

Four new species of Galerucinae (Coleoptera: Chrysomelidae) from Malaysia and Indonesia

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Abstract. Four new Galerucinae (Chrysomelidae) are described from Malaysia and Indonesia: *Aplosonyx geiseri* sp. nov. (Malaysia: Sabah), *Hoplasoma martapurensis* sp. nov. (Indonesia: South Kalimantan), *Mimastra hajeki* sp. nov. (Indonesia: East Kalimantan; Malaysia: Sabah) and *Palpoxena antonini* sp. nov. (Malaysia: Pahang, Sabah). Photographs and drawings of body details are presented for all newly described species.

INTRODUCTION

Despite many taxonomical papers devoted to Malaysian and Indonesian Chrysomelidae published over last 30 years, most of the Chrysomelidae subfamilies are still insufficiently known. During the identification of numerous specimens, four new species were discovered and their descriptions are given below.

MATERIAL AND METHODS

All measurements were made by using an ocular grid mounted on the MBS-10 stereomicroscope (under magnification 16× for the body length and 32× for the remaining measurements). Photographs of specimens were taken with the Canon EOS 550D digital camera with Canon MP-E 65 mm objective. Images of the same objects at different focal planes were combined by using the Helicon Focus 5.1.3 software.

The material examined is housed in the following collections:

- BMNH The Natural History Museum, London, U.K. (Michael Geiser);
- JBCB Jan Bezděk collection, Brno, Czech Republic;
- JVCJ Jiří Voříšek collection, Jirkov, Czech Republic;
- NMPC Národní Muzeum, Praha, Czech Republic (Jiří Hájek);
- PRCS Pavel V. Romantsov collection, St. Petersburg, Russia.

Exact label data are cited for all type specimens; a double slash (//) divides the data on different labels and a single slash (/) divides the data in different lines. Other comments and remarks are placed in square brackets: [p]-preceding data are printed, and [w]-white label.

RESULTS

Aplosonyx geiseri sp. nov.

(Figs. 1-5, 15)

Type locality. Malaysia, Sabah, Kinabalu National Park, 6°00'N 116°32'E.

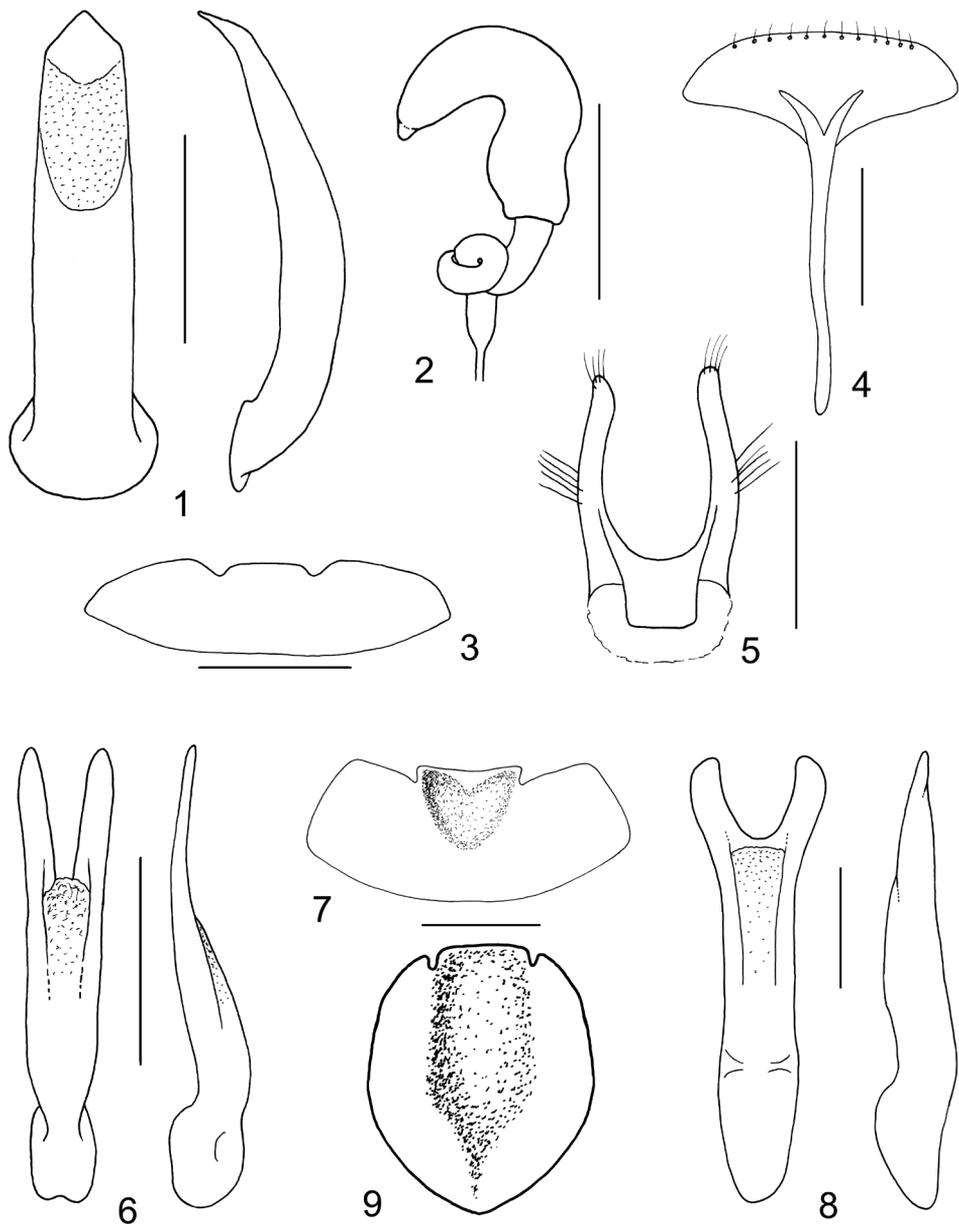
Type material. Holotype: (♂): “MALAYSIA, SABAH / Kinabalu National Park, / headquarters, 6°00'N 116°32'E, / 1550-1650 m, 12.-15.VII.2012 [w, p]”, (BMNH). Paratypes (2 ♀♀): same data as in holotype (NMPC, JBCB). The specimens are provided with one additional printed red label: “HOLOTYPUS, [or PARATYPUS, respectively], / *Aplosonyx* / *geiseri* sp. nov., / J. Bezděk det., 2016”.

Description. Body length: male 8.7 mm (holotype); females 9.7-10.4 mm.

Male (Fig. 15). Coloration. Head black with distinct metallic blue tint, particularly on vertex, mandibles dark brown with orange outer sides, labrum black with extreme anterior margin yellow, genae with extreme anterior margin yellow, antennae black, antennomere I with orange base, apical half of antennomere X and complete antennomere XI yellow. Pronotum pale brown with dark blurred lateral sides and median spot wider in anterior half and narrower in posterior half. Scutellum black. Elytra metallic greenish blue with distinct oil tint. Legs black with brownish knees. Underside black, abdomen yellow with darkened pygidium and posterior half of last ventrite.

Head. Maxillary palpomere II elongate, III clavate, and IV small and hemispherical. Labrum transverse with anterior margin emarginate in middle, lateral margins slightly converging, anterior angles rounded, surface moderately convex, covered with groups of 5 pores with setae on each side and additional two groups of 3 pores in middle. Anterior part of head distinctly convex along anterior margin, anteriorly smooth, surface below antennal insertions punctate and covered with setae. Interocular space twice as wide as transverse diameter of eye. Eyes large, protruding beyond outline of head, with thin furrow along eyes. Frontal tubercles large, hook-like, impunctate, strongly elevated, separated by very thin furrow, posterior margin sinuate, with triangular incision between both tubercles and separated from vertex by deep furrow. Interantennal space 1.5 times as wide as transverse diameter of antennal socket. Vertex semiopaque, sparsely covered with small punctures and with one pore behind each eye bearing long pale seta. Antennae thin, 0.75 times as long as body, length ratios of antennomeres I-IX equal to 100-32-32-136-128-128-124-124-108-108-156, antennomeres I-III lustrous, covered with sparse long setae, IV-XI dull, densely covered with punctures and shorter setae.

Pronotum transverse, 2.5 times as broad as long, widest at posterior corners. Surface lustrous, glabrous, sparsely covered with large punctures. Disc with deep transverse furrow, less distinct in middle. Anterior margin moderately concave, posterior margin widely rounded slightly emarginate in middle and more distinctly emarginate laterally next to posterior angles, lateral margins straight and converging anteriorly. Lateral margin distinctly bordered, border on both anterior and posterior margins visible only near angles. Anterior angles widely rounded, slightly swollen, posterior angles rectangular. All angles with



Figs. 1-9. 1-5. Details of *Aplosonyx geiseri* sp. nov.: 1- aedeagus (dorsal and lateral views); 2- spermatheca; 3- male last ventrite; 4- sternite VIII and tignum; 5- gonocoxae. 6-7. Details of *Hoplasoma martapurense* sp. nov.: 6- aedeagus (dorsal and lateral views); 7- male last ventrite. 8-9. Details of *Hoplasoma dilaticorne*: 8- aedeagus (dorsal and lateral views); 9- male last ventrite. Scale bars: 1 mm for Figs. 1, 3, 6; 0.5 mm for Figs. 4-5, 7-9; 0.25 mm for Fig. 2.

setigerous pore bearing long pale seta. Scutellum glabrous, dull, triangular, with shortly rounded apex, sparsely covered with several small punctures.

Elytra lustrous, glabrous, convex, 0.72 times as long as body, 1.57 times as long as wide (measured at humeral calli), widest at posterior third, densely covered with small confused punctures. Postscutellar area distinctly triangularly impressed. Humeral calli well developed, convex, separated by deep furrow from the rest of elytra. Lateral margin narrowly bordered around humeral calli, much wider towards apex. Elytral apex rounded. Lateral margins with very short setae. Epipleura moderately wide at anterior quarter, posteriorly gradually narrowing towards apex, glabrous, very sparsely covered with small punctures. Macropterous.

Anterior coxal cavities open. Ventral surface semiopaque, covered with fine punctures and pale setae. Last abdominal ventrite transverse with two short and wide triangular incisions (Fig. 3). Legs long and narrow, semiopaque, covered with pale semi-adpressed setae. Protibiae without apical spur, meso- and metatibiae with well developed apical spur. Protarsomere I subtriangularly elongate, 1.66 times as long as wide, protarsomere II triangular, as long as wide, length ratios of protarsomeres I-IV equal to 20-13-13-25. Metatarsomere I elongate, nearly parallel, three times as long as wide and 1.2 times longer than two following tarsomeres combined, metatarsomere II triangular, as long as wide, length ratios of metatarsomeres I-IV equal to 30-12-13-25. Tarsal claws appendiculate.

Aedeagus subparallel, 4.7 times as long as wide, with triangular apex, in lateral view moderately bent, with abruptly bent apex (Fig. 1).

Female. Antennae slightly thinner than in male. Protarsomere I thinner than in males. Posterior margin of last ventrite entire. Spermatheca with question mark-shaped cornu with small triangular apical appendix, without visible nodule, ductus spermathecae with two distinct coils (Fig. 2). Gonocoxae with two long and slightly round processes each with group of several setae on apex and additional group of setae laterally in middle of process; basally connected in wide base (Fig. 5). Sternite VIII transverse with setae along rounded posterior margin, tignum narrow, 2.5 times longer than sternite VIII (Fig. 4).

Variability. One paratype with reduced dark colour on pronotum forming only small elongate dark spot in middle of posterior half and dark transverse spot along middle of anterior margin.

Differential diagnosis. The genus *Aplosonyx* Chevrolat, 1836 belongs to the genera which badly need modern taxonomical revision based on the study of relevant type specimens. The genus is distributed in the Oriental Region and comprises 56 species. Mohamedsaid (2004) listed 11 species from Borneo, four of them have completely metallic elytra: *Aplosonyx albicornis* (Wiedemann, 1821), *A. monticola* (Bowditch, 1925), *A. parvulus* (Jacoby, 1886) and *A. sumatrensis* (Jacoby, 1884). The new species can be easily distinguished by coloration of head, antennae, pronotum and underside. *Aplosonyx geiseri* sp. nov. has head black with blue tint, bicolorous pronotum, antennae black with apical half of antennomere X and complete XI yellow, and underside black with abdomen yellow, while *A. monticola*, *A. parvulus* and *A. sumatrensis* have head, pronotum and underside completely orange. Antennae of *A. parvulus* and *A. sumatrensis* are completely yellow, antennae of *A. monticola*

are similar to those of *A. geiseri* sp. nov. but also antennomeres I-III (or IV) are orange. Moreover, elytral punctation in *A. monticola* forms punctate striae. *Aplosonyx albicornis* has head and pronotum black and antennae yellow with black antennomeres I-III.

Distribution. Malaysia (Sabah).

Etymology. Dedicated to my dear colleague and friend Michael Geiser (The Natural History Museum, London) who collected the type series.

***Hoplasoma martapurensis* sp. nov.**

(Figs. 6-7, 16)

Type locality. Indonesia, South Kalimantan prov., Martapura.

Type material. Holotype: (♂): “Martapura, / S. E. Borneo. / Doherty 1891. [w, p]”, (NMPC). Paratypes (3 ♂♂): same data as in holotype (NMPC, 1 ♂ in JBCB). The specimens are provided with one additional printed red label: “HOLOTYPUS, [or PARATYPUS, respectively], / *Hoplasoma / martapurensis* sp. nov., / J. Bezděk det., 2016”.

Description. Body length: males 6.3-6.8 mm (holotype 6.6 mm).

Male (Fig. 16). Coloration. Dorsal side orange, pro- and mesosternum orange, metasternum and abdomen black. Antennae dark brown with paler last four antennomeres. Anterior legs brown, mid and posterior legs black.

Head lustrous. Labrum transverse, with transverse row of several pale setae. Anterior part of head distinctly triangularly convex, impunctate, almost glabrous, with long pale seta in anterolateral angles and several shorter setae below antennal insertions. Interantennal space 1.25 times as wide as transverse diameter of antennal socket. Interocular space 1.66 as wide as transverse diameter of eye. Eyes large, protruding beyond outline of head. Frontal tubercles large, subtriangular, moderately elevated, lustrous, glabrous, impunctate. Vertex lustrous, impunctate except several small punctures along eye margin bearing long pale seta. Antennae thin, 0.75 times as long as body, length ratios of antennomeres I-IX equal to 100-33-66-92-92-100-100-100-83-83-83, antennomeres I-III lustrous, covered with sparse long setae, IV-XI dull, covered with dense punctures, dense short setae and sparse long setae.

Pronotum lustrous, glabrous, subrectangular, 1.53 times as broad as long, widest at first quarter, disc with distinctly convex anterior half, posterior half impressed. Anterior margin almost straight, unbordered, posterior margin moderately rounded, thinly bordered, lateral margins slightly diverging anteriorly, nearly straight, widely bordered. Anterior angles swollen and pointed, posterior angles obtusely angulate. All angles with setigerous pore bearing long pale seta. Scutellum impunctate, glabrous, subtriangular, with rounded apex.

Elytra lustrous, almost glabrous, with very sparse setae on apical and lateral slopes and short setae on lateral and apical margins, densely covered with fine small confused punctures, 0.74 times as long as body, 2.13 times as long as wide (measured at humeral calli), widest at posterior third. Humeral calli well developed, convex. Each elytron with three distinct costae, two internal costae visible but not sharp, external costa elevated and sharp, on lateral elytral slopes between external costa and lateral margins with traces of indistinct and incomplete costa. Epipleura narrow, at posterior third gradually narrowing towards apex. Macropterous.

Legs moderately long and narrow, semiopaque, covered with pale setae. Tarsomeres I not enlarged. Protarsomere I parallel, II triangular, length ratios of protarsomeres I-IV equal to 8-5-5-6. Metatarsomere I parallel, length ratios of metatarsomeres I-IV equal to 9-6-5-8. Claws bifurcate with inner branches somewhat shorter. Ventral surface subopaque, punctate, covered with pale setae. Abdomen simple, last ventrite with deep heart-shaped impression in middle, posterior margin of last ventrite with two subtriangular incisions (Fig. 7).

Aedeagus with two long flat and slightly diverging branches (Fig. 6).

Female. Unknown.

Variability. Two paratypes have distinctly darker mesosternum and almost black fore legs.

Diagnosis. The genus *Hoplasoma* Jacoby, 1884 is widely distributed in the Oriental Region from India to the Philippines. Despite the relatively high number of species and many endemic ones in neighbouring archipelagos, e.g. Celebes with 6 species (Bezděk 2008) or the Philippines with 8 species (Bezděk 2012), only one species, *H. ventrale* Baly, 1886, was recorded from Borneo (Bezděk 2006). *Hoplasoma ventrale* can be distinguished from *H. martapurensis* sp. nov. by not bifurcate aedeagus, not costate elytra and male abdomen with well defined subquadrate area on last ventrite and with one pair of processes from the posterior margin of the second ventrite.

Together with *H. dilaticorne* Jacoby, 1900 from India, the new species is the second *Hoplasoma* species with bifurcate aedeagus. The processes of aedeagus are somewhat longer and less diverging in *H. martapurensis* sp. nov., while shorter and more divergent in *H. dilaticorne* (Figs. 6, 8). Both species also differ in the structure of male antennae (filiform in *H. martapurensis* sp. nov., while last four antennomeres are dilated and flattened in *H. dilaticorne*), and in the structure of last abdominal ventrite (transverse with subcordiform impression in *H. martapurensis* sp. nov., while subpentagonal with elongate impression in *H. dilaticorne*, Figs. 7, 9). Having three distinct costae on each elytron *H. martapurensis* sp. nov. also resembles species of the *H. acuminatum* group (*H. acuminatum* Medvedev, 2000 from Thailand, Laos and Myanmar, and *H. sumatranum* Medvedev, 2000 from Sumatra), but can be easily distinguished by different structure of aedeagus and last abdominal ventrite in males (cf. Figs. 6-7 and Figs. in Bezděk 2014).

Distribution. Indonesia (South Kalimantan prov.).

Etymology. Derived from the name of the type locality.

Mimastra hajeki sp. nov.

(Figs. 10-14, 17)

Type locality. Indonesia, East Kalimantan prov., Muara Ritan vill., 00°24.0'N 116°03.1'E.

Type material. Holotype: (♂): "INDONESIA, E Kalimantan / Muara Ritan vill. / 00°24.0'N 116°03.1'E, 48 m / J. Hájek, J. Schneider & / P. Votruba leg. 5.xii.2011 [w, p] // border of fields and rainforest / in foothill near Belayan river; / individual collecting in puddle / and on vegetation, + light trap [w, p]", (NMPC). Paratypes: (1 ♀): same data as in holotype (JBCB); (1 ♀): "MALAYSIA, N Borneo, Sabah, / Keningau dist., Trus Madi Mt. / 1250 m, N 05°26'35", E 116°27'5" / 20-22.III.2012 P. Romantsov leg. [w, p]", (PRCS). The specimens are provided with one additional printed red label: "HOLOTYPUS, [or PARATYPUS, respectively], / *Mimastra* / *hajeki* sp. nov., / J. Bezděk det., 2016".

Description. Body length: male 4.4 mm (holotype); females 5.3-5.5 mm.

Male (Fig. 17). Coloration. Body strawy yellow, apices of mandibles black. Antennae with antennomeres I-III yellow, IV darkened, V-XI black. Anterior legs yellow with narrow black stripes on outer sides of femora and tibiae, protarsi darkened. Mid and posterior legs with yellow femora with black stripe on outer side, tibiae black with paler inner posterior half, protarsi darkened.

Head. Labrum transverse with anterior margin shallowly emarginate in middle, surface with several setae at each side. Anterior part of head flat, smooth, along antennal insertions with several punctures bearing setae. Interocular space 1.75 times as wide as transverse diameter of eye. Frontal tubercles large, triangular, impunctate, semiopaque, slightly elevated. Interantennal space as wide as transverse diameter of antennal socket. Vertex lustrous, impunctate, except one pore behind each eye bearing long pale seta. Antennae filiform, 0.90 times as long as body, length ratios of antennomeres I-IX equal to 100-33-42-100-95-90-90-85-81-76-71.

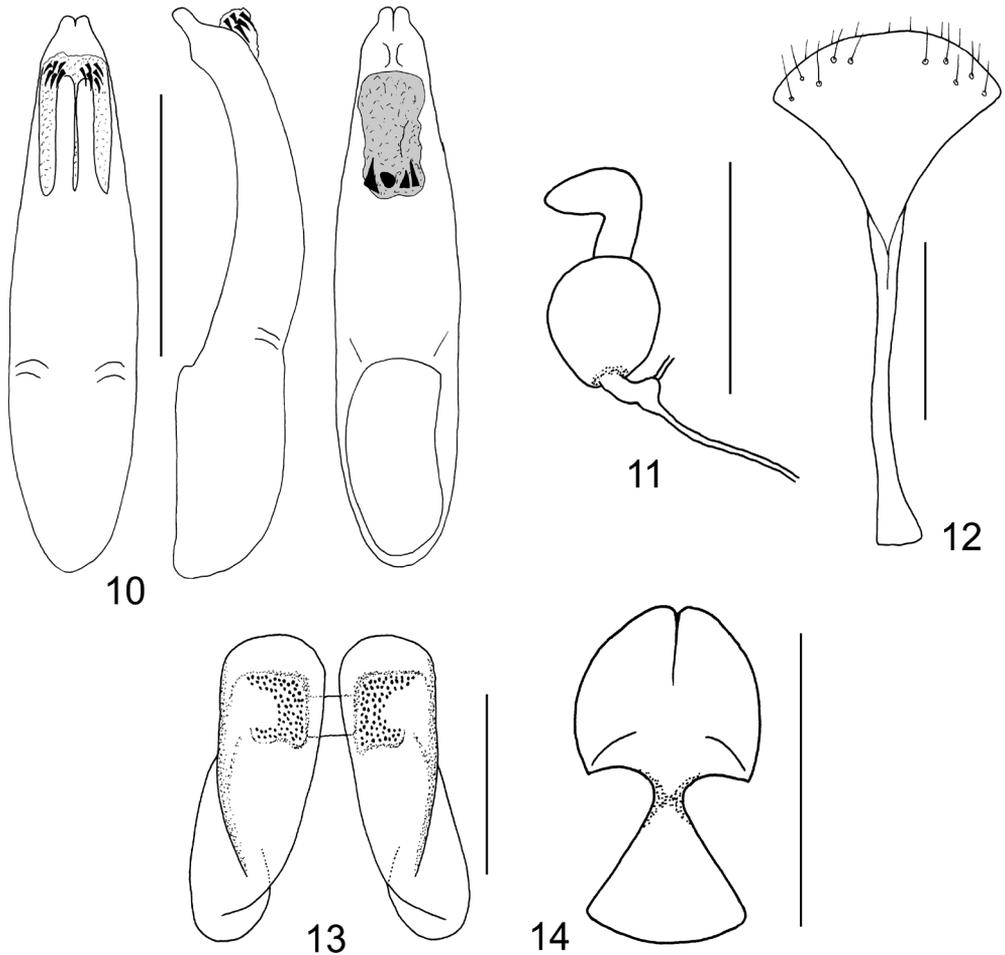
Pronotum transverse, 2.13 times as broad as long, widest at anterior third. Surface lustrous, glabrous, almost indistinctly punctate. Disc with shallow transverse furrow, almost indistinct in middle. Anterior margin straight, unbordered, posterior margin moderately rounded, narrowly bordered, lateral margins slightly rounded, distinctly bordered. Anterior angles distinctly swollen, posterior angles obtusely angulate. All angles with setigerous pore bearing long pale seta, several additional short setae placed on lateral margin near both angles. Scutellum glabrous, subtriangular with rounded apex, surface slightly convex, covered with very fine microsculpture.

Elytra lustrous, glabrous (except several short setae on apical elytral slopes), 0.69 times as long as body, 1.84 times as long as wide (measured at humeral calli), widest at posterior third, densely covered with small confused punctures. Humeral calli developed, convex. Epipleura moderately wide at anterior quarter, posteriorly gradually narrowing towards apex, glabrous. Macropterous.

Ventral surface semiopaque, covered with fine punctures and pale setae. Legs long and narrow, semiopaque, covered with pale setae. Protarsomere I elongate, subparallel, II elongate, subtriangular, length ratios of protarsomeres I-IV equal to 11-8-5-10. Metatarsomere I subparallel, length ratios of metatarsomeres I-IV equal to 16-10-4-10. Tarsal claws appendiculate, with distinct and sharp basal tooth.

Aedeagus 4.30 times as long as wide, widest at posterior third, gradually narrowed anteriorly, apex subtriangular with distinctly incised tip, in lateral view with small subapical bulge. Internal sclerite subrectangular, basally with several large spines (Fig. 10).

Female. Spermatheca: cornus small, hook-like, about as wide as nodulus, nodulus large and spherical, ductus spermathecae moderately wider basally with angular extension with connection of gland (Fig. 11). Bursa copulatrix with pair of large, elongate, laterally depressed sclerites connected with narrow transverse plate (Fig. 13). Gonocoxae grown together, posteriorly forming large semicircular plate with small incision at apex and anteriorly subtriangular plate with rounded anterior margin, both plates narrowly connected (Fig. 14). Sternite VIII subtriangular with rounded posterior margin, with setae along cumulated laterally along posterior margin, tignum ca 1.7 times longer than sternite VIII, with apex slightly extended (Fig. 12).



Figs. 10-14. Details of *Mimastra hajeki* sp. nov.: 10- aedeagus (dorsal, lateral and ventral views); 11- spermatheca; 12- sternite VIII and tignum; 13- bursa sclerites; 14- gonocoxae. Scale bars: 1 mm for Fig. 10; 0.25 mm for Figs. 11-14.

Variability. Both females have completely black mid and posterior tibiae.

Diagnosis. Based on Mohamedsaid (2004) and Bezděk (2009), five species of *Mimastra* Baly, 1865 were recorded from Borneo. The occurrence of *M. uncitarsis* Laboissière, 1940 is doubtful and needs verification. *Mimastra violaceipennis* Jacoby, 1884 can be easily distinguished by metallic blue elytra. Last three species, *Mimastra pallida* Jacoby, 1896, *M. submetallica* Jacoby, 1884, and *M. sumatrensis* Jacoby, 1884, have similar coloration as *M. hajeki* sp. nov. and differ in the structure of aedeagus (compare Fig. 1 with drawings in Bezděk 2009). *Mimastra sumatrensis* can also be distinguished from *M. hajeki* sp. nov. by much larger body (7.7-9.7 mm while 4.4-5.5 mm in *M. hajeki* sp. nov.) and completely

yellow legs (bicolourous in *M. hajeki* sp. nov.). *Mimastra submetallica* differs in elytra with extreme apices black (completely yellow in *M. hajeki* sp. nov.), antennae yellow with 1-2 antennomeres infusate (antennae black with 3-4 basal antennomeres yellow in *M. hajeki* sp. nov.), coloration of underside (meso- and metasternum black and abdomen yellow in *M. submetallica*, while completely yellow underside in *M. hajeki* sp. nov.), and larger body (6.2-8.1 mm while 4.4-5.5 mm *M. hajeki* sp. nov.). The most similar species is *M. pallida* which is yellowish orange (not strawy yellow as *M. hajeki* sp. nov.). Both species differ mainly in the structure of aedeagus (compare Fig. 1 with drawings in Bezděk 2009).

Distribution. Indonesia (East Kalimantan prov.).

Etymology. Dedicated to my dear colleague and friend Jiří Hájek (National Museum in Prague) who collected two specimens of this new species.

Palpoxena antonini sp. nov.

(Figs. 18-24)

Type locality. Malaysia, Sabah, Gunung Emas.

Type material. Holotype: (♂): “BORNEO, Malaysia / SABAH 1700 m / GUNUNG EMAS / 21.III.-20.IV.1996 / leg. J. Kadlec [w, p]”, (NMPC). Paratypes: (1 ♂): “Malaysia-Borneo / Kota Kinabalu / 20.-30.3.1996 / Lgt. J. Linda [w, p]”, (JVCJ); (1 ♀): “MALAYSIA W., PAHANG / 50 km NE of Kuala Rompin / Endau Rompin Nat. P., 400m / G. Keriung (Kg. Tebu Hitam) / 9.-30.iv.2008, P. Čechovský leg. [w, p]”, (JBCB). The specimens are provided with one additional printed red label: “HOLOTYPUS, [or PARATYPUS, respectively], / *Palpoxena / antonini* sp. nov., / J. Bezděk det., 2016”.

Description. Body length: males 9.6-9.7 mm (holotype 9.7 mm); female 10.1 mm.

Male (Fig. 18). Coloration. Head yellowish brown, apices of mandibles black, vertex with large metallic black spot with blurred margin. Antennomeres I-II yellowish brown, III with darkened outer apical half, IV-XI brown with paler apices. Pronotum pale brown with black pattern with blurred margin: large spot in middle, not touching posterior margin, narrowed anteriorly, thin stripe along anterior margin and stripe along lateral margin becoming wider anteriorly. Scutellum yellowish brown. Elytra metallic green with extreme lateral margin of epipleura brown. Legs yellowish brown with darkened basal outer halves of all femora and apical two thirds of all tibiae, tarsi darkened. Underside yellowish brown, prothorax with two large dark spots laterally, metasternum black except extreme margins, abdomen slightly darker brown.

Head (Figs. 19-20). Maxillary palpomere II clavate, III enlarged, oval, and IV small, inserted into III. Labrum enlarged, transverse, subelliptical, slightly impressed along posterior margin. Clypeus lustrous, widely concave with indistinct keel along anterior margin, laterally with small bulge bearing pale seta, additional group of shorter setae placed on outer clypeal margin. Anterior part of head lustrous, short, nasal part triangular and distinctly convex. Interocular space 2.16 times as wide as transverse diameter of eye. Eyes large, protruding beyond outline of head. Frontal tubercles transverse, anterior apices hook-like with diverging tips, impunctate, distinctly elevated, separated by deep furrow, posterior margin of tubercles rounded, separated from vertex by thin furrow. Interantennal space 1.23 times as wide as transverse diameter of antennal socket. Vertex shagreened, semiopaque,



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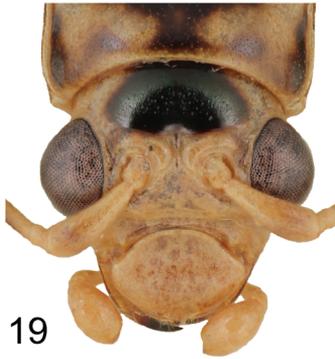


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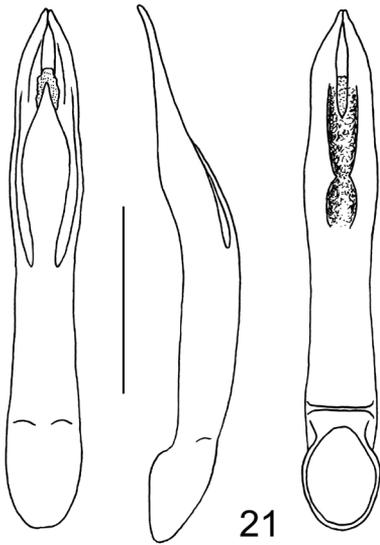
Figs. 15-18. Habitus of type specimens: 15- *Aplosonyx geiseri* sp. nov. (holotype, male, 8.7 mm); 16- *Hoplasoma martapurense* sp. nov. (holotype, male, 6.6 mm); 17- *Mimastra hajeki* sp. nov. (holotype, male, 4.4 mm); 18- *Palpoxena antonini* sp. nov. (holotype, male, 9.7 mm).



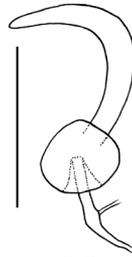
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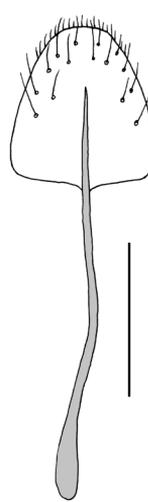
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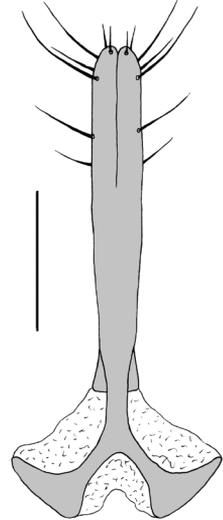
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Figs. 19-24. Details of *Palpoxena antonini* sp. nov.: 19- head in frontal view; 20- head in lateral view; 21- aedeagus (dorsal, lateral and ventral views); 22- spermatheca; 23- sternite VIII and tignum; 24- gonocoxae. Scale bars: 1 mm for Figs. 21, 23; 0.5 mm for Fig. 24; 0.25 mm for Fig. 22. Figs. 19-20 not to scale.

sparingly covered with small punctures and with one pore behind each eye bearing long pale seta. Antennae thin, 0.91 times as long as body, length ratios of antennomeres I-IX equal 100-24-110-126-121-115-110-100-89-79-79, antennomeres I-II lustrous, covered with sparse setae, III-XI dull, densely covered with punctures and short setae. Ventral side of antennomeres III-XI also with very long setae directed downwards.

Pronotum transverse, 1.58 times as broad as long, widest at anterior quarter. Surface shagreened, subopaque, sparsely covered with fine punctures. Disc with transverse furrow. Anterior margin slightly concave, posterior margin straight in middle, then slightly oblique

and lateral parts straight again, lateral margin nearly straight, divergent anteriorly. Anterior margin unbordered, lateral and posterior margins thinly bordered. Anterior angles swollen, posterior angles nearly rectangular, all angles with setigerous pore bearing long pale seta. Several additional short setae placed on lateral margin near anterior angles and dense short setae also on posterior margin. Scutellum glabrous, subtriangular, with widely rounded apex, shagreened.

Elytra lustrous, almost glabrous (with several setae on apical slopes), 0.68 times as long as body, 1.85 times as long as wide (measured at humeral calli), widest at posterior third, densely covered with small confused punctures. Humeral calli well developed. Epipleura moderately wide at anterior quarter, gradually narrowing towards apex, glabrous, smooth. Macropterous.

Last abdominal ventrite transverse with two short incisions on posterior margin. Legs moderately long and narrow, covered with pale semi-addressed setae. Protarsomere I extended, 1.62 times as long as wide, inner lateral margin slightly rounded, outer lateral margin more distinctly rounded, protarsomere II subtriangular, length ratios of protarsomeres I-IV equal to 26-12-13-26. Mesotarsomere I extended, 2.15 times as long as wide, lateral margins slightly convergent. Metatarsomere I not modified, nearly parallel, 3.66 times as long as wide, length ratios of metatarsomeres I-IV equal to 33-17-12-23. Tarsal claws appendiculate.

Aedeagus subparallel, 7.7 times as long as wide, with two apical convergent processes forming triangular apex, tectum lanceolate with sharp apex. In ventral view with deep elongate furrow (Fig. 21).

Female. Antennomeres III-XI covered with uniform setae, without long setae directed downwards. Pro- and mesotarsomeres I not enlarged, narrow, subparallel. Last abdominal ventrite with posterior margin entire. Spermatheca with thin C-shaped cornu and small spherical nodulus (Fig. 22). Gonocoxae parallel, each gonocoxa with five long setae on apex and two additional setae laterally, base w-shaped (Fig. 24). Sternite VIII with convergent lateral margins and widely rounded apex, setae cumulated along posterior margin, tignum narrow with slightly wider apex, twice longer than sternite VIII (Fig. 23).

Variability. Female with antennae completely yellowish brown. Both paratypes have somewhat extended dark pattern on pronotum and transverse anterior stripe is connected with lateral stripes near anterior angles.

Diagnosis. The genus *Palpoxena* Baly, 1861, distributed in the Oriental Region from India to Borneo, is one of the galerucine genera which badly needs a modern taxonomical revision. Mohamedsaid (1997, 2004) listed and keyed four species from Malaysia. Two of them, *P. jacobyi* Baly, 1888 and *P. variabilis* Jacoby, 1886, differ easily from *P. antonini* sp. nov. by not metallic elytra, which are always partly orange. Other two species, *P. laeta* Baly, 1861 and *P. sabahensis* Mohamedsaid, 1997 belongs to the *P. laeta* species group characterized by metallic blue or blue-green elytra with red extreme apex, hypertrophic male maxillary palpi and modified anterior part of head in male. *Palpoxena antonini* sp. nov. differs from all its congeners by head structure of male with not modified clypeus but strongly enlarged labrum forming transverse subelliptical plate (Figs. 19-20) combined with bicolorous head, pronotum and legs.

Distribution. Malaysia (Pahang, Sabah).

Etymology. Dedicated to my youngest son Antonín.

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REFERENCES

- BEZDĚK J. 2006: Resurrection of *Hoplasoma simplicipennis* and *H. ventralis*, previously synonymized with *H. unicolor* (Coleoptera: Chrysomelidae: Galerucinae). *Acta Entomologica Musei Nationalis Pragae* 46: 133-144.
- BEZDĚK J. 2008: A review of the genus *Hoplasoma* (Coleoptera: Chrysomelidae: Galerucinae) from Sulawesi, Indonesia, with the description of *H. bosi* sp. nov. *Zootaxa* 1941: 55-66.
- BEZDĚK J. 2009: Revisional study on the genus *Mimastra* (Coleoptera: Chrysomelidae: Galerucinae): Species with unmodified protarsomeres in male. Part 1. *Acta Entomologica Musei Nationalis Pragae* 49: 819-840.
- BEZDĚK J. 2012: Revision of *Hoplasoma* (Coleoptera: Chrysomelidae: Galerucinae) of the Philippines, with descriptions of five new species. *Zootaxa* 3382: 1-19.
- BEZDĚK J. 2014: A revision of *Hoplasoma acuminatum* and *H. thailandicum* species groups, and re-definition of *H. unicolor* species group (Coleoptera: Chrysomelidae: Galerucinae). *Zootaxa* 3794: 419-434.
- MOHAMEDSAID M. S. 1997: The Malaysian species of the genus *Palpoxena* Baly (Coleoptera: Chrysomelidae: Galerucinae). *Serangga* 2: 53-64.
- MOHAMEDSAID M. S. 2004: *Catalogue of the Malaysia Chrysomelidae (Insecta: Coleoptera)*. Sofia-Moscow: Pensoft, 239 pp.

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