Revision of the *Agrilus muscarius* species-group (Coleoptera: Buprestidae) with
description of thirteen new species from Palaeartic and Oriental regions

EDUARD JENDEK & VASILY V. GREBENNIKOV
Entomology Research Laboratory, Ottawa Plant Laboratories, Canadian Food Inspection Agency, K.W. Neatby Bldg., 960 Carling Avenue, Ottawa, Ontario, K1A 0C6, Canada. E-mail: jendeke@agr.gc.ca

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Abstract

The *Agrilus muscarius* species-group (Coleoptera, Buprestidae, Agrilinae) is defined to include twenty-nine species, thirteen of which are described herein: *A. apicaureus* Jendek, **sp. nov.** (north Laos); *A. carinelytratus* Jendek, **sp. nov.** (mainland Malaysia); *A. cuneatus* Jendek, **sp. nov.** (Thailand); *A. dilatipenis* Jendek, **sp. nov.** (Thailand); *A. haucki* Jendek, **sp. nov.** (Malaysia: Pahang); *A. hunanus* Jendek, **sp. nov.** (China: Hunan); *A. madanensis* Jendek, **sp. nov.** (south Vietnam); *A. pseudoharlequin* Jendek, **sp. nov.** (Indonesia: Java); *A. rolcki* Jendek, **sp. nov.** (India: Assam); *A. semicaducus* Jendek, **sp. nov.** (north Laos); *A. spiculipenis* Jendek, **sp. nov.** (Thailand, Vietnam); *A. tiomanensis* Jendek, **sp. nov.** (Malaysia: Tioman island); *A. ventrituber* Jendek, **sp. nov.** (Myanmar, north Thailand). *Agrilus aurarius* (Kerremans, 1892) **comb. nov.** is transferred from the genus *Meliboeus*. Two new synonyms are proposed for *A. aurarius* (Kerremans, 1892) **comb. nov.** (≡ *A. bocae* Descarpentries & Villiers, 1963 **syn. nov.**) and *A. muscarius* Kerremans, 1895 (≡ *A. seladon* Obenberger, 1940 **syn. nov.**). A lectotype is designated for *A. muscarius* Kerremans, 1895. Members of the group are illustrated and an identification key is provided.

**Key words:** Taxonomy, new species, Coleoptera, Buprestidae, *Agrilus*, Palaearctic and Oriental regions

Introduction

Species from the *Agrilus muscarius* species-group are strikingly, often bichromatically or trichromatically, pubescent in the form of intricate mosaic patterns. Each pubescence color is usually combined with a different colored elytral background, making it visually more contrasting. This character of elytral pubescence and color is similar to that of species related to *A. angulatus* (Fabricius, 1798) and *A. occipitalis* (Eschscholtz, 1822), from which members of the *A. muscarius* species-group can by distinguished by the smaller head and eyes, the different shape and sculpture of the pronotum and by the diverse elytral patterns. Members of the *A. muscarius* species-group are distributed in the Palaearctic and Oriental parts of south and east Asia (Fig. 77). This study is the first comprehensive revision of this group as a whole. It provides descriptions of thirteen new taxa, two new synonyms, one new generic combination, one lectotype designation, diagnosis of the group and a key to the species, illustrations, taxonomic history and synoptic catalog for all included species.

Material and methods

The following abbreviations are used in the text: [p], preceding data ‘printed’; [h], preceding data ‘handwritten’. Square brackets [ ] are used for remarks and addenda; the backslash \ separates data from different labels. Codens for museums and collections are:

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<thead>
<tr>
<th>Coden</th>
<th>Museum/Collections</th>
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<tr>
<td>DEI</td>
<td>Deutsches Entomologisches Institut, Eberswalde Finow, Germany;</td>
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<tr>
<td>EJCB</td>
<td>Collection of E. Jendek, Slovak Academy of Sciences, Bratislava, Slovakia;</td>
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<td>Institut royal des Sciences naturelles de Belgique, Brussels, Belgium;</td>
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<td>MHNB</td>
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<td>Národní muzeum, Prague, Czech Republic;</td>
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<td>National Science Museum (Natural History), Tokyo, Japan;</td>
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<tr>
<td>ZIN</td>
<td>Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.</td>
</tr>
</tbody>
</table>

All taxonomic acts proposed herein should be attributed to the first author. All primary types belonging to *A. muscarius* species-group were studied, except for *A. palii* Baudon, 1968 (MHNB) which was unavailable.

Synonyms are cited in the following format: **specific name**, author, year: pages. The valid name is cited first, then chronologically by invalid names that are preceded by an equal sign (=). Taxonomic and/or
nomenclatural information, where necessary, is cited in square brackets at the end. Generic combinations are cited only if other than of *Agrilus*. Subsequent references for each particular name are provided on a new line.

The type locality is quoted exactly as originally published, although the order of type locality data is sometimes altered from the original sequence.

Data on material examined are ordered alphabetically with the following format COUNTRY: Lower administration unit: number of specimens, sex (collection): “verbatim data from locality label”. The summarized distribution data follows the format: Country (Lower administration unit). Distributional data taken from the published sources are cited with the corresponding reference.

**Diagnosis**

Members of the *Agrilus muscarius* species-group are small to medium sized (3.5–7.2 mm), with fusiform (Figs. 8–33) or cuneate body (Figs. 1–7) covered with ornamental pubescence dorsally. Head and eyes small, distinctly narrower than basal part of pronotum (Figs. 8–33), rarely large (Figs. 1–7). Pronotum widest in basal half, with sides subrectilinearly (Fig. 28) or arcuately (e.g. Figs. 19–24) convergent apicad, rarely with subparallel sides (Fig. 1). Pronotal disk markedly convex, with prebasal impression; lateral impressions absent; marginal and submarginal pronotal carinae strikingly convergent and conjoined in basal third, distant from hind pronotal angles. Prehumerus costate or carinate, rectilinear or arcuate laterally, extending to basal third or basal half of pronotal length, apex distant from marginal carina.

Elytra bichromatic (e.g. Figs. 18–20), rarely monochromatic (Fig. 1) or trichromatic (Figs. 25–27) combined with monochromatic (Figs. 7, 24, 33), bichromatic (Figs. 8–16) or trichromatic (Figs. 25, 27) pubescence. Elytra in apical adsutural ¾ with striking, contrasting, subtriangular or V-shaped pubescent pattern surrounded by glabrous (Figs. 1–15, 17–33), or diversely colored (Fig. 16) areas. Humeri sometimes with short, or long humeral carinae. Elytral apices separately (Fig. 5, 30) or conjointly (Fig. 25–29) arcuate. Prosternal lobe large with apical margin entire (Figs. 40, 51, 53), emarginated (Figs. 49, 55) or incised (Figs. 35–37). Prosternal process tricuspidate with sides subparallel (Figs. 42), rectilinearly (Figs. 39) or sinuately (Figs. 35, 51, 52) divergent. Basal abdominal ventrite in male sometimes with tubercles. Apex of last abdominal ventrite with an emargination, which is sometimes very obsolete and scarcely visible.

There are two trends in body part development within the *Agrilus muscarius* species-group. The first consists of species with a wider head, larger eyes, pronotum less convergent apicad with a deeply bisinuate anterior margin, slender body and with long, narrow elytral apices (*A. nalandae* Théry, 1904; *A. aurosus* Descarpentries & Villiers, 1963; *A. rolcki* Jendek, sp. nov.; *A. cuneatus* Jendek, sp. nov.; Figs. 1–5). The second group (all remaining species, Figs. 6–33) is distinctive by the smaller eyes and head, pronotum strikingly convergent apicad with a less bisinuate or subtruncate anterior margin, a more robust body and by the shorter and wider elytral apices.

**Key to species**

1. Body slender with elytral apices narrow (Figs. 1–5); anterior pronotal margin deeply bisinuate; margin of prosternal lobe incised or angulately emarginate medially (Figs. 34–37) .......................................................... 2
   - Body robust with elytral apices wider (Figs. 6–33); anterior pronotal margin moderately bisinuate to subtruncate; margin of prosternal lobe subtruncate, emarginate or incised medially (Figs. 38–57) ........................................ 5

2. Elytral apices without distinct pubescence (Figs. 1–3) .......................................................... 3
   - Elytral apices with whitish or golden pubescence (Figs. 4–5) .......................................................... 4

3. Body smaller (4.9 mm); prehumerus filamentose apically, not reaching to half of pronotal length (lateral view); postscutellar adsutural elytral pubescence narrowly subtriangular; elytra monochromatic black; male unknown; Sri Lanka (Figs. 1, 34) .......................................................... *A. nalandae* Théry, 1904
   - Body larger (5.0–7.2 mm); prehumerus costate, reaching to half of pronotal length (lateral view); postscutellar adsutural elytral pubescence in shape of letter Lambda (Λ); elytra bichromatic with apex golden or carmine, rarely black;
male with two tubercles on basal abdominal ventrite; India (Assam), Laos, Vietnam (Figs. 2–3, 35, 58) ............................................................  A. aurosus Descarpentries & Villiers, 1963

4 Body smaller (4.9 mm); pronotal sides subparallel, convergent just before apex; prosternal process feebly impressed with angles in one plane; apex of last abdominal ventrite without emargination; Thailand (Figs. 5, 37, 60) .................................  A. cuneatus Jendek, sp. nov.

4 Body larger (5.9–6.3 mm); pronotal sides convergent from base; prosternal process impressed with angles protruding ventrad; apex of last abdominal ventrite feebly arcuately emarginate; India (Assam) (Figs. 4, 36, 59) ..........................................................  A. rolcki Jendek, sp. nov.

5 Pronotal sides slightly convergent apicad (Figs. 6–7); anterior pronotal margin somewhat narrower than posterior one; head and eyes large; prehumerus shorter, not extending to half of pronotal length (lateral view) .........................  6

5 Pronotal sides markedly convergent apicad (Figs. 8–33); anterior pronotal margin strikingly narrower than posterior one; head and eyes small; prehumerus longer, extending to half of pronotal length (lateral view) .........................  7

6 Posterior pronotal angles rectangular; apex of last abdominal ventrite distinctly emarginate; male without tubercles on basal abdominal ventrite; aedeagus styliform (Fig. 62); size 3.9–4.6 mm; Thailand, Vietnam (Figs. 7, 39, 62) .................................  A. spiculipenis Jendek, sp. nov.

6 Posterior pronotal angles obtuse; apex of last abdominal ventrite obtusely emarginate; male with two tubercles on basal abdominal ventrite; aedeagus stout (Fig. 61); size 3.9–4.4 mm; north Thailand, Myanmar (Mandalay) (Figs. 6, 38, 61) .................................................................  A. ventrituber Jendek, sp. nov.

7 Apex of last abdominal ventrite deeply, arcuately emarginate ..................................................................................................................  8

7 Apex of last abdominal ventrite entire, or shallowly arcuately emarginate .................................................................  9

8 Elytral apices conjointly arcuate; elytral humeri without carinae; size 4.0 mm; Sumatra (Figs. 14, 45) .................................  A. coraeboides Kerremans, 1900

8 Elytral apices broadly separately arcuate; elytral humeri with short carinae; size 4.0 mm; Borneo (Fig. 15) ........................................  A. samboides Fisher, 1930

9 Apical margin of prosternal lobe subtruncate or weakly inflected (Figs. 40, 43, 51–53, 55) .................................  10

9 Apical margin of prosternal lobe distinctly emarginate or incised (Figs. 42, 44, 46–50, 54, 56–57) .........................  17

10 Elytral pubescence distinctly trichiromatic (golden, white, carmine or reddish) (Figs. 25, 27) .........................  11

10 Elytral pubescence monochromatic, bichromatic or vaguely trichromatic .................................................................  12

11 Prehumerus rising from posterior pronotal angles, bisinuate; eyes larger and more convex; elytral humeri without carinae; body more robust; size 4.5 mm; Malaysia (Borneo, Sabah) (Figs. 25, 70) ... A. harlequin Obenberger, 1924

11 Prehumerus rising mediad of posterior pronotal angles, closer to medial part of pronotum, almost straight except for apical parts; eyes smaller and less convex; elytral humeri with carinae; body more elongate; size 5.2–5.3 mm; north Thailand (Figs. 27, 52) .................................................................  A. siamensis Tôyama, 1987

12 Elytra with humeral carinae ..........................................................................................................................................................  13

12 Elytra without humeral carinae..................................................................................................................................................  15

13 Elytra with long humeral carinae extending beyond distal part of epipleuron (lateral view); size 3.9–4.0 mm; mainland Malaysia (Melaka, Pahang) (Figs. 31, 55, 74) ...............................................  A. carinelytratus Jendek, sp. nov.

13 Elytra with very short humeral carinae not extending to distal part of epipleuron (lateral view) .........................  14

14 Prosternal process with sides slightly expanded or subparallel (Fig. 53); size 4.1–4.9 mm; Malaysia (island Tioman) (Figs. 28–29, 53, 72) .................................................................  A. tianonensis Jendek, sp. nov.

14 Prosternal process with sides markedly expanded (Fig. 51); size 5.0 mm; Indonesia (Java) (Figs. 26, 51, 71) .................................................................  A. pseudoharlequin Jendek, sp. nov.

15 Apex of last abdominal ventrite entire; prosternal process with sides obviously expanded (Fig. 43); size 4.0 mm; mainland Malaysia (Pahang) .................................................................  A. haucki Jendek, sp. nov. (Figs. 11, 43, 64)

15 Apex of last abdominal ventrite feebly arcuately emarginate; prosternal process with sides subparallel or weakly expanded ..........................................................................................................................................................  16

16 Prosternal lobe larger (Fig. 40), trapezoid, with subangulate angles and subtruncate margin; body larger, 4.5–5.3 mm; Myanmar, north Vietnam (Figs. 8, 40) .................................................................  A. aurarius (Kerremans, 1892)

16 Prosternal lobe narrower (Fig. 41), with arcuate angles and inflected margin; body smaller, 3.9–4.7 mm; Japan (Figs. 9, 41, 63) .................................................................  A. mallotiiellus Kurosawa, 1985

17 Sides of pronotum slightly, arcuately emarginate above acute posterior corners; elytral apices prominent, widely, separately, subangulately arcuate; aedeagus obviously expanded apically (Fig. 73) size 4.8–5.6 mm; north Thailand (Figs. 30, 54, 73) .................................................................  A. dilatipenis Jendek, sp. nov.

17 Sides of pronotum without emargination, posterior corners rectangular or obtuse; elytral apices not widely separately arcuate; aedeagus not obviously expanded apically ........................................  18

18 Elytral pubescence monochromatic (whitish or yellowish) (Figs. 24, 33) .................................................................  19

18 Elytral pubescence bichromatic .................................................................................................................................  20

19 Body larger, elongate; pronotal sides markedly arcuate; elytral pubescence inconspicuous; size 4.5–5.0 mm; north Vietnam (Figs. 33, 57, 76) .................................................................  A. mirei Descarpentries & Villiers, 1963
- Body smaller, stout; pronotal sides less arcuate; elytral pubescence conspicuous; size 3.9–4.0 mm; south India (Karnataka), Sri Lanka (Figs. 24, 50) ............................................................... A. ventripotens Kerremans, 1900
20  Elytra with very short humeral carinae; size 4.9 mm; north Laos (Figs. 18, 47, 67) . A. apicaureus Jendek, sp. nov.
- Elytra without humeral carinae........................................................................................................................................21
21  Apical margin of prosternal lobe incised, or angulately emarginate (Figs. 42, 44, 46, 56)........................................ 22
- Apical margin of prosternal lobe distinctly, arcuately emarginate (Figs. 48, 49) .................................................... 25
22  Elytra evenly pubescent; size 5.6 mm; south Vietnam (Figs. 10, 42).......... A. madanensis Jendek, sp. nov.
- Elytra unequally pubescent (Figs. 12, 13, 16, 17, 19–21, 22–23, 32) ........................................................................... 23
23  Elytra, except for apices, bichromatic (combination of blackish with green or golden); body more prolonged; size 4.1–5.0 mm; China: Shaanxi, Japan, Russia: Primorye (Figs. 32, 56, 75) .................. A. kurumi Kurosawa, 1957
- Elytra, except of apices, monochromatic black; body stout ... 24
24  Apex of elytra with dense golden pubescence; prosternal process subparallel sided; size 5.0–5.2 mm; north Vietnam, China: Fujian (Figs. 12, 44) ............................................................. A. liscapia Jendek, 2003
- Apex of elytra without distinct pubescence, except for adusutural part; prosternal process slightly expanded laterally; size 4.1 mm; China (Hunnan) (Figs. 17, 46, 66)................................. A. hunanus Jendek, sp. nov.
25  Entire apical half of elytra with even, dense golden pubescence; size 7.0 mm; mainland Malaysia (Fig. 16).............. ........................................................................................................ A. gunjii Tôyama, 1987
- Apical half of elytra with mosaic pubescence ........................................................................................................ 26
26  Prosternal process slightly expanded laterally, disk deeply impressed; size 4.0–4.6 mm; Taiwan (Figs. 13, 65)..........
- Prosternal process distinctly expanded laterally, disk flat or feebly impressed ....................................................... A. acastus Kerremans, 1913
27  Body robust; sides of pronotum subparallel or feebly arcuate except for anterior, markedly arcuate part; adhumeral elytral portion with sparse, white pubescence; size 3.5–4.9 mm; eastern and south Asia (Figs. 19–21, 48, 68) .... A. muscarius Kerremans, 1895
- Body slender; sides of pronotum strikingly convergent except for basal third; adhumeral elytral portion with sparse golden pubescence; size 4.0–4.9 mm; north Laos (Figs. 22–23, 49, 69) .......... A. semicaducus Jendek, sp. nov.

Taxonomy of the Agrilus muscarius species-group

Agrilus nalandae Théry
(Figs. 1, 34)


Diagnosis. This species resembles species related to A. livens Kerremans, 1892 by the color and elytral patterns, but it differs from them by the large eyes, presence of prehumerus, the markedly attenuate elytral apices and by the robust prosternal lobe and prosternal process. Agrilus nalandae is similar to A. aurosus by the body shape, elytral pubescence, and incised prosternal lobe, although it differs from it by the characters given in the key.

Length. 4.9 mm.


Specimens examined. Known only from the holotype.


Remarks. Male unknown.

Agrilus aurosus Descarpentries & Villiers
Figs. 2–3, 35, 58

aurosus Descarpentries & Villiers, 1963: 105, 110.

REVISION OF THE AGRILUS MUSCARIUS SPECIES-GROUP

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FIGURES 1–6. Habitus of 1) *A. nalandaee*, Holotype; 2) *A. aurosus*–south Vietnam; 3) *A. aurosus*–Laos; 4) *A. rolcki* Jendek sp. nov., Holotype; 5) *A. cuneatus* Jendek sp. nov., Holotype; 6) *A. ventrituber* Jendek sp. nov., Holotype. Scale bar = 1 mm.
**Diagnosis.** This species belongs to the group of species having a slender body, larger head and narrow elytral apices (*A. nalandae, A. roleiki, A. cuneatus*). It is similar to *A. nalandae* by the elytral patterns and to *A. ventrituber* by having tubercles on the basal abdominal ventrite in males.

**Length.** 5.0–7.2 mm.

**Variability.** Elytra bichromatic, with black (Fig. 2) or bronze (Fig. 3) background blended with golden-green or golden-violet patterns. Elytral pubescence monochromatic gold, or a bichromatic combination of gold and white. The basal part of body with the pubescence often caducous.


**Type locality.** Tonkin: Hoa Binh.


**Distribution.** Northeast India (Assam), Laos, Vietnam.

*Agrilus roleiki* Jendek, sp. nov.

Figs. 4, 36, 59

**Diagnosis.** This species is similar to *A. cuneatus* by the dense, long pubescence, but it differs by the larger size (5.9–6.3 mm) and by the sides of pronotum convergent from base to apex.

**Description** (Holotype): Body form, color and pubescence as in Fig. 4. Head and eyes distinctly convex; eyes protruding from head outline. Sides of pronotum rectilinear, distinctly convergent from base to apex; apical margin clearly narrower than basal margin; anterior pronotal lobe prominent, distinctly projecting beyond anterior pronotal angles; disk markedly convex with wide basal impression and very narrow lateral impressions; prehumerus long, extending almost to half of pronotal length, sharply costate, feebly arcuate sideward, with apex distant from marginal carina (lateral view).

Elytra without humeral carinae, slender, markedly attenuate apically; apices narrowly, separately arcuate; elytra slightly trichromatic with golden-green, black and carmine (on apices) patterns combined with trichromatic golden, whitish and reddish (on apices) pubescence.

Prosternum (Fig. 36): Prosternal lobe large, incised medially; prosternal process tricuspidate, with sides expanded, deep impressed on disk with sharp, protruding ventrad angles. Basal abdominal ventrite without tubercles. Apex of last abdominal ventrite with weak emargination.

Aedeagus (Fig. 59).

**Length.** 5.9–6.3 mm, Holotype 6.0 mm.

**Sexual dimorphism.** Without apparent sexual differences.

**Variability.** Paratypes have less obvious carmine color and reddish pubescence on elytral apices.

Assam, 1999, 5 km N of Umrongso 700m, 25°27′N, 92°43′E, 17.–25.v., Zd. Košťál lgt.”. **Type locality.** Northeastern India, Assam, 5 km N of Umrongso 700 m, 25°27′N, 92°43′E.

**Distribution.** India (Assam).

**Etymology.** Patronymic, dedicated to Jakub Rolčík, the collector of this species.

*Agrilus cuneatus* Jendek, sp. nov.
Figs. 5, 37, 60

**Diagnosis.** This species is similar to the species with narrow elytral apices (*A. nalandae*, *A. aurosus* and *A. rolciki*). It may be distinguished by its smaller size (4.9 mm) and by the apex of last abdominal ventrite not emarginate.

**Description** (Holotype): Body form, color and pubescence as in Fig. 5. Head and eyes distinctly convex; eyes not protruding from head outline. Pronotum with subparallel sides, distinctly narrowed just before apical margin; apical margin narrower than basal margin; anterior pronotal lobe prominent, distinctly projecting beyond anterior pronotal angles; pronotal disk markedly convex, distinctly impressed at base; prehumerus long, extending almost to half of pronotal length, sharply costate, straight with apex arcuate downward and markedly distant from marginal carina (lateral view).

Elytra without humeral carinae, short, markedly attenuate apically, bichromatic with bronze and violet patterns combined with golden and whitish pubescence; apices narrowly separately arcuate. Prosternum (Fig. 37): Prosternal lobe large with apical margin distinctly arcuate and incised medially; prosternal process tricuspidate, with sides expanded and with sharp uniplanar angles and weakly impressed disk. Basal abdominal ventrite without tubercles. Apex of last abdominal ventrite without emargination.

Aedeagus (Fig. 60).

**Length.** Holotype 4.9 mm.

**Sexual dimorphism.** Female unknown.

**Variability.** Unknown.

**Type series.** Holotype ♀ (EJCB): “THAI, 18–24.IV.1991, Lansang n. p. 500 m, 16°48′N, 98°57′E, Vít Kubáň leg.”. **Type locality.** Thailand, Lansang n. p. 500 m, 16°48′N, 98°57′E.

**Distribution.** Thailand.

**Etymology.** *Cuneatus* (= wedge-shaped, Latin). The name refers to the strikingly cuneate shape of the body.

*Agrilus ventrituber* Jendek, sp. nov.
Figs. 6, 38, 61

**Diagnosis.** This species is similar to *A. spiculipenis*, from which it may be distinguished by the characters given in the key. Males of *A. ventrituber* possess tubercles on the basal abdominal ventrite, which are absent in *A. spiculipenis*. Females may be distinguished by the shape of emargination of the apex of the last abdominal ventrite, which is shallow and scarcely visible in *A. ventrituber*, but deeper and clearly visible in *A. spiculipenis*.

**Description** (Holotype): Body form, color and pubescence as in Fig. 6. Head large, distinctly convex; eyes feebly protruding from head outline. Sides of pronotum moderately arcuate, apical pronotal margin slightly narrower than basal margin; anterior pronotal lobe wide, projecting beyond anterior pronotal angles, posterior angles slightly obtuse; pronotal disk markedly convex, feebly impressed at base, without lateral impressions; prehumerus short, extending to basal third of pronotal length, feebly costate, moderately arcuate, with apex distinctly distant from marginal carina (lateral view).

Elytra without humeral carinae, moderately attenuate apically, bichromatic bronze and black-violet patterns combined with monochromatic whitish pubescence; apices narrowly separately angulately-arcuate.
Prosternum (Fig. 38): Prosternal lobe large, with apical margin deeply incised medially; prosternal process sharply tricuspidate, sides expanded in straight line, disk feebly impressed. Basal abdominal ventrite with obvious, median tubercles in proximal third. Apex of last abdominal ventrite faintly emarginate.

Aedeagus (Fig. 61).

**Length.** 3.9–4.4 mm, Holotype 4.1 mm.

**Sexual dimorphism.** Female without tubercles on basal abdominal ventrite, and with very obsolete emargination at apex of last abdominal ventrite.

**Variability.** Pronotal sides in some paratypes are less arcuate or almost subparallel in basal two thirds. Elytral pubescence is sometimes slightly bichromatic, combining golden and white hairs.


**Distribution.** North Thailand, Myanmar (Mandalay).

**Etymology.** Derived from the Latin words *ventral* (situated on the lower, abdominal plane of the body) and *tuber* (a rounded swelling or protuberance; a tuberosity; a tubercle), which refers to the presence of the two tubercles on the basal abdominal ventrite in the male.

### Agrilus spiculipenis Jendek, sp. nov.

Figs. 7, 39, 62

**Diagnosis.** This species differs from the very similar *A. ventrituber* mainly by the male sexual characters: by the absence of tubercles on basal abdominal ventrite and by the shape of aedeagus.

**Description (Holotype):** Body form, color and pubescence as in Fig. 7. Head distinctly convex; eyes feebly protruding from head outline. Pronotum with subparallel sides, slightly attenuate at apex; apical pronotal margin narrower than basal margin; anterior pronotal lobe prominent, distinctly projecting beyond anterior pronotal angles, posterior angles rectangular; pronotal disk markedly convex, distinctly impressed at base; lateral impressions missing; prehumerus not extending to half of pronotal length, costate basally, filamentous apically, straight with apex feebly arcuate to pronotal margin and distinctly distant from marginal carina (lateral view).

Elytra without humeral carinae, short, moderately attenuate apically, apices narrowly separately angulately-aruncate; elytra bichromatic with bronze and violet patterns combined with monochromatic whitish pubescence.

Prosternum (Fig. 39): Prosternal lobe large with apical margin broadly subangulately emarginate medially; prosternal process sharply tricuspidate, sides expanded in straight line, disk feebly impressed. Basal abdominal ventrite without tubercles. Apex of last abdominal ventrite distinctly emarginate.

Aedeagus (Fig. 62).

**Length.** 3.9–4.6 mm, Holotype 4.1 mm.

**Sexual dimorphism.** Without apparent sexual differences.

**Variability.** Eyes sometimes less convex, not protruding from head outline. Sides of pronotum sometimes faintly arcuate and slightly emarginate before posterior pronotal angles.


**Distribution.** Thailand, Vietnam.
**Etymology.** Derived from the words *spiculum* (a small, needlelike body, part, process, or the like) and *penis* (the male organ of copulation). The name refers to the spike-like shape of the aedeagus.

**FIGURES 7–12.** Habitus of 7) *A. spiculipenis* Jendek sp. nov., Holotype; 8) *A. aurarius*, Holotype; 9) *A. mallotiellus*—Japan, Yakushima; 10) *A. madanensis* Jendek sp. nov., Holotype; 11) *A. haucki* Jendek sp. nov., Holotype; 12) *A. liscapia*—China, Fujian. Scale bar = 1 mm.
**Agrilus aurarius** (Kerremans) comb. nov.
Figs. 8, 40

*aurarius* Kerremans, 1892: 205–206 [*Meliboeus* cited as *Melybaeus*].
Kerremans, 1903: 236 [*Meliboeus*; cited as *Melibaeus*]. Obenberger, 1935: 895 [*Meliboeus*].

=bocae Descarpentries & Villiers, 1963:105, 110 syn. nov.

**Diagnosis.** This species, together with *A. mallotiellus*, *A. madanensis*, *A. haucki* and *A. semicaducus* (in well preserved specimens), is distinctive by having a larger area covered with ornamental elytral pubescence and also by less contrasting bichromatic elytra. It can be distinguished by the subtruncate prosternal lobe (Fig. 40), which in *A. madanensis* is markedly incised (Fig. 42).

**Length.** 4.5–5.25 mm.

**Type series.** *Meliboeus aurarius* Kerremans, 1892. Holotype by monotypy: ♀, MNHN: “Hte Birmanie Mines des Rubis 1200m 2300m Doherty 1890 [p] \ aurarius Kerr. Type [h] \ Kerremans vidit 1892 [p] \ Muséum Paris Coll. Générale [p] [yellow label]”. **Type locality.** Haute Birmanie, Mines des Rubis, 1200–2300 m [Note: Type locality was complemented by lectotype label data (ICZN, Article 76.2.)]. Originally published locality: Haute Birmanie.


**Specimens examined.** Known only from the type specimens.

**Distribution.** Myanmar, northern Vietnam.

**Remarks.** Male unknown.

**Agrilus mallotiellus** Kurosawa
Figs. 9, 41, 63

*mallotiellus* Kurosawa, 1985: 162 [replacement name for malloti Kurosawa, 1957 not Théry, 1930].


**Diagnosis.** This species is similar to *A. aurarius*, *A. madanensis* and *A. haucki* in the arrangement of the elytral pubescence (Figs. 8, 10, 11). It differs from the similar *A. aurarius* by the characters given in the key.

**Length.** 3.9–4.7 mm.


**Specimens examined.** 1 ♂ (EJCB): “Yakushima Is. 6.vii.1989 H. Akiyama \ Funayuki”.

**Distribution.** JAPAN (Kyushu, Shikoku, Honshu, Ryukyu island (Yaku-shima Island, Amami-oshima Island, Tokuno-oshima Island, Tokaranakanoshima Island) (Akiyama & Ohmomo 1997)).
Agrilus madanensis Jendek, sp. nov.

Figs. 10, 42

Diagnosis. This species is by the body form, color and by the ornamental pubescence very similar to A. aurarius, from which it differs by the incised margin of prosternal lobe (Fig. 42). Both species are known only from females.

Description (Holotype): Body form, color and pubescence as in Fig. 10. Head small, distinctly convex; eyes slightly protruding from head outline.

Pronotum markedly convergent apically, with sides in basal half subparallel, in apical half strikingly arcuate; apical pronotal margin clearly narrower than basal margin; anterior pronotal lobe large and prominent, distinctly projecting beyond anterior pronotal angles; posterior pronotal angles rectangular; pronotal disk conspicuously convex, feebly impressed at base; lateral impressions absent; prehumerus extending to half of pronotal length, sharply costate, bisinuate, with apex markedly distant from marginal carina (lateral view).

Elytra without humeral carinae, bichromatic with bronze and golden-bronze patterns combined with bichromatic golden and whitish pubescence; apices very narrowly conjointly arcuate.

Prosternum (Fig. 42): Prosternal lobe large, with apical margin broadly subtriangularly incised medially; prosternal process sharply tricuspidate, sides somewhat expanded, disk deeply impressed, lateral corners distinctly protruding ventrad. Apex of last abdominal ventrite weakly emarginate.

Length. Holotype 5.6 mm.

Sexual dimorphism. Male unknown.

Variability. Unknown.

Type series. Holotype ♀ (EJCB): “S Vietnam, Ma Da, 24.VI.1991”. Type locality. South Vietnam, Dong Nai province, Ma Da [approximate coordinates 106°55'E, 11°14’N].


Etymology. The name is derived from the name of the type locality.

Agrilus haucki Jendek, sp. nov.

Figs. 11, 43, 64

Diagnosis. This species differs from the similarly pubescent species (A. aurarius, A. malotiellus, A. madanensis) by having the anterior pronotal margin subtruncate (Fig. 11).

Description (Holotype): Body form, color and pubescence as in Fig. 11. Head convex; eyes slightly protruding from head outline.

Pronotum markedly convergent apically, with sides subparallel in basal third and then distinctly arcuate; apical pronotal margin markedly narrower than basal margin, subtruncate, without anterior pronotal lobe; posterior angles obtusely rectangular; pronotal disk convex, feebly impressed at base; lateral impressions absent; prehumerus extending about to half of pronotal length, sharply costate, arcuate, with apex markedly distant from marginal carina (lateral view).

Elytra without humeral carinae, short, apices widely, separately subangulately-arcuate; elytra bichromatic with golden-bronze and dark violet patterns combined with golden and golden-whitish pubescence.

Prosternum (Fig. 43): Prosternal lobe large, with apical margin arcuate, entire, without emargination or incision; prosternal process sharply tricuspidate, sides distinctly expanded in straight line, disk impressed, with lateral corners distinctly protruding ventrad. Apex of last abdominal ventrite very finely emarginate.

Aedeagus (Fig. 64).

Length. Holotype 4.0 mm.

Sexual dimorphism. Female unknown.

Variability. Unknown.
**Type series.** Holotype ♂ (EJCB): “W Malaysia, Pahang, Baniaran Benom Mts., 10–15 km SSE K. Ulu Dong, D. Hauck leg.”. **Type locality.** Malaysia, Pahang, Baniaran Benom Mts., 10–15 km SSE of Kampung Ulu Dong [102°03'E, 03°53'N].

**Distribution.** Malaysia (Pahang).

**Etymology.** Patronymic, dedicated to David Hauck (Czech Republic), the collector of this species.

### Agrilus liscapia Jendek

Figs. 12, 44

*liscapia* Jendek, 2003: 182 [replacement name for *apicalis* Bourgoin, 1923 not Waterhouse, 1889].

= *apicalis* Bourgoin, 1923: 261 [*Sambus*].


**Diagnosis.** This species, together with *A. acastus*, *A. coraeboides*, *A. samboides*, *A. gunjii*, *A. hunanus* and *A. apicaureus*, is distinctive by having the apical elytral pubescence more contrasting than on the remaining parts. It differs from *A. apicaureus*, by lacking humeral carinae, and from *A. hunanus*, by having the elytral apex more densely pubescent.

**Sexual dimorphism.** Male unknown.

**Length.** 5.0–5.2 mm.


**Distribution.** north Vietnam, China (Fujian).

**Remarks.** *Agrilus apicalis* was described in the genus *Sambus*. Descarpentries & Villiers (1967) proposed the new genus *Therysambus*. Jendek (2000) considered *Therysambus* to be congeneric with *Agrilus* and proposed (Jendek 2003) the new replacement name *liscapia* for the name *apicalis*, preoccupied in *Agrilus*.

### Agrilus acastus Kerremans

Figs. 13, 65

*acastus* Kerremans, 1913: 114.


= *horni* Kerremans, 1914: 104–105 [*Sambus*].


**Diagnosis.** This species is distinctive by the large extent of white elytral pubescence (Fig. 13) and mainly by the robust, apically expanded aedeagus (Fig. 65).

**Length.** 4.0–4.6 mm.

FIGURES 13–18. Habitus of 13) A. acastus, Holotype of junior subjective synonym A. ohbayashii; 14) A. coraeboides, Lectotype; 15) A. samboides, Holotype; 16) A. gunjii, Holotype; 17) A. hunanus Jendek sp. nov., Holotype; 18) A. apicaureus Jendek sp. nov., Holotype. Scale bar = 1 mm.


**Remarks.** Kurosawa (1963a) described two subspecies: *A. acastus tsushimanus* and *A. acastus nakanei*, which are currently considered to be different species not belonging to the *A. muscarius* species-group. The name horni Kerremans, 1914 is a junior secondary homonym of horni Kerremans, 1900 (*Agrilus*) and horni Théry, 1904 (*Agrilus*).

**Specimens examined.** This species is known to us only from the type specimens.

**Distribution.** Taiwan.

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*Agrilus coraeboides* Kerremans

Figs. 14, 45


**Diagnosis.** This species is very similar to *A. samboides* by the body size and by the pattern of elytral pubescence; see diagnosis of *A. samboides*.

**Length.** 4.0 mm.


**Specimens examined.** Known only from the type specimens.

**Distribution.** Sumatra.

**Remarks.** Male is unknown.

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*Agrilus samboides* Fisher

Fig. 15


**Diagnosis.** This species is similar to *A. coraeboides* by having a deeply emarginate apex on the last abdominal ventrite, but it differs from it by the shape of the elytral apices which are broadly, separately arcuate (Fig. 15), unlike those in *A. coraeboides* that are conjointly arcuate (Fig. 14).

**Length.** 4.0 mm.


**Specimens examined.** Known only from the holotype.

**Distribution.** North Borneo.
Remarks. The holotype is badly damaged, only the right elytron, part of the thorax and abdomen are preserved (Fig. 15).

Agrilus palii Baudon


**Diagnosis.** Based solely on the description, this species very probably belongs to the *A. muscarius* species-group by having a fusiform body, apically narrowed pronotum and bichromatic ornamental pubescence. A more precise identification is impossible due to the absence of the important taxonomic characters on ventral body side (prosternal lobe, prosternal process, apex of last abdominal ventrite).

**Type series.** Holotype ♀ preserved in MHNB was not examined. This species was described from a single female. **Type locality.** Laos: Sayaboury.

**Distribution.** Laos.

**Length.** 6.0 mm.

**Remarks.** This species is unknown to us and, therefore, it is not included in the key.

Agrilus gunjii Tôyama


**Diagnosis.** This species is very distinctive by the strikingly bicolored dorsal side of the body and by the dense, golden pubescence on the apical half of elytra.

**Length.** 7.0 mm.


**Specimens examined.** Known only from the holotype. **Distribution.** Peninsular Malaysia.

Agrilus hunanus Jendek, sp. nov.

Figs. 17, 46, 66

**Diagnosis.** This species is similar to *A. apicaureus* by the body shape and the arrangement of elytral pubescence, but it is easily distinguishable by the shape of the aedeagus.

**Description (Holotype):** Body form, color and pubescence as in Fig. 17. Head small, convex; eyes slightly protruding from head outline.

Pronotum conspicuously convergent apicad, sides subparallel in basal third, then conspicuously arcuately convergent to apex; apical pronotal margin subtruncate, distinctly narrower than basal margin; posterior angles obtusely rectangular; pronotal disk strikingly convex, vaguely impressed at base; lateral impressions absent; prehumerus extending to about half of pronotal length, sharply costate, arcuate, with apex distinctly distant from marginal carina (lateral view).

Elytra without humeral carinae; elytra faintly bichromatic, black with bronze apex combined with white and golden–reddish ornamental pubescence; apices widely separately arcuate.
Prosternum (Fig. 46): Prosternal lobe large, with apical margin distinctly incised medially; prosternal process sharply tricuspidate, sides distinctly arcuately expanded, disk feebly impressed, with lateral corners somewhat protruding ventrad. Apex of last abdominal ventrite vaguely emarginate.

Aedeagus (Fig. 66).

**Length.** Holotype 4.1 mm.

**Sexual dimorphism.** Female unknown.

**Variability.** Unknown.

**Type series.** Holotype ♂ (EJCB): “China: Hunnan province, Huitong, 400–600 m”. **Type locality.** China, Hunan province, Huitong [= Lincheng, 109°42’E, 26°52’N], 400–600 m.

**Distribution.** China: Hunan.

**Etymology.** The name is derived from the name of Chinese province Hunan, where the holotype of this species was collected.

*Agrilus apicaureus* Jendek, sp. nov.

Figs. 18, 47, 67

**Diagnosis.** This species is very distinctive by the strikingly contrasting elytra which are black except for the golden-bronze elytral apices covered with dense, golden pubescence. The head and anterior part of pronotum are covered with golden pubescence similar to that on elytral apices.

**Description** (Holotype): Body form, color and pubescence as in Fig. 18. Head large, frons and vertex feebly convex; eyes markedly protruding from head outline.

Pronotum conspicuously convergent apicad, with sides subparallel in basal third and then strongly, almost rectilinearly convergent to apex: apical pronotal margin distinctly narrower than basal margin; anterior pronotal lobe distinctly projecting beyond anterior pronotal angles; posterior angles rectangular; pronotal disk conspicuously convex, distinctly impressed at base; lateral impressions absent; prehumerus extending to about half of pronotal length, sharply costate, arcuate, with apex strikingly arcuate to pronotal margin but distant from marginal carina (lateral view).

Elytra with feebly and short humeral carinae, bichromatic, black except for golden-bronze apex, combined with white and golden ornamental pubescence; apices separately arcuate.

Prosternum (Fig. 47): Prosternal lobe large, with apical margin distinctly incised medially; prosternal process sharply tricuspidate, sides obviously, arcuately expanded; disk deeply impressed, with lateral corners distinctly protruding ventrad. Apex of last abdominal ventrite distinctly emarginate.

Aedeagus (Fig. 67).

**Length.** Holotype 4.9 mm.

**Sexual dimorphism.** Female unknown.

**Variability.** Unknown.

**Type series.** Holotype ♂ (EJCB): “LAO-N, Phongsaly prov., 21°41’–2’N, 102°06’–08’E, Phongsaly env., 28.v.–20.vi.2003, 1500 m, P. Pacholátko leg.”. **Type locality.** north Laos, Phongsaly province, Phongsaly env., 1500 m, 21°41’–2’N, 102°06’–08’E.

**Distribution.** North Laos (Phongsali).

**Etymology.** The name is derived from the Latin noun *apex*, -icis (a combining shape of apex or apical) and *aureus* (golden) to stress the strikingly golden elytral apices of this species.

*Agrilus muscarius* Kerremans

Figs. 19–21, 48, 68

*muscarius* Kerremans, 1895: 224.
Diagnosis. This species (Figs. 19–21) is distinctive by its strikingly bichromatic elytra with the dark violet and golden-bronze, or golden-green pattern; pronotal sides subparallel or feebly arcuate except for the conspicuously arcuate anterior part; apical pronotal margin narrower than basal margin; anterior pronotal lobe wide, slightly projecting beyond anterior pronotal angles; pronotal disk conspicuously convex; prehumerus feebly costate, moderately arcuate, with apex distinctly distant from marginal carina (lateral view); prosternal lobe arcuately or subangulately emarginate; prosternal process (Fig. 48) tricuspidate with sides expanded in straight line and weakly impressed. Apex of last abdominal ventrite with distinct emargination. Aedeagus as in Fig. 68.

Length. 3.5–4.9 mm.

Sexual dimorphism. Without apparent sexual differences.

Type series. *Agrilus muscarius* Kerremans, 1895. Lectotype by present designation: ♂, MNHN: “Meliboeus muscarus nov. s. Fairm. Ht. Tonkin [h] \ Ha-Lang Tonkin N. Lamey \ muscarius Kerr. [h] PARATYPE [p] [red label] \ MUSÉUM PARIS 1935 Coll. A. Théry [p] \ Muséum Paris Coll. Générale [p] [yellow label]”. Parallectotype: 1 ♂, MNHN: with the same locality data as lectotype. The exact number of syntypes is unknown. Type locality. Ht. Tonkin, Ha Lang [Note: Type locality complemented by lectotype (ICZN, Article 76.2.)]. Originally published locality: Tonkin.


Agrilus muscarius is the most common and most widely distributed species of the *A. muscarius* species-group. Baudon (1968) reported the capture of this species from foliage of *Indigofera galegoides* (Fabaceae). Based on the altitude data from locality labels of the examined specimens, this species was collected at altitude range between 500 m (Laos) and 2528 m (China: Yunnan).
FIGURES 19–24. Habitus of 19) *A. muscarius*–India (Assam); 20) *A. muscarius*–south Vietnam; 21) *A. muscarius*–China (Yunnan); 22) *A. semicaducus* Jendek sp. nov., Holotype; 23) *A. semicaducus* Jendek sp. nov., Paratype; 24) *A. ventripotens*–Sri Lanka. Scale bar = 1 mm.
**Agrilus semicaducus** Jendek, sp. nov.
Figs. 22–23, 49, 69

**Diagnosis.** This species is similar to *A. muscarius* in general appearance, but it differs mainly by the larger, more prolonged body, the longer elytral apex and by the trapezoid pronotum.

**Description** (Holotype): Body form, color and pubescence as in Fig. 22. Head moderately convex; eyes flat, not protruding from head outline.

Pronotum distinctly convergent apicad, sides subparallel in basal third and then obviously, subrectilinearly convergent to apex; apical pronotal margin distinctly narrower than basal margin; anterior pronotal lobe faint, not projecting beyond apical pronotal angles; posterior angles obtusely rectangular; pronotal disk obviously convex, with distinct prescutellar impression; lateral impressions absent; prehumerus extending to about half of the pronotal length, sharply costate, arcuate, subparallel with marginal carina (lateral view).

Elytra without humeral carinae, brightly bichromatic with golden and dark-violet patterns combined with whitish and golden ornamental pubescence; apices separately, shallowly arcuate.

Prosternum (Fig. 49): Prosternal lobe large, with apical margin arcuately emarginate; prosternal process with subparallel sides, disk impressed, lateral corners protruding ventrad. Basal abdominal ventrite without tubercles; apex of last abdominal ventrite slightly emarginate.

Aedeagus (Fig. 69).

**Length.** 4.0–4.9 mm, Holotype 4.9 mm.

**Sexual dimorphism.** Female without apparent sexual differences.

**Variability.** Pronotal sides in basal third are sometimes divergent. Elytral pubescence in paratypes from the locality “Ban Salaie” is present also on humeral part (Fig. 23).


**Type locality.** Laos north, 15 km NW Louang Namtha, N 21°07.5, E 101°21.0, alt. 750±100 m.

**Distribution.** north Laos: Louang Namtha, Houa Phan.

**Etymology.** The name is derived from the prefix *semi-* (Latin, partially, incompletely, somewhat) and *caducus* (Latin, subject to shedding), to indicate the variability in the extent of elytral pubescence (Figs. 22–23).

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**Agrilus ventripotens** Kerremans
Figs. 24, 50

ventripotens Kingremanas, 1900a: 342 [replacement name for *ventralis* Kerremans, 1893 not Horn, 1891]

Kerremans, 1903: 279 [cited as *ventripotens*]. Obenberger, 1936: 1107.

= *ventralis* Kerremans, 1893 [preoccupied by *ventralis* Horn, 1891]

Kerremans, 1900a: 342 [synonym of *ventripotens*]. Kerremans, 1903: 279 [synonym of *ventripotens*]. Obenberger, 1936: 1107 [synonym of *ventripotens*].

**Diagnosis.** This species is very distinctive by the unichromatic, black with violet tinged elytral color combined with a unichromatic whitish mosaic pubescence. Sides of pronotum arcuate, apical margin somewhat narrower than basal margin; anterior pronotal lobe wide but not extending beyond anterior angles; disk conspicuously convex; prehumerus costate, feebly arcuate, extending to about half the pronotal length, with apex distant from margin (lateral view); prosternal lobe distinctly incised (Fig. 50); prosternal process expanded in straight line (Fig. 50), disk flat; apex of last abdominal ventrite markedly emarginate.

**Length.** 3.9–4.0 mm.
**Type series.** *Agrilus ventralis* Kerremans, 1893. Holotype by monotypy: sex not examined, BMNH: “Type H. T. [p] [round label with red border] \ Kanara Andrewes [h] \ ventralis Type [h] \ A. ventralis Kerrem. Inde [h] \ Kerremans. 1903–59 [p]”. **Type locality.** Kanara.


**Distribution.** south India: Karnataka; Sri Lanka.

*Agrilus harlequin* Obenberger
Figs. 25, 70

*harlequin* Obenberger, 1924: 556, 564, 592–593.

**Diagnosis.** This species is distinctive by the strikingly fusiform body; trichromatic color of elytral pubescence; large, apically subtruncate prosternal lobe; wide prosternal process with sides sinuately expanded; absence of humeral carinae and by the presence of tubercles on the basal abdominal ventrite. Aedeagus (Fig. 70).

**Length.** 4.5 mm.

**Type series.** *Agrilus harlequin* Obenberger, 1924. Lectotype, designated by Jendek (2005): ♂, NMPC: “Kinabalu [h] \ TYPUS [p] [red label with black border] \ Agrilus harlequin Type m. [h] Det. Dr. Obenberger [p]”. The exact number of syntypes is unknown. **Type locality.** Malaysia, Borneo, Kinabalu.

**Specimens examined.** Known only from the holotype.

**Distribution.** Malaysia: Sabah.

*Agrilus pseudoharlequin* Jendek, sp. nov.
Figs. 26, 51, 71

**Diagnosis.** This species is similar to *A. harlequin* (Fig. 25) in the ornamental pubescence, and by the shape of the prosternal lobe and prosternal process. It differs by the more prolonged body, by the presence of a short humeral carina and by the shape of the aedeagus (Fig. 71).

**Description** (Holotype): Body form, color and pubescence as in Fig. 26. Head markedly convex; eyes flat, not protruding from head outline.

Pronotum convergent apicad, with sides in subparallel basal third and then slightly, arcately convergent to apex; apical pronotal margin narrower than basal margin; anterior pronotal lobe wide and somewhat projecting beyond apical pronotal angles; posterior angles rectangular; pronotal disk obviously convex, with vague prescutellar impression; lateral impressions absent; prehumerus extending almost to half of pronotal length, moderately costate, straight, except for apex which is arcuate to pronotal margin but distant from marginal carina (lateral view).

Elytra longer with short humeral carinae; bichromatic, with black and greenish patterns combined with whitish and golden, sparse, ornamental pubescence; apices conjointly arcuate.

Prosternum (Fig. 51): Prosternal lobe very large, apical margin subtruncate; prosternal process sharply tricuspitate, sides strikingly, sinuately expanded; disk flat; lateral corners uniplanar. Basal abdominal ventrite without tubercles; apex of last abdominal ventrite slightly emarginate.

Aedeagus (Fig. 71).

**Length.** Holotype 5.0 mm.

**Sexual dimorphism.** Female unknown.

**Variability.** Unknown.
Type series. Holotype ♂ (EJCB): “Palaboehan Ratoe, Wijnkoopsbaai”. Type locality. Indonesia, West Java, Palaboehan Ratoe [= Pelabuhanratu, 106°32'E, 06°59'S], Wijnkoopsbaai.

Distribution. Indonesia: Java.

Etymology. The name is a combination of the prefix pseudo- (not actually but having the appearance of) and harlequin, to stress similarity of this species with A. harlequin.

*Agrilus siamensis* Tôyama
Figs. 27, 52

*siamensis* Tôyama, 1987: 308.

Diagnosis. This species is very similar to *A. pseudoharlequin* (Fig. 26) by the body size and shape, the arrangement of dorsal pubescence, and by the presence of a short humeral elytral carina; it differs from it by the prosternal lobe with faint emargination at the apex, by the prosternal process less wide, with sides expanded almost in a straight line (Fig. 52), and by the more distinctly arcuate apex of the last abdominal ventrite.

Length. 5.2–5.3 mm.


Remarks. Male unknown.

*Agrilus tiomanensis* Jendek, sp. nov.
Figs. 28–29, 53, 72

Diagnosis. This species is very distinctive by the arrangement of elytral pubescence combined with the presence of humeral elytral carina and the tubercles on basal abdominal ventrite in males.

Description (Holotype): Body form, color and pubescence as in Fig. 28. Head and eyes larger; eyes not protruding from head outline. Pronotum distinctly convergent apicad, widest at base, with sides convergent from base to apex in almost straight line; apical pronotal margin distinctly narrower than basal margin, deeply bisinuate, with obvious anterior pronotal lobe, not projecting beyond anterior pronotal angles; posterior angles acute; pronotal disk conspicuously convex, with deep, oval, prescutellar impression; lateral impressions absent; prehumerus long, extending beyond half the pronotal length, sharply costate, evenly arcuate, with apex distant from marginal carina (lateral view).

Elytra with short humeral carinae, faintly bichromatic, with black and green-black pattern combined with white and golden-reddish ornamental pubescence; apices widely, conjointly arcuate.

Prosternum (Fig. 53): Prosternal lobe large, apical margin subtruncate, without emargination or incision; prosternal process feebly expanded, disk feebly impressed, lateral corners somewhat protruding ventrad. Basal abdominal ventrite with two obvious tubercles medially; apex of last abdominal ventrite distinctly emarginate.

Aedeagus (Fig. 72).

Length. 4.1–4.9 mm, Holotype 4.8 mm.

Sexual dimorphism. Female without apparent sexual differences, except for the absence of tubercles on the basal abdominal ventrite.
Variability. In some paratypes, the sides of pronotum are diverging arcuately, not sublinearly. The extent of white and golden-reddish elytral pubescence varies considerably among specimens (Fig. 29).


Type locality. Malaysia, Pahang, Tioman Island, road Kampong Tekek - Kampong Juara, alt. 0–400 m, 2.48° N, 104.11°E.

Distribution. Malaysia: Tioman Island. The name of this species refers to the name of Malayan island Tioman, to which this species is probably endemic.

Agrilus dilatipenis Jendek, sp. nov.
Figs. 30, 54, 73

Diagnosis. This species is very distinctive by the bell-shaped pronotum with acute basal angles and by the aedeagus conspicuously expanded apically.

Description (Holotype): Body form, color and pubescence as in Fig. 30. Head small, moderately convex; eyes not protruding from head outline. Pronotum bell-shaped, with sides slightly bisinuate, emarginate at base and then arcuately convergent apicad; apical pronotal margin distinctly narrower than basal margin; anterior pronotal lobe large and distinctly projecting beyond apical pronotal angles; basal angles acute; pronotal disk obviously convex, with distinct basal impression; lateral impressions absent; prehumerus extending to about half of pronotal length, sharply costate, feebly arcuate, with apex clearly distant from marginal carina (lateral view).

Elytra elongate, without humeral carinae, faintly bichromatic, with golden-bronze and golden-violet patterns, combined with golden and golden-whitish ornamental pubescence; apices widely, separately, shallowly arcuate.

Prosternum (Fig. 54): Prosternal lobe large, with apical margin distinctly incised medially; prosternal process with faintly expanded sides; disk flat with uniplanar lateral corners. Basal abdominal ventrite without tubercles; apex of last abdominal ventrite slightly, but distinctly emarginate.

Aedeagus (Fig. 73).

Length. 4.8–5.7 mm, Holotype 5.7 mm.

Sexual dimorphism. Female without apparent sexual differences.

Variability. Some paratypes have basal pronotal impression deeper; elytra more contrastly bichromatic and elytral apices more markedly arcuate.

**Type locality.** Thailand borealis, Chiang Mai province, Chiang Dao [19°24'N, 98°55'E]

**Distribution.** Thailand: Chiang Mai, Mae Hong Son.

**Etymology.** The name is a combination of Latin verb dilato, -are (to make wider or larger, cause to expand) and the noun penis (the male organ of copulation), to stress the peculiar shape of the aedeagus of this species.

*Agrilus carinelytratus* Jendek, sp. nov.

Figs. 31, 55, 74

**Diagnosis.** This species is very distinctive by the very long humeral carinae extending to the epipleural apex.

**Description** (Holotype): Body form, color and pubescence as in Fig. 31. Head and eyes feebly convex; eyes not protruding from head outline. Pronotum markedly convergent apically, widest at basal half, sides subparallel in basal half, arcuately convergent in apical half; apical pronotal margin distinctly narrower than basal margin; anterior pronotal lobe large and slightly projecting beyond anterior pronotal angles; posterior angles subrectangular; pronotal disk markedly convex, with distinct, oval, prescutellar impression; lateral impressions absent; prehumerus long, extending beyond half of pronotal length, sharply costate, rectilinear in basal half, feebly arcuate to margin in apical half, apex distant from marginal carina (lateral view).

**FIGURES 31–33.** Habitus of 31) *A. carinelytratus* Jendek sp. nov., Paratype; 32) *A. kurumi*–Japan (Ibaraki); 33) *A. mirei*–North Vietnam. Scale bar = 1 mm.

Elytra with obvious humeral carinae extending to apical end of epipleuron, monochromatic golden-green combined with bichromatic yellowish and white ornamental pubescence; apices narrowly, separately, subangulately arcuate.

Prosternum (Fig. 55): Prosternal lobe large, subtruncate, slightly bent at margin; prosternal process broad, with moderately, rectilinearly expanded sides, disk faintly impressed, lateral corners somewhat protruding.
FIGURES 34–49. Prosternum of 34) A. nalandae; 35) A. aurosus; 36) A. rolciki Jendek sp. nov.; 37) A. cuneatus Jendek sp. nov.; 38) A. ventrituber Jendek sp. nov.; 39) A. spiculipenis Jendek sp. nov. 40) A. aurarius; 41) A. mallotiellus; 42) A. madamensis Jendek sp. nov.; 43) A. haucki Jendek sp. nov.; 44) A. liscapia; 45) A. coraeboides; 46) A. hunanus Jendek sp. nov.; 47) A. apicaureus Jendek sp. nov.; 48) A. muscarius; 49) A. semicaducus Jendek sp. nov.
ventrad. Basal part of intercoxal process with spinuliform protrusion medially; basal abdominal ventrite without tubercles; apex of last abdominal ventrite distinctly emarginate.

Aedeagus (Fig. 74).

**Length.** 3.9–4.0 mm, Holotype 3.9 mm.

**Sexual dimorphism.** Female has prosternal process flat with uniplanar lateral angles, lacking spinuliform protrusion on interxocal process.

**Variability.** Paratypes are golden-bronze, with pronotal sides slightly emarginate before subacute basal angles.


**Distribution.** Mainland Malaysia: Melaka, Pahang.

**Etymology.** The name is a compound word derived from the Latin word *carina* (keel-like part or ridge) and Greek *elytra* (one of the pair of hardened forewings of certain insects) to stress the very long humeral carinae of this species.

*Agrilus kurumi* Kurosawa

Figs. 32, 56, 75


Diagnosis. This species (Fig. 32), together with *A. mirei* (Fig. 33), is characteristic by the obsolete elytral pubescence in comparison with other members of *A. muscarius* species-group. *Agrilus kurumi* may be distinguished from *A. mirei* by the flat pronotum with the less arcuate sides.

**FIGURES 58–76.** Aedeagus of 58) *A. aurosus*; 59) *A. rolecki* Jendek sp. nov.; 60) *A. cuneatus* Jendek sp. nov.; 61) *A. ventrituber* Jendek sp. nov.; 62) *A. spiculipenis* Jendek sp. nov.; 63) *A. mallotiellus*; 64) *A. haucki* Jendek sp. nov.; 65) *A. acastus*; 66) *A. hunanus* Jendek sp. nov. (basal piece missing); 67) *A. apicaureus* Jendek sp. nov.; 68) *A. muscarius*; 69) *A. semicaducus* Jendek sp. nov.; 70) *A. harlequin*; 71) *A. pseudoharlequin* Jendek sp. nov.; 72) *A. tiomanensis* Jendek sp. nov.; 73) *A. dilatipenis* Jendek sp. nov.; 74) *A. carinelytratus* Jendek sp. nov.; 75) *A. kurumi*; 76) *A. mirei*.

**Length.** 4.1–5.0 mm.

**Variability.** Specimens vary in body shape (robust–elongate), color of elytra (combination of blackish with gold or green patterns), prosternal lobe (arcuately emarginate or incised) and sides of prosternal process (expanded arcuately or rectilinearly).


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**Diagnosis.** This species (Fig. 32), together with *A. mirei* (Fig. 33), is characteristic by the obsolete elytral pubescence in comparison with other members of *A. muscarius* species-group. *Agrilus kurumi* may be distinguished from *A. mirei* by the flat pronotum with the less arcuate sides.
Described from eight males and six females. **Type locality.** Japan, Nagano Pref., Komanoyu, near Kiso-Fukushima.


**Distribution.** Northern China: Shaanxi; Japan: Hokkaido, Honshu; Eastern Russia: Primorye.

**Remarks.** Alexeev (1979) reported *Juglans mandshurica* and Akiyama & Ohmomo (1997) reported *Juglans sieboldiana* as host plants of this species.

*Agrilus mirei* Descarpentries & Villiers

Figs. 33, 57, 76


**FIGURE 77.** Distribution of the *Agrilus muscarius* species-group.
**Diagnosis.** This species (Fig. 33) is distinctive by the flatter pronotum, which is widest in the middle and with sides markedly arcuate. Elytra uniformly black; prosternal lobe deeply incised (Fig. 57); prosternal process expanded, sides rectilinear (Fig. 57); basal abdominal ventrite with tubercles in male and apex of last abdominal ventrite subtruncate or faintly emarginate. Aedeagus (Fig. 76).

**Length.** 4.5–5.0 mm.


**Distribution.** northern Vietnam: Hoa Binh, Ninh Binh.

**Synoptic catalog of the Agrilus muscarius–species group**

*acastus* Kerremans, 1913  
= *horni* (Kerremans, 1914)  
= *ohbayashii* Tōyama, 1987

*apicaureus* Jendek, **sp. nov.**

*aaurarius* (Kerremans, 1892) **comb. nov.**  
= *bocae* Descarpentries & Villiers, 1963 **syn. nov.**

*aurarius* Descarpentries & Villiers, 1963

*apicaureus* Descarpentries & Villiers, 1963

*apraeaurantius* Jendek, **sp. nov.**

*apricaudatus* Jendek, **sp. nov.**

*apricaudinus* Jendek, **sp. nov.**

*dilatipenis* Jendek, **sp. nov.**

*gunjii* Tōyama, 1987

*harlequin* Obenberger, 1924

*haucki* Jendek, **sp. nov.**

*hunanus* Jendek, **sp. nov.**

*kurumi* Kurosawa, 1957

*liscapia* Jendek, 2003  
= *apicalis* (Bourgoin, 1923)

*madanensis* Jendek, **sp. nov.**

*mallotiellus* Kurosawa, 1985  
= *mallotii* Kurosawa, 1957

*mirei* Descarpentries & Villiers, 1963

*muscarius* Kerremans, 1895  
= *seladon* Obenberger, 1940 **syn. nov.**  
= *komiyai* Tōyama, 1987

*nalanda* Théry, 1904

*pallii* Baudon, 1968

*pseudoharlequin* Jendek, **sp. nov.**

*rolciki* Jendek, **sp. nov.**

*samboideus* Fisher, 1930

*semicaducus* Jendek, **sp. nov.**

*siamensis* Tōyama, 1987
spiculipenis Jendek, sp. nov.
tamanensis Jendek, sp. nov.
ventripotens Kerremans, 1900
  = ventralis Kerremans, 1893
ventrituber Jendek, sp. nov.

Acknowledgements

We thank all the curators who loaned specimens used in this study. Aleš Smetana (Agriculture and Agri-Food Canada, Ottawa) and Karen McLachlan Hamilton (Canadian Food Inspection Agency, Ottawa) commented on the MS before submission; their help is sincerely acknowledged.

References
