

**A contribution to the tribe Brachinini (Coleoptera: Carabidae) - VIII.
A new species of Brachinini from South and South-East Asia and New Guinea**

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Abstract. Eight new taxa, *Brachinus barclayi* sp. nov. from Myanmar, *B. geiseri* sp. nov. from India, *B. garnerae* sp. nov. from China, *Pheropsophus lei* sp. nov. from Vietnam, *P. snizeki* sp. nov., *P. worthingtoni* sp. nov. both from Thailand, *P. lumawigi* sp. nov. from the Philippines, *P. jandai* sp. nov. from Papua New Guinea are described and illustrated. Male genitalia of holotypes are illustrated (except females *B. geiseri* sp. nov. and *P. jandai* sp. nov.).

INTRODUCTION

The last complete revision of the tribe Brachinini was published by Chaudoir (1876). A checklist with the distribution of species from the Oriental region was published by Andrewes (1930). A work aimed at the S. E. Palaearctic and Oriental Regions was published later by Jedlička (1964), but it included only a part of species. In India, the genus *Brachinus* Weber, 1801 is represented by 25 species (Andrewes 1930, 1931, 1932, 1933, 1936, 1937, Jedlička 1964, Tian & Deuve 2016), in Myanmar by 15 species (Andrewes 1930, Jedlička 1964, Kirschenhofer 2003), in China by 21 species (Hrdlička 2018). In Vietnam, the genus *Pheropsophus* Solier, 1833 is represented by 13 species (Andrewes 1930, Jedlička 1964, Park, Trac & Will 2006, Kirschenhofer 2010, Fedorenko 2013), in Thailand by 9 species (Andrewes 1930, Jedlička 1964, Kirschenhofer 2010), in Philippines by 10 species (Andrewes 1930, Jedlička 1964, Lassalle & Schnell 2018), in New Guinea by 14 species (Andrewes 1930, Darlington 1968, Giachino 2005).

MATERIAL AND METHODS

The type material of new species was taken from Natural History Museum, London collection, author's collection and from National Museum, Praha. Photographs of specimens used for descriptions were provided (photographs of general habitus of specimens and photographs of aedeagi were taken with the Canon EOS 600D digital camera with Canon MP-E 65 mm and Canon EF-S 60 mm objectives, images of the same objects at different focal planes were combined by using the Helicon Focus 6.4.3 software). Each paratype has its own number. Exact label data are cited for the type material, separate lines on labels are indicated by „/“, separate labels by „//“. Autor's remarks and comments are found in brackets. [p] - the preceding data were printed; [hw] - the same was hand-written.

Measurements of body parts and corresponding abbreviations used in the text are as follows:

- TL total length - measured from the apex of the left mandible (mandibles opened) to the apex of the left elytron;
- DVH dorso-ventral height - maximum dorso-ventral height of the body;
- HL length of head - measured from the clypeus apex to the neck constriction;
- HW width of head - maximum width of the head (including eyes);
- AL antennae length;
- PL pronotal length - length of the pronotum measured along the mid-line;
- PW1 pronotal width 1 - width of the anterior margin of pronotum;
- PW2 pronotal width 2 - maximum width of the pronotum;
- PW3 pronotal width 3 - minimum width of the pronotum;
- PW4 pronotal width 4 - width of the posterior margin of the pronotum;
- EL elytral length - measured from the anterior margin of the scutellum to the posterior margin of the elytra;
- EW elytral width - maximum width of both elytra combined.

PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 individual dimensions (PW1, PW3, PW4) are recalculated in relation to PW2 (expresses the curvature of the lateral sides of the pronotum). The location of the PW2 and PW3 of the pronotum are given as a percentage of the PL (calculated from the anterior margin of the pronotum). The location of the EW of the elytra is given as a percentage of the EL (calculated from the anterior margin of the scutellum).

TAXONOMY

Brachinus barclayi sp. nov.

(Figs. 1, 9-11)

Type material. Holotype (♂) labelled: „Rangoon / Burma / 28.5.1922 / E. A. Dabreu [hw, white label] // Brit. Mus. [p] / 1958- [p] 385 [hw], [white label] // Brachynus / sp. nov. [hw, white label] // HOLOTYPE / Brachinus / barclayi sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Holotype is pinned and damaged (lacking 10 antennomeres of left antenna and 9 antennomeres of right antenna). Holotype is deposited in coll. Natural History Museum, London (GBR).

Description of the male holotype. Habitus (Fig. 1). A medium-sized *Brachinus* (TL 11.60 mm); 2.32 times longer than wide (TL/EW). Body flat (TL/DVH 4.64). Body largely black or black-brown. One big spot between the eyes, basal part of mandibles, the remains of antennae, labrum, mentum, gula, two big spots on pronotum, episterna of prothorax, three big spots on prosternum, one irregular spot in anterior part of each elytron, one oblong spot in apical part of each elytron and lateral margin of each elytron, elytral epipleura, coxae, trochanters and legs yellow. Apical parts of mandibles, maxillary and labial palpi, mesothorax and metathorax yellow-brown.

Head longer than wide (HL/HW 1.08), wider than pronotum (HW/PW2 1.09). Eyes large. Frons smooth and shiny, dorsal and lateral parts of neck slightly wrinkled and sparsely pubescent by short yellow setae. Mandibles in side-view with plurisetose scrobe.



Figs. 1-8: Habitus: 1- *Brachinus barclayi* sp. nov. (HT); 2- *Brachinus geiseri* sp. nov. (HT); 3- *Brachinus garnerae* sp. nov. (HT); 4- *Pheropsophus lei* sp. nov. (HT); 5- *Pheropsophus snizeki* sp. nov. (PT5); 6- *Pheropsophus worthingtoni* sp. nov. (HT); 7- *Pheropsophus lumawigi* sp. nov. (HT); 8- *Pheropsophus jandai* sp. nov. (HT).

Pronotum slightly transverse (PL/PW2 0.95). PL 1.95 mm, PW1 1.53 mm, PW2 (at the 28% of PL) 2.05 mm, PW3 (at the 77% of PL) 1.38 mm, PW4 1.55 mm. Lateral margins strongly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.75; 1; 0.67; 0.76). Disc flatter, smooth, shiny and slightly irregularly ridged, anterior margin longitudinally ridged. Median line of pronotum deepened apicad, does not reach the anterior and hind margins. Lateral groove poorly obvious, with a setiferous puncture at about half. Posterior angles of pronotum rectangular, corners pointed and prominent. Episterna of prothorax and pronotal epipleura smooth and shiny.

Scutellum shiny and wrinkled, without punctuation.

Elytra 1.45 times longer than wide (EL/EW). Maximal width at the 69% of EL. Elytral



Figs. 9-20: Aedeagus: 9-11- *Brachinus barclayi* sp. nov. (HT); 12-14- *Brachinus garnerae* sp. nov. (HT); 15-17- *Brachinus knirschi* Jedlička, 1931 (China: Yunnan); 18-20- *Pheropsophus lei* sp. nov. (HT).



Figs. 21-32: Aedeagus: 21-23- *Pheropsophus discicollis* (Dejean, 1825) (India); 24-26- *Pheropsophus snizeki* sp. nov. (HT); 27-29- *Pheropsophus worthingtoni* sp. nov. (HT); 30-32- *Pheropsophus lumawigi* sp. nov. (HT) (9, 11, 12, 14, 15, 17, 18, 20, 21, 23, 24, 26, 27, 29, 30, 32 - lateral view, 10, 13, 16, 19, 22, 25, 28, 31 - dorsal view).

disc shiny, with microsculpture. Humeri distinct. Each elytron with 7 distinct glabrous costae, between costae punctate and pubescent by short light setae. Posterior margin of elytra with membranous fringe of very short setae (approximately 0.0075 mm).

Male genitalia (Figs. 9-11). Aedeagus long, narrow, conical, extending towards the tip. The tip is robust and strongly rounded.

Differential diagnosis. *Brachinus barclayi* sp. nov. is not similar to any species of the genus *Brachinus* from Asia. He is the most similar to the species *B. fasciatocollis* (Fairmaire, 1901) from Madagascar. *B. fasciatocollis* (Fairmaire, 1901) differs from new species by coloration (head yellow, humeral spots absent) and shape of aedeagus (Jeannel 1949).

Biology. Unknown.

Name derivation. This species is dedicated to Maxwell V. L. Barclay, a Senior Curator in Charge, Coleoptera of the Department of Life Sciences of Natural History Museum, London (GBR).

Distribution. Myanmar: Yangon.

Brachinus geiseri sp. nov.

(Fig. 2)

Type material. Holotype (♀) labelled: „INDIA: / Poona. At light. / P.V. Joshi. / B.M. 1961 - 164 [hw, white label with yellow line] // 17 [hw, white label] // *Brachynus* sp. [hw] / (nov. in B. M.) [hw] / E.B.Britton.det.1961 [p], [white label] // HOLOTYPE / *Brachinus* / *geiseri* sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Holotype is pinned and damaged (lacking 2 antennomeres of left antenna, 4 tarsomeres of hind left tarsus and middle right leg). Holotype is deposited in coll. Natural History Museum, London (GBR).

Description of the female holotype. Habitus (Fig. 2). A medium-sized *Brachinus* (TL 9.83 mm); 2.14 times longer than wide (TL/EW). Body flat (TL/DVH 4.37). Head with mandibles rusty red, maxillary and labial palpi and antennomeres 1.-4. yellow. Antennomeres 5.-11. yellow-brown. Pronotum rusty red, narrow lateral groove, front and hind corners of disc and upper half of episterna of prothorax brown. Scutellum, mesothorax, metathorax, coxae, trochanters, central parts of abdominal segments 1.-5. rusty red. Episterna of mesothorax and episterna of metathorax, epimeron of mesothorax and epimeron of metathorax, lateral margins of abdominal segments 1.-5. and entire abdominal segments 6.-7. black. Each elytron black with two yellow irregular spots. Elytral epipleura black. Legs yellow.

Head longer than wide (HL/HW 1.11), approximately as wide as pronotum (HW/PW2 1.01). Eyes large. Frons largely smooth and shiny. Anterior part of frons, dorsal, ventral and lateral parts of neck and narrow belts around the eyes (in dorsal view) sparsely covered with indistinct setiferous punctures (short yellow setae). Mandibles in side-view with plurisetose scrobe.

Pronotum longer than wide (PL/PW2 1.03). PL 1.83 mm, PW1 1.45 mm, PW2 (at the 23% of PL) 1.78 mm, PW3 (at the 81% of PL) 1.28 mm, PW4 1.35 mm. Lateral margins strongly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.82; 1; 0.72; 0.76). Disc convex, slightly matt, slightly transversely irregularly ridged, sparsely covered with setiferous punctures (short yellow setae). Anterior margin longitudinally ridged. Median

line of pronotum uniformly deep, reaches to the anterior and hind margins. Lateral groove is wider, with a setiferous puncture at about half. Posterior angles of pronotum rectangular, corners pointed and prominent. Episterna of prothorax with small setiferous punctures (very short yellow setae). Pronotal epipleura smooth and shiny.

Scutellum matt, with setiferous punctures.

Elytra 1.30 times longer than wide (EL/EW). Maximal width at the 73% of EL. Elytral disc matt, with microsculpture. Humeri distinct. Each elytron with 6 little distinct costae. Elytra punctate and pubescent by short yellow setae, costae in central part glabrous. Posterior margin of elytra with membranous fringe of short setae (approximately 0.015 mm).

Differential diagnosis. *Brachinus geiseri* sp. nov. is similar to *B. hamatus* Fischer von Waldheim, 1829 from Central Asia. *B. hamatus* Fischer von Waldheim, 1829 differs from new species by: entire dorsal surface coarsely punctate and densely pubescent, eyes and elytra flatter, elytral spots smaller and less distinct.

Biology. Unknown.

Name derivation. This species is dedicated to Michael Geiser, a Curator of Coleoptera of the Department of Life Sciences of Natural History Museum, London (GBR).

Distribution. India: Maharashtra Prov.: Pune.

Brachinus garnerae sp. nov.

(Figs. 3, 12-14)

Type material. Holotype (♂) labelled: „Nyew-tew Id. / nr Shei-pu / Walker Coll. / 93.-18. [p, white label] // IO 194 [p, white label] // *Brachynus* sp. [hw, white label] // HOLOTYPE / *Brachinus* / *garnerae* sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Holotype is stuck on the label and damaged (lacking tibia and tarsus of hind left leg). Holotype is deposited in coll. Natural History Museum, London (GBR).

Description of the male holotype. Habitus (Fig. 3). A medium-sized *Brachinus* (TL 7.23 mm); 2.51 times longer than wide (TL/EW). Body convex (TL/DVH 3.61). Body largely yellow. Antennomeres 5.-11. yellow-brown. Episterna of mesothorax and episterna of metathorax, epimeron of mesothorax and epimeron of metathorax, lateral margins of abdominal segments 1.-6. and entire abdominal segments 7.-8. black. Each elytron black with two yellow irregular spots. Lateral margins of elytra and elytral epipleura yellow. Legs yellow.

Head longer than wide (HL/HW 1.05), wider than pronotum (HW/PW2 1.09). Eyes large. Head largely smooth and shiny. Lateral parts of neck (near eyes) with few short yellow setae. Mandibles in side-view with plurisetose scrobe.

Pronotum transverse (PL/PW2 0.91). PL 1.23 mm, PW1 1.05 mm, PW2 (at the 20% of PL) 1.35 mm, PW3 (at the 80% of PL) 0.88 mm, PW4 0.98 mm. Lateral margins strongly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.78; 1; 0.65; 0.72). Disc convex, slightly matt, sparsely covered with setiferous punctures (short yellow setae). Median line of pronotum uniformly deep, reaches to the anterior and hind margins. Lateral groove poorly obvious, with a setiferous puncture at about half. Posterior angles of pronotum acute, corners pointed and prominent. Episterna of prothorax and pronotal epipleura smooth and shiny.

Scutellum matt, with setiferous punctures.

Elytra 1.55 times longer than wide (EL/EW). Maximal width at the 62% of EL. Elytral disc matt, with microsculpture. Humeri distinct. Each elytron with 5 little distinct costae. Elytra punctate and pubescent by short yellow setae. Posterior margin of elytra with membranous fringe without setae.

Male genitalia (Figs. 12-14). Aedeagus long and narrow. Apical half flattish dorsoventrally. The tip is rounded.

Differential diagnosis. *Brachinus garnerae* sp. nov. is very similar to *B. knirschi* Jedlička, 1931 from Yunnan. *B. knirschi* Jedlička, 1931 differs from new species by its coloration (head, pronotum and elytral spots red, the surface more shining) and shape of aedeagus (Figs. 15-17).

Biology. Unknown.

Name derivation. This species is dedicated to Beulah Garner, a Senior Curator Coleoptera of the Department of Life Sciences of Natural History Museum, London (GBR).

Distribution. China: Zhejiang Prov.: Nantian Island (cca 150 km South of Shanghai).

Pheropsophus lei sp. nov.

(Figs. 4, 18-20)

Type material. Holotype (♂) labelled: „VIETNAM Central, / Quang Nam Province, / Tay Giang, Mt. Axan, / 1.300 m, IV.2017, / Thanh Luong Le lgt. [p, white label] // HOLOTYPE / Pheropsophus / lei sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Paratypes: Nos. 1-376 (♂♂, ♀♀) labelled: the same data as holotype; Nos. 377-392 (♂♂, ♀♀) labelled: the same locality as holotype „VI.2017“; Nos. 93-395, 446-448 (♂♂, ♀♀) labelled: the same locality as holotype „VII.2017“; Nos. 396-430 (♂♂, ♀♀) labelled: the same locality as holotype „IV.2018“; Nos. 431-445 (♂♂, ♀♀) labelled: „VIETNAM Central, / Thua Thien Hue / Province, Mt. Bach Ma, / 1.400 m, VII.2017 / Thanh Luong Le lgt. [p, white label]“; Nos. 449-453 (♂♂, ♀♀) labelled: “Yen Bai envir. / Yen Bai province / North Vietnam / 6.2016, local coll. [p, white label]“. Holotype is stuck on the label. Holotype and paratypes no. 1-10 are deposited in coll. National Museum, Praha (CZE), paratypes no. 66-445 and 449-450 are deposited in coll. Jan Hrdlička, Babice u Říčan (CZE), paratypes no. 17-20 are deposited in coll. Natural History Museum, London (GBR). Other paratypes are stored in these collections: no. 11-12 coll. Kamil Orszulik, Frýdek-Místek (CZE), no. 21-22 coll. David Wrase, Berlin (DEU), no. 23-24 coll. Rudolf Kmeco, Litovel (CZE), no. 25-26 coll. Zdeněk Malinka, Opava (CZE), no. 27-28 coll. Adolf Mikyška (CZE), no. 29-32 coll. Oldřich Hovorka, Praha (CZE), no. 33-61 coll. Jiří Háva, Únětice u Prahy (CZE), no. 62-63 coll. Martin Häckel, Praha (CZE), no. 64-65 coll. Petr Bulirsch, Praha (CZE), no. 13-16, 446-448 and 451-453 coll. Miroslav Kliča, Praha (CZE).

Description of the male holotype. Habitus (Fig. 4). A large-sized *Pheropsophus* (TL 20.90 mm); 2.55 times longer than wide (TL/EW). Body convex (TL/DVH 3.48). Body largely black. Head yellow-brown, mandibles, labrum, clypeus, mentum, area under the eyes, maxillary and labial palpi, antennomeres 1.-2. and 5.-11. brown. Antennomeres 3.-4. and irregular arrow shaped spot in the front black. Pronotum black with front coxae and two longitudinal spots on the disc yellow-brown. Each elytron black with one small yellow-brown humeral spot and one big yellow-brown irregular spot in middle. Scutellum and elytral epipleura black. Ventral part of abdomen black, middle and hind trochanters, parts of middle and hind coxae yellow-brown. Femora yellow-brown, knees black, tibia black-brown and tarsi brown.

Head longer than wide (HL/HW 1.20), narrower than pronotum (HW/PW2 0.94). Eyes flatter. Head shiny, slightly wrinkled, area above the eyes with a 1-2 setiferous punctures. Neck wrinkled. Mandibles in sideview with unisetose scrobe. Antennae long, narrow (TL/AL 1.39).

Pronotum longer than wide (PL/PW2 1.11). PL 4.65 mm, PW1 3.10 mm, PW2 (at the 38% of PL) 4.20 mm, PW3 (at the 80% of PL) 3.35 mm, PW4 3.40 mm. Lateral margins slightly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.74; 1; 0.80; 0.81). Disc slightly convex, shiny, slightly transversely irregularly ridged, without setiferous punctures. Median line of pronotum poorly obvious, deepened apicad, does not reach the anterior and hind margins. Lateral groove narrow, with one setiferous puncture at about half (long setae). Posterior angles of pronotum rectangular, corners faintly rounded. Episterna of prothorax and epipleura of pronotum smooth and shiny.

Scutellum shiny and wrinkled, without punctuation.

Elytra 1.40 times longer than wide (EL/EW). Maximal width at the 70% of EL. Elytral disc convex, dull, with expressive microsculpture. Each elytron with 8 distinct (but very thin), rounded, shiny and bare costae. Elytra sparsely pubescent by long setae (between costae). Humeri absent. Posterior margin of elytra with membranous fringe of short setae (approximately 0.042 mm). Ventral part of abdomen densely covered with setiferous punctures.

Male genitalia (Figs. 18-20). Aedeagus robust. Apical half flattish dorsoventrally. The tip is short and robust.

Variability. TL 15.00-23.00 (aver. 19.92) mm. Measured 158 specimens. Coloration of body and shape of aedeagus are not variable.

Differential diagnosis. *Pheropsophus lei* sp. nov. is similar to *P. discicollis* (Dejean, 1825) from India. *P. discicollis* (Dejean, 1825) differs from new species by its rusty-red head, poorly obvious spot in the front, bigger rusty-red pronotal spots, yellow elytral spots, yellow legs. Antennomeres 3.-4. rusty red, pronotal disc with setiferous punctures in margin pars, part of elytral epipleura yellow. The tip of aedeagus as in Figs. 21-23.

Biology. Unknown.

Name derivation. This species is dedicated to its collector Thanh Luong Le from Vietnam.

Distribution. Vietnam: Quang Nam Prov.: Tay Giang, Mt. Axan; Thua Thien Hue Prov.: Mt. Bach Ma.

Pheropsophus snizeki sp. nov.

(Figs. 5, 24-26)

Type material. Holotype (♂) labelled: „N. THAILAND / CHIANG DAO env. / 21.V.-4.VI.1995 / M. Snížek lgt. [p, white label] // HOLOTYPE / Pheropsophus / snizeki sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Paratypes Nos. 1-4 (♂♂) labelled: the same data as holotype; No. 5 (♂) labelled: „NW Thailand, Chieng Dao, / Ban San Pakia, 5.-10.v. / 2004, 1200m, Sv. Bílý leg. [p, white label]“. Holotype is stuck on the label. Holotype and paratypes no. 1-4 are deposited in coll. Jan Hrdlička, Babice u Říčan (CZE), paratype no. 5 is deposited in coll. National Museum, Praha (CZE).

Description of the male holotype. Habitus (Fig. 5). A medium-sized *Pheropsophus* (TL 16.75 mm); 2.66 times longer than wide (TL/EW). Body convex (TL/DVH 3.56). Body largely black. Head yellow, mandibles, labrum, clypeus, mentum, area under the eyes, maxillary and labial palpi, antennomeres 2.-11. brown. Irregular angular shaped spot in the front black. Pronotum black with front coxae and two big longitudinal spots on the disc yellow-brown. Each elytron black with one small yellow-brown humeral spot and one big yellow-brown irregular spot in middle. Scutellum and elytral epipleura black. Ventral part of abdomen black, middle and hind trochanters, parts of metathorax and middle and hind coxae yellow. Femora and tibia yellow, knees black, tarsi brown.

Head longer than wide (HL/HW 1.21), narrower than pronotum (HW/PW2 0.94). Eyes flatter. Head shiny, slightly wrinkled, area above the eyes with a 1-2 setiferous punctures. Neck wrinkled. Mandibles in sideview with unisetose scrobe. Antennae long, narrow (TL/AL 1.34).

Pronotum longer than wide (PL/PW2 1.09). PL 3.65 mm, PW1 2.40 mm, PW2 (at the 32% of PL) 3.35 mm, PW3 (at the 82-100% of PL) 2.90 mm, PW4 2.90 mm. Lateral margins slightly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.72; 1; 0.87; 0.87). Disc slightly convex, shiny, slightly transversely irregularly ridged, without setiferous punctures. Median line of pronotum poorly obvious, uniformly deep, does not reach the anterior and hind margins. Lateral groove narrow, with one setiferous puncture at about half (long setae). Posterior angles of pronotum rectangular, corners rounded. Episterna of prothorax and epipleura of pronotum smooth and shiny.

Scutellum shiny and wrinkled, without punctuation.

Elytra 1.48 times longer than wide (EL/EW). Maximal width at the 72% of EL. Elytral disc convex, dull, with expressive microsculpture. Each elytron with 8 distinct (but very thin), rounded, shiny and bare costae. Elytra sparsely pubescent by long setae (between costae). Humeri absent. Posterior margin of elytra with membranous fringe of short setae (approximately 0.028 mm). Ventral part of abdomen densely covered with setiferous punctures.

Male genitalia (Figs. 24-26). Aedeagus robust. Apical half flattish dorsoventrally. The tip is short and robust.

Variability. TL 13.50-17.00 (aver. 15.54) mm. Measured 6 specimens. Coloration of body and shape of aedeagus are not variable.

Differential diagnosis. *Pheropsophus snizeki* sp. nov. is similar to *P. lei* sp. nov. from Vietnam. *P. snizeki* sp. nov. differs from *P. lei* sp. nov. by coloration (head, femora, tibia and spots yellow, antennomeres 3.-4. brown), by shape of frontal spot, by shape of pronotum, by shape of aedeagus. Posterior margin of elytra with membranous fringe of shorter setae than *P. lei*.

Biology. Unknown.

Name derivation. This species is dedicated to its collector Miroslav Snížek from Czech Republic, a well-known specialist in Chrysomelidae.

Distribution. Thailand: Chiang Dao Prov.

Pheropsophus worthingtoni sp. nov.

(Figs. 6, 27-29)

Type material. Holotype (♂) labelled: „S.E. THAILAND / Khao Soi Dao N.P. / 7.XI.2018 / Leonard Worthington lgt. [p, white label] // HOLOTYPE / Pheropsophus / worthingtoni sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Holotype is stuck on the label and damaged (lacking front right tarsus). Holotype is deposited in coll. Jan Hrdlička, Babice u Říčan (CZE).

Description of the male holotype. Habitus (Fig. 6). A medium-sized *Pheropsophus* (TL 16.70 mm); 2.69 times longer than wide (TL/EW). Body flat (TL/DVH 3.71). Body largely black. Head yellow, mandibles, maxillary and labial palpi, antennomeres 5.-11. brown. Neck rusty-red. Irregular angular shaped spot in the front black. Pronotum black with front coxae, trochanters, episterna of prothorax and prosternum yellow. Two big longitudinal spots on the pronotal disc rusty-red. Each elytron black with one small yellow humeral spot, one sinuate yellow irregular spot in middle and anterior half of elytral epipleura yellow. Scutellum and hind half of elytral epipleura black. Ventral part of abdomen black, mesothorax, part of episternum of prothorax, middle and hind trochanters, middle and hind coxae, episterna of metathorax yellow. Hind coxae and metathorax yellow-brown. Legs yellow, knees brown.

Head longer than wide (HL/HW 1.09), narrower than pronotum (HW/PW2 0.95). Eyes large. Head shiny, slightly wrinkled, area above the eyes with a 1-2 setiferous punctures. Lateral parts of neck (near eyes) with few very short yellow setae. Neck wrinkled. Mandibles in sideview with unisetose scrobe. Antennae long, narrow (TL/AL 1.55).

Pronotum slightly transverse (PL/PW2 0.98). PL 3.25 mm, PW1 2.50 mm, PW2 (at the 40% of PL) 3.30 mm, PW3 (at the 85% of PL) 2.75 mm, PW4 2.80 mm. Lateral margins slightly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.76; 1; 0.83; 0.85). Disc slightly convex, shiny, slightly transversely irregularly ridged, without setiferous punctures. Median line of pronotum poorly obvious, uniformly deep, does not reach the anterior and hind margins. Lateral groove narrow, with one setiferous puncture at about half (long setae). Posterior angles of pronotum rectangular, corners rounded. Episterna of prothorax and epipleura of pronotum smooth and shiny.

Scutellum shiny and wrinkled, without punctuation.

Elytra 1.61 times longer than wide (EL/EW). Maximal width at the 62% of EL. Elytral disc slightly convex, dull, with expressive microsculpture. Each elytron with 8 distinct (but very thin), rounded, shiny and bare costae. Elytra sparsely pubescent by long setae (between costae). Humeri prominent. Posterior margin of elytra with membranous fringe of short setae (approximately 0.042 mm). Ventral part of abdomen densely covered with setiferous punctures.

Male genitalia (Figs. 27-29). Aedeagus thinner. Apical half flattish dorsoventrally. The tip is long.

Differential diagnosis. *Pheropsophus worthingtoni* sp. nov. is similar to *P. javanus* (Dejean, 1825) from Indonesia. *P. javanus* (Dejean, 1825) differs from the new species by coloration (neck, prosternum, mesothorax, episternum of prothorax, episterna of metathorax and pronotal spots yellow; knees and tibia black). Humeri less prominent.

Biology. Attracted to the blacklight at the edge of the forest, cca 100 m from the creek.

Name derivation. This species is dedicated to its collector Leonard Worthington from Thailand, a well-known photographer of nature.

Distribution. Thailand: Khao Soi Dao N.P.

Pheropsophus lumawigi sp. nov.

(Figs. 7, 30-32)

Type material. Holotype (♂) labelled: „PHILIPPINES-MINDANAO / Davao del Sur, / Kapatagan, VIII.2016, / Igt. Ismael Lumawig [p, white label] // HOLOTYPE / Pheropsophus / lumawigi sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Paratypes: No. 1 (♀) labelled: „PHILIPPINES-MINDANAO / Davao del Sur, / Kapatagan, VII.2016, / Igt. Ismael Lumawig [p, white label]“; Nos. 2-3 (♂♀) labelled: „PHILIPPINES-MINDANAO / Davao del Sur, / KAPATAGAN, IV.2017, / Igt. Ismael Lumawig [p, white label]“; No. 4 (♂) labelled: „PHILIPPINES-MINDANAO / Sarangani, KIAMBA, / VII.2017, / Igt. Ismael Lumawig [p, white label]“; No. 5 (♂) labelled: „PHILIPPINES-MINDANAO / Sarangani, MAITUM, / X.2017, / Igt. Ismael Lumawig [p, white label]“; Nos. 6-7 (♀♀) labelled: „PHILIPPINES-MINDANAO / Davao del Sur, / KAPATAGAN, vii.2018, / Igt. Ismael Lumawig [p, white label]“; No. 8 (♂) labelled: „PHILIPPINES-MINDANAO / Compostela Valley, / New Albay, viii.2018, / Igt. Ismael Lumawig [p, white label]“. Holotype is stuck on the label. Holotype and paratypes are deposited in coll. Jan Hrdlička, Babice u Řičan (CZE).

Description of the male holotype. Habitus (Fig. 7). A medium-sized *Pheropsophus* (TL 16.30 mm); 2.72 times longer than wide (TL/EW). Body convex (TL/DVH 3.26). Body largely black. Head, maxillary and labial palpi, antennomeres 1.-4., front, middle and hind trochanters and coxae, metathorax and legs rusty-red. Antennomeres 5.-11. brown.

Head longer than wide (HL/HW 1.23), narrower than pronotum (HW/PW2 0.93). Eyes flatter. Head shiny, area above the eyes with a 1-2 setiferous punctures. Neck wrinkled. Mandibles in sideview with unisetose scrobe. Antennae long, narrow (TL/AL 1.40).

Pronotum cordiform (PL/PW2 1.00). PL 3.50 mm, PW1 2.65 mm, PW2 (at the 29% of PL) 3.50 mm, PW3 (at the 79-100% of PL) 2.65 mm, PW4 2.65 mm. Lateral margins slightly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.76; 1; 0.76; 0.76). Disc slightly convex, shiny, slightly transversely irregularly ridged, with setiferous punctures in margin parts (long setae). Median line of pronotum poorly obvious, uniformly deep, does not reach the anterior and hind margins. Lateral groove large, larger posteriorly, with one setiferous puncture at about half (long setae). Posterior angles of pronotum rectangular, corners rounded. Episterna of prothorax with big setiferous punctures (long setae). Epipleura of pronotum smooth and shiny.

Scutellum shiny and wrinkled, without punctuation.

Elytra 1.47 times longer than wide (EL/EW). Maximal width at the 57% of EL. Elytral disc convex, dull, with expressive microsculpture. Each elytron with 6 distinct (but very thin), rounded, shiny and bare costae. 7-th costae acute. Elytra sparsely pubescent by very long setae (between costae). Humeri slightly distinct. Posterior margin of elytra with membranous fringe of short setae (approximately 0.015 mm). Ventral part of abdomen densely covered with setiferous punctures.

Male genitalia (Figs. 30-32). Aedeagus robust. Apical half flattish dorsoventrally. The tip is long and narrow.

Variability. TL 12.50-17.80 (aver. 16.14) mm. Measured 9 specimens. Coloration of body and shape of aedeagus are not variable.

Differential diagnosis. *Pheropsophus lumawigi* sp. nov. is similar to *P. capitatus* Jedlička, 1935 from Luzon. *P. capitatus* Jedlička, 1935 differs from new species by smooth and shiny episterna of prothorax and shape of aedeagus (Lassalle & Schnell 2018).

Biology. Unknown.

Name derivation. This species is dedicated to its collector Ismael Lumawig from the Philippines.

Distribution. The Philippines: Mindanao.

***Pheropsophus jandai* sp. nov.**

(Fig. 8)

Type material. Holotype (♀) labelled: „PNG, MADANG Prov. / Halopa / xii.2001 / M. Janda leg. [p, white label] // HOLOTYPE / *Pheropsophus* / *jandai* sp. n. / det. Jan Hrdlička, 2018 [p, red label]“. Holotype is stuck on the label and damaged (lacking middle left leg and antennomeres 9.-11. of right antenna). Holotype is deposited in coll. National Museum, Praha (CZE).

Description of the female holotype. Habitus (Fig. 8). A medium-sized *Pheropsophus* (TL 17.65 mm); 2.67 times longer than wide (TL/EW). Body convex (TL/DVH 3.21). Body largely black-brown. Anterior half of head, maxillary and labial palpi, antennae, front, middle and hind trochanters and coxae and legs rusty-red.

Head longer than wide (HL/HW 1.19), narrower than pronotum (HW/PW2 0.93). Eyes flatter. Head shiny, area above the eyes with a 1-2 setiferous punctures. Neck wrinkled. Mandibles in sideview with unisetose scrobe. Antennae long, narrow (TL/AL 1.60).

Pronotum slightly transverse (PL/PW2 0.99). PL 3.60 mm, PW1 3.00 mm, PW2 (at the 28% of PL) 3.65 mm, PW3 (at the 75% of PL) 2.90 mm, PW4 3.10 mm. Lateral margins strongly sinuate (PW1/PW2; PW2/PW2; PW3/PW2; PW4/PW2 0.82; 1; 0.79; 0.85). Disc slightly convex, shiny, slightly transversely irregularly ridged, with setiferous punctures in margin parts (short setae). Median line of pronotum poorly obvious, uniformly deep, does not reach the anterior and hind margins. Lateral groove narrow, with one setiferous puncture at about half (long setae). Posterior angles of pronotum acute, corners rounded. Episterna of prothorax and epipleura of pronotum smooth and shiny. Epipleura of pronotum smooth and shiny.

Scutellum shiny and wrinkled, without punctuation.

Elytra 1.51 times longer than wide (EL/EW). Maximal width at the 64% of EL. Elytral disc convex, dull, with little distinct microsculpture. Each elytron with 6 strongly flat, shiny and bare costae. 7-th costae strongly acute. Elytra sparsely pubescent by long setae (between costae). Humeri absent. Posterior margin of elytra with membranous fringe of short setae (approximately 0.015 mm). Ventral part of abdomen densely covered with setiferous punctures.

Differential diagnosis. *Pheropsophus jandai* sp. nov. is not similar to any species of the genus *Pheropsophus*. He is completely unique by its elytral structure.

Biology. Unknown.

Name derivation. This species is dedicated to its collector Milan Janda, Research Scientist from Laboratory of Ecology and Evolution of Social Insect (Institute of Entomology - Biology Centre CAS, Czech Republic).

Distribution. Papua New Guinea: Madang Prov.: Halopa.

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