



A new genus of the tribe Caliscelini (Hemiptera, Fulgoroidea, Caliscelidae) from Vietnam

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Abstract

A new genus *Annamatissus* Gnezdilov et Bourgoïn **gen. nov.**, including the new species, *Annamatissus tami* Gnezdilov et Soulier-Perkins **sp. nov.** is described in the family Caliscelidae from the Bi-Doup massif in Lam Dong Province of Vietnam. The new taxon represents only the second genus of the tribe Caliscelini known from Vietnam. An identification key to separate *Gelastissus* Kirkaldy from *Annamatissus* **gen. nov.** is provided together with a check list of the Caliscelidae of Vietnam and their distribution. New distribution data in Vietnam are given for *Cicimora sicildia* Emeljanov, 1998 and *Gelastissus hokutonis* (Matsumura, 1916).

Key words: Vietnam, taxonomy, new genus, new species, Fulgoroidea, Caliscelidae, Caliscelini, *Gelastissus*, *Cicimora*, planthoppers

Introduction

Caliscelidae Amyot et Serville is a small planthopper family of about 70 genera and 200 species (Gnezdilov, 2013a; Bourgoïn, 2014), relatively recently evolved as a probable 55 Ma Laurasian lineage (Bourgoïn, Wang & Gnezdilov, unpublished). They are generally worldwide distributed, with the exception the tribe Caliscelini Amyot et Serville, which is restricted to the Old World and currently comprises 28 genera with 64 species (Gnezdilov, 2013a).

The Vietnamese caliscelid fauna, including the species described here, is represented by 10 genera each with one species: eight taxa belong to the subfamily Ommatidiotinae Fieber (tribes Augilini Baker and Adenissini Dlabola) and two to the subfamily Caliscelinae Amyot et Serville (tribe Caliscelini) (Gnezdilov, 2013a; Bourgoïn, 2014). Most of these taxa have been described or recorded from Vietnam during the last 16 years (Emeljanov, 1998, 2013; Gnezdilov, 2008a, 2008b, 2013b). Accordingly, the genus and species described below is only the second representative of the tribe Caliscelini recorded for the country.

All caliscelid species known from Vietnam seem to be restricted to this country, except for *Gelastissus hokutonis* (Matsumura, 1916) originally described from Taiwan (Matsumura, 1916) and recently recorded also from Japan (Ryukyus) (Hayashi, 1997, 2003) and *Discote scutifer* (Fennah, 1963) originally described from Cambodia (Fennah, 1963). Within Vietnam, *Phusta dantela* Gnezdilov, 2008 is described from its central part (Annam) and *G. hokutonis* (Matsumura, 1916) was previously recorded from the north (Gnezdilov, 2008a, 2008b). All other species are known from southern Vietnam. The genera *Symplana* Kirby, *Symplanella* Fennah, and *Tubilustrium* Distant recorded from Southern Vietnam by Emeljanov (2013) are still not identified to species and may represent new taxa.

Little is known about the host plants of tropical Caliscelidae except for the Augilini, which appear to be oligophagous (or monophagous) on bamboo (Gnezdilov, 2013b; Emeljanov, 2013; Yang and Chen, 2014). *Tubilustrium* seems to represent an exception as it was collected in Southern Vietnam (Cat Tien National Park) in the forest with no bamboo around (Emeljanov, 2013; V.M. Gnezdilov, unpublished data).

The species described below is sexually dimorphic which is rather typical for the family Caliscelidae. Males and females of some species, e.g. *Formiscurra indicus* Gnezdilov et Viraktamath, 2011, are very different in body shape and coloration (Gnezdilov & Viraktamath, 2011, figs 2–7) and if not found in the same place and time may be recognised as different species or even genera.

Material and methods

Morphological terminology follows Anufriev & Emeljanov (1988) for the head and pronotum description, Bourgoïn (1988) completed by Bourgoïn (1990) and Gnezdilov (2003) for the male genitalia structures and Bourgoïn (1993) for the female ones. Photographs of the specimen were taken with Nikon video camera SMZ 1500, images are produced using the software ACT-2U Combine Z5.

Male genital segments were boiled in KOH solution and figured in glycerine jelly using light stereomicroscope Mikmed-1.

The specimens studied are deposited in the Museum national d'Histoire naturelle, Paris, France (MNHN) and in the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia (ZIN).

Checklist of Vietnamese Caliscelidae

Family Caliscelidae Amyot et Serville, 1843

Subfamily Caliscelinae Amyot et Serville, 1843

Tribe Caliscelini Amyot et Serville, 1843

Gelastissus hokutonis (Matsumura, 1916) (Ha Son Binh and Dong Nai Provinces)

= *Conocaliscelis koshunensis* Matsumura, 1916: 91, syn. fide Gnezdilov, 2008a: 26

Annamatissus tami Gnezdilov et Soulier-Perkins sp. nov. (Lam Dong Province)

Subfamily Ommatidiotinae Fieber, 1875

Tribe Augilini Baker, 1915

Augilina namboina Gnezdilov, 2013 (Dong Nai Province)

Anthracidium albosignatum Emeljanov, 2013 (Dong Nai Province)

Cicimora sicildia Emeljanov, 1998 (Gia Lai and Binh Phuoc Provinces)

Discote scutifer (Fennah, 1963) (Dong Nai Province)

Symplana sp. (Dong Nai Province)

Symplanella sp. (Dong Nai Province)

Tubilustrium sp. (Dong Nai Province)

Tribe Adenissini Dlabola, 1980

Subtribe Pteriliina Gnezdilov et Wilson, 2006

Phusta dantela Gnezdilov, 2008 (Central Vietnam: Annam)

Taxonomy

Family Caliscelidae Amyot et Serville, 1843

Subfamily Caliscelinae Amyot et Serville, 1843

Tribe Caliscelini Amyot et Serville, 1843

Annamatissus Gnezdilov et Bourgoïn gen. nov.

Figs 1–13

Type species: *Annamatissus tami* Gnezdilov et Soulier-Perkins sp. nov.

Description. *Male.* Metope wide, convex (visible from above), without visible (Figs 1–2), with two rows of weakly visible tubercles on each side latero-apically along its lateral margins and sublateral carinae: lateral row with 3 tubercles and sublateral row with 4 tubercles. Metopoclypeal suture distinct laterally, not visible frontally. Postclypeus large, with median carina. Coryphe transverse (short and wide), concave (in dorsal view); hind margin nearly straight; anterior margin convex and widely truncate. Ocelli absent. Pedicel with large latero-apical process rounded apically. Rostrum reaching hind coxae. Pronotum 0.5 as long as mesonotum along midline, flat, without carinae. Paradiscal fields of pronotum very narrow, not visible behind the eyes (in dorsal view). Paranotal lobes of pronotum wide, without carinae. Mesonotum slightly flattened dorsoventrally, without carinae. Forewings short, reaching anterior margin of 3rd abdominal tergite, with no veins visible. Fore femora slightly flattened and foliate shaped. Hind tibia with a single lateral spine and 5 apical spines. First and second metatarsomeres with two lateroapical spines.

Female. Metope wide, with very weak and short sublateral carinae apically and with two rows of tubercles on each side latero-apically along its lateral margins: lateral row with 5–6 tubercles and sublateral row with 4 tubercles (Fig. 12). Postclypeus with median carina. Mesonotum with lateral carinae. Forewings reaching posterior margin of 3rd abdominal tergite, with a single longitudinal vein visible. Fore femora slightly flattened and foliate shaped. Fore tibiae slightly flattened laterally. Ventral surface of first metatarsomere with short and thick setae.

Etymology. The name *Annamatissus* is masculine and refers to the Annamite Range that separates Vietnam and Laos, ending to the south with the Bi-Doup massif where the type specimens were collected, and concatenated with the genus name *Issus* Fabricius, 1803.

Comparison. Closely related to the genus *Gelastissus* Kirkaldy, 1906. The differences between these genera are summarized in the key below. Other Indochinese Caliscelini, *Caliscelis* Laporte, 1833 and *Bambusicaliscelis* Chen et Zhang, 2011 are very different from the new genus. *Caliscelis* is distinguished by foliately flattened fore femora and tibiae particularly in males (Che *et al.*, 2011, figs 5, 9, 15, 17, 23, 24, 35, 45, 58, 64) and *Bambusicaliscelis* by well developed intermediate carinae of metope and a very peculiar tubular phallobase with long aedeagal processes (Chen & Zhang, 2011, figs 2, 9, 13, 19).

Key to Vietnamese Caliscelini genera

1. Metope rather narrow, with median carina. Coryphe nearly square. Pronotum with median carina. First and second metatarsomeres each with one latero-apical spine *Gelastissus* Kirkaldy, 1906
- . Metope wider, without median carina. Coryphe wider than long. Pronotum without carinae. First and second metatarsomeres each with two latero-apical spines *Annamatissus* gen. nov.

Annamatissus tami Gnezdilov et Soulier-Perkins sp. nov.

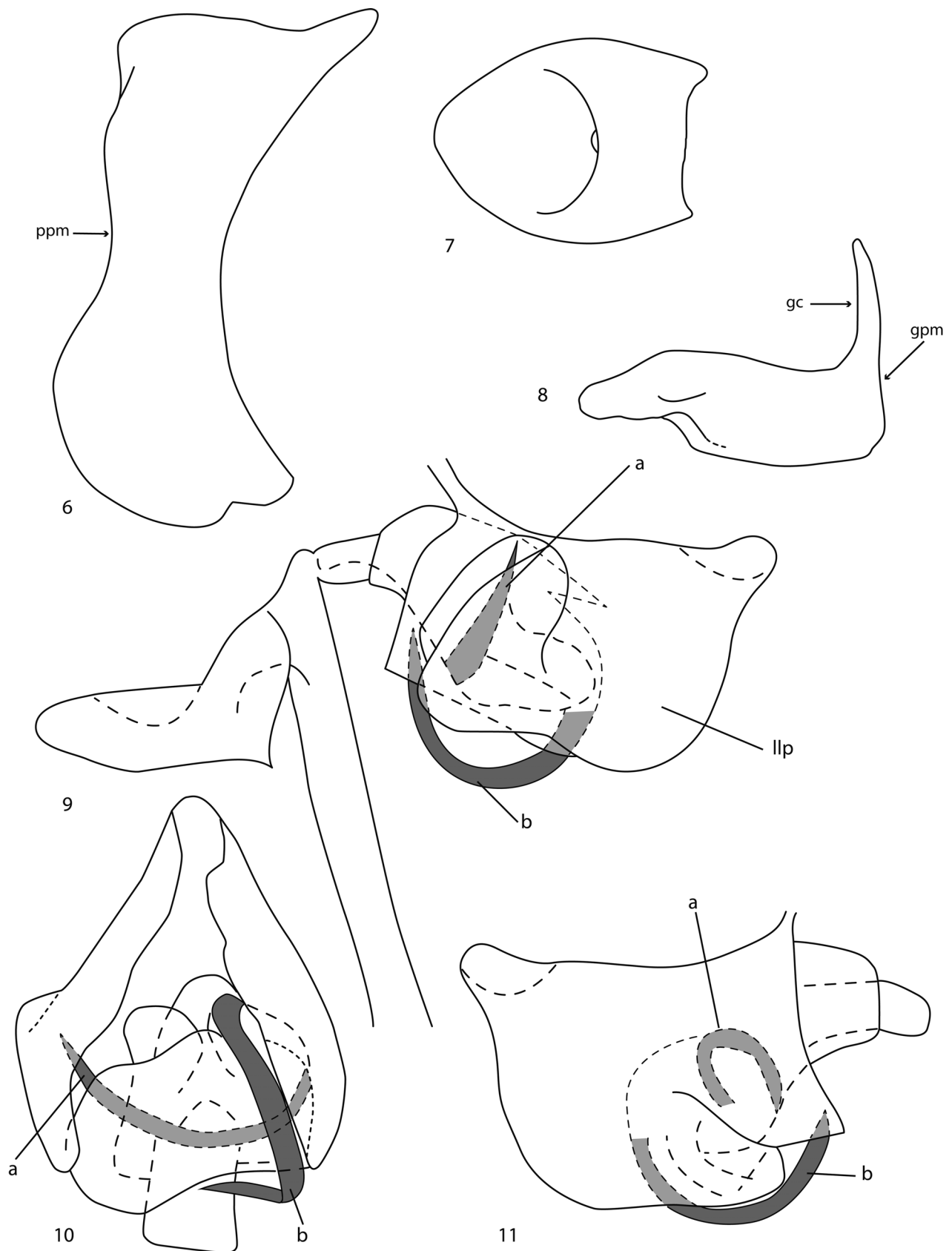
Figs 1–13

Type material. Holotype, ♂, Vietnam, Lam Dong, Bi Doup massif, Da Lat, Chang Ly, 1467 m, 12°11.052' N 108°40.669' E, 12.VI.2008, beating open range & forest edge, T. Bourgoïn rec., Museum Paris, MNHN(EH)7368 [MNHN]. Paratypes: 1 ♀, as holotype except, Museum Paris, MNHN(EH)7369, A. Soulier-Perkins rec. [MNHN]; 1 ♀, as holotype, Museum Paris, MNHN(EH)7370 [ZIN].

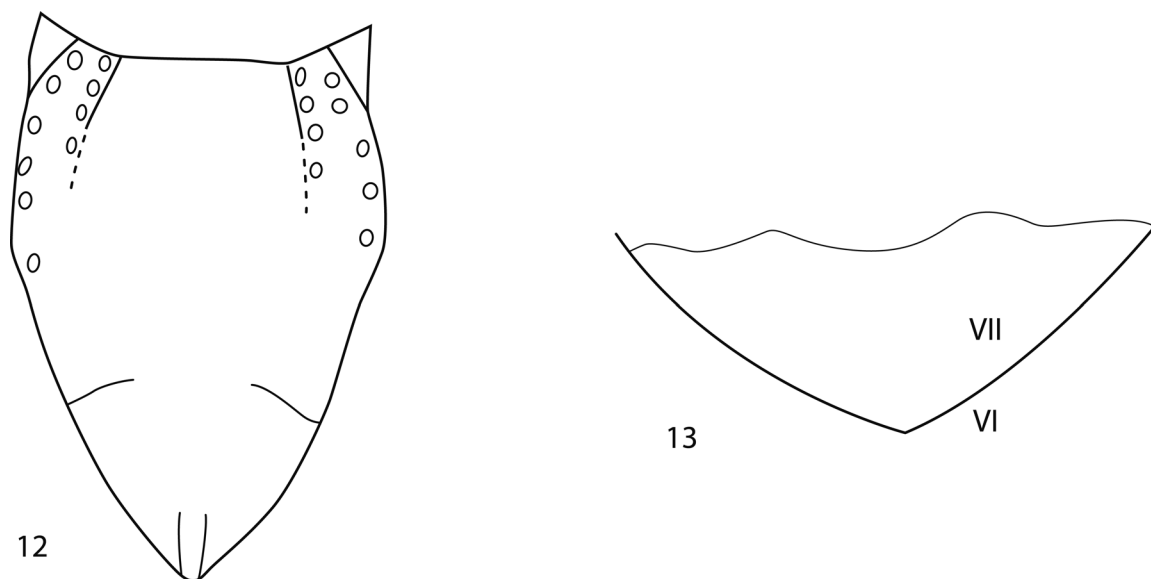
Coloration. *Male.* Pedicel, underside of the body, and legs light brown yellowish (Fig. 1). Metope, excluding whitish median line, genae, fore wings, excluding whitish costal and claval margins, hind epimera and abdominal sternites dark reddish to black (Figs 2,3). Scape dark reddish. Clypeus laterally light reddish brown. Coryphe and pronotum light reddish brown with whitish median stripe (Fig. 2). Mesonotum light brown reddish excluding whitish median line with apical angles from dark brown reddish to black (Fig. 2). Apices of spines black. Abdominal tergites III–VII from dark brown reddish to black with whitish median stripe margined by light red



FIGURES 1–5. *Annamatissus tami* sp. nov. 1—male, lateral view; 2—male, dorsal view; 3—male, frontal view; 4—female, lateral view; 5—female, dorsal view.—b: bulbous projection.



FIGURES 6–11. *Annamatissus tami* sp. nov., male genitalia. 6—pygofer, lateral view; 7—anal tube, dorsal view; 8—gonostyle, lateral view; 9—aedeagus, left lateral view; 10—aedeagus, ventral view; 11—aedeagus, right lateral view.—a, b: aedeagus processes; gc: gonostyle capitulum; gpm: gonostyle posterior margin; llp: posterior lateral lobe of the periandrium; ppm: pygofer posterior margin.



FIGURES 12–13. *Annamatissus tami* sp. nov., female. 12—head, frontal view; 13—hind margin of sternite VII.

lines. Abdominal sternite II almost whole brown. Abdominal sternite III brown medially. Pygofer, except for dark brown upper angles, and styles orange yellow. Anal tube dark brown to black.

Female. Upper side of the body including metope light yellowish brown with dark brown dots. Genae, clypeus, hind epimera and abdominal sternites IV to VI from dark brown to black. Coryphe and pronotum each with pair of light red spots laterally (Fig. 5). Coxae light brown yellowish (Fig. 4). Pro- and mesotibiae and hind femora and tibiae light yellowish brown with dark brown dots (Fig. 4). Pro- and mesofemora light brown yellowish with dense dark brown dots which often agglomerate particularly on fore femora. Posterior margin of 3rd abdominal sternite dark brown. 7th abdominal sternite dark brown. Gonoplags light brown yellowish with black dots.

Male genitalia (Figs 6–11). Posterior margin of pygofer concave medially (Fig. 6, ppm). Anal tube (segment X) wide, narrowing apically in dorsal view (Fig. 7). Gonostyle with posterior margin (Fig. 8, gpm) straight, bent at 90°; capitulum of gonostyle long and narrow (Fig. 8, gc). Periandrium narrowing apically, with a pair of lateral lobes (Figs 9–11, llp). Aedeagus with pair of long and curved hook-like processes (Figs 9–11, a, b) directed from left to right side.

Female genitalia. Hind margin of sternum VII weakly and widely concave (Fig. 13). Posterior margin of 9th laterotergite straight, with a paler bulbous projection medially on each side (Fig. 4, b). Gonoplags flat. Anal tube wide, narrowing apically.

Total length. Male—2.9 mm. Females—3.4–3.5 mm.

Etymology. The species is dedicated to our colleague Dr Tam Truong Quang who organised the MNHN expedition 'Vietnam 2008'.

New records of Caliscelidae from Vietnam

Cicimora sicildia Emeljanov, 1998

Material examined. 1♂, Vietnam, Binh Phuoc Province, 13 km NE Bu Gia Map village, Bu Gia Map National Park, 540 m, 12°11'37''N 107°12'21''E, 18–31.V.2011, L.N. Anisutkin & A.E. Anichkin leg. (ZIN).

Gelastissus hokutonis (Matsumura, 1916)

Material examined. 2♀, Vietnam, Dong Nai Province, Cat Tien National Park, 11.V.2012, D.E. Shcherbakov leg. (ZIN).

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