

## Three new species of the genus *Airapus* from the Oriental Region (Coleoptera: Scarabaeidae: Aphodiinae: Eupariini)

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**Taxonomy, new species, Coleoptera, Scarabaeoidea, Scarabaeidae, Aphodiinae, Eupariini, *Airapus*, Oriental Region, Australian Region, Borneo, Malaysia, Thailand**

**Abstract.** The following three new species of the genus *Airapus* Stebnicka & Howden, 1996 are described from Southeast Asia as follows: *Airapus cechovskyi* sp. nov. from Malaysia (Federal State of Kelantan), *Airapus jenisi* sp. nov. from Malaysia (Federal State of Sabah) and Indonesia (East Kalimantan Province), and *Airapus tyri* sp. nov., from Thailand (Phetchaburi Province).

### INTRODUCTION

In the course of examining materials from some private collections, we discovered three new species of the genus *Airapus* Stebnicka & Howden, 1996.

The genus was established to include *Aulonocnemis sumatrae* Fairmaire, 1896 (the type species) and five Australian species with adding the following two remarks: all the names listed by Krikken (1970) under *Euparia* Le Peletier de St. Fargeau & Audinet-Serville, 1828, should be considered in *Airapus* with exception of *Euparia squamosa* Lea, 1923; and some species considered by Balthasar (1964, 1967) under *Ataenius* Harold, 1867 or *Euparia* belong to the genus *Airapus*.

Appropriate data on currently known *Airapus* species can be found as follows.

Two species from the Oriental Region were dealt with in the monograph by Balthasar (1964): *Airapus sumatrae* (Fairmaire, 1896) under the name *Euparia acutula* Schmidt, 1913 (*E. acutula* is a synonym of *A. sumatrae*), and *Airapus sicardi* (Paulian, 1945) under *Euparia sicardi* Paulian, 1945. A drawing of the former species and descriptions of both species are available there. Three new species of the genus from the Oriental Region are described below.

Nineteen species (divided into three species groups) from New Guinea, the Bismarck Archipelago and the Solomon Islands were keyed and described in a work by Stebnicka (1998). The authors of the present work (Rakovič et al. 2019) recently described a new species of the genus from East Indonesia (the Raja Ampat Islands) exerting a strong affinity to New-Guinean species.

Five Australian species are treated in the iconography by Stebnicka (2009).

## MATERIAL AND METHODS

The specimens were observed by using the MBS-10 and SZP 1120-T stereoscopic microscopes. The photos published here were taken by the use of the Meopta laboratory microscope, CMEX 5 digital camera and Helicon Focus programme.

The following acronyms stand for collections, in which the specimens studied here are kept: DKCP David Král collection (deposited in National Museum, Praha), Czech Republic; LMCT Ladislav Mencl, private collection, Týnec nad Labem, Czech Republic; MRCD Miloslav Rakovič, private collection, Dobřichovice, Czech Republic; NMPC National Museum, Praha, Czech Republic; VTCZ Václav Týr, private collection, Žihle, Czech Republic.

Exact label data concerning specimens of the four species described here are specified in the section Results below. Our remarks and addenda are found in brackets, separate label lines are indicated by a slash (/), separate labels by a double slash (//).

For morphological terms used in the description of epipharyngeal structures we follow Dellacasa et al. (2010).

## RESULTS

### *Airapus cechovskyi* sp. nov.

(Figs. 1-19)

**Type locality.** Malaysia, Kelantan, Road between Kampong Raja and Gua Musang, 1400-1700 m a.s.l. (Ladang Pandrag), 4°38'-48'N, 101°27'-57'E.

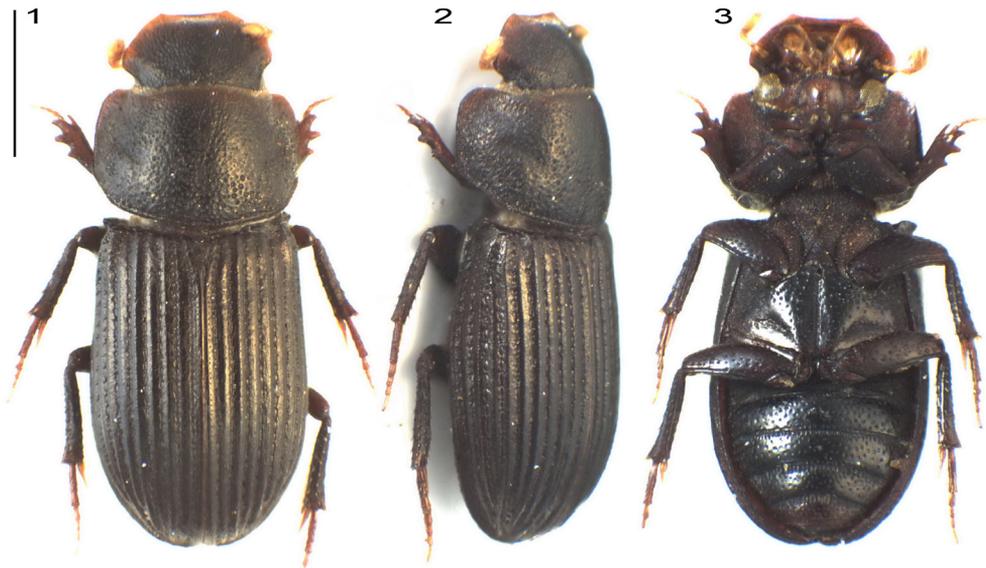
**Type material.** Holotype (♂): "MALAYSIA W, KELANTAN / Road between Kampong Raja and / Gua Musang, 1400-1700 m, 1.-28. iv. / (Ladang Pandrag), 4°63'-80'N, 101° / 45'-95'E [= 4°38'-48'N, 101°27'-57'E], P. Čechovský lgt., 2006 [white printed label] // 2412 / Dok. L. Mencl [pale green printed label, related to the photo-documentation system of the third author] // HOLOTYPE (♂) / *Airapus cechovskyi* sp. nov. / D. Král, L. Mencl & M. Rakovič det. 2018 [red printed label]", (LMCT). Allotype (♀): same data as with holotype on white label, 2607 instead of 2412 on pale green label, symbol ♀ and word ALLOTYPE instead of ♂ and HOLOTYPE, respectively, on red label, (LMCT). Paratypes (2 ♀♀): "MALAYSIA W. KELANTAN / 40 km N of Gua Musang / Gunung Berangkat / Kampang Riek; 1100 m / 15.v.-8.vi.2017 / Petr Čechovský lgt. [white printed label] // pale green similarly as with holotype, but with numbers 2606 and 2607, respectively // red labels as with holotype, but with word PARATYPE instead of HOLOTYPE, (DKCP, MRCD).

See also Fig. 19 for photos of etiquettes under type specimens.

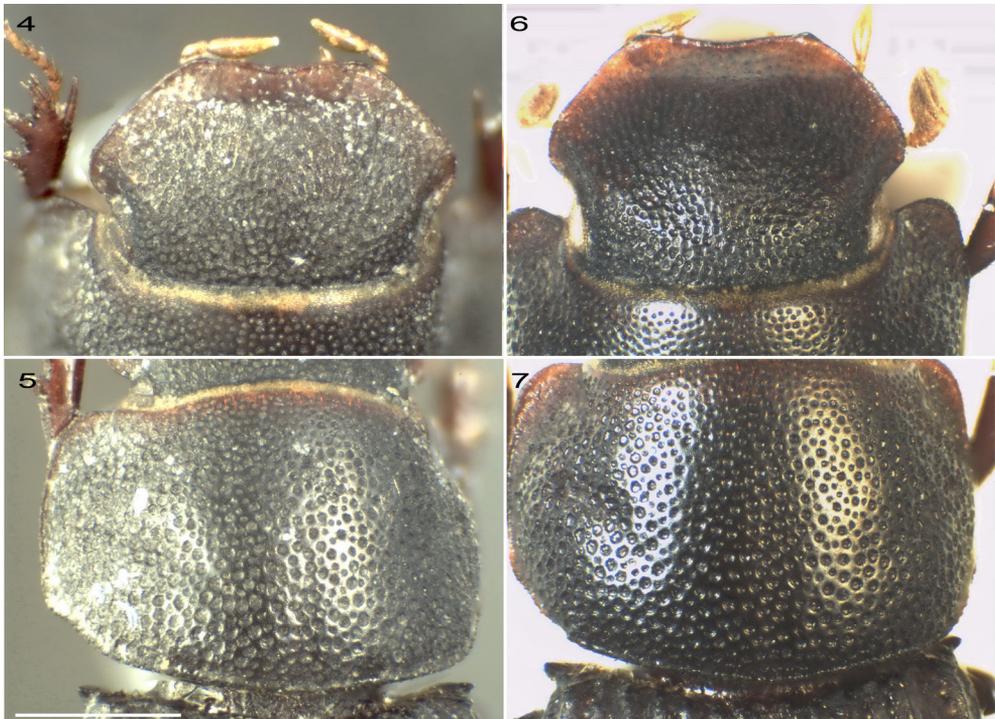
**Description of holotype.** Oblong oval, subparallel, only slightly broader behind, moderately convex, moderately shining, dark blackish brown, anterior clypeus margin, anterior pronotal angles and sutural interval of elytra brown, body length of 3.4 mm maximum width of 1.47 mm (Figs. 1-2).

Head (Figs. 4 and 6) moderately convex, without frontoclypeal suture; head surface with mostly longitudinal punctures. Clypeus dentate each side of wide anteromedian emargination, its lateral sides nearly aligned with anterior margins of genae. Genae rounded, large, considerably exceeding eyes.

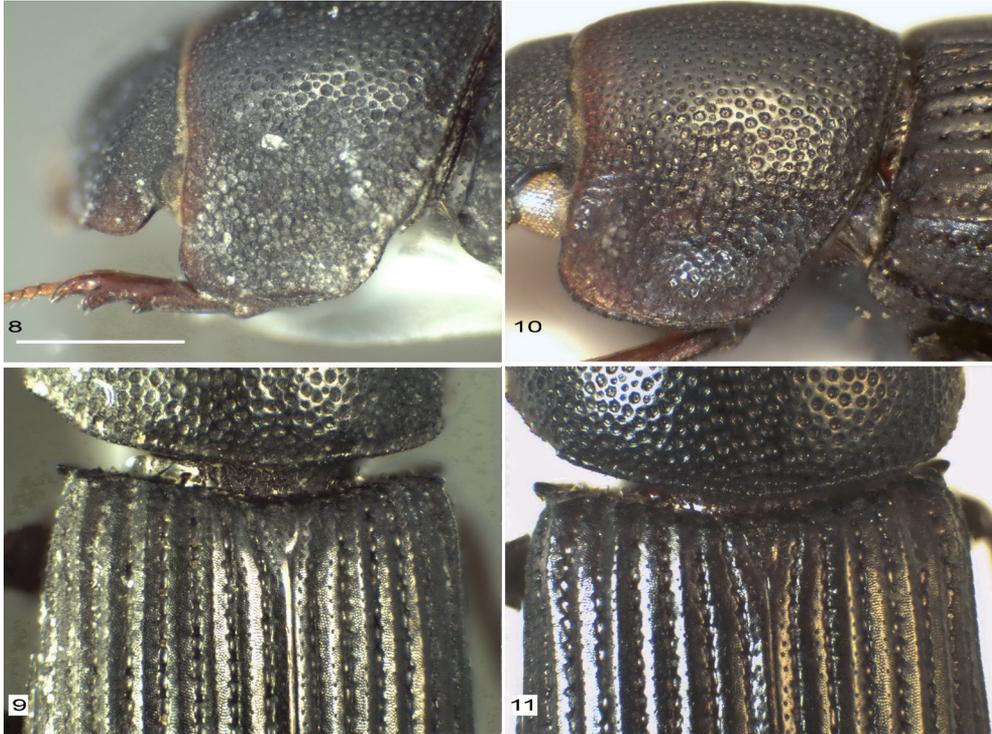
Epipharynx (Fig. 16). Transversal, anterior outline shallowly emarginate, lateral outlines regularly widely rounded; tormae and nesium well sclerotised, approximately symmetrical,



Figs. 1-3. *Airapus cechovskyi* sp. nov., paratype, ♀, habitus: 1- dorsal view; 2- dorsolateral view; 3- ventral view. Scale line 1 mm. Photographs by L. Mencl.



Figs. 4-7. *Airapus cechovskyi* sp. nov., details in dorsal view: 4- holotype, ♂, head; 5- holotype, ♂, pronotum; 6- paratype, ♀, head; 7- paratype, ♀, pronotum. Scale line 0.5 mm. Photographs by L. Mencl.



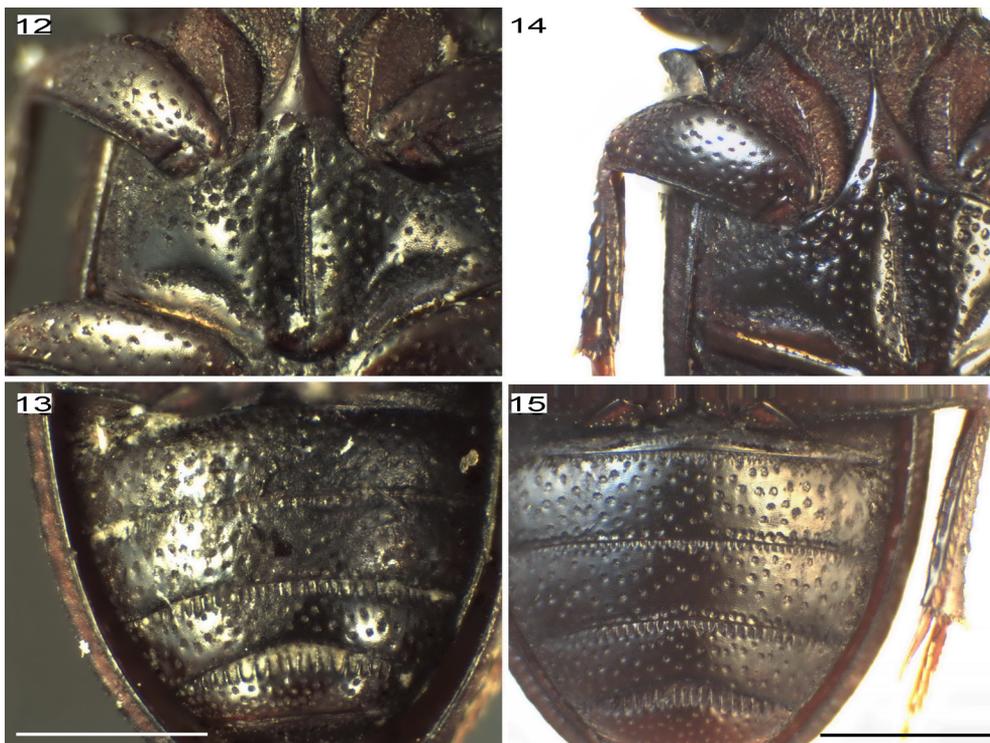
Figs. 8-11. *Airapus cechovskyi* sp. nov., details in dorsal or lateral view: 8- pronotum holotype, ♂, (lateral view); 9- pronotum base and elytra base (dorsal view), holotype, ♂; 10- pronotum (lateral view), paratype, ♀; 11- pronotum base and elytra base (dorsal view), paratype, ♀. Scale line 0.5 mm. Photographs by L. Mencl.

apotormae only slightly indicated; epitorma pentagonal, well sclerotised, covered with group of distinct, sparse sensilla laterally and with two sinuate rows of dense sensilla basally; corypha with four spines; prophobae sclerotized, each with only one distinct spine; adelochaetae consisting of row of 11-12 closely spaced spines; chaetopariae with dense row of about 25 long stout spines; ipophobae weakly sclerotized, covered with several macrosetae.

Pronotum (Figs. 5, 7-8 and 10) transversal (length-to-width ratio 0.741), widest before posterior angles, with nearly straight sides, rounded anterior angles and moderately truncate and excised posterior angles. Pronotum considerably wider than head. Pronotum surface regularly densely punctate; punctures largest basally and stepwise decreasing in size toward anterior margin. Pronotum lateral margins smooth, glabrous.

Scutellum small, narrow, triangular (Figs. 9 and 11).

Elytra (Figs. 1-2, 9, 11) with 10 striae and 10 intervals, with distinct humeral denticles, elongate (length-to-width ratio of 1.55), only slightly broader behind (broadest point behind half elytra length). Elytra 2.25 times longer than pronotum and only 1.07 times wider than pronotum. Striae narrow, with punctures distinctly observable under high magnification only, but crenating intervals. Intervals wider, costate, reticulate.



Figs. 12-15. *Airapus cechovskyi* sp. nov., details in ventral view: 12- meso-metaventrum, holotype, ♂; 13- abdomen, holotype, ♂; 14- meso-metaventrum, paratype, ♀; 15- abdomen, paratype, ♀. Scale line 0.5 mm. Photographs by L. Mencl.

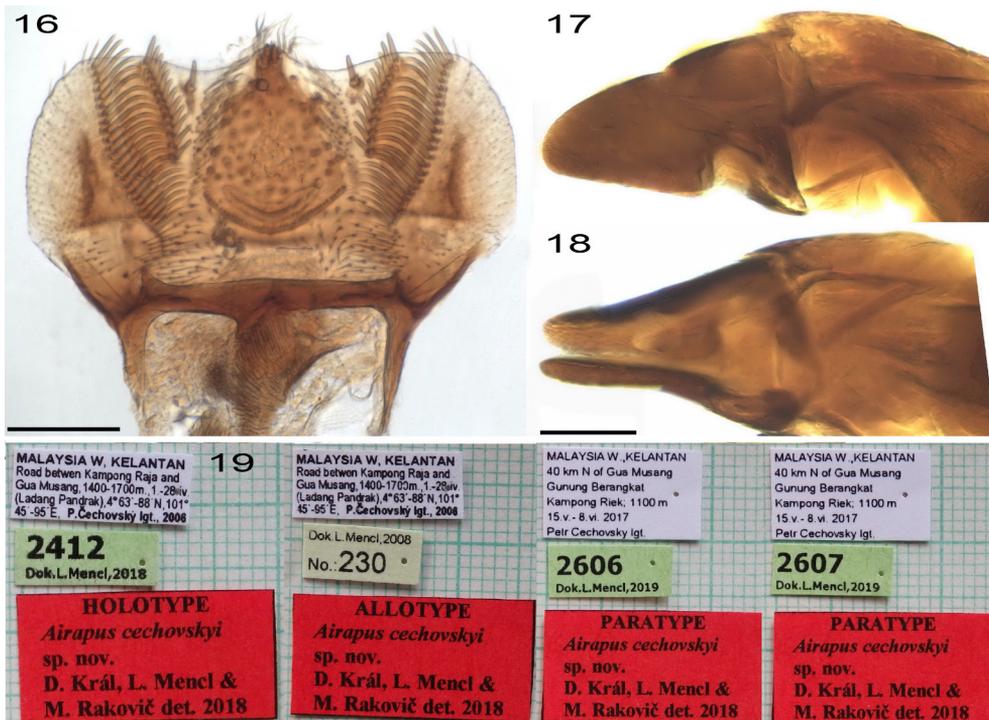
Legs in dorsal view: protibia with three large teeth in anterior part of outer margin, not denticulate in basal part, its upper surface smooth impunctate, apical spine about as long as basal protarsomere; Basal meso- and metatarsomeres long, longer than superior terminal spines of mesotibia and metatibia, respectively.

Ventral surfaces (Figs. 3 and 12-15) shining, punctate, punctures on femora smaller than those on meso-metaventum and abdominal ventrites. Median furrow of meso-metaventral plate nearly complete as shown in Figs. 12 and 14. Abdominal ventrites fluted anteriorly and/or posteriorly as in Figs. 13-15.

Aedeagus as in Figs. 17-18.

**Sexual dimorphism.** In males, posterior corners of pronotum are moderately more emarginate compared to females. The male abdominal ventrite 5 narrower at middle than the female one.

**Variability.** Four type specimens are available. The body length varies between 3.4 and 3.7 mm. No variability in shapes, sculptures or colours was observed.



Figs.16-19. *Airapus cechovskyi* sp. nov., epipharynx, aedeagus and etiquettes: 16- epipharynx, paratype, ♀; 17- aedeagus, lateral view, holotype, ♂; 18- aedeagus, ventral view, holotype, ♂; 19- etiquettes. Scale lines 0.1 mm for epipharynx and aedeagus. Photographs by L. Mencl.

**Collection circumstances.** Unknown.

**Distribution.** Malaysia, Kelantan State [situated in the north-east of peninsular Malaysia].

**Name derivation.** Patronymic, after Petr Čechovský (Brno, Czech Republic), who provided us with the type material.

**Differential diagnosis.** See the key below. The following combination of characters is important for differentiating the species *Airapus cechovskyi* sp. nov. from other *Airapus* species still described from the Oriental Region: body size of 3.4-3.7 mm, the clypeus dentate each side of the clypeus anteromedian emargination, moderately truncate and excised posterior angles of the pronotum, elytra (in dorsal view) broadest behind half, straight-narrowing from there toward base and arcuately narrowing toward apex, their intervals distinctly costate.

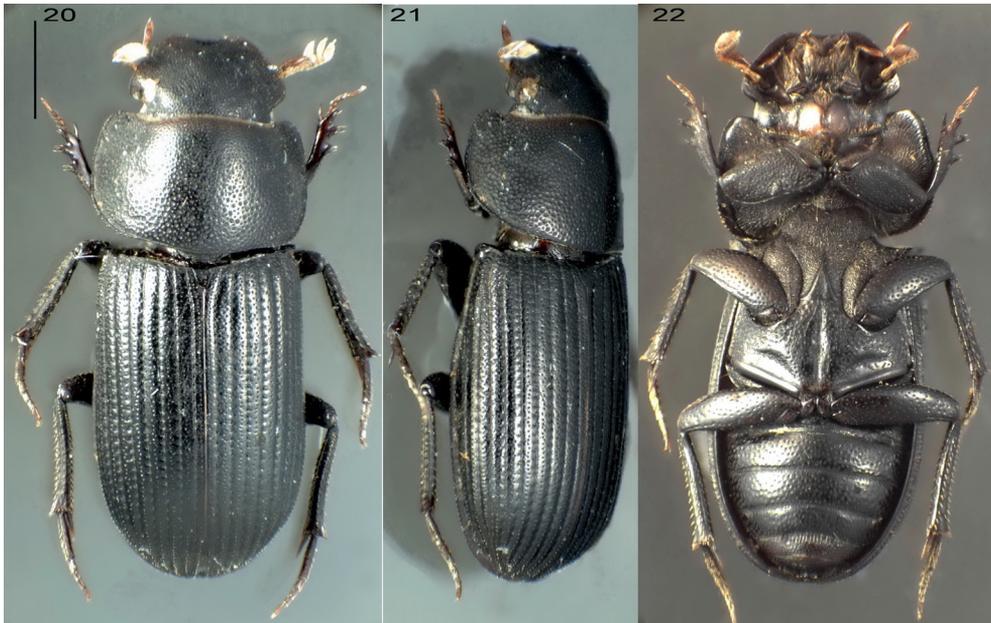
*Airapus jenisi* sp. nov.  
(Figs. 20-32)

**Type locality.** Malaysia, Sabah, Batu Punggul, about 50 km SE of Sapulutu.

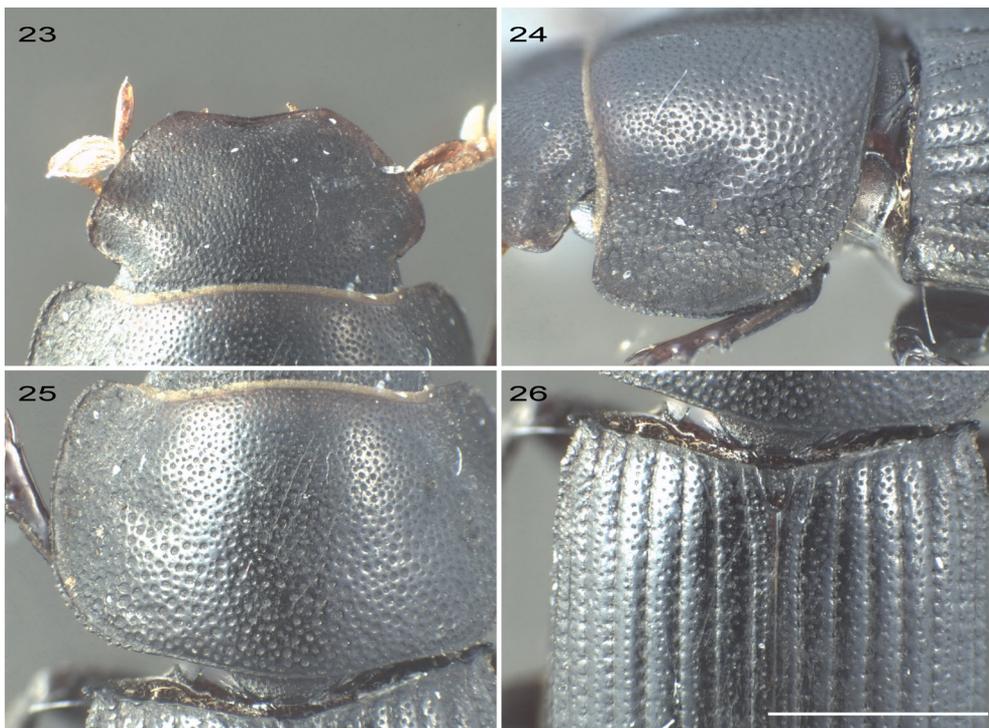
**Type material.** Holotype (♂): “BORNEO - SABAH / Batu Punggul / approx. 50 km SE of / Sapulutu, 25.-27.v.1995 / Ivo Jeniš lgt. [white printed label] // 2456, Dok. L. Mencl 2018 [pale green printed label, related to the photo-documentation system of the third author] // HOLOTYPE / *Airapus jenisi* sp. nov. / D. Král, L. Mencl & M. Rakovič det. 2018 [red printed label]”, (LMCT). Paratype (1 ♂): “INDONESIA, E Kalimantan / ca. 50 km W of BALIKPAPAN / PT Fajar Surya Swadaya [area] / 01°13.4'S, 116°22.6'E, 66 m / J. Hájek, J. Schneider & / P. Votruba leg. 27+30. xi. 2011 [white printed label] // stream in primary rain forest, / ca. 2 m wide, sandy + mud bottom; collecting in stream / and tributaries, / on vegetation and dead wood [white printed label] // 2245 / Dok. L. Mencl, 2016 [pale green printed label, related to the photo-documentation system of the third author] // PARATYPE / *Airapus jenisi* sp. nov. / D. Král, L. Mencl & M. Rakovič det. 2018 [red printed label]”, (NMPC).  
See also Fig. 32 for photos of etiquettes under type specimens.

**Description of holotype.** Oblong oval, subparallel, only quite slightly broader behind, moderately convex, moderately shining, mostly black, clypeus margin and partially also anteromedial area of head brownish, body length of 5.0 mm maximum width of 2.2 mm (Figs. 20-21).

Head (Fig. 23) moderately convex, without frontoclypeal suture; head surface densely covered with mostly longitudinal punctures. Clypeus obtusely angulate each side of wide anteromedian emargination, its lateral sides aligned with anterior margins of genae. Genae rounded, large, considerably exceeding eyes.



Figs. 20-22. *Airapus jenisi* sp. nov., paratype, ♂, habitus: 20- dorsal view; 21- dorsolateral view; 22- ventral view. Scale line 1 mm. Photographs by L. Mencl.



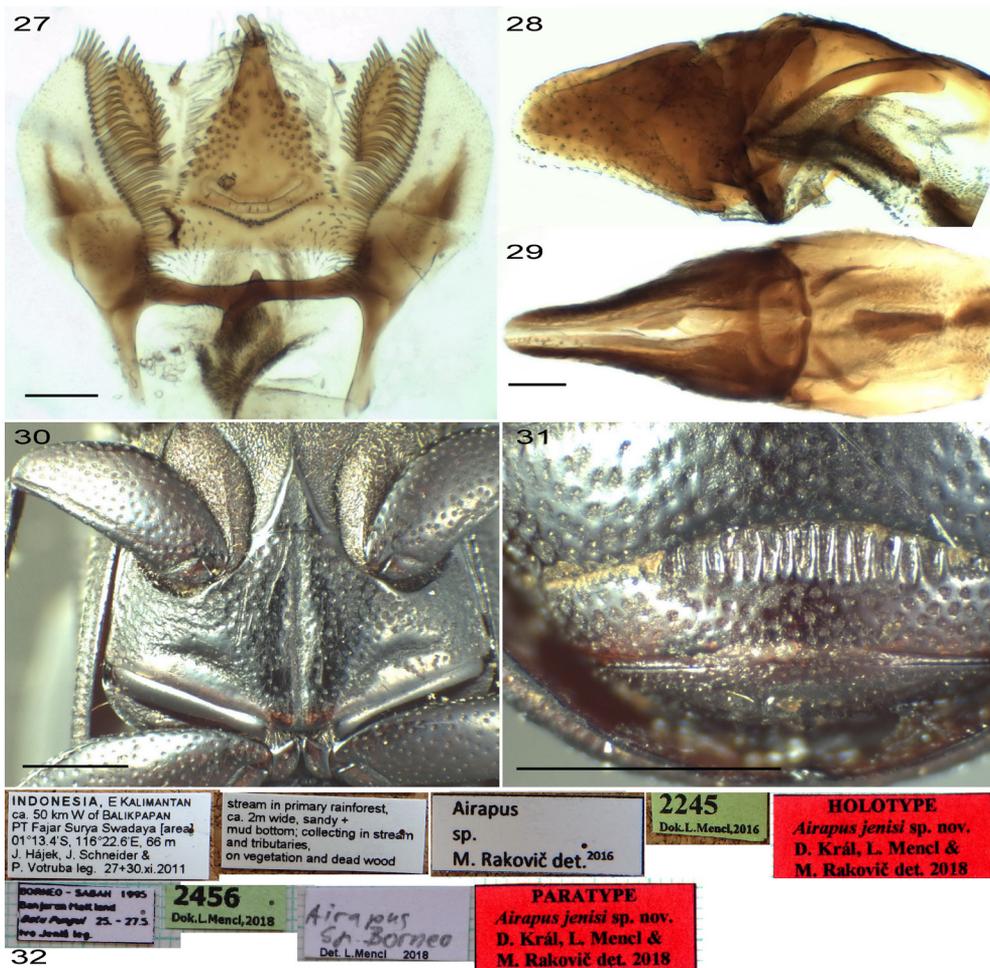
Figs. 23-26. *Airapus jenisi* sp. nov., paratype, ♂, details in dorsal or lateral view: 23- head (dorsal view); 24- pronotum (lateral view); 25- pronotum (dorsal view); 26- pronotum base and elytra base (dorsal view), paratype, ♂. Scale line 0.5 mm. Photographs by L. Mencl.

Epipharynx (Fig. 27). Transversal, anterior outline shallowly emarginate, lateral outlines regularly widely rounded; tormae and nesium well sclerotised, approximately symmetrical, apotormae only slightly indicated; epitorma triangular, well sclerotised, covered with group of distinct, sparse sensilla laterally and with two sinuate rows of dense sensilla basally; corypha with two spines; prophobae sclerotized, each with only one distinct spine; adelochaetae consisting of row of 15 closely spaced spines; chaetopariae with dense row of about 35 long stout spines; ipophobae weakly sclerotized, bare.

Pronotum (Figs. 24-25) transversal (length-to-width ratio 0.667), widest before posterior angles. Anterior as well as posterior angles rounded. Pronotum considerably wider than head. Pronotum surface regularly covered with medium-sized punctures intermixed with fine, but well distinct punctures. Margins of posterior corners irregularly crenulate and sparsely equipped with enormously short macrosetae observable under high magnification only.

Scutellum (Fig. 26) small, triangular, about twice as long as wide, its surface with few punctures.

Elytra (Figs. 20-21 and 26) with 10 striae and 10 intervals, with distinct humeral denticles, elongate (length-to-width ratio of 1.59), only slightly broader behind (broadest point behind half elytra length). Elytra 2.31 times longer than pronotum and 1.03 times narrower than



Figs.27-32. *Airapus jenisi* sp. nov., paratype, ♂, epipharynx, aedeagus. details of ventrum and etiquettes: 27-epipharynx; 28- aedeagus, lateral view; 29- aedeagus, ventral view; 30- meso-metaventrum, ventral view; 31- part of abdomen, ventral view; 32- etiquettes. Scale lines 0.1 mm for epipharynx and aedeagus, 0.5 mm for meso-metaventrum and abdomen. Photographs by L. Mencil.

pronotum. Striae narrow, distinct, with punctures distinctly crenating inside margins of intervals. Intervals wide, convex. Each interval of elytra with medium-sized punctures: mostly 2-3 punctures per interval width and 1-2 punctures per interval width present in anterior and posterior parts of elytra, respectively. Elytral apex and upper edge of epipleurae with very short macrosetae observable under high magnification only.

Legs in dorsal view: protibia with three large teeth in anterior part of outer margin (each large tooth with a pair of distinct macrosetae), not denticulate in basal part, its upper surface smooth, impunctate, apical spine reaching to apex of basal protarsomere 2; basal meso- and metatarsomeres long, longer than terminal spines of mesotibia and metatibia, respectively.

Ventral surfaces (Figs. 22 and 30-31) shining, blackish brown. Femora punctate. Meso-metaventral plate punctate, with distinctly concave longitudinal area. Abdominal ventrites punctate, ventrite 5 finely fluted anteriorly, ventrite 6 remarkably fluted anteriorly.

Pygidium as in Fig. 31.

Aedeagus as in Figs. 28-29.

**Sexual dimorphism.** Not available. Only two male specimens were examined.

**Variability.** Only two type specimens are available. Body lengths of the holotype and paratype are of 5.0 and 5.5 mm, respectively. No variability in shapes, sculptures or colours was observed.

**Collecting circumstances.** The paratype was collected at a stream in a primary rain forest, when picking up single insects on the vegetation and dead wood.

**Distribution.** Malaysia, Sabah [a state of Malaysia situated in the northernmost area of the island Kalimantan] and Indonesia, province of East Kalimantan.

**Name derivation.** Patronymic, after Ivo Jeniš (Náklo, Czech Republic), who provided the second author with the holotype specimen.

**Differential diagnosis.** See the key below. The following combination of characters is important for differentiating the species *Airapus jenisi* sp. nov. from other *Airapus* species still described from the Oriental Region: the body length of about 5-6 mm, obtusely angulate clypeus each side of the clypeus anteromedian emargination, rounded posterior angles of the pronotum, nearly parallel elytra, convex (not costate) elytral intervals, and presence of enormously short macrosetae in apical area of the elytra and on margins of posterior pronotal angles and upper edge of epipleurae.

***Airapus tyri* sp. nov.**

(Figs. 33-49)

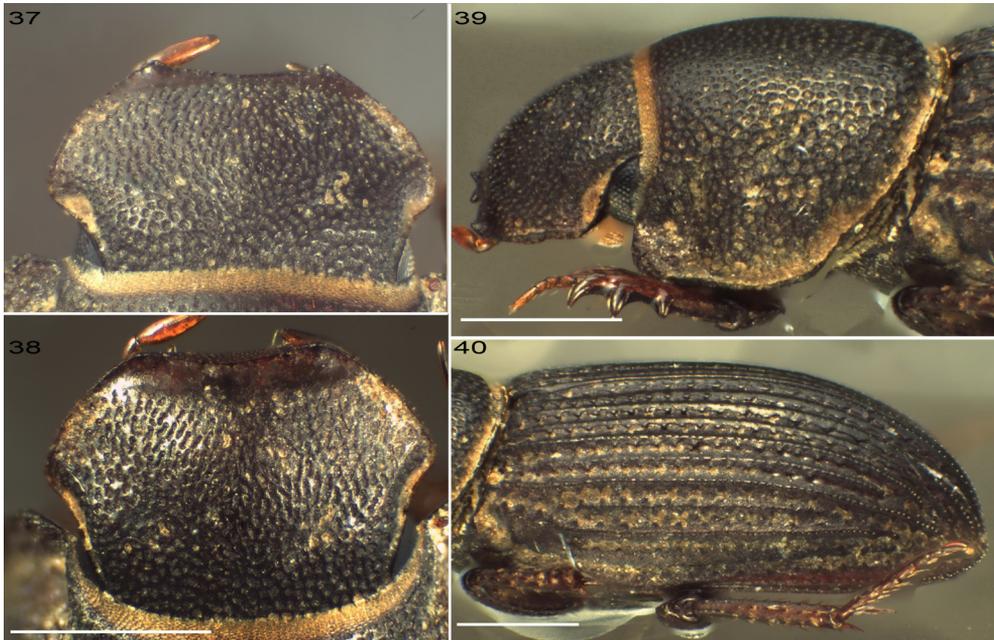
**Type locality.** Thailand, Petchaburi Province, 4 km south of Wang Chan, 55 m a.s.l.

**Type material.** Holotype (♂) (DKCP) “Thailand, Petchaburi d. / 4 km S of Wang Chan / 14. i. 2013, at 55 m / lgt. Fouqué René [white printed label] // 2394, Dok. L. Mencl [pale green printed label, related to the photo-documentation system of the third author] // “HOLOTYPE (♂) / *Airapus tyri* sp. nov. / D. Král, L. Mencl, & / M. Rakovič det. 2018 [red printed label]”. Allotype (♀): (DKPC) same data as with holotype on white label, symbol ♀ and word ALLOTYPE instead of ♂ and HOLOTYPE, respectively, on red label. Number 2393 instead of 2394 on pale green label. Paratypes (16 spec. not sexed): DKCP - 3, LMCT - 3, MRCD - 3, VTCZ - 7. Same data as with holotype on white label, word PARATYPE instead of HOLOTYPE on red labels, symbol ♀ and word ALLOTYPE instead of ♂ and HOLOTYPE, respectively, on red label. See also Fig. 49 for photos of etiquettes under type specimens.

**Description of holotype.** Oblong oval, subparallel, moderately broader behind, convex, vaguely shining, mostly black to blackish brown, forebody darker than elytra, body length of 3.8 mm maximum width of 1.46 mm (Figs. 35-36).



Figs. 33-36. *Airapus tyri* sp. nov., habitus: 33- ventral view, allotype, ♀; 34- ventral view, holotype, ♂; 35- dorsal view, holotype, ♂; 36- dorsolateral view, holotype, ♂. Scale line 1 mm. Photographs by L. Mencl.



Figs. 37-40. *Airapus tyri* sp. nov., details in dorsal or lateral view, holotype, ♂: 37- head in slightly declined position; 38- head in horizontal position; 39- pronotum and head, lateral view; 40- elytra, lateral view. Scale line 0.5 mm. Photographs by L. Mencl.

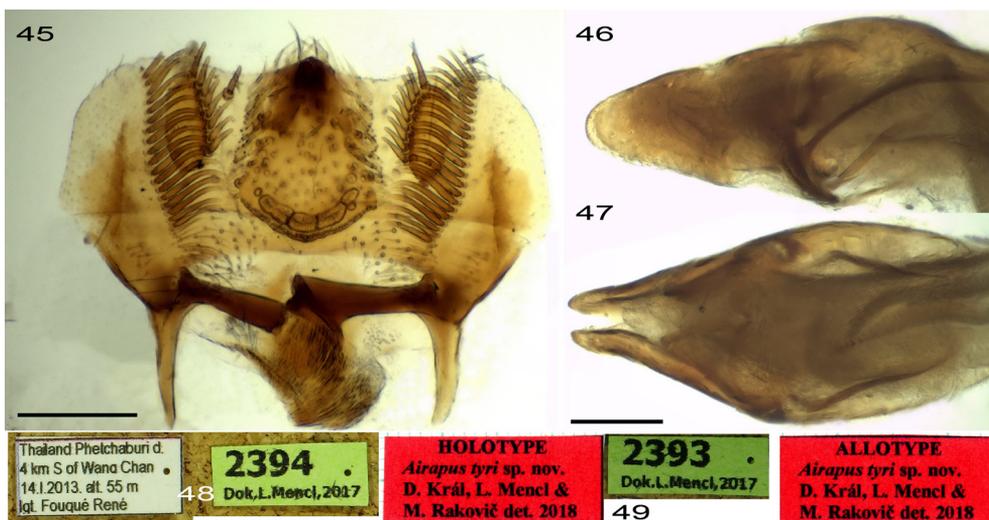


Figs. 41-44. *Airapus tyri* sp. nov., details in ventral view: 41- mesometaventrums, holotype, ♂; 42- abdomen, holotype, ♂; 43- meso-metaventrums, allotype, ♀; 44- abdomen, allotype, ♀. Scale lines 0.5 mm. Photographs by L. Mencl.

Head (Figs. 37-38) moderately convex, without frontoclypeal suture; head surface densely punctate (punctures much larger than intervals between them), punctures longitudinal anteriorly, irregularly round posteriorly. Clypeus denticulate each side of wide anteromedian emargination, its lateral sides quite slightly sinuate after anterior denticles and then continuously arcuate and aligned with anterior margins of genae. Genae rounded, large, considerably exceeding eyes.

Epipharynx (Fig. 45). Transversal, anterior outline shallowly emarginate, lateral outlines regularly widely rounded; tormae and nesium well sclerotised, approximately symmetrical, apotormae short, only slightly indicated; epitorma pentagonal, well sclerotised, covered with group of distinct, sparse sensilla laterally and with two sinuate rows of dense sensilla basally; corypha with two spines; prophobae sclerotised, each with only one distinct spine; adelochaetae consisting of row of 8-9 closely spaced spines; chaetopariae with dense row of about 20 long stout spines; ipophobae weakly sclerotized, bare.

Pronotum (Fig. 39) transversal (length-to-width ratio 0.690), widest before posterior angles. Anterior angles rounded, posterior angles distinctly truncate and excised. Lateral margins straight. Pronotum considerably wider than head. Pronotum surface regularly



Figs. 45-49. *Airapus tyri* sp. nov., epipharynx and aedeagus, holotype, ♂, and etiquettes under holotype and allotype: 45- epipharynx; 46- aedeagus, lateral view; 47- aedeagus, ventral view; 48- etiquettes under holotype; 49- etiquettes under allotype. Scale lines 0.1 mm. Photographs by L. Mencl.

covered with medium-sized punctures stepwise decreasing in size from basal margin to anterior margin, intermixed with smaller punctures. Posterior part of lateral margins, margins of posterior corners and basal margin irregularly crenulate and sparsely equipped with enormously short macrosetae observable under high magnification only.

Scutellum small, triangular, elongate (about twice as long as wide), with rounded apex.

Elytra (Figs. 35-36 and 40) with 10 striae and 10 intervals, with distinct humeral denticles, elongate (length-to-width ratio of 1.56), moderately broader behind (broadest point behind half elytra length), lateral margins of elytra continuously arcuate throughout. Elytra 2.29 times longer than pronotum and as wide as pronotum. Striae narrow, distinct, with elongate oval punctures distinctly crenating inside margins of intervals, distances between punctures smaller than puncture lengths. Intervals costate. Elytral intervals enormously finely punctate on their outside surfaces; punctures visible under very high magnification only, distances between them irregular, much larger than puncture diameter. Upper edges of intervals (costae) in apical area and upper edge of epipleurae in about posterior half with very short macrosetae observable under high magnification only.

Legs in dorsal view: protibia with three large teeth in anterior part of outer margin, not denticulate in basal part, its upper surface smooth, impunctate, mostly glabrous, apical spine blunt, reaching nearly to apex of basal protarsomere 2; basal meso- and metatarsomeres long, but shorter than terminal spines of mesotibia and metatibia, respectively.

Ventral surfaces (Figs. 33-34 and 41-44) shining, blackish brown, mostly glabrous. Femora and abdominal ventrites punctate throughout. Punctures of abdominal ventrites moderately larger than those of femora. Meso-metaventral plate with few punctures, with distinctly concave longitudinal area. Abdominal ventrites 4-6 finely fluted anteriorly, fluting most considerable in ventrite 6.

Pygidium not considerably sculptured.  
Aedeagus as in Figs. 46-47.

**Sexual dimorphism.** Not considerably expressed.

**Variability.** Within the type series (18 specimens), the body length varies between 3.1 and 3.8 mm. In most specimens, the colours are similar to those in the holotype, but there are few specimens having their elytra rather brown than blackish brown.

**Collecting circumstances.** Unknown.

**Distribution.** Thailand, Phetchaburi Province.

**Name derivation.** Patronymic, after Václav Týr (Žihle, Czech Republic), who provided us with the type material.

**Differential diagnosis.** See the key below. The following combination of characters is important for differentiating the species *Airapus tyri* sp. nov. from other *Airapus* species still described from the Oriental Region: the body length is of 3.1-3.4 mm; the clypeus is dentate each side its anteromedian emargination; the shape of punctures on the head is characteristic, as shown in Figs. 37-38 the posterior angles of the pronotum are moderately truncate and excised in the dorsal or lateral views (strongly truncate and excised in the ventral view), the pronotum surface is regularly covered with medium-sized punctures stepwise decreasing in size from the basal margin to the anterior margin; there is a pair of not very deep but quite distinct oblique impressions on the pronotum surface; the elytra are subparallel in the dorsal view, large, elongate-oval punctures are present in elytral striae, considerably crenating costate elytral intervals.

#### TENTATIVE KEY TO ASIAN *AIRAPUS* SPECIES

- 1 (2) Dorsal surfaces setaceous throughout, clypeus rounded each side of anteromedian emargination, elytra (in dorsal view) oval, arcuately narrowing from their widest point toward their base as well as toward their apices. Body length 4 mm. Vietnam (northern, central as well as southern parts of the country). ..... *A. sicardi* (Paulian)
- 2 (1) Dorsal surfaces prevalently glabrous (sometimes with short, fine setae on elytral apex), clypeus dentate or at least angulate each side of anteromedian emargination, elytra (in dorsal view) parallel or subparallel.
- 3 (6) Relatively larger species (body length of 5 mm or above), elytral intervals convex (neither costate nor subcostate).
- 4 (5) Pronotum densely, very coarsely punctate, with pair of considerable oblique impressions, posterior pronotal angles considerably truncate, elytral intervals impunctate. Body length 5.6-6.2 mm. Indonesia (Sumatra). ..... *A. sumatrae* (Fairmaire)
- 5 (4) Pronotum with medium-sized punctures intermixed with fine punctures, with pair of shallow, obsolete oblique impressions, posterior pronotal angles rather rounded, elytral intervals finely but distinctly punctate (2-3 punctures per interval width). Body length 5.0-5.5 mm. Malaysia (Sabah State), Indonesia (E. Kalimantan Province). ..... *A. jeni* sp. nov.
- 6 (3) Relatively smaller species (body length under 4 mm), elytral intervals costate.

- 7 (8) Elytral striae with large, elongate-oval punctures considerably crenating intervals (Figs. 35-36), surfaces of elytral intervals uneven but impunctate. Body length 3.1-3.8 mm. Thailand (Phetchaburi Province). ..... *A. tyri* sp. nov.
- 8 (7) Elytral striae with narrow punctures, at most slightly or moderately crenating intervals (Figs. 1-2), surfaces of elytral intervals even but distinctly finely punctate. Body length 3.4-3.7 mm. Malaysia (Kelantan State). ..... *A. cechovskyi* sp. nov.

## DISCUSSION

According to Stebnicka & Howden (1996), the genus *Airapus* is close to the genus *Euparotrix* Stebnicka & Howden, 1996 because of explanate sides of the pronotum and certain characters observable on the ventral side as mentioned in the next paragraph. *Euparotrix* is, however, an Australian, monospecific, strongly modified genus endemic to Lord Howe Island; its type species is *E. squamosa*, originally described in *Euparia*.

Within the framework of the Oriental fauna of the subfamily Aphodiinae, tribe Eupariini, it is necessary to differentiate the genus *Airapus* from the genus *Ataenius*. For these purposes, the following characters of *Airapus* and *Ataenius* can be employed, as pointed out in the key to genera by Stebnicka & Howden (1996):

*Airapus*: "Sides of pronotum explanate; mesosternum weakly convex or flat with variously shaped callosities; middle coxae widely separated, flattened, parallel or subparallel".

*Ataenius*: "Sides of pronotum slightly reflexed or not; mesosternum evenly convex or elevated longitudinally at middle, without callosity; middle coxae slightly separated or contiguous, rarely flattened, oblique".

All the currently known Asian species of the genus *Airapus* come from the Oriental Region, more explicitly from Southeast Asia. They are five in number: two formerly described species (see the part Introduction) and three new species described here (see the part Results). Their outline can be found in the key above. The tentative nature of the key is obvious due to the fact that in the near future, it is possible to expect discoveries of further species of the genus from the region of interest. Having this fact in mind, in differential diagnoses, we presented not only references to the present dichotomic key, but also combinations of characters important for the differentiation of particular species. We also believe that detailed photos provided here will be helpful in studying *Airapus* specimens in terms of considering any described or new species.

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