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New species of the subfamily Galerucinae (Coleoptera: Chrysomelidae) from South-East Asia

Новые виды подсемейства Galerucinae (Coleoptera: Chrysomelidae) из Юго-Восточной Азии

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Ключевые слова: Coleoptera, Chrysomelidae, Galerucinae, *Charaea, Haplosomoides, Lipromorpha, Luperomorpha, Paleosepharia*, Вьетнам, Суматра.

Abstract. Six new species are described from South-East Asia: Charaea khanhhoanica sp. n., Charaea prosvirovi sp. n. (both from Ch. coomani species group); Haplosomoides bezdeki sp. n. from the group of species with modified antennal segments; Lipromorpha acehensis sp. n. from the species group without transverse impression behind anterior margin of pronotum; Luperomorpha pseudoalbofasciata sp. n. from the species group with fulvous band in middle of black elytra, black abdomen and fulvous head; and Paleosepharia khramovi sp. n. from the species group with modified area on elytra depressed along suture in male, metasternum, apex of abdomen black and elytra with black stripe on anterior third of lateral margin. The figures of general view and aedeagus are given for them and related species. The spelling of Lipromorpha costata Medvedev, Romantsov, 2016 is fixed. A key to the species of Lipromorpha in Peninsular Malaysia and Sumatra is provided.

Резюме. Описано шесть новых видов из Юго-Восточной Азии: Charaea khanhhoanica sp. n., Charaea prosvirovi sp. n. (оба из группы видов Ch. coomani); Haplosomoides bezdeki sp. n. из группы видов с усиковыми модифицированными сегментами; Lipromorpha acehensis sp. n. из группы видов без поперечной бороздки позади переднего края переднеспинки; Luperomorpha pseudoalbofasciata sp. n. из группы видов с желтой перевязью на черных надкрыльях, желтой головой и черным брюшком; и Paleosepharia khramovi sp. n. из группы видов с вдавленной областью вдоль шва на надкрыльях у самцов, черной вершиной брюшка и с черной полоской в передней трети бокового края надкрылий. Даны изображения внешнего вида и эдеагусов для описываемых и близких к ним видов. Зафиксировано написание Lipromorpha costata Medvedev, Romantsov, 2016. Приведена определительная таблица для видов рода Lipromorpha из Малакки и Суматры.

The Galerucinae (including the tribe Alticini) is the largest subfamily of the family Chrysomelidae, containing

more 15000 species distributed worldwide. In the present paper based on study materials collected by A. Prosvirov, P. Romantsov and A. Prokofiev in Vietnam and Sumatra six new species to science of this subfamily (four species of the tribe Galerucini and two species of the tribe Alticini) are described.

All measurements were made using an ocular grid mounted on MBS-20 stereomicroscope. Photographs of the habitus were taken with a Canon EOS 500D digital camera with combined Canon EF 70–200 mm f/4.0L IS USM and inverted Helios 50 mm objectives. Photographs of aedeagi and some spermatheca were made with a Canon EOS 500D digital camera with combined Canon EF 70–200 mm f/4.0L IS USM and inverted EFS 18–55 mm f/3.5–5.6 objectives. Images at different focal planes were combined using Zerene Stacker Professional 1.04 software.

Next abbreviations are used for depository places of types:

NHM – collection of the Natural History Museum (London, United Kingdom);

JB – collection of J. Bezděk (Brno, Czech Republic);

NHRS – Naturhistoriska Riksmuseet (Stockholm, Sweden);

PR – collection of P. Romantsov (Saint Petersburg, Russia).

Charaea khanhhoanica **sp. n.** (Color plate 5: 1, 2; Figs 12–14)

Material. Holotype, $\vec{\sigma}$ (PR): "Vietnam, Prov. Khanh Hoa on border with Lam Dong 27-29. IV. 2010 A. Prokofiev leg".

Description. Body and legs completely metallic blue; antennae with metallic blue 1st segment, 2nd and 3rd segments brown, all next segments black; labrum black; abdomen completely yellow. General view – Color plate 5: 1, 2.

Body oblong, convex, slightly broadened posteriorly, 1.82 times as long as wide. Head smooth, impunctate. Labrum transverse, with rounded lateral margins; its anterior margin entire with six thin pale setae. Anterior margin of clypeus straight with few long setae; nasal keel wide, convex, impunctate. Frontal tubercles large, convex, impunctate, transverse, separated from vertex by distinct furrow. Eyes large, strongly convex. Antennae robust, slightly longer half body length, proportions (in length) of segments are as 11:5:7:10:10:9:10:10:10:10:15 (1 = 0.25 mm), their proportions in width are as 4.5: 4: 4: 4.5:5:5:5:4.5:4.5:4.5:4, three basal segments shining with few semi-erect thin hairs, following segments shagreen with more dense, adpressed thin hairs. Interantennal space 2 times shorter than distance between eyes and 0.7 times as wide as transverse diameter of eye. Pronotum strongly convex, without any discal impressions, 1.3 times as wide as long, broadest in middle, much narrower (about 1.35 times) at base than elytra. Anterior margin concave, posterior margin convex, lateral margins rounded. Anterior margin unbordered, lateral and posterior margins bordered. Anterior angles rounded, very slightly produced anteriorly, with one long seta on each angle, posterior angles obtuse. Disc of pronotum very sparsely covered with two kinds of punctures: among very rare large punctures (with their size as on elytra) scattered smaller (about 3 times less) punctures. Scutellum lustrous and impunctate, triangular, with acute-angled apex. Elytra 1.4 times as long as wide, broadened near apex; its surface rather densely covered with moderately large confused punctures. Humeral calli well developed. Epipleura strongly broadened at base, gradually narrower to middle where it narrows more strongly, then gradually narrows again and disappearing slightly not reaching apex. Front half of epipleural surface concave near inner margin, rest is even. Legs robust with slightly enlarged femora. All tibiae with short apical spurs. Tarsi with 1st segment elongated (2 times as long as wide), equal to width (on apex) of 2nd and 1.7 times narrower than 3d. 1st segment of hind tarsi 1.5 shorter than two following segments combined. Claws appendiculate. Underside finely punctate and sparsely covered with thin hairs. Prosternal process very narrow, almost not visible between procoxae. Anterior coxal cavities open posteriorly. Abdomen with 5 distinctly visible sternites; hind margins of first to third sternites straight and fourth sternite concave; last sternite trilobed, middle lobe with straight cut apex, its surface slightly impressed throughout. Pygidium convex with triangular apex. Aedeagus wide (Figs 12–14), 2.7 times as long as wide, with deeply emarginate apex and convex ventral side, length of aedeagus 1.1 mm, its width 0.4 mm. Length of body 5.1 mm.

Differential diagnosis. The oriental species of *Charaea* Baly, 1878 were recently reviewed by Bezděk [2017]. *Charaea khanhhoanica* **sp. n.** belongs to the *Ch. coomani* species group but differs from all species of this group in the structure of aedeagus with deep triangular emargination on wide apex. In the key of *Charaea* species given by Bezděk [2017], *Ch. khanhhoanica* **sp. n.** should be placed between *Ch. bifurcatum* Bezděk, 2017 and *Ch. zaki* Bezděk, 2017. *Charaea khanhhoanica* **sp. n.** similar to the latter species, but *Ch. zaki* has apex with wide apical orifice and anterior margin transversely bisinuate.

Etymology. The name of the new species refers to the province of the origin.

Charaea prosvirovi **sp. n.** (Color plate 5: 3; Figs 15–17, 37)

Material. Holotype, ♂ (PR): "Indonesia, Sumatra Is., Aceh Prov., Southeast Aceh Regency, Ketambe Distr., Gunung Leuser Nat. Park, N 03°41′38.8″, E 097°38′49.1″, h=404 m, primary forest, near stream, 1.III.2017 Prosvirov A. leg.".

Description. Body completely metallic green; legs greenblack; antennae with metallic green $1^{st}-3^{rd}$ segments, all next segments black with slight metallic tint; labrum black; abdomen completely yellow. General view – Color plate 5: 3.

Body oblong, convex, slightly broadened posteriorly, 1.9 times as long as wide. Head smooth, impunctate. Labrum transverse, with rounded lateral margins. Its anterior margin straight with four thin pale setae. Anterior margin of clypeus straight with few long setae; nasal keel convex. Antennal socket with few short setae along lower and inner margins. Frontal tubercles large, convex, transverse, separated from vertex by distinct furrow. Eyes large, strongly convex. Antennae robust, 0.61 times as long as body; proportions (in length) of segments are as 11:5:7:12:11:12:12:14:14:13:12 (1 = 0.25 mm), their proportions in width are as 5:4:4:6:6:6:5.5:5:5:4; three basal segments shining with few semi-erect thin hairs, following segments shagreen with more dense, adpressed thin hairs. Interantennal space twice shorter than distance between eyes, approximately equal to transverse diameter of eye; genae short, about 5 times shorter than transversal diameter of eye and about 5.5 times shorter than longitudinal diameter of eye. Pronotum strongly convex without any discal impressions, 1.32 times as wide as long, broadest in middle. Anterior margin concave, posterior margin convex, lateral margins rounded. Anterior margin unbordered, lateral and posterior margins bordered; lateral borders with few short setae near anterior and posterior angles. Anterior angles completely rounded with one long seta on each angle, posterior angles obtuse. Disc of pronotum with mixed punctuation of small and very small punctures (size of all punctures less than size of elytra punctures). Scutellum triangular, lustrous and impunctate. Elytra 1.4 times as long as wide, broadened near apex, its surface densely covered with two kinds of confused punctures: larger punctures mixed with fine punctures. Humeral calli well developed. Epipleura wide at base, gradually narrowed behind and disappearing slightly not reaching apex, its surface concave in middle part. Legs robust with slightly enlarged femora. All tibiae with short apical spurs. 1st segment of hind tarsi elongated (2.8 times as long as wide), equal to length of two following segments combined. Claws appendiculate. Breast finely punctate and sparsely covered with thin hairs, surface of abdomen more densely covered with deeper and larger punctures. Prosternal process very narrow, almost not visible between procoxae. Anterior coxal cavities open posteriorly. Abdomen with 5 distinctly visible sternites, hind margins of first to third sternites straight and fourth sternite concave, last sternite trilobed, middle lobe with straight cut apex, its surface slightly impressed throughout. Pygidium convex with widely rounded apex. Aedeagus narrow about 3.9 times as long as wide, convergent in anterior third, with transversely truncated apex, in lateral view apical part is sligthly rounded up (Figs 15-17), length of aedeagus 1.75 mm, its width 0.45 mm. Internal sac of aedeagus (Fig. 37) has internal sclerites without small spines. Length of body 5.3 mm.

Differential diagnosis. Charaea prosvirovi sp. n. belongs to the Charaea coomani species group and is the sole member of this species group for Sumatra. In the key of Charaea species given by Bezděk [2017], Ch. prosvirovi sp. n. should be placed between Ch. jaromiri Bezděk, 2017 and Ch. coomani (Gressitt et Kimoto, 1963). Charaea prosvirovi sp. n. differs from these both species with 1-2 antennal segments completely metallic green (Ch. jaromiri and Ch. coomani have these antennal segments brown with metallic tint) and with shape of aedeagus which narrower at apex in Ch. prosvirovi sp. n. Charaea jaromiri has internal sclerites of aedeagus densely covered with small spines; Ch. coomani and Ch. prosvirovi sp. n. have these sclerites without spines. Moreover Ch. prosvirovi sp. n. has elytra and pronotum green unlike Ch. coomani having upperside blue and *Ch. jaromiri* having elytra with distinct violet tint.

Etymology. The new species is named after its collector A. Prosvirov, a specialist on Elateridae.



Figs 1–6. Galerucinae, general view. 1–2 – *Charaea khanhhoanica* **sp. n.**, holotype: 1 – dorsal view, 2 – ventral view; 3 – *Charaea prosvirovi* **sp. n.**, holotype; 4 – *Haplosomoides bezdeki* **sp. n.**, holotype; 5–6 – *Lipromorpha acehensis* **sp. n**.: 5 – holotype, male, 6 – paratype, female.

Рис. 1–6. Galerucinae, общий вид. 1–2 – *Charaea khanhhoanica* **sp. n.**, голотип: 1 – вид сверху, 2 – вид снизу; 3 – *Charaea prosvirovi* **sp. n.**, голотип; 4 – *Haplosomoides bezdeki* **sp. n.**, голотип; 5–6 – *Lipromorpha acehensis* **sp. п.**: 5 – голотип, самец, 6 – паратип, самка.



Figs 7–11. Galerucinae, general view (7–8, 10–11) and suture of elytra (9). 7 – Lipromorpha malayana (Jacoby, 1885); 8 – Luperomorpha pseudoalbofasciata **sp. n.**, holotype; 9 – Paleosepharia suturalis L. Medvedev, 2009, holotype; 10 – Paleosepharia fanxipana L. Medvedev, 2009, holotype; 11 – Paleosepharia khramovi **sp. n.**, holotype. Рис. 7–11. Galerucinae, общий вид (7–8, 10–11) и шов надкрылий (9). 7 – Lipromorpha malayana (Jacoby, 1885); 8 – Luperomorpha pseudoalbofasciata **sp. n.**, голотип; 9 – Paleosepharia suturalis L. Medvedev, 2009, голотип; 10 – Paleosepharia fanxipana L. Medvedev, 2009, голотип; 11 – Paleosepharia khramovi **sp. n.**, голотип.

Haplosomoides bezdeki **sp. n.** (Color plate 5: 4; Figs 18, 19)

Material. Holotype, ♂ (PR): "Indonesien, N Sumatra, Aceh Prov, Ketambe Vill., h~414-550 m., N 03°41′01″, E 097°39′16″ - N 03°41′26″, E 097°39′27″, 30.III.2017 P. Romantsov leg.". Paratypes: 3♂, "W SUMATRA prov., Kerinci Seblat N. P; 24 km NE Tapar; MUARA SAKO \rightarrow E env.; 2°05′S 101°15′E; 400-550 m; Dembický leg.; 4. – 18. iii. 2003″ (JB); 1♂, "Bandar Baroe", "Sumatra: Mjöberg" (NHRS); 1♂, "Sumatra Sungei Kumbang, Koninchi 4,500 ft. A pl. 1914." (NHM).

Description. Holotype. Entirely yellow. General view – Color plate 5: 4.

Body elongate, slightly broadened posteriorly, 2.25 times as long as wide. Labrum transverse, with slightly emarginate anterior margin and with few long setae. Anterior margin of clypeus triangular emarginate. Frontal tubercles flat and smooth but distinctly limited behind, subtriangular, contiguous, distinctly grooved medially, with anterior corners entered between antennal insertions. Eyes small, convex; distance between eyes about 1.4 times broader than diameter of eye. Vertex shining, impunctate with thin longitudinal groove. Antennae robust, 0.65 times as long as body, proportions (in length) of segments are as 25:8: 11:15:16:20:25:30:19:10:31 (1 = 0.25 mm), proportions in width (in the widest part) are as 12:7:10:11:10:10:16:16:14:10:10. Two basal segments shining, cylindrical; all following segments shagreen; 3rd-6th segments dilated on apex; 7th modified, axe-shaped; 8th strongly enlarged; 9th enlarged, 10th narrow on base, greatly dilated on apex; 11th with pointed apex. Maxillary palps with penultimate segment enlarged and last segment small, triangular. Pronotum 1.4 times as wide as long, widest nearly at anterior margin, with wide transverse depression. Its surface impuncate, shining, with microsculpture. Anterior margin triangular concave, posterior margin convex, lateral margins sinuous. Anterior angles slightly thickened with small teeth, posterior angles obtuse. Anterior margin unbordered, lateral and posterior margins bordered. Scutellum lustrous and impunctate, triangular, with acute-angled apex. Elytra 1.75 times as long as wide, broadened near apex and rounded at apex, its surface dull, covered with confused shallow punctures. Each elytron with two distinct ridges starting from the humerus and disappearing in apical quarter. One ridge sharp, straight, running parallel to lateral margin, second ridge slightly curved and less sharp. These ridges are separated by a deep depression. Humeral calli well developed. Epipleura very narrow, disappear without reaching the apex. Legs slender, fore and middle tibiae straight, hind slightly curved. All tibiae without apical spurs. Fore and middle tarsi with 1st segments slightly widened and flattened; 1st segment of hind tarsi elongated, slightly longer (1.1 times) than two following segments combined. Claws appendiculate. Underside shagreen, covered with rather dense semi-adpressed short thin hairs. Prosternal process very narrow, almost not visible between procoxae. Anterior coxal cavities open posteriorly. Abdomen with 5 distinctly visible sternites; hind margins of last sternite with wide semicircular emargination. Pygidium convex with rounded apex. Aedeagus (Figs 18, 19) thin, with acute triangular apex, in lateral view strongly curved in apical quarter, length of aedeagus 2.1 mm. Length of body 8.2 mm.

All paratypes are similar to the holotype morphologically and in coloration, length of body 7.3–7.6 mm.

Differential diagnosis. The genus *Haplosomoides* Duvivier, 1890 was revised and keyed by Medvedev [2000]. In addition, there is a key for members of this genus from Malaysia [Mohamedsaid, 1994]. Moreover, species of the genus *Haplosomoides* in Japan and Taiwan were revised [Lee et al., 2011]. This genus containing 28 species and 1 subspecies is distributed mainly in the Oriental region and partly in the south-east of the Palaearctic. Only five species are known from Peninsular Malaysia and the

Greater Sunda Islands. Until now only Haplosomoides serena Boheman, 1859 was reported for Sumatra. The first specimen of Haplosomoides bezdeki sp. n. was collected by me along with lots of specimens of *H. serena* Boheman, 1859 during my expedition to Sumatra in 2017. Then I had contact with Jan Bezděk and learned from him that he also has several specimens of this new species, which he kindly conveyed to me. Haplosomoides bezdeki sp. n. belongs to species with modified antennal segments. Most members of these genus exhibit secondary sexually dimorphic characters, but only three of them have modified antennae in males. However, all three these species (H. abdominalis Kimoto, 1984, H. himalayana Medvedev, 2002 and H. laticornis Laboissiere, 1930) have antennal segments (3rd-10th or 7th-11th) just dilated on apex, unlike Haplosomoides bezdeki sp. n. having a few antennal segments of unusual shape. In the key of Haplosomoides species [Medvedev, 2000] Haplosomoides *bezdeki* **sp. n.** should be placed among the entirely fulvous (on the upper side) species with shining pronotum and dull elytra, between H. krishila Maulik, 1936 and H. rasha Maulik, 1936 (thesis 16).

Etymology. The name of the new species is dedicated to Jan Bezděk (Brno, Czech Republic), a well known specialist on Chrysomelidae.

Paleosepharia khramovi **sp. n.** (Color plate 6: 11; Figs 28, 29)

Material. Holotype, ${\mathbb d}^*$ (PR): "Vietnam, Lam Dong Prov. on border with Khanh Hoa 22-24. IV. 2010 A. Prokofiev leg".

Description.Head red except labrum black and mandibulae fulvous; antennae black with 1stsegment entirely and 2nd– 3rd segments partly fulvous. Pronotum fulvous; scutellum black; elytra fulvous with black anterolateral narrow area that includes corresponding part of epipleura and humeral callus; prosternum fulvous; mesosternum and metasternum black; abdomen fulvous with black apical half of last visible sternite; legs fulvous with darkened tibiae and tarsi. General view – Color plate 6: 11.

Head impunctate, very finely microreticulate; labrum wide with entire anterior margin, with four long setae near anterior margin and two setae near posterior margin; clypeus convex, triangular; interantennal space very narrow, 3.5 times narrower than transverse diameter of eye, with obtuse ridge; frontal tubercles triangular with acute anterior angles, sharply delimited posteriorly; vertex convex, without impression. Eyes large, convex, distinctly oval; genae very short, about 4.5 times shorter than transversal diameter of eye and about 5.3 times shorter than longitudinal diameter of eye. Antennae long, proportions (in length) of segments are as 20:7:12:17:19:18:18:19:16(rest lacking), their proportions in width (in the widest part) are as 5:4:4:4:4:4:4:4; all segments almost cylindrical, very slightly widened toward apex. Maxillary palps with penultimate segment not enlarged. Pronotum about 0.75 times as long as wide, with almost parallel lateral margins, which are only very slightly widened behind middle; anterior margin slightly concave; posterior margin convex with shallow notch in front of scutellum. Anterior angles triangular, protruding laterally; posterior corners widely triangular. Lateral margins with one long seta on each anterior and posterior angles and with two short setae (one seta behind anterior angle, other seta before posterior angle). Anterior margin unbordered; posterior margin finely bordered; lateral margins slightly explanate, bordered. Surface shining, flattened in middle before scutellum, with fine microsculpture and with very

fine and sparse punctuation. Scutellum triangular with rounded apex. Elytra 1.45 times as long as wide, broadened to behind, with truncate apex, humeral calli convex. Each elytron with postbasal modified area including wide depression along suture behind scutellum and inside this depression with deep impressed groove starting almost behind scutellum, going parallel to suture and then curved obliquely outwards. Surface of elytra covered with confused, dense punctures. Hind wings present. Pygidium triangular. Legs slender, fore and middle tibiae straight with short spurs, hind tibiae slightly curved, with long spurs. 1st segment of hind tarsi distinctly longer than remainder combined (1.7 as long as 2nd - 3rd segments combined and 1.15 as long as 2nd - 4th segments combined). Anterior coxal cavities closed posteriorly. Apical sternite of abdomen trilobed with middle lobe quadrate, concave in its apical part. Aedeagus widened behind middle, with sharp, narrow, triangular apex; length of aedeagus 1.7 mm. Length of body 5.4 mm.

Differential diagnosis. The members of the genus Paleosepharia Laboissiere, 1936 occur only in Oriental region, mainly in its eastern continental part. A key to the species of this genus from Peninsular Malaysia was given by Mohamedsaid [1996]. The first key to the species of this genus from Vietnam was given by Medvedev [2009b]; then Indochinese species of the genus Paleosepharia were revised and keyed by Medvedev [2014] who indicated 18 species for Vietnam. Two more species were recently described from Vietnam by Nguyen and Gómez-Zurita [2017]. Paleosepharia khramovi sp. n. belongs to the species group, which members have modified area on elvtra depressed along suture in male; metasternum, apex of abdomen black and elytra with black stripe on anterior third of lateral margin. This group includes P. fanxipana L. Medvedev, 2009 (Color plate 6: 10), P. subsuturalis L. Medvedev, 2009 and P. suturalis L. Medvedev, 2009. Two last species differ from P. khramovi sp. n. by having elytra with thickened basal part of elytral suture in form of sharply delimited convex stripe (Color plate 6: 9) and shape of aedeagus (Figs 32-35). Paleosepharia fanxipana is very similar to this new species by coloration and by shape of impressed groove in modified area on elytra. However, grooves in Paleosepharia khramovi sp. n. are situated inside wide depression. The area of elytra where these grooves are located in P. fanxipana is not depressed. Moreover, they differ from each other by completely different aedeagus and coloration of femora. In the key of Paleosepharia species [Medvedev, 2000] Paleosepharia khramovi sp. n. should be placed near P. fanxipana (thesis 15). The following addition to this key is proposed below:

- 15(16). Elytra without thickened sutural stripe, with impressed groove behind scutellum and parallel to suture, than curved obliquely outwards. Fulvous, head, basal antennal segment and pygidium except apex red.
- (a). All femora with narrow black stripe on upper side. Impressed groove situated on convex surface of elytra. Aedeagus narrow (Figs 30, 31). Length 5–5.3 mm. NW Vietnam (Fanxipan) P. fanxipana

Etymology. The name of the new species is dedicated to Petr Khramov (Moscow, Russia), a manufacturer of entomological equipment.

Lipromorpha acehensis **sp. n.** (Color plate 5: 5, 6; Figs 22, 23, 36)

Material. Holotype, $\overset{\circ}{\supset}$ (PR): "Indonesien, N Sumatra, Aceh Prov, Ketambe Vill., h~414-550 m., N 03°41'01", E 097°39'16" N 03°41'26", E 097°39'27" 24.III.2017 P. Romantsov leg.". Paratypes (PR): $2\overset{\circ}{\supset}$, $1\overset{\circ}{\bigcirc}$, same locality and date as holotype; $1\overset{\circ}{\supset}$, $2\overset{\circ}{\bigcirc}$, same locality, 25.03.2017; $1\overset{\circ}{\supset}$, $2\overset{\circ}{\bigcirc}$, same locality, 26.03.2017; $2\overset{\circ}{\bigcirc}$, same locality, 31.03.2017.

Description. Holotype. Fulvous, $4^{th}-11^{th}$ antennal segments darkened, apices of hind femora blackish. General view – Color plate 5: 5.

Labrum narrow, transverse with almost straight anterior margin and with few long setae; clypeus triangular, delimited from labrum with distinct transverse depression; frontal tubercles triangular, penetrating between antennal sockets, delimited posteriorly with wide rounded depression; interantennal space narrow with deep longitudinal sulcus; vertex impunctate with infrequent transverse wrinkles. Eyes convex, oval, medium size; genae about 1.7 times shorter than transversal diameters of eye and about 2 times shorter than longitudinal diameter of eye. Antennae long, equal to body length, proportions of segments are as 12:7:8:8:7:7:7:7:7:10, 1st-5th segments almost cylindrical, 6th-10th segments slightly expanded on apex, 11th segment with pointed apex. Pronotum about 0.9 times as long as wide, widest at anterior angles, with almost straight anterior and posterior margins, deeply constricted in basal third at sides. Anterior and posterior margins bordered, lateral margins unbordered. On surface of pronotum behind middle these constrictions continue as bisinuate depression. Transverse impression behind anterior margin lacking. Surface shining, finely and sparsely punctuate, sparsely pubescent, moderately convex before bisinuate depression and almost flat behind it. Scutellum triangular with sharp apex. Elytra nearly parallel-sided, 1.4 times as long as wide; humeral calli well developed; base of elytra strongly convex, then distinctly concave, apical half convex; apices rounded with obtusely rounded sutural angles. Elytra surface covered with 9 rows of punctures considering short scutellar row; 5th row bifurcating behind transverse depression; interstices strongly costae, costae impunctate, distinct throughout from base to apex, each costa with row of long semi-erect hairs. Hind wings present. Pygidium convex, with longitudinal impressed line in middle from base almost to truncate apex. Fore and middle femora distinctly swollen, especially hind femora; all tibiae slightly curved, with short spurs. 1st segment of hind tarsi elongated, equal to length of two following segments combined. Underside covered with sparse hairs and small punctures; last visible abdominal sternite with longitudinal fine groove along entire length; trilobed, central lobe with broad depression at middle and straight cut apex. Anterior coxal cavities closed posteriorly. Aedeagus short, with small notch at rounded-triangular apex, in lateral view thick in basal two-thirds and thin in apical third (Figs 22, 23), length of aedeagus 0.6 mm. Length of body 2.25 mm.

Paratypes. Length of body: males 2.25–2.4 mm, females 2.35–2.4 mm, coloration of all males and two females as in holotype; elytra of other females more or less blackish: two females have brown elytra with darkened areas near scutellum and along lateral margins; elytra of two remaining females almost entirely black, only sutural, basal and lateral margins with narrow brown border (Color plate 5: 6). Spermatheca – Fig. 36.

Differential diagnosis. The species of *Lipromorpha* were recently reviewed [Medvedev, Romantsov, 2016]. *Lipromorpha acehensis* **sp. n.** belongs to the species



Figs 12–38. Galerucinae, aedeagus, spermatheca and internal sac of aedeagus (12–13, 15, 18, 20, 22, 24–26, 28, 30, 32, 34 – aedeagus, dorsal view; 16 – aedeagus, ventral view; 14, 17, 19, 21, 23, 27, 29, 31, 33, 35 – aedeagus, lateral view; 36, 38 – spermatheca; 37 – internal sac of aedeagus).
12–14 – Charaea khanhhoanica sp. n., holotype; 15–17 – Charaea prosvirovi sp. n., holotype; 18–19 – Haplosomoides bezdeki sp. n., holotype; 20–21 – Lipromorpha malayana; 22–23 – Lipromorpha acehensis sp. n.; 24 – Luperomorpha tricolor; 25 – Luperomorpha albofasciata; 26–27 – Luperomorpha pseudoalbofasciata sp. n., holotype; 28–29 – Paleosepharia khramovi sp. n., holotype; 30–31 – Paleosepharia fanxipana, holotype; 32–33 – Paleosepharia suturalis, holotype; 34–35 – Paleosepharia suturalis, holotype; 36 – Lipromorpha acehensis sp. n., paratype; 38 – Luperomorpha pseudoalbofasciata sp. n., holotype;

Варстоприя рекливановисных вр. п., ранкурс.
 Рис. 12–38. Galerucinae, эдеагус, сперматека и внутренний мешок эдеагуса (12, 13, 15, 18, 20, 22, 24–26, 28, 30, 32, 34 – эдеагус, вид сверху; 16 – эдеагус, вид снизу; 14, 17, 19, 21, 23, 27, 29, 31, 33, 35 – эдеагус, вид сбоку; 36, 38 – сперматека; 37 – внутренний мешок эдеагуса).
 12–14 – Charaea khanhhoanica sp. n., голотип; 15–17 – Charaea prosvirovi sp. n., голотип; 18–19 – Haplosomoides bezdeki sp. n., голотип; 20–21 –

12–14 – Charaea khanhhoanica sp. n., голотип; 15–17 – Charaea prosvirovi sp. n., голотип; 18–19 – Haplosomoides bezdeki sp. n., голотип; 20–21 – Lipromorpha malayana; 22–23 – Lipromorpha acehensis sp. n.; 24 – Luperomorpha tricolor; 25 – Luperomorpha albofasciata; 26–27 – Luperomorpha pseudoalbofasciata sp. n., голотип; 28–29 – Paleosepharia khramovi sp. n., голотип; 30–31 – Paleosepharia fanxipana, голотип; 32–33 – Paleosepharia subsuturalis, голотип; 34–35 – Paleosepharia suturalis, голотип; 36 – Lipromorpha acehensis sp. n., паратип; 37 – Charaea prosvirovi sp. n., голотип; 38 – Luperomorpha pseudoalbofasciata sp. n., паратип.

group without transverse impression behind anterior margin of pronotum and more similar to L. pahanga Medvedev et Romantsov, 2016, but differs in the structure of aedeagus with a narrow notch on wide apex. In the key of Lipromorpha species [Medvedev, Romantsov, 2016] L. acehensis sp. n. should be placed between L. malayana (Jacoby, 1885) and L. pahanga. Now I have additional material for a number of species. This made it possible to give additions and corrections for our key of Lipromorpha as well as figures of L. malayana missing in our revision. The corrected part of this key for species from Peninsular Malaysia and Sumatra is given below.

Etymology. The name of the new species refers to the collecting locality.

Remark. In the revision of *Lipromorpha* [Medvedev, Romantsov, 2016] the authors used two different spellings for L. costata Medvedev et Romantsov, 2016. In the description, the species name was spelled as L. costata but it was spelled as L. costipennis in the abstract for article. The name L. costata was used in the key of species as well. Now I fix the name L. costata as the correct spelling.

Key to *Lipromorpha* species from Peninsular Malaysia and Sumatra (modified part of key after Medvedev, Romantsov [2016])

15(20). Species from Peninsular Malaysia and Sumatra.

- 16(17). Body entirely fulvous (Color plate 6: 7). Pronotum impunctate, 1.1 times as long as wide. Elytra slightly depressed behind base. Apical sternite of abdomen with deep round groove. Aedeagus with broad fingerlike apical process not curved downward (Figs 20, 21). Length 3.2 mm. Sumatra L. malayana
- 17(16). At least 6-7 apical antennal segments piceous to black (sometimes very weakly). Pronotum at least finely and sparsely punctuate, as long as wide or shorter. Elytra deeply depressed behind base.
- 18(19). Apices of hind femora black. Antennae longer than body. Pronotum without longitudinal impression in middle. Apical sternite of abdomen with longitudinal fine groove along entire length and with broad depression near apex. Length of body 2.2-2.85 mm.
- a(b). Longer (2.7-2.85 mm). Pronotum more transverse (0.8-0.85 times as long as wide). Aedeagus straight in lateral view, with elongate-triangular apex.. Peninsular Malaysia L. pahanga
- b(a). Smaller (2.2-2.3 mm). Aedeagus with small notch at rounded-triangular apex (Figs 22, 23). Pronotum less transverse (0.8-0.9 times as long as wide) L. acehensis sp. n.

19(18). Hind femora entirely fulvous. Antennae as long as body. Pronotum with longitudinal impression in anterior part of disc. Apical sternite of abdomen with longitudinal fine groove and with broad deep depression along entire length. Aedeagus with apex not acute, practically narrowly rounded. Length of body 3.2 mm. Peninsular Malaysia L. costata

Luperomorpha pseudoalbofasciata sp. n. (Color plate 6: 8; Figs 26, 27, 38)

Material. Holotype, ♂ (PR): "N Vietnam, Lai Chau Prov., near Tram Ton Pass, Gie river, N 22.35538° E 103.75265° - N 22.35744° E 103.74984°, 1494-1557m, 5.V.2013, Prosvirov A. leg". Paratypes (PR): 4Å, "N Vietnam, Lao Cai Prov., near Sa pa, Cat Cat Vill., 1220-1242 m., N 22°19'37", E 103°49'57.9" N 22°19'29.7", E 103°49'50" 11.V.2018 P. Romantsov leg."; 13, "N Vietnam, Lao Cai Prov., near Sa pa, Cat Cat Vill., 1220-1274 m, N 22°19'37" E 103°49'57.9" N 22°19'18.5", E 103°49'35.3" 14.V.2018 P. Romantsov leg."; [3] 10, 12, "N Vietnam, Lao Cai Prov., near Sa pa, Cat Cat Vill., 1348-1264 m., N 22°19'31.8", E 103°49'41.9" N 22°19'19.2", E 103°49'28.6" 18.V.2018 P. Romantsov leg."; 4Å, "N Vietnam, Lao Cai Prov., near Sa pa, Cat Cat Vill., 1280-1337 m., N 22°19'35.3", E 103°49'47.8" N 22°19'12.2", E 103°49'17.9" 21.V.2018 P. Romantsov leg."

Description. Head fulvous with labrum black. Antennae black with tree basal segments fulvous. Pronotum yellow. Scutellum black. Elytra black with light yellow band in middle. Prosternum fulvous; mesosternum, metasternum and abdomen black. Fore legs fulvous, mid and hind legs black with fulvous knees. General view - Color plate 6: 8.

Labrum narrow, transverse, with rounded anterior margin and with few setae; clypeus convex, triangular; frontal tubercles triangular, delimited behind with almost straight groove; interantennal space 2.2 times shorter than distance between eyes and 1.85 times shorter than transverse diameter of eye. Eyes convex, almost round, large size; genae very short, 7.5 times shorter than longitudinal diameter of eye. Antennae robust, reach middle of elytra, proportions (in length) of segments are as 9:6:6:6:6:7:7:7:7:7:10 (1 = 0.25 mm), their proportions in width are as 5.5:5:4:4:4:4:4:4:4:4:4:4:4 three segments strong extended to apex (especially 2nd segment), 4th-6th segments slightly expanded on apex, 5th segment almost cylindrical, 11th segment with pointed apex. Vertex shinning, impunctate. Pronotum about 0.65 times as long as wide, widest at base, with almost straight anterior, slightly rounded lateral and widely rounded posterior margins. Anterior angles almost rectangular; posterior angles very obtusely angulate, seems almost rounded. Anterior and posterior margins unbordered; lateral margins bordered, with one very long seta near anterior angles and with few shorter setae near posterior angles. Surface of pronotum convex, shining, covered with very sparse, microscopic punctures, without any impressions. Scutellum triangular, with elongate apex. Elytra 1.35 times as long as wide, broadest behind middle; apices rounded with obtusely rounded sutural angles. Humeral calli developed. Elytra surface without microsculpture, covered with moderately fine, confused punctures and with sparse erect hairs on apical slope and edge. Hind wings present. Pygidium convex, shagreen, with long semi-adjoining hairs and rounded apex. Hind femora distinctly swollen; all tibiae almost straight, with spurs. 1st segment of hind tarsi elongated, about 3 times shorter than hind tibia, equal to length of two following segments combined. Anterior coxal cavities open posteriorly, prosternal process narrow but visible between procoxae. Underside covered with distinct punctures and short hairs; last visible abdominal sternite trilobed, with deep depression starting in middle and covering whole central lobe. Aedeagus narrow, parallel, with elongate sharp triangular apex, in lateral view rather strong curved (Figs 26, 27), length of aedeagus 1 mm. Length of body 3 mm. All males paratypes are similar to the holotype morphologically and in coloration, length of body 2.8-3.4 mm.

Female has simple last visible abdominal sternite (not trilobed and without depression) and antennae with not extended basal segments; length of body 3.1 mm, spermatheca - Fig. 38.

Differential diagnosis. Indochinese members of the tribe Alticini were relatively recently revised and keyed by Kimoto [2000] and Medvedev [2009a]. Luperomorpha pseudoalbofasciata sp. n. is similar to L. albofasciata Duvivier, 1892 and L. tricolor (Bryant, 1939), but differs in the structure of antennae with strong swollen basal segments, in the shape of aedeagus in male and in shape of spermatheca in female (*L. albofasciata* and *L. tricolor* have more C-shaped vasculum). Of the other representatives of this genus, only *Luperomorpha pedicelis* Wang et Ge, 2010 from China has antennae with enlarged basal segments but with the most enlarged 3^{th} (instead 2^{nd} in *L. pseudoalbofasciata* **sp. n.**) segment. Besides *L. pedicelis* differs with yellow patch on elytra not reaching suture and lateral sides. In the key of *Luperomorpha* species [Medvedev, 2009a] *L. pseudoalbofasciata* **sp. n.** should be placed near the above two species (see below the corrected part of this key):

- 18(17). Abdomen black. Prothorax evenly convex.
- 19(22). Head fulvous. Elytra black with fulvous band in middle. Fore legs usually fulvous, mid legs more or less darkened, hind legs mostly black. Prothorax usually more reddish than elytra band.
- 20(21). Upperside with microsculpture, elytra very fine punctate. Antennae fulvous or dark fulvous with more pale basal segments, basal antennal segments not strongly swollen. 1st segment of fore tarsi strongly widened in male, about twice as wide as 3rd segment. Aedeagus in lateral view weakly curved, with rounded triangular apex (Fig. 25). Length 3–3.8 mm... *Luperomorpha albofasciata*
- 21(20). Upperside without microsculpture, elytra with stronger punctuation. Antennae black with 3 basal segments fulvous, basal antennal segments strongly swollen or not. 1st segment of fore tarsi practically not widened in male, as wide as 3rd segment. Aedeagus in lateral view strongly curved.
- a(b). Basal antennal segments in male strongly swollen. Aedeagus with elongate sharp triangular apex (Fig. 26). Length 3 mm

Etymology. The name of the new species indicates its similarity to *L. albofasciata*.

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