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A new genus and species of Deraeocorinae (Hemiptera: Heteroptera: Miridae) from Brunei Darussalam with emphasis on the stridulatory mechanism

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Abstract. *Emnicoris silesianus* Taszakowski, Kim & Gierlasiński gen. et sp. nov. (Deraeocorinae: Deraeocorini) is described from Brunei Darussalam. Morphological characters of the new genus and species are provided with photographs and SEM micrographs. Male and female genital structures are presented. Additionally, the uniqueness of its morphological features is discussed in the context of the tribal placement of this new genus. The stridulatory device (embolial stridulitrum and metafemoral plectra) of the new taxon is documented. The unique stridulation mechanisms of Surinamellini (Deraeocorinae) are reported and described for the first time.

Keywords. Borneo, entomology, plant bugs, stridulation, true bugs.

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Introduction

The subfamily Deraeocorinae Douglas & Scott, 1865 (Hemiptera: Cimicomorpha: Miridae) is the fourth largest group among the mirid subfamilies, currently comprising six tribes (Schuh 2002–2013; Cassis & Schuh 2012; Schuh & Weirauch 2020). All members of Deraeocorinae are known to be predaceous, with some groups exhibiting mimicry of natural enemies such as ants, wasps or other predatory heteropterans, as well as their prey, including aphids and thrips (Wheeler 2001; Jung & Lee 2012; Yasunaga 2022; Kim *et al.* 2023). Recently, the phylogenetic relationships and the morphological characters of tribes within Deraeocorinae have been revealed, highlighting the need for a revision of the nominate tribe Deraeocorini Douglas & Scott, 1865 and the non-monophyletic tribe Surinamellini Carvalho & Rosas, 1962 (Kim *et al.* 2023).

Brunei Darussalam (hereafter referred to as Brunei) is one of the most intriguing regions on the Earth, due to its high biodiversity, encompassing a wide range of animal and plant groups (Small *et al.* 2004; Sulaiman *et al.* 2018; Damken 2023). It also contains a portion of pristine rainforest habitat known as the 'Heart of Borneo' (WWF 2007). Recent studies on the mirid fauna of Brunei have led to the description of several new species and taxa endemic to the northwestern Borneo with unique morphological characters (Kim *et al.* 2019; Tyts *et al.* 2020; Taszakowski *et al.* 2021, Gorczyca *et al.* 2024). In the present paper, a new genus and species, *Emnicoris silesianus* gen. et sp. nov., is described from Brunei, with photographs of the habitus and genitalia as well as scanning electron micrographs of the selected structures, particularly the stridulatory device. Possession of the stridulatory organs is for the first time documented in Deraeocorini and Surinamellini.

Material and methods

The photographs of the holotype habitus and genitalic structures were taken in the Laboratory of Insect Anatomy and Morphology of the Institute of Biology, Biotechnology and Environmental Protection, the University of Silesia in Katowice (Katowice, Poland). The focus-stacked colour photographs were prepared with a Leica M205C stereo microscope with a high diffuse dome illumination Leica LED5000 HDI, Leica Flexacam C3 digital camera, and LasX ver. 5.1.025593 software.

Male and female genitalia were separated from the insect body using standard entomological pins. Then, they were dissected after boiling three times (about five minutes) in a 10% potassium hydroxide (KOH) solution.

SEM micrographs (excluding Fig. 4M) were prepared in the Educational Laboratory of Scanning Microscopy, Institute of Biology, Biotechnology and Environmental Protection, the University of Silesia in Katowice (Katowice, Poland) using a Phenom XL scanning electron microscope (Phenom-World B.V., Eindhoven, The Netherlands) at 15 kV accelerating voltage with a BackScatter Detector (BSD). To obtain various views about scanned structures, an SEM manual rotary holder equipped with an entomological pin adapter was used (Taszakowski & Marchlewicz 2025). Specimens were uncoated, except for the hind legs, which were glued onto aluminum pin stubs with carbon adhesive discs and coated with a film of gold (30 nm) using Q150T ES sputter coater with the rotary planetary stage (Quorum Technologies Ltd., Laughton, United Kingdom). The micrograph shown in Fig. 3M was taken using a Quanta FEI 250 scanning electron microscope (FEI Companies, Hillsboro, Oregon-USA) in the SPIN-Lab Centre for Microscopic Research on Matter, the University of Silesia in Katowice (Katowice, Poland).

To obtain high-quality figures, fragments of specimens (for both light microscopy and SEM) were imaged at high magnifications and combined using the Image Composite Editor (panoramic image stitcher). The figures were prepared using Adobe Photoshop 2025 graphic editor. Measurements were made with LasX ver. 5.1.025593 software and presented in millimeters (mm). Terminology for external and male genital morphology and tribal placement follows Kim *et al.* (2023). The homology and terminology of the female genitalia are largely derived from Davis (1955), Cassis & Symonds (2016), Pluot-Sigwalt & Matocq (2017) and Taszakowski *et al.* (2022).

Detailed label data are cited in their original form. A backward slash (\) separates the rows on the label, and a double backslash (\\) separates individual labels.

All examined material comes from the Natural History Museum, London, Great Britain (NHM) collection. For the holotype and paratypes data, see the Type material section. Stridulatory devices of two species of Surinamellini (Deraeocorinae) were examined: *Glossopeltis conradti* Poppius, 1914.

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Hemiptera Linnaeus, 1758
Suborder Heteroptera Latreille, 1810
Family Miridae Hahn, 1833
Subfamily Deraeocorinae Douglas & Scott, 1865
Tribe Deraeocorini Douglas & Scott, 1865

Emnicoris Taszakowski, Kim & Gierlasiński gen. nov.
urn:lsid:zoobank.org:act:F5E38E17-BFD5-4720-9BC2-C8FBA9B5D1A8

Type species

Emnicoris silesianus Taszakowski, Kim & Gierlasiński gen. et sp. nov., here designated.

Diagnosis

Distinct from other genera of Deraeocorini by the following combination of characters: body elongate, almost parallel-sided, glossy, mostly brown to fuscous (Fig. 1A–B); head weakly prognathous, frons more or less vertical to clypeus, clypeus projected forwardly (Fig. 1B); vertex narrow, in males 0.3 × as long as head width (Fig. 1A); compound eye large (Fig. 1A), in males wider than vertex, ventral margin reaching gula (Fig. 2A–C); antennae thick, shorter than body length (Fig. 1A); first to third antennomeres clavate (Fig. 1A–B); fourth antennomere fusiform; second antennomere shorter than total head width, and shorter than combination of third and fourth antennomeres (Fig. 1A–B); labium short, reaching mesocoxa (Fig. 1B); pronotum large, posterior angle beyond hemelytra lateral margin (Fig. 1A); scutellum small, apically tapering, flat (Fig. 1A); hemelytra glabrous, lateral margin almost straight, very weakly concave (Fig. 1A); claval commissure longer than scutellum length (Fig. 1A); hypocostal lamina with notches forming stridulitrum (Fig. 2F); legs somewhat short and thick (Fig. 1B); all femora thick (Fig. 1A–B); distal part of metafemoral ventral surface with 4–5 ribs forming plectra (Fig. 2G); metatibia thickened (Fig. 1B), third tarsomere longest, subequal to combination of first and second tarsomere (Fig. 2I); left paramere scythe-shaped, 2 × as long as right paramere, hypophysis long and thin, flat apically, sensory lobe weakly projected, covered with setae (Fig. 1F); right paramere rod-shaped, short, hypophysis flat apically (Fig. 1E); endosoma with multiple sclerites, medial sclerite large and broad, lateral sclerite thin (Fig. 1C–D).

Etymology

The genus name is combined as an abbreviation 'EMN' of the event 'Europejskie Miasto Nauki' (European City of Science), in which a student project was initiated, resulting in the description of this species, and combined with a Greek noun, 'coris' (κόρις = bug), gender masculine.

Description

Body. Elongate and parallel, medium in size (3.6–4.1), glossy.

Texture and vestiture. Body strongly glossy, glabrous (Fig. 1A–B); head glabrous, impunctate (Figs 1A, 2B–C); antennae with dense short setae (Fig. 1A–B); pronotum almost glabrous, partly punctate, calli region impunctate (Figs 1A–B, 2D); scutellum impunctate, covered with few setae (Fig. 1A, 2E); hemelytra almost glabrous, covered by single, erect, sparsely distributed setae (Fig. 2E–F), strongly punctate (Figs 1A–B, 2E–F); legs glossy, densely covered with short setae (Fig. 1A–B); abdomen sparsely covered with setae (Fig. 1B).

Head. Weakly prognathous, frons almost vertical to clypeus, clypeus projected forwardly in lateral view (Figs 1B, 2A); vertex narrow, shorter than single compound eye width (Figs 1A, 2B–C); compound eye large (Fig. 2A–C), ventral margin reaching gula in lateral view (Figs 1B, 2A); antennae thick, shorter than body length (Fig. 1A); first to third antennomere clavate; fourth antennomere fusiform; second antennomere shorter than ½ of third antennomere, shorter than combination of third and fourth antennomeres; third antennomere subequal to fourth antennomere (Fig. 1A–B); labium short, reaching midcoxae (Fig. 1B); all labial segments subequal in length (Fig. 1B).

Thorax. Pronotum relatively large (Fig. 2D), posterior angles extending far laterad beyond hemelytra lateral margins, length 0.5–1.0 × posterior maximal width (Fig. 1A); scutellum small, apically tapering, width shorter than length, flat in lateral view (Figs 1A, 2E); hemelytra elongate, lateral margin almost straight, very weakly concave (Fig. 1A); hypocostal lamina with notches forming stridulitrum (Fig. 2F); commissure longer than scutellum length (Fig. 1A); legs somewhat short and thick (Fig. 1A–B); distal half of metafemoral ventral surface with 4–5 ribs forming plectrum (Fig. 2G); third tarsomere longest, subequal to combination of first and second tarsomere (Figs 1B, 2H).

Abdomen. Short, not reaching to apex of cuneus (Fig. 1B).

Male genitalia. Left paramere scythe-shaped, longer than 2 × right paramere, hypophysis long and thin, flat apically, sensory lobe projected, with setae (Fig. 1F); right paramere rod-shaped, small, hypophysis flat apically, sensory lobe broad (Fig. 1E); endosoma with multiple sclerites; medial sclerite large and broad, lateral sclerite narrow; ductus seminis long (Fig. 1D).

Female genitalia (Fig. 3). Bursa copulatrix relatively broad (Fig. 3H); sclerotized ring (sr) situated laterally, thickrimmed; attachment (att) long, attached to sr; lateral oviducts (lo) located posterior-laterally, long, in the basal part broad, with asymmetrically distributed small sclerites (sc); spermathecal gland (sgl) located centrally; gonapophyses 8 and 9 (first and second valvulae) (gp8, gp9) with apex sharpened and finely serrate (Fig. 3F–G).

Emnicoris silesianus Taszakowski, Kim & Gierlasiński gen. et sp. nov.
urn:lsid:zoobank.org:act:80C47099-4772-43F3-8DF9-CA244B441325
Figs 1–3

Diagnosis

See the generic diagnosis.

Etymology

The specific epithet is created in relation to the 'Silesian Science Festival' event, in which a student project concerning, among others, the newly described species was presented.

Type material

Holotype

BRUNEI • ♂; Brunei Darassalam, Bukit Sulang; "BRUNEI: / Bukit Sulang / nr Lamunin // N.E. Stork, fogging / 20.viii-10.ix.82 / B.M. 1982-388 // Tree 17: *Shorea* / *johorensis* Fcx. / Dipterocarp"; 20 Oct.–10 Nov. 1982; N.E. Stork leg; NHMUK015981855.

Paratypes

BRUNEI • 1 ♂; same data as for holotype; NHMUK015981856 • 2 ♀♀; same data as for holotype; NHMUK015981853 to NHMUK015981854.

Description

Measurements (♀/♂, *: holotype measurements). Body: length 3.83–4.12/3.62*–3.65, width 1.07–1.17/1.05–1.07*. Head: width 0.72/0.74*–0.75, interocular distance (vertex width) 0.30–0.32/0.23*–0.25, eye, dorsal width 0.20–0.21/0.27–0.28*. Antenna: total antennal length 1.98–1.99/1.97*–2.01, antennomere length: I 0.26–0.27/0.26*, II 0.63–0.66/0.64*–0.69, III 0.28–0.29/0.27–0.28*, IV 0.40–0.41/0.37*–0.39. Labium: total labial length: 1.15–1.27/1.14–1.16*, length of segments: I 0.34–0.38/0.31*–0.34, II 0.31–0.35/0.28–0.30*, III 0.28–0.29/0.27–0.28*, IV 0.40–0.41/0.37*–0.39. Pronotum: mesal length 0.79–0.80/0.81*–0.82, basal maximal width (straight) 1.07–1.17/1.05–1.07*. Scutellum: mesal length (visible) 0,52/0.33*–0,46. Legs: metafemur length: 1.05/1.01–1.02*, metatibia length: 1.38/1.34–1.35*, metatarsus total length (with claws): 0.38/0,38–0.39*, tarsomere length: I 0.12/0.11*, II 0.12–0.12*, III 0.18/0.17*. Hemelytrae: length 2.51–2.90/2.32*–2.48, corium length 1.69–1.72/1.45*–1.54, claval commissure length: 0.63–0.70/0.58*–0.59, outer cuneal margin length: 0.38–0.42/0.38*–0.40.

Male

Body. Elongate, length approximately 3.60.

Coloration. Mostly brown and dark brown (Fig. 1A–B). Head: Entirely brown except for dark brown antennae and labium (Fig. 1A–B); antennae mostly dark brown (Fig. 1A–B); first antennomere pale brown, with thin dark annulations basally and apically (Fig. 1A); second, third and fourth antennomeres entirely dark brown (Fig. 1A–B); labium darker than head (Fig. 1B); second and third labial segment slightly paler (Fig. 1B). Thorax. Pronotum mostly dark brown, posterior angle pale brown (Fig. 1A–B); pronotal collar brown (Fig. 1A–B); scutellum dark brown, apex brown (Fig. 1A); peritreme of metathoracic scent gland pale brown (Fig. 1B); hemelytra mostly brown (Fig. 1A–B); corium mostly brown, embolial margin darker (Fig. 1A); clavus mostly darker than corium (Fig. 1A); cuneus reddish brown (Fig. 1A); legs mostly reddish brown (Fig. 1A–B); femur brown with reddish brown part dorsally (Fig. 1A–B); tibia mostly reddish brown (Fig. 1B); tarsi entirely pale yellowish brown (Fig. B). Abdomen: entirely reddish brown (Fig. 1B).

TEXTURE AND VESTITURE. Body strongly glossy, almost glabrous (Fig. 1A–B); head glabrous, impunctate (Figs 1A–B, 2B–C); antennae with dense short setae (Fig. 1A–B); pronotum almost glabrous, partly punctate (Figs 1A–B, 2D–E), calli region impunctate (Figs 1A–B, 2D); scutellum impunctate, sparsely covered with somewhat long setae (Figs 1A, 2E); hemelytra almost glabrous, covered by single, erect, sparsely distributed setae, strongly punctate (Figs 1A–B, 2E–F); legs glossy, densely covered with short setae (Figs 1A–B, 2G); abdomen sparsely covered with setae (Fig. 1B).

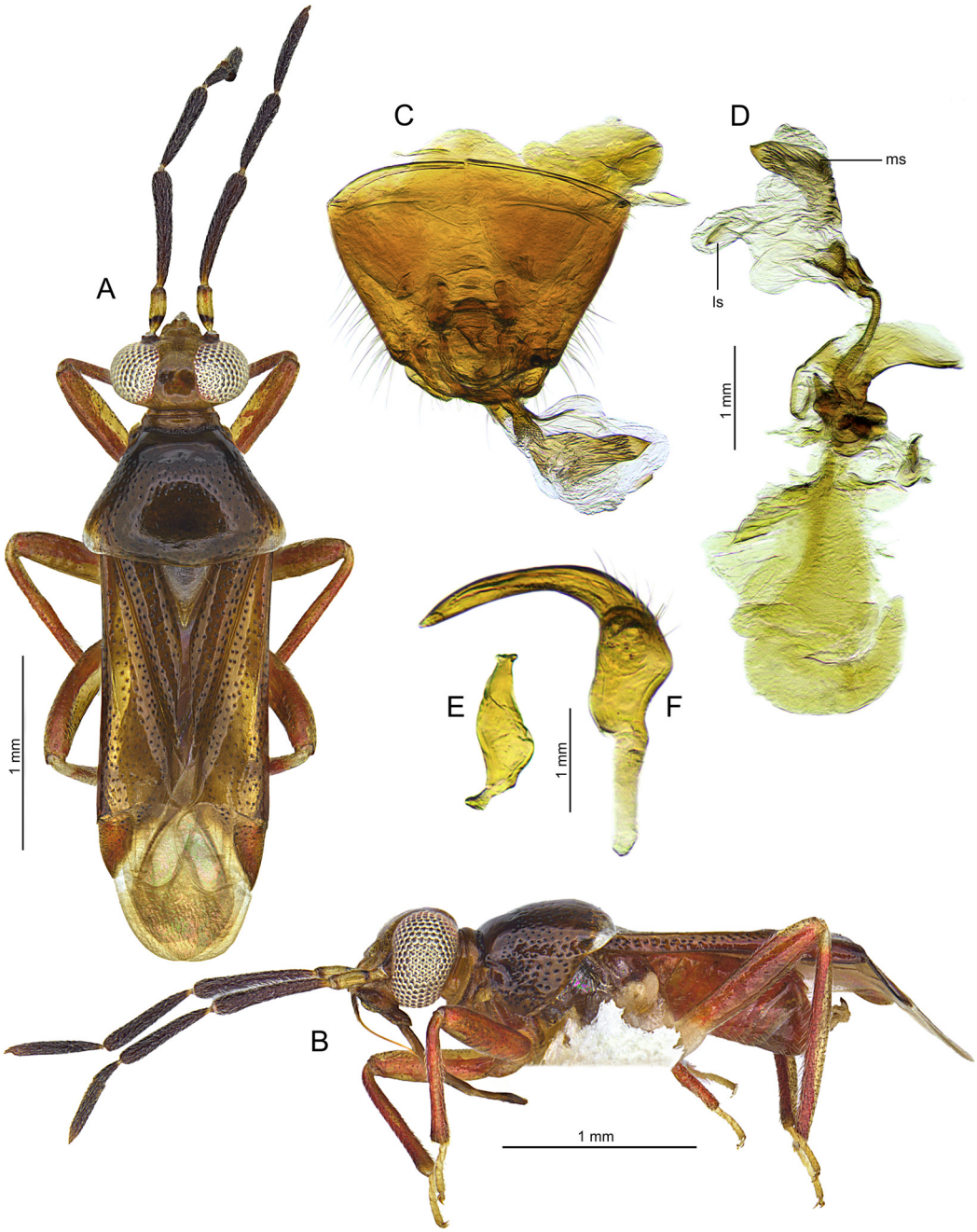

Fig. 1. *Emnicoris silesianus* Taszakowski, Kim & Gierlasiński gen. et sp. nov., holotype, ♂ (NHMUK015981855). **A**. Dorsal view. **B**. Lateral view. **C–F**. Male genitalia. **C**. Pygophore. **D**. Aedeagus. **E**. Right paramere. **F**. Left paramere. Abbreviations: ls = lateral sclerite; ms = medial sclerite.

Head. Weakly prognathous (Figs 1B, 2A), wider than long (Fig. 1A); vertex narrow, shorter than single compound eye width (Figs 1A, 2B–C); compound eye large, ventral margin reaching gula in lateral view (Figs 1B, 2A); antennae thick, shorter than body length (Fig. 1A–B); first to third antennomere clavate (Fig. 1A–B); fourth antennomere fusiform (Fig. 1A–B); first antennomere length more than vertex width, more than ⅓ of second antennomere (Fig. 1A); second antennomere shorter than total head width, shorter than combination of third and fourth antennomeres (Fig. 1A); third antennomere subequal to fourth antennomere (Fig. 1A); proportion of first to fourth antennomeres 0.26: 0.66: 0.56: 0.61; labium short, reaching midcoxae (Fig. 1B); all labial segments subequal in length (Fig. 1B).

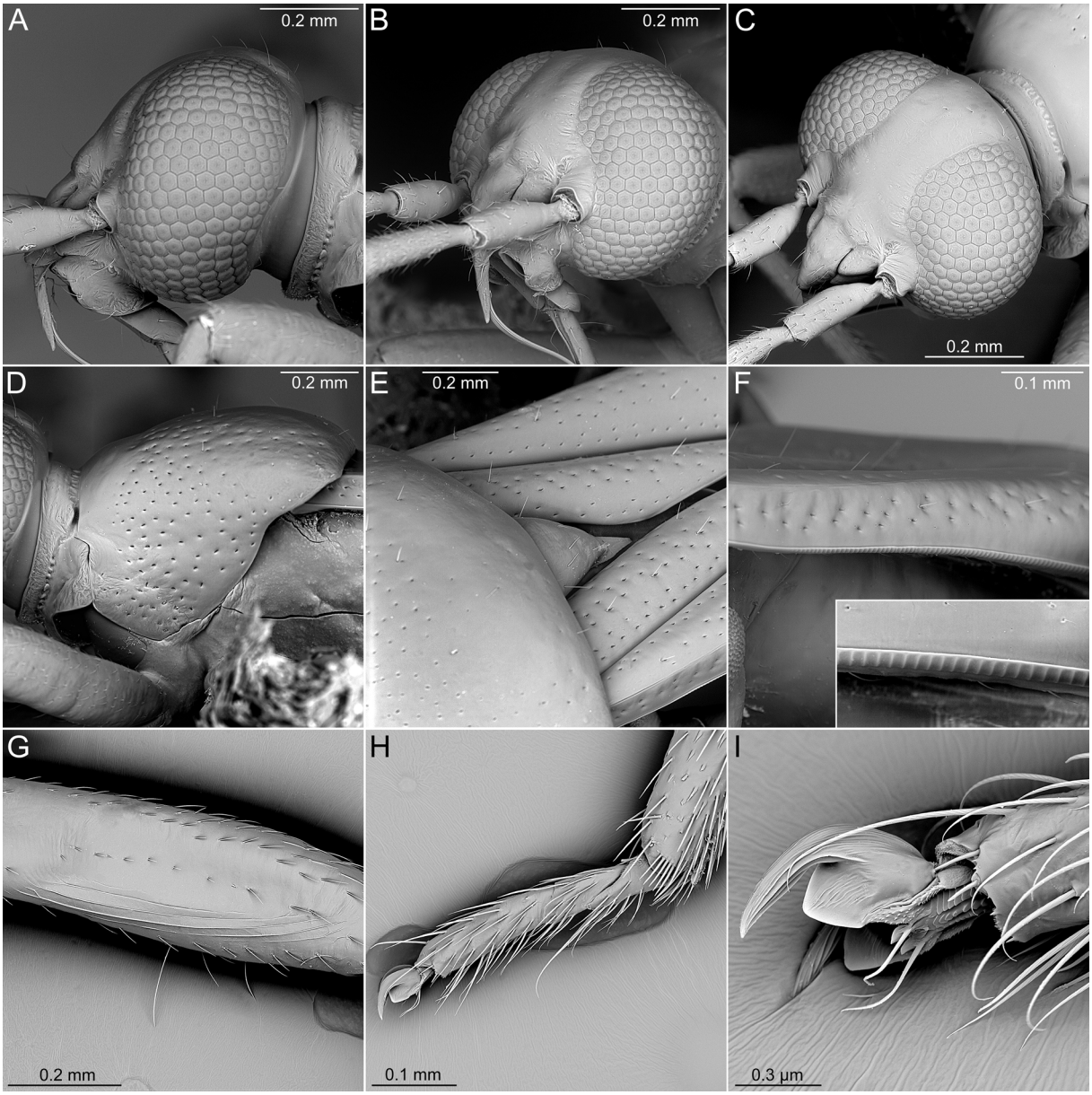

Fig. 2. *Emnicoris silesianus* Taszakowski, Kim & Gierlasiński gen. et sp. nov., holotype, ♂ (NHMUK015981855). **A–C**. Head. **A.** Lateral view. **B**. Anterolateral view. **C**. Dorso-antero-lateral view. **D**. Pronotum, lateral view. **E.** Posterior part of pronotum, scutellum and basal part of hemelytrae. **F**. Middle part of hemelytrae, lateral view with the magnification of stridulitrum on hypocostal lamina. **G**. Distal part of metafemur with plectrum. **H**. Metatarsus. **I**. Pretarsal structures.

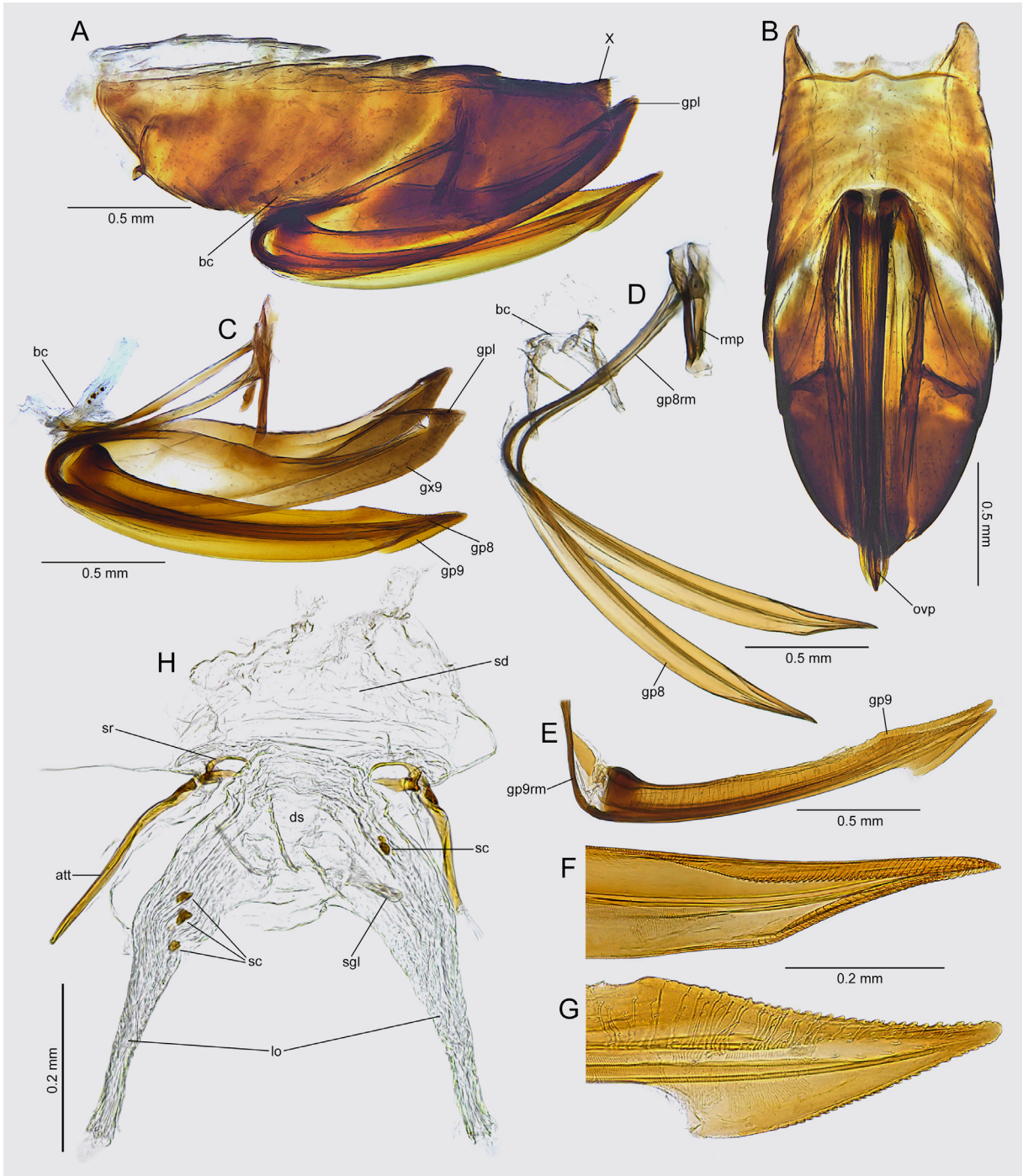

Fig. 3. *Emnicoris silesianus* Taszakowski, Kim & Gierlasiński gen. et sp. nov., paratype, ♀ (NHMUK015981853), genitalia. **A–B**. Abdomen. **A**. Lateral view. **B**. Dorsal view. **C**. Ovipositor and bursa copulatrix, lateral view. **D**. Gonapophysis 8 and bursa copulatrix. **E**. Gonapophysis 9. **F**. The apical part of gonapophysis 8 in magnification. **G**. The apical part of gonapophysis 9 in magnification. **H**. Bursa copulatrix. Abbreviations: X = tenth abdominal segment; att = attachment; bc = bursa copulatrix; ds = dorsal sac; gp8 = gonapophysis 8; gp8rm = gonapophysis 8 ramus; gp9 = gonapophysis 9; gp9rm = gonapophysis 9 ramus; gpl = gonoplac; gx9 = gonocoxae 9; lo = lateral oviduct; ovp = ovipositor; rmp = ramal plate; sc = sclerites; sd = seminal depository; sgl = spermathecal gland; sr = sclerotized ring.

Thorax. Pronotum large, posterior angles beyond hemelytra lateral margin, length about 0.7 × as long as posterior maximal width (Fig. 1A); pronotal collar length less than first antennomere diameter (Fig. 1A); scutellum small, tapering triangular (Figs 1A, 2E), width shorter than length, subequal to ¼ pronotal posterior maximal width (Figs 1A, 2E), laterally flat (Fig. 1B); hemelytra elongate, lateral margin almost straight, very weakly concave (Fig. 1A–B); commissure slightly shorter than 2 × scutellum length (Fig. 1A); cuneus small, outer margin subequal to anterior margin, shorter than ⅓ of embolial margin (Fig. 1A); legs somewhat short, thick (Fig. 1A–B); all femora thick, similar in thickness (Fig. 1A–B); third tarsomere longest, subequal to combination of first and second tarsomere (Fig. 1B).

Abdomen. Short, not reaching to apex of cuneus (Fig. 1B).

Male genitalia. Left paramere scythe-shaped, longer than 2 × right paramere, hypophysis long and thin, rounded, tapered to apex, sensory lobe projected with setae (Fig. 1F); right paramere rod-shaped, small, hypophysis flat, sensory lobe broad (Fig. 1E); endosoma with two sclerites; medial sclerite (ms) large and broad, tapered to apex, almost reaching apex of membranous lobe; lateral sclerite (ls) thin and apically sharp (Fig. 1C, F).

Female

Similar to male, vertex wider than single compound eye width; eye dorsal width 1,35 × as in male.

Female genitalia. Bursa copulatrix relatively broad (Fig. 3H); sclerotized ring (sr) oval; attachment (att) long and uniformly thick; lateral oviducts (lo) with four asymmetrically distributed small sclerites (sc); spermathecal gland (sgl) located centrally; gonapophyses 8 (gp8) tapered to apex, folded inward; gonapophyses 9 (gp9) with broadened apex, margins finely serrate (Fig. 3F–G).

Biology

This new species is assumed to be arboreal, as the specimens were collected by fogging a trree of *Rubroshorea johorensis* (Foxw.) P.S. Ashton & J. Heck (Dipterocarpaceae).

Distribution

Borneo, Brunei Darussalam.

Tribe Surinamellini Carvalho & Rosas, 1962
Genus *Glossopeltis* Reuther, 1903

Glossopeltis conradti Poppius, 1914
Fig. 4G–M

Material examined

GHANA • 1 ♂; Tafo; 17 Mar. 1966; Leston leg.; UV trap; NHMUK015981840; 1 ♀; Tafo; 29 Mar. 1966; Leston leg.; Pyrethrum knockdown, Cocoa; NHMUK015981841; NHMUK.

Surinamella doesburgi Carvalho & Rosas, 1962
Fig. 4A–F

Material examined

SURINAM • 1 ♀; Paramaribo; 10 Mar. 1963; P.H. v. Doesburg Jr. leg.; on *Citrus* L. together with *Crematogaster* Lund, 1831 ants; NHMUK015981842; NHMUK.

The stridulatory device of Emnicoris silesianus gen. et sp. nov. and selected Surinamelline taxa

Emnicoris silesianus Taszakowski, Kim & Gierlasiński gen. et sp. nov.
The plectrum (520 × 50 μm) is located in the distal half of the metafemoral ental surface, and it is formed with four–five slightly arcuate ribs (Fig. 2G). The elongated stridulitrum (0.8 mm) is developed on a somewhat arcuate hypocostal lamina. It has the form of a row of dense notches (spaced every 6.25 μm).

Surinamella doesburgi Carvalho & Rosas, 1962
The plectrum (270 × 38 μm) is located in the central part of the metafemoral ental surface. It is formed by densely arranged, inclined towards the distal side of the femora, almost recumbent, short (ca 17 μm), thick (ca 3 μm) setae (Fig. 4A–C). The elongated stridulitrum (1.12 mm) is developed on a slightly arcuate hypocostal lamina. It has the form of a row of tubercles (ca 9 μm in diameter), having at the apex a hole with a thin and delicate seta protruding from it (Fig. 4D–F).

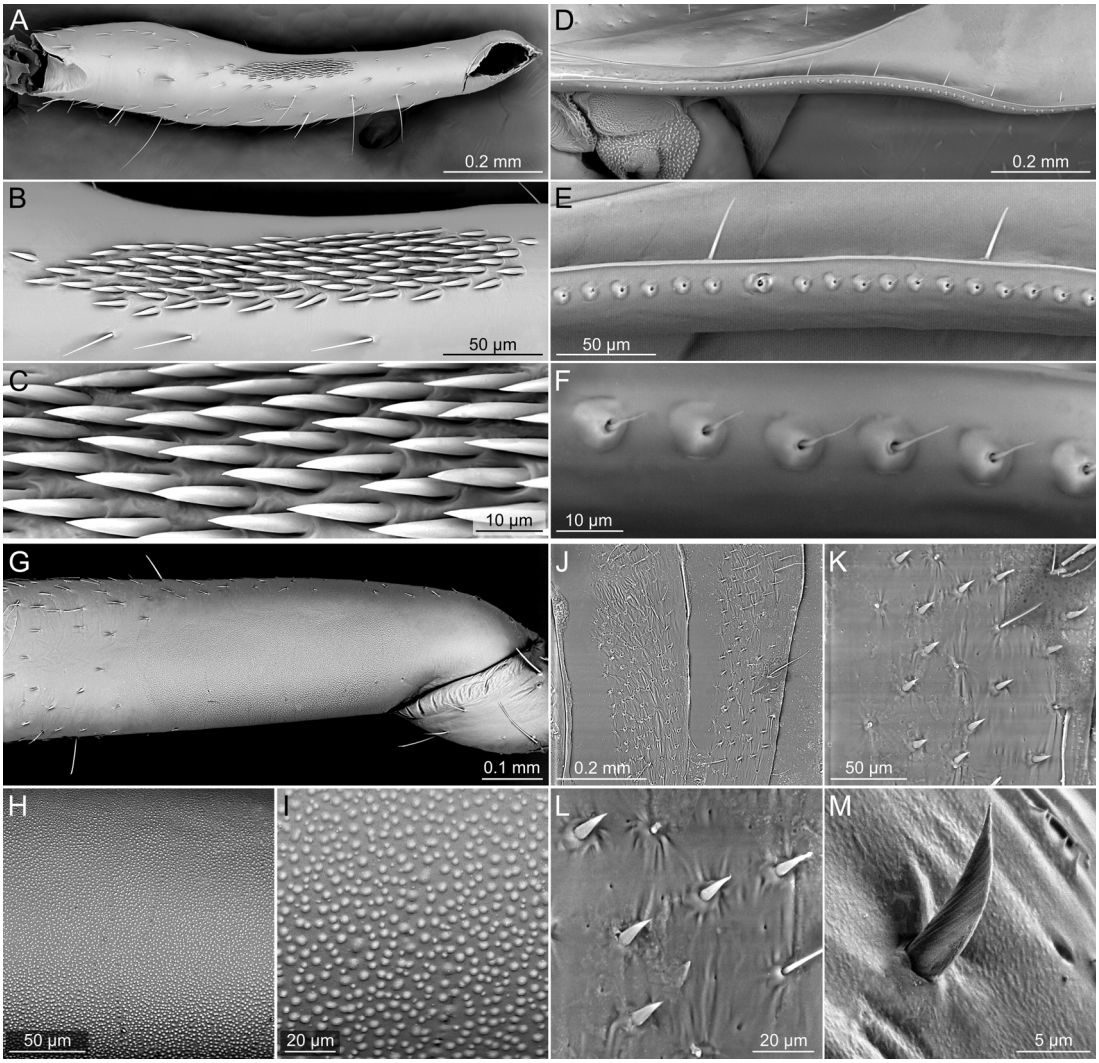

Fig. 4. Stridulatory device of Surinamellini Carvalho & Rosas, 1962. **A–F**. *Surinamella doesburgi* Carvalho & Rosas, 1962. **G–M**. *Glossopeltis conradti* Poppius, 1914. **A–C**. Plectrum on the ental surface of metafemur. **D–F**. Stridulitrum on hypocostal lamina. **G–I**. Plectrum on the ental surface of the basal part of metafemur. **J**–**M.** Stridulitrum on abdominal segments III and IV.

Glossopeltis conradti Poppius, 1914

The plectrum (0.5× 0.2 mm) is located in the basal part of the metafemoral ental surface. It is formed by dense, tiny tubercles (ca 1.1–2.2 μm in diameter) (Fig. 4G–I). The stridulitrum is developed on abdominal segments III–V. It is formed by sparsely but evenly distributed (spaced 25–32 μm), slightly inclined, short (ca 12 μm), thick (ca 3,8 μm), curved and pointed setae (Fig. 4J–M).

Discussion

Systematic position

Emnicoris gen. nov. may undoubtedly be classified into the Deraeocorinae based on the characters such as the presence of a pronotal collar, a polished and deeply punctate pronotum, the presence of a basal claw tooth and setiform parempodia on the pretarsus (Kim *et al.* 2023).

We herein placed this new genus in Deraeocorini based on the results and characters reconstructed in the total-evidence phylogenetic study within Deraeocorinae (Kim *et al.* 2023). This study recovered Surinamellini as paraphyletic, transferring two genera (*Eustictus* Reuter, 1909 and *Krainacoris*, Carvalho & Wallerstein, 1975) from Surinamellini to Deraeocorini. Although Surinamellini was not monophyletic, the clade, including the type genus *Surinamella* Carvalho & Rosas, 1962, was supported by apomorphic character states (such as a scutellum with projection(s) and the concave lateral margin of the hemelytra) and other characters (see Kim *et al.* 2023 for a detailed history of Surinamellini and its character states). This new genus does not exhibit the characters associated with Surinamellini, nor those of other tribes, except for the nominal tribe Deraeocorini.

According to Carvalho's (1955) key to the genera of Miridae of the World, no genera within Deraeocorinae exhibit linear antennae or uniform antennomere thickness, except for *Eustictus*. Since Carvalho's (1955) work, a few taxa of Deraeocorinae with such antennal structure (*Craoiella* Carvalho, 1988, *Kalamemiris* Hosseini & Cassis, 2017, *Krainacoris* Carvalho & Wallerstein, 1975, *Surinamella* Carvalho & Rosas, 1962, *Zanchismella* Carvalho & Wallerstein, 1975 and *Zanchismisca* Carvalho & Wallerstein, 1975) have been described. All these genera (except *Krainacoris* and *Kalamemiris*) belong to Surinamellini. Moreover, Schuh (1974) transferred from Hallodapini (Phylinae) to Surinamellini the following genera with linear antennae: the African *Glossopeltis* Reuter, 1903, and *Opistocyclus* Poppius, 1914 (syn. *Makakix* Odhiambo 1967) and Southeast Asian *Nicostratus* Distant, 1904. *Emnicoris* gen. nov. exhibits a unique antennal structure within the taxa mentioned above, with the first, second and third antennomeres clavate. Only *Surinamella* has this feature, although the proportion of each antennomere differs in length.

Emnicoris gen. nov. can be easily distinguished from *Eustictus* and *Krainacoris* by antennae distinctly shorter than body length (vs subequal to or more than body length); second antennomere shorter than head width (vs second antennomere longer than head width); a posterior angle of the pronotum extending beyond the hemelytral lateral margin (vs posterior angle fitting to hemelytral lateral margin); small cuneus (vs not small or normal sized cuneus) and thick femora (vs not thick or normally thickened femora).

The newly described genus displays a combination of characters from both Deraeocorini and Surinamellini, suggesting that it is an important and essential taxon for future studies on the evolution of Deraeocorinae.

Female genitalia

Female genitalia are becoming more widely used in mirid systematics (Cassis & Schuh 2012); however, data on their structure in Deraeocorinae are scarce. Slater (1950) demonstrated the structure of sclerotized

rings and the posterior wall in four genera from three tribes (Clivinemini Carvalho, 1957, Hyaliodini Carvalho & Drake, 1943 and Deraeocorini). Pluot-Sigwalt & Matocq (2017) analyzed the genital chamber in two genera of Deraeocorini. Other works presenting various elements of the female genitalia are mainly concerned with taxonomic issues (e.g., Chérot 1998; Matocq 1998; Henry & Ferreira 2003; Ferreira & Henry 2010; Yasunaga 2022). Further study of the female genitalia of Deraeocorinae is necessary before any conclusions can be drawn.

Stridulatory device

Stridulatory vibroacoustic signaling has evolved independently many times in true bugs as well as within Miridae (Davranoglou *et al.* 2023). In plant bugs, the stridulatory organs evolved in the form of the stridulitrum situated on the wing edge or sternites of the abdomen and the plectrum located on the metafemur (Davranoglou *et al.* 2023). Such a mechanism is known in Cylapinae Kirkaldy, 1903 (Taszakowski *et al.* 2025; Wolski & Yasunaga 2025), Orthotylinae Van Duzee, 1916 (Henry 2015), Phylinae Douglas & Scott, 1865 (Schuh 1974, 1984; Yasunaga *et al.* 2019; Tamada *et al.* 2020) and recently it was first described in Mirinae Hahn, 1833 (Yasunaga 2024). Within Deraeocorinae, stridulatory organs have so far been found in African representatives of Hyaliodini of the genera *Linnavuorista* Akingbohungbe, 1979 and *Obudua* Linnavuori, 1974. However, their description is not very precise (Akingbohungbe 1979). In *Obudua*, the plectrum is formed by a "narrow ridge on the ental margin of the metafemora", and in *Linnavuorista* by a "scraper located on the ental surface of the metafemora". In both species, the stridulitrum is formed by a serrated embolial margin (Akingbohungbe 1979).

The stridulatory device of another myrmecomorphic group within Phylinae (Hallodapini Van Duzee, 1916) has been assumed to be a synapomorphy for several genera (Yasunaga *et al.* 2019). In our study, the new genus exhibits a stridulatory device entirely distinct from that of *Surinamella* and *Glossopeltis* (Figs 2F–G, 3A–M). Moreover, the elements that make up the stridulatory mechanism in each of these species differ not only in structure but also in origin. The stridulitrum of *Emnicoris* gen. nov. is developed in the form of notches on the hypocostal lamina (= hypocostal ridge, the outer edge of the costal margin, epipleura of the corium) (Fig. 2F). This type of stridulitrum occurs, for example, in Ceratocapsini Van Duzee, 1916 (Orthotylinae) (Henry 2015), Fulviini Uhler, 1886 (Cylapinae) (Taszakowski *et al.* 2025; Wolski & Yasunaga 2025), Hallodapini (Phylinae) (Schuh 1984; Yasunaga 2019) and Mirini Hahn, 1833 (Mirinae) (Yasunaga 2024). However, the stridulitrum of *Surinamella* appears in the form of a row of tubercles (Fig. 4D–F), which are most likely the modified sockets of mechanoreceptors, as well as fields of specific setae on the abdomen of *Glossopeltis* (Fig. 4J–K), whose function as stridulitrum was not known until now.

The plectrum of *Emnicoris* gen. nov. is formed by a few ribs on the metafemur (Fig. 2G). Similar structures perform the same function, for example, in Fulviini (Taszakowski *et al.* 2025; Wolski & Yasunaga 2025). Minute bumps functioning as a plectrum in *Glossopeltis* (Fig. 4G–I) have been well documented in other groups such as Ceratocapsini (Orthotylinae) (Henry 2015), Hallodapini (Phylinae) (Schuh 1984; Yasunaga 2019) and Mirini (Mirinae) (Yasunaga 2024). The plectrum of *Surinamella* (Fig. 3A–C), which probably arose from highly modified mechanoreceptors, is unique.

Although the importance of stridulation organs in the taxonomy of plant bugs is still relatively poorly understood, the data presented indicate that their structure may be a valuable taxonomic feature. Vast differences in the form of stridulation devices may provide evidence that the three examined generations belong to different lineages.

Mimicry

McMah & Cassis (2024) recently published a study on myrmecomorphic traits within Orthotylinae. Although these authors focused on groups from another subfamily, they codified many characters for

myrmecomorphic morphology. However, the new genus does not conform to these characters, as many myrmecomorphic taxa display a noticeable pale or white band on the dorsum, while the new genus has a predominantly unicolorous dorsum. Instead, we observe that the new genus shows similarity in certain morphological features with wasp groups (e.g., Eulophidae Westwood, 1829), such as a glossy body, short antennae, large pronotum, straight wings toward the abdomen and thick and short legs. These features suggest a resemblance to wasps rather than ants. Although we do not propose a formal term here, we note that the external morphology of the new genus diverges from typical myrmecomorphic traits and appears more reminiscent of wasp-like forms, suggesting a distinct pattern of resemblance.

Therefore, it is reasonable to place this new genus in Deraeocorini, as it does not exhibit the same degree of myrmecomorphic characters as Surinamellini until the definition and the monophyly of Surinamellini are further established. The placement of this new genus should be reevaluated after a detailed myrmecomorphic study within Deraeocorinae.

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