

Contribution to knowledge of the genus *Agrilus* Curtis, 1825 of Taiwan. Part 2 (Coleoptera Buprestidae)

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ABSTRACT

Our second contribution concerning the *Agrilus* Curtis, 1825 (Coleoptera Buprestidae) of Taiwan in which 15 new species and 2 new subspecies are described: *A. iustusventer* n. sp., *A. dioptasius* n. sp., *A. chen* n. sp., *A. exophthalmus* n. sp., *A. polydeukes* n. sp., *A. valdedotatus* n. sp., *A. natus* n. sp., *A. baolai* n. sp., *A. dapan* n. sp., *A. lulinshan* n. sp., *A. dahanshan* n. sp., *A. takaharui* n. sp., *A. mica* n. sp., *A. attalicus* n. sp., *A. pericles* n. sp., *A. yakushimensis remotus* n. ssp., *A. esakii pudicus* n. ssp. For each of these, photos of dorsal, ventral bodies and aedeagus are provided. Each entity is compared with species considered morphologically more similar.

KEY WORDS

Oriental Region; Agrilini; taxonomy; new species; new subspecies; host plants; ecological records.

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INTRODUCTION

A few months after our first contribution (Curletti & Ong, 2022), a description of a new series of taxa found on the island of Taiwan is added.

In the early twentieth century, German entomologist, Hans Sauter, started developing many collecting sites in the mid-south part of Taiwan, and the specimens were handed over to Belgian entomologist, Charles Kerremans, for publication. From the 1970s to the early 2000s, Jin-Ji Luo, a local insect dealer in Puli, Taiwan, began to carry out large-scale collecting activities with Japanese colleagues in central, northern to southern Taiwan. In 2012–2014, Japanese entomologist Sadahiro Ohmomo and Taiwanese Dr. Yen-Chiu Lan conducted extensive surveys on jewel beetles in Kenting National Park, the southernmost tip of Taiwan, and near Hengchun Peninsula; the results were shown in

their report (Lan & Ohmomo, 2015). Until now, people have explored most of the areas west of Taiwan's Central Mountains from south to north, but very few people have explored the areas east of the Central Mountains which, with a height exceeding 3,000 m, favor the isolation of the forests located on the eastern sides of the island, creating ecological niches that favor the evolution of indigenous populations. One of our good friends and colleagues, Chiamu Chen, who worked in Taitung County from 2017 to 2020, conducted intensive collecting activities in the eastern mountainous area. The results are fruitful and are partially shown in this paper.

MATERIAL AND METHODS

The methods and materials used are the same

as those described in the first contribution (Curletti & Ong, 2022) and refer to this for further details. Figures: bodies scale 1.0 mm; aedeagi scale 0.5 mm.

ACRONYMS. NMNST: National Museum of Natural Science, Taichung, Taiwan; UOTT: Uitsiann Ong, Tainan, Taiwan; GCCI: coll. Curletti, Museo Civico di Storia Naturale, Carmagnola, Italy; leg.: legit.

RESULTS

Systematics

Agrilus (Uragrilus) iustusventer n. sp. - Figs. 1–4
<https://zoobank.org/act:A7656221-3650-4F45-ADFC-FF55B8B3D7FC>

MATERIAL EXAMINED. Holotype male: Taiwan, Kaohsiung City, Baolai, 29.V.2018, U. Ong leg. (NMNST). Paratypes: 1 female, idem, 16.V.2015, U. Ong leg.; 1 male - 1 female, idem 26.IV.2017, U. Ong leg.; 1 male, idem, 12.VI.2018, U. Ong leg.; 1 male - 1 female, idem, 24–26.VII.2018, U. Ong leg.; 3 females, idem, 24–27.V.2019, U. Ong leg.; 1 male, idem, V.2020, U. Ong leg.; 1 females, idem, 19.IV–2.V.2015, U. Ong leg.; 1 females, Taiwan, Pingtung County, Dahanshan, 19.VI.2019, U. Ong leg.; 1 male, idem, 14.VI.2021, Chiamu Chen leg.; 1 females, Taiwan, Taitung County, Kinchenshan, 1.VII.2020, Jiafong Chen leg.; 3 males, Taiwan, Nantou County, Chientai Trail, 7.V.2021, U. Ong leg.; 3 males, idem, 14.V.2021, S. Shih leg.; 1 female, Taiwan, Taitung County, Liyuan, 4.VII.2018, Uika Ong leg.; 1 male, idem, 7.VI.2019, U. Ong leg. (NMNST, UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 7.8 mm. Narrow and elongated shape, apical spine at the last visible tergite. Dark bronze color. Head: vertex 1/3 wide of the anterior margin of the pronotum. Frons glabrous, flat with green highlights. Clypeus separated from the frons by a transverse furrow. Antennae serrate from antennomere IV. Pronotum widest in the middle, with posterior angles acute. Disc regularly convex. Yellow pubescence on the sides. Prehumeral carinulae entire. Marginal carinae not joined at the base even if very close. Gular lobe slightly sinuous. Prosternal process flat, parallel, with slightly

rounded edges. Scutellum carinate. Elytra with apical spine. Disc with 3 pairs of yellow sparse setae arranged respectively in the humeral callus, before the middle and at the $\frac{3}{4}$ of length. Abdomen with laterotergum covered with yellow pubescence. Ventral side with very short and uniform white pubescence. Basal ventrite with a pair of median elongated reliefs, particularly visible with lateral illumination, at the end of which there is a small, glabrous and shiny depressed area. Yellow pubescence on metaepisternum and metacoxa. Legs: metatarsus as long as metatibia. Tarsal formula 1>2+3+4. Claws bifid. Aedeagus 3.1 mm in length, narrow and elongated, parallel, slightly dilated at the apex. Median lobe strongly pointed (Fig. 3).

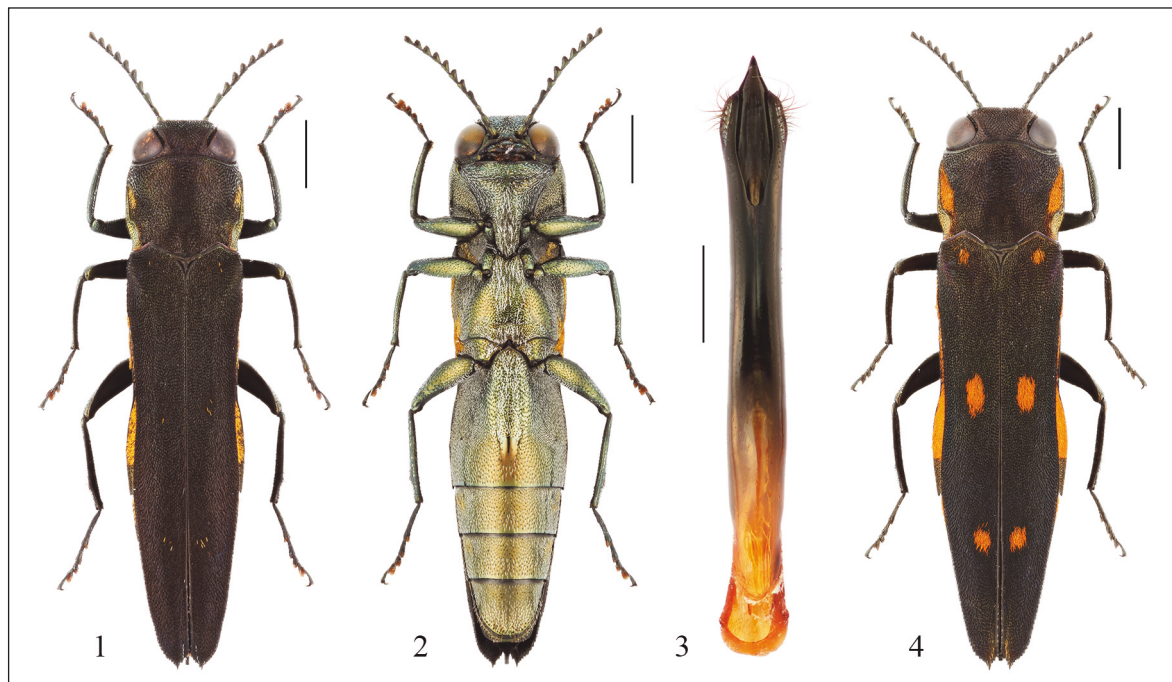
PARATYPES DESCRIPTION. Length from 7.0 to 9.7 mm. Some male specimens are missing elytral yellow setae. The apical spines of the elytra are more or less elongated.

SEXUAL DIMORPHISM. All females have evident spots on elytra (Fig. 4), contrary to the males who have few or absent setae. Furthermore, the females have bronzed frons, claws dentate, metatarsus shorter than metatibia and lack of the elongated reliefs at the basal ventrite.

ETYMOLOGY. From Latin: with regular belly. From the conjunction of the terms *iustus* and *venter*.

DIAGNOSIS. From the subgenus *Uragrilus* having three couples of elytral spots disposed like the females of *A. iustusventer* n. sp., the closest species is *A. formosanus* Kerremans, 1912 for the elytral apex and for the conformation of basal ventrite of the male. It differs over all in the yellow lateral spots on ventrites and the aedeagus with rounded median lobe. Also *A. tokyoensis* Kurosawa 1985, from S Japan (Bellamy, 2008; Jendek & Grebennikov, 2009) and Taiwan (Ohmomo & Fukutomi, 2013), is similar to *A. iustusventer* n. sp. This Japanese species differs in the color of the integuments and pubescence, in the less pronounced apical spines, in the apex of non-pointed median lobe.

HOST PLANT. The adults will gather on the leaves of various Fagaceae trees, such as *Quercus glauca*. Males are also found visiting the flowers of *Swida macrophylla* (Wall.) Sojak (Cornaceae) in the spring.



Figures 1–3. *Agrilus iustusventer* n. sp., holotype. Fig. 1: dorsal view. Fig. 2: ventral view. Fig. 3: aedeagus dorsal view, 3.1 mm. Figure 4. Idem, paratype female, dorsal view, 9.2 mm.

Agrilus (Anambus) dioptasius n. sp. - Figs. 5–7
<https://zoobank.org/act:8F5888E9-BC4B-4EDA-8093-C1393E115133>

MATERIAL EXAMINED. Holotype male: Taiwan, Pingtung County, Damei, 10.V.2017, U. Ong leg. (NMNST). Paratypes: 3 males, idem, 10.V.2017, U. Ong leg.; 1 male - 1 female, idem, 7.VI.2017, U. Ong leg.; 1 male - 2 females, idem, 12.V.2020, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 8.8 mm. Entirely emerald green dorsally, darker green ventrally. Head: vertex with golden reflections, sinuous and slightly bilobed, half the width of the anterior margin of pronotum. Frons flat, glabrous, shiny. Epistome short and wide, carinated. Antennae serrate from antennomere IV. Pronotum glabrous, with blue reflections on the sides. Lateral margins slightly arched with posterior angles right. Disc with a slight posterior median depression. Striae regular, transverse. Prehumeral carinula absent. Marginal carinae welded before the posterior angles of the pronotum. Gular lobe broadly sinuous. Prosternal process with lateral margins divergent. Scutellum carinate. Elytra glabrous with apices sep-

arately rounded and micro-denticulate. Ventral side more tomentose, with yellow pubescence on the sides of metacoxa and metaepisternum. Central white pubescent tuft on the basal ventrite. Legs with all claws bifid. Metatarsus shorter than the metatibia. Metatarsal formula $1 > 2 + 3$. Aedeagus 2.3 mm in length. Apex of the median lobe acuminate (Fig. 7).

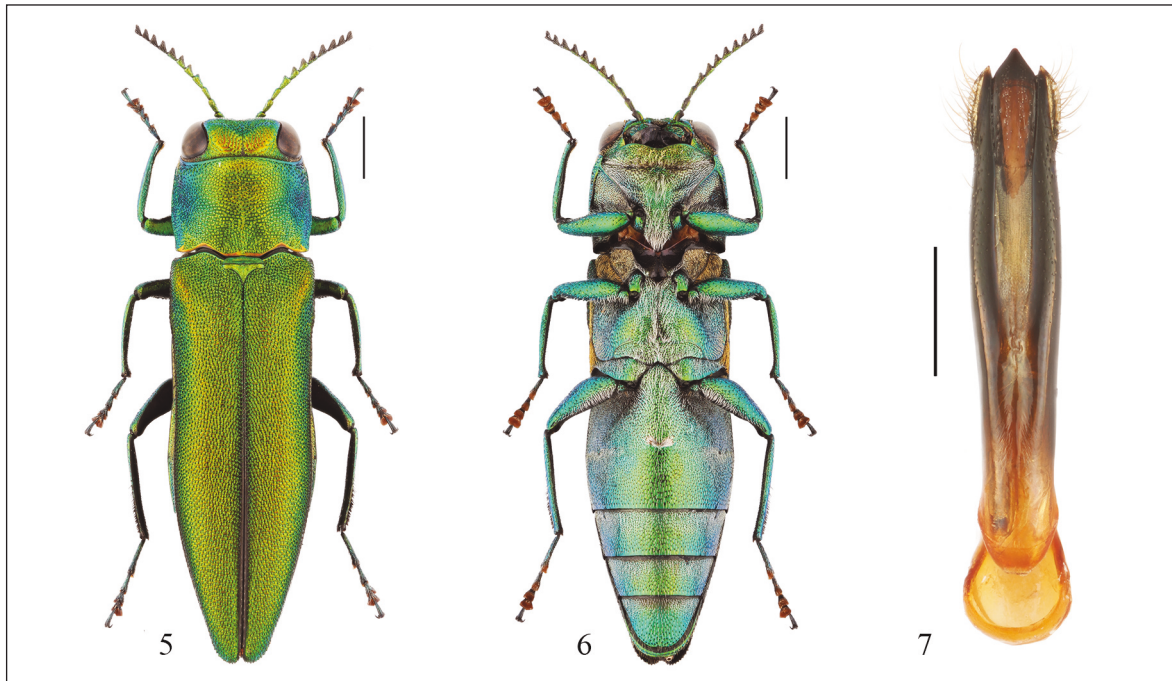
PARATYPES DESCRIPTION. Length from 7.4 to 11.4 mm. The second known male has less arcuate lateral margins of the pronotum and slightly furrowed frons.

SEXUAL DIMORPHISM. The females differ in the claws, which are dentate, in the proportionately shorter metatarsus, and in the lack of pubescent tuft on the basal ventrite.

ETYMOLOGY. Latinization of Dioptase, a bright green mineral from the category of Cyclosilicates sometimes cut into small gems.

DIAGNOSIS. No similar species were found, at moment.

HOST PLANT. Adults feed on the leaves of *Gleditsia rolfei* S. Vidal (Fabaceae).



Figures 5–7. *Agrilus dioptasius* n. sp., holotype. Fig. 5: dorsal view. Fig. 6: ventral view. Fig. 7: aedeagus dorsal view, 2.3 mm.

Agrilus (Anambus) chen n. sp. Figs. 8–10
<https://zoobank.org/act:F98DA13F-19CE-4D1C-AE57-7FE8715B31DE>

MATERIAL EXAMINED. Holotype male: Taiwan, Taitung County, Kinchenshan, 10.VI.2019, Chiamu Chen leg. (NMNST). Paratypes: 1 male, idem, 26.VII.2017, Jiafong Chen leg. (GCCl).

HOLOTYPE DESCRIPTION. Length 5.3 mm. Body slender, entirely dark bronzed. Head with flat vertex, wide about 1/3 of the anterior margin of the pronotum. Frons green, silky sculpture with white pubescence at the base. Clypeus with obsolete carina. Antennae slender, serrate from antennomere IV. Big and elongated eyes. Pronotum wider anteriorly, gradually narrowed towards the base. Posterior angles obtuse. Anterior margin moderately protruding. Sculpture composed of fine and transverse striae. Prehumeral carinula entire. Marginal carinae divided also posteriorly, where they are close together and parallel. Gular lobe moderately sinuous. Prosternal process dilated, forming distal blunt angles. Scutellum carinate. Elytra with apices separately rounded and micro-denticulate. Pubescence scattered, arranged along the suture and interrupted at $\frac{3}{4}$. Ab-

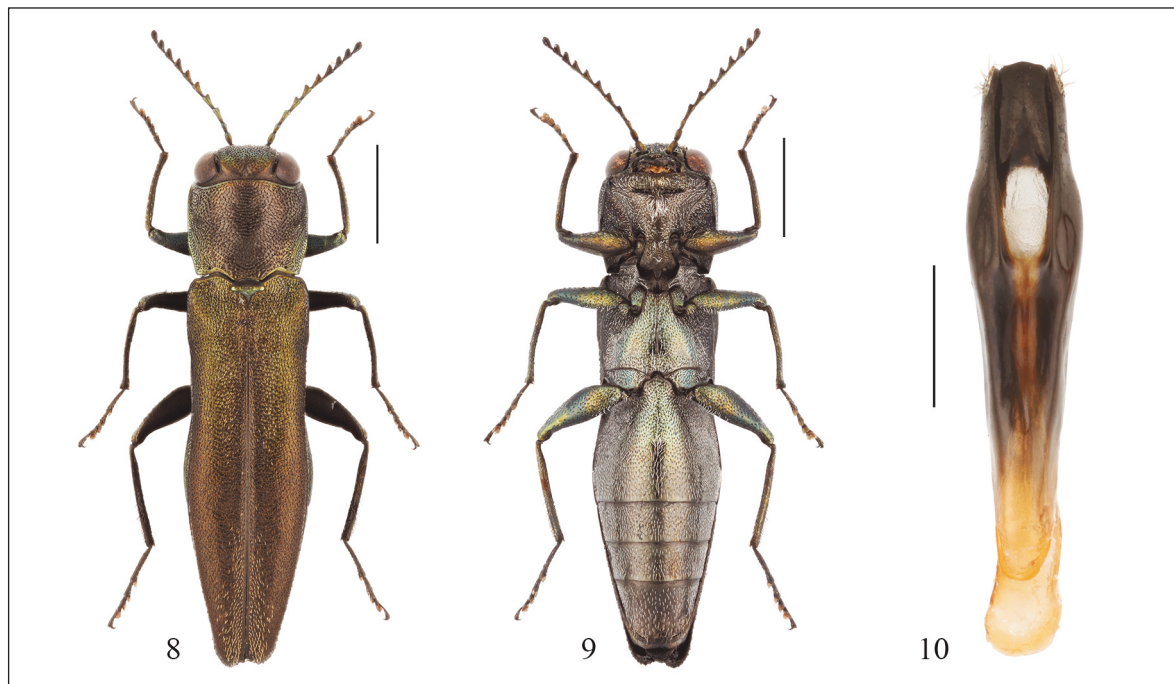
domen regularly and not very pubescent. Margin of the apical ventrite rounded. Legs with metatarsus elongate but shorter than the metatibia. Metatarsal formula 1=2+3+4. Anterior claws bifid, median claws with external spur bifid and internal spur dentate, posterior claws dentate. Aedeagus 2.1 mm in length. Apex of median lobe flat, with a semi-transparent white area at the base (Fig. 10).

PARATYPE DESCRIPTION. Length 5.3 mm. There are no substantial differences compared to the holotype.

ETYMOLOGY. This species is named after the two brothers Jiafong and Chiamu Chen, skilled researchers and indefatigable research companions of one of the AA. Their help in the field was very important in the current knowledge of Taiwan's Buprestidae fauna. Noun in apposition.

DIAGNOSIS. *Agrilus chen* n. sp. remembers *A. miwai* Obenberger, 1936 reported for Taiwan and China. It is easily differentiated by the more provided elytral pubescence, also present anteriorly, and by the conformation of the aedeagus.

HOST PLANT. Unknown.



Figures 8–10. *Agrilus chen* n. sp., holotype. Fig. 8: dorsal view. Fig. 9: ventral view. Fig. 10: aedeagus dorsal view, 2.1 mm.

***Agrilus (Anambus) exophthalmus* n. sp.**

Figs. 11–13 - <https://zoobank.org/act:9E0F0D80-8426-43CC-8C63-F0D7CA543A12>

MATERIAL EXAMINED. Holotype male: Taiwan, Taitung County, Kinchenshan, 4.VI.2020, Chiamu Chen leg. (NMNST). Paratypes: 1 male, idem, 2.VI.2018, Chiamu Chen leg.; 1 female, idem, 24.VII.2018, Chiamu Chen leg.; 1 female, idem, 8.VI.2019, Chiamu Chen leg.; 1 male - 1 female, idem, 10.VI.2019, Chiamu Chen leg.; 1 male, idem, 18.V.2020, Chiamu Chen leg.; 1 female, idem, 4.VI.2020, Chiamu Chen leg.; 1 male - 1 female, idem, 29.VI.2020, Chiamu Chen leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 6.5 mm. Uniformly dark bronze almost black with three pairs of small pubescent spots on the elytra. Head: Vertex prominent with bulging eyes, as wide as half the anterior margin of the pronotum. Frons flat, dark green, with longer white pubescence. Clypeus transversely carinate. Antennae serrate from antennomere IV. Pronotum with strongly arcuate lateral margins, narrowed posteriorly, with obtuse posterior angles. Anterior margin straight. Disc strongly

depressed on the sides. Sculpture thin, not very evident, composed of short smooth plates arranged transversely. Prehumeral carinula slightly raised, interrupted in mid-length. Marginal carinae not joined posteriorly, with the submarginal interrupted before the posterior angle. Gular lobe broadly and slightly sinuous. Prosternal process parallel. Scutellum carinate. Elytra with separately elliptic, micro-denticulate apices. The three pairs of pubescent spots are placed in the humeral depression, mid-length and at $\frac{3}{4}$ respectively. The second pair is barely visible. Further pubescence behind the scutellum and at the apex. Abdomen with short uniform white pubescence. Apical ventrite entire not sinuate. Legs with metatibia shorter than metafemur. Metatarsal formula $1 > 2 + 3$. Anterior claws bifid, median claws with outer spur bifid, inner dentate, posterior claws all dentate. Aedeagus narrow and parallel, apex of the median lobe subrounded, elliptic. 1.8 mm in length (Fig. 13).

PARATYPES DESCRIPTION. Length from 6.2 to 9.0 mm. In some cases, the prehumeral carinulae are barely visible and almost absent. The second couple of spots is more visible. Ovipositor narrowed and elongated.



Figures 11–13. *Agrilus exophthalmus* n. sp., holotype. Fig. 11: dorsal view. Fig. 12: ventral view. Fig. 13: aedeagus dorsal view, 1.8 mm.

SEXUAL DIMORPHISM. The females have practically hairless bronzed frons and dentate claws.

ETYMOLOGY. From Latin = with bulging eyes.

DIAGNOSIS. *Agrilus exophthalmus* sp. nov. is similar to *Agrilus pleurostigmus* Jendek, 2011 from China, described using a single female specimen. The Taiwanese species differs principally for the protruding vertex, the presence of rudimental carinulae on pronotum, the postscutellar pubescence, the more elongated elytral apices, the shorter metatarsus.

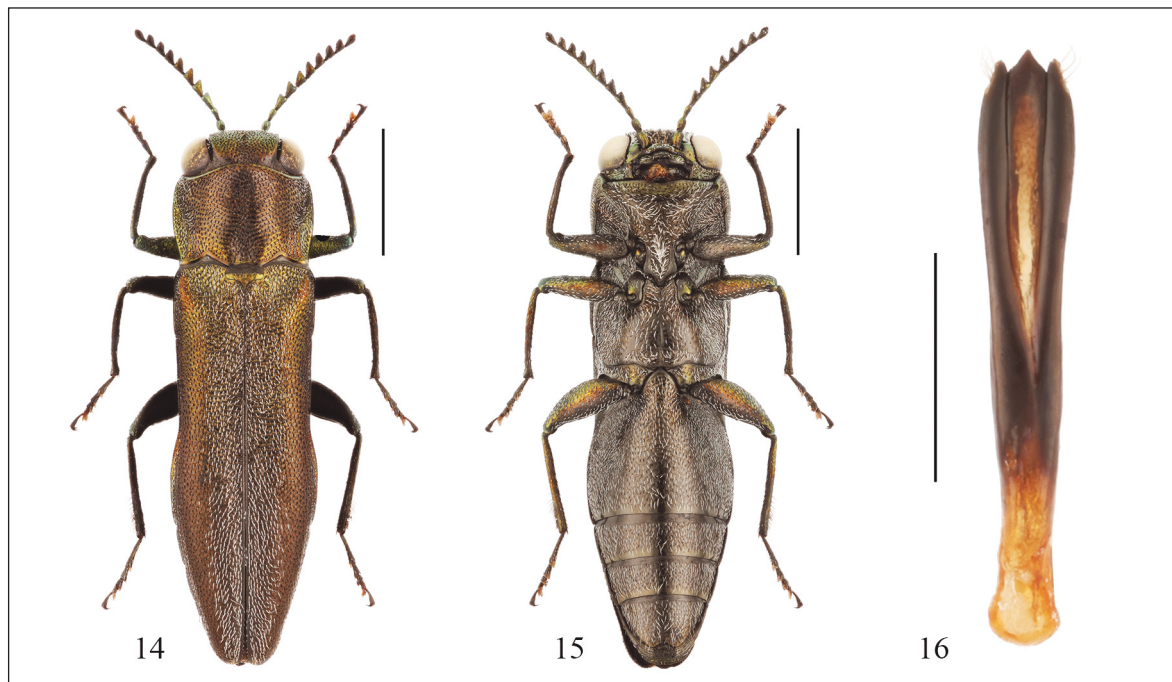
HOST PLANT. Adults can be found on the leaves of *Castanopsis carlesii* (Hemsl.) Hayata (Fagaceae).

***Agrilus (Anambus) yakushimensis remotus* n. ssp.**
Figs. 14–16 - <https://zoobank.org/act:163BF999-9090-4335-8373-13DA73107DFC>

MATERIAL EXAMINED. Holotype male: Taiwan, Tainan City, Meiling, 4.VI.2010, U. Ong leg. (NMNST). Paratypes: 1 female, idem, 16.VIII.2010, U. Ong leg.; 1 female, Taiwan, Ping-

tung County, Dahanshan, 19.VI.2019, U. Ong leg.; 1 male, Taiwan, Chiayi County, Dulishan, 8.IV.2015, U. Ong leg.; 2 females, Taiwan, Kaohsiung City, Ergituan, 17.V.2010, U. Ong leg.; 1 male, Taiwan, Taitung County, Kinchenshan, 18.V.2020, Chiamu Chen leg.; 1 male, Taiwan, Nantou County, Guandaoshan, 18.V.2016, U. Ong leg.; 1 females, Taiwan, Chiayi County, Shihmianton, 28.VI.2015, Uika Ong leg.; 1 females, Taiwan, Taitung County, Lijia, 20.VI.2010, Kunta Ho leg. (UOTT and GCCI).

HOLOTYPE DESCRIPTION. Length 4.2 mm. Slightly elongated, dark bronze with light elytral perisutural pubescence not in depression. Head with flat vertex, slightly furrowed, 1/3 wide of the anterior margin of the pronotum. Moderately prominent eyes. Frons flat with short uniform pubescence; color with green reflections. Clypeus contiguous to the front, without transverse carina. Antennae serrate from antennomere IV. Pronotum with slightly arched lateral margins, wider anteriorly with obtuse posterior angles. Anterior margin sinuous and advanced between the eyes. Disc with a weak median longitudinal depression. Sparce white pubescence on the sides. Sculpture transversely furrowed. Pre-



Figures 14–16. *Agrilus yakushimensis remotus* n. ssp., holotype. Fig. 14: dorsal view. Fig. 15: ventral view. Fig. 16: aedeagus dorsal view, 1.3 mm.

humeral carinulae interrupted, arched, almost half the length of the pronotum. Marginal carinae joined posteriorly. Gular lobe with anterior margin slightly sinuate. Prosternal process moderately dilated. Scutellum transversely carinate. Elytra with separately rounded apices, without denticulation. The perisutural pubescence covers approximately half of the elytral width. Abdomen with clear and uniform pubescence. Apical ventrite with apex sinuate. Legs: metatarsus shorter than metatibia. Metatarsal formula $1=2+3+4$. Claws: anterior and median bifid, posterior dentate. Aedeagus: length 1.3 mm. Narrow and elongated, slightly sinuous in the median part, just slightly asymmetrical at the base. Apex of the median lobe acuminate (Fig. 16).

PARATYPES DESCRIPTION. Length from 4.6 to 5.7 mm. Apart from the size, there are no substantial differences with the holotype.

SEXUAL DIMORPHISM. The females have bronzed frons with more reduced pubescence. All the claws are simply dentate.

ETYMOLOGY. From Latin “*rēmōtus*” = far, remote.

DIAGNOSIS. *Agrilus yakushimensis remotus* n.

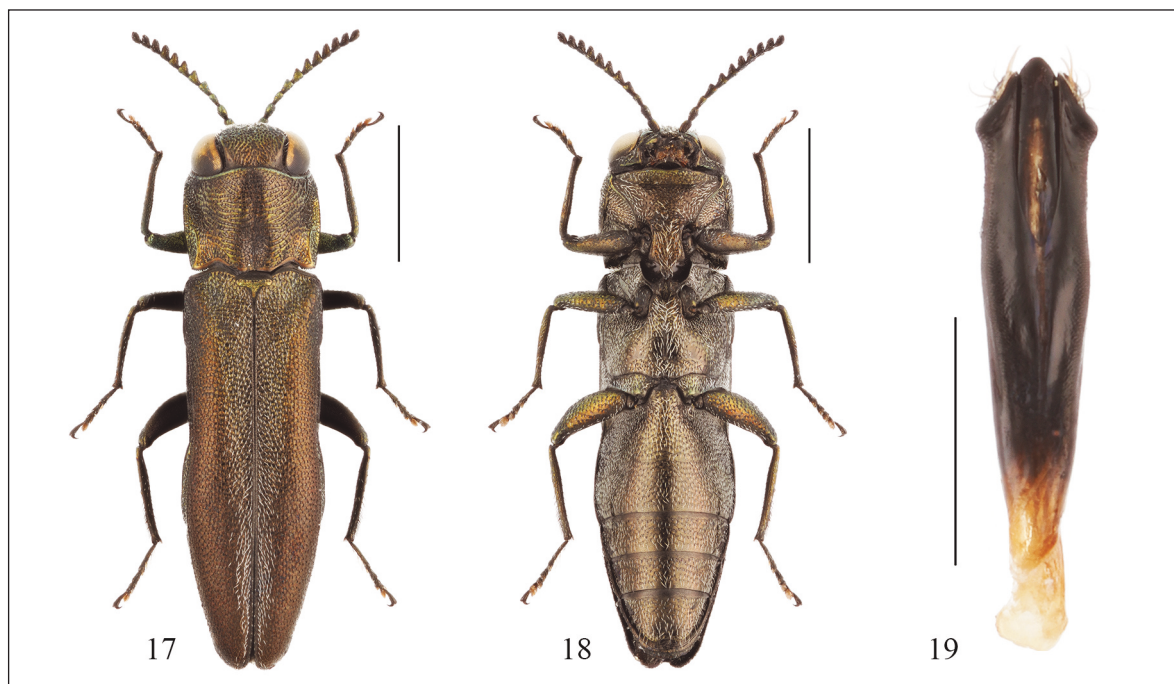
ssp. is easily distinguishable from *A. yakushimensis yakushimensis* Tōyama, 1985 as it has its pubescence only along the elytral suture instead of uniform pubescence.

HOST PLANT. Adults can be collected by sweeping the leaves of Fagaceae trees.

***Agrilus (Anambus) polydeukes* n. sp.** Figs. 17–19
<https://zoobank.org/act:CE5A4010-56B4-4CE4-8499-1C4568EA44B7>

MATERIAL EXAMINED. Holotype male: Taiwan, Chiayi County, Shihzihlu, 16.VI.2020, U. Ong leg. (NMNST). Paratypes: 2 females, idem, 2.VII.2021, U. Ong leg.; 1 female, idem, 14.VI.2022, U. Ong leg.; 1 female, Taiwan, Nantou County, Hobon, 2.VI.2018, Sinyan Shih leg.; 1 male, 2 females, Taiwan, Nantou County, Sunlinksea, 24.VII.2020, U. Ong leg.; 5 males, idem, 12.VII.2022, U. Ong leg.; 1 female, Taiwan, Taichung City, Dasyueshan, 13.VII.2021, U. Ong leg. (UOTT and GCCI).

HOLOTYPE DESCRIPTION. Length 4 mm. Uniformly bronze in colour. Head with carinate



Figures 17–19. *Agrilus polydeukes* n. sp., holotype. Fig. 17: dorsal view. Fig. 18: ventral view. Fig. 19: aedeagus dorsal view, 1.2 mm.

clypeus. Antennae serrate from IV antennomere. Pronotum wider anteriorly, posterior angles obtuse. Prehumeral carinulae interrupted. Sculpture transverse. Disc with a weak median longitudinal depression. Marginal carinae joined posteriorly. Gular lobe slightly sinuate. Prosternal process dilated. Scutellum transversely carinate. Elytra with perisutural white pubescence not in depression. Apices separately rounded. Abdomen uniformly pubescent. Legs with metatarsal formula $1 < 2 + 3 + 4$. Anterior and median claws bifid, posterior claws dentate. Aedeagus 1.2 mm in length, sclerotized, robust. Parameres with an external apical protuberance. Apex of median lobe subrounded (Fig. 19).

PARATYPES DESCRIPTION. Length from 3.6 to 4.4 mm. In some specimens the elytral perisutural pubescence is less visible posteriorly. Ovipositor narrow and elongate.

SEXUAL DIMORPHISM. In females all claws are dentate and the ventral pubescence is sparser.

ETYMOLOGY. From the ancient Greek “*Polydeúkēs*” (= Pollux) the name of the twin brother of *Kástōr*. Noun in apposition.

DIAGNOSIS. The description is purposely synthetic as it almost entirely follows those that of *A. yakushimensis remotus* ssp. nov. *A. polydeukes* sp. nov. is similar to *A. yakushimensis remotus* ssp. nov. with which it can be easily confused. The main differences are presented in the following table:

<i>yakushimensis remotus</i> n. ssp.	<i>polydeukes</i> n. sp.
More stumpy form	More slender form
Vertex flat	Vertex more advanced between the eyes
Pronotum wider with more rounded edges	Pronotum narrower with straighter edges
Pubescent stripe covering half of the elytra	Pubescent stripe covering less than half the elytra
Basal metatarsomere longer than the following three	Basal metatarsomere shorter than the following three
Aedeagus fig. 16	Aedeagus fig. 19

HOST PLANT. Adults of this new species can be found on the leaves of endemic *Ulmus uyematsui* Hayata (Ulmaceae).

Agrilus (Anambus) valdedotatus n. sp. Figs. 20–22
<https://zoobank.org/act:5461BDB5-6602-4526-92F0-D83E1733DBAE>

MATERIAL EXAMINED. Holotype male: Taiwan, Kaohsiung City, Baolai, 30.IV.2015, Uitsiann Ong leg. (NMNST). Paratypes: 1 female, idem, 11.VI.2015, U. Ong leg.; 1 male, 1 female, idem, 29.V.2018, U. Ong leg.; 1 male, idem, 7.VI.2018, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 5.7 mm. Moderately slender. Pronotum red copper, elytra red bronze. Head flat; vertex about half as wide as the anterior margin of the pronotum, with the same color as the pronotum. Frons bright, bronze, with green reflections when viewed from above. Pubescence white, uniform, visible only with grazing light. Clypeus transversely carinate. Antennae thin, serrate from antennomere IV. Pronotum wider anteriorly, with slightly arched lateral margins and obtuse posterior angles. Anterior margin slightly advanced between the eyes. Disc irregular, depressed at the sides and at the base before the scutellum. Sculpture composed of flattened wrinkles arranged transversely. Prehumeral carinulae entire

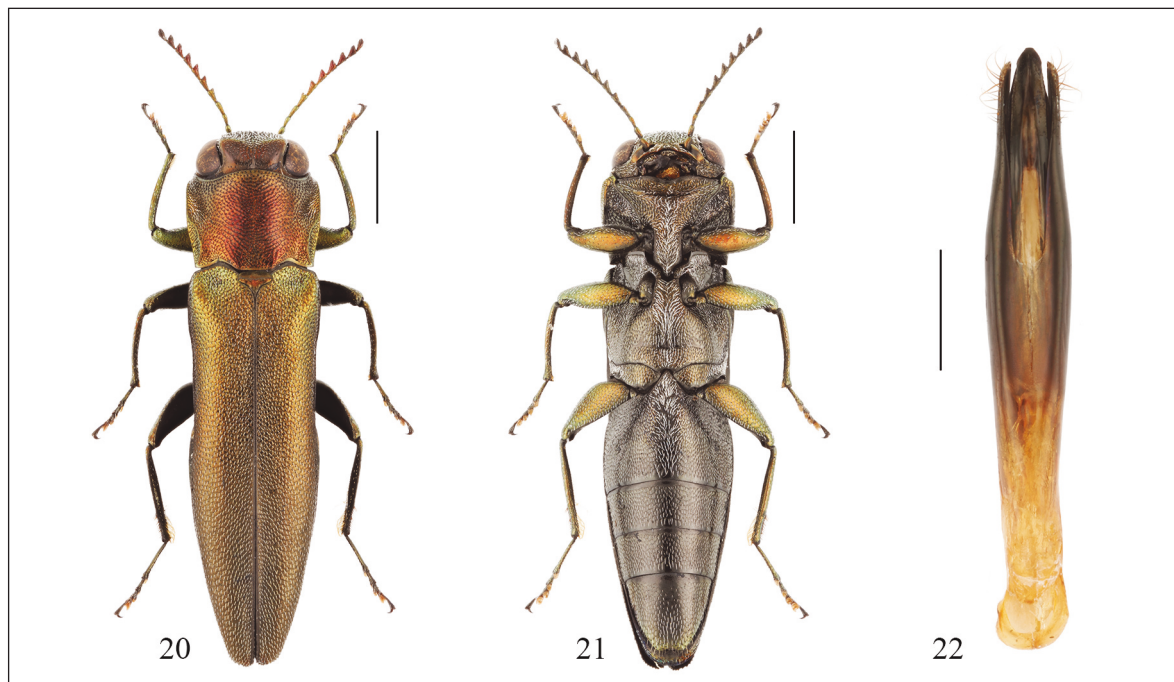
and strong. Marginal carinae also divided posteriorly, where they are parallel and adjacent. Gular lobe with sinuate anterior margin. Prosternal process parallel. Scutellum carinate. Elytra with uniform white pubescence not covering the integuments, slightly more thickened towards the suture. Apices separately rounded. Abdomen dark bronze, slightly and regularly pubescent. Legs copper; metatarsus almost as long as the metatibia. Metatarsal formula 1>2+3+4. All claws dentate. Aedeagus 2.5 mm in length, elongate, curved, symmetrical. Apex of median lobe rounded (Fig. 22).

PARATYPES DESCRIPTION. Length from 4.7 to 6.7 mm. There are no notable differences.

SEXUAL DIMORPHISM. Females are distinguished only for frons copper and for metatarsus shorter.

ETYMOLOGY. From Latin: “*valdē*” = very and “*dōtātus*” = equipped, endowed. Referring to the large size of the male sexual organ, almost half the length of the body.

DIAGNOSIS. *Agrilus valdedotatus* n. sp. is hardly comparable to other species. The one that seems most similar is *A. tazoei* Kurosawa 1985 described



Figures 20–22. *Agrilus valdedotatus* n. sp., holotype. Fig. 20: dorsal view. Fig. 21: ventral view. Fig. 22: aedeagus dorsal view, 2.5 mm.

from Japan, but also reported from China (Jendek & Grebennikov, 2011). *Agrilus valdedotatus* n. sp. differs in the shorter shape, the flat frons, the pronotum wider anteriorly and has less arcuate sides.

HOST PLANT. Unknown.

***Agrilus (Anambus) esakii pudicus* n. ssp.**

Figs. 23–25 - <https://zoobank.org/act:D982FE96-58DF-4525-BD39-E9B323CB6B46>

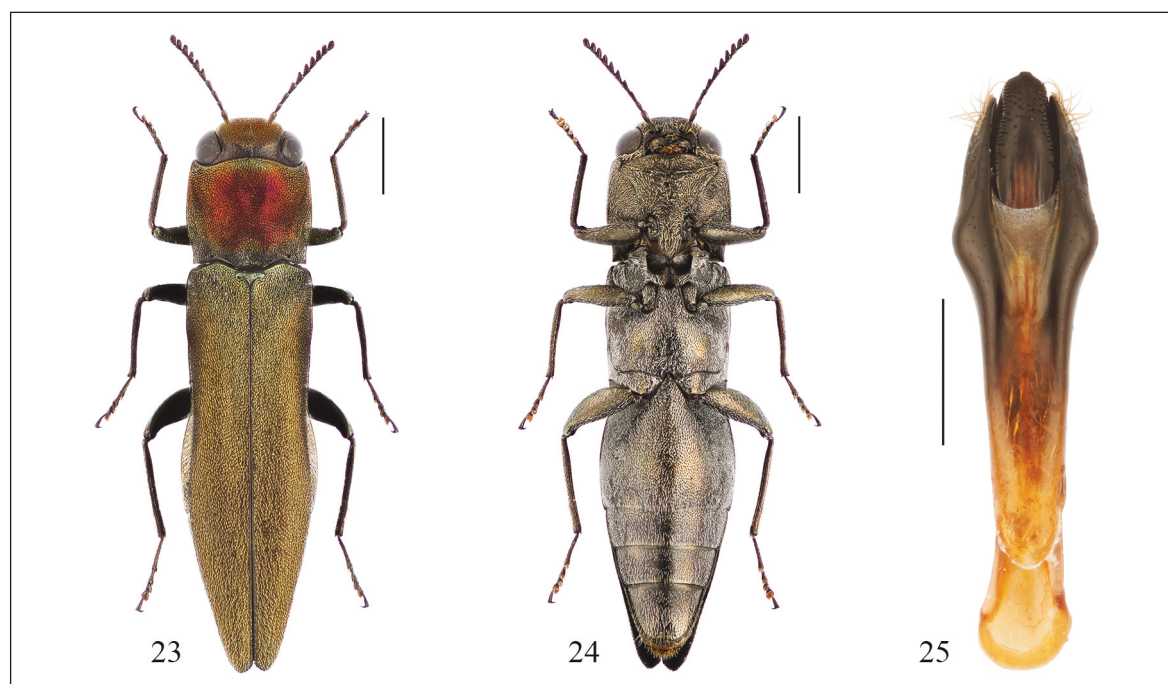
MATERIAL EXAMINED. Holotype male: Taiwan, Chiayi County, Shihzhihu, 11.V.2016, U. Ong leg. (NMNST). Paratypes: 2 females, idem, 1.VII.2015, U. Ong leg.; 1 male, idem, 3.VI.2016, U. Ong leg.; 1 male, idem, 24.VI.2016, U. Ong leg.; 1 female, idem, 28. VI.2016, U. Ong leg.; 1 female, idem, 14.VII.2016, U. Ong leg.; 1 female, idem, 27.VI.2018, U. Ong leg.; 1 female, idem, 16.VI.2020, U. Ong leg.; 1 male, 1 female, idem, 14.VI.2022, U. Ong leg.; 1 male, Taiwan, Taitung County, Kinchenshan, 27.VII.2018, Chiamu Chen leg.; 2 females, idem, 2. VI.2019, Chiamu Chen leg.; 1 male, idem, 10. VI.2019, Chiamu Chen leg.; 1 female, idem, 20.VI.2019, Chiamu Chen leg.; 1

female, idem, 28. VI.2019, Chiamu Chen leg.; 1 female, idem, 30. VI.2019, Jiafong Chen leg.; 1 male, idem, 18. V.2020, Chiamu Chen leg.; 1 male, Taiwan, Pingtung County, Shouca, 14. IV.2021, U. Ong leg.; 1 female, Taiwan, Nantou County, Guandaoshan, 2.VI.2018, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 6.1 mm. The description follows that of the typical form. The frons has dark green reflections. Prehumeral carinulae interrupted, not very evident. Gular lobe widely sinuous. Prosternal process parallel. Metatarsus slightly shorter than metatibia. Metatarsal formula $1=2+3+4+5$. The anterior and median claws are bifid, the posterior ones dentate. Aedeagus 2.05 mm in length, with a bump on the sides of the parameres. Median lobe sub-rounded, but with a blunt tooth at the apex (Fig. 25).

PARATYPES DESCRIPTION. Length from 5.6 to 7.4 mm. In some specimens the prehumeral carinulae are absent or not very evident. Two females lack anterior red color.

SEXUAL DIMORPHISM. The females differ by the red wine color on the frons, on the vertex and on the anterior part of pronotum. Elytra with cupreous



Figures 23, 24. *Agrilus esakii pudicus* n. ssp., paratype female, 7.2 mm. Fig. 23: dorsal view. Fig. 24: ventral view. Figure 25. Idem, holotype, aedeagus dorsal view, 2.05 mm.

tinge. All claws simply dentate. Metatarsus shorter, while maintaining the proportions between the tarsomeres.

ETYMOLOGY. After the Latin adjective “*pudicus*” = modest, shy. For the anterior redness that tinges almost all the females.

DIAGNOSIS. *Agrilus esakii esakii* Kurosawa, 1964 (= *Agrilus toyoshimai* Tôyama, 1988) was described on Okinawa islands, South Japan. *Agrilus esakii pudicus* ssp. nov. differs for having sexual dichroism, with females red in the frons, vertex and anterior pronotum. The aedeagus has more developed protuberances on the sides of the parameres.

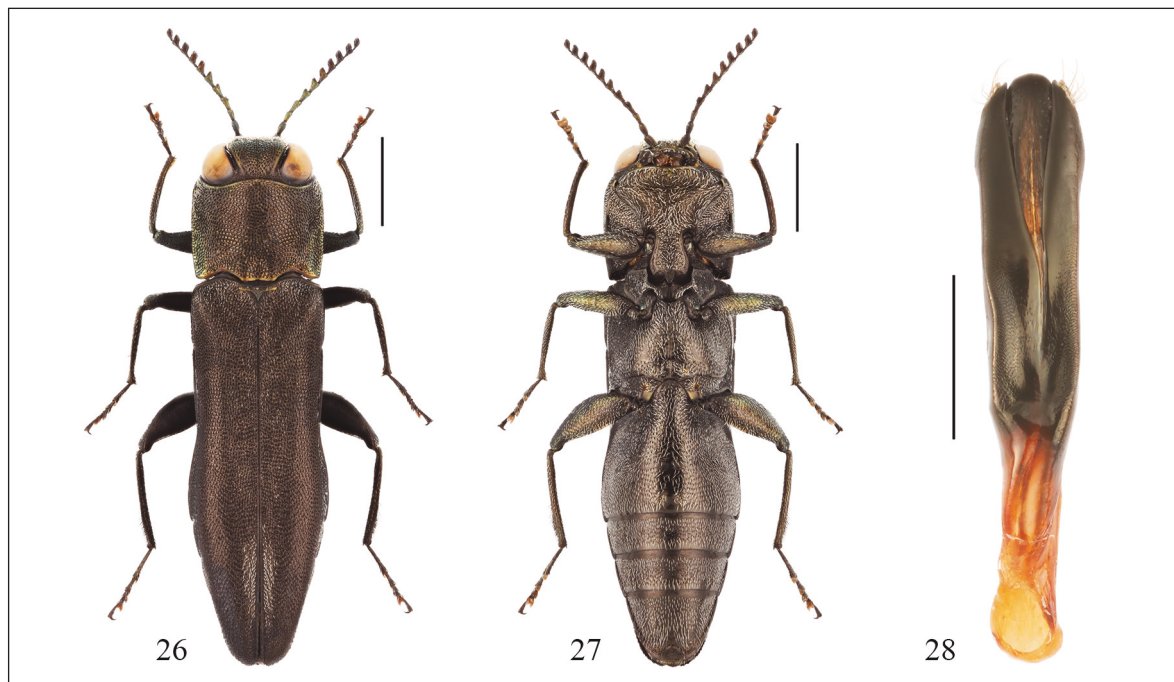
HOST PLANT. Adults can be found on the leaves of various Fagaceae trees.

Agrilus (Anambus) nasutus n. sp. Figs. 26–28
<https://zoobank.org/act:37FB21E6-4B8A-46DA-9F6A-AEE9158F344A>

MATERIAL EXAMINED. Holotype male: Taiwan, Kaohsiung City, Baolai, 20.V.2022, U. Ong leg. (NMNST).

Paratypes: 1 male, 1 female, idem, 8.V.2017, U. Ong leg.; 1 female, idem, 9.V.2017, U. Ong leg.; 1 female, idem, 12.VI.2018, U. Ong leg.; 1 female, idem, 28.IV.2022, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 5.9 mm. Body short but not stocky, entirely dark bronze. Head with vertex flat, furrowed, 1/3 the width of the anterior margin of pronotum. Frons with green reflections, flat, covered with uniform and shiny white pubescence. Clypeus not carinate. Antennae serrate from antennomere IV. Pronotum wider anteriorly, lateral margins straight and posterior angles obtuse. Anterior margin sinuous, protruding between the eyes. Disc with central basal depression. Sculpture regular, transverse. Prehumeral carinulae absent. Marginal carinae joined at the base. Gular lobe broadly sinuous. Prosternal process with a vaguely trapezoidal shape, but with curved lateral margins, sinuous at the base and rounded towards the distal part, which is tridentate, but with all the tips facing downwards. Scutellum transversely carinate. Elytra with white perisutural pubescence, interrupted at $\frac{3}{4}$, with distal part more dense, evident and shiny. Elytral apices separately rounded with micro-denticulation obsolete. Abdomen lightly pubescent. Legs



Figures 26–28. *Agrilus nasutus* n. sp., holotype. Fig. 26: dorsal view. Fig. 27: ventral view. Fig. 28: aedeagus dorsal view, 1.8 mm.

with metatarsus shorter than metatibia. Metatarsal formula 1=2+3+4. Anterior claws bifid, median claws with the external spur bifid and the internal spur dentate, posterior claws dentate. Aedeagus 1.8 mm in length, subparallel, sclerotized, with rounded median lobe (Fig. 28).

PARATYPES DESCRIPTION. Length from 5.9 to 6.7 mm. The elytral pubescence is variable: in one case it is not interrupted, in another it is visible only in the apical part. Ovipositor elongated.

SEXUAL DIMORPHISM. Females have frons concolor and all claws dentate.

ETYMOLOGY. After Latin “*nasūtus*” = nosed, big-nosed. In reference to the particular conformation of the prosternal process which remember a flattened human nose.

DIAGNOSIS. The particular structure of the prosternal process in a trapezoidal, tridentate shape with curved lateral margins makes the species almost unique. Observing the dorsal face, *A. nasutus* sp. nov. is similar to *A. marginicollis* Saunders, 1873 from China, Japan, Korea, Russia and *A. varius* Kerremans, 1895 from China, Korea and Rus-

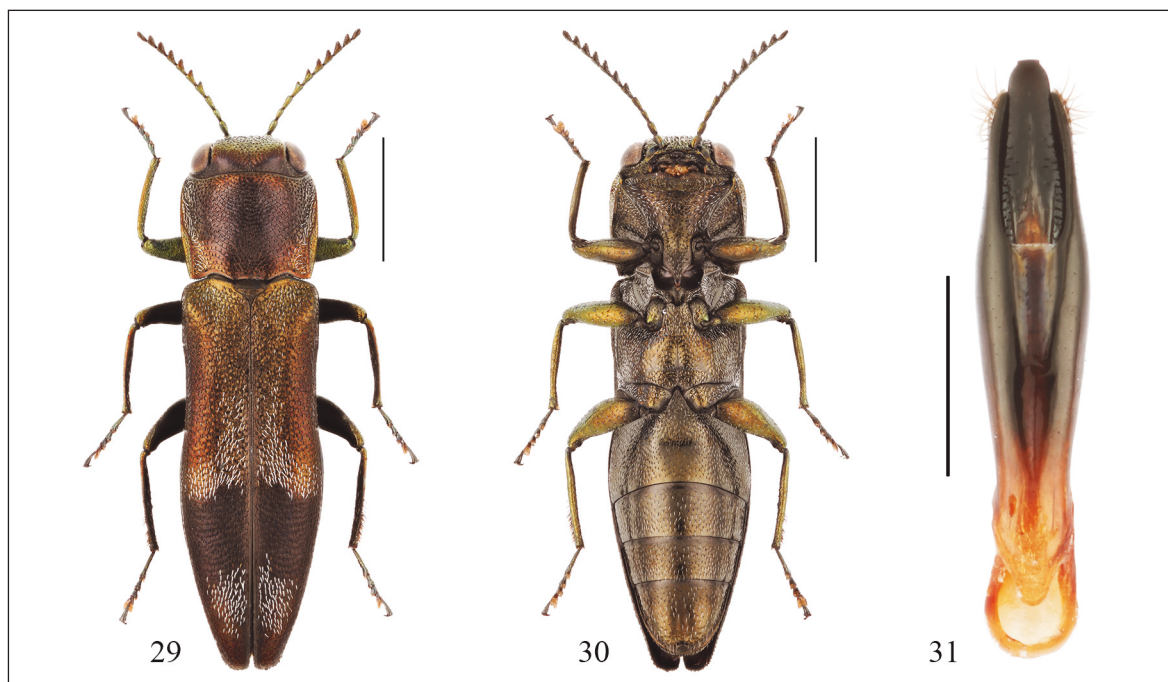
sia. However, *A. nasutus* sp. nov. is easily distinguishable due to the different shape of the aedeagus.

HOST PLANT. Unknown.

***Agrilus (Anambus) baolai* n. sp.** Figs. 29–31
<https://zoobank.org/act:9080E148-436C-44D4-A9CD-26CF99051A3F>

MATERIAL EXAMINED. Holotype male: Taiwan, Taichung City, Baolai, 18.V.2018, U. Ong leg. (NMNST). Paratypes: 1 female, idem, 9.V.2017, U. Ong leg.; 1 female, idem, 18.V.2018, U. Ong leg.; 1 male, idem, 28.IV.2020, U. Ong leg.; 1 male, 1 female, idem, 28.IV.2022, U. Ong leg.; 1 male, Taiwan, Chiayi County, Shihmianton, 5.V.2021, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 4.3 mm. Head flattened, with vertex wider than half of the anterior margin of the pronotum. Eyes bulging. Frons bronze-gilded, practically glabrous. Clypeus carinated. Antennae serrate from antennomere IV. Pronotum bronze, wider anteriorly, with lateral



Figures 29–31. *Agrilus baolai* n. sp., holotype. Fig. 29: dorsal view. Fig. 30: ventral view. Fig. 31: aedeagus dorsal view, 1.5 mm.

margins slightly arched and basal angles obtuse. Anterior margin just perceptibly protruding forward. Sculpture shallow and oblique. Prehumeral carinula entire. Marginal carinae welded posteriorly. Gular lobe sinuate. Prosternal process subparallel. Scutellum carinate. Elytra bronzed clear on the anterior half, black posteriorly; the two colors are divided by a transverse white strip of pubescence which goes up along the suture to form an inverted Y that does not reach the scutellum. An additional pair of white pubescent spots are present on the posterior half. Apices separately rounded and micro-denticulated. Abdomen regularly and scarcely pubescent. In the central half of the basal ventrite there is a transverse protuberance. Apex of the apical ventrite sinuate. Legs with metatarsus shorter than the metatibia. Metatarsal formula 1>2+3. All claws simply dentate. Aedeagus 1.5 mm in length (Fig. 10c).

PARATYPES DESCRIPTION. Length from 4.0 to 4.4 mm. One specimen has less clearly distributed dorsal pubescence. Ovipositor elongated.

SEXUAL DIMORPHISM. Little differentiate. The females are distinguished by the lack of the protuber-

ance on the basal ventrite and by the dark bronzed frons.

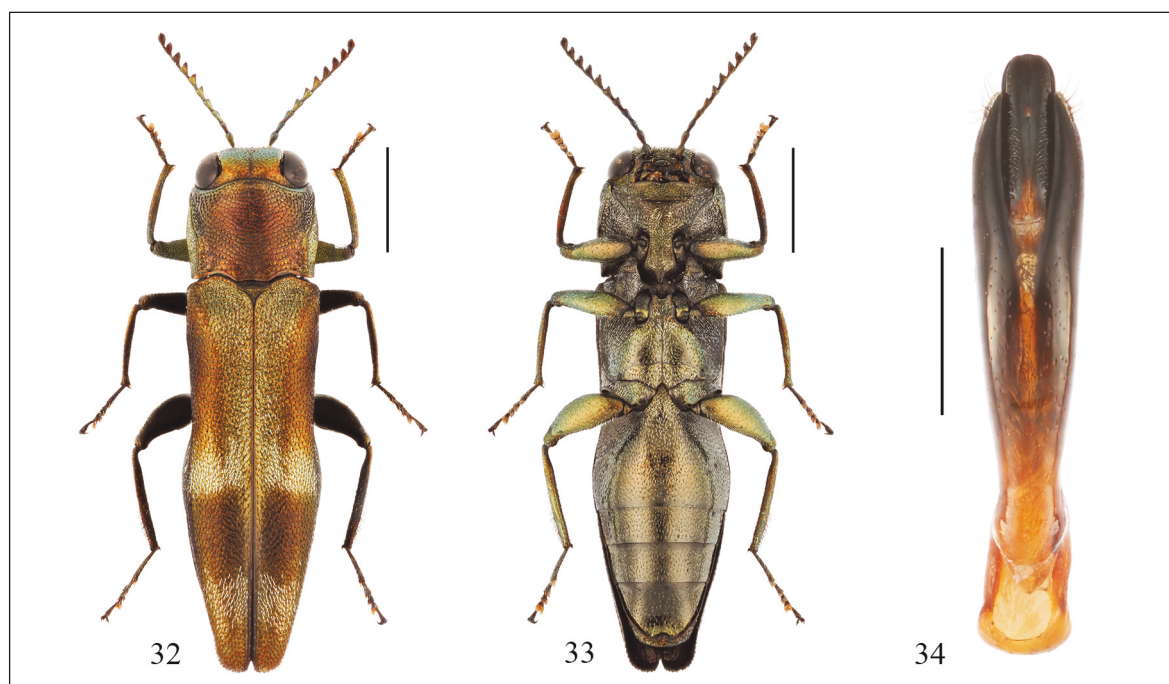
ETYMOLOGY. Baolai is the place name where the specimens were found. Noun in apposition.

DIAGNOSIS. Similar species is *A. aramis* Jendek & Grebennikov, 2018. *A. baolai* sp. nov. can be easily distinguished via the flat frons, wider vertex, entire prehumeral carinule, and more elongated first metatarsomere. Another similar species is *A. nishiyamai* Tôyama, 1985 described from Taiwan. It differs from *A. baolai* n. sp. in the rounded and narrower vertex, the rounded sides of the pronotum, the elytral pubescence, and the shape of the aedeagus.

HOST PLANT. Unknown.

Agrilus (Anambus) dapan n. sp. Figs. 32–34
<https://zoobank.org/act:C3274AD0-1FCF-4D9F-9946-AED1D80462F5>

MATERIAL EXAMINED. Holotype male: Taiwan, Taichung City, Dapan, 24.VI.2021, U. Ong leg. (NMNST). Paratypes: 3 males, 3 females, idem,



Figures 32–34. *Agrilus dapan* n. sp., holotype. Fig. 32: dorsal view. Fig. 33: ventral view. Fig. 34: aedeagus dorsal view, 1.8 mm.

24.VI.2021, U. Ong leg.; 1 male, 3 females, idem, 22.VI.2022, U. Ong leg.; 1 male, idem, 13.VII.2022, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION AND DIAGNOSIS. Length 5.0 mm. As can be deduced from Figs. 32 and 33, the species is very similar to *A. baolai* n. sp. Apart from the dimensions, *A. dapan* n. sp. differs from *A. baolai* for some substantial characters listed here:

- lighter color.
- vertex more bilobed, narrower and with less prominent eyes.
- pronotum with maximum width in the middle and with right posterior angles.
- anterior margin of the pronotum that protrudes more forward.
- elytral apex more elongated and sinuous on the sides.
- wider distal pubescence.
- gular lobe less strongly sinuous.
- prosternal process dilated.
- aedeagus 1.8 mm in length, with a more claviform profile and with median lobe with apex rounded and not truncate (Fig. 34).

PARATYPES DESCRIPTION. Length from 4.5 to 5.3

mm. The only differences observed are in the conformation of the elytral apex which can be more or less sinuous on the sides.

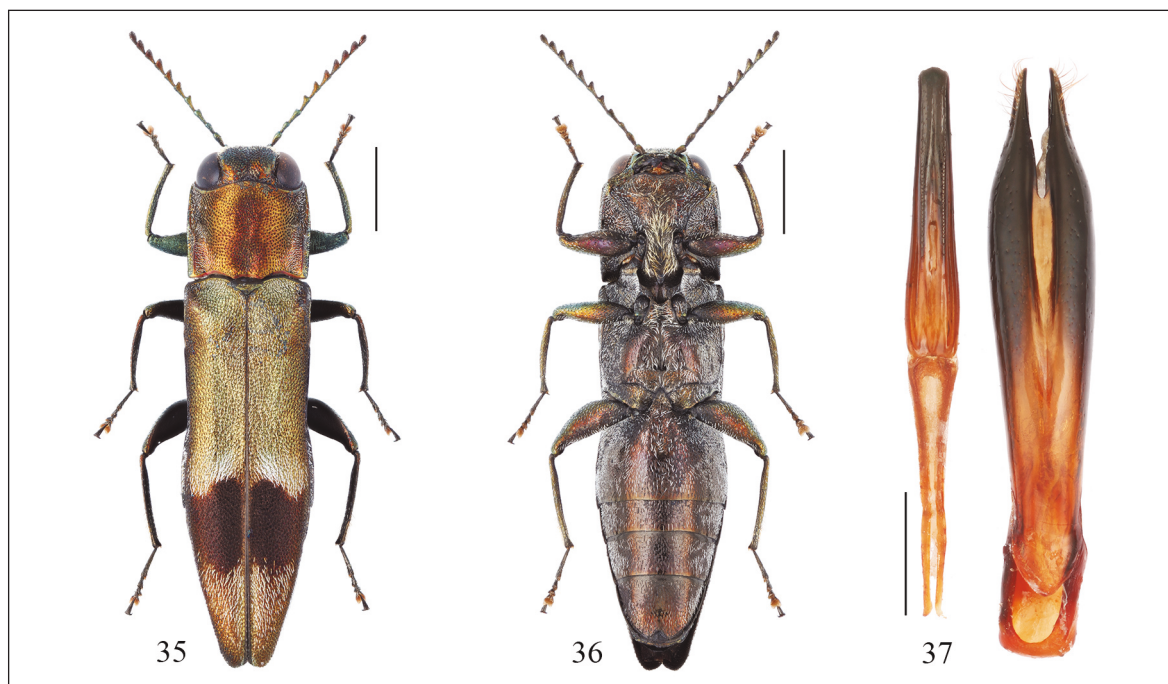
SEXUAL DIMORPHISM. Not very evident. It basically consists of the color of the frons which is green in the males and bronzed in the females.

ETYMOLOGY. Like the similar *A. baolai* n. sp., *A. dapan* n. sp. bears the name of the place where it was found. Noun in apposition.

HOST PLANT. Adults can be found on the leaves of *Juglans cathayensis* Dode (Juglandaceae).

***Agrilus (Anambus) lulinshan* n. sp.** Figs. 35–37
<https://zoobank.org:act:99EB6E59-EF6D-466D-A56A-DA3D97593367>

MATERIAL EXAMINED. Holotype male: Taiwan, Taichung City, Dasyueshan, 13.VII.2021, Jingfu Tsai leg. (NMNST) (Figs. 35–37). Paratypes: 1 male, Taiwan, Nantou County, Sunlinksea, 12.VIII.2015, U. Ong leg.; 1 female, Taiwan, Nantou County, Lulinshan, 8.VII.2021, U. Ong leg. (NMNST, GCCI).



Figures 35–37. *Agrilus lulinshan* n. sp., holotype. Fig. 35: dorsal view. Fig. 36: ventral view. Fig. 37: aedeagus dorsal view, 1.4 mm.

HOLOTYPE DESCRIPTION AND DIAGNOSIS. Length 6.2 mm. Mountain species, found in localities ranging from 1700 to 2600 m of altitude. Also *A. lulinshan* n. sp. is similar to *A. baolai* n. sp. and to *A. dapan* n. sp., with characters reminiscent of one or the other species.

Due to the almost black color in the distal half of the elytra, *A. lulinshan* n. sp. reminds of *A. baolai* n. sp., but the shape of the body places *A. lulinshan* closer to *A. dapan* n. sp. The main differences that differentiate *A. lulinshan* n. sp. from *A. dapan* n. sp. species are:

- vertex narrower and less bilobed.
- pronotum narrower with lateral margins straighter.
- pubescence placed in a longitudinal depression in the median part of the pronotum.
- pronotum with thinner and more irregular sculpture.
- anterior half of elytra lighter, gray.
- elytra more tapered at the apex.
- more extensive pubescence at the elytral apex.
- ventral side more pubescent.
- further thickened pubescence on the sides of ventrites.
- anterior claws bifid.

PARATYPES DESCRIPTION. Length from 5.0 to 6.2 mm. Paratypes have anterior part of the elytra more bronzed.

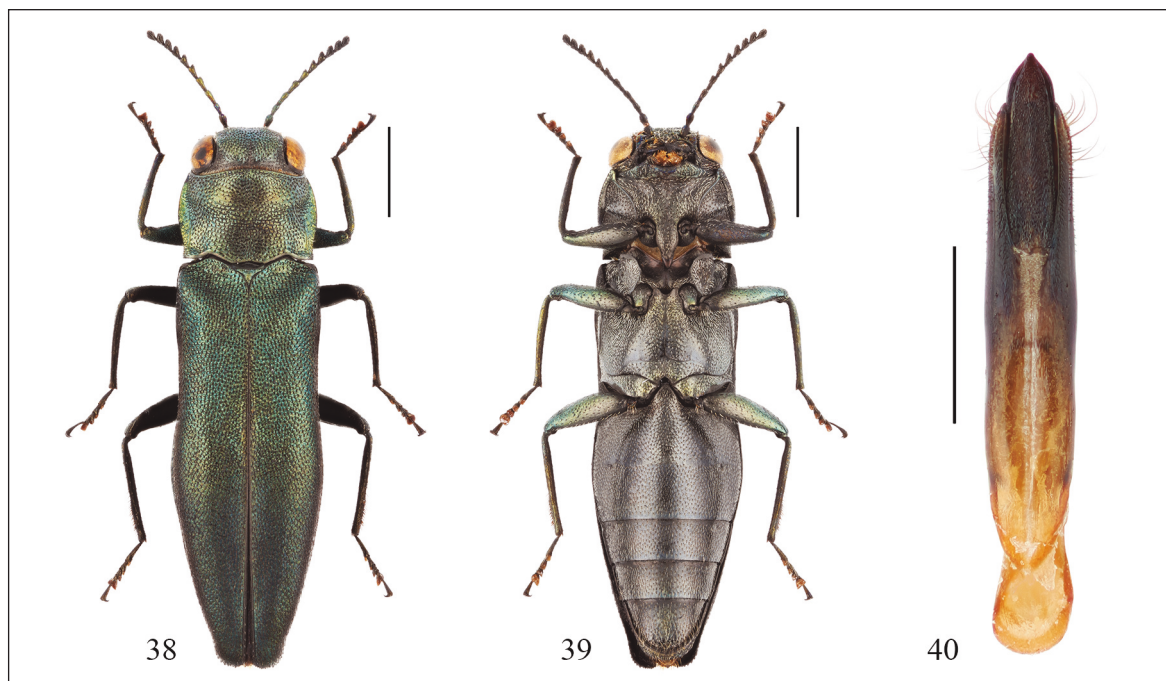
SEXUAL DIMORPHISM. In females all claws are dentate. As for the two previous species, the frons is bronze in females and green in males.

ETYMOLOGY. Like the two similar species - *A. baolai* sp. nov. and *A. dapan* n. sp. - *A. lulinshan* bears the name of one of the places where it was found. Noun in apposition.

HOST PLANT. Adults can be collected on the leaves of Fagaceae trees.

***Agrilus (Anambus) dahanshan* n. sp.** Figs. 38–40
<https://zoobank.org/act:42D3F2BF-B184-4F6C-992B-E729B35B9346>

MATERIAL EXAMINED. Holotype male: Taiwan, Pingtung County, Dahanshan, 16.IV.2020, U. Ong leg. (NMNST) (Figs. 38–40). Paratypes: 1 male, idem, 17.VII.2016, U. Ong leg.; 1 female, idem, 30.VII.2012, Uika Ong leg.; 2 males, idem, 29.VI.2019, Sinyan Shih leg.; 1 male, idem, 16.



Figures 38–40. *Agrilus dahanshan* n. sp., holotype. Fig. 38: dorsal view. Fig. 39: ventral view. Fig. 40: aedeagus dorsal view, 1.7 mm.

IV.2020, U. Ong leg.; 3 females, idem, 3.V.2021, Chiamu Chen leg.; 1 female, idem, 14.V.2021, Chiamu Chen leg.; 1 male, idem, 20.V.2021, Chiamu Chen leg.; 1 male, Taiwan, Nantou County, Benbuxi, 29.IV.2021, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 6.0 mm. Head with vertex wider than 1/3 of the anterior margin of the pronotum. Eyes large, bulging. Frons flat, loosely furrowed longitudinally, gilded. Pubescence more visible in the lower part. Clypeus not carinate. Antennae serrate from IV antennomere. Pronotum transverse, very depressed at the sides. Lateral margins arcuate with posterior angles right. Prehumeral carinulae short and straight. Marginal carinae also divided posteriorly. Gular lobe sinuous with pointy and protruding sides. Prosternal process parallel. Scutellum carinate. Elytra almost glabrous with posterior scattered pubescence. Apex slightly rounded and micro-denticulate. Abdomen with short and regular pubescence. Apical ventrites with rounded margin. Legs with metafemur shorter than the metatibia. Metatarsal formula $1>2+3$. Claws bifid but with internal spur shorter. Aedeagus symmetric, parallel, with median lobe apex. 1.7 mm in length (Fig. 13c).

PARATYPES DESCRIPTION. Length from 5.3 to 6.0 mm. The specimen from Benbuxi is blue, probably a cyanescent form that is not rare in Buprestidae populations subjected to environmental stress conditions. Ovipositor narrowed and elongated.

SEXUAL DIMORPHISM. The females have bronzed frons and all their claws are dentate.

ETYMOLOGY. From the place where the holotype was found. Noun in apposition.

DIAGNOSIS. The shape of the gular lobe puts *A. dahanshan* sp. nov. in the group of *Agrilus cyanescens* Ratzeburg, 1837. In particular it seems similar to *A. dali* Jendek, 2009 of China, from which it differs from mainly in the anterior margin of the pronotum, which is most advanced on the vertex, the presence of prehumeral carinulae, the squared elytral apex and not separately rounded. Apex of the median lobe of the aedeagus is pointy.

HOST PLANT. Adults can be found on the leaves of Fagaceae trees.

Agrilus (Anambus) takaharui n. sp. Figs. 41–43
<https://zoobank.org:act:758EBF5F-8AB1-4614-BAF9-7DC2E12C577B>

MATERIAL EXAMINED. Holotype male: Taiwan, Pingtung County, Damei, 12.V.2020, U. Ong leg. (NMNST). Paratypes: 1 male, 2 females, idem, 7.VI.2017, U. Ong leg.; 1 female, idem, 5.V.2018, U. Ong leg.; 2 males, idem, 12.V.2020, U. Ong leg. (UOTT, GCCI).

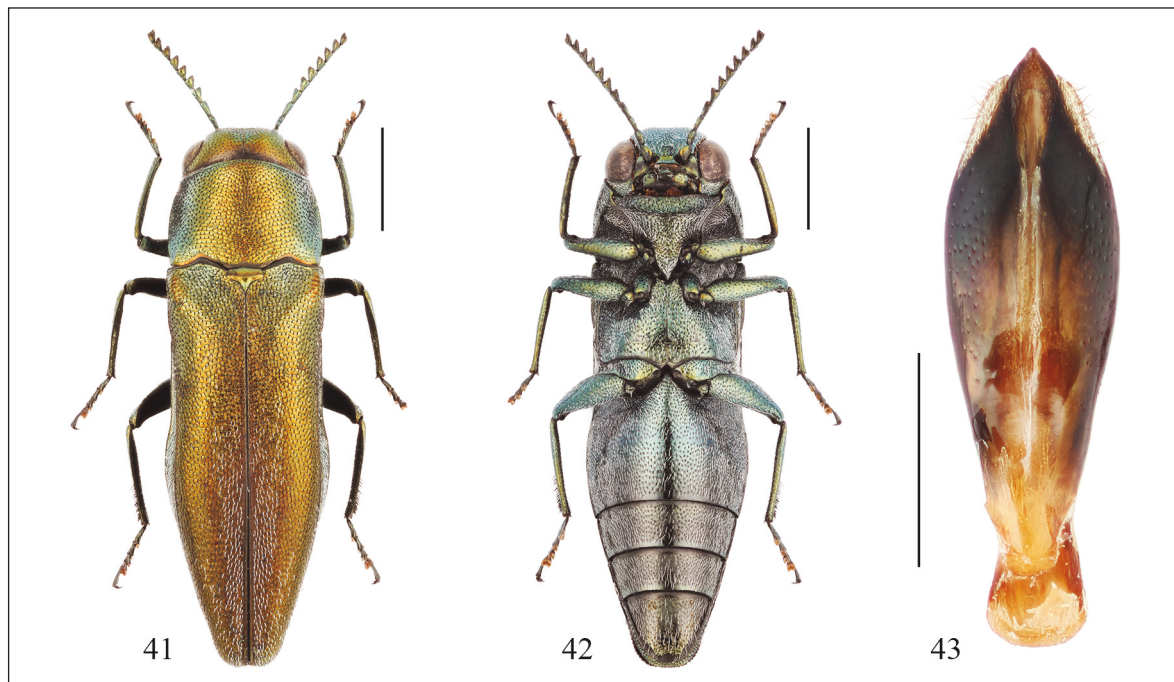
HOLOTYPE DESCRIPTION. Length 5.9 mm. Stumpy form, bronze brilliant color. Head with vertex prominent and furrowed, more than half the anterior margin of the pronotum wide. Eyes hardly visible dorsally. Frons green, clypeus in relief with respect to the base of the frons. Antennae serrate from antennomere IV. Pronotum trapezoidal, wider posteriorly, with posterior angles obtuse. Anterior margin not sinuous, regularly arched. Disc glabrous, gibbous, convex, with transverse sculpture. Prehumeral carinulae absent. Marginal carinae welded to the rear before the basal angle. Gular lobe little and broadly sinuous. Prosternal process acute. Scutellum transversely carinate. Elytra with perisutural white pubescence in the posterior half. Apex rounded. Abdomen with uniform white pubescence. Apex of the apical ventrite sinuate. Legs with the metatarsus shorter than the metatibia. Metatarsal formula $1=2+3$. Anterior claws bifid, median claws with the external spur bifid, the internal spur mucronate. Aedeagus 1.4 mm in length, slightly sclerified; ovoid profile, with apex of the median lobe acute (Fig. 43).

PARATYPES DESCRIPTION. Length from 5.0 to 5.9 mm. There are no notable differences. Ovipositor narrow and elongate.

SEXUAL DIMORPHISM. The female differs for having a bronze-coloured frons and all claws dentate. Metatarsus shorter: $1<2+3$.

ETYMOLOGY. This species is named after the estimate colleague Dr. Takaharu Hattori from Yokohama, a Japanese entomologist who has been to Taiwan since the 1970s to collect and described several Buprestids species in the genera *Toxoscelus*, *Coraebus*, *Lamprodila*, *Melobasis* and *Dicerca*.

DIAGNOSIS. Due to the protruding vertex, and the dorsally hardly visible eyes, *A. takaharui* sp. nov. is similar to the African species belonging to the



Figures 41–43. *Agrilus takaharui* n. sp., holotype. Fig. 41: dorsal view.
Fig. 42: ventral view. Fig. 43: aedeagus dorsal view, 2.4 mm.

subgenus *Robertius* Théry, 1947 from which it differs in the absence of serrations on the inner edge of the femurs. In particular, it is similar to two species of continental Asia: *Agrilus quentini* Descarpentries & Villiers, 1963 from China, Laos, Nepal, Thailand and *A. ineptus* Kerremans, 1892 from China and Myanmar. It differs from both species in its further shorter and more stumpy form, its elytral pubescence and the ovoid shape of the aedeagus.

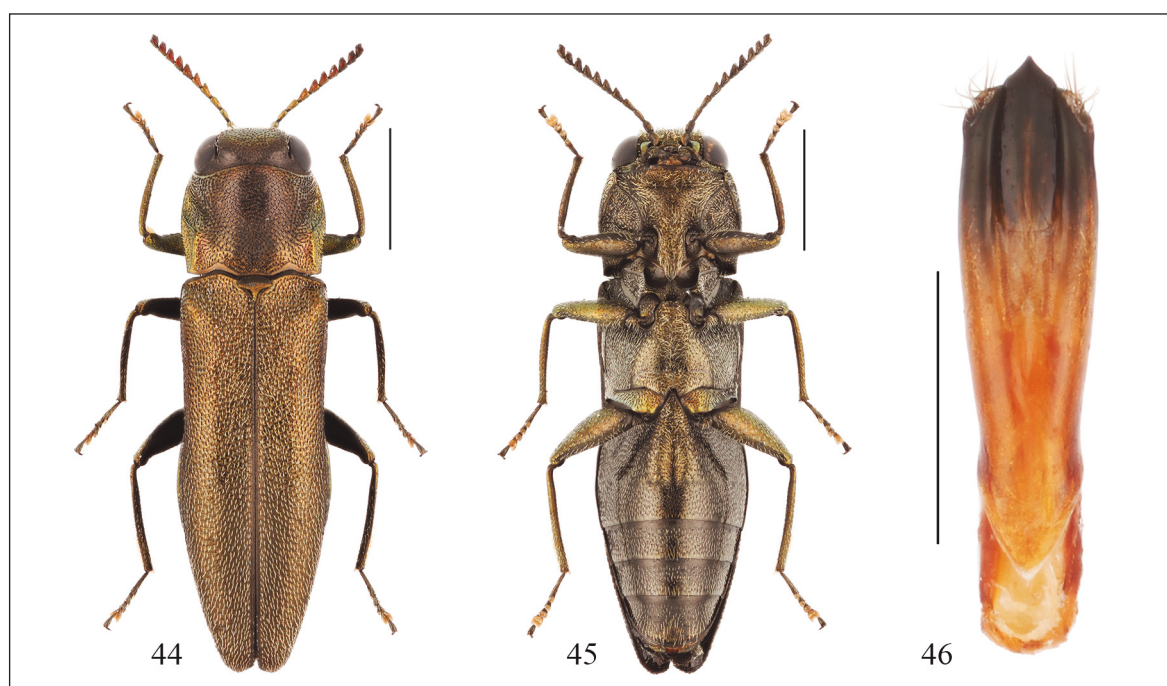
HOST PLANT. All the specimens were found on the leaves of *Gleditsia rolfei* S. Vidal (Fabaceae).

***Agrilus (Anambus) mica* n. sp.** Figs. 44–46
<https://zoobank.org/act:E411298A-2E89-4358-B7B8-BD90AFBA3E41>

MATERIAL EXAMINED. Holotype male: Taiwan, Taichung City, Dapan, 22.VI.2022, U. Ong leg. (NMNST). Paratypes: 1 male, idem, 26.V.2021, U. Ong leg.; 1 female, idem, 22.VI.2022, U. Ong leg.; 1 male: Taiwan, Chiayi County, Dulishan, 8.IV.2015, U. Ong leg.; 1 female, Taiwan, Kaohsiung City, Ergituan, 25.V.2016, U. Ong leg.; 1 fe-

male, Taiwan, Nantou County, Chientai Trail, 5.VI.2018, U. Ong leg.; 1 male, idem, 7.V.2021, U. Ong leg.; 1 female, Taiwan, Nantou County, Wusha, 21. VI.2009, Uika Ong leg.; 1 male, Taiwan, Taichung City, Basianshan, 13.V.2021, U. Ong leg.; 1 female, Taiwan, Chiayi County, Shihmianton, 5.V.2021, U. Ong leg.; 1 male, Taiwan, Nantou County, Gaofong, 18.V.2016, U. Ong leg. (UOTT, GCCI).

HOLOTYPE DESCRIPTION. Length 4.5 mm. Body entirely bronzed, with vertex and anterior part of the pronotum darker. Head with vertex regularly rounded. Frons green, pubescent, especially in the basal part. Clypeus without transverse carina. Antennae serrate from antennomere IV and with golden reflections from the VII to XI antennomere. Pronotum regularly arcuate, posterior angles obtuse. Disc with oblique sculpture. Prehumeral carinula entire. Marginal carinae joined posteriorly. Gular lobe barely sinuous. Prosternal process parallel. Scutellum transversely carinate. Elytra with apices separately rounded and micro-denticulate. Pubescence gray, uniform, regular, as well as for the ventral side. Abdomen with a vague longitudinal median depression on the basal ventrite. Legs



Figures 44–46. *Agrilus mica* n. sp., holotype. Fig. 44: dorsal view. Fig. 45: ventral view. Fig. 46: aedeagus dorsal view, 1.1 mm.

with metatarsus shorter than the metatibia. Metatarsal formula 1=2+3+4. Claws dentate. Aedeagus 1.1 mm in length, slightly sclerotized, ochre in color in the basal part. Apex of the median lobe acute (Fig. 46).

PARATYPES DESCRIPTION. Length from 3.8 to 4.7 mm. Some specimens are uniformly bronze in colour. Ovipositor narrowed and elongate.

SEXUAL DIMORPHISM. The females have a hairless and bronze frons, distal antennomeres without golden reflections, pubescence generally less well-stocked.

ETYMOLOGY. From Latin noun “mica” which means crumb, granule. To indicate the small size of the species.

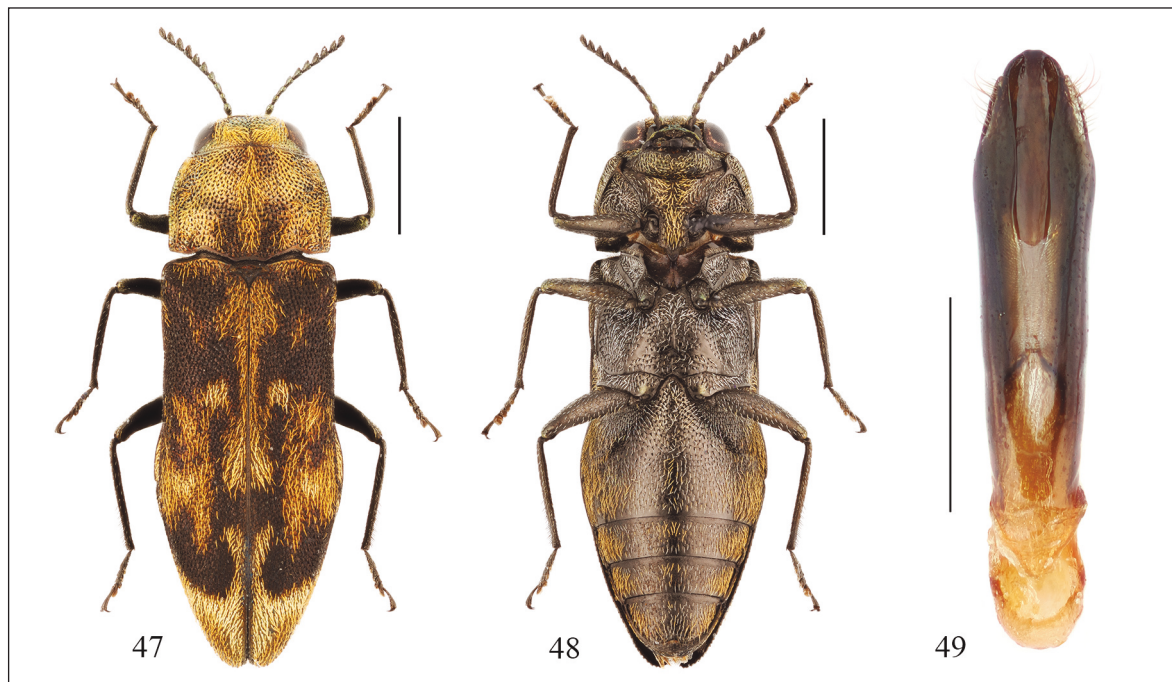
DIAGNOSIS AND COMMENTS. *Agrilus mica* sp. nov. can be confused with *A. minor* Dejean, 1864, reported in Taiwan by Miwa & Chûjô (1933, 1936). Miwa & Chûjô’s report was quoted later by Mühle (2003) and by Bellamy (2008). The examen of Miwa & Chûjô’s specimen stored in TARI (Taiwan Agricultural Research Institute) allowed us to ascertain an error in the species identification: it is a

specimen of *A. mica* sp. nov. Consequently, the presence of *A. minor* in Taiwan can be at now excluded, pending any confirmations. *A. mica* sp. nov. easily differs from *A. minor* for having the pubescence uniformly diffused on the elytra and for the conformation of the elytral apex which is regularly rounded.

HOST PLANT. Unknown.

***Agrilus (Agrilus) attalicus* n. sp.** Figs. 47–49
<https://zoobank.org/act:3EEAD38C-A651-4AEF-A43B-F0C54FB7B734>

MATERIAL EXAMINED. Holotype male: Taiwan, Kaohsiung City, Baolai, 24.VII.2018, U. Ong leg. (NMNST). Paratypes: 1 male, idem, 24.VII.2018, U. Ong leg.; 1 male: Taiwan, Chiayi County, Shihzihlu, 5.VIII.2015, U. Ong leg.; 1 female, idem, 2.VII.2015, U. Ong leg.; 1 female, idem, 9.VII.2020, U. Ong leg.; 1 male, idem, 18.VI.2021, U. Ong leg.; 1 male, 1 female, idem, 2.VII.2021, U. Ong leg.; 1 male, idem, 26.VII.2018, U. Ong leg.; 2 males, 1 female, Taiwan, Taitung County, Tuban, 18.VI.2019, U. Ong leg. (UOTT, GCCI).



Figures 47–49. *Agrilus attalicus* n. sp., holotype. Fig. 47: dorsal view.
Fig. 48: ventral view. Fig. 49: aedeagus dorsal view, 1.4 mm.

HOLOTYPE DESCRIPTION. Length 4.5 mm. Stumpy form. Bronze/black integuments covered with yellow golden pubescence forming damask designs. Head rounded, barely visible dorsally, partly hidden by the anterior hump of the pronotum. Vertex hemispheric, forming a continuous line with the eyes. Frons entirely and evenly covered with golden pubescence. Clypeus with transverse carina. Antennae serrate from antennomere IV. Pronotum gibbous, wider in the middle, with lateral edges regularly rounded and posterior angles obtuse. Anterior margin prominent between the eyes, regularly rounded. Sculpture obsolete, shallow. Untidy golden pubescence, thicker at the edges and in the middle. Prehumeral carinulae not entire and straight. Marginal carinae joined just after the posterior half. Gular lobe with anterior margin broadly sinuate. Prosternal process concave, just dilated and tridentate. Scutellum transversely carinate. Elytra short and wide. Apices separately rounded, micro-denticulated. Golden pubescence forming a design difficult to describe, as in Fig. 47. Abdomen uniformly covered in yellow pubescence. Apex of last visible ventrite sinuate. Legs thin and slightly elongated. Metatarsus about half the length of the metat-

ibia, Metatarsal formula $1 < 2 + 3 + 4$. Anterior claws with inner spur bifid and outer spur dentate, contrary to the median claws which have the outer spur bifid and inner spur dentate; posterior claws simply dentate. Aedeagus 1.4 mm in length, subparallel, slightly enlarged anteriorly. Median lobe with rounded apex (Fig. 49).

PARATYPES DESCRIPTION. Length from 4.1 to 5.2 mm. There are no appreciable differences. Ovipositor short and broad, uritiform (Cobos, 1986).

SEXUAL DIMORPHISM. The females have all claws dentate.

ETYMOLOGY. From the Latin adjective “*attālicus*” which means dress woven with gold (Castiglioni & Mariotti, 1994).

DIAGNOSIS. *Agrilus attalicus* n. sp. belongs to *Agrilus muscarius* species-group (*sensu* Jendek & Grebennikov, 2009). Within this group, two species are morphologically and geographically close to *A. attalicus* n. sp.: *A. acastus* Kerremans, 1913 endemic to Taiwan and *A. mallotiellus* Kurosawa, 1985 endemic to some of the southern islands of Japan. Both these species differ in their pale gray

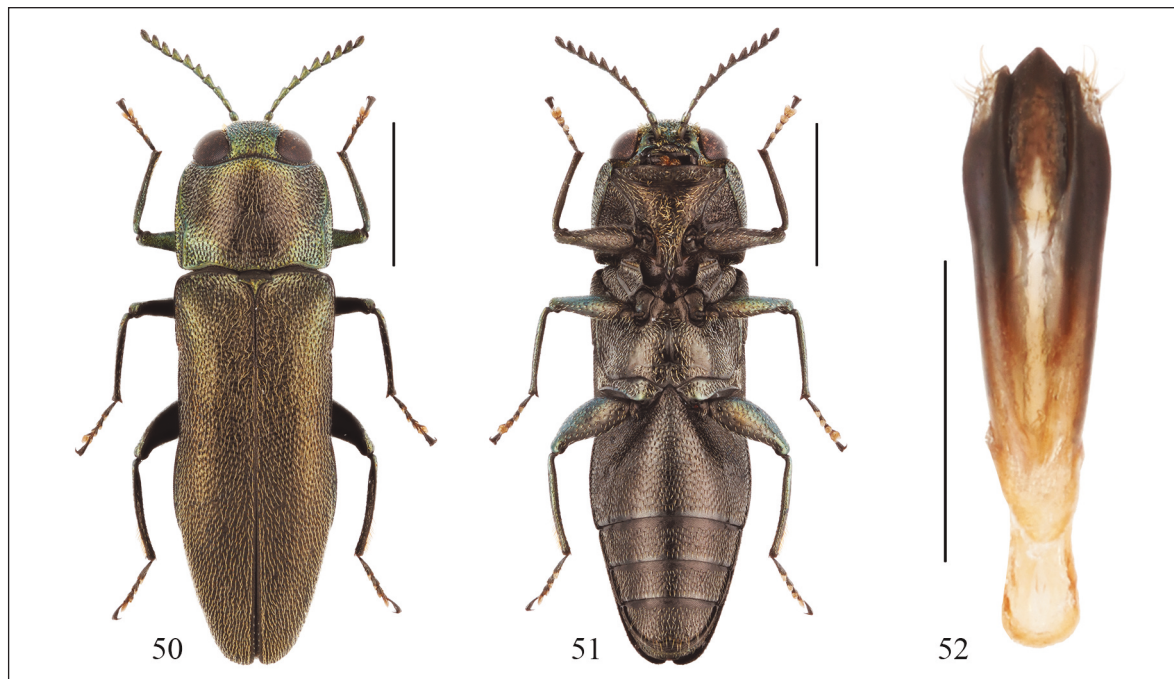
pubescence, in the trapezoidal shaped pronotum wider at the base, and in the shape of the prosternal process which in *A. acastus* is expanded laterally. For the elytral drawing *A. mallotiellus* appear most similar to *A. attalicus* n. sp., even if the new species has less bronzed, almost black integuments and a more developed frontal pubescence. It could be considered a vicariant form. Limiting the analysis to the male sexual organs, the shape of the aedeagus confirm this impression. However, observing only the median lobes, *A. attalicus* n. sp. would seem systematically more similar to *A. acastus* for having the apex rounded like that of *A. acastus* instead of subacute in *A. mallotiellus*.

HOST PLANT. Adults feed on the flowers of *Malotus japonicus* (L.f.) Müll. Arg., 1865 (Euphorbiaceae).

***Agrilus (Agrilus) pericles* n. sp.** Figs. 50–52
<https://zoobank.org/act:EC4D104E-2233-42AF-9174-5D1FAE23E3BF>

MATERIAL EXAMINED. Holotype male: Taiwan, Chiayi County, Shihzihlu, 2.VII.2021, U. Ong leg.

(NMNST). Paratypes: 1 female, idem, 1.VII.2015, U. Ong leg.; 1 female, idem, 14.VII.2016, U. Ong leg.; 1 female, idem, 27.VI.2018, U. Ong leg.; 1 male, idem, 2.VII.2021, U. Ong leg.; 1 female, Taiwan, Chiayi County, Zenwen Reservoir, 4.VII.2015, U. Ong leg.; 1 female, Taiwan, Nantou County, Chientai Trail, 5.VI.2018, U. Ong leg.; 3 males, 2 females, idem, 7.V.2021, U. Ong leg.; 1 female, idem, 14.V.2021, Sinyan Shih leg.; 2 females, Taiwan, Nantou County, Hobon, 9.VII.2021, U. Ong leg.; 1 male, Taiwan, Nantou County, Renlung Trail, 28.VII.2018, U. Ong leg.; 2 females, Taiwan, Nantou County, Nanshanxi, 22.VII.2021, U. Ong leg.; 1 female, Taiwan, Taitung County, Kinchen-shan, 8.VI.2019, Chiamu Chen leg.; 1 male, Taiwan, Pingtung County, Derwenshan, 13.VII.2022, Jiafong Chen leg.; 1 male, Taiwan, Taichung City, Dasyueshan, 13.VII.2021, U. Ong leg.; 1 male, Taiwan, Taichung City, Basianshan, 13.V.2021, U. Ong leg.; 1 female, Taiwan, Taichung City, Lilang Trail, 23.VII.2020, U. Ong leg.; 1 female, Taiwan, Taichung City, Guguan, 30.VI.2022, U. Ong leg.; 1 male, 3 females, Taiwan, Taichung City, Derfland, 2.VI.2021, U. Ong leg.; 2 males, idem, 22.VII.2020, U. Ong leg.; 1 male, Taiwan, Taichung



Figures 50–52. *Agrilus pericles* n. sp., holotype: a) dorsal view; b) ventral view; c) aedeagus dorsal view, 1 mm.

City, Dapan, 24.VI.2021, U. Ong leg.; 1 female, Taiwan, Kaohsiung City, Baolai, 5.VIII.2017, U. Ong leg.; 2 females, idem, 22.IV.2018, Chiamu Chen leg.; 1 female, idem, 7.VI.2018, U. Ong leg.; 1 female, idem, 12. VI.2018, U. Ong leg.; 1 male, idem, 29.V.2019, U. Ong leg. (NMNST, UOTT, GCCI)

HOLOTYPE DESCRIPTION. Length 3.8 mm. Entirely bronzed in colour. Stumpy form. Head

rounded, not very prominent. Vertex narrow, 1/3 width of the anterior margin of the pronotum. Smooth frons, with dark green reflections, pubescence yellow at the base. Clypeus not carinate. Antennae serrate from antennomere IV. Pronotum regularly convex, wider in the middle with slightly arched lateral margins. Anterior margin moderately advanced between the eyes. Disc with transverse sculpture. Prehumeral carinulae entire, slightly arcuate. Marginal carinae joined in the posterior half.

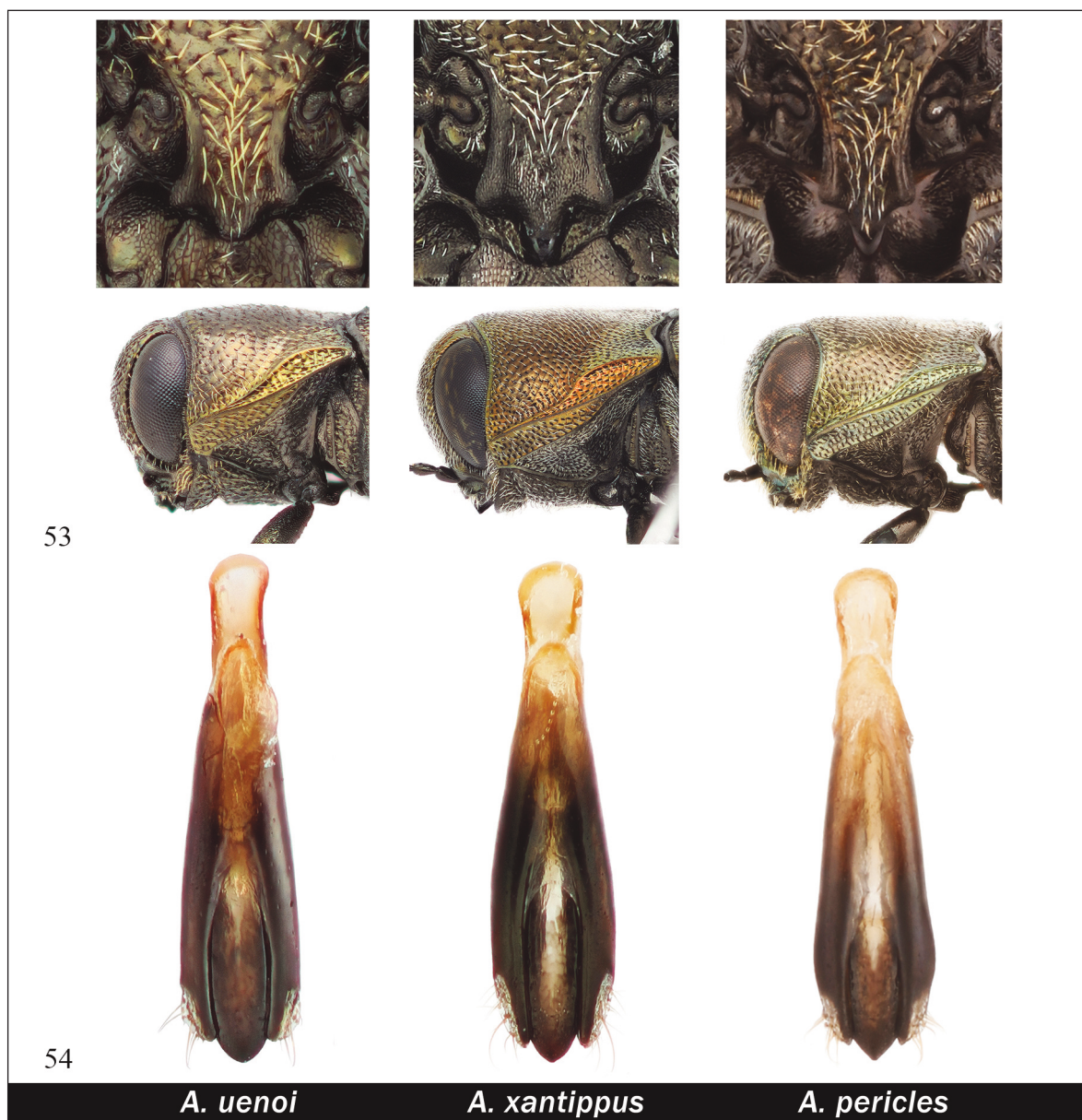


Figure 53. Comparison of prosternal process and prehumeral carinulae of *A. uenoi*, *A. xantippus*, *A. pericles*.

Figure 54. Comparison from aedeagi of *A. uenoi*, *A. xantippus*, *A. pericles*.

Gular lobe with anterior margin rounded, entire. Prosternal process concave, parallel. Scutellum transversely carinate. Elytra with jointly rounded apex, not denticulated. Disc coated with white, short, uniform pubescence. Abdomen with short and uniform pubescence. Legs short with metatarsal length just over half that of the metatibia. Metatarsal formula 1>2+3. Anterior claws bifid, median and posterior dentate. Aedeagus 1 mm in length, slightly sclerotic, claviform. Apex of median lobe subrounded (Fig. 52).

PARATYPES DESCRIPTION. Length from 3.3 to 4.4 mm. Species with constant morphological and chromatic characters. There are no noteworthy differences. Ovipositor subquadrangular, uritiform.

SEXUAL DIMORPHISM. Females have concolor frons, without basal pubescence. Metatarsus shorter and all claws simply dentate.

ETYMOLOGY. After Latin "*Pēriclēs*". He was an important Greek politician, son of *Xanthippus*, Athenian general, to which Kerremans dedicated probably the closest species. Noun in apposition, attributed for the similarity with the *A. xantippus*.

DIAGNOSIS. *A. pericles* n. sp. can be confused with two other species: *A. xantippus* Kerremans, 1913 from Taiwan and *A. uenoi* Kurosawa, 1963 from Japan; the report for Taiwan concerning this species (Ohmomo & Fukutomi, 2013), should be checked after this description. Compared to *A. xantippus*, *A. pericles* n. sp. has a least arched pronotum, while *A. uenoi* has a widest vertex. The characters that however allow a sure differentiation are in the conformation of the prosternal process, which in *A. pericles* n. sp. is parallel, and in the prehumeral carinulae, which are straighter and closer to the marginal carina (Fig. 53). The aedeagus is more claviform and less fusiform (Fig. 54).

HOST PLANT. Adults can be found on various Fagaceae trees.

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