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A new genus and two new species in the planthopper tribe Sarimini from Borneo (Hemiptera: Fulgoromorpha: Issidae)

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Abstract. A new genus of Issidae in the tribe Sarimini (Hemiptera: Fulgoromorpha), *Pseudomiklukha* gen. nov. is described to accommodate two species from Borneo. The type species is new to science and described as *Pseudomiklukha auriculata* gen. et sp. nov. The second species is *Nikomiklukha maclayi* Gnezdilov, 2010, which is transferred to the new genus, and the new combination *Pseudomiklukha maclayi* (Gnezdilov, 2010) gen. et comb. nov. is proposed. Another new species is described in the genus *Nikomiklukha* Gnezdilov, 2010, *Nikomiklukha floreni* sp. nov., also from Borneo. Distribution maps and illustrations of specimens and terminalia are provided.

Keywords. Biodiversity, Fulgoroidea, Malaysia, Indonesia.

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Introduction

The planthopper family Issidae Spinola, 1839 (Hemiptera: Fulgoromorpha) counts over 230 genera with 1100 species (Bourgoin 2025). It is distributed around the globe and represents about 8% of all known species of Fulgoromorpha. Despite recent progress in the description of new taxa, major regions, such as tropical Africa, New Guinea and Australia, are still very poorly documented (Gnezdilov & Fletcher 2010; Gnezdilov 2013; Gnezdilov *et al.* 2022; Constant & Semeraro 2023). The tribe Sarimini currently counts about 160 species in 40 genera. My study of the material of Issidae in the collection of the Royal Belgian Institute of Natural Sciences revealed two new species of Sarimini from Borneo, apparently belonging to the genus *Nikomiklukha* Gnezdilov, 2010. The Issidae fauna of Borneo currently counts 28 species in four tribes: Eupsilini Gnezdilov, 2020 (six species), Hemisphaeriini Melichar, 1906 (nine species), Parahiraciini Cheng & Yang, 1991 (five species) and Sarimini Wang, Zhang & Bourgoin, 2016 (eight species) (Walker 1857, 1858; Melichar 1906; Gnezdilov & Wilson 2007; Gnezdilov 2010, 2015, 2020, 2022; Constant 2021; Bourgoin 2025), and the genus *Nikomiklukha* presently contains three species: one from Sumatra and two from Borneo (Gnezdilov 2010). However, my study of the structure of the male terminalia of these taxa shows that the species included in the genus by Gnezdilov (2010) should actually be accommodated in two distinct genera.

The present paper aims to describe a new species from Sabah in the genus *Nikomiklukha*, as well as erect a new genus *Pseudomiklukha* gen. nov. to accommodate another new species from Sabah, together with *Nikomiklukha maclayi* Gnezdilov, 2010, as a new contribution to the knowledge of the issid fauna of Borneo.

Material and methods

The specimens were collected by canopy fogging. The specimens and terminalia were photographed with a Leica EZ4W stereo microscope with integrated camera, and the images were stacked with CombineZ software and optimized with Adobe Photoshop CS3. The distribution map was produced with SimpleMappr (Shorthouse 2010). The genitalia were extracted after soaking the abdomen in a 10% solution of potassium hydroxide (KOH) at room temperature for about 12 hours. The pygofer was separated from the abdomen and the aedeagus dissected with a needle blade for examination. The whole was thoroughly rinsed in 70% ethanol, then placed in glycerine for preservation in a tube attached to the pin of the corresponding specimen. The hind wings were glued with white glue on a small white cardboard rectangle attached to the pin of the corresponding specimen.

The external morphological terminology follows O'Brien & Wilson (1985) and for the terminalia, Bourgoin & Huang (1990), Gnezdilov (2003) and Gnezdilov *et al.* (2014). The metatibiotarsal formula gives the number of spines on (side of metatibia) apex of metatibia / apex of first metatarsus / apex of second metatarsus. The terminology of the wing venation follows Bourgoin *et al.* (2015). The higher classification follows the most recent one as published by Gnezdilov *et al.* (2022).

Abbreviations for measurements

The measurements were taken as in Constant (2004) and the following abbreviations are used:

BB = maximum breadth of the body
BF = maximum breadth of the frons
BTg = maximum breadth of the tegmen
BV = maximum breadth of the vertex
BW = maximum breadth of the hind wing
LF = length of the frons in median line
LTg = maximum length of the tegmen
LT = total length (apex of head to apex of tegmina)
LV = length of the vertex in median line
LW = maximum length of the hind wing

Abbreviations for morphological terms (male terminalia)

ae = aedeagus
An = anal tube
ca = capitulum of the gonostylus
co = connective of the aedeagus
dl = dorsal lobe of the periandrium
G = gonostylus
ldp = laterodorsal process of the periandrium
lvp = lateroventral process of the aedeagus
Py = pygofer
te = tectiductus of the aedeagus
vl = ventral lobe of the periandrium

Institutional abbreviation

RBINS = Royal Belgian Institute of Natural Sciences, Brussels, Belgium

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Hemiptera Linnaeus, 1758
Suborder Auchenorrhyncha Duméril, 1806
Infraorder Fulgoromorpha Evans, 1946
Superfamily Fulgoroidea Latreille, 1807
Family Issidae Spinola, 1839
Subfamily Issinae Spinola, 1839

Tribe **Sarimini** Wang, Zhang & Bourgoin, 2016

Type genus

Sarima Melichar, 1903.

Genus ***Nikomiklukha*** Gnezdilov, 2010

Nikomiklukha Gnezdilov, 2010: 48.

Type species

Issus praecedens Walker, 1857 by original designation.

Diagnosis

The genus *Nikomiklukha* can be differentiated from the other genera of Sarimini by the following combination of characters (modified from Gnezdilov 2010):

(1) Frons elongate, enlarged above clypeus, with only strong median keel from its upper margin to clypeus. Frontopoclypeal suture weakly convex.
(2) Vertex elongate (1.4 × as long as broad), its lateral margins keel-shaped, anterior margin acutely angulate, posterior margin concave.
(3) Pronotum without keels, with very narrow paradiscal fields, anterior margin acutely angular.
(4) Mesonotum without keels.
(5) Tegmina elongate, rounded apically, without hypocostal plate. Veins RP and CuA bifurcate, M trifurcate.
(6) Hind wings trilobed; costal margin concave and with coupling lobe; ScP+R and CuA furcate; MP simple; second branch of CuA fused distally with CuP; Pcu forked in distal portion, fused on basal half with A1; A2 simple.
(7) Hind tibiae with two lateral spines distally. First metatarsomere with seven intermediate spines apically.
(8) Male anal tube elongate with basal portion rather narrow.
(9) Pygofer with dorsal lobes laterodorsally.
(10) Gonostyli with rather short, curved capitulum (in lateral view) and with angularly rounded (more or less right angle) posteroventral angle, not produced into a distinct lobe.
(11) Aedeagus strongly upcurved, horseshoe-shaped in lateral view.
(12) Dorsal lobe of the periandrium apically without lateral lobes.
(13) Aedeagus (s. str.) with pair of acuminate lateroventral processes.

Differential diagnosis

The most similar genus is *Pseudomiklukha* gen. nov. which can be separated from *Nikomiklukha* by the male anal tube elongate with a rather wide basal portion (elongate with basal portion rather narrow in *Nikomiklukha*), the male pygofer without dorsal lobes (pygofer with dorsal lobes laterodorsally in *Nikomiklukha*), the gonostyli with rather elongate, digitiform capitulum (in lateral view) and with posteroventral angle produced into a small but distinct lobe (rather short, curved capitulum and with angularly rounded (more or less right angle) posteroventral angle, not produced into a distinct lobe in *Nikomiklukha*), the aedeagus more or less straight in basal portion, then upcurved at right angle (strongly upcurved, horseshoe-shaped in lateral view in *Nikomiklukha*), the dorsal lobe of the periandrium apically with lateral lobes (no lateral lobes in *Nikomiklukha*).

Distribution

Malaysia and Indonesia: Borneo and Sumatra.

Species included

Nikomiklukha floreni sp. nov.
Nikomiklukha praecedens (Walker, 1857)
Nikomiklukha sumatrana Gnezdilov, 2010

Nikomiklukha floreni sp. nov.

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Figs 1–4, 5A

Diagnosis

Nikomiklukha floreni sp. nov. can be recognized by the bilobed dorsal lobe of the pygofer (posterior lobe distinctly smaller – Fig. 3A), the dorsal lobe of the periandrium without process (Fig. 4A) and the lateroventral process of the aedeagus distinctly sinuate and weakly converging in distal portion (Fig. 4F).

Etymology

The species epithet is a patronym referring to Dr Andreas Floren (Germany) in acknowledgement of his help in documenting this new species.

Type material

Holotype

MALAYSIA • ♂; Borneo, Keningau; [5°15′43″ N, 116°20′07″ E]; 21 Feb. 2001; A. Floren leg.; fogging *Melanolepis* sp. (Euphorbiaceae Juss.); code 320; I.G.: 31.494; RBINS.

Paratypes

MALAYSIA • 11 ♂♂, 3 ♀♀; same data as for holotype; RBINS.

Description

Measurements and ratios. LT: ♂ (n = 10): 7.1 mm (7.0–7.2), ♀ (n = 3): 7.6 mm (7.4–7.7); LT/BB = 1.74; LTg/BTg = 2.43; LW/BW = 1.22; BV/LV = 0.96; LF/BF = 1.19.

Head (Figs 1A–D, 2A–D). Vertex variegated brown, often paler on posterior angles, and with obsolete yellowish median carina; about as broad as long in midline, but seeming elongate, weakly constricted in middle; disc moderately concave; anterior margin strongly, angularly projecting anteriad, sides incurved; posterior margin rather deeply concave; all margins elevated. Frons brown densely covered

in small yellowish mottling, gradually darker from lower to upper portion, and with row of yellowish tubercles along lateral and dorsal margins; distinctly elongate, slightly convex, smooth with incomplete median carina (not reaching frontoclypeal suture), peridiscal carina absent. Genae yellowish with brown markings, with anteroventral angle distinctly projecting anteriad. Clypeus triangular, convex, smooth, without distinct median carina; postclypeus yellowish brown; anteclypeus yellowish brown with apical portion blackish on sides. Labium yellowish brown with last segment longer than broad, slightly shorter than penultimate. Antennae with scape short, ring-shaped, brown, and pedicel bulbous, blackish brown with whitish disc-shaped sensory organs.

Thorax (Figs 1A–D, 2A–D). Pronotum dark brown with anterior portion of disc yellowish, with distinct yellowish median carina; subtriangular, projecting anteriorly; rugulose with anterior margin carinate and yellowish tubercles in paranotal fields, and pair of impressed points on each side of midline; paranotal fields moderately narrow behind eyes; paranotal lobes dark brown in dorsal half with small yellowish tubercles along lateral margin, pale yellowish in ventral half (under level of antenna) and with darker area along ventral margin, posteroventral angle rounded. Mesonotum brown, with carinae more or less marked with paler colour, smooth, weakly convex with distinct depression before scutellum; sublateral (peridiscal) carinae incomplete but rather distinct, some pale tubercles in angles. Tegulae brown.

Tegmina (Fig. 1A–D). Variegated brown, usually with larger, more or less distinct, paler marking at basal third, sometimes with whitish markings in basal portion, rarely extending along postclaval margin, main veins distinctly elevated, more so than cross-veins; distinctly convex, about 2.4 × as long as wide, with distinct lateral hump including vein ScP+RA around basal third; no epipleuron; clavus closed, reaching $^{4}/_{5}$ of tegmen length.

Venation of tegmina. ScP+R rather short; ScP+RA long, reaching external margin of tegmen around distal ¼ of tegmen length; RP unforked, long and more or less straight; first fork of MP after midlength of tegmen, MP1 with two terminales; first fork of CuA around halflength of tegmen; Pcu and A1 fused slightly before halflength of clavus, Pcu+A1 reaching apex of clavus; cross-veins weakly marked, more numerous along costal margin and in distal half of tegmen.

Hind wings (Fig. 1E). Dark brown; veins darker than background, generally black, sometimes paler in basal portion; well developed, with three distinct lobes (Sarimini type) more or less equal in width; indentation between ScP-R-MP-Cu and Pcu-A1 lobes rather deep; costal margin sinuate and with coupling lobe; basal cell large, oval.

Venation of hind wings. ScP+R and CuA furcate; MP simple, sinuate; second branch of CuA fused distally with CuP; Pcu and A1 fused on basal half, Pcu forked in distal portion, and A2 simple; one transverse vein between second branch of ScP+R and MP, and another one between MP and first branch of CuA.

Legs (Fig. 1A–C, 2E–F). Yellowish brown, generally paler than tegmina, anterior and median pair variegated; more or less distinct darker rings on pro- and mesofemora (subbasal and anteapical), at about first and second third of pro- and mesotibiae; all spines of posterior legs black apically. Anterior and median legs elongate and slender, tibiae longer and more slender than corresponding femora; pro- and mesotarsi yellowish brown, rather elongate. Metatibiae with two lateral spines in distal half and seven apical spines. Metatarsi yellowish brown, rather elongate with first segment about as long as combined length of remaining segments. First metatarsomere with two latero-apical and eight intermediate spines arranged in arc. Metatibiotarsal formula: (2) 7 / 10 / 2.

Abdomen (Fig. 1B). Brown, sometimes irregularly variegated with yellowish.

Fig. 1. *Nikomiklukha floreni* sp. nov., holotype, ♂ (RBINS). **A**. Habitus, dorsal view. **B**. Habitus, ventral view. **C**. Habitus, lateral view. **D**. Habitus, anterolateral view. **E**. Right hind wing.

Male terminalia (Figs 3–4). Pygofer (*Py* – Fig. 3A–D) rather short, about 2.4 × as high as long at midheight in lateral view, with posterior margin broadly, distinctly sinuate in lateral view, and with dorsal margin bearing bilobed dorsal lobe (posterior lobe distinctly smaller; in caudal view suboval, 1.3 × as high as wide; dorsally abruptly, deeply notched. Gonostyli (*G* – Fig. 3A–D) massive, moderately convex, subtriangular in lateral aspect with posterior margin oblique, anterodorsal margin weakly convex and ventral margin oblique, forming rounded right angle with posterior margin; capitulum (*ca* – Fig. 3A–B, D) rather short and massive, curved (hooked) anterodorsad and with poorly distinct neck in lateral view,

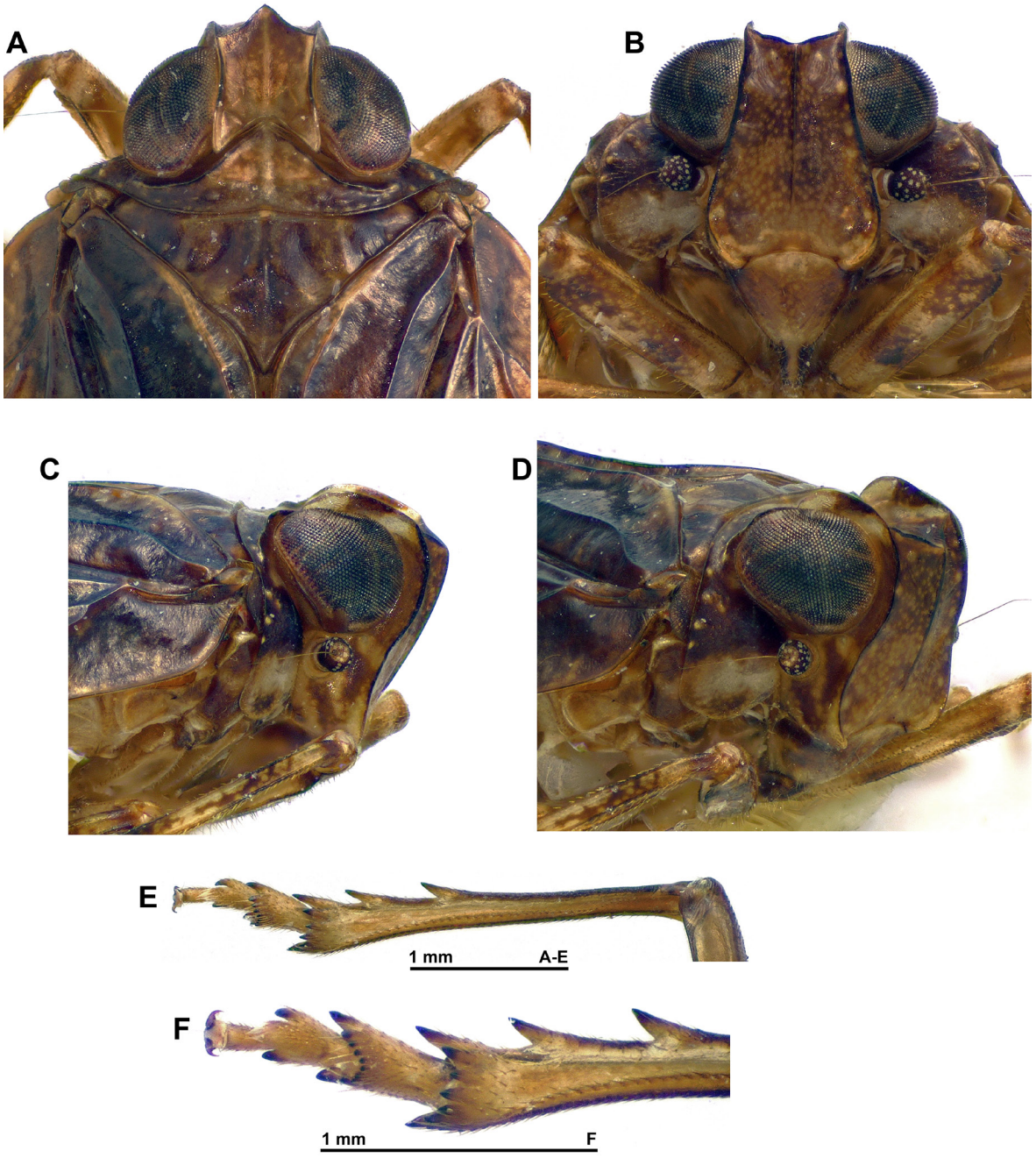

Fig. 2. *Nikomiklukha floreni* sp. nov., holotype, ♂ (RBINS). **A–D**. Head and thorax. **A**. Dorsal view. **B**. Perpendicular view of frons. **C**. Lateral view. **D**. Anterolateral view. **E**. Metatibia and metatarsus, ventral view. **F**. Apex of metatibia and metatarsus, ventral view.

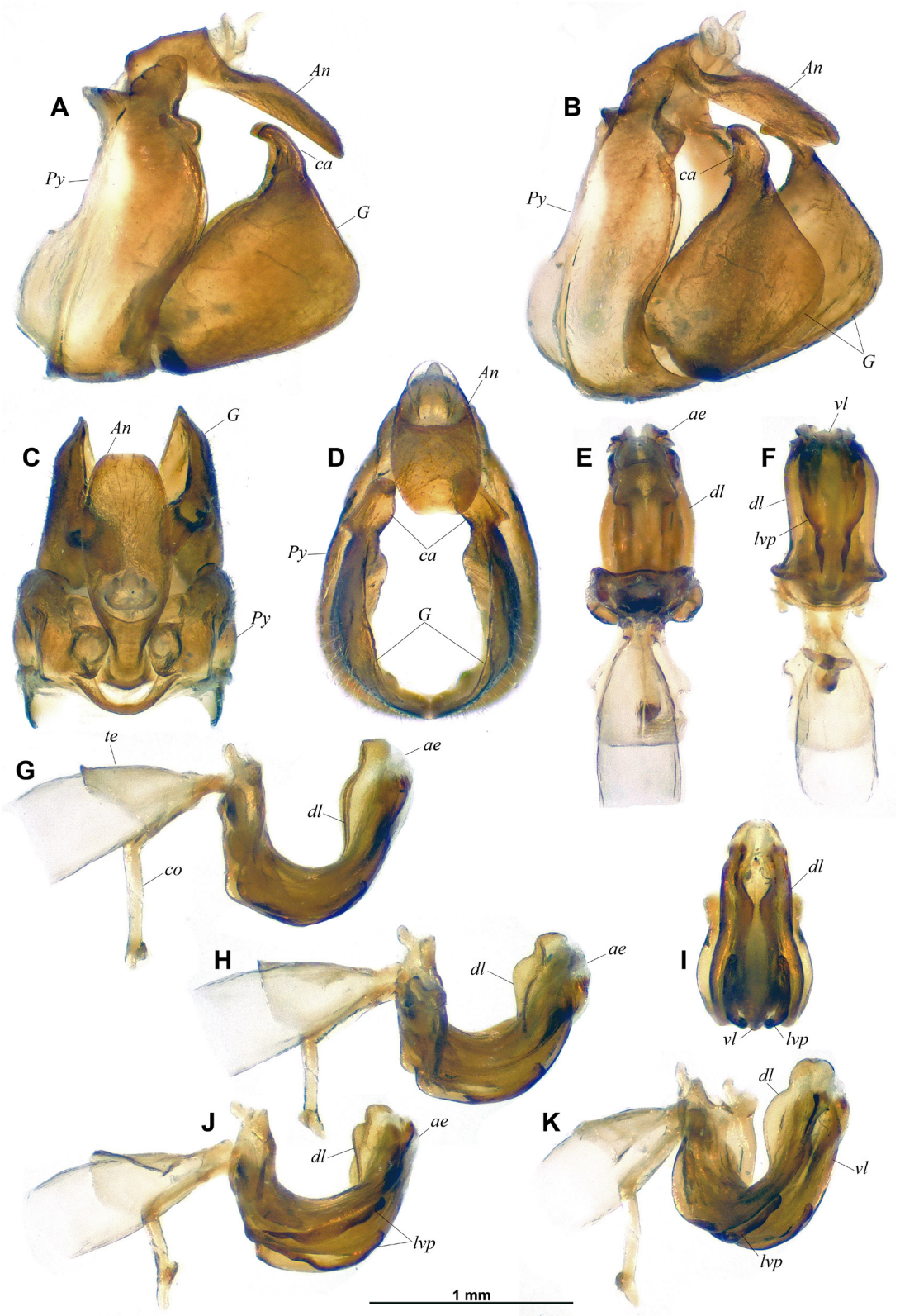

Fig. 3. *Nikomiklukha floreni* sp. nov., holotype, ♂ (RBINS), terminalia. **A–D**. Pygofer, anal tube and gonostyli. **A**. Left lateral view. **B**. Posterolateral view. **C**. Dorsal view. **D**. Caudal view. **E–K**. Aedeagus. **E**. Dorsal view. **F**. Ventral view. **G**. Left lateral view. **H**. Left laterodorsal view. **I**. Caudal view. **J**. Left lateroventral view. **K**. Posterolateral view. Abbreviations: see Material and methods.

with basilateral process directed lateroventrad in caudal view, and, in caudal view, anteroposteriorly laminate with inner margin rounded. Anal tube (*An* – Fig. 3A–D) elongate, dorsoventrally flattened, and oblong (narrow basally), moderately narrow with lateral margins broadly curved in dorsal view; about 2.6 × as long as wide in dorsal view and with anal opening in basal third; apical margin subtruncate; in lateral view, downcurved at level of anal opening, then more or less straight. Aedeagus (*ae* – Figs 3E–K, 4) symmetrical, strongly curved posterodorsad in lateral view (horseshoe-shaped). Ventral lobe of periandrium (*vl* – Figs 3F–G, I–K, 4A–C) laminate, spatulate, with apical margin weakly lanceolate. Dorsal lobe of periandrium (*dl* – Figs 3EK, 4A–C) rounded apically, laminate with lateral margins expanded into large lateral lobe projecting ventrad on each side, along most of length (more or less conceiling ventral lobe of periandrium), and moderate lateral lobe projecting dorsad in distal half; distinctly surpassing ventral lobe. Aedeagus (sensu stricto, *ae* – Figs 3E, G–H, J–K, 4D–G) surpassing ventral lobe of periandrium but not dorsal lobe; bifid with inner margins sinuate and with apical portion inflated; pair of elongate lateroventral processes (*lvp* – Figs 3F, I–K, 4D–G), moderately curved ventrocephalad (in lateral view), rather robust and curved mesad (in ventral view) in basal two third, then tapering to pointed apex, distinctly sinuate and weakly converging in distal portion (Fig. 4F). Connective

Fig. 4. *Nikomiklukha floreni* sp. nov., holotype, ♂ (RBINS). **A–C**. Periandrium. **A**. Left lateral view. **B**. Posterolateroventral view. **C**. Caudal view. **D–G**. Aedeagus s. str. **D**. Left lateral view. **E**. Dorsal view. **F**. Ventral view. **G**. Caudal view. Abbreviations: see Material and methods.

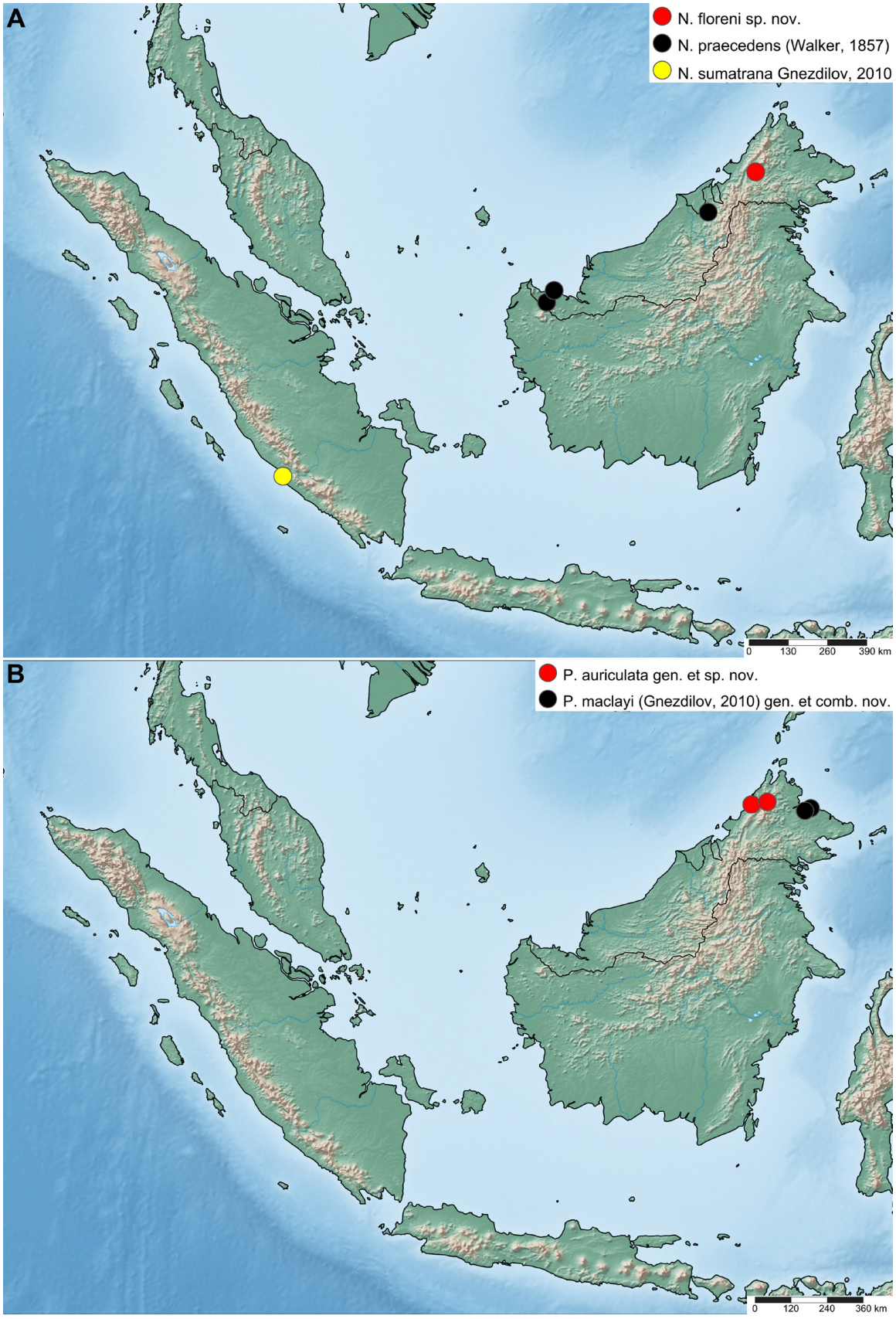

Fig. 5. A. *Nikomiklukha* spp., distribution map. **B**. *Pseudomiklukha* spp., distribution map.

(*co* – Fig. 3G) well developed, corpus connective long, strongly (abruptly) curved ventrad in lateral view, tectiductus (*te* – Fig. 3G) massive, conical with secondary layer on basal half ending in a tranverse dorsal crista slightly beyond halflength; wide anterior foramen.

Biology

The type series was collected in the primary forest in Keningau by fogging *Melanolepis* sp. (Euphorbiaceae Juss.) (A. Floren pers. com., 2010 – see also Horstmann *et al.* 2005 for additional information on A. Floren's collecting).

Distribution

Malaysia: Sabah (Fig. 5A).

Genus ***Pseudomiklukha*** gen. nov.
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Type species

Pseudomiklukha auriculata gen. et sp. nov. by present designation.

Diagnosis

The genus *Pseudomiklukha* gen. nov. can be differentiated from the other genera of Sarimini by the following combination of characters:

(1) Frons elongate, enlarged above clypeus, with only strong median keel from its upper margin to clypeus. Frontopoclypeal suture weakly convex.
(2) Vertex elongate (1.4 × as long as broad), its lateral margins keel-shaped, anterior margin acutely angulate, posterior margin concave.
(3) Pronotum without distinct carinae, with very narrow paradiscal fields, anterior margin acutely angular.
(4) Mesonotum without distinct carinae.
(5) Tegmina elongate, rounded apically, without hypocostal plate. Veins RP and CuA bifurcate, M trifurcate.
(6) Hind wings trilobed; costal margin sinuate and with coupling lobe; ScP+R and CuA furcate; MP simple; second branch of CuA fused distally with CuP; Pcu forked in distal portion (multiple secondary veins), fused on basal half with A1; A2 simple.
(7) Hind tibia with two lateral spines distally. First metatarsomere with seven intermediate spines apically.
(8) Male anal tube elongate with basal portion rather wide.
(9) Pygofer without dorsal lobes laterodorsally.
(10) Gonostyli with rather elongate, digitiform capitulum (in lateral view) and with posteroventral angle produced into a small but distinct lobe.
(11) Aedeagus more or less straight in basal portion, then upcurved at right angle.
(12) Dorsal lobe of the periandrium apically with lateral lobes.
(13) Aedeagus (s. str.) with pair of acuminate lateroventral processes.

Differential diagnosis

The most similar genus is *Nikomiklukha* Gnezdilov, 2010, which can be separated by the characters given in the corresponding section of this genus.

Etymology

The genus name is formed by the combination of 'pseudo', an ancient Greek prefix meaning 'false', and the ending of the closest genus '*Nikomiklukha*'. The name refers to the close resemblance between the two genera. Gender feminine.

Description

Medium-sized (around 8.4–10.0 mm), very convex, moderately elongate, rather robust-bodied.

Colour. Mostly brown variegated with yellowish and blackish.

Head. Vertex elongate (1.1 × as long in midline, as broad), concave, with lateral margins keel-shaped, anterior margin acutely angulate, posterior margin concave, lateral margins sinuate. Frons elongate with dorsal margin deeply concave, widest above clypeus, with incomplete median carina from upper margin nearly to clypeus. Frontopoclypeal suture convex.

Thorax. Pronotum with obsolete median carina, anterior margin projecting anteriad, with very narrow lateral fields. Mesonotum with obsolete carinae.

Tegmina. Elongate, rounded apically, without hypocostal plate; main veins elevated; clavus closed, reaching about $^{4}/_{5}$ of tegmen length. Venation: ScP+R forked close to base; first fork of M slightly after midlength of tegmen, M_1 forked in distal portion; CuA forked at about midlength of tegmen; CuP and A1 fused at about midlength of clavus.

Hind wings. Hind wings trilobed; costal margin sinuate, with coupling lobe; ScP+R and CuA furcate; MP simple; second branch of CuA fused distally with CuP; Pcu forked in distal portion (multiple secondary veins), fused on basal half with A1; A2 simple.

Legs. Elongate and slender. Hind tibiae with two lateral spines in distal half. First metatarsomere with seven intermediate spines apically.

Male terminalia. Anal tube elongate with basal portion rather wide. Pygofer without dorsal lobes laterodorsally. Gonostyli with rather elongate, digitiform capitulum (in lateral view) and with posteroventral angle produced into a small but distinct lobe. Aedeagus more or less straight in basal portion, then upcurved at right angle. Dorsal lobe of the periandrium apically with lateral lobes. Aedeagus (s. str.) with pair of acuminate lateroventral processes.

Distribution

Malaysia: Borneo (Sabah).

Species included

Pseudomiklukha auriculata gen. et sp. nov.
Pseudomiklukha maclayi (Gnezdilov, 2010) gen. et comb. nov.

Pseudomiklukha auriculata gen. et sp. nov.
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Figs 5B, 6–9

Diagnosis

Pseudomiklukha auriculata gen. et sp. nov. can be recognized by the oval, flat laterodorsal processes of the dorsal lobe of the periandrium (*ldp* – Figs 8G–H, 9A–C) (narrow and upcurved in distal portion in *P. maclayi* Gnezdilov 2010: figs 41–42), and the very long lateroventral processes of the aedeagus reaching anteriorly to base of periandrium (*lvp* – Fig. 8G) (much shorter, distinctly not reaching base of periandrium in *P. maclayi* Gnezdilov 2010: fig. 41).

Etymology

The species epithet '*auriculata*' is a Latin adjective meaning 'with ears'; it refers to the ear-shaped processes of the dorsal lobe of the periandrium.

Type material

Holotype

MALAYSIA • ♂; Borneo, Poring; 5°59′ N, 116°14′ E; 28 Mar. 1998; A. Floren leg.; fogging *Barringtonia scortechinii* King (Barringtoniaceae), primary forest, night; code 082; I.G.: 31.494; RBINS.

Paratypes

MALAYSIA • 1 ♂; same data as for holotype; RBINS • 1 ♀; Borneo, Poring; 29 Mar. 1998; A. Floren leg.; fogging *Ficus leptogramma* Corner [Moraceae], primary forest, night; code 089; I.G.: 31.494; RBINS • 1 ♀; Borneo, Poring Hot Spring; 6°03′29″ N, 116°42′12″ E; 16 Sep. 2006; A. Floren leg.; fogging *Aporosa lagenocarpa* Airy Shaw (Euphorbiaceae), primary forest, night; code 100; I.G.: 31.494; RBINS • 1 ♀; Borneo, Poring Hot Spring; 6°03′29″ N, 116°42′12″ E; 16 Sep. 2006; A. Floren leg.; fogging *Dacryodes laxa* (A.W.Benn.) H.J.Lam (Burseraceae), primary forest, night; code 105; I.G.: 31.494; RBINS.

Description

Measurements and ratios. LT: ♂ (n = 2): 8.5 mm (8.4–8.6), ♀ (n = 3): 9.7 mm (9.3–10.0); LT/BB = 1.64; LTg/BTg = 2.43; LW/BW = 1.21; BV/LV = 0.91; LF/BF = 1.16.

Head (Figs 6A–C, E, 7A–D). Vertex yellowish brown, often with some darker markings in basal area; obsolete median carina; about 1.1 × as long in midline as broad, constricted in middle; disc concave; anterior margin strongly, angularly projecting anteriad, sides incurved; posterior margin deeply concave; all margins elevated. Frons brown densely covered in small yellowish mottling, gradually darker from lower to upper portion (yellowish along frontoclypeal suture), and with row of yellowish tubercles along lateral margin; distinctly elongate, slightly convex, smooth with incomplete median carina (not reaching frontoclypeal suture), peridiscal carina absent. Genae yellowish with brown markings, with anteroventral angle moderately projecting anteriad. Clypeus triangular, convex, smooth, without distinct median carina; postclypeus yellowish brown, with basilateral dark brown markings; anteclypeus yellowish brown, paler than postclypeus. Labium yellowish brown with last segment longer than broad and darker apically, slightly shorter than penultimate. Antennae with scape short, ring-shaped, yellowish brown, and pedicel bulbous, brown with whitish disc-shaped sensory organs.

Thorax (Figs 6A, C, E, 7A–D). Pronotum brown with anterior portion of disc yellowish, with distinct yellowish median carina; subtriangular, projecting anteriorly; rather smooth with anterior and posterior margins carinate, and pair of impressed points on each side of midline; paranotal fields moderately

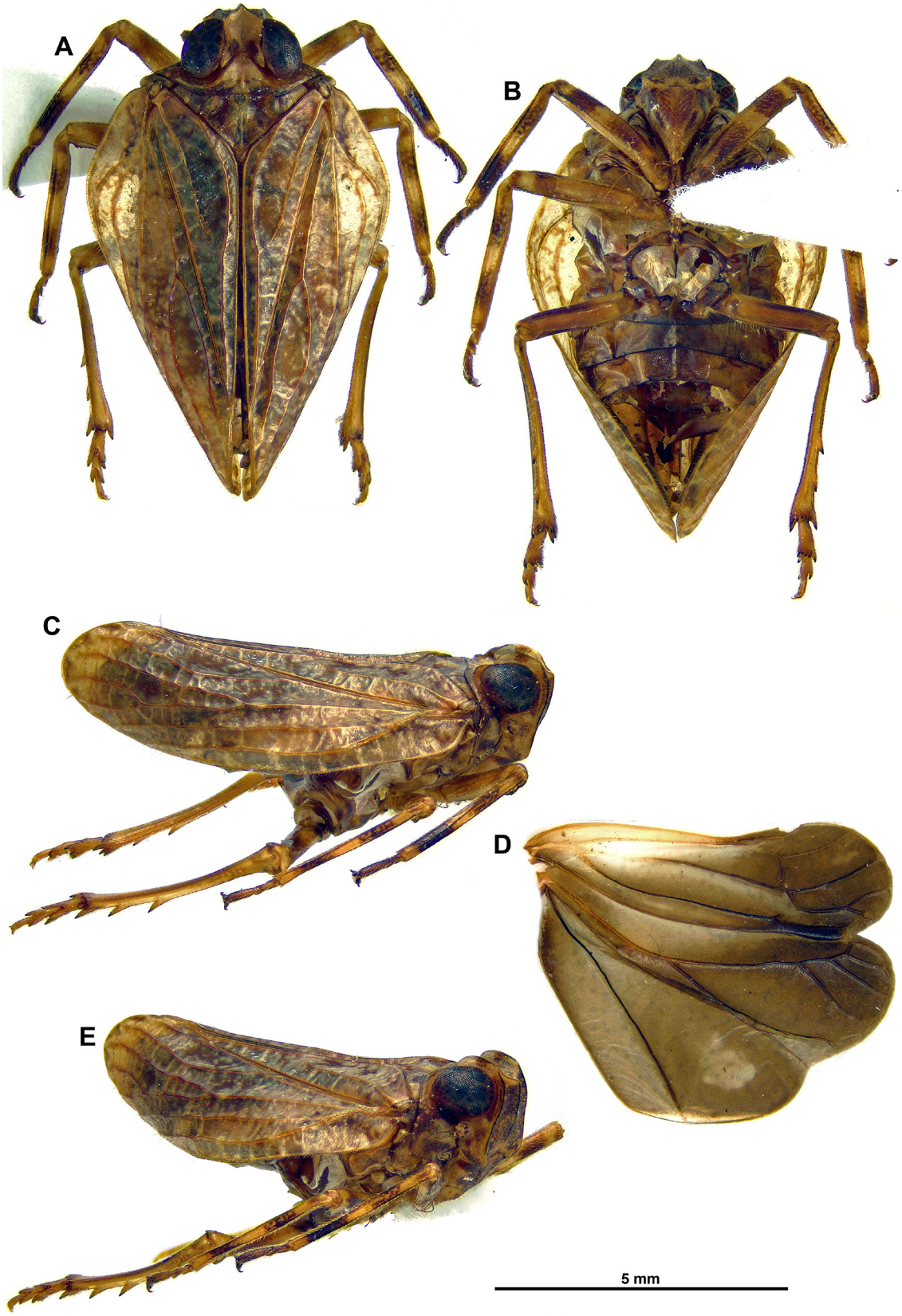

Fig. 6. *Pseudomiklukha auriculata* gen. et sp. nov., holotype, ♂ (RBINS). **A**. Habitus, dorsal view. **B**. Habitus, ventral view. **C**. Habitus, lateral view. **D**. Right hind wing. **E**. Habitus, anterolateral view.

narrow behind eyes; paranotal lobes variegated yellowish and dark brown with small yellowish tubercles along lateral margin at level of eye, posteroventral angle rounded. Mesonotum brown, with carinae more or less marked with paler colour, smooth, weakly convex with distinct depression before scutellum; sublateral (peridiscal) carinae weak. Tegulae brown.

Tegmina (Fig. 6A–C, E). Variegated brown, sometimes with more or less distinct, paler marking at basal third; main veins elevated, more so than cross-veins; distinctly convex, and about 2.4 × as long as wide, with distinct lateral hump including vein ScP+RA around basal third; no epipleuron; clavus closed, reaching $^{4}/_{5}$ of tegmen length.

Venation of tegmina. ScP+R rather short; ScP+RA long, reaching external margin of tegmen around distal ¼ of tegmen length; RP unforked, long and more or less straight; first fork of MP after midlength of tegmen, MP1 with two terminales; first fork of CuA around halflength of tegmen; Pcu and A1 fused slightly before halflength of clavus, Pcu+A1 reaching apex of clavus; cross-veins weakly marked, more numerous along costal margin and in distal half of tegmen.

Hind wings (Fig. 6D). Dark brown with paler area in basal portion along costal margin; veins darker than background; well developed, with three distinct lobes (Sarimini type) more or less equal in width; indentation between ScP-R-MP-Cu and Pcu-A1 lobes rather deep; costal margin sinuate and with coupling lobe.

Venation of hind wings. ScP+R and CuA furcate; MP simple, sinuate; second branch of CuA fused distally with CuP; Pcu and A1 fused on basal half, Pcu multiforked in distal portion, and A2 simple; one transverse vein between second branch of ScP+R and MP, and another one between MP and first branch of CuA.

Legs (Figs 6A–C, 7E–F). Yellowish brown, not distinctly paler than tegmina, anterior and median pair variegated; more or less distinct darker rings on pro- and mesofemora (subbasal and anteapical, latter more distinct), and at about first and second third of pro- and mesotibiae, anteapical of protibiae more distinct); all spines of posterior legs black apically. Anterior and median legs elongate and slender, tibiae slightly more slender than corresponding femora; pro- and mesotarsi brown, rather elongate. Metatibiae with two lateral spines in distal half and seven apical spines. Metatarsi yellowish brown, rather elongate with first segment about as long as combined length of remaining segments. First metatarsomere with two latero-apical and six intermediate spines arranged in arc. Metatibiotarsal formula: (2) 7/8/2.

Abdomen (Fig. 6B). Brown, sometimes irregularly variegated with yellowish.

Male terminalia (Figs 8–9). Pygofer (*Py* – Fig. 8A–D) rather short, about 2.6 × as high as long at midheight in lateral view, with posterior margin broadly rounded in lateral view; in caudal view suboval, 1.4 × as high as wide; dorsally deeply notched. Gonostyli (*G* – Fig. 8A–D) massive, moderately convex, subtriangular in lateral aspect with posteroventral angle produced into a small but distinct lobe and posterior margin incurved, anterodorsal margin weakly convex and ventral margin oblique; capitulum (*ca* – Fig. 8A–B, D) rather elongate, digitiform, curved (hooked) anterodorsad in apical portion and with poorly distinct neck in lateral view, with basilateral process directed lateroventrad in caudal view, and, in caudal view, anteroposteriorly laminate with inner margin sinuate. Anal tube (*An* – Fig. 8A–D) relatively elongate, dorsoventrally flattened, and oblong (rather wide basally), moderately narrow (widest at anal opening), with lateral margins sinuate in dorsal view; about 2.0 × as long as wide in dorsal view and with anal opening in basal fourth; apical margin rounded; in lateral view, weakly downcurved at level of anal opening, then more or less straight. Aedeagus (*ae* – Figs 8E–K, 9) symmetrical, more or less straight in basal portion, then upcurved at right angle. Ventral lobe of periandrium (*vl* – Figs 8E–K, 9A–C) laminate, spatulate, with apical margin rounded. Dorsal lobe of periandrium (*dl* – Figs 8E–K,

9A–C) apically with median laminate portion upcurved, then sinuate (in lateral view) and projecting posterodorsad; lateral margins laminate with large lateral lobe projecting ventrad on each side, along part of length (more or less conceiling ventral lobe of periandrium); laterodorsal process of dorsal lobe of periandrium (*ldp* – Figs 8E–K, 9A–C) forming large, ear-shaped lobe on each side apically, directed ventrad. Aedeagus (sensu stricto, *ae* – Figs 8E–K, 9D–F) reaching more or less same level as dorsal and ventral lobes of periandrium apically; bifid with inner margins sinuate in distal portion, and with apical portion moderately inflated and apex recurved anteriad; pair of elongate lateroventral processes (*lvp* –

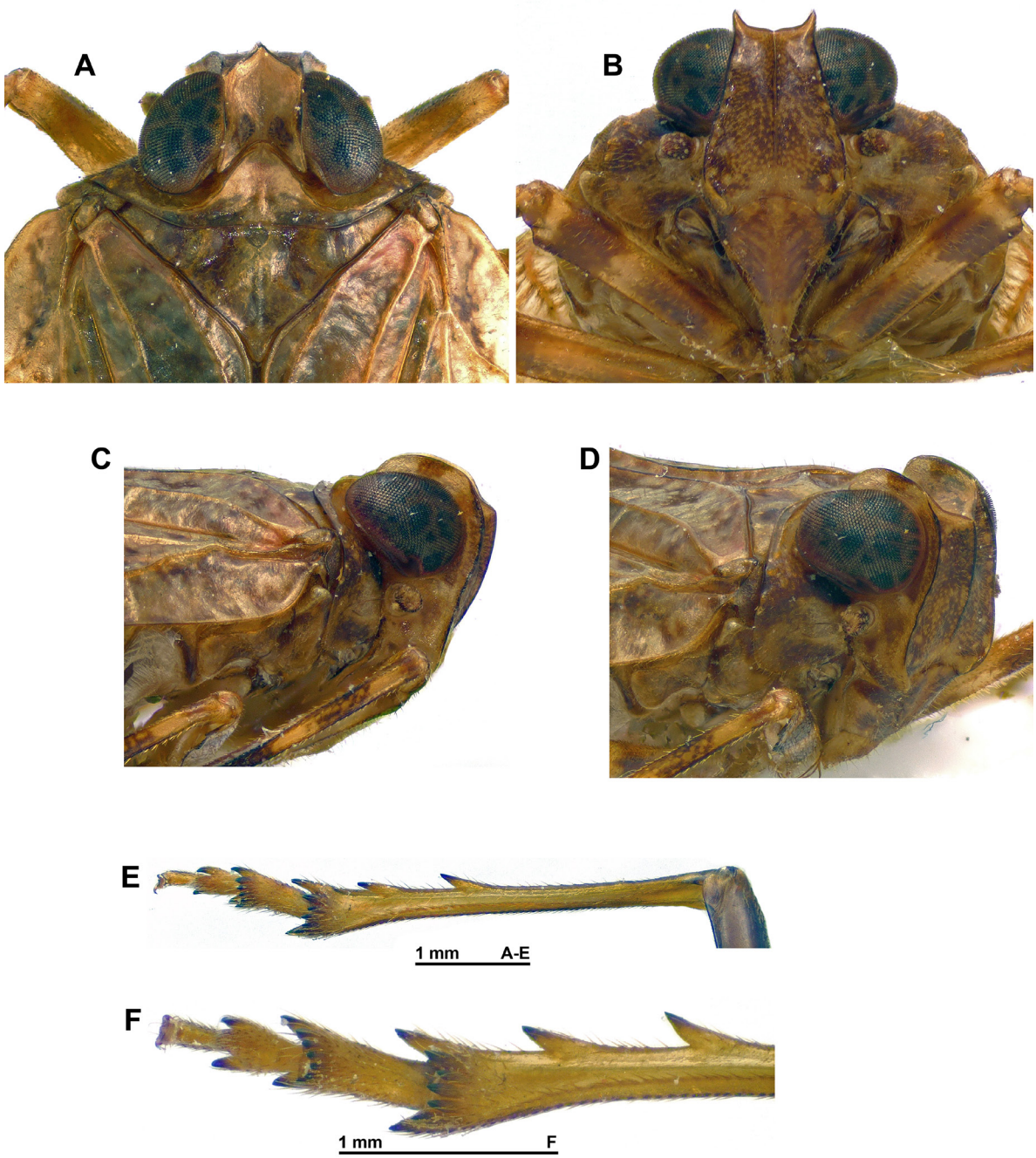

Fig. 7. *Pseudomiklukha auriculata* gen. et sp. nov., holotype, ♂ (RBINS). **A–D**. Head and thorax. **A**. Dorsal view. **B**. Perpendicular view of frons. **C**. Lateral view. **D**. Anterolateral view. **E**. Metatibia and metatarsus, ventral view. **F**. Apex of metatibia and metatarsus, ventral view.

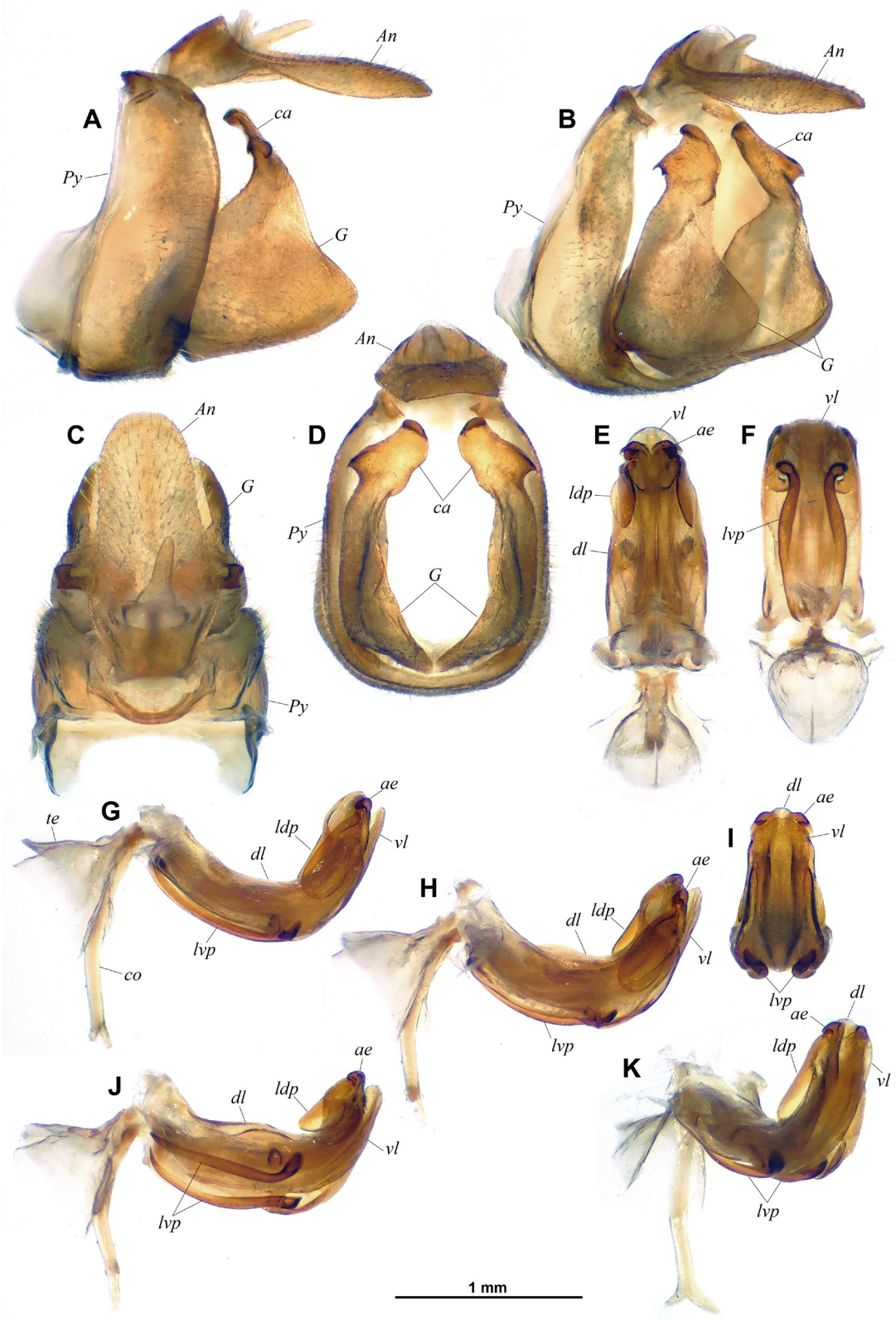

Fig. 8. *Pseudomiklukha auriculata* gen. et sp. nov., holotype, ♂ (RBINS), terminalia. **A–D**. Pygofer, anal tube and gonostyli. **A**. Left lateral view. **B**. Posterolateral view. **C**. Dorsal view. **D**. Caudal view. **E–K**. Aedeagus. **E**. Dorsal view. **F**. Ventral view. **G**. Left lateral view. **H**. Left laterodorsal view. **I**. caudal view. **J**. Left lateroventral view. **K**. Posterolateral view. Abbreviations: see Material and methods.

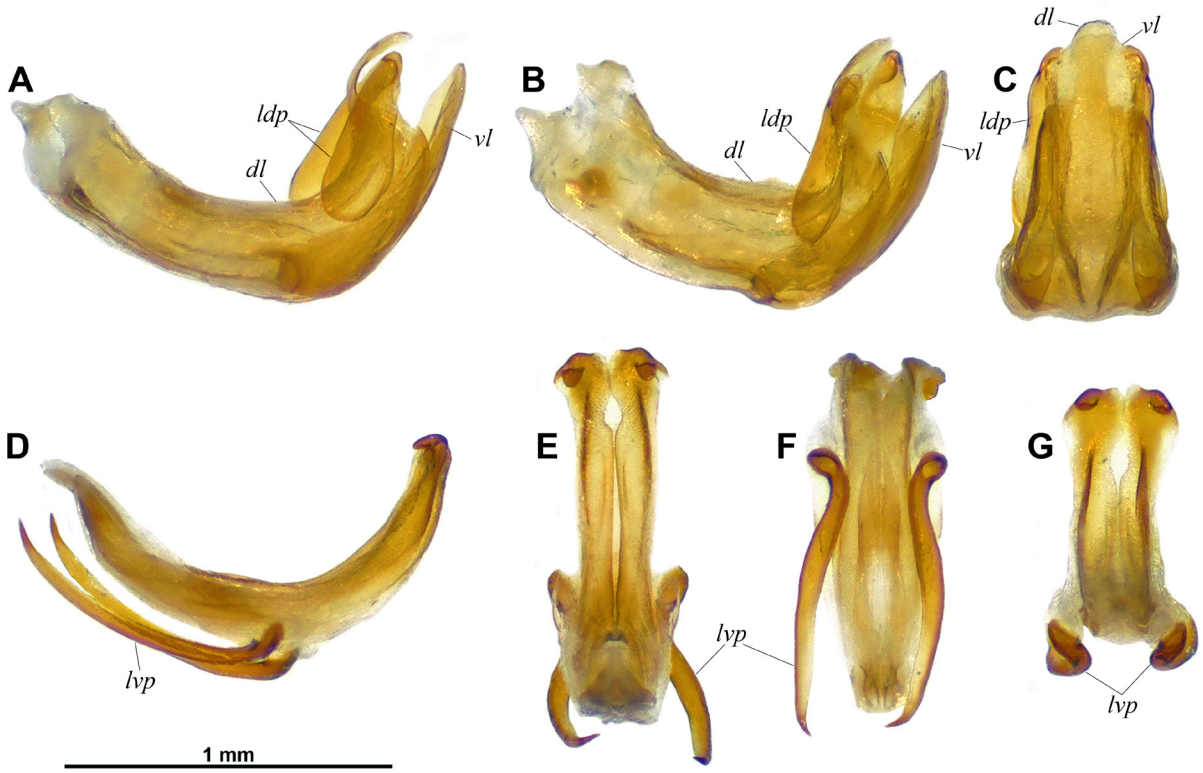

Fig. 9. *Pseudomiklukha auriculata* gen. et sp. nov., holotype, ♂ (RBINS). **A–C**. Periandrium. **A**. Left lateral view. **B**. Posterolateroventral view. **C**. Caudal view. **D–G**. Aedeagus s. str. **D**. Left lateral view. **E**. Anterodorsal view. **F**. Ventral view. **G**. Caudal view. Abbreviations: see Material and methods.

Figs 8F–K, 9D–F), moderately curved ventrocephalad (in lateral view), reaching base of periandrium, in ventral view, distinctly sinuate basally, then slightly incurving. Connective (*co* – Fig. 8G) well developed, corpus connective long, evenly curved in lateral view, tectiductus (*te* – Fig. 8G) well developed, conical with secondary layer on basal two third ending in a tranverse dorsal crista; wide anterior foramen.

Biology

The type series was collected in the primary forest in Poring by fogging *Barringtonia scortechinii* King (Barringtoniaceae J.R.Forst. & G.Forst.), *Ficus leptogramma* Corner (Moraceae Gaudich.), *Aporosa lagenocarpa* Airy Shaw (Phyllanthaceae Martinov) and *Dacryodes laxa* (A.W.Benn.) H.J.Lam (Burseraceae Kunth), in March and September (A. Floren, pers. com. 2010 – see also Horstmann *et al.* 2005 for additional information on A. Floren's collecting).

Distribution

Malaysia: Sabah (Fig. 5B).

Pseudomiklukha maclayi (Gnezdilov, 2010) gen. et comb. nov.
Fig. 5B

Nikomiklukha maclayi Gnezdilov, 2010: 49 (keyed), 51 (described), figs 11 (frons), 13 (hind wing), 14 (female terminalia), 41–47 (male terminalia).

Diagnosis

The closest species is *Pseudomiklukha auriculata* gen. et sp. nov. which differs by the characters given in the diagnosis of the latter species.

Distribution

Malaysia: Sabah (Fig. 5B).

Remarks

Nikomiklukha maclayi Gnezdilov, 2010 is here transferred to the new genus *Pseudomiklukha* gen. nov. based on the characters of the male terminalia: pygofer without dorsal lobe, aedeagus more or less straight in basal portion, then upcurved at right angle, dorsal lobe of the periandrium apically with lateral lobes.

Discussion

The present study adds a new genus and two new species of Sarimini to the fauna of Borneo, which now counts 30 species in the family Issidae, including ten species of Sarimini in six genera. Despite a number of recent studies dealing with the issid planthoppers from Borneo (Gnezdilov & Wilson 2007; Gnezdilov 2010, 2015, 2020, 2022; Constant 2021; present work), the fauna of the island remains very poorly known. The characters of the male terminalia are still undescribed for many species, while their relevance to accurate generic placement appears obvious. Furthermore, many new taxa are present in collections, including additional material from A. Floren's canopy fogging, awaiting formal decription (Constant, unpublished data).

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