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RESEARCH ARTICLE

Revision of the *Agrilus adonis* species-group (Coleoptera: Buprestidae: Agrilini) with description of sixteen new species from southeastern Asia

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Abstract: The newly defined *Agrilus adonis* species-group comprising thirty taxa from Southeast Asia is revised based on the examination of type specimens. The taxonomic concept and distribution of all known taxa is reexamined for the first time since they were described. The complete commented bibliographic data are given for each name. The key to species is provided and complemented with illustration of habitus and genitalia. Images of all primary types are also included. The distribution of selected species is shown on maps. The following sixteen new species are described: *Agrilus acrobeles* **sp. nov.**; *A. bunsu* **sp. nov.**; *A. cechovskyi* **sp. nov.**; *A. curiosus* **sp. nov.**; *A. garo* **sp. nov.**; *A. iban* **sp. nov.**; *A. jakli* **sp. nov.**; *A. kuchingi* **sp. nov.**; *A. lembik* **sp. nov.**; *A. meratus* **sp. nov.**; *A. orangulu* **sp. nov.**; *A. serratus* **sp. nov.**; *A. strbai* **sp. nov.**; *A. upsilon* **sp. nov.**; *A. vir* **sp. nov.** and *A. xiphos* **sp. nov.**. The name *emeritus* Descarpentries & Villiers, 1963 is removed from the synonymy of *Agrilus perlisensis* Fisher 1936 and revalidated as the name for species *A. emeritus* Descarpentries & Villiers, 1963. Nine new synonyms are proposed: *Agrilus adonis* Deyrolle, 1864 (= *A. perlisensis* Fisher, 1936 **syn. nov.** = *A. testor* Kerremnas, 1900 **syn. nov.**); *A. emeritus* Descarpentries & Villiers, 1963 (= *A. deuvei* Baudon, 1965 **syn. nov.** = *A. souvannavongsi* Baudon, 1968 **syn. nov.**); *A. famulus* Kerremans, 1900 (= *A. convergens* Fisher, 1930 **syn. nov.** = *A. japanensis* Obenberger, 1935 **syn. nov.**); *A. insularis* Deyrolle, 1864 (= *A. nigrocyaneus* Deyrolle, 1864 **syn. nov.** = *A. falsulus* Obenberger, 1924 **syn. nov.**); *A. malasicus* Fisher, 1930 (=*A. bettotanus* Fisher, 1930 **syn. nov.**). Some of those names were already treated as invalid ones but in the synonymy of different species. Their taxonomic history is recognizable from commented references cited at each name.

Key words: Taxonomy, new taxa, new synonyms, Oriental region.

Introduction

The current subgeneric classification in the genus *Agrilus* Curtis, 1825 with more than 3000 species is unsustainable and desperately needs an extensive revision on a global scale. Prior to such a revision, the adequate knowledge of species diversity of the whole genus must be achieved.

The enormous species richness in *Agrilus* has two consequences. The first one is a stream of descriptions of new species, the second one is a very poor knowledge on those already described and never revised. At this stage, any natural subgeneric classification appears to be premature. On species level, however, the operational categories allowing to work with logical entities of species are needed. The species-groups meet these requirements best because unlike subgenera, their names are not regulated by the Code thus having no impact to the synonymy of generic-group names.

In the past, many entomologists described *Agrilus* species while ignoring type examination of previously described species. The consequences are disastrous and the disorder in alpha taxa taxonomy in the last decades of 20th century prevented any serious work.

This paper is further in the series of revisionary works aiming to resolve taxonomic problems and describe new taxa.

Material and methods

Taxonomic and nomenclatural act. All new taxonomic or nomenclatural acts are highlighted at relevant names and summarized in the abstract. **New synonyms**. Some new synonyms proposed herein were already treated as invalid but in synonymy of different species. The taxonomic history of all names is recognizable from commented references cited for each name.

Format. Species are cited in alphabetical order with the following structure: synonymy, references, type material, examined specimens, distribution and remarks. **Synonymy**. The first is cited the valid specific name with its author and year. Invalid names follow in chronological order and same format. Each invalid synonym is preceded by the Equals sign "=". **References** to names are ordered chronologically and include a brief information enclosed in round brackets. **Type material**. The study is based on examination of type material of all included species. Data on types are grouped by nominal taxa and cited in the original generic combination. The information includes original number of types, published type locality, status of primary type (holotype, lectotype, syntype), deposition, primary type label data cited verbatim and a reference to type designation or information to secondary types (if any). **Examined specimens**. Locality data of examined specimens are grouped by country and secondary administrative unit in alphabetical order. Data are cited in following format: *Nr (Collection)*: *Locality (Coordinates) Month(s)-Year* where *Nr* = number and sex (if available); *Collection* = collection coden; *Locality* = collecting site including altitude if available; *Coordinates* = original or derived from the locality; *Month*(s)-*Year* = month(s) and year of collecting. **Distribution**. Distributional data are grouped by country and secondary administrative units in alphabetical order. **Remarks**. Any additional information or explanatory notes are given in remarks.

Descriptions. All new taxa descriptions with a few modifications follow the character state matrix introduced by Jendek & Grebenikov (2011) where all characters were explained and illustrated. Descriptions are generated as an output from the MS Access database. This approach allows fast and efficient describing and generates consistent character state matrix.

Along with key, illustration of habitus and male genitalia, as well as with diagnostic and variability information, it provides adequate data for identification.

Maps were generated by using the SimpleMappr (http://www.simplemappr.net), the free mapping tool developed by Shorthouse (2010).

Collections codens

BMNH	The Natural History Museum, London, United Kingdom
EJCB	Collection of E. Jendek, Bratislava, Slovak Republic [presently in Ottawa, Canada]
HHCC	Collection of H. A. Hespenheide, University of California, Los Angeles, USA
ISNB	Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium
MHNB	Muséum d'histoire naturelle, Béziers, France
MNHN	Muséum National d'Histoire Naturelle, Paris, France
NMPC	National Museum (Natural History), Prague, Czech Republic
USNM	National Museum of Natural History, Washington D.C., USA

Other abbreviations and symbols

\	indicates data from separate labels
""	indicate verbatim text
[ ]	enclose annotation or comment
[h]	handwritten
[p]	printed

Results

Agrilus adonis species-group

Agrilus adonis species-group comprises medium sized species with unicuspidate (Figs. 2D, 2E, 2F), bicuspidate (e.g. Figs. 2A, 2B, 2C) or denticulate (Fig. 1E) elytral apices and obvious sexual modifications of antennae, legs, ventral side and pubescence in most males.

Eyes are large (width of eye is larger than half width of vertex) (e.g. Figs. 2D, 2E, 2F) or very large (width of eye is larger than width of vertex) (Figs. 2A, 2B, 2C, 6B). Antennae are slender and often reach beyond half of pronotal length. Antennae in male are often longer and modified (Fig. 2A). The frons sculpture in lower part is rough, the upper one is fine and obviously microreticulate (Fig. 1A).

The pronotum is usually widest in middle or anterior half. Pronotal disk has lateral (Fig. 1C) or posterolateral impressions (Fig. 1D). The prehumerus is carinal and rarely tubercular. It is strongly arcuate (Fig. 1C), rarely almost straight (Fig. 1D) and extending across posterior half of pronotum.

The elytra are variously pubescent, rarely glabrous (Fig. 3A). The pubescence varies from continuous (Fig. 3D) to discontinuous with glabrous part in apical third (most species). Species with pubescent elytra have elytral apices always pubescent (e.g. Figs. 4B, 4C). The pubescence in anterior half has often shape of inverted V, X or Y (e.g. Figs. 2C, 2F, 3F). Legs in males are often modified by having longer metatarsi (e.g. Figs. 2A, 2B, 2C), arcuate protibiae and mesotibiae (e.g. Fig. 2A) or erect pubescence on mesotibiae and metatibiae (Fig. 3F).

The ventral side in males bears usually strip of erect medial pubescence extending from prosternal lobe to intercoxal process of abdomen. The male basal ventrite is often armed with a pair of tubercles (Fig. 1B) or with medial impression. The pygidium in both sexes is usually angulate (Figs. 1B, 1F), rarely arcuate or armed with protrusion or spine (Fig. 6D). The apex of last ventrite often bears medial carinula (Fig. 1F). The sternal groove on apex of last ventrite is subtruncate or finely angulately sinuate.

The aedeagus is subparallel (e.g. Fig. 10E) or expanded in apical half (e.g. Fig. 8B), strongly sclerotized. Tegmen (e.g. Fig. 9A) or medial lobe (e.g. Figs. 8C) of aedeagus may bear transverse carina. Females of all species seem to have elongate or markedly elongate ovipositor.

Species of *Agrilus adonis* species-group are very similar to *A. albogaster* Deyrolle, 1864 and some twenty other species mostly from Maritime Southeast Asia and Oceania. These species have sexual dimorphism and elytral apices similarly modified as those in *Agrilus adonis* species-group, but they display different trends in development of pronotal characters.

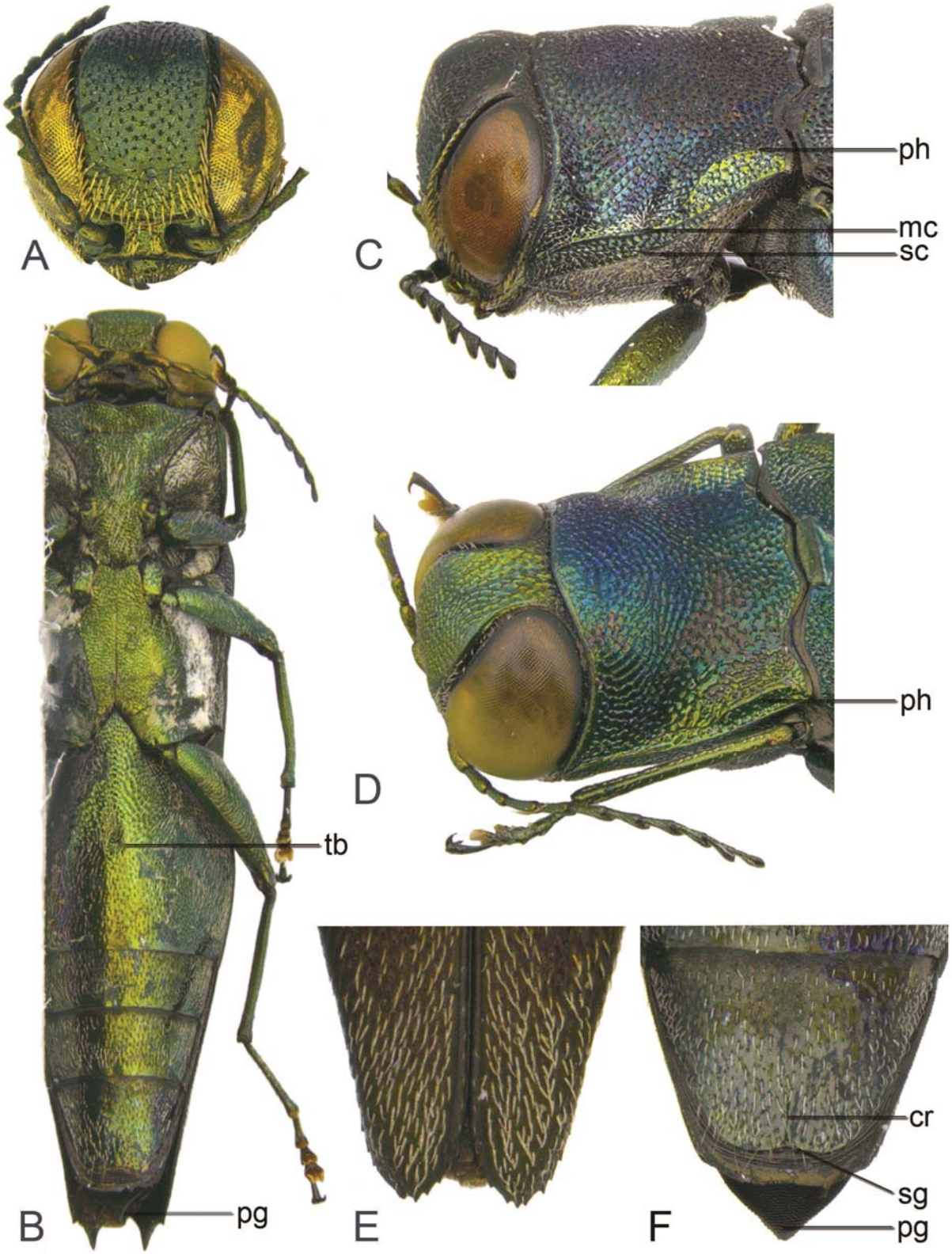
Key to species

The key is based predominantly on male morphological characters. Female of some species cannot be reliably distinguished.

The key does not include *A. banahoensis* Fisher, *A. saundersianus* Obenberger, *A. subornatus* Kerremans and *A. subspinosus* Fisher which are known to me from the type specimens only. The primary types of these species are illustrated.

1 Eyes in male very large, width of eye distinctly larger than width of vertex (dorsal view) (Figs. 2A, 2B, 2C, 6B) 2
– Eyes in male smaller, width of eye equal or smaller than width of vertex (dorsal view) 5
2 Antennomeres 7-11 in male obviously expanded; prosternal process with medial tubercle armed with cluster of short bristles ..... *A. curiosus* sp. nov. (6.1 mm) (Fig. 2A)
– Antennomeres 7-11 in male not expanded; prosternal process without tubercle 3
3 Prehumerus almost straight with anterior and posterior ends distant from pronotal margin (Fig. 1D); anteromedial pronotal protuberance less distinct ..... *A. bunsu* sp. nov. (8.4 mm) (Fig. 2B)
– Prehumerus arcuate and extending about to half of pronotal length (Fig. 1C); at least posterior end of prehumerus joined with pronotal margin; anteromedial pronotal protuberance obvious 4
4 Elytral apices distinctly bicuspidate; anteromedial pronotal protuberance obvious ..... *A. protenor* (5.1–7.0 mm) (Fig. 2C)
– Elytral apices indistinctly bicuspidate; anteromedial pronotal protuberance faint ..... *A. contractus* (5.8 mm) (Fig. 6B)
5 Elytral apices distinctly unicuspidate (Figs. 2D, 2E, 2F) 6
– Elytral apices bicuspidate or with denticulate margin 8
6 Apical margin of pygidium angulate; dorsal side unicolor blue ..... *A. xiphos* sp. nov. (5.4 mm) (Fig. 2D)
– Apical margin of pygidium with long spine; dorsal side bicolor 7
7 Basal ventrite in male without tubercles; aedeagus widest apically (Fig. 9I) ..... *A. pictithorax* (5.2–7.2 mm) (Fig. 2E)
– Basal ventrite in male with tubercles; aedeagus subparallel (Fig. 10E) ..... *A. tripartitus* (5.5–6.5 mm) (Fig. 2F)
8 Elytral apices with vague cuspidation or with denticulate margin (Fig. 1E) 9

– Elytral apices distinctly bicuspidate 15
9 Dorsal side very dark and unicolor; elytra without discernible pubescence, glabrous ..... *A. cechovskyi* sp. nov. (4.7–5.6 mm) (Fig. 3A)
– Dorsal side unicolor blue or bicolor (blue or green head with pronotum, golden-green elytra); elytra pubescent 10
10 Eyes in male larger, width of eye equal to width of vertex (dorsal view) (Fig. 3B, 3C) 11
– Eyes in male smaller, width of eye smaller than width of vertex (dorsal view) 12
11 Body stout, dorsal side unicolor blue; pronotum widest in middle ..... *A. thalassinus* (5.0–5.7 mm) (Fig. 3B)
– Body prolonged, dorsal side bicolor; pronotum widest in anterior half ..... *A. lembik* sp. nov. (4.8–6.3 mm) (Fig. 3C)
12 Elytral pubescence continuous along sutural margin, dorsal side bicolor (head and pronotum blue or blackish, elytra golden); male unknown ..... *A. malasicus* (5.0–5.4 mm) (Fig. 3D)
– Elytral pubescence discontinuous in apical third 13
13 Basal ventrite in male without tubercles ..... *A. kuchingi* sp. nov. (4.8 mm) (Fig. 3E)
– Basal ventrite in male with pair of tubercles 14
14 Body smaller (5.2 mm); pronotum widest in middle; prosternal process in male glabrous; tubercles on basal ventrite in male sharply protuberant ..... *A. meratus* sp. nov. (5.2 mm) (Fig. 3F)
– Body larger (5.8-7.1 mm); pronotum widest in anterior half; prosternal process in male with erect pubescence; tubercles on basal ventrite in male flat ..... *A. upsilon* sp. nov. (5.8–7.1 mm) (Fig. 4A)
15 Pronotum golden-orange or carmine (Figs. 4B, 4C) 16
– Pronotum blue, golden-green or reddish 17
16 Body smaller; prehumerus carinal; apical margin of pygidium with long spine ..... *A. acrobeles* sp. nov. (5.2 mm) (Fig. 4B)
– Body larger; prehumerus tubercular; apical margin of pygidium angulate ..... *A. garo* sp. nov. (6.3 mm) (Fig. 4C)
17 Tegmen of aedeagus with obvious transverse carina (Figs. 9A, 9H, 10H) 18
– Tegmen of aedeagus with vague or without transverse carina 20
18 Basal ventrite in male with tubercles, pronotum more prolonged ..... *A. vir* sp. nov. (6.2 mm) (Fig. 4D)
– Basal ventrite in male without tubercles; pronotum subquadrangular 19
19 Aedeagus spiniform (Fig. 9A) ..... *A. iban* sp. nov. (4.9 mm) (Fig. 4F)
– Aedeagus robust, widest in apical part (Fig. 9H) ..... *A. orangulu* sp. nov. (5.9 mm) (Fig. 4E)
20 Tegmen of aedeagus dorsoventrally flattened (Figs. 8I, 10A) 21
– Tegmen of aedeagus convex 22
21 Aedeagus less expanded apically (Fig. 8I) ..... *A. famulus* (5.0–6.6 mm) (Fig. 5A)
– Aedeagus more expanded apically (Fig. 10A) ..... *A. serratus* sp. nov. (5.6 mm) (Fig. 5B)
22 Medial lobe of aedeagus with obvious transverse carina with sharp lateral angles (Figs. 8B, 8C) ..... *A. adonis* (5.1–7.3 mm) (Fig. 5C)
– Medial lobe of aedeagus with vague transverse protuberance without sharp lateral angles (Figs. 8G, 8H, 9B, 9C, 9D, 10B, 10C) 23
23 Apex of medial lobe of aedeagus sharp with sinuate sides (Fig. 8H) ..... *A. emeritus* (4.8–7.8 mm) (Fig. 5D)
– Apex of medial lobe of aedeagus widely obtuse with evenly arcuate sides (Figs. 9C, 9D, 10C) .....
Aedeagus (Figs. 9B, 9C) ..... *A. insularis* (5.1–7.2. mm) (Fig. 5E)
Aedeagus (Fig. 10B, 10C) ..... *A. strbai* sp. nov. (6.4–8 mm) (Fig. 5F)
Aedeagus (Fig. 9D) ..... *A. jakli* sp. nov. (7.7 mm) (Fig. 6A)



Figures 1A–1F. Morphology of *Agrilus*. **1A,** *A. famulus* Kerremans, 1990 head (frontal view); **1B,** *A. bunsu* sp. nov. Holotype, ventral side; *tb* = tubercles, *pg* = pygidium; **1C**, *A. emeritus* Descarpentries & Villiers, 1963 head and pronotum; *ph* = prehumerus; *mc* = marginal carina; *sc* = submarginal carina; **1D,** *A. bunsu* sp. nov. Holotype, head and pronotum; *ph* = prehumerus; **1E,** *A. lembik* sp. nov. Holotype, elytral apices; **1F,** *A. strbai* sp. nov. Holotype, last ventrite and pygidium, *cr* = carinula, *sg* = sternal groove, *pg* = pygidium.

***Agrilus acrobeles* sp. nov.** Figs. 4B, 8A

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Description: Size: 5.2 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: subparallel; Sculpture density: dense. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: slightly arcuate; Maximal width: at middle; Anterior margin: subequal to posterior. **Anterior lobe**: Development: obvious; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: anteromedial and posteromedial. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior 1/5-1/4 of marginal carina. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: distal only; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: with spine. **Last ventrite**: Shape: with wide apex; Disk: with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: angulately sinuate; Sinuosity (depth): very shallow. LEGS. **Metatarsus**: Length to metatibia: distinctly shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: subparallel.

Variability: Unknown. **Sexual dimorphism**. The basal ventrite in male with pair of fine tubercles. Ventral side lacks erect pubescence. The female is unknown.

Diagnosis: *Agrilus acrobeles* sp. nov. is characterized by smaller size and bright bicolor dorsal side (purple pronotum, dark blue head and elytra). The apex of last ventrite is armed with a spine (Fig. 4B) and the form of aedeagus is very distinctive (Fig. 8A).

Type material: Type locality: Indonesia, Riau, Moeara Mahat Sumatra (= Muaramahat) [00°16'N, 100°49'E]. **Type specimens**: Holotype ♂ (EJCB): "Moeara Mahat Sumatra".

Distribution: Indonesia: Riau.

Etymology: The specific name *acrobeles* (pointed at the end) is a combination from the Greek *akron* (top, summit, peak) and *belos* (dart, arrow). The specific epithet refers to cuspidate elytral apices.

***Agrilus adonis* Deyrolle, 1864** Figs. 5C, 8B, 8C, 11B, 7A, 7K, 7O

adonis Deyrolle, 1864
Deyrolle 1864: 139, 171-172.
Gemminger & Harold 1869: 1436 (catalog).
Saunders 1871: 123 (catalog).
Kerremans 1892: 244 (catalog).
Kerremans 1903: 281 (catalog).
Moulton 1911: 177 (faunal records; Borneo: Sarawak).

Obenberger 1936: 1070 (world catalog).
Jendek 1998: 316 (lectotype designation).
Jendek 2005: 4 (synonymy).
Bellamy 2008: 1951 (world catalog).

= *testor* Kerremans, 1900 **syn**. **nov**.
Kerremans 1900a: 339.
Kerremans 1903: 277 (catalog).
Obenberger 1936: 1105 (world catalog).
Jendek 2007: 93 (lectotype designation).
Bellamy 2008: 2326 (world catalog).

= *perlisensis* Fisher, 1936 **syn**. **nov**.
Fisher 1936: 174-176.
Bellamy 1994: 361 (holotype in USNM).
Bellamy 2008: 2231 (world catalog).
Jendek 2012: 13 (synonymy).
Jendek & Poláková 2014: 276-277 (critical host plant review).

Type material: *Agrilus adonis* Deyrolle, 1864 (Fig. 7A). Described from inexplicit number of syntypes. **Type locality**: "Singapoor". **Type specimens**: Lectotype, sex not examined (MNHN): "Transcriptio [p] Adonis Deyr. Singapoor [h] \ Muséum Paris 1952 coll. R. Oberthur [p] [yellow label]". Lectotype by Jendek (1998). Secondary types: 1 paralectotype (MNHN).

Agrilus testor Kerremans, 1900 (Fig. 7O). Described from inexplicit number of syntypes. **Type locality**: "Sumatra: Hindrapoera". **Type specimens**: Lectotype ♀ (BMNH): "TYPE [p] [round label with red border] \ Sumatra Weyers [h] \ testor Kerr. Type [h] \ Kerremans 1903-59 [p] \ A. testor Kerrem. Sumatra [h]". Lectotype by Jendek (2007).

Agrilus perlisensis Fisher, 1936 (Fig. 7K). Described from holotype by monotypy. **Type locality**: "Perlis, Bukit Jerneh, Malay Peninsula". **Type specimens**: Holotype ♂ (USNM): "Malaya [p] Perlis Bukit Jerneh 17 - 3 [h] 19 [p] 36 [h] \ TypeNo [p] 51756 [h] USNM [p] [red label] \ Agrilus perlisensis Fisher [h]".

Examined specimens: **INDONESIA**. **Riau**: 1 ♂ (EJCB): Bukit Tigapuluh National Park (05°50'S / 102°26'E) 1-2000. **MALAYSIA**. **Johor**: 1 ♀ (EJCB): Mersing, Air Papan env., 50 m (02°31'45"N / 103°49'11"E) 4-2011; 2 ♀ (EJCB): Endau Rompin National Park, 120 - 300 m (02°37'12"N / 103°21'E) 5-2013. **Pahang**: 2 ♂ (EJCB): Banjaran Benom, Lata Jarom (03°56'04"N / 102°01'48"E) 3-1997; 2 ♂ (EJCB): Tioman Island, Kampung Tekek env. (02°49'07"N / 104°10'17"E) 3-2009; 1 ♀ (EJCB): Benom Mts., 15 km E Kampong Dong (03°53'N / 102°01'E) 3, 4-1998; 2 ♀ (EJCB): Endau-Rompin Nat. Park, Salendang env. (02°37'32"N / 103°22'44"E) 4, 5-1993; 1 ♂ (EJCB): Kampung Kuala Boh vill., 850-1050 m (04°27'54"N / 101°34'48"E) 3, 4-2001; 4 ♀ (EJCB): Benom Mts, 15 km E Kampong Dong, 700 m (03°53'N / 102°01'E) 4-1998; 15 (EJCB): Lata Lembik, 30 km NE Raub, 200-400 m (03°56'N / 101°38'E) 4, 5-2002. **Perak**: 1 ♂, 2 ♀ (EJCB): Malacca (02°15'E / 102°15'40"E); 1 ♂, 2 ♀ (EJCB): Belum Forest, 84 km E of Gerik, alt. 950 m (05°32'53"N / 101°36'38"E) 3, 4-2014; 1 ♀ (EJCB): Felda Lasah vill., 120-390 m (05°02'18"N / 101°12'18"E) 3-2001. **Sarawak**: 1 ♂ (EJCB): Sarawak (02°52'N / 113°27'16"E). **THAILAND**. **Phuket**: 2 ♂ (EJCB): Phuket Island (07°58'N / 098°21'05"E) 1, 2-1992. **VIETNAM**. **Gia Lai**: 1 ♂ (EJCB): 40 km NW Ankhe, Buon Luoi, 620-750 m (14°10'N / 108°30'E) 3, 4-1995.

Distribution: Indonesia: Riau, Sumatera Utara. **Malaysia**: Johor, Pahang, Perlis, Perak, Sarawak. **Singapore**. **Thailand**: Phuket. **Vietnam**: Gia Lai, (Fig. 11B).

Remarks: *Agrilus adonis*, *A. insularis* and *A. emeritus*, *A. strbai* sp. nov. and *A. jakli* sp. nov. can be reliably distinguished only by the shape of aedeagus, particularly by the form of its medial lobe. While *A. adonis* and *A. emeritus* are usually uniformly blue or green on dorsal side, *A. insularis*, *A. strbai* sp. nov. and *A. jakli* sp. nov. vary from uniformly blue or green to bicolor (blue head and pronotum and golden elytra). The pubescence is generally discontinuous at apical third of elytra, but specimens with glabrous elytra (*A. emeritus*) or with wide adsutural stripes (*A. adonis*, *A. strbai* sp. nov.) are also known. Apex of elytra in all species bears two cusps size of which is either subequal or the one on pleural side is smaller, therefore the cusp on sutural side appears as prominent.

Agrilus banahaoensis Fisher, 1921 Fig. 6E

banahaoensis Fisher, 1921
Fisher 1921: 356, 366-367.
Obenberger 1924b: 561 (characters in key).
Obenberger 1936: 1075 (world catalog).
Bellamy 1994: 359 (holotype in USNM).
Bellamy 2008: 1989 (world catalog).

Type material: *Agrilus banahaoensis* Fisher, 1921. Described from holotype by monotypy. **Type locality**: "Mount Banahao, Luzon". **Type specimens**: Holotype, sex not examined (USNM): "Mt. Banahao P. I. Baker [p] \ Type No. [p] 54161 [h] U. S. N. M. [p] [red label] \ Holotype [p red ink] Agrilus banahaoensis Fisher [h] [white label with red border]".

Distribution. **Philippines**: Luzon island.

Remarks: *Agrilus banahoensis* is very similar to *A. emeritus* and *A. adonis* by blue color and by general appearance and it might be conspecific with the latter. Fisher (1921) declares the male, but brief examination of holotype indicates that the specimen can be a female (missing tubercles and pubescent strip on ventral side).

Agrilus bunsu sp. nov. Figs. 2B, 1B, 1D, 8D

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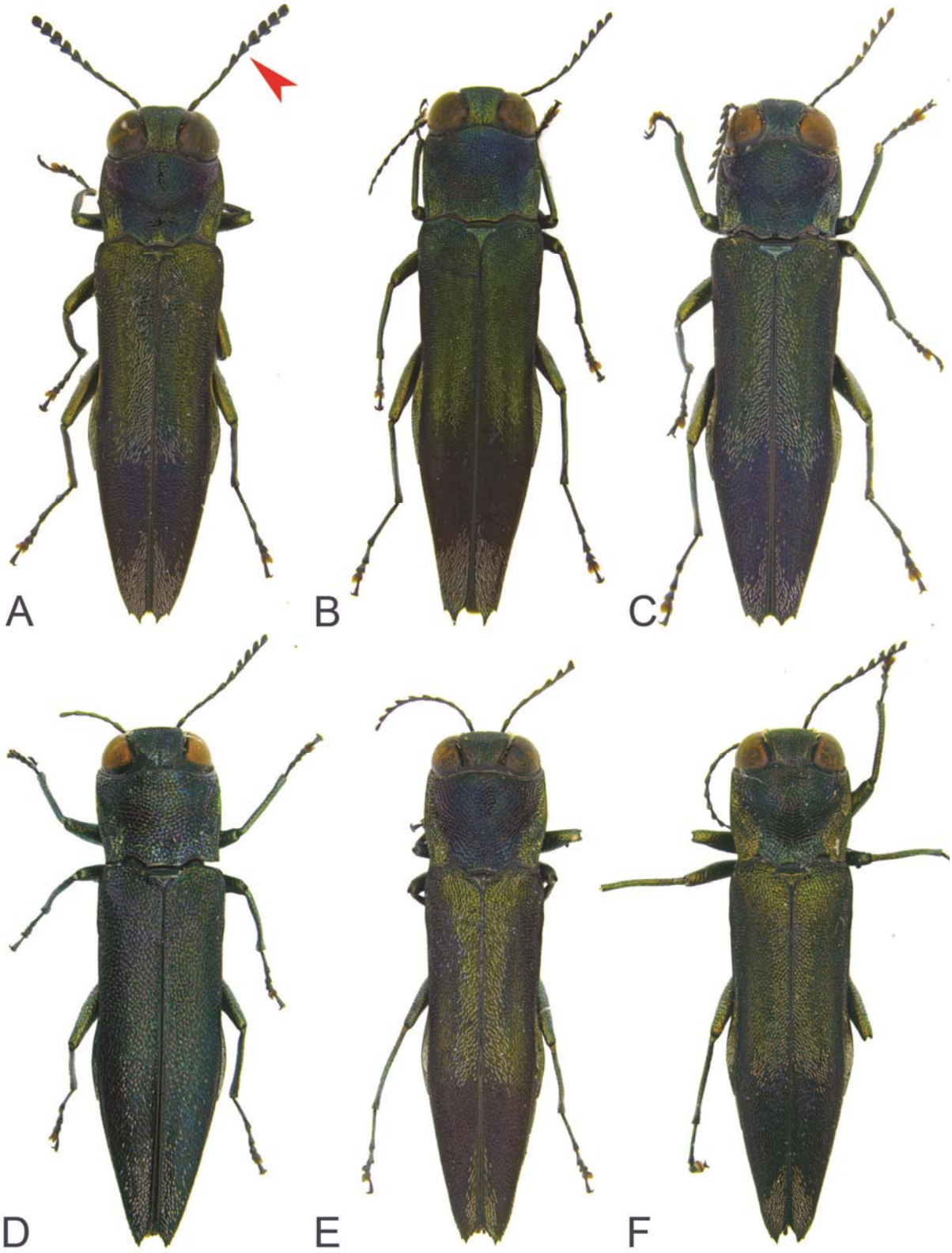
Description: Size: 8.4 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): tricolored. HEAD. Medial impression: shallow; Epistoma: raised above frons. **Vertex**: Sculpture elements: punctures; Sculpture aspect: arcuate. **Eyes**: Size: very large; Shape: markedly protruding head outline; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Length: very long; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: slightly arcuate; Maximal width: at middle; Anterior margin: subequal to posterior. **Anterior lobe**: Development: obvious; Shape: subangulate; Width: broad; Position: projecting beyond anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Convexity: with obvious medial protuberance; Impressions: posterolateral. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/3 of pronotal length; Anterior end: distant from lateral carina; Posterior end: distant from angles and margin; Arc: weak. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: bicolored; Alternative color: apical portion. **Apices**: Arrangement: separate; Shape: cuspidate or spinate; Number of



Figures 2A–2F. Habitus of *Agrilus*. **2A,** *A. curiosus* sp. nov., Holotype; **2B,** *A. bunsu* sp. nov., Holotype; **2C,** *A. protenor* Obenberger, 1924; **2D,** *A. xiphos* sp. nov., Holotype; **2E,** *A. pictithorax* Obenberger, 1924; **2F,** *A. tripartitus* Deyrolle, 1864.

cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: proximal and distal; Proximal (shape): like V, X, Y, T; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate. **Prosternal process**: Shape: slightly dilated; Sides: straight; Angles: obtuse; Disc: flat. **Metasternum**: Metasternal projection: flat, ABDOMEN. Tomentum: present. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: with short protrusion. **Last ventrite**: Shape: with wide apex; Apical margin: subtruncate; Disk: with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: arcuately sinuate; Sinuosity (depth): very shallow; Sinuosity (width): markedly wide. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: about as long or longer. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half.

Variability: Unknown. **Sexual dimorphism**. The male has long antennae and metatarsi, basal ventrite bears a pair of fine but distinct medial tubercles, medial strip of white, erect pubescence in male extends from prosternal lobe to intercoxal process of abdomen. The female is unknown.

Diagnosis: *Agrilus bunsu* sp. nov. belongs to a group of species with bicuspidate elytral apices and protuberance in anterior half of pronotum. It is distinguishable by larger size and by more prolonged pronotum with sides only slightly arcuate. The prehumerus is almost straight and extends through posterior third of pronotum with anterior and posterior ends distant from pronotal margin. Sternal groove on apex of last ventrite is widely, shallowly sinuate.

Type material: Type locality: Malaysia, Sarawak, Mt. Merinjak [01°05’20”N, 110°19’37”E]. **Type specimens**: Holotype ♂ (EJCB): “Sarawak, Mt. Merinjak”.

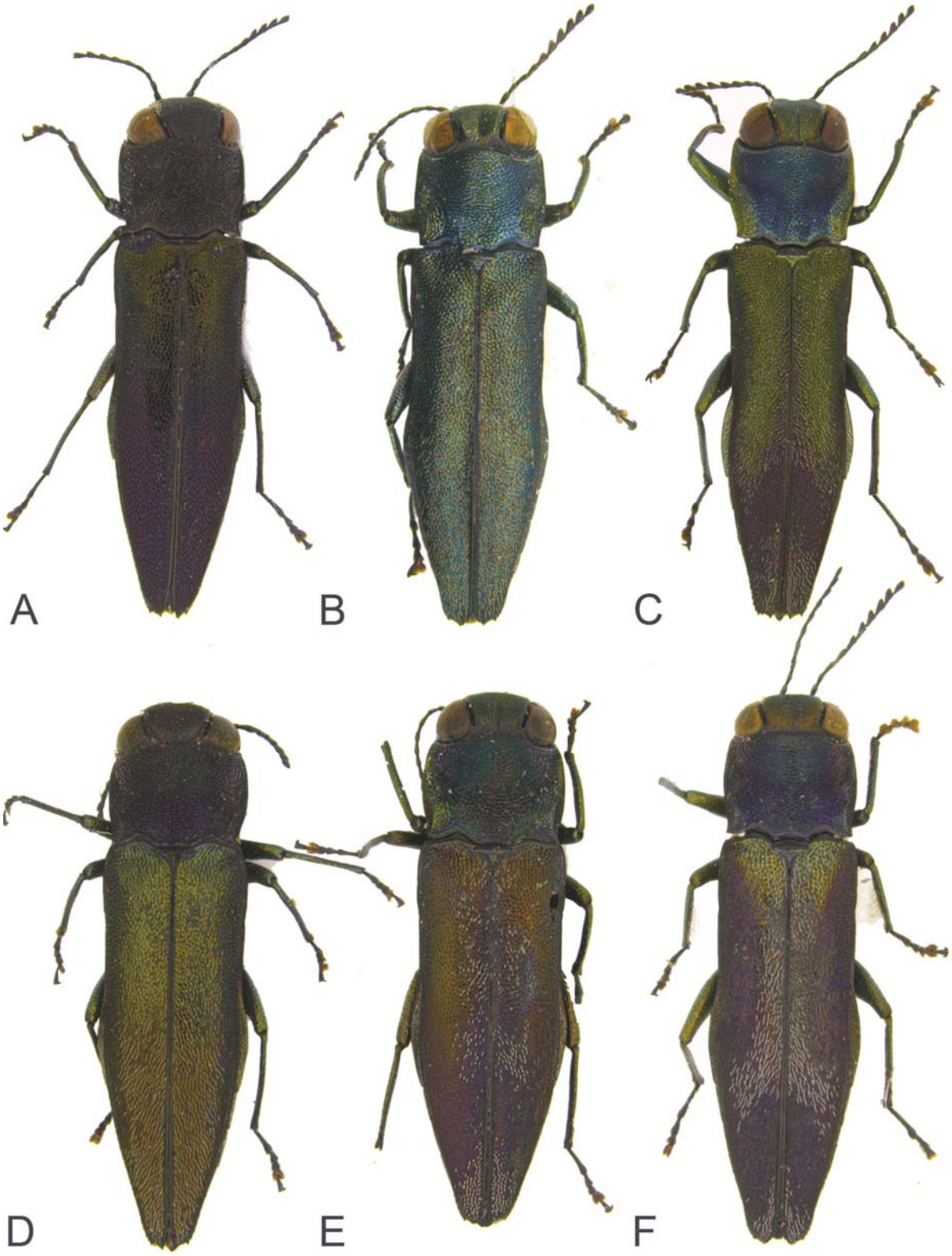
Distribution: Malaysia: Sarawak.

Etymology: The specific name is a noun in apposition relating to *Bunsu* - the supreme God of indigenous Iban people inhabiting Borneo.

***Agrilus cechovskyi* sp. nov.** Figs. 3A, 8E, 12A

urn:lsid:zoobank.org:act:C35BB5BC-C377-44C6-99CB-F7DB16EF04A1

Description: Size: 4.7–5.6 mm (Holotype 5.1 mm). BODY. Shape: cuneiform; Color (dorsally): unicolored. HEAD. Medial impression: shallow; Microstructure: present. **Vertex**: Sculpture elements: rugae; Sculpture aspect: subparallel; Sculpture intensity: superficial. **Eyes**: Size: large; Median orbit: converging ventrally. **Antennae**: Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Position: at level with anterior angles. **Posterior angles**: Shape: acute; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: posteromedial only. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: adjoining to lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: arcuate or cuspidate; Modifications: margin obviously



Figures 3A–3F. Habitus of *Agrilus*. **3A,** *A. cechovskyi* sp. nov., Holotype; **3B,** *A. thalassinus* Deyrolle, 1864; **3C**, *A. lembik* sp. nov., Holotype; **3D,** *A. malasicus* Fisher, 1930; **3E,** *A. kuchingi* sp. nov., Holotype; **3F,** *A. meratus* sp. nov., Holotype.

denticulate. **Pubescence**: Presence: without discernible pubescence. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: distinctly shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex.

Variability: The color of dorsal side varies from unicolor black with bluish tinge to slightly bicolor with pronotum dark-blue and elytra dark golden-green. **Sexual dimorphism**. The male has obvious pair of tubercles and medial impression on basal ventrite. The last ventrite is deeply impressed with medial carinula. The medial strip of pubescence on ventral side is present but shorter and restricted to prosternum. The female is unknown.

Diagnosis: *Agrilus cechovskyi* sp. nov. belongs to species having elytral apices not clearly bicupidate but narrowly subarcuate or subtruncate with denticulate margin. Among them, this species can be recognized by unicolor, very dark dorsal side, by elytra without discernible pubescence and by very distinctive aedeagus (Fig. 8E).

Type material: Type locality: Malaysia, Johor, 20km NW Kota Tinggi, Lombong Muntahak Hill [01°49'44"N, 103°50'E]. **Type specimens**: Holotype ♂, 7 ♂ paratypes (EJCB): "W Malaysia, Johor, 20km NW Kota Tinggi, Lombong Muntahak Hill, 28.i.-2.ii.2005, P. Čechovský leg."; 1 ♂ paratype (EJCB): "Singapore, Central Water Catchment, N1.39, E103.81, 20-22.v.2013, 50m, E. Jendek & O. Šauša leg."; 1 ♂ paratype (EJCB): "Sumatra (Aceh), Kutacane, Leuser Nat. Park, 400m, 25.ii.1991, Bocák & Bocáková lgt."; 1 ♂ paratype (EJCB): "Malaysia-Pahang, Banjaran Benom, Lata Jarom, 18-21.3.1997, Oliver Ďulík leg.".

Distribution: Indonesia: Aceh. **Malaysia**: Johor, Pahang. **Singapore**, (Fig. 12A).

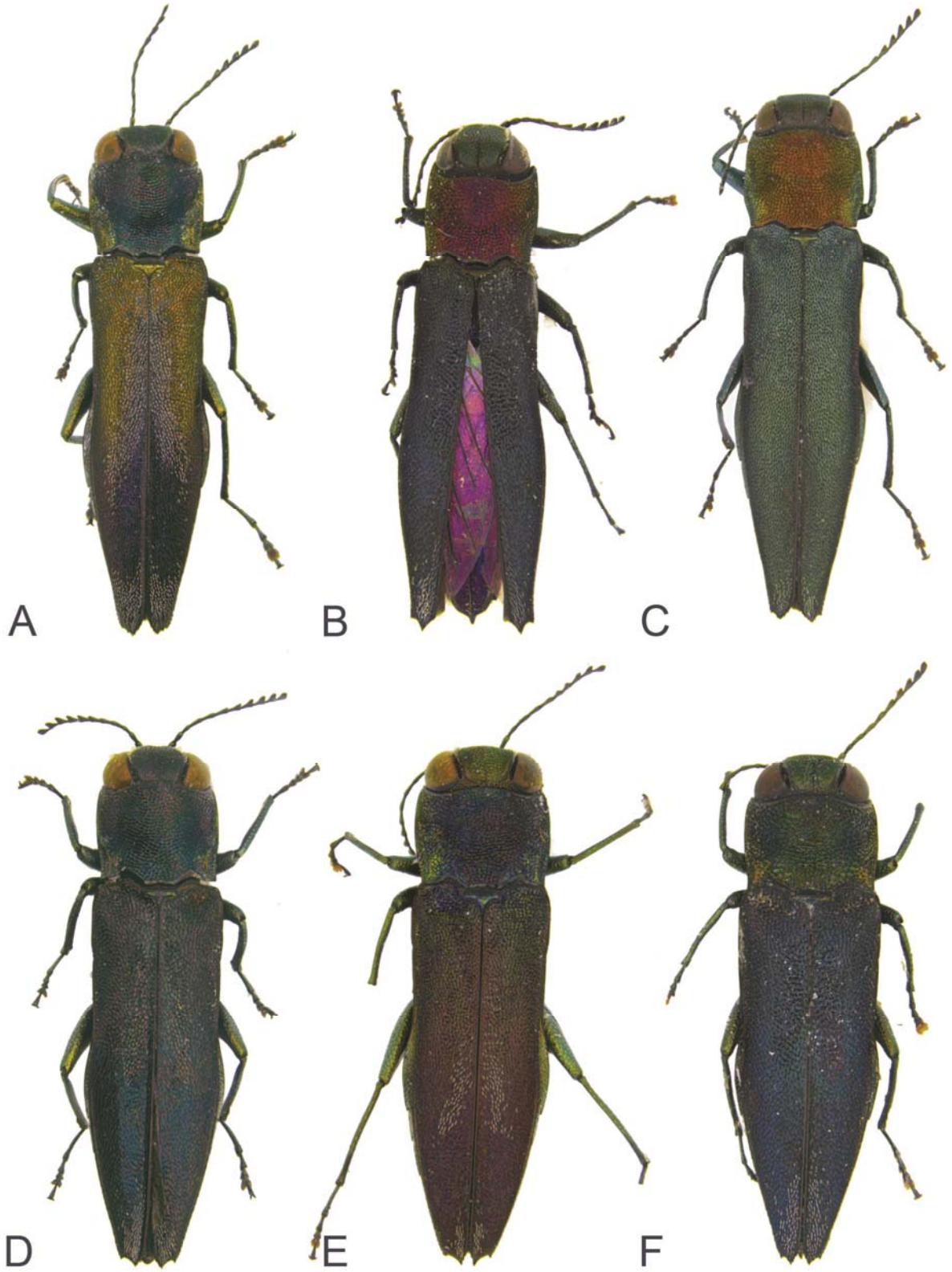
Etymology: Patronymic; the species is named in honor of entomologist Petr Čechovský, Czech Republic, who collected the holotype.

Agrilus contractus Fisher, 1930 Fig. 6B

contractus Fisher, 1930
Fisher 1930b: 75-77.
Obenberger 1936: 1078 (world catalog).
Bellamy 1994: 360 (holotype in USNM).
Bellamy 2008: 2036 (world catalog).

Type material: *Agrilus contractus* Fisher, 1930. Described from holotype by monotypy. **Type locality**: "Samawang, near Sandakan, North Borneo". **Type specimens**: Holotype ♀ (USNM): "N. Borneo Samawang nr. Sandakan [p] jungle 12th [h] July 1927 [p]; [underside] C. B. K[loss]. & H. M. P[endlebury]. [leg.] F. M. S. Museums. [p] [pink label] \ TypeNo [p] 57433 [h] USNM [p] [red label] \ Agrilus contractus Fisher [p]".

Distribution: Malaysia: Sabah.



Figures 4A–4F. Habitus of *Agrilus*. **4A,** *A. upsilon* sp. nov., Holotype; **4B,** *A. acrobeles* sp. nov., Holotype; **4C,** *A. garo* sp. nov., Holotype; **4D,** *A. vir* sp. nov., Holotype; **4E,** *A. orangulu* sp. nov., Holotype; **4F,** *A. iban* sp. nov., Holotype.

Remarks: *Agrilus contractus* is known to me only from the single female holotype (Fig. 6B). It resembles *A. thalassinus* by having pronotal protuberance and indistinctly cuspidate elytral apices, but it differs by larger eyes, different coloration and by different arrangement of elytral pubescence. Fisher (1930) coupled this species with *A. albogaster* Deyrolle, 1864 which has apical margin of pygidium with long spine unlike that angulate at *A. contractus*.

***Agrilus curiosus* sp. nov.** Figs. 2A, 8F

urn:lsid:zoobank.org:act:4D047FBB-2C69-4544-8F32-38B3AE1014C9

Description: Size: 6.1 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): unicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Eyes**: Size: very large; Shape: markedly protruding head outline; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Length: very long; Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: markedly arcuate; Maximal width: at middle; Anterior margin: subequal to posterior. **Anterior lobe**: Development: obvious; Shape: arcuate; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Convexity: with obvious medial protuberance; Impressions: posterolateral. **Prehumerus**: Development: carinal; Shape: bisinuate; Extent: beyond 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: moderate. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: proximal and distal; Proximal (shape): like V, X, Y, T; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: slightly dilated; Sides: arcuate; Angles: rectangular; Angles (tips): sharp; Disc: with medial protuberance; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat, ABDOMEN. Tomentum: present. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: with short protrusion. **Last ventrite**: Shape: with wide apex; Apical margin: subtruncate; Disk: impressed. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: arcuately sinuate; Sinuosity (depth): very shallow; Sinuosity (width): markedly wide. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half.

Variability: Unknown. **Sexual dimorphism**. The male has obviously expanded antennomeres 7-11, protibiae and metatibiae are distinctly arcuate in apical half (Fig. 2A); ventral side lacks strip of erect pubescence, prosternal process bears a single obvious tubercle armed with cluster of short bristles on top and basal ventrite bears pair of medial tubercles. For aedeagus see Fig. 8F. The female is unknown.

Diagnosis: *Agrilus curiosus* sp. nov. belongs to species having unicuspidate elytral apices and obvious protuberance in anterior half of pronotum. It can be easily distinguished from similar species by male sexual characters (see variability).

Type material: Type locality: Indonesia, Sumatera Barat, Annai Valley nat. res., 40 km N of Padang [00°28'37"S, 100°21'37"E]. **Type specimens**: Holotype ♂ (EJCB): "Indonesia, West Sumatra prov., 40km N of Padang, Annai valley nat. res., June 1999, St. Jákl leg.".

Distribution: Indonesia: Sumatera Barat.

Etymology: The specific name is a Latin adjective *curiosus* (curious, inquisitive) referring to the big eyes of species.

***Agrilus emeritus* Descarpentries & Villiers, 1963** Figs. 5D, 1C, 8G, 8H, 12B, 7D, 7E, 7N

emeritus Descarpentries & Villiers, 1963
Descarpentries & Villiers 1963: 51.
Bellamy 2008: 2082 (world catalog).
Jendek 2012: 13 (synonym of *perlisensis*).
= *deuvei* Baudon, 1965 **syn**. **nov.**
Baudon 1965: 201-202.
Descarpentries & Villiers 1967: 144 (*fouqueti* species group).
Baudon 1968: 63, 65 (characters in key; faunal records; Laos).
Bellamy 2008: 2067 (world catalog).
Jendek 2012: 13 (synonym of *perlisensis*).
= *souvannavongsi* Baudon, 1968 **syn. nov.**
Baudon 1968: 64, 69-70.
Bellamy 2008: 2301 (world catalog).
Jendek 2012: 13 (synonym of *perlisensis*).

Type material: *Agrilus emeritus* Descarpentries & Villiers, 1963 (Fig. 7E). Described from holotype. **Type locality**: "Tonkin: région de Hoa Binh". **Type specimens**: Holotype ♂ (MNHN): "Tonkin Région De Hoa-Binh [p] \ HOLO [h] TYPE [p] [red label] \ Agrilus emeritus n. sp. Holotype nobis A. Descarpentries et [h] A. Villiers det. 195 [p] [5 is strike through] 62 [h]".

Agrilus deuvei Baudon, 1965 (Fig. 7D). Described from holotype and inexplicit number of paratypes. **Type locality**: "Laos: Vientiane". Type specimens: Holotype ♂ (MHNB): "Vientiane iv.[19]63 [h] Laos (Baudon) [p] \ Agrilus deuvei mihi Type [h] A. Baudon det. [p] [blue label] \ Type [p] [red label]". Secondary types (paratypes): 1 (HHCC), 2 (ISNB), 4 (MHNB), 1 (MNHN), 1 (USNM).

Agrilus souvannavongsi Baudon, 1968 (Fig. 7N). Described from holotype. **Type locality**: "Laos: Ille de Khong". **Type specimens**: Holotype ♂ (MHNB): "Ille de Khong iv.[19]65 [h] Laos (Baudon) [p] \ Agrilus souvannavongsi mihi Type [h] A. Baudon det. [p] [blue label] \ Type [p] [red label]".

Examined specimens: LAOS. **Bolikhamxai**: 2 ♂ (EJCB): Ban Nape (8 km NE), ~600m (18°21'N / 105°08'E) 5-2001; 4 ♂, 4 ♀ (EJCB): Ban Nape - Kaew Nua Pass, alt. 600±100 m (18°22'20"N / 105°09'06"E) 4, 5-1998; 1 ♀ (EJCB): Ban Nape env., alt., 400±100 m (18°20'N / 105°08'E) 5-2004. **Champasak**: 1 ♂, 1 ♀ (EJCB): Route (No. 23) Pakse - Paksong, Ban Itou env. (km.35), alt. 800m (15°10'20"N / 106°05'45"E) 4-1999. **Houaphan**: 1 ♂ (EJCB): 25 km SE Vieng Xai (by road), Ban Kangpabong env. (20°19'N / 104°25'E) 5-2001. **Khammouan**: 1 ♂ (EJCB): Nakai village env. (17°42'37"N / 105°08'55"E) 5-2002; 1 ♀ (EJCB): Ban Nok env., Route No 8, alt. 220±50 m (18°08'42"N / 104°28'06"E) 5-1998; 1 ♂, 2 ♀ (EJCB): Ban Khoun Ngeun, ~200 m (18°07'N / 104°29'E) 4-2001. **Louang Namtha**: 1 ♀ (EJCB): Namtha - Muang Sing, 900-1200 m (21°09'N / 101°19'E) 5-1997; 3 ♂ (EJCB): 15 km NW Louang Namtha (21°07'30"N / 101°21'E) 5-1997; 2 ♂, 2 ♀ (EJCB): 20 km NW Louang Namtha (21°09'03"N / 101°18'48"E) 5-1997. **Louangphabang**: 1 ♀ (EJCB): Ban Song Cha (5km W), ± 1200 m (20°33'N / 102°14'E) 4, 5-1999. **Vientiane**: 1 ♂ (EJCB): Lao

Pako resort, 100 m, 50km NE Vientiane (18°10'N / 102°52'E) 5-2002. **THAILAND**. **Chiang Mai**: 1 ♀ (EJCB): 20 km NW from Fang, 1000-1600 m (20°04'N / 099°08'E) 5-1996; 2 ♀ (EJCB): Doi Suthep (18°48'N / 098°55'E) 4-1993. **Mae Hong Son**: 1 ♀ (EJCB): Soppong, 1500 m (19°27'N / 098°20'E) 5-1996; 2 ♀ (EJCB): Mae Hong Son (19°16'N / 097°59'E) 4, 5-1992. **Nakhon Nayok**: 1 ♀ (EJCB): Khao Yai NP Nhong ping khaokeaw, 733m (14°23'06"N / 101°23'03"E) 3-2007. **VIETNAM**. **Vinh Phuc**: 2 ♂ (EJCB): Melinh biodiversity station, 200m (21°23'04"N / 105°42'44"E) 6-2011.

Distribution: Laos: Bolikhamxai, Champasak, Houaphan, Khammouan, Louang Namtha, Louangphabang, Vientiane, Savannakhét. **Thailand**: Chiang Mai, Mae Hong Son, Nakhon Nayok. **Vietnam**: Hoa Binh, Vinh Phuc, (Fig. 12B).

Remarks: See remarks at *A. adonis*.

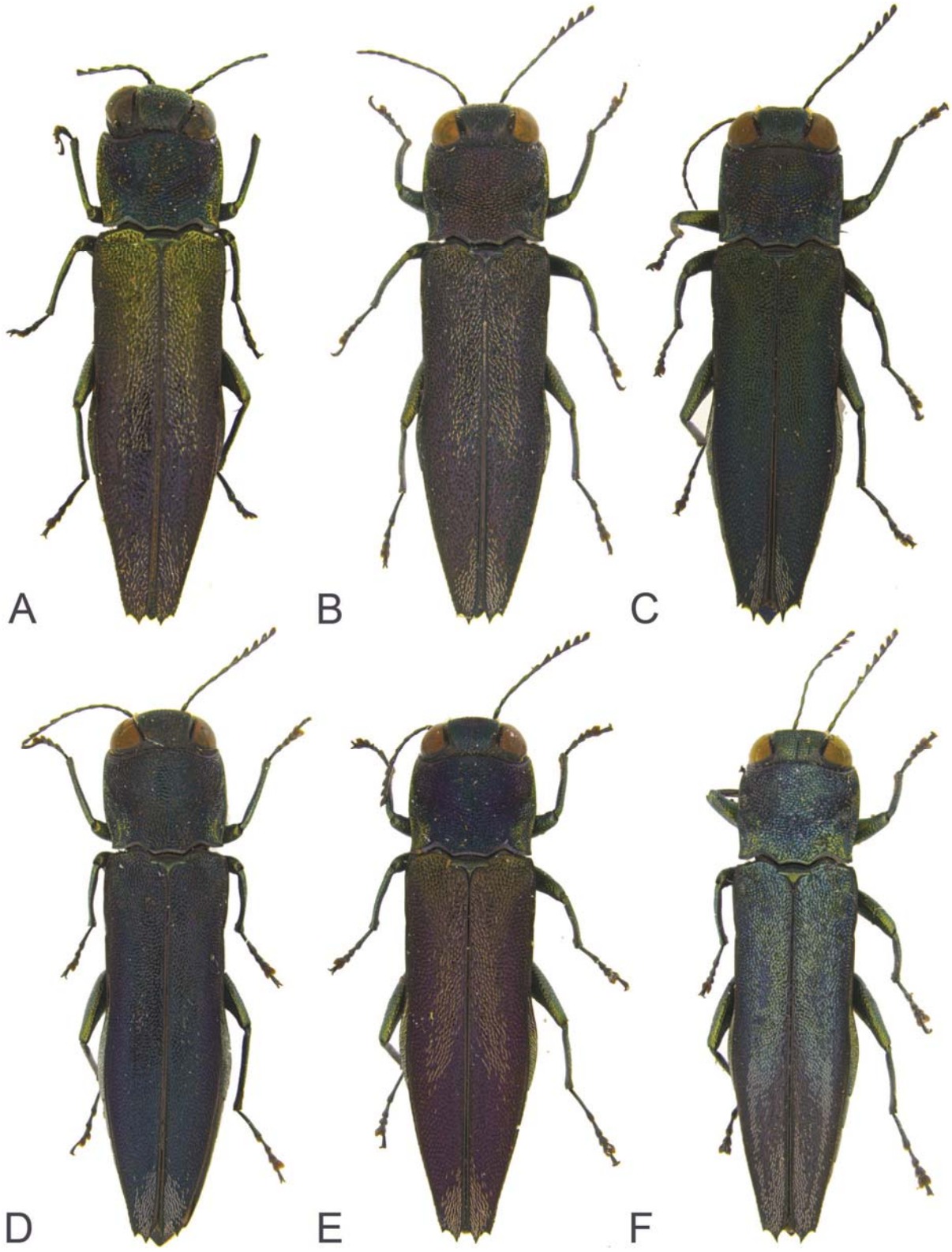
***Agrilus famulus* Kerremans, 1900** Figs. 5A, 1A, 8I, 13A, 7C, 7G

famulus Kerremans, 1900
Kerremans 1900b: 5, 22, 27-28.
Kerremans 1903: 277 (catalog).
Moulton 1911: 175 (faunal records; Borneo: Sarawak).
Obenberger 1936: 1082 (world catalog).
Obenberger 1960: 126-127 (type examination; redescription).
Bellamy 2008: 2091 (world catalog).
= *convergens* Fisher, 1930 **syn. nov.**
Fisher 1930b: 72-73.
Obenberger 1936: 1078 (world catalog).
Bellamy 1994: 360 (holotype in USNM).
Jendek 2005: 7 (synonymy).
Bellamy 2008: 2037 (world catalog).
= *japanensis* Obenberger, 1935 **syn. nov.**
Obenberger 1935: 170 (subspecies of *tripartitus*).
Miwa & Chûjô 1936: 17 (cited as *japonensis*; catalog; Japan).
Obenberger 1936: 1106 (subspecies of *tripartitus*; world catalog).
Kurosawa 1975: 3 (subspecies of *tripartitus*).
Kurosawa 1989: 191-192 (synonym of *tripartitus*; lectotype designation; not in Japan).
Jendek 2005: 7 (synonym of *convergens*).

Type material: *Agrilus famulus* Kerremans, 1900 (Fig. 7G). Described from holotype by monotypy. **Type locality**: "not given [Sumatra, Hindrapoera is cited in the title and introductory text of the publication]. **Type specimens**: Holotype ♀ (BMNH): "SYN-TYPE [p] [round label with blue border] \ Sumatra Weyers [h] \ famulus Kerr. Type [h] \ Kerremans 1903-59 [p] \ A. famulus Kerrem. Sumatra [h]".

Agrilus convergens Fisher, 1930 (Fig. 7C). Described from holotype by monotypy. **Type locality**: "Samawang, near Sandakan, North Borneo". **Type specimens**: Holotype ♀ (USNM): "N. Borneo, Samawang, nr. Sandakan [p] jungle 15th [h] 1927 [p] \ TypeNo [p] 57431 [h] USNM [p] [red label] \ Agrilus convergens Fisher".

Agrilus tripartitus japanensis Obenberger, 1935. Described from inexplicit number of syntypes. **Type locality**: "Japan [Note: Locality confused]". **Type specimens**: Lectotype ♀ (NMPC): "Sumatra ou Borneo non Japon [h] \ Japan [p] \ TYPUS [p] [red label] \ Mus. Nat. Pragae Inv. [p] 26480 [h] [orange label] \ Agrilus tripartitus ssp. japanensisi m. Type [h] Det. Dr Obenberger [p]". Lectotype by Kurosawa (1989).



Figures 5A–5F. Habitus of *Agrilus*. **5A,** *A. famulus* Kerremans, 1990; **5B,** *A. serratus* sp. nov., Holotype; **5C,** *A. adonis* Deyrolle, 1864; **5D,** *A. emeritus* Descarpentries & Villiers, 1963; **5E,** *A. insularis* Deyrolle, 1864; **5F,** *A. strbai* sp. nov., Holotype.

Examined specimens: INDONESIA. **Sumatera Barat**: 3 ♂ 1 ♀ (EJCB): Mentawai Isls., S. Siberut isl., 0-50m, Salapa vill. env., (01°21'S / 098°54'E) 10-2006; 1 ♀ (EJCB): Harau Valley, 500-800 m, 20 km N of Payakumbuh (00°04'23"S / 100°41'55"E) 7-2007; 1♀ (EJCB): Payakumbuh (00°13'30"S / 100°38'E) 8-1995; 1 ♂ (EJCB): Harau Valley, 500-800 m, N of Payakumbuh (00°04'23"S / 100°41'55"E) 4, 5-2006; 1 ♂ (EJCB): Harau Valley, 500-800 m, 20 km N of Payakumbuh (00°04'23"S / 100°41'55"E) 5, 6-2007; 3 (EJCB): Harau Valley, 500-800 m,ca 20 N of Payakumbuh (00°04'23"S / 100°41'55"E) 8-2009; 19 (EJCB): Harau Valley, 500-800 m,ca 20 N of Payakumbuh (00°04'23"S / 100°41'55"E) 8-2006.

Distribution (Fig. 13A)**: Indonesia**: Sumatera Barat. **Malaysia**: Sarawak.

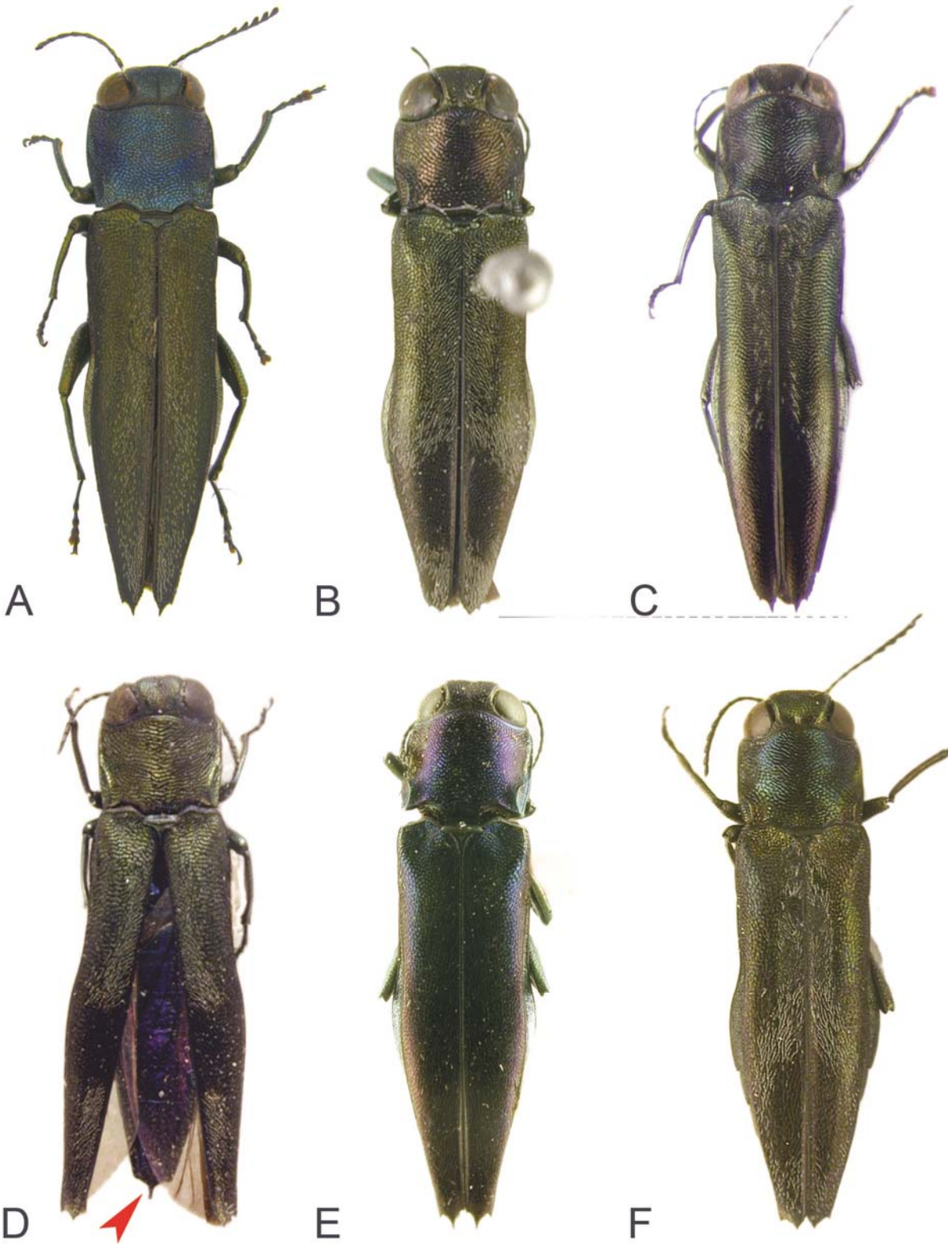
Remarks: *Agrilus famulus* belongs to species with bicuspidate elytral apices and flattened aedeagus. The species is quite variable. The color of dorsal side varies from bicolor (blue head and pronotum, golden elytra) to unicolor dark olive; elytral pubescence is entire or discontinued in apical third of elytra. The male has very delicate pair of tubercles on basal ventrite. It can be distinguished from very similar *A. serratus* sp. nov. by shape of aedeagus (Fig. 8I) which is less expanded apically.

***Agrilus garo* sp. nov.** Figs. 4C, 8J

urn:lsid:zoobank.org:act:F3962B88-635A-4E88-AD51-CB4104329D09

Description: Size: 6.3 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Eyes**: Size: large; Median orbit: converging dorsally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: subangulate; Maximal width: at posterior margin; Anterior margin: subequal to posterior. **Anterior lobe**: Development: obvious; Shape: arcuate; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: obtuse; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: anteromedial and posteromedial; Lateral impressions (depth): deep. **Prehumerus**: Development: tubercular; Shape: arcuate; Extent: to 1/2 of pronotal length. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: distal only; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with impression(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity; Sinuosity (depth): very shallow. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Modifications: apex of medial lobe markedly obtuse and tegmen with transverse carina.

Variability: Unknown. **Sexual dimorphism**. The male has basal ventrite with shallow medial sulcus and indication of tubercles. The ventral side with medial strip of erect, white pubescence extends from prosternal lobe to apex of prosternal process. The female is unknown.



Figures 6A–6F. Habitus of *Agrilus*. **6A,** *A. jakli* sp. nov., Holotype; **6B,** *A. contractus* Fisher, 1930, Holotype; **6C,** *A. subspinosus* Fisher, 1921, Holotype; **6D,** *A. saundersianus* Obenberger, 1924, Syntype; **6E,** *A. banahaoensis* Fisher, 1921, Holotype; **6F,** *A. subornatus* Kerremans, 1900, Holotype.

Diagnosis: *Agrilus garo* sp. nov. belongs to brightly bicolor species. It is distinctive by having pronotum widest at posterior third with subangulate sides (Fig. 4C). The prehumerus is tubercular and not carinal as at most of similar species and the shape of aedeagus (Fig. 8J) is very characteristic.

Type material: Type locality: India, Meghalaya, West Garo Hills reg., Tura, alt. 700±100 m [25°30'42"N, 090°13'54"E]. **Type specimens**: Holotype ♂ (EJCB): "NE India, Meghalaya state, West Garo Hills reg., Tura, 29-31.V.1996, alt. 700±100 m, GPS N25°30.7' E90°13.9' (WGS 84) E. Jendek & O. Šauša leg.".

Distribution: India: Meghalaya.

Etymology: The specific name is a noun in apposition referring to the Garos - indigenous people living in Meghalaya, India.

***Agrilus iban* sp. nov.** Figs. 4F, 9A

urn:lsid:zoobank.org:act:C547C842-9A54-4436-A997-D8CF21224798

Description: Size: 4.9 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): unicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually transverse; Sides: slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: posterolateral. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: distal only; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity; Sinuosity (depth): very shallow. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: distinctly shorter. **Tarsomere 1**: Length to following tarsomeres: longer than 2-3 but shorter than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Profile: convex; Modifications: tegmen with transverse carina.

Variability: Unknown. **Sexual dimorphism**. The male has ventral side without strip of erect pubescence and basal ventrite without tubercles or impression. The female is unknown.

Diagnosis: *Agrilus iban* sp. nov. belongs to species with transverse carina on tegmen of aedeagus. It is distinctive by having the last ventrite only very finely impressed and by then very distinctive, spine-like aedeagus (Fig. 9A).

Type material: Type locality: Bornéo. **Type specimens**: Holotype ♂ (EJCB): "Bornéo".

Distribution: Borneo.

Etymology: The specific name is a noun in apposition derived from the name of tribal group Iban (branch of the Dayak peoples) living in Borneo.

***Agrilus insularis* Deyrolle, 1864** Figs. 5E, 9B, 9C, 13B, 7F, 7H, 7J

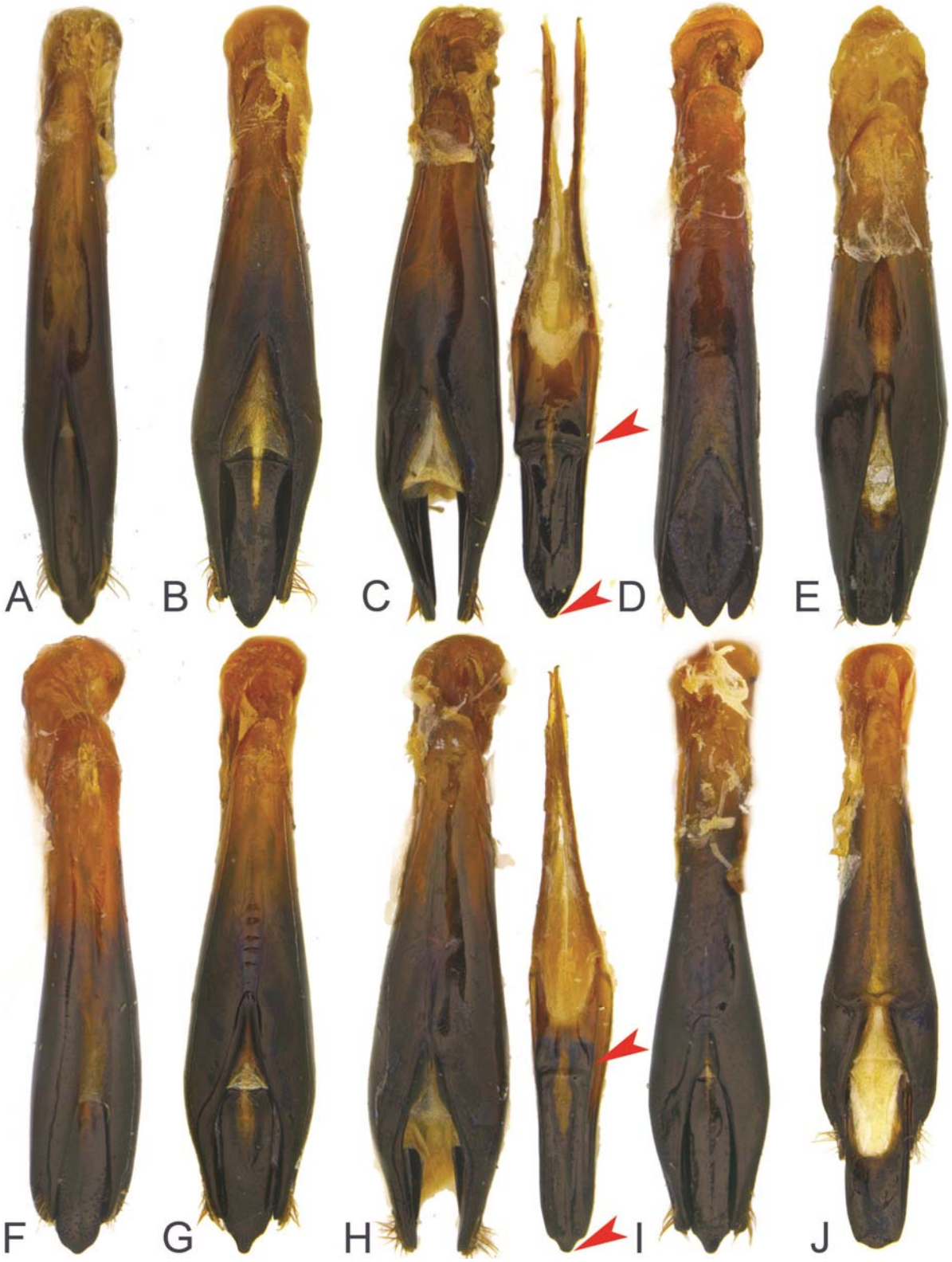
insularis Deyrolle, 1864
Deyrolle 1864: 140, 173.
Gemminger & Harold 1869: 1441 (catalog).
Saunders 1871: 123 (catalog).
Kerremans 1892: 261 (catalog).
Kerremans 1903: 277 (catalog).
Moulton 1911: 175 (faunal records; Borneo: Sarawak).
Obenberger 1924b: 560, 579 (characters in key; notes).
Obenberger 1936: 1087-1088 (world catalog).
Jendek 1998: 324 (lectotype designation).
Bellamy 2008: 2141 (world catalog).
= *nigrocyaneus* Deyrolle, 1864 **syn**. **nov**.
Deyrolle 1864: 140, 172 .
Gemminger & Harold 1869: 1443 (catalog).
Saunders 1871: 123 (catalog).
Kerremans 1892: 265 (catalog).
Kerremans 1903: 288 (catalog).
Moulton 1911: 178 (faunal records; Borneo: Sarawak).
Gebhardt 1925: 92 (faunal records; Malaysia: Sarawak).
Obenberger 1936: 1093 (world catalog).
Jendek 1998: 326 (lectotype designation).
Bellamy 2008: 2202 (world catalog).
= *falsulus* Obenberger, 1924 **syn**. **nov**.
Obenberger 1924b: 562, 583-584.
Obenberger 1936: 1082 (world catalog).
Bellamy 1994: 360 (lectotype designation [ICZN, Article 74.6]).
Jendek 2005: 4 (synonym of *adonis*).
Bellamy 2008: 1951 (synonym of *adonis*; world catalog).

Type material: *Agrilus insularis* Deyrolle, 1864 (Fig. 7H). Described from inexplicit number of syntypes. **Type locality**: "Bornéo, Singapoor, Sumatra, Makian" [Type locality Sumatra is determined by the lectotype ICNZ (1999): Article 76.2.)]. **Type specimens**: Lectotype ♂ (MNHN): "Sumatra [h] \ Muséum Paris 1952 coll. R. Oberthur [p] [yellow label]". Lectotype by Jendek (1998). Secondary types: 4 paralectotypes (MNHN).

Agrilus nigrocyaneus Deyrolle, 1864 (Fig. 7J). Described from inexplicit number of syntypes. **Type locality**: "Bornéo". **Type specimens**: Lectotype ♂ (MNHN): "Transcriptio [p] Nigro-cyaneus HDeyr. Bornéo [h] \ Muséum Paris 1952 coll. R. Oberthur [p] [yellow label]". Lectotype by Jendek (1998). Secondary types: 1 paralectotype (MNHN)

Agrilus falsulus Obenberger, 1924 (Fig. 7F). Described from inexplicit number of syntypes. **Type locality**: "Singapore". **Type specimens**: Lectotype ♂ (USNM): "Singapore Coll. Baker [p] \ 12611 [h] \ TYPUS [p] [red label] \ Agrilus falsulus m. Type [h] Det. Dr Obenberger [p] \ TypeNo. [p] 57694 [h] U. S. N. M. [p] [red label] \ Agrilus falsulus Obenb. [h] [red label]". Lectotype by Bellamy (1994).

Figures 7A–7R. *Agrilus* primary types. **7A,** *A. adonis* Deyrolle, 1864, Lectotype; **7B,** *A. bettotanus* Fisher, 1930, Holotype; **7C,** *A. convergens* Fisher, 1930, Holotype; **7D,** *A. deuvei* Baudon, 1965, Holotype; **7E,** *A. emeritus* Descarpentries & Villiers, 1963, Holotype; **7F,** *A. falsulus* Obenberger, 1924, Lectotype; **7G,** *A. famulu*s Kerremans, 1900, Holotype by monotypy; **7H,** *A. insularis* Deyrolle, 1864, Lectotype; **7I,** *A. malasicus* Fisher, 1930, Holotype; **7J,** *A. nigrocyaneus* Deyrolle, 1864, Lectotype; **7K,** *A. perlisensis* Fisher, 1936, Holotype; **7L,** *A. pictithorax* Obenberger, 1924, Lectotype; **7M,** *A. protenor* Obenberger, 1924, Lectotype; **7N,** *A. souvannavongsi* Baudon, 1968, Holotype; **7O,** *A. testor* Kerremans, 1900, Lectotype; **7P,** *A. thalassinus* Deyrolle, 1864, Lectotype; **7Q,** *A. tripartitus* Deyrolle, 1864, Lectotype.



Figures 8A–8J. Aedeagus of *Agrilus*. **8A,** *A. acrobeles* sp. nov.; **8B,** *A. adonis* Deyrolle, 1864; **8C,** *A. adonis* Deyrolle, 1864, separated; **8D,** *A. bunsu* sp. nov.; **8E,** *A. cechovskyi* sp. nov.; **8F,** *A. curiosus* sp. nov.; **8G,** *A. emeritus* Descarpentries & Villiers, 1963; **8H,** *A. emeritus* Descarpentries & Villiers, 1963, separated; **8I,** *A. famulus* Kerremans, 1990; **8J,** *A. garo* sp. nov.

Examined specimens: INDONESIA. **Jawa Barat**: 2 ♂ (EJCB): Mt. Djampang [= Gunung Jampang] (07°20'07"S / 107°37'34"E). **Jawa Timur**: 1 ♀ (EJCB): Watu Ulo (08°23'24"S / 113°36'E); 1 ♂ (EJCB): Meru Betiri Nat. Park, 300-800 m Sukomade (08°30'S / 113°52'E) 1-1997. **Kalimantan Timur**: 1 ♂ (MNHN): Batan bessi [located near Sangkulirang] (00°59'30"N / 117°59'E) 1937. **Sumatera Barat**: 3 ♂ (EJCB): Harau Valley, 600-800 m, 20 km N of Payakumbuh (00°04'23"S / 100°41'55"E) 8-2008; 1 ♂, 1 ♀ (EJCB): (02°04'S / 100°56'E); 1 ♂ (EJCB): Harau Valley, Paya Kumbuh (00°04'23"S / 100°41'55"E) 8-1992; 2 ♂ (EJCB): Harau Valley, 500-800 m, 20 km N of Payakumbuh (00°04'23"S / 100°41'55"E) 4, 5-2006; 1 ♂ (EJCB): Harau Valley, 500-800 m, 20 km N of Payakumbuh (00°04'23"S / 100°41'55"E) 7-2007; 1 ♂, 1 ♀ (EJCB): Harau Valley, 500-800 m, 20 km N of Payakumbuh (00°04'23"S / 100°41'55"E) 5, 6-2007. MALAYSIA. **Negeri Sembilan**: 1 ♂, 2 ♀ (EJCB): Pasoh forest, 80 m (02°58'12"N / 102°18'E) 6-2013. **Pahang**: 1 ♂ (EJCB): Benom Mts, 15 km E Kampong Dong, 700 m (03°53'N / 102°01'E) 4-1998. **Perak**: 1 ♂ (EJCB): 25 km NE Ipoh, 1200 m, Banjaran Titi Wangsa mts., Korbu Mt., (04°43'N / 101°16'E) 2-1999; 1 ♂ (EJCB): Malacca (02°14'N / 102°16'E). **Sabah**: 1 ♂ (EJCB): Keningau (05°18'N / 116°10'E) 4-1979; 1 ♀ (EJCB): Crocker Range, vic. of Mt. Trus Madi (05°38'10"N / 116°27'30"E) 3, 4-2002; 1 ♂ (EJCB): Lahad Datu 15km W (05°01'12"N / 118°10'18"E) 6-2002; 2 ♂ (EJCB): Sandakan (05°53'N / 118°01'E).

Distribution: Indonesia: Jawa Barat, Jawa Timur, Kalimantan Timur, Sumatera Barat. **Malaysia**: Negeri Sembilan, Pahang, Perak, Sabah, Sarawak. **Singapore**, (Fig. 13B).

Remarks: See remarks at *A. adonis*. Except for characters on aedeagus (Figs. 9B, 9C), this species differs from *A. strbai* sp. nov. and *A. jakli* sp. nov. by generally smaller size which rarely exceeds 6 mm.

***Agrilus jakli* sp. nov.** Figs. 6A, 9D

urn:lsid:zoobank.org:act:B7FC3E5C-0F2A-43AB-9C83-FCAE33FFF7C4

Description. Size: 7.7 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: arcuate or subparallel. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: medial and lateral or posterolateral. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: adjoining to lateral carina or joined with lateral carina; Posterior end: distant from angles and margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate or spinate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: perisutural stripes or with irregular glabrous parts of various extent. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with impression(s) and tubercle(s).

Pygidium: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Apical margin: subtruncate; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: longer than 2-3 but shorter than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex.

Variability: Unknown. **Sexual dimorphism**. The male has the same sexual modifications as those at *A. strbai* sp. nov.

Diagnosis: *Agrilus jakli* sp. nov. is by size, color and general appearance (Fig. 6A) very similar to *A. strbai* sp. nov., from which it differs especially by narrower apex of elytra and by form of aedeagus (Fig. 9D).

Type material: Type locality: Indonesia, Sumatera Barat, Mentawai Island, SW coast, 0-100 m [01°44'27"S, 099°00'37"E]. **Type specimens**: Holotype ♂ (EJCB): "Indonesia, iii.2005, Mentawai Isl., 0-100m, SW coast, S. Jákl leg.".

Distribution: Indonesia: Sumatera Barat.

Etymology: Patronymic; the species is named in honor of entomologist Stanislav Jákl, Czech Republic, who collected the holotype.

Remarks: See remarks at *A. adonis*.

***Agrilus kuchingi* sp. nov.** Figs. 3E, 9E

urn:lsid:zoobank.org:act:01F9AA67-294E-4B3B-A29E-9EAFC8B7CBBB

Description: Size: 4.8 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: subparallel; Sculpture intensity: superficial. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: slightly arcuate; Maximal width: at middle; Anterior margin: subequal to posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Convexity: strongly convex or with obvious medial protuberance; Impressions: posterolateral; Lateral impressions (depth): deep. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: arcuate; Modifications: margin obviously denticulate. **Pubescence**: Extent: proximal and distal; Proximal (shape): quadrangular; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuate. **Prosternal process**: Shape: subparallel; Angles: obtuse; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Pygidium**: Apical margin: angulate. **Last ventrite**: Disk: impressed. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate. LEGS. **Metatarsus**: Length to metatibia: distinctly shorter. **Tarsomere 1**: Length to following tarsomeres: longer than 2-3 but shorter

than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex.

Variability: Unknown. **Sexual dimorphism**. The male lacks tubercles or medial impression on basal ventrite; the last ventrite is impressed but without medial carinula and the ventral strip of erect pubescence is visible only on prosternum. The female is unknown.

Diagnosis: *Agrilus kuchingi* sp. nov. (Fig. 3E) belongs to species having elytral apices not clearly bicupidate but narrowly subarcuate with denticulate margin. Among them, it can be distinguished by obvious anteromedial protuberance on pronotum, lacking tubercles on basal ventrite in male and by the shape of aedeagus.

Type material: Type locality: Malaysia, Sarawak, Kuching [01°35'27"N, 110°20'04"E]. **Type specimens**: Holotype ♂ (EJCB): "Kuching".

Distribution: Malaysia: Sarawak.

Etymology: The specific name is derived from the type locality of the species.

***Agrilus lembik* sp. nov.** Figs. 3C, 1E, 9F

urn:lsid:zoobank.org:act:9D020EFE-E1BC-4539-B37D-1EDD3E288EBC

Description: Size: 4.8-6.3 mm (Holotype 5.6 mm). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: subparallel; Sculpture density: dense; Sculpture intensity: superficial. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate or subangulate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: obvious; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: posterolateral. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored with darker hue at apical third; Alternative color: apical portion; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: arcuate or subtruncate; Modifications: margin obviously denticulate. **Pubescence**: Extent: proximal and distal; Proximal (shape): like V, X, Y, T; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). - **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: about as long or longer. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex.

Variability: The dorsal body side varies from bright bicolor (blue head and pronotum, golden green elytra with dark, glabrous spot in apical third) to unicolor blue or green. Elytral apices are from separately arcuate or subangulate to subtruncate but always with denticulate margin. **Sexual dimorphism**. The male has longer metatarsi, which are about as long as metatibiae; basal ventrite bears obvious pair of tubercles and the strip of medial, erect pubescence extends from prosternal lobe to intercoxal process of abdomen. The female is unknown.

Diagnosis: *Agrilus lembik* sp. nov. belongs to species with elytral apices not clearly bicupidate (Fig. 1E). Among them, it can be recognized mainly by pronotum which is more prolonged and widest in anterior half (Fig. 3C) and by form of aedeagus (Fig. 9F).

Type material: **Type locality**: Malaysia, Pahang, Lata Lembik, 30 km NE Raub, 200-400 m [03°56'N, 101°38'E]. **Type specimens**: Holotype ♂, 12 paratypes (EJCB): "Malaysia, Pahang distr., 30km NE Raub, Lata Lembik, 3°56'N; 101°38'E, 200-400 m, 22.IV.-1.V., 8-15.V.2002, E. Jendek & O. Šauša leg."; 4 ♀ paratypes (MNHN): "Malacca, Perak, W. Doherty"; 1 ♂, 1 ♀ paratypes (EJCB): "Malaysia, Benom Mts, 15 km E Kampong Dong, 1.iv.1998, alt. 700 m, 3.53° N, 102.01°E, D. Hauck leg.".

Distribution: Malaysia: Pahang, Perak.

Etymology: The specific name is a noun in apposition derived from the type locality "Lata Lembik".

Agrilus malasicus Fisher, 1930 Figs. 3D, 7B, 7I

malasicus Fisher, 1930
Fisher 1930a: 43-44.
Obenberger 1936: 1090 (world catalog).
Bellamy 1994: 361 (holotype in USNM).
Bellamy 2008: 2176 (world catalog).
= *bettotanus* Fisher, 1930 **syn**. **nov**.
Fisher 1930b: 77-78.
Obenberger 1936: 1075 (world catalog).
Bellamy 1994: 359 (holotype in USNM).
Bellamy 2008: 1994 (world catalog).

Type material: *Agrilus malasicus* Fisher, 1930 (Fig. 7I). Described from holotype by monotypy. **Type locality**: "Kedah, Catchment Area, near Jitra, Malay Peninsula". **Type specimens**: Holotype ♀ (USNM): "Malay Penin. Kedah nr. Jitra, Catchment Area [p], 11th [h] April 1928 [p] \ H. M. Pendlebury Coll. F. M. S. Museums. [p] \ TypeNo [p] 57413 [h] USNM [p] [red label] \ Agrilus malasicus Fisher [p]".

Agrilus bettotanus Fisher, 1930 (Fig. 7B). Described from holotype by monotypy. **Type locality**: "Bettotan, near Sandakan, North Borneo". **Type specimens**: Holotype ♀ (USNM): "N. Borneo Bettotan, nr. Sandakan. [p] Aug. 219 [h] 1927 [p] [pink label] \ TypeNo [p] 57434 [h] USNM [p] [red label] \ Agrilus bettotanus Fisher [p]".

Distribution. **Malaysia:** Kedah, Sabah.

Remarks: The male of *A. malasicus* is unknown. This species is characteristic by brightly bicolor body with head and pronotum blue and elytra golden (Fig. 3D). The elytral

pubescence is entire excluding epipleural parts, or it forms wide adsutural stripe on each elytron. Elytral apices are subtruncate with vague cuspidation or subtruncate with denticulate margin.

***Agrilus meratus* sp. nov.** Figs. 3F, 9G

urn:lsid:zoobank.org:act:B87501B8-A250-4FBE-96D2-7100F0867240

Description: Size: 5.2 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: arcuate. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Length: very long; Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at middle; Anterior margin: subequal to posterior. **Anterior lobe**: Development: obvious; Shape: arcuate; Position: at level with anterior angles. **Posterior angles**: Shape: acute; Apex: sharp. **Disk**: Convexity: strongly convex; Impressions: posterolateral. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored with darker hue at apical third; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: arcuate; Modifications: margin obviously denticulate. **Pubescence**: Extent: proximal and distal; Proximal (shape): like V, X, Y, T; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). - **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: distinctly shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex.

Variability: Unknown. **Sexual dimorphism**. The male has mesotibiae and metatibiae obviously erectly pubescent on inner margin; ventral medial strip of erect pubescence is restricted to anterior part of prosternum. The prosternal process is glabrous. The basal ventrite has obvious and sharp pair of tubercles and apex of last ventrite is erectly pubescent laterally. The female is unknown.

Diagnosis: *Agrilus meratus* sp. nov. belongs to species with elytral apices not clearly bicupidate but narrowly subarcuate with denticulate margin. This species (Fig. 3F) can be distinguished especially by long antennae reaching to posterior angles of pronotum, glabrous prosternal process and sharp pair of tubercles on basal ventrite in male and by distinctive aedeagus (Fig. 9G).

Type material: Type locality: Indonesia, Kalimantan Selatan, Meratus Mts., Loksado, 1000 m [02°43’37”S, 115°32’20”E]. **Type specimens**: Holotype ♂ (EJCB): “Indonesia, Borneo I., South Kalimantan prov., Meratus mts., 1000 m, Loksado, 3-22.ix.1997, S. Jákl leg.”.

Distribution: Indonesia: Kalimantan Selatan.

Etymology: The specific name is a noun in apposition referring to the Mountain Meratus cited for the type locality.

***Agrilus orangulu* sp. nov.** Figs. 4E, 9H

urn:lsid:zoobank.org:act:90FE6927-BACC-4F7F-8287-4B1FDDD49135

Description: Size: 5.9 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: deep; Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture density: dense. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Width: broad; Position: not reaching level of anterior angles. **Posterior angles**: Shape: obtuse; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: anteromedial and posteromedial; Lateral impression (width): broad. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: adjoining to lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: proximal and distal; Proximal (shape): like V, X, Y, T; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with impression(s). **Pygidium**: Apical margin: arcuate. **Last ventrite**: Shape: with wide apex; Disk: impressed. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate. LEGS. **Metatarsus**: Length to metatibia: distinctly shorter. **Tarsomere 1**: Length to following tarsomeres: longer than 2-3 but shorter than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex; Modifications: tegmen with transverse carina.

Variability: Unknown. **Sexual dimorphism**. The male has basal ventrite riangularly impressed but without discernible tubercles. The last ventrite is deeply impressed and medial strip of erect pubescence on ventral side is most obvious on prosternum. The female is unknown.

Diagnosis: *Agrilus orangulu* sp. nov. belongs to species with transverse carina on tegmen of aedeagus. It is distinctive by having body more stout, pygidium with apical margin arcuate and by distinctive form of aedeagus (Fig. 9H).

Type material: Type locality: Malaysia, Sabah, Sandakan [05°50’50”N, 117°58’50”E]. **Type specimens**: Holotype ♂ (EJCB): “Sandakan, Borneo, Baker”.

Distribution: Malaysia: Sabah.

Etymology: The specific name is a noun in apposition derived from the name of tribal group *Orang Ulu* (remote people) living in Borneo.

***Agrilus pictithorax* Obenberger, 1924** Figs. 2E, 9I, 14A, 7L

pictithorax Obenberger, 1924
Obenberger 1924b: 559, 574-575.
Obenberger 1936: 1098 (world catalog).
Bellamy & Nelson 1990: 291 (lectotype designation).
Bellamy 1994: 361-362 (lectotype in USNM).
Bellamy 2008: 2235 (world catalog).

Type material: *Agrilus pictithorax* Obenberger, 1924 (Fig. 7L). Described from inexplicit number of syntypes. **Type locality**: "Borneo, Sandakan". **Type specimens**: Lectotype ♀ (USNM): "Sandakan Borneo Baker [p] \ 12659 [h] \ TYPUS [p] [red label] \ Agrilus pictithorax m. Type [h] Det. Dr Obenberger [p] \ TypeNo. [p] 57689 [h] U.*S*.N.*M*. [p] [red label] \ Agrilus pictithorax Obenb. [h] [red label]". Lectotype by Bellamy & Nelson (1990). Secondary types: 1 paralectotype (NMPC).

Examined specimens: MALAYSIA. **Pahang**: 12 (EJCB): Lata Lembik, 30 km NE Raub, 200-400 m (03°56'N / 101°38'E) 4, 5-2002; 2 ♀ (EJCB): Benom Mts, 15 km E Kampong Dong, alt 700 m (03°53'N / 102°01'E) 4-1998. **Perak**: 1 ♀ (EJCB): Belum Forest, 84 km E of Gerik, alt. 950 m (05°32'53"N / 101°36'38"E) 3, 4-2014; 1 ♂, 1 ♀ (EJCB): Malacca (02°14'N / 102°16'E). **Sabah**: 1 ♀ (EJCB): East Crocker range Mt., W of Apin Apin (05°29'27"N / 116°13'30"E) 2-2000.

Distribution: Malaysia: Pahang, Perak, Sabah, (Fig. 14A).

Remarks: *Agrilus pictithorax* is very similar to *A. tripartitus* by size, shape, color, unicuspidate elytral apices and by character of ventral strip of erect pubescence which is very dense but delicate. The male of *Agrilus pictithorax* can by distinguished by almost parallel aedeagus (Fig. 9I) and by having tubercles on basal ventrite.

***Agrilus protenor* Obenberger, 1924** Figs. 2C, 9J, 14B, 7M

protenor Obenberger, 1924
Obenberger 1924a: 124.
Obenberger 1936: 1099 (world catalog).
Bellamy 2008: 2247-2248 (world catalog).
Jendek 2012: 13 (lectotype designation).

Type material: *Agrilus protenor* Obenberger, 1924 (Fig. 7M). Described from inexplicit number of syntypes. **Type locality**: "Java (Bantam)". **Type specimens**: Lectotype ♀ (NMPC): "Bantam Java [h] \ TYPUS [p] [red label] \ Agrilus protenor [h] Det. Dr Obenberger [p]". Lectotype by Jendek (2012).

Examined specimens: MALAYSIA. **Pahang**: 4 ♂, 1 ♀ (EJCB): Benom Mts, 15 km E Kampong Dong, 700 m (03°53'N / 102°01'E) 4-1998; 1 ♀ (EJCB): Lata Lembik, 30 km NE Raub, 200-400 m (03°56'N / 101°38'E) 4, 5-2002. THAILAND. **Nakhon Si Thammarat**: 1 ♀ (EJCB): Khao Luan NP, Krung Ching waterfall (08°43'27"N / 099°40'06"E) 5-1998.

Distribution: Indonesia: Banten. **Malaysia**: Pahang. **Thailand**: Nakhon Si Thammarat, (Fig. 14B).

Remarks: *Agrilus protenor* belongs to species with conspicuous eyes (see key). Unlike *A. bunsu* and *A. curiosus* with protrusion on apical margin of pygidium, this species has pygidium subangulate similarly like *A. contractus*.

Agrilus saundersianus Obenberger, 1924 Fig. 6D

saundersianus Obenberger, 1924
Obenberger 1924b: 561, 580 (characters in key; notes).
Obenberger 1936: 1101 (world catalog).
Bellamy 2008: 2280 (world catalog).

Type material: *Agrilus saundersianus* Obenberger, 1924. Described from inexplicit number of syntypes. **Type locality**: "Philippines". **Type specimens**: 1 ♂ syntype (NMPC).

Distribution: Philippines.

Remarks: This species is known to me only from a type (Fig. 5D). It is characteristic by long spine on apical margin of pygidium and by pair of tubercles on basal ventrite.

Agrilus serratus sp. nov. Figs. 5B, 10A

urn:lsid:zoobank.org:act:62875322-F6AB-48F7-B038-3E1B4ABAB7CA

Description: Size: 5.6 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): unicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: subparallel; Sculpture density: dense. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin. **Anterior lobe**: Development: moderate; Shape: arcuate; Width: broad; Position: not reaching level of anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: anteromedial and posteromedial. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: adjoining to lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Color: unicolored; Extent: proximal and distal; Proximal (shape): perisutural stripes; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity; Sinuosity (depth): very shallow. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: longer than 2-3 but shorter than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half.

Variability: Unknown. **Sexual dimorphism**. The male has metafemora obviously expanded; basal ventrite with pair of medial tubercles and the last ventrite wider and apically impressed on disk. The medial stripe of erect, white pubescence on ventral side in male expands from anterior margin of prosternal lobe to mesocoxae but it is not very obvious. The female is unknown.

Diagnosis: *Agrilus serratus* sp. nov. (Fig. 5B) is very similar to *A. famulus* from which it differs by darker, black color with bluish tinge of dorsal side and by the form of aedeagus (Fig. 10A).

Type material: Type locality: Malaysia, Pahang, Banjaran Benom, Lata Jarom [03°56'04"N, 102°01'48"E]. **Type specimens**: Holotype ♂ (EJCB): "Malaysia-Pahang, Banjaran Benom, Lata Jarom, 18-21.3.1997, Oliver Ďulík leg.".

Distribution: Malaysia: Pahang.

Etymology: The specific name is the Latin adjective *serratus* (serrate, jagged, serrated, saw-edged). It refers to the elytral apices of this species.

***Agrilus strbai* sp. nov.** Figs. 5F, 1F, 10B

urn:lsid:zoobank.org:act:3FB38880-4090-4BF3-B8F5-62499544B36E

Description: Size: 6.4-8.0 mm (Holotype 7.7 mm). BODY. Shape: cuneiform; Color (dorsally): bicolored or unicolored. HEAD. Medial impression: shallow; Microstructure: present; Epistoma: raised above frons. **Frons**: Shape: flat. **Vertex**: Sculpture elements: rugae; Sculpture aspect: arcuate; Sculpture intensity: rough. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: acute; Apex: sharp. **Disk**: Impressions: medial and lateral or posterolateral. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: distant from angles and margin; Arc: obvious. **Lateral carinae**: Interspace: narrow; Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate or spinate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Color: unicolored; Character: homogenous; Extent: entire except epipleura or entire except glabrous part at distal half or with irregular glabrous parts of various extent. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): deep; Emargination (width): wide. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: longer than 2-3 but shorter than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex.

Figures 9A–9J. Aedeagus of *Agrilus*. **9A,** *A. iban* sp. nov.; **9B,** *A. insularis* Deyrolle, 1864; **9C,** *A. insularis* Deyrolle, 1864, separated; **9D,** *A. jakli* sp. nov.; **9E,** *A. kuchingi* sp. nov.; **9F,** *A. lembik* sp. nov.; **9G,** *A. meratus* sp. nov.; **9H,** *A. orangulu* sp. nov.; **9I,** *A. pictithorax* Obenberger, 1924; **9J,** *A. protenor* Obenberger, 1924.

Variability: The color of dorsal side varies from unicolor silky blue to bicolor with head and pronotum blue and elytra green. The extent of elytral pubescence varies from entire to partial and reduced in the apical third of elytra. The pleural cusp on of elytral apices can be reduced. **Sexual dimorphism**. The male has antennae and tarsi longer; metafemora more expanded; basal ventrite with pair of medial tubercles and the last ventrite wider and apically impressed on disk (Fig. 1F). The medial stripe of erect, white pubescence on ventral side in male expands from anterior margin of prosternal lobe to intercoxal projection of abdomen. The female is without strip of erect pubescence on ventral side.

Diagnosis: *Agrilus strbai* sp. nov. (Fig. 5F) is very similar to *A. jakli* sp. nov. from which it can be distinguished by wider elytral apex and by the form of aedeagus (Fig. 10B).

Type material: Type locality: Indonesia, Sulawesi Tenggara, Buton Island, Wakarumba [04°55'S, 122°51'E]. **Type specimens**: Holotype ♂, 2 paratypes (EJCB): "Sulawesi SE, isl. Buton, Wakarumba, 3-7.II.1994, M. Štrba & I. Jeniš leg."; 15 paratypes (EJCB): "Indonesia, SE Sulawesi, Kasipute, 13-18.5.97 Khvylya leg.".

Distribution: Indonesia: Sulawesi Tenggara.

Etymology: Patronymic; the species is named in honor of entomologist Milan Štrba, Slovakia, who collected the holotype.

Remarks: See remarks at *A. adonis*.

Agrilus subornatus Kerremans, 1900 Fig. 6F

subornatus Kerremans, 1900
Kerremans 1900b: 4, 21, 26.
Kerremans 1903: 277 (catalog).
Obenberger 1936: 1103 (world catalog).
Bellamy 2008: 2312 (world catalog).

Type material: *Agrilus subornatus* Kerremans, 1900. Described from holotype by monotypy. **Type locality**: "not given [Sumatra, Hindrapoera is cited in the title and introductory text of the publication]". **Type specimens**: Holotype ♀ (BMNH): "Sumatra, Weyers [h] \ subornatus Kerr. Type [h] \ A. subornatus Kerrem. Sumatra \ Kerremans 1903-59 [p]".

Distribution: Indonesia: Sumatra.

Remarks: This species is known from ♀ holotype only (Fig. 6F). It has elytral pubescence in form of inverted Y, prosternal lobe is widely but shallowly arcuately emarginated and prosternal process is flat with subparallel sides.

Agrilus subspinosus Fisher, 1921 Fig. 6C

subspinosus Fisher, 1921
Fisher 1921: 356, 364-366.
Obenberger 1924b: 561 (characters in key; notes).
Obenberger 1936: 1103 (world catalog).
Bellamy 1994: 362 (holotype (allotype) in USNM).
Bellamy 2008: 2314 (world catalog).

Type material: *Agrilus subspinosus* Fisher, 1921. Described from holotype and 1 paratype). **Type locality:** "Davao, Mindanao". **Type specimens**: Holotype ♂ (USNM): "Davao Mindanao Baker [p] \ Type No [p] 51460 [h] U. S. N. M. [p] [red label \ Holotype [p] [red ink] Agrilus subspinous Fisher [h] [white label with red border]". Secondary types: 1 paratype (USNM).

Distribution: Philippines: Mindanao island.

Remarks: Know to me only from the holotype (Fig. 6C) and paratype which are similar to *A. adonis*. Male of *A. subspinosus* can be distinguished by slightly dilated prosternal process; feeble triangular impression between metacoxae and by lacking tubercles on basal ventrite.

Agrilus thalassinus Deyrolle, 1864 Figs. 3B, 10D, 7P

thalassinus Deyrolle, 1864
Deyrolle 1864: 141, 179-180.
Gemminger & Harold 1869: 1446 (catalog).
Saunders 1871: 123 (catalog).
Kerremans 1892: 275 (catalog).
Kerremans 1903: 291 (catalog).
Moulton 1911: 179 (checklist; Borneo).
Obenberger 1936: 1105 (world catalog).
Jendek 1998: 331 (lectotype designation).
Bellamy 2008: 2327 (world catalog).

Type material: *Agrilus thalassinus* Deyrolle, 1864 (Fig. 7P). Described from inexplicit number of syntypes. **Type locality**: "Bornéo". **Type specimens**: Lectotype, sex not examined (MNHN): "Transcriptio [p] Thalassinus HDeyr. Bornéo [h] \ Muséum Paris 1952 coll. R. Oberthur [p] [yellow label]". Lectotype by Jendek (1998).

Examined specimens: **INDONESIA**. **Bengkulu**: 1 ♀ (EJCB): Moerara Tenam (03°42'13"S / 102°23'35"E) 1935. **MALAYSIA**. **Sabah**: 1 ♂ (EJCB): Batu Punggul resort env. (04°38'N / 116°36'E) 6, 7-1996.

Distribution: Indonesia: Bengkulu. **Malaysia**: Sabah.

Remarks: See remarks at *A. contractus*.

Agrilus tripartitus Deyrolle, 1864 Figs. 2F, 10E, 7Q

tripartitus Deyrolle, 1864
Deyrolle 1864: 141, 181.
Gemminger & Harold 1869: 1446 (catalog).
Saunders 1871: 123 (catalog).
Kerremans 1892: 276 (catalog).
Kerremans 1900b: 5, 21, 27, 34 ([Note: Kerremans is cited as author on pages 21, 27, 34]; characters).
Kerremans 1903: 277 (catalog).
Gieben 1907: 207 ([Note: Kerremans is cited as author]; cotype in museum in Hamburg).
Moulton 1911: 175 (faunal records; Borneo: Sarawak).
Gebhardt 1925: 93 ([Note: Kerremans is cited as author]; faunal records; Malaysia: Sarawak).
Obenberger 1929: 110 (faunal record; Singapore).

Obenberger 1936: 1105-1106 (world catalog).
Kurosawa 1989: 191 (notes; not in Japan).
Jendek 1998: 331 (lectotype designation).
Bellamy 2008: 2334 (world catalog).

Type material: *Agrilus tripartitus* Deyrolle, 1864 (Fig. 7Q). Described from inexplicit number of syntypes. **Type locality**: "Bornéo". **Type specimens**: Lectotype, sex not examined (MNHN): "Transcriptio [p] Tripartitus HDeyr. Bornéo [h] \ Muséum Paris 1952 coll. R. Oberthur [p] [yellow label]". Lectotype by Jendek (1998).

Examined specimens: MALAYSIA. **Sabah**: 3 ♂ (EJCB): Sandakan (05°53'N / 118°01'E).

Distribution: Malaysia: Sabah, Sarawak.

Remarks: Till present, the concept of this species was unclear and therefore all faunal records from past should be revised. The distribution cited herein is based on the verified records only. *Agrilus tripartitus* (Fig. 2F) is similar to *A. pictithorax*, from which it differs mainly by the shape of aedeagus (Fig. 10E) and by lacking tubercles on basal ventrite in male.

***Agrilus upsilon* sp. nov.** Figs. 4A, 10F, 10G

urn:lsid:zoobank.org:act:02288DBB-438E-4DBD-8EE7-8E5C6014257C

Description: Size: 5.8-7.1 mm (Holotype 6.3 mm). BODY. Shape: cuneiform; Color (dorsally): bicolored. HEAD. Medial impression: shallow; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: arcuate; Sculpture intensity: superficial. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: obvious; Shape: arcuate; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: posterolateral. **Prehumerus**: Development: carinal or tubercular; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: adjoining to lateral carina; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored with darker hue at apical third; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: arcuate or subtruncate; Modifications: margin obviously denticulate. **Pubescence**: Extent: proximal and distal; Proximal (shape): like V, X, Y, T; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity; Sinuosity (depth): very shallow. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in basal part; Profile: convex.

Variability: The elytral pubescence varies considerably in extent, but it is always interrupted by glabrous part in apical third. The proximal part of pubescence is usually in form of inverted Y or V, but it can be also subquadrangular and expanded more towards epipleura. The distal part of pubescence extends always to elytral apices. Form of elytral apices varies from subarcuate, to subangulate or subtruncate but always with denticulate margin. The number of denticles is usually more than two. **Sexual dimorphism**. The male has longer metatarsi and tubercles on basal ventrite. The medial strip of erected pubescence on ventral side in male extends from anterior margin of prosternal lobe to prosternal process. The apex of last ventrite in male is distinctly impressed.

Diagnosis: *Agrilus upsilon* sp. nov. (Fig. 4A) belongs to species with elytral apices not clearly bicupidate. Among them, it can be distinguished mainly by larger size, strikingly bicolor dorsal side, more prolonged body, anterior part of elytral pubescence in form of inverted Y or V and especially by distinctive aedeagus (Figs. 10F, 10G).

Type material: Type locality: Malaysia, Pahang, Lata Lembik, 30 km NE Raub, 200-400 m [03°56'N, 101°38'E]. **Type specimens**: Holotype ♂, 3 ♂ paratypes (EJCB): "Malaysia, Pahang distr., 30km NE Raub, Lata Lembik, 3°56'N; 101°38'E, 200-400 m, 22.IV.-1.V., 8-15.V.2002, E. Jendek & O. Šauša leg."; 4 paratypes (EJCB): "Indonesia, W Sumatra, Harau Valley, 500-800 m, ca 20 km N of Payakumbuh, v-vi.2007, S. Jákl leg."; 2 paratypes (EJCB): "Indonesia, W Sumatra, Harau Valley, 500-800 m, ca 20 km N of Payakumbuh, vii.2007, S. Jákl leg."; 2 paratypes (EJCB): "Indonesia, W Sumatra, Harau Valley, 500-800 m, ca 20 km N of Payakumbuh, viii.2006, S. Jákl leg."; 1 paratype (EJCB): "Indonesia, W Sumatra, Harau Valley, 500-800 m, ca 20 km N of Payakumbuh, v.2007, S. Jákl leg."; 1 paratype (EJCB): "Indonesia, W Sumatra, Harau Valley, 500-800 m, ca 20 km N of Payakumbuh, vi.2007, S. Jákl leg."; 1 ♀ paratype (EJCB): "Malaysia, Benom Mts, 15 km E Kampong Dong, 1.iv.1998, alt. 700 m, 3.53° N, 102.01°E, D. Hauck leg.".

Distribution: Indonesia: Sumatera Barat, **Malaysia**: Pahang.

Etymology: The specific name is a noun in apposition derived from the 20th uppercase letter of the Greek alphabet (Y). The name refers to the shape of anterior part of elytral pubescence which resembles inverted Y.

***Agrilus vir* sp. nov.** Figs. 4D, 10H

urn:lsid:zoobank.org:act:3068319B-32DF-4771-99A1-63BB9BD90E15

Description: Size: 6.2 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): unicolored. HEAD. Medial impression: shallow; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae; Sculpture aspect: arcuate. **Eyes**: Size: large; Lower margin: in line or below antennal socket; Median orbit: converging ventrally. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum; Antennomere 7-10: markedly longer than wide. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: moderate; Shape: arcuate; Position: not reaching level of anterior angles. **Posterior angles**: Shape: acute; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: anteromedial and posteromedial. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin;

Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 2; Position of dominant projection: sutural margin. **Pubescence**: Extent: proximal and distal; Proximal (shape): perisutural stripes; Distal (shape): apical. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Shape: with wide apex; Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: subtruncate with indication of medial sinuosity; Sinuosity (depth): very shallow. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: widest in apical half; Profile: convex; Modifications: tegmen with transverse carina.

Variability: Unknown. **Sexual dimorphism**. The male has metafemora obviously expanded; basal ventrite with pair of medial tubercles and the last ventrite wider and apically impressed on disk. The medial stripe of erect, white pubescence on ventral side in male expands from anterior margin of prosternal lobe to metanotum. The female is unknown.

Diagnosis: *Agrilus vir* sp. nov. (Fig. 4D) belongs to species having transverse carina on the tegmen of aedeagus. It can be distinguished mainly by having dorsal side unicolor blue, pronotum more prolonged, prosternal lobe obvious and by the form of aedeagus (Fig. 10H).

Type material: Type locality: Malaysia, Perlis, Taman Negeri, Perlis, 35 km N of Kangar, alt. 180m [06°42'05"N, 100°11'55"E]. **Type specimens**: Holotype ♂ (EJCB): "Malaysia-Perlis, Taman Negeri, Perlis, 35 km N of Kangar, N 06°42'05", E 100°11'55", alt. 180m, 4-8.iv.2014, F.+M. Štrba leg.".

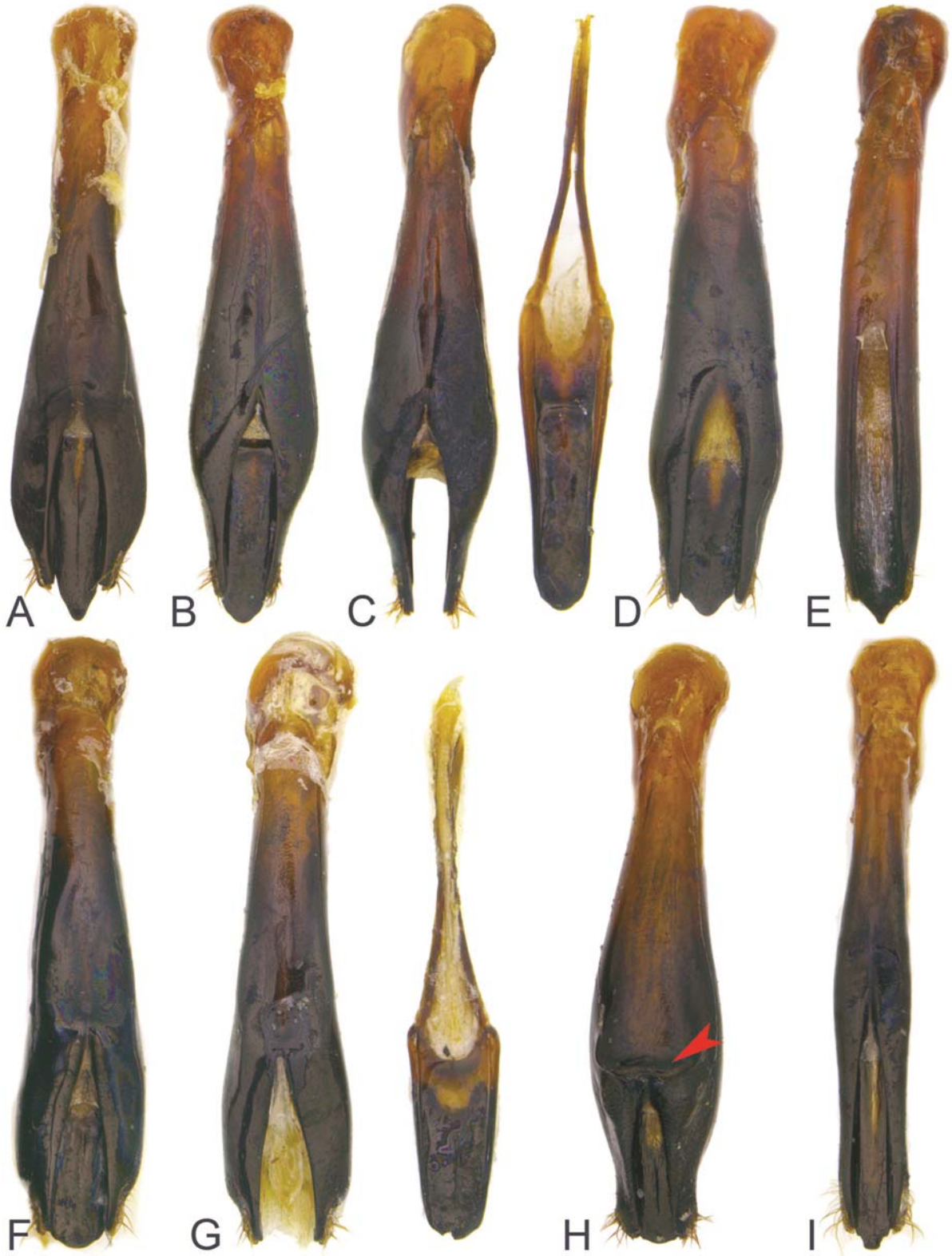
Distribution: Malaysia: Perlis.

Etymology: The specific name *vir* is the Latin noun in apposition (hero, husband, man). It refers to the sex of the holotype.

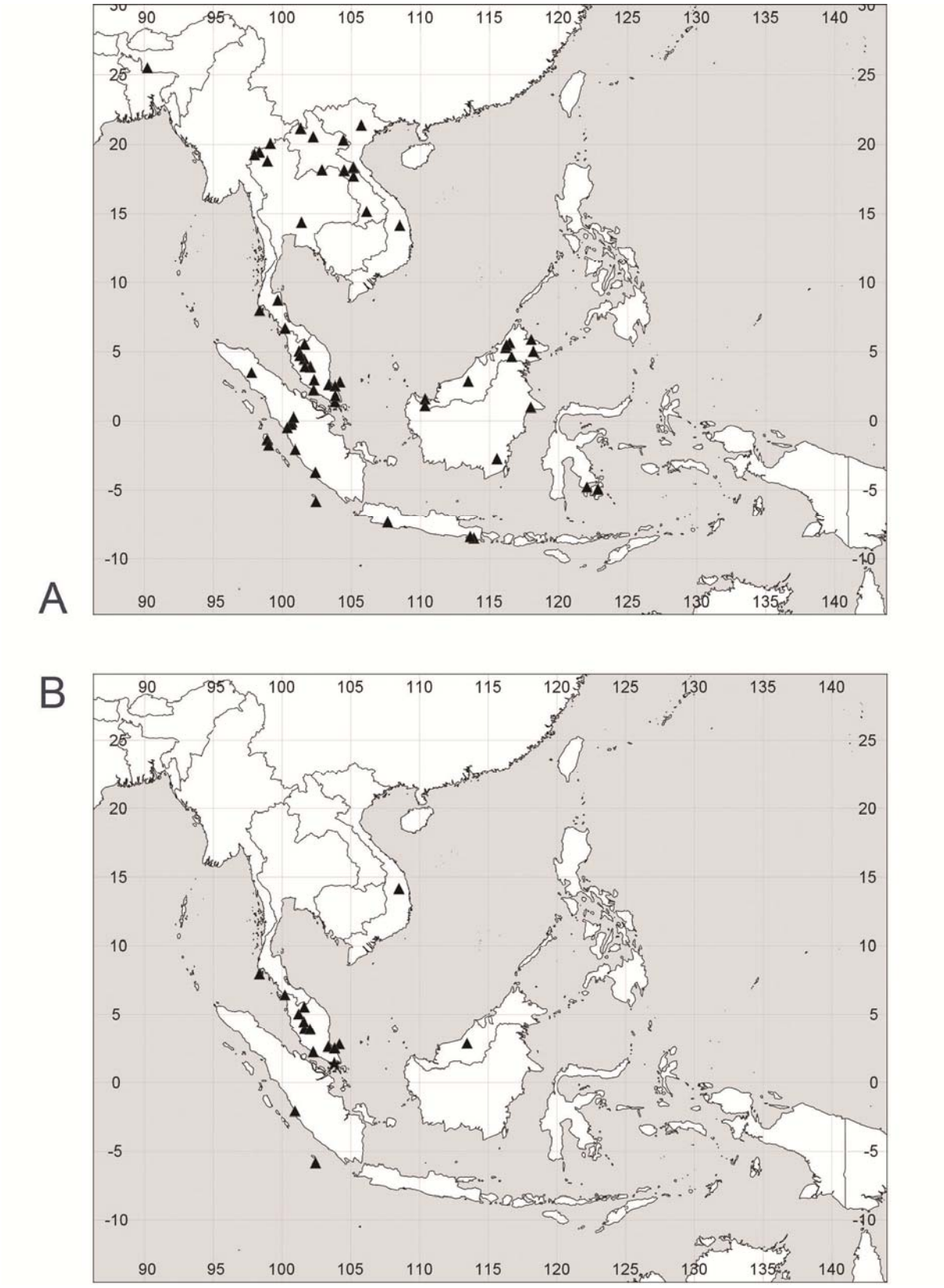
***Agrilus xiphos* sp. nov.** Figs. 2D, 10I

urn:lsid:zoobank.org:act:35F0E35D-0459-4BA2-A183-0E9A7DBDF51C

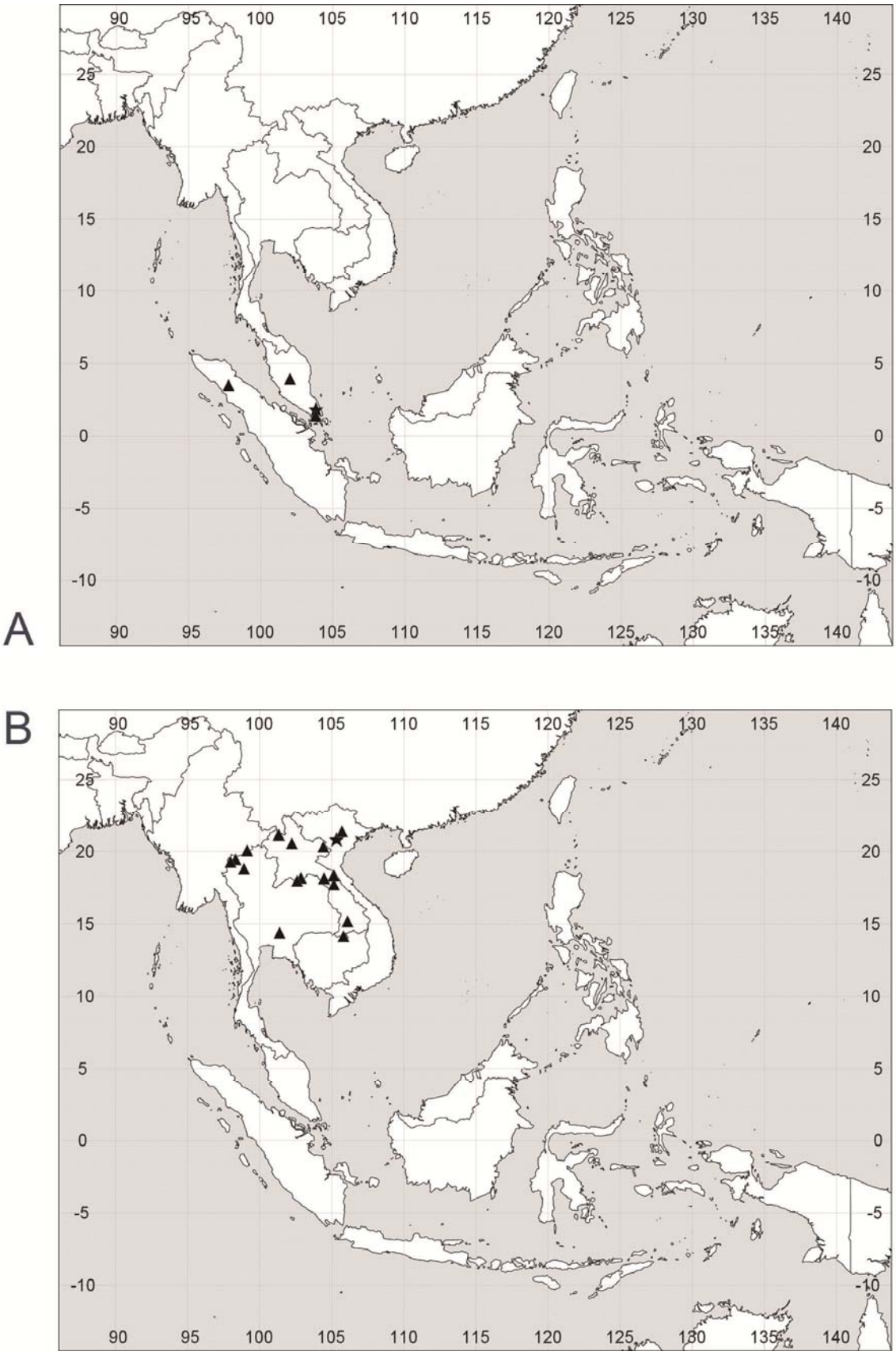
Description: Size: 5.4 mm (Holotype). BODY. Shape: cuneiform; Color (dorsally): unicolored. HEAD. Microstructure: present; Epistoma: raised above frons. **Vertex**: Sculpture elements: rugae. **Eyes**: Size: large; Lower margin: in line or below antennal socket. **Antennae**: Width: slender; Serration: from antennomere 4; Antennomere 7-10: with obvious collum. PRONOTUM. Shape: visually elongate or square; Sides: sinuate before posterior angles or slightly arcuate; Maximal width: at anterior margin; Anterior margin: wider than posterior. **Anterior lobe**: Development: obvious; Shape: arcuate; Width: broad; Position: at level with anterior angles. **Posterior angles**: Shape: rectangular; Apex: sharp. **Disk**: Impressions: medial and lateral; Medial impression: anteromedial and posteromedial. **Prehumerus**: Development: carinal; Shape: arcuate; Extent: to 1/2 of pronotal length; Anterior end: joined with lateral carina; Posterior end: joined with posterior angle or margin; Arc: obvious. **Lateral carinae**: Convergence: moderate; Junction: present; Narrowest point: at posterior



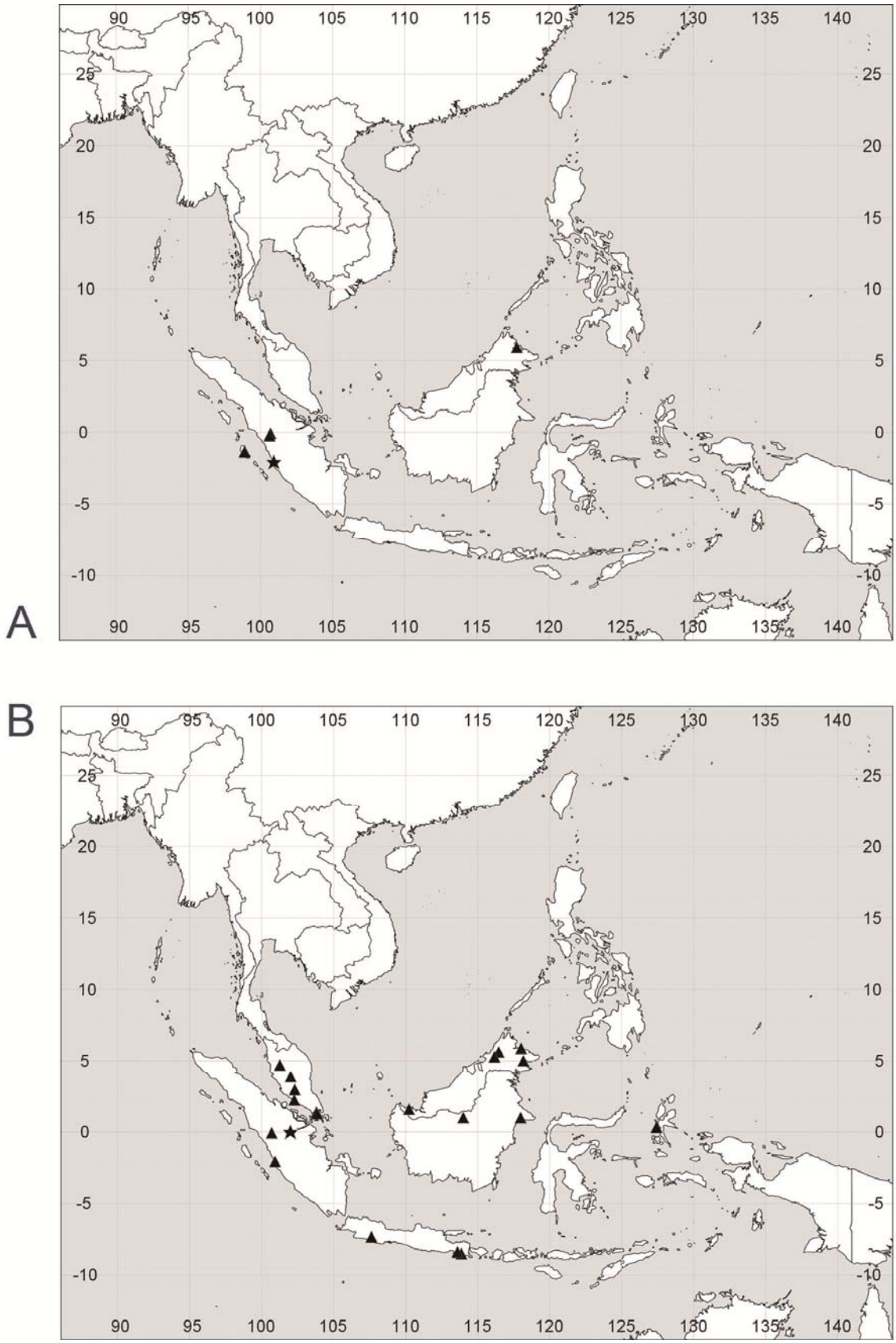
Figures 10A–10I. Aedeagus of *Agrilus*. **10A,** *A. serratus* sp. nov.; **10B,** *A. strbai* sp. nov.; **10C,** *A. strbai* sp. nov., separated; **10D,** *A. thalassinus* Deyrolle, 1864, **10E,** *A. tripartitus* Deyrolle, 1864; **10F,** *A. upsilon* sp. nov.; **10G,** *A. upsilon* sp. nov., separated; **10H,** *A. vir* sp. nov.; **10I,** *A. xiphos* sp. nov.



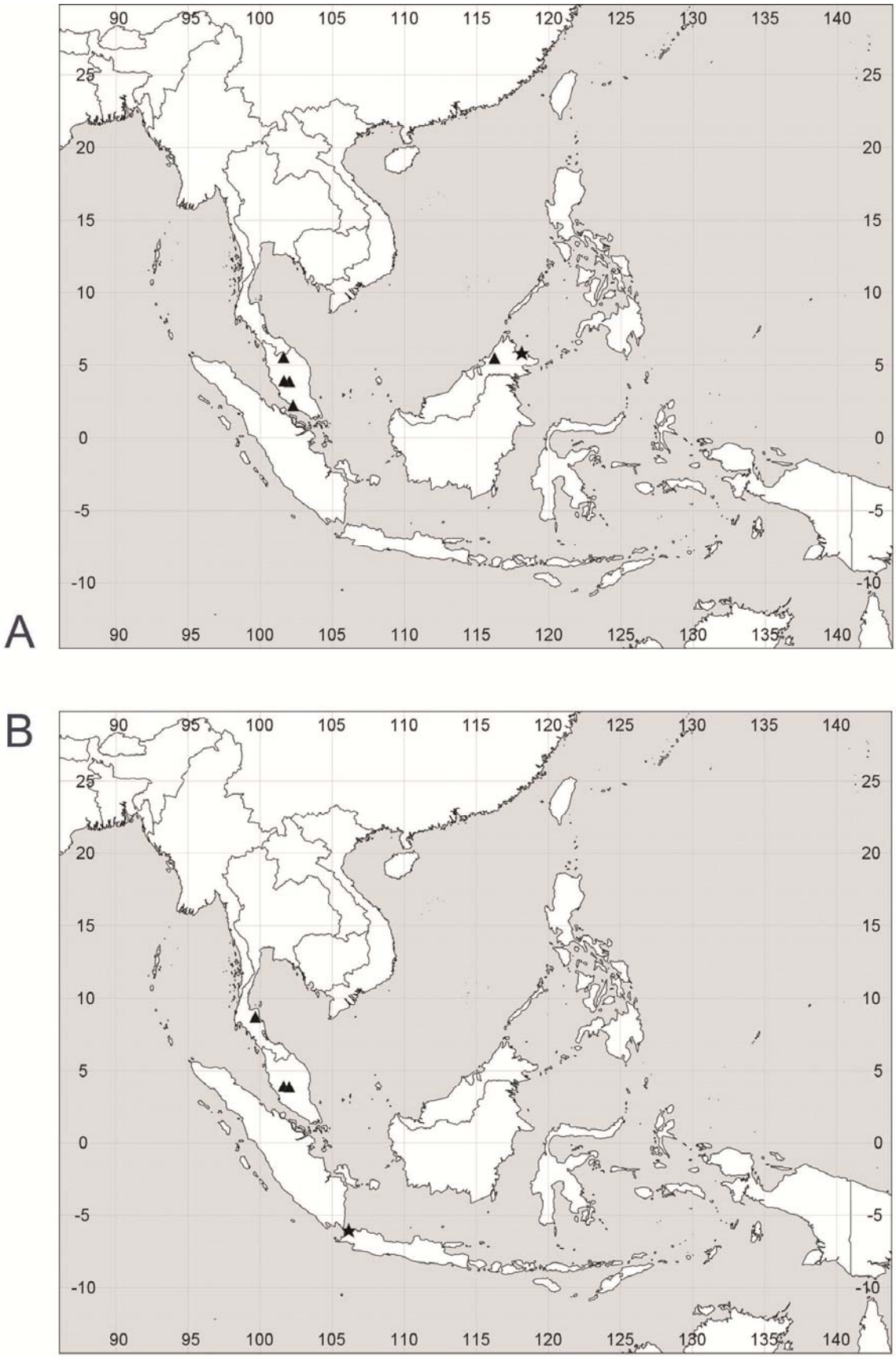
Figures 11A–11B. 11A, Examined material and known distribution of *Agrilus adonis* species-group; **11B,** Distribution of *A. adonis* Deyrolle, 1864. Star (★) indicates type locality, triangle (▲) indicates examined material.



Figures 12A–12B. Distribution of *Agrilus*. Star (★) indicates type locality, triangle (▲) indicates examined material. **12A,** *A. cechovskyi* sp. nov.; **12B,** *A. emeritus* Descarpentries & Villiers, 1963.



Figures 13A–13B. Distribution of *Agrilus*. Star (★) indicates type locality, triangle (▲) indicates examined material. **13A,** *A. famulus* Kerremans, 1990; **13B,** *A. insularis* Deyrolle, 1864.



Figures 14A–14B. Distribution of *Agrilus*. Star (★) indicates type locality, triangle (▲) indicates examined material. **14A,** *A. pictithorax* Obenberger, 1924, **14B,** *A. protenor* Obenberger, 1924.

angles. ELYTRA. Color: unicolored; Humeral carina: absent. **Apices**: Arrangement: separate; Shape: cuspidate; Number of cusps: 1. **Pubescence**: Extent: proximal and distal; Proximal (shape): perisutural stripes; Distal (shape): perisutural stripe. STERNUM. **Prosternal lobe**: Size: large; Distal margin: arcuately emarginate; Emargination (depth): shallow; Emargination (width): narrow. **Prosternal process**: Shape: subparallel; Sides: straight; Angles: obtuse; Angles (tips): blunt; Disc: flat; Projection (extend): protruding distinctly beyond angles. **Metasternum**: Metasternal projection: flat. ABDOMEN. **Basal ventrite**: with tubercle(s). **Pygidium**: Apical margin: angulate. **Last ventrite**: Disk: impressed with medial carinula. **Sternal groove**: Extent: on all ventrites; Shape on the apex of last ventrite: arcuate. LEGS. **Metatarsus**: Length to mesotarsus: obviously longer; Length to metatibia: somewhat shorter. **Tarsomere 1**: Length to following tarsomeres: subequal or longer than 2-4. GENITALIA. **Aedeagus**: Symmetry: symmetric; Shape: subparallel.

Variability: Unknown. **Sexual dimorphism**. The male bears pair of tubercles on basal ventrite and the strip of erect medial pubescence on ventral side extends from prosternal lobe to intercoxal process of abdomen. The female is unknown.

Diagnosis: *Agrilus xiphos* sp. nov. (Fig. 2D) belongs to species with unicuspidate elytral apices. From them, it can be distinguished by unicolor blue dorsal side, by lacking tomentose spots and especially by the shape of aedeagus (Fig. 10I).

Type material: Type locality: Malaysia, Pahang, Lata Lembik, 30 km NE Raub, 200-400 m [03°56'N, 101°38'E]. **Type specimens**: Holotype ♂ (EJCB): "Malaysia, Pahang distr., 30km NE Raub, Lata Lembik, 3°56'N; 101°38'E, 200-400 m, 22.IV.-1.V., 8-15.V.2002, E. Jendek & O. Šauša leg.".

Distribution: Malaysia: Pahang.

Etymology: The specific name is a noun in apposition from the Greek *xiphos* (double-edged sword used by the ancient Greeks). It refers to the unicuspidate shape of elytral apices of the species.

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References

Baudon A. **1965.** Contribution a l'etude des Buprestidae du Laos (Coleoptera) (1re partie). *Bulletin & Annales de la Société Royale d'Entomologie de Belgique* 101(10): 193–230.

Baudon A. 1968. *Catalogue commenté des Buprestidae récoltés au Laos*. Deuxième Partie. Vientiane, Ministère de l'Information, 190 pp.

Bellamy C. L. 1994. A list of the primary types of Buprestidae (Coleoptera) in the U. S. National Museum of Natural History. *Giornale Italiano di Entomologia* (1994) 6(34): 357–378.

Bellamy C. L. 2008. *A world catalogue and bibliography of the jewel beetles (Coleoptera*: *Buprestoidea)*. Volume 4, Agrilinae: Agrilina through Trachyini. Sofia, Pensoft, p. 1932–2684.

Bellamy C. L. & Nelson G. H. 1990. Lectotype designations in the Buprestidae collections of the National Museum of Natural History (Coleoptera). *Insecta Mundi* (1989) 3(4): 289–297.

Descarpentries A. & Villiers A. 1963. Catalogue raisonné des Buprestidae d'Indochine. I, Agrilini, genre Agrilus (1re partie). *Revue française d'Entomologie* 30(1): 49–62.

Descarpentries A. & Villiers A. 1967. Catalogue raisonné des Buprestidae d'Indochine. XII. Agrilini (supplément). *Bulletin du Muséum National d'Histoire Naturelle*, *Paris* 2e Série, 39 (1), 143–150.

Deyrolle H. 1864. Description des Buprestides de la Malaisie recueillis par M. Wallace. *Annales de la Société Entomologique de Belgique* 8: 1–272, 305–312.

Fisher W. S. 1921. New Coleoptera from the Philippine Islands. Family Buprestidae, tribe Agrilini. *Philippine Journal of Science*, *Manila* 18(4): 349–447.

Fisher W. S. 1930a. New Malayan Buprestidae. *Journal of the Federated Malay States Museums* 16: 25–57.

Fisher W. S. 1930b. New Bornean Buprestidae. *Journal of the Federated Malay States Museums* 16: 58–97.

Fisher W. S. 1936. New Malayan Buprestidae (III). *Journal of the Federated Malay States Museums* 18(1): 173–177.

Gebhardt A. von 1925. Vier neue Prachtkäfer von Borneo (Col. Buprest.). *Entomologische Blätter* 21(2): 92–96.

Gemminger M. & Harold E. von 1869. *Catalogus coleopterorum hucusque descriptorum synonymicus et systematicus*. Tom. V, Buprestidae, Trixagidae, Monommidae, Eucnemidae, Elateridae, Cebrionidae. Monachii, Sumptu E. H. Gummi, pp. 1347–1608.

Gieben H. 1907. Verzeichnis der im Naturhistorischen Museum zu Hamburg vorhandenen Typen von Coleopteren. *Mitteilungen aus dem Naturhistorischen Museum in Hamburg* 24(2 Beiheft): 195–228.

ICZN (International Commission on Zoological Nomenclature) 1999. *International Code of Zoological Nomenclature*. Fourth Edition, adopted by the International Union of Biological Sciences. London, International Trust for Zoological Nomenclature, XXIX + 306 pp.

Jendek E. 1998. Lectotype designations in the Palaearctic and Oriental *Agrilus* species (Coleoptera: Buprestidae) of the Oberthür's collection in the Muséum national d'Histoire naturelle, Paris. *Acta Societatis Zoologicae Bohemicae* 62: 315–333.

Jendek E. 2005. Taxonomic and nomenclatural notes on the genus Agrilus Curtis (Coleoptera: Buprestidae: Agrilini). *Zootaxa* 1073: 1–29.

Jendek E. 2007. Taxonomic and nomenclatural clarifications on the genus Agrilus (Coleoptera: Buprestidae: Agrilini). *Entomological Problems*, *Bratislava* 37(1–2): 87–95.

Jendek E. 2012. Studies in the Palaearctic and Oriental Agrilus (Coleoptera, Buprestidae) IV. *Zootaxa* 3300: 1–19.

Jendek E. & Grebennikov V. 2011. *Agrilus (Coleoptera*, *Buprestidae) of East Asia*. Prague, Jan Farkač, 362 pp. [the online version of the book is available at https://drive.google.com/file/d/0BzVg5T7tIMfiVVd6MVU5N0piNUk/edit?usp=sharing]

Jendek E. & Poláková J. 2014. *Host plants of world Agrilus (Coleoptera*, *Buprestidae)*. A critical review. Springer, 706 pp.

Kerremans C. 1892. Catalogue synonymique des Buprestides decrits de 1758 à 1890. Séance du 5 septembre 1891. *Mémoires de la Société Entomologique de Belgique* 1: 1–304.

Kerremans C. 1900a. Buprestides nouveaux et remarques synonymiques. *Annales de la Société Entomologique de Belgique* 44: 282–351.

Kerremans C. 1900b. Contribution a l'etude de la faune entomologique de Sumatra (Côte ouest - Vice-résidence de Païnan). Chasses de M. J. -L. Weyers VI. Buprestides. *Mémoires de la Société Entomologique de Belgique* 7: 1–60.

Kerremans C. 1903. Coleoptera Serricornia. Fam. Buprestidae, Fasc. 12b, 12c, 12d, p. 49–338, *In*: Wytsman, P. (ed), *Genera Insectorum*. Tome II, Fascicules XII-XIV. Bruxelles, Verteneuil & Desmet.

Kurosawa Y. 1975. [A comment to the Japanese Buprestidae (14)]. *Coleopterists' News*, *Tokyo* 27 / 28: 1–4. (in Japanese)

Kurosawa Y. 1989. A list of the buprestid species erroneously described or recorded from Japan. *Kanagawa Chûhô* 90: 187–192.

Miwa Y. & Chûjô M. 1936. *Catalogus Coleopterorum Japonicorum*. *Buprestidae*. Taihoku, Formosa. Taiwan-Konshu-Kenkyusho, 26 + 8 pp index. (in Japanese)

Moulton J. C. 1911. A contribution to the study of the insect fauna of Borneo. A list of the Bornean Buprestidae (Part I). *Sarawak Museum Journal* No. 1: 157–183.

Obenberger J. 1924a. Kritische Studien über die Buprestiden (Col.). *Archiv für Naturgeschichte* 90(A) Heft 3: 1–171.

Obenberger J. 1924b. A study of the Buprestidae, collected by Charles Fuller Baker in Singapore, Borneo and the Philippine Islands. *Philippine Journal of Science*, *Manila* 25(5): 539–660.

Obenberger J. 1929. Insecta Baumiana I. 1. Buprestidae. *Acta Entomologica Musaei Nationalis Pragae* 7: 107–119.

Obenberger J. 1935. De regionis palaearcticae generis Agrili speciebus novis (Col. Bupr.). O nových palaearktických druzích krasců z rodu Agrilus. *Časopis Československé Společnosti Entomologické* 32: 161–171.

Obenberger J. 1936. Buprestidae V., p. 935–1246, *In*: Junk, W. & Schenkling, S. (eds), *Coleopterorum Catalogus* Volumen XIII, Pars 152, Gravenhage, Verlag für Naturwissenschaften, W. Junk, 311 pp.

Obenberger J. 1960. Notes et études buprestologiques I. (Coleoptera). Buprestodologické studie I. *Acta Universitatis Carolinae* Biologica, No. 2: 125–153.

Saunders E. 1871. *Catalogus Buprestidarum Synonymicus et Systematicus*. London, E. W. Janson, XXIII + 171 pp.

Shorthouse D. P. 2010. SimpleMappr, an online tool to produce publication-quality point maps. [Retrieved from http://www.simplemappr.net. Accessed 14 January, 2015].

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http://dx.doi.org/10.12976/jib/2015.3.3 http://www.insectbiodiversity.org