles of abdominal tergite III with large white spots (Fig. 4). Abdominal tergites IV–VI light brown yellowish medially (Figs 3, 5). Abdominal sternite III light yellow posteriorly.

Female (Figs 6–7). As mentioned for the genus. Metope brown, with dense black dots fused at the apex of metopial process. Metope in its upper part, coryphe, pro- and mesonotum, abdominal tergites medially, and claval margin of fore wings with wide light brown or white stripe (Fig. 7). Clypeus yellowish brown, with dark brown spots. Rostrum yellowish light brown. Scape yellowish brown. Pedicel yellowish brown or dark brown. Coryphe with 2 large round black spots be-



Figures 8–11. *Formiscurra indicus* gen. et sp. n., male genitalia; **8.** Pygofer, anal tube, and style, lateral view; **9.** Penis and connective, ventral view; **10.** Penis and connective, lateral view; **11.** Style, lateral view, internal side.

sides of the medial stripe. Coryphe, pro- and mesonotum brown, with dense black dots. Forewings dark brown, with light costal margins (Fig. 6). Episternae and epimerae of thorax, tarsi, and spines of hind legs dark brown or black. Legs yellowish brown. Abdominal tergites dark brown or black, with fine longitudinal brown stripes. Abdominal sternites black except yellowish brown medial part. Pygofer with whitish hind margins. Anal tube black medially and whitish laterally. Each gonoplac with large yellowish light brown patch.

Total length (from the apex of metopial process to the end of abdomen). Males: 4.8–5.1 mm. Females: 5.0 mm.

Discussion

According to the current state of our knowledge of Caliscelinae the Indian fauna is closely related to the African one. Thus, *Chirodisca eximia* (Stål, 1859) is distributed in Nepal, Pakistan, India, Sri Lanka and Eastern Africa (Gnezdilov & Bourgoïn 2009), the genus *Rhinogaster* Fennah, 1949 includes two Indian and one South African species (Fennah 1949; Menon & Parshad

1961; Gnezdilov in press), monotypical genus *Bulbonaso* Emeljanov, 2007 is known from Northern India (Parshad 1981; Emeljanov 2007) and closely related to the genus *Afronaso* Jacobi, 1910 which includes 4 species distributed in Eastern and Equatorial Africa and Madagascar (Gnezdilov & Bourgoïn 2009).

Formiscurra indicus gen. et sp. n. is closely related to African genera as well. According to saddle-shaped, concave forewings and convex abdomen in male it is close to *Populonia curvata* (Melichar, 1908) from Eastern Africa (Gnezdilov & Bourgoïn 2009) and according to cigar-shaped body (in dorsal view) and elongate metopial process in female it is close to the species of the genus *Afronaso*. Both sexes have pedicel with long acuminate latero-apical process which is similar to that of the genus *Griphissus* Fennah, 1967 from Southern Africa (Fennah 1967).

Within the tribe Caliscelini there is a remarkable sexual dimorphism. Thus, the males and females of two species of the genus *Gelastissus* Kirkaldy, 1906 were described in different genera (Gnezdilov 2008b). Some species are still known only by one sex (male or female). Males and females of *F. indicus* gen. et sp. n. are characterized by different shape of the body and meto-

pial process. Metopial bulb in males of *F. indicus* gen. et sp. n. is similar to ant abdomen. This species was collected in dry biotopes with low grass. Apparently males of the species mimic ants.

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