

Notes on the Oriental Species of the Coleopterous Family Buprestidae (IV)

By

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Abstract Fourteen new species and six new subspecies of the coleopterous family Buprestidae from Japan and the Ryukyu Archipelago, two new subspecies of the same family from Formosa are described, and the synonymies of ten Japanese species of the genera *Endelus* and *Trachys* are enumerated. The new taxa belong to the genera *Philanthaxia*, *Coraeus*, *Nalanda*, *Sambus*, *Agrilus*, *Endelus* and *Trachys*, of which the genus *Philanthaxia* H. DEYROLLE, 1864, is the new member for the fauna of these regions.

Before the publication of the volume III of "The Coleoptera of Japan in Color" by Hoikusha Publishing Co., the author is going to correct certain errors of the nomenclature of Japanese buprestid beetles and to add descriptions of new buprestid taxa brought about from Japan including the Ryukyu Archipelago and the Bonin Islands. All the species to be described from the mainland of Japan will be illustrated in the new book mentioned above.

Philanthaxia iriei sp. nov.

Male. Body greenish dark bronzy, with the exception of frons deeply metallic green.

Head slightly convex between eyes; frons and vertex broad, without any depression or impression; clypeal suture absent; clypeus broad, subtrapezoidal, more than 4 times as broad as long, with the anterior margin subtruncate or feebly bilobed laterally; antennal cavities small, not surrounded by carina; surface rather evenly and densely punctate by round, somewhat confluent punctures, with the intervals somewhat reticulate laterally and rugose centrally; antennae slender, slightly serrate from the fourth, with the first segment the longest, about 4 times as long as the second, which is the shortest and somewhat fusiform, the third slightly longer than the second, slightly shorter than the fourth and about as long as the fifth.

Pronotum subtrapezoidal, transverse, about 1.6 to 1.7 times as wide as long, and widest at the base; sides oblique, narrowed from the posterior angles to the anterior ones, and slightly sinuate just before each posterior angle, which is acute and slightly produced latero-posteriorly; anterior angles abased, acute and well defined in lateral aspect; anterior margin bisinuate a little, without distinct median lobe; posterior margin

rather subtruncate, feebly bisinuate, with a broad inconspicuous median lobe; lateral carinae entire and somewhat reflexed posteriorly; disc evenly convex, without any depression or impression; surface densely, strongly and rather evenly punctate, the punctures partially confluent, and the intervals somewhat reticulate anteriorly and rugose posteriorly. Scutellum cordate, deplanate, and microscopically shagreened.

Elytra a little broader than the base of pronotum and truncate at the base, about 1.7 times as long as wide, about 3.5 times as long as pronotum and widest at the posterior two-fifths; sides constricted just before humeri, which are slightly expanded, slightly sinuate from base to the part of maximum width, and then obliquely narrowed to apices, which are separately rounded; lateral margins almost entirely dentato-serrate; disc nine- or ten-striated, with the interstices somewhat convex, transversely aciculato-rugose, scattering with inconspicuous punctures, but the rugosity becomes inconspicuous posteriorly.

Body beneath scattering with short, inconspicuous, semirecumbent, cinereous hairs. Prosternum convex, coarsely, densely, strongly and confluent punctate; prosternal process subconical, rounded just behind anterior coxal cavities, with the margins distinctly reflexed and smooth, and the apex sharp and acute. Meso- and metasternum similarly punctured to prosternum, with the median line slightly impressed. Abdomen beneath scattering with semirecumbent cinereous hairs, variolarly punctate by punctures opened posteriorly; first ventral segment convex and rather flattened between posterior coxal cavities; anal segment rounded at the apex.

Legs normal, short but slender.

Female. Robuster than the male, with head and pronotum aeneo-cuprescent.

Length: 6.8–8.0 mm; width: 2.7–3.2 mm.

Holotype: ♂, Tokorono, Yonaguni-jima, Ryukyu Is., 13. v. 1974, H. HIRAMATSU lgt.; allotype: ♀, do., 3. vi. 1973, H. IRIÉ lgt.; paratypes: 1 ♀, Air port, Yonaguni-jima, 3. vi. 1973, K. AKIYAMA lgt.; 1 ♀, Taketomi-jima, Yaéyama group, Ryukyu Is., 28. v. 1983, H. IRIÉ lgt.

Range. Ryukyu Is. (Taketomi-jima, Yonaguni-jima).

The species stands next to *P. convexifrons* Y. KUROSAWA, 1954, described from Botel-Tobago Island off Formosa, but differs from the latter in the following points: 1) Body darker, fusco-aeneous, with head and pronotum less reddish; 2) body slenderer, with pronotum narrower, about 1.6 times as wide as long, while in *convexifrons*, the pronotum is about 1.9 times as wide as long (misprinted as 1.7 times as wide as long in the original description); 3) sides of pronotum slightly sinuate just before posterior angles; 4) punctures on head and pronotum weaker and somewhat sparser, with the reticulation and rugosity of the intervals weaker; 5) transverse rugosity on elytral interstices weaker and sparser.

Coraebus ignotus okinawanus subsp. nov.

Closely resembles subsp. *shibatai* Y. KUROSAWA, 1963, of the same species de-

scribed from the Island of Amami-Oshima, an island in the Amami Group of the Ryukyu Archipelago, but the ground colour of elytra is strongly tinged with aeneous, at least in basal half, not steel blue as in *shibatai*, and the pubescence is paler than in *shibatai*.

Length: 9.6–10.4 mm; width: 2.8–3.6 mm.

Holotype: ♂, Mt. Yonaha-dake, N. Okinawa I., Ryukyu Is., 27. vi. 1973, K. AKIYAMA lgt.; allotype: ♀, Hiji, N. Okinawa I., 12. vi. 1982, M. TÔYAMA lgt.

Coraeus amamianus sp. nov.

(Fig. 1)

Male. Head and pronotum greenish bronzy; elytra blackish with a slight purpurascens tinge, ornamented with undulate markings of silver-whitish or silver-greyish pubescence; antennae greenish bronzy; body beneath blackish, ventral segments of abdomen with more or less distinct steel-bluish shimmer; legs blackish, with femora tinged with aeneous.

Head moderate; frons subquadrate, about as wide as long, bordered anteriorly from post-antennal pores by bi-emarginate carina which is interrupted at the middle; median groove distinct from vertex to clypeus; surface sparsely and coarsely punctate, but the punctuation becomes somewhat imbricato-rugose on vertex; post-antennal pores narrow, transverse and arcuate, connected with each other by a subquadrate area between antennal cavities; clypeal suture transverse and straight between antennal cavities; clypeus narrow, arcuately emarginate anteriorly; each antennal cavity situated in a large subtransverse depression; antennae slender and lax, serrate from the fourth segment, with the serrate segments strongly dentate at each exterior apex, the first

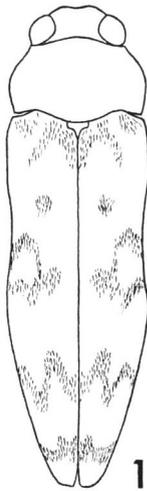


Fig. 1. Dorsal view of *Coraeus amamianus* sp. nov.

and second segments about equal in length, less than 1.5 times as long as the third, the fourth slightly longer than the third, but shorter than the second and about as long as the fifth.

Pronotum transverse, about 1.45 times as wide as long, and widest just behind or at the middle; sides arcuate and rounded from posterior to anterior angles; posterior angles obtuse; anterior angles abased and acutely defined in lateral aspect; lateral margins crenulate, almost straight and slightly sinuate in lateral aspect; prehumeral carinae obsolete, somewhat acute, but they are not connected with marginal carinae anteriorly and posteriorly; anterior margin obtusely angulate and produced at the middle; posterior margin bisinuate, with the median lobe broadly produced and subtruncate just before scutellum; disc broadly and transversely depressed on each side in posterior half; surface imbricato-rugose and partially clothed with inconspicuous silver-whitish or silver-greyish semirecumbent hairs, but the rugosity is denser at the middle than at the sides and the hairs somewhat concentric to the middle of the posterior depression on each side. Scutellum transverse, more than 3 times as wide as long, depressed, with the posterior margin dentate at the middle.

Elytra about 2.5 times as long as wide, about 4.3 times as long as pronotum, and widest at humeri or at the posterior two-fifths; sides obtusely rounded at humeri, subparallel or slightly sinuate to the posterior two-fifths, where they are broadly and arcuately rounded, then obliquely narrowed to apices, which are denticulate and somewhat conjointly rounded or somewhat separately rounded, with the sutural angles rounded; lateral margins finely denticulato-serrate in the posterior two-fifths; disc broadly and longitudinally, but shallowly depressed along the suture; basal depressions broad, occupying almost all the width of base; surface coarsely imbricato-rugose and ornamented with undulate markings of silver-whitish semirecumbent hairs arranged on each elytron as follows: an irregular-sized one at the post-scutellar part and in the basal depression; a small spot at the basal fourth near the suture; a wavy band just behind the basal third, it is abruptly connected down along the suture to the next; an irregular wavy band at the middle; a strongly zigzag band at the posterior third; a wavy band just before apex.

Prosternum coarsely rugoso-punctate, with the anterior margin arcuately emarginate; prosternal process subconical, with the sides slightly dilated just behind anterior coxal cavities and blunt at the tip. Metasternum coarsely rugoso-punctate, with the anterior margin M-shapedly produced and emarginate at the middle. Abdomen beneath imbricato-rugose, with the first and second ventral segments longitudinally grooved at the middle and filled with long greyish hairs; anal segment broadly, deeply and W-shapedly emarginate at the apex.

Legs normal, with the apex of each posterior tibia internally dilated and irregularly denticulate. Male genital apparatus long and slender.

Length: 8.6–9.0 mm; width: 2.0–2.3 mm.

Holotype: ♂, Mt. Takada-yama, Yamato-son, Amami-Oshima, Ryukyu Is., 6. vii. 1972, K. MASAKI lgt.; paratype 1 ♂, Hatsuno, Amami-Oshima, 22. iv. 1964,

K. SAKO lgt.

Host plant: Unknown.

Range. Ryukyu Is. (Amami-Oshima).

The present species is somewhat similar in habitus to *C. ignotus shibatai* Y. KUROSAWA, 1963, from the same island, but is slenderer and smaller than the latter, the colour of head and pronotum is greenish aeneous, not golden aeneous as in *shibatai*, the ground colour of elytra is blackish, without dark steel-blue tinge as in *shibatai*, basal depressions of elytra are larger and deeper than in *shibatai*, the apex of each posterior tibia is interiorly dilated, the apex of the anal segment of abdomen is W-shapedly emarginate, and the colour of the body beneath is bluish, not brassy as in *shibatai*.

Coraebus iriei sp. nov.

(Fig. 2, a, b)

Small, dark aeneous, with head and pronotum tinged with brassy and brighter than elytra; body beneath blackish, darker than above, with slight aenescent tinge; antennae dark aeneous; legs blackish, concolorous with the body beneath.

Head moderate; frons slightly but distinctly broader than long, clothed with sub-erect dark greyish hairs, coarsely intricato-aciculate, and subgibbose on each side of the median groove, which is entire and is situated at the centre of large depression, with the anterior margin ~-shaped just above the post-antennal impression, but sometimes the middle part is obsolete; clypeal suture transverse between antennal cavities; clypeus thin, with the anterior margin broadly but shallowly and arcuately emarginate;

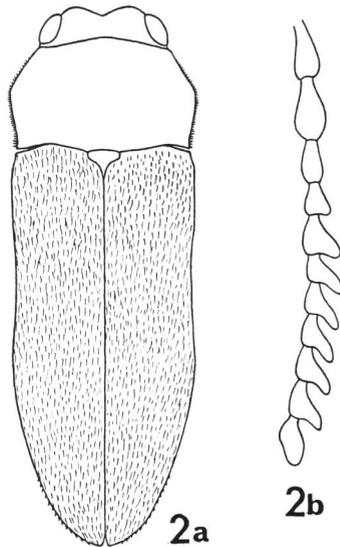


Fig. 2. *Coraebus iriei* sp. nov. a, dorsal view; b, right antenna.

eyes subparallel; each antennal cavity situated at the centre of large elliptical and oblique depression; antennae rather short and compact, serrate or subpectinate from the fourth, with the first segment stout, about as long as and about equal-sized with the second, and about 1.5 times as long as the third, which is about as long as or slightly longer than the fourth.

Pronotum transverse, about 1.35 times as broad as long, and widest just before the middle; sides arcuately rounded from base to front, but the arcuation is stronger in front than behind; posterior angles obtuse; anterior angles abased but acute and sharply defined in lateral aspect; anterior margin slightly but arcuately produced or very slightly bisinuate; posterior margin slightly bisinuate and very finely but densely crenulate, with the median lobe broadly but slightly arcuate; lateral margin strongly, densely and rather uniformly dentato-serrate, but not crenulate; disc slightly convex anteriorly, transversely depressed along the base, and the depression extending laterally towards the middle of each side; surface rather uniformly imbricato-rugose and clothed with inconspicuous semirecumbent greyish or golden-greyish hairs. Scutellum transverse, depressed, and subtrapezoidal with large dentation at the middle of the posterior margin.

Elytra about 2.2 times as long as wide, about 3.4 times as long as pronotum, and widest at or just behind the middle; sides subparallel or slightly sinuate to just behind the middle, where they are slightly swollen and arcuate, then gradually and arcuately narrowed to apices, which are conjointly rounded and very finely dentato-serrate; lateral margins finely but uniformly dentato-serrate in the anterior half and near apices; basal depressions obsolete and shallow; disc obsoletely and broadly depressed along the suture; surface coarsely punctate in basal half, but the punctuation becomes somewhat imbricato-rugose in apical half, and entirely and uniformly clothed with semi-recumbent bicolorous hairs which are mingled with silver-white or silver-grey and pale brown hairs.

Prosternum coarsely imbricato-aciculate; anterior margin broadly emarginate; prosternal process broad, subconical, slightly depressed, and sharply pointed at the tip. Abdomen beneath scattering short semirecumbent silver-greyish hairs, with apex of anal segment obsoletely truncate (male) or rounded (female) at the apex, but the sexual dimorphism is not so clear as in the other species of the genus.

Legs short but normal, without sexual dimorphism.

Length: 4.8–5.8 mm; width: 1.6–1.8 mm.

Holotype (♂) and paratopotypes: 2 ♂♂ 3 ♀♀, Mt. Omoto-dake, Ishigaki-jima I., Ryukyu Is., 18 & 27. v. 1974, H. IRIÉ lgt.; allotopotype: do., 23. v. 1974, M. TAKAKUWA lgt.; paratopotypes: 1 ♂ 1 ♀, do., 11 & 17. v. 1974, H. HIRAMATSU lgt.; 2 ♀♀, do., 14 & 15. v. 1973, K. SUGINO lgt.; paratype: 1 ♂, Kampira, Iriomote-jima I., Ryukyu Is., 30. iv. 1974, H. IRIÉ lgt.

Host plant: Unknown, but presumed to be *Castanopsis lutchuensis* NAKAI.

Range. Ryukyu Is. (Yaéyama group).

The present species is different from any other described species of the genus

Coraebus in the densely denticulate lateral margins of pronotum and the subpectinate antennae. The specimens from the northern parts of the Ryukyu Archipelago are different from the nominotypical race of the Yaeyama island-group of the same archipelago, and is separated as a geographical race.

Coraebus iriei yoshimotoi subsp. nov.

Different from the nominotypical race in the darker body, the ornamentation of elytra, which consists of brownish hairs partially mingled with silver-whitish and sometimes blackish hairs, silver-whitish hairs forming obscure undulate markings, and the broadly and somewhat obliquely subtruncate apices of elytra, which are not conjointly rounded as in the nominotypical race.

Length: 4.5–5.2 mm; width: 1.5–1.7 mm.

Holotype: ♂, Mt. Yuwan-dake, Amami-Oshima, Ryukyu Is., 16–17. vii. 1963, C. YOSHIMOTO lgt.; paratypes: 1 ♀, Hatsuno, Amami-Oshima, 17. v. 1972, H. IRIÉ lgt.; 2 ♀♀, Ohkawa, Yakushima I., Kyushu, 12. vii. 1973, O. YAMAJI lgt.

Range. Japan (Yakushima), Ryukyu Is. (Amami-Oshima).

Nalanda rutilicollis ryukyuensis subsp. nov.

Different from the nominotypical race from the mainland of Japan in the greenish or brozy-greenish head and pronotum, more bluish elytra and stronger rugosity on the elytra.

Host plants: *Mallotus* spp. (Euphorbiaceae).

Holotype and paratopotypes: 9 exs., Kawarayama, Ishigaki-jima I., Ryukyu Is., 5. vi. 1978, Y. KUROSAWA lgt.; paratypes: 8 exs., Botanical Garden, Ishigaki-jima, 24. v. 1978, Y. KUROSAWA lgt.; 1 ex., Ohama, Ishigaki-jima, 23. viii. 1958, T. HIDAKA lgt.; 1 ex., Mt. Omoto-dake, Ishigaki-jima, 7. v. 1974, H. IRIÉ lgt.; 1 ex. do, 14. vi. 1975, S. KIMOTO lgt.; 2 exs., Tonogusuku, Ishigaki-jima, 14. vi. 1983, K. IHA lgt.; 1 ex., Mt. Manse-dake, Ishigaki-jima, 15. vi. 1965, Y. HORI lgt.; 1 ex., Kampira, Iriomote-jima, Ryukyu Is., 24. v. 1973, K. SUGINO lgt.; 1 ex., Ôtomi, Iriomote-jima, 26. iv. 1969, H. MAKIHARA lgt.; 5 exs., Shirahama, Iriomote-jima, 7. viii. 1972, M. SATÔ lgt.; 2 exs., Ushikumori, Iriomote-jima, 7. viii. 1972, M. SATÔ & Y. ARITA lgt.; 1 ex., Indo-misaki, Iriomote-jima, 21. v. 1969, R. MUSASHINO lgt.; 1 ex., Inda, Iriomote-jima, 5. viii. 1968, H. ÔHIRA lgt.; 1 ex., Iriomote-jima, 28. vii. H. NOMURA lgt.; 3 exs., Shirahama — Sonai, Iriomote-jima, 27. v. 1977, J. ÔKUMA lgt.; 1 ex., Ôhara, Iriomote-jima, 7. v. 1973, I. FUJIYAMA lgt.; 1 ex., Toyohara, Iriomote-jima, 25. vii. 1977, J. ÔKUMA lgt.; 1 ex., Ôtomi, Iriomote-jima, 16. iv. 1980, S. KASAHARA lgt.; 1 ex., Shirahama, Iriomote-jima, 5. v. 1974, H. IRIÉ lgt.; 2 exs., Ôhara, Iriomote-jima, 16. v. 1973, T. NAKANE lgt.; 3 exs., Mt. Yonaha-dake, Okinawa, 12. vii. 1984, Y. KUROSAWA lgt.

Range. Ryukyu Is. (Yaeyama & Okinawa groups).

Nalanda wenigi shirozui Y. KUROSAWA, 1954, comb. nov.

Nalanda shirozui Y. KUROSAWA, 1954, Bull. natn. Sci. Mus., Tokyo, (34): 36, pl. 16, fig. 1.

Though the pygidium is slightly different in shape, the author prefers to regard *shirozui* of the Islands of Tsushima as an isolated subspecies of Continental *N. wenigi* (OBENBERGER, 1927). The host plant confirmed by the author himself is *Quercus variabilis* BLUME.

Sambus quadricolor unifasciatus subsp. nov.

This is a local race of *S. quadricolor* E. SAUNDERS, 1873, isolated in the Yaéyama Islands-group of the Ryukyu Archipelago. It differs from the nominotypical race from Japan and the other islands-groups of the same archipelago, in the ornamentation of elytra, which forms a somewhat oblique blackish band from the sutural to the marginal parts at the posterior three-fifths, though the band does not reach the suture nor the lateral margins. The part before the band is brassy aeneous and clothed with subrecumbent greyish hairs and the part behind it is dark aeneous and uniformly clothed with subrecumbent silver-whitish hairs, but without bi-ocellate marking.

Length: 4.1–5.4 mm; width: 1.3–2.0 mm.

Holotype (♂), allotopotype, and paratopotypes: 4 ♂♂ 2 ♀♀, Mt. Omoto-dake, Ishigaki-jima, Ryukyu Is., 1. vi. 1972, H. IRIÉ lgt.; paratypes: 1 ♀, do., 23. v. 1974, H. IRIÉ lgt.; 1 ♀, Arakawa — Yonehara, Ishigaki-jima, 4. vi. 1973, Y. KUROSAWA lgt.

Range. Ryukyu Is. (Yaéyama group).

Sambus yaeyamanus sp. nov.

Sambus yushiroi MIWA et CHUJÔ, 1940, Nippon no Kôchû, Tokyo, 3: 74 (in litt.).

Sambus aeneicollis: Y. KUROSAWA, 1970, Coleopterists' News, Tokyo, (11): 4 (nec FISHER, 1921).

Based upon two males and one female collected on Ishigaki-jima, an island in the Ryukyu Archipelago, the author recorded in 1970 *S. aeneicollis* FISHER, 1921, described from Luzon of the Philippines. A closer examination of many examples from the Ryukyu Archipelago theretofore gathered at the author's hand shows that it is not identical with Philippine *aeneicollis*, but represents a new species to be described in the following lines.

Male. Different from *aeneicollis* FISHER, 1921, in the following points: Head and pronotum blackish with a slight aenescent tinge, except for greenish frons and broadly aeneous marginal parts of pronotum, while they are entirely aeneous or cupreous in *aeneicollis*; prehumeral carinae of pronotum sinuate at the base, not straight as in *aeneicollis*; elytral markings of pubescent hairs partially intermixed with silver-white and golden; elytral apices separately rounded.

Female. Entirely black, ornamented with the markings of silver-white hairs.
Length: 3.3–4.2 mm; width: 1.4–1.9 mm.

Holotype (♂), allotopotype, and paratopotypes: 3 ♂♂ 2 ♀♀, Takeda, Ishigaki-jima, Ryukyu Is., 3-6. v. 1963, Y. ARITA lgt.; paratypes: 1 ♂, Mt. Banna-dake, Ishigaki-jima, 2. v. 1969, H. MAKIHARA lgt.; 1 ♀, Omoto, Ishigaki-jima, 5. viii. 1970, S. TAKASUGA lgt.; 1 ♀, Mt. Omoto-dake, Ishigaki-jima, 16. vii. 1976, S. KIMOTO lgt.; 2 ♂♂ 2 ♀♀, Karimata, Miyako-jima, Ryukyu Is. 27. vi. 1974, S. KIMOTO lgt.; 1 ♀, Ôtomi, Iriomote-jima, Ryukyu Is., 12. iv. 1969, H. MAKIHARA lgt.; 1 ♀, Nakara, Iriomote-jima, 26. v. 1973, Y. KUROSAWA lgt.; 5 ♂♂ 2 ♀♀, Tokorono, Yonaguni-jima, Ryukyu Is., 9-13. v. 1974, H. IRIÉ lgt.

Range. Ryukyu Is. (Yaéyama group).

Agrilus chujoi sp. nov.

(Fig. 6, a, b)

Body above entirely bronzy-green to golden-bronzy, with a large dark or blackish marking along the suture in the posterior half of each elytron; body beneath black with a slight bluish or steel-bluish tinge; frons either bluish (male) or bronzy to bronzy-coppery (female); antennae blackish with a slight greenish or bronzy tinge; legs blackish, with more or less greenish or bluish tinge.

Head moderate, not broader than the anterior margin of pronotum; vertex strongly and densely rugoso-punctate, but the rugosity is somewhat concentrical latero-anteriorly on each side of median line, which is slightly impressed; eyes not so large, subparallel or feebly converging below, with the interior rims distinctly sinuate; frons narrow, distinctly longer than wide (male) or about as wide as or slightly wider than long (female), neither depressed nor convex, entirely rugoso-punctate, with the impressions behind antennal cavities deep, but the rugosity is somewhat transverse, and stronger and coarser in male than in female; clypeal suture distinct and transverse between antennal cavities; antennal cavities large, with the posterior margin transversely carinate; antennae slender, serrate from the fourth segment, with the first segment stout, the longest, the second subconical or fusiform, about as long as or slightly longer than the third or the fourth, the fifth slightly shorter than the fourth, the sixth dentate exteriorly, and about as long as wide, the following five segments dilated exteriorly and wider than long, the antennae being much more compact in male than in female.

Pronotum transverse, about 1.4 times as wide as long, and widest at a part just behind the middle; sides sinuate from posterior angles to the part of the maximum width, where they are somewhat angulate obsoletely, then obliquely and somewhat arcuately convergent to anterior angles, which are arcuately produced in dorsal aspect, though sharply abased in lateral aspect; anterior margin bisinuate, with the median lobe arcuately produced; posterior margin tripartite, with the median antescutellar part somewhat arcuately emarginate, and the parts on both sides angulately emarginate just before each basal lobe of elytra; prehumeral carinae very obsolete, sinuate and traceable from just interior to posterior angle to near the middle, then conjunct with

the marginal carina, which is bisinuate; submarginal carinae sinuate and approximate to the marginal carina posteriorly, though they are not conjunct with it and become obsolete in posterior fourth; disc moderately convex, with two obsolete large depressions on the median area, of which one is shallower, more obsolete and situated at the part just behind the median lobe on anterior margin and the other is larger, more distinct, rounded and situated at the part just before scutellum, and with an obsolete depression along the margin in anterior two-thirds; surface transversely, coarsely and strongly imbricato-rugose or rugoso-punctate, but the rugosity is somewhat concentric to the median lobe of the anterior margin in anterior half. Scutellum bipartite by sharp median carina, with the anterior part depressed and transverse, more than 3 times as wide as long, and the posterior part triangular, depressed, slightly broader than long, and sharply pointed posteriorly into elytra.

Elytra subparallel in anterior half, attenuate posteriorly in posterior half, about 2.8 times as long as wide, about 4.5 times as long as pronotum, and widest at humeri or at the middle; sides subparallel or slightly sinuate from humeri to the middle, where they are rounded, then obliquely and rather straightly narrowed to apices, which are dentato-serrate exteriorly and separately unidentate, with the interior side of dentation denticulate, broadly sinuate and produced or angulate at the sutural angles; humeri less prominent and slightly broader than the base of pronotum, without humeral carina; basal lobes angulate at the middle; disc shallowly but broadly depressed along the suture in posterior four-fifths, with the basal depressions large and broad along the entire basal margin except for the scutellar part; surface densely imbricato-punctate, subglabrous along the sides, clothed with subrecumbent dark greyish hairs on brighter greenish parts, with subrecumbent blackish hairs on darker parts and ornamented with the markings consisting of silver-whitish or silver-greyish hairs arranged on each elytron as follows: a stripe of sparse hair occupying sutural half from humeral part to the middle, a distinct spot at the middle of the darker part at posterior three-fourths of each elytron, and an obscure marking of sparse hairs at the apical part. Sides of first to third abdominal segments narrowly exposed from elytra in dorsal aspect, densely imbricate and filled on the first segment with white recumbent pubescence.

Body beneath entirely but sparsely clothed with inconspicuous recumbent silver-greyish hairs, with an inconspicuous markings of dense white hairs on both latero-anterior parts of the third and fourth ventral segments of abdomen. Prosternum moderately convex, coarsely rugoso-granulate; gular lobe broadly bilobed; prosternal process evenly granulate, subconical, with the sides oblique, slightly constricted between anterior coxal cavities, and somewhat angulate behind them, and the apex acute and pointed. Metasternum convex with the median groove obsolete, and the anterior projection slightly excavated between middle coxae, semicircularly emarginate at the anterior margin and angulate exteriorly at middle coxae. Abdomen beneath with the first ventral segment convex between posterior coxal cavities, the suture between the first and second segments obsolete and inconspicuous; anal segment rounded at the apex, though there is a small arcuate incision at the middle of extreme margin

which is minutely denticulate; pygidium without carina, and rounded at the apex.

Legs slender, with the basal segment of each posterior tarsus long and slender, longer than the following three segments united, but shorter than the following four ones united; claws simply cleft with the interior dentation broad and dilated.

Length: 5.8–7.6 mm; width: 1.6–2.4 mm.

Holotype (♂), allotopotype (♀), and paratopotypes: 3 ♂♂ 1 ♀, Nii, N. Tsushima, Japan, 14 & 18. vii. 1969, Y. KUROSAWA lgt.; paratypes: 1 ♂ 2 ♀♀, Izuhara, S. Tsushima, 25. vii. 1968, K. SUGA lgt.; 1 ♂, Mt. Ohboshi-yama, N. Tsushima, 12. vii. 1973, T. AKASHI lgt.; 1 ♀, do., 18. vii. 1975, Y. JOHKI lgt.; 2 ♀♀, Mt. Ariake-yama, S. Tsushima, 16. vii. 1960, MT. CHÛJÔ lgt.; 1 ♂, Uchiyama, S. Tsushima, 17. vii. 1960, T. NAKANE lgt.; 1 ♂ Mt. Tatera-yama, S. Tsushima, 30. vii. 1961, H. KONISHI lgt.; 1 ♀, do., 26. vii. 1969, M. EZIMA lgt.; 1 ♀, Mitsune, N. Tsushima, 22. vii. 1965, Y. KARASAWA lgt.

The author has examined other specimens of this beautiful species from the Continent: 1 ♀, Seoul, Korea, 7. viii. 1933, K. NOMURA lgt.; 2 ♂♂ 3 ♀♀, Kyongsangpuk-do, Mt. Sudosan, S. Korea, 9–18. vii. 1971, K. YAMAGISHI lgt.; 1 ♂ 1 ♀, Ryosuiji, Kwangtung Prov., S. Manchuria, 30. vii. 1936, M. HANANO lgt.; 1 ♀, do., 10. viii. 1935, M. HANANO lgt.

Host plant: *Pueraria thunbergiana* BENTH. (Legminosae) (confirmed by the author, etc.).

Range. Japan (Tsushima), Korea, S. Manchuria.

The present new species stands closely by *A. dichrosomus* OBENBERGER, 1924, described from Formosa, but differs from the latter in the following points: 1) Body robuster, concolorous, not bicolorous as in *dichrosomus* which has cupreous head and pronotum and greenish elytra; 2) pronotum slightly narrower, with the sides more strongly sinuate posteriorly; 3) white markings on elytra robuster and shorter; 4) elytra more strongly dentate at apices.

Agrilus tokyoensis sp. nov.

(Fig. 3, a, b)

Male. Body slender and subcylindrical; frons bluish-bronzy; vertex and pronotum coeruleous; elytra blue, with a slight greenish or bronzy tinge; body beneath and legs bronzy-blue, brighter than above; antennae blackish, with a bronzy or greenish tinge.

Head moderate, slightly narrower than the base of pronotum, clothed with inconspicuous, short, recumbent, dark greyish hairs on vertex and conspicuous greyish or silver-greyish hairs on frons and clypeus; vertex longitudinally rugose, with the median groove slightly impressed; frons slightly longer than wide or almost as long, flattened, densely and uniformly punctato-granular, and obsoletely edged along the upper part of the interior rim of each eye, with the median line obsoletely impressed and each post-antennal pore deep and transverse; eyes large, slightly converging below,

with the interior rim distinctly sinuate above; clypeal suture Y-shaped; clypeus subtrapezoidal, shagreened, with the anterior margin broadly but shallowly and arcuately emarginate; antennal cavities large, with the surrounding carina distinct; antennae slender, lax, serrate from the fourth segment, with the first segment stout, the second distinctly longer than, but less than 1.5 times as long as, the third, and about as long as the fourth, which is longer than any of the following ones.

Pronotum transverse, subquadrate, about 1.4 times as wide as long, and widest at posterior third or the middle or anterior third; sides sinuate and expanded from posterior angles to posterior third, then subparallel or somewhat arcuately rounded towards anterior angles, which are acute and produced in dorsal aspect, sharply pointed and abased in lateral aspect; anterior margin bisinuate, with the median lobe broadly and arcuately rounded; posterior angles acute and slightly produced; posterior margin bisinuate, with the median lobe produced and broadly emarginate just before scutellum, with both sides of the emargination angulate; prehumeral carinae short but strongly curved from posterior angle to near the middle, and connected there with the marginal carina in dorsal aspect; marginal carinae bisinuate, but the anterior sinuation stronger and the posterior sinuation finer and sometimes almost straight; submarginal carinae sinuate, widely distant from marginal carina anteriorly, gradually approximate to it posteriorly and connected with it just before basal angle; disc convex, with large but obsolete antescutellar depression and very obsolete lateral depressions, and sometimes with a very obsolete anterior depression just behind the anterior lobe; surface strongly, coarsely and transversely rugose, and clothed with very inconspicuous, short, semi-recumbent, blackish hairs which are observable in certain aspects and mingled with silver-greyish hairs in the lateral depressions. Scutellum transverse, bipartite by a transverse carina; the part before the carina depressed, subtrapezoidal, and about 4 times as broad as long; the part behind the carina T-shaped, with the median projection sharply and strongly projecting.

Elytra about 3.4 times as long as wide, about 4.2 times as long as pronotum, and widest at humeri or just behind the middle; sides obliquely truncate at humeri, broadly sinuate from just behind humeri to just behind the middle, where they are swollen and rounded, then rather straightly narrowed to apices, which are separately, sharply dentate or spinose, with the sutural angles dentate and both sides finely and irregularly denticulato-serrate; basal margin slightly carinate, with the lobe produced; sutural margin slightly elevated in posterior three-fifths; lateral margins finely but entirely serrate and dentato-serrate near the apex; humeri slightly prominent, without humeral carina; basal depressions very large and well-marked; disc convex, flattened along the suture in anterior half and obsolete impressed along the suture in posterior third; surface finely and densely imbricate, clothed with inconspicuous, short, recumbent, blackish hairs, which are hardly observable and only recognized in certain aspects, and adorned with three small spots consisting of whitish-grey hairs on each elytron, arranged in the basal depression, at the centre just behind the anterior third, and at the posterior third closely near the suture, but the third spot is more distinct than the

anterior two. The sides of the first to the third abdominal segments exposed from elytra on each side and ornamented with similar hairs to those of the elytral markings.

Body beneath brighter than above, clothed with short, semirecumbent, greyish-white hairs. Prosternum convex, coarsely rugoso-punctate; gular lobe broadly rounded or subtruncate; prosternal process subconical, slightly convex, with the sides not expanded behind anterior coxal cavities and slightly produced at the apex. Metasternum flattened at the middle, and coarsely rugoso-punctate. Abdomen beneath finely and rather uniformly punctured, with the first ventral segment flattened at the middle, and the anal segment rounded at the apex. Pygidium strongly carinate at the middle and strongly pointed at the apex, with the tip of the projection truncate. Posterior coxae strongly constricted at the middle, with the latero-posterior angles acute, produced posteriorly, but blunt at the tip. Posterior tarsi long and slender, with the basal segment about as long as the following three segments united; claws simply cleft, with interior dentation sharp and strong. Genital apparatus with paramere fork-shaped, not dilated at the apices.

Female. Frons slightly wider than in male and with stronger bronzy tinge.

Length: 7.0–10.2 mm; width: 1.3–2.0 mm.

Holotype (♂) and paratopotypes: 4 ♂♂, Hinoharu, Yamanashi Pref., Honshu, Japan, 10. vii. 1981, A. SEKI lgt., allotype: 1 ♀, Ushigome, Tokyo, 3. viii. 1941, T. NISHIMURA lgt.; paratypes: 1 ♂, Setagaya, Tokyo, 4. vii. 1964, K. SAKAI lgt.; 1 ♂, Mt. Takachihono-mine, Kagoshima Pref., Kyushu, 25. vi. 1965, M. NAGAKARI lgt.

Host plant: *Quercus acutissima* CARRUTH. (confirmed by A. SEKI).

Range. Japan (Honshu, Kyushu).

The present species resembles *A. alazon* LEWIS, 1893, from Japan in every respect, except for the form of elytral apices and the male genital apparatus. In *alazon*, the apices of elytra are acute, not dentate or spinose, and the paramere is dilated exteriorly at the apex.

Agrilus toyamai sp. nov.

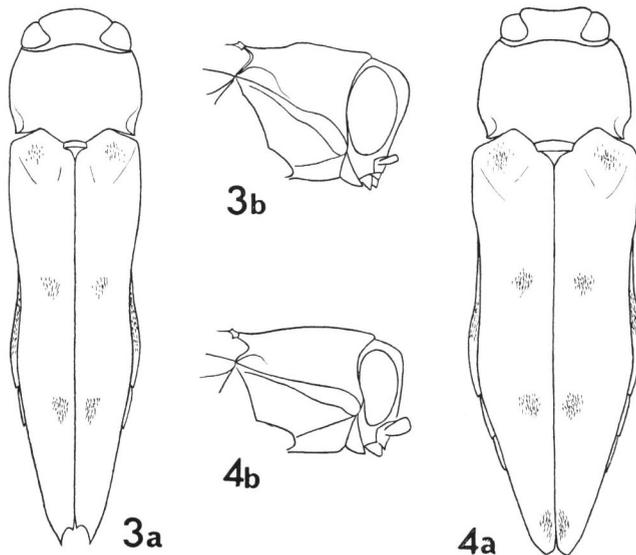
(Fig. 4, a, b)

Male. Body robust and contracted; body above bluish bronzy-green, with vertex, disc of pronotum, and the sutural part of elytra tinged with cyaneous; body beneath brighter than above, entirely greenish bronzy; legs and antennae concolorous with body beneath.

Head moderate, distinctly narrower than the base of pronotum, clothed with inconspicuous, short, recumbent, blackish hairs on vertex and with rather recumbent silver-greyish hairs on frons; vertex longitudinally rugose, with the median groove inconspicuous; frons about as broad as long, irregularly and obsoletely depressed or deplanate, and rather evenly and coarsely imbricato-rugose, with post-antennal pores transverse and obsolete; eyes moderate, subparallel or slightly converging below, with the interior rim strongly sinuate; clypeal suture arcuately produced below; clypeus

about twice as wide as long between antennal cavities, with the anterior margin deeply, broadly and rather semicircularly emarginate; antennal cavities large and transverse; antennae short but lax, not extending beyond the middle of the sides of pronotum, strongly serrate from the fourth segment, with the first segment stout, fusiform, the second about as long as the third, the fourth distinctly longer than the third, but less than 1.5 times as long as the latter.

Pronotum transverse, attenuate anteriorly and posteriorly, about 1.5 times as wide as long, and widest at the posterior third; sides obliquely expanded and sinuate from basal angles to the posterior third, then gradually and arcuately narrowed to anterior angles; anterior margin as broad as or a little narrower than the posterior, bisinuate with the median lobe broadly and arcuately produced; anterior angles slightly produced in dorsal aspect, abased and sharply defined in lateral aspect; posterior margin strongly bisinuate, with the median lobe broadly and arcuately emarginate just before scutellum; posterior angles subrectangular or obtuse, somewhat produced; prehumeral carinae very short, interiorly oblique from each posterior angle in dorsal aspect, strongly curved and raised in posterior third, but suddenly becomes inconspicuous and vanished there, sometimes very obsoletely and inconspicuously traceable and strongly sinuate to the middle and approximate to and connected with marginal carina; marginal carinae somewhat bisinuate; submarginal carinae distant from marginal carina anteriorly, slightly sinuate, gradually approximate to it posteriorly and connected with it just before the base; disc convex, broadly depressed along the lateral margins, without any depression at the middle; surface transversely and coarsely



Figs. 3-4. — 3. *Agrilus tokyoensis* sp. nov. — 4. *A. toyamai* sp. nov. a, dorsal view; b, lateral view of head and pronotum.

rugose, and clothed with very inconspicuous, short, recumbent, blackish hairs, which are only recognizable in certain aspects. Scutellum subtriangular, with an obsolete transverse carina and a sharp and acute posterior projection.

Elytra short, about 2.6 times as long as wide, about 4 times as long as pronotum, and widest and slightly broader than pronotum at humeri; sides slightly broader than the base of pronotum and slightly rounded at humeri, sinuate from humeri to the posterior two-thirds, where they are broadly rounded, then obliquely narrowed to the apices, which are separately rounded, finely denticulate, and somewhat dilated laterally; lateral margins narrowly reflexed, finely and irregularly denticulato-serrate near apices; basal lobes produced and angulate; sutural margin slightly elevated in posterior two-thirds; humeri not prominent, without humeral carina; basal depressions large, occupying the entire width of basal lobes; disc broadly depressed along the suture and obsoletely costate along the exterior part of the depression in posterior two-thirds; surface coarsely granulato-imbricate, sparsely clothed with short, inconspicuous, recumbent, blackish hairs which are recognizable in certain aspects, and adorned with four spots of agglomerate silver-greyish or silver-whitish hairs arranged on each elytron as follows: first inconspicuous one in the basal depression; second rounded one near the centre of the basal third; subtriangular one near the suture at the posterior third; fourth obscure one along the suture just before apex. The sides of the first and second abdominal segments exposed from elytra and clothed on the middle of the first segment and the anterior part of the second segment with whitish agglomerate hairs.

Body beneath clothed with short, semirecumbent, silver-greyish hairs, but the hairs become denser and somewhat agglomerate on each latero-posterior part of each ventral segment of abdomen. Prosternum strongly, coarsely, and confluent punctured; gular lobe broadly but slightly bilobed; prosternal process short, robust, subparallel or slightly constricted between anterior coxal cavities and sharply pointed at the apex. Metasternum somewhat convex. Abdomen beneath finely punctured, with the first ventral segment narrowly flattened at the middle, and anal segment rounded at the apex. Posterior coxae with latero-posterior angles subrectangular, rounded at the tip, and not produced. Pygidium subtruncate at the apex, with the median carina indistinct. Posterior tarsi rather robust, with the basal segment about as long as the following three segments with lamellae united.

Female. Robuster than male, frons and the sides of pronotum and elytra strongly tinged with aeneous; frons broader than male, slightly broader than long.

Length: 8.4–10.3 mm; width: 2.5–3.0 mm.

Holotype (♂) and paratopotypes: 7 ♂♂ Takahachi-yama, Tottori Pref., Honshu, Japan, 16. viii. 1979, M. TÔYAMA lgt.; allotopotype: ♀, do., 20. vii. 1980, M. TÔYAMA lgt.; paratypes: 1 ♂, do., 10. viii. 1975; 1 ♂, Kawarayu, Gumma Pref., 7. vii. 1973, I. KÔNO lgt.

Host plant: *Celtis Bungeana* BLUME var. *jessoensis* KUDO (Ulmaceae) (confirmed by M. TÔYAMA).

Range. Japan (Honshu).

This species stands closely by *A. alazon* LEWIS, 1893, and *A. tokyoensis* m., but the body is robuster with rather flattened disc, not cylindrical as in the two species. Mr. Masao TÔYAMA confirmed that this species is symbiotic with *alazon* on the same host tree. In this case, the species is always found on the tips of twigs, whereas *alazon* is found on the trunk.

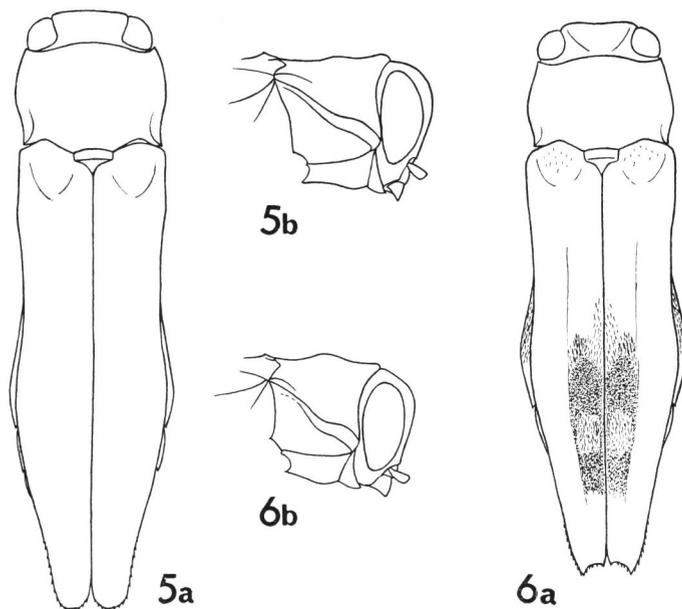
Agrilus tazoei sp. nov.

(Fig. 5, a, b)

Male. Vertex and pronotum aeneo-cupreous; elytra blackish, mat, sometimes with a slight aenescent tinge; frons viridi-cyaneous; body beneath and legs blackish with a slight bluish tinge; antennae blackish, with the basal three segments tinged with aeneous. Body slender and subcylindrical.

Head moderate, narrower than pronotum; vertex rugose on each side of the median line, which is inconspicuously grooved; frons narrow, distinctly and uniformly imbricato-punctate, sparsely clothed with short, semirecumbent, inconspicuous, cinereous hairs, and neither impressed nor depressed; clypeal suture transverse but obsolete, and somewhat angulate; clypeus thin, with the anterior margin bilobed and angulately emarginate at the middle; antennal cavities large, subtriangular; post-antennal pores transverse though obsolete; eyes large, slightly converging below, with the interior rim sinuate; antennae short, lax, serrate from the fourth segment, with the first segment fusiform, about as long as the second, and slightly longer than the third, the fourth about as long as the second and slightly longer than the fifth.

Pronotum transverse, about 1.4 times as wide as long, and widest at the middle; sides slightly sinuate just before basal angles, then arcuately rounded to anterior angles; anterior margin bisinuate, somewhat narrower than the posterior margin, with the median lobe broadly and arcuately, but slightly produced; anterior angles acutely projecting in dorsal aspect, and sharply abased and well-defined in lateral aspect; posterior margin bisinuate, with the median lobe slightly emarginate just before scutellum; posterior angles subrectangular, somewhat produced; prehumeral carinae arcuate from posterior angle and extending to near the middle of the sides in dorsal aspect, strongly and semicircularly curved in lateral aspect; marginal carinae bisinuate, but oblique and straight from base to the middle; submarginal carinae bisinuate, distant from and subparallel to the marginal carina in anterior half, approximating to it in posterior half, but not connected with it having a certain distance from it at the posterior end of the carina; disc slightly and obsoletely depressed before scutellum and narrowly depressed along the lateral margins causing the margin somewhat reflexed; surface transversely rugoso-punctate, but the rugosity becomes imbricate in anterior and posterior lobes and clothed with short, recumbent, inconspicuous, blackish hairs, which are recognizable in certain aspects. Scutellum transverse, bipartite by a transverse carina, the ante-carinal part subquadrate and about 3 times as wide as long, while the post-carinal part is transverse, about twice as wide as long, subtri-



Figs. 5-6. — 5. *Agrilus tazoei* sp. nov. — 6. *A. chujoi* sp. nov. a, dorsal view; b, lateral view of head and pronotum.

angular, sharply pointed posteriorly.

Elytra about 3 times as long as wide, about 4.3 times as long as pronotum, and widest at a part just behind the middle; sides broadly sinuate from humeri to the part of the maximum width, where they are broadly and arcuately rounded, then gradually narrowed and sinuate to apices, which are separately and broadly rounded and finely denticulate; humeri subrectangular, slightly wider than the base of pronotum, without humeral carina, but they are not prominent and not broader than the maximum width of pronotum; basal lobe less prominent, somewhat angulate exteriorly; lateral margins finely and irregularly serrate in posterior third; sutural margins slightly elevated in posterior third; basal depresssions large, occupying all the width of the basal lobes; disc obsoletely carinate on each elytron from humerus to apex, with a broad post-scutellar depression and an obsolete sutural impression near apex; surface densely, finely, and uniformly imbricate, and clothed with short recumbent black hairs which are usually invisible but recognizable in certain aspects and do not form any ornamentation. The sides of the first to the third abdominal segments narrowly exposed from elytra, without ornamentation by hairs.

Body beneath entirely clothed with semirecumbent cinereous hairs. Prosternum convex; gular lobe subtruncate or somewhat emarginate at the middle of the anterior margin; prosternal process subconical, deplanate, with the sides slightly angulate behind anterior coxal cavities. Metasternum convex, longitudinally grooved at the middle, and entirely imbricato-reticulate, with the anterior projection somewhat Y-

shapedly emarginate. Abdomen beneath convex between posterior coxal cavities, and finely punctured, with the apex of anal segment rounded.

Legs normal, claws approximated with each other and cloven, with a long interior tooth; first segment of each posterior tarsus about as long as the following three segments united.

Female. Frons concolorous with vertex and pronotum. Body rubuster than in the male.

Length: 7.6–9.2 mm; width: 1.5–2.0 mm.

Holotype: ♂, Tsuchiyu, Fukushima Pref., Honshu, Japan, 22. vi. 1974, K. TAZOÉ lgt.; allotype: ♀, Mt. Takatori-yama, Zushi, Kanagawa Pref., Honshu, 17. vi. 1972, M. MIURA lgt.; paratype: 1 ♀, Iwaki, Fukushima Pref., 18. vii. 1981, S. OHMOMO lgt.; 1 ♂, Mt. Hotaka, Gumma Pref., 13. vii. 1974, M. TSUZAKI lgt.; 1 ♀, Rokkoku Pass, Kanagawa Pref., 10. vi. 1979, K. EMOTO lgt.; 1 ♀, Kurosaka, Tottori Pref., 5. vi. 1979, K. SUGINO lgt. (Host out).

Host plant: *Wistaria floribunda* DC. (Leguminosae) (confirmed by M. TÔYAMA).

Range. Japan (Honshu).

The present species closely resembles *A. imitans* LEWIS, 1893, also described from Japan, but differs from the latter by the subcylindrical body, more strongly curved prehumeral carinae of pronotum, and by the submarginal carinae of pronotum which are more distant from the marginal carina anteriorly and not connected with them posteriorly.

Agrilus suzukii sp. nov.

(Fig. 7, a, b)

Body above brassy with more or less bronzy or greenish tinge; body beneath brighter than above, entirely brassy aeneous; legs concolorous with the body beneath; antennae aeneous, darker than the body above.

Head moderate, slightly narrower than the base of pronotum; vertex sparsely and longitudinally punctato-rugose, slightly but broadly sulcate at the middle, with the median groove inconspicuous; frons slightly longer than wide, somewhat convex, neither depressed nor impressed, entirely but coarsely punctate, and clothed with short, inconspicuous, cinereous hairs; post-antennal pores transverse, though obsolete; clypeal suture obsolete; clypeus subtrapezoidal, twice as wide as long between antennal cavities, with the anterior margin arcuately emarginate; antennal cavities large but transverse; eyes subparallel, with the interior rim slightly sinuate; antennae short, rather compact, serrate from the fourth segment, with the first and second segments stout, the third slender, slightly shorter than the second, the fourth slightly dilated and acute apico-exteriorly, slightly longer than the third and about as long as the second.

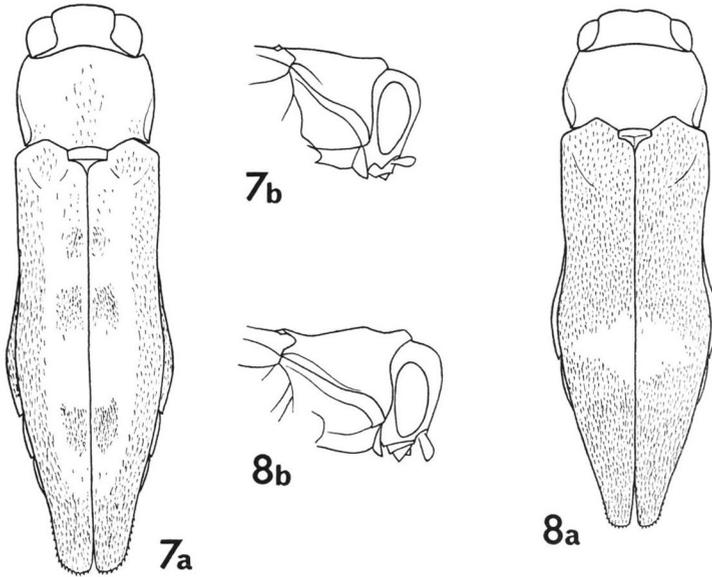
Pronotum transverse, about 1.35 times as wide as long, and widest at a part just behind anterior angles or just before the middle; sides slightly sinuate just before posterior angles, slightly expanded to just before the middle, where they are arcuately

rounded, then obliquely or arcuately narrowed to near the anterior angles, which are acute and sharply produced in dorsal aspect, and sharply abased in lateral aspect; anterior margin bisinuate, with the median lobe broadly and arcuately produced; posterior margin emarginate broadly and rather arcuately on each side just before each basal lobe of elytron and narrowly just before scutellum; posterior angles subrectangular or somewhat acute and produced; prehumeral carinae arcuate basally from posterior angles and subparallel to the lateral margin to near the middle in dorsal aspect, but they are approximate anteriorly to the marginal carina and somewhat conjoined with it there; marginal carinae sinuate; submarginal carinae slightly sinuate, distant from marginal carina anteriorly, approximate to it posteriorly, and conjoined with it or vanished at the posterior third; disc obsoletely depressed just behind the median lobe of anterior margin; surface brighter than elytra, transversely rugoso-punctate and clothed with short, recumbent, dark cinereous hairs which are visible only in certain aspects. Scutellum T-shaped, bipartite by transverse elevated carina, with the ante-carinal part shagreened, and the post-carinal part strongly and sharply produced between elytra.

Elytra about 2.8 times as long as wide, about 4 times as long as pronotum, and widest at humeri or the part just behind the middle; sides subparallel at humeri, slightly sinuate to the part of the maximum width, where they are arcuately rounded, then obliquely narrowed to apices, which are separately rounded and finely denticulate; humeri slightly broader than the base of pronotum and not prominent; lateral margins serrate in posterior fourth; basal lobes broad and obtusely produced; basal depressions large, occupying almost all the width on the base and becoming obsolete towards scutellum latero-posteriorly; sutural margin narrowly elevated in posterior three-fifths; disc convex, longitudinally but obsoletely depressed along the suture in posterior two-thirds; surface densely and uniformly imbricate, and ornamented with short, subrecumbent, silver-whitish hairs arranged in the following markings: an obscure one in basal depression; a distinct spot at a part just behind the anterior third closer to the suture; a large spot at the posterior third touching the suture; a marginal one broadly occupying the entire length of margin and apex; the part seemingly naked sparsely clothed with short, recumbent, inconspicuous, dark-brownish hairs, which are recognizable in certain aspects. The sides of the first and the second abdominal segments narrowly exposed from elytra without distinct ornamentation.

Body beneath sparsely clothed with short, recumbent, inconspicuous, cinereous hairs. Prosternum convex; gular lobe bilobed and emarginate at the middle; prosternal process sublingulate, somewhat depressed apically with angulate apex. Metasternum with median groove a little impressed in posterior half, and the anterior projection deplanate or obsoletely depressed and slightly emarginate anteriorly. Abdomen beneath finely and sparsely punctured; first segment convex between posterior coxal cavities; anal segment rounded at apex.

Legs normal, with the first segment of each posterior tarsus about as long as the following three segments with lamellae united; claws simply cleft, with the interior



Figs. 7-8. — 7. *Agrilus suzukii* sp. nov. — 8. *A. sudai* sp. nov. a, dorsal view; b, lateral view of head and pronotum.

tooth short and blunt.

Length: 4.2–5.8 mm; width: 1.0–1.4 mm.

Holotype: ♂, Nakanotaira, Haha-jima, Bonin Is., 29. vi. 1976, Y. KUROSAWA lgt.; allotype: ♀, Iguma Bay, Haha-jima, 10. vi. 1972, K. SUZUKI lgt.; paratypes: 5 ♂♂ 3 ♀♀, Kuwanoki-yama, Haha-jima, 23. vi. 1976, Y. KUROSAWA lgt.; 3 ♂♂ 3 ♀♀, Kuwanoki-yama — Nagahama, Haha-jima, 24. vi. 1976, Y. KUROSAWA lgt.; 1 ♂, Nakanotaira, Haha-jima, 3. vii. 1976, Y. KUROSAWA lgt.; 10 ♂♂ 8 ♀♀, Kuwanoki-yama, Haha-jima, 5. vii. 1976, Y. KUROSAWA lgt.

Host plant: *Melia Azedarach* LINNÉ (Meliaceae) (confirmed by the author).

Range. Bonin Is. (Haha-jima).

There is no species closely allied to this one in Japan and the Ryukyu Archipelago.

Agrilus sudai sp. nov.

(Fig. 8, a, b)

Male. Frons bluish or greenish bronzy; vertex and pronotum brassy or coppery, shining, with the sides of the latter bronzy-green or -blue; elytra cupreous or brassy aeneous, mat; body beneath blackish, sometimes partially with a slight aenescent tinge; antennae dark aeneous, with the basal two segments tinged with blue.

Head moderate, narrower than pronotum, sparsely clothed with short semirecumbent, inconspicuous, dark cinereous or blackish hairs, which are recognizable in

certain aspects; vertex rugose on each side of the median line, which is inconspicuously grooved; frons slightly broader than long, flattened, without depression or impression, somewhat longitudinally rugose in upper half, and coarsely punctate or transversely rugose in lower half; eyes subparallel, with the interior rim straight; post-antennal pores small, transverse and inconspicuous; clypeal suture transverse and straight between antennal cavities; clypeus subtrapezoidal, narrowed by the insertion of antennae, with anterior margin arcuately emarginate; antennal cavities large and rounded; antennae lax, serrate from the fourth segment, with the first segment fusiform, the second ellipsoid, about as long as the third, and the fourth slightly longer than the third or fifth, but less than 1.5 times as long as the latter.

Pronotum transverse, about 1.5 times as wide as long, and widest at the middle; sides somewhat sinuate just before posterior angles, then arcuately rounded and expanded to anterior angles; anterior margin a little narrower than the posterior, bisinuate, with the median lobe broadly but slightly produced; posterior margin bisinuate, with the median lobe subtruncate just before scutellum; posterior angles subrectangular, slightly produced; prehumeral carinae started in a short distance from posterior angles, almost straight to near the middle in dorsal aspect, arcuate in posterior half, then approximate to marginal carina and conjunct with it in lateral aspect; marginal carinae slightly bisinuate; submarginal carinae distant from and subparallel to marginal carinae in anterior half, then approximate to the latter to posterior third, where the two carinae become conjunct; disc very obsoletely depressed just before scutellum; surface transversely rugoso-punctate and sparsely clothed with short, recumbent, inconspicuous, dark-greyish hairs, but the rugosity is somewhat concentric to the median lobe of anterior margin and the hairs are only recognizable in certain aspects. Scutellum transverse, bipartite by an elevated transverse carina, with the part before the carina subquadrate, a little more than 3 times as wide as long, and the part behind the carina subtriangular, sharply produced posteriorly between elytra.

Elytra about 3 times as long as wide, about 4.6 times as long as pronotum, and widest at a part just behind the middle; sides subparallel at humeri, sinuate to the part just behind the middle, where they are broadly and arcuately rounded, then gradually narrowed to apices, which are separately rounded and finely, irregularly dentato-serrate, with obtuse sutural angles; basal lobe obtusely angulate; humeri not prominent, broader than the base of pronotum, but as wide as its middle; lateral margins unarmed except for a short distance before each apex; basal depressions very large, occupying almost all the width of basal margin; sutural margin narrowly elevated in posterior half or rarely in posterior two-thirds; disc obsoletely impressed along suture in posterior half; surface densely and uniformly punctato-imbricate, and ornamented almost entirely with short, semirecumbent, yellowish-grey hairs, except for a broad band at the part just behind the middle; the band is seemingly naked, though clothed with inconspicuous, semirecumbent, dark-brownish hairs, which are recognizable in certain aspects. The sides of the first abdominal segment very narrowly exposed from elytra, without any marking.

Body beneath brighter than above, sparsely clothed with short, semirecumbent, silver-whitish hairs. Prosternum convex; gular lobe thin, broadly bilobed; prosternal process deplanate, subconical, with the sides somewhat angulate just behind anterior coxal cavities, then narrowed to apex, which is sharply prolonged posteriorly and deeply inserted into the anterior projection of metasternum. Metasternum inconspicuously grooved at the middle. Abdomen beneath flattened between posterior coxal cavities, finely and sparsely punctured, and rounded at apex of anal segment.

Legs normal; claws simply cleft, with a short interior tooth of each claw.

Female. Body above entirely cupreous including frons, but the elytral ornamentation is similar to that of male.

Length: 5.3–7.2 mm; width: 1.3–2.0 mm.

Holotype: ♀, Mt. Hayachine, Iwate Pref., Honshu, Japan, 31. vii. 1952, M. SUDA lgt.; allotype: ♂, Tokusa Pass, Yamanashi Pref., Honshu, 4. vii. 1952, M. OHNO lgt.; paratypes: 1 ♂, Sandogoya, Mt. Nasu-dake, Tochigi Pref., Honshu, 28. vii. 1962, K. SUGA lgt.; 1 ♂, Yokogawa, Tochigi Pref., 12. viii. 1970, H. SATÔ lgt.; 1 ♀, Mt. Gomanodan, Wakayama Pref., Honshu, 7. vii. 1973, H. HIRAMATSU lgt.

Host plant: Unknown.

Range. Japan (Honshu).

Agrilus mallotiellus nom. nov.

Agrilus malloti Y. KUROSAWA, 1957, Bull. natn. Sci. Mus., Tokyo, (40): 189 (nec THÉRY, 1930).

Since the name, *A. malloti* Y. KUROSAWA, 1957, is preoccupied by *A. malloti* THÉRY, 1930, from N. India, a new name for the former is proposed here.

Endelus opacipennis sp. nov.

Head and pronotum brassy aeneous to reddish aeneous; elytra aeneo-olivaceous, mat, with a distinct silky shimmer; body beneath black; antennae aeneous; legs blackish beneath and aeneous above.

Head broadly, deeply, and ~-shapedly excavated between eyes in dorsal aspect, with the interior rim of each eye edged and sharply produced; frons rather smooth, but entirely and microscopically shagreened, very sparsely scattering a few obsolete, inconspicuous, round punctures, with entirely distinct median groove and / \-shaped depression just above antennal cavities; clypeal suture inconspicuous; clypeus strongly narrowed between large subtriangular depressions surrounding antennal cavities, with the anterior margin broadly and arcuately emarginate; eyes oblique, slightly converging below; antennae compact, serrate from the sixth segment, with the first and the second segments stout, ellipsoid, and the following three ones equal in size and length.

Pronotum transverse, about 1.7 times as wide as long, and widest at or just before the middle; sides sinuate just before posterior angles, extending to near the middle, where they are obsoletely and obtusely angulate, then obliquely narrowed to anterior

angles, which are slightly produced, acute but not abased; lateral margins sharply defined and coarsely and obsoletely dentato-crenulate; anterior margin slightly sinuate on each side, with the median lobe subtruncate in antescutellar part; disc with seven depressions, a round one on each side at the middle, a large transverse one on the posterior lobe, rather round one on the interior part of each posterior angle, and a large longitudinal one along the anterior half of each lateral margin to anterior angle; surface very finely shagreened or microscopically imbricate and very sparsely scattering obsolete variolate punctures. Scutellum triangular, depressed anteriorly and microscopically shagreened.

Elytra about 1.8 times as long as wide, about 4.4 times as long as pronotum, widest at the middle, and distinctly broader than pronotum at the base; sides slightly dilated and subangulate just behind humeri, sinuate from there to the middle, where they are arcuately rounded, then obliquely narrowed to apices, which are separately rounded; lateral margins very obsoletely and inconspicuously dentato-serrate; disc deplanate, broadly depressed along the suture and lateral margins, with the basal depressions large and obsolete, irregular impression from each basal depression to anterior third; surface uniformly and microscopically shagreened, mat, and very sparsely scattering obscure variolate round punctures.

Body beneath finely shagreened, very sparsely scattering with very short, inconspicuous silver-greyish hairs. Prosternum transversely grooved along the anterior margin, which forms a narrow gular lobe and broadly emarginate; prosternal process broad, slightly dilated and angulate just behind anterior coxal cavities and acute at the tip. Anal segment of abdomen rounded at apex.

Legs a little longer than those in the other species of the genus.

Length: 3.5–3.6 mm; width: 1.2–1.3 mm.

Holotype and a paratopotype: 2 exs., Mt. Omoto-dake, Ishigaki-jima, Ryukyu Is., 16–17. iv. 1973, H. IRIÉ lgt.

Host plant: *Gilbertia trifida* MAKINO (Araliaceae) (after K. AKIYAMA).

Range. Ryukyu Is. (Ishigaki-jima).

This species is characterized by its silky surface of body.

The same species collected in Formosa has the following subspecific characters.

Endelus opacipennis aeneopacus subsp. nov.

Different from the nominotypical race in the Ryukyu Archipelago in the following points: Body above aeneous, without olivaceous shimmer; depressions on pronotum broader, shallower and less sharply defined; punctures on elytra larger, stronger and partially somewhat confluent.

Length: 2.8–3.3 mm; width: 1.0–1.3 mm.

Holotype and a paratopotype: 2 exs., Lishan, Taichung Hsien, C. Formosa, 1. vi. 1971, K. KANMIYA lgt.; paratypes: Mt. Alishan, Chiai Hsien, C. Formosa, 11. vii. 1927, T. KANO lgt.; 1 ex., Kuraru, S. Formosa, 2. iv. 1965, S. MIYAMOTO lgt.

Host plant: Unknown.

Range. Formosa.

Endelus pyrrosiae sp. nov.

Body above entirely aeneo-cupreous, except for the lower half of frons aeneo-iridescent; body beneath aeneous, brighter than above.

Head moderate, narrower than pronotum, entirely shagreened, \vee -shapedly excavated between eyes in dorsal aspect, with the interior rim of each eye blunt, not edged and produced; frons about as long as the width between eyes, with the median groove entire, distinct from vertex to clypeus; eyes subparallel; frontal groove just above antennal cavities \cup -shaped and curved up along the interior margin of each eye to near the mid-eye level; the part before frontal groove strongly narrowed by the insertion of antennae, about 4 times as long as wide; clypeal suture V-shaped; clypeus thin, \mathcal{M} -shaped, with the anterior margin broadly, sharply and arcuately emarginate; each antennal cavity surrounded by a large, rather shallow depression; surface finely shagreened and sparsely scattering with obsolete, round, shallow and variolate punctures.

Pronotum transverse, subquadrate, about 1.7 times as wide as long, widest at the middle and far broader than the width of head; sides arcuately rounded from base to front, but the convergence of them a little stronger in front than behind; anterior angles slightly produced, though blunt at the tip; anterior margin bisinuate, with the median lobe broadly and arcuately produced; posterior margin strongly sinuate on each side, with the median lobe somewhat arcuately emarginate just before scutellum; posterior angles obtuse and not produced; lateral margins very obsolete and irregularly crenulate; disc broadly and transversely grooved in the entire width of basal margin and just before the middle in entire width, but both grooves are connected by a lateral depression along each lateral margin; surface microscopically shagreened, and irregularly scattering with large round variolate punctures. Scutellum subtriangular, somewhat convex and microscopically shagreened.

Elytra distinctly broader than pronotum at humeri, which are subrectangular but rounded, about 1.8 times as long as wide, about 4 times as long as pronotum, and widest at the posterior two-fifths; sides subparallel to the anterior fifth, sinuate from there to the posterior two-fifths, where they are broadly rounded, then obliquely and straightly narrowed to apices, which are conjointly rounded; lateral margins very obsolete serrate; basal depressions large but obsolete, occupying the entire width of base; disc uneven, very obsolete and obliquely costate from humeri to the centre of the middle, and narrowly impressed along the suture in posterior third causing each apex convex and swollen; surface finely but entirely shagreened, sparsely scattering with fine punctures, the intervals becoming obliquely but slightly rugose at the post-scutellar parts and sutural parts in anterior half.

Presternum shagreened, mat, sparsely scattering with shallow, variolate, obscure,

round punctures; anterior margin arcuately emarginate; prosternal process broad, deplanate, laterally angulate behind anterior coxal cavities, and angulate and pointed at the tip. Metasternum shining, rather smooth, without median groove. Abdomen beneath shining, ∞ -shapedly variolate; first ventral segment convex at the middle between posterior coxal cavities; anal segment rounded at apex.

Legs normal.

Length: 4.3–5.0 mm; width: 1.5–1.8 mm.

Holotype and paratopotypes: 19 exs., Motoike, Shimabara, Nagasaki Pref., Kyushu, Japan, 2–28. iv. 1977, S. IMASAKA lgt.; 4 exs., do., 18–24. iv. 1976, S. IMASAKA lgt.; paratypes: 1 ex., Yura, Wakayama Pref., S. GOTÔ lgt.; 2 exs., Mt. Mikuma-yama, Awaji-shima, Hyôgo Pref., 20. x. 1973, K. ITÔ lgt.; 1 ex., Kakumodani, Kôchi Pref., Shikoku, 20. x. 1950, K. BABA lgt.

Host plant: *Pyrrosia lingua* FARWELL (Polypodiaceae) (confirmed by S. IMASAKA).

Range. Japan (Honshu, Awaji-shima, Shikoku, Kyushu).

After an observation made by Mr. Shôichi IMASAKA, this species is a leaf-miner of *Pyrrosia lingua* FARWELL, a kind of fern. Emerging in the autumn, it hibernates in adult stage and mates and oviposits in the next spring.

The specimen obtained on the Island of Amami-Oshima, the Amami group of the Ryukyu Archipelago, has somewhat different characters from those from the main islands of Japan.

Endelus pyrrosiae aokii subsp. nov.

Different from the nominotypical race in the following points: 1) Body brighter; 2) shagreening of the body above finer and weaker; 3) sides of pronotum somewhat sinuate just before posterior angles, and evenly and arcuately rounded towards anterior angles and posterior angles, but they are more strongly narrowed anteriorly than posteriorly.

Length: 4.2 mm; width: 1.6 mm.

Holotype: Mt. Yuwan-dake, Amami-Oshima, Ryukyu Is., 16. vi. 1963, J. AOKI lgt.

Range. Ryukyu Is. (Amami-Oshima).

Endelus bicarinatus THÉRY, 1932

Endelus bicarinatus THÉRY, 1932, Novit. ent., 2: 14, fig.

Endelus eous OBENBERGER, 1944, Časopis Čs. Spol. ent., 41: 42 (syn. nov.).

Endelus evus MIWA et CHÛJÔ, 1940, Nippon no Kôchû, Tokyo, 3: 74 (in litt.).

Endelus eous OBENBERGER, 1944, is conspecific with *bicarinatus* THÉRY, 1932, described from Tonkin and Japan. A. THÉRY stated in his original description that "ce dernier paratype provenant de Hagi, Japon."

Host plant: *Ficus erecta* THUNBERG (Moraceae) (confirmed by T. SHIRÔZU).

Range. Japan (Honshu, Kyushu), N. Vietnam.

Trachys auriflua SOLSKY, 1876

Trachys auriflua SOLSKY, 1876, Horae Soc. ent. ross., 11: 280.

Brachys orichalcea KIESENWETTER, 1879, Dtsch. ent. Z., 23: 67.

Trachys aurichalcea MARSEUL, 1889, Abeille, Paris, 26, 67.

Trachys tiliae Y. KUROSAWA, 1959, Bull. natn. Sci. Mus., Tokyo, 4: 245, fig. 14.

Trachys tiliae Y. KUROSAWA, 1959, described from N. Honshu, Japan has no peculiarity to separate it from Continental *auriflua* SOLSKY, 1876.

Host plants: *Tilia Maximowicziana* SHIRASAWA and rarely *T. japonica* SIMK. (confirmed by the author).

Range. Japan (Honshu), Korea, E. Siberia.

Trachys pecirkai OBENBERGER, 1925

Trachys pecirkai OBENBERGER, 1925, Časopis Čs. Spol. ent., 22: 100.

Trachys semenovi OBENBERGER, 1929, Časopis Čs. Spol. ent., 26: 126.

Trachys amuricola OBENBERGER, 1929, Časopis Čs. Spol. ent., 26: 11.

Host plants: *Ulmus davidiana* PLANCH. var. *japonica* NAKAI (confirmed by the author).

Range. Japan (Hokkaido, Honshu), Korea, E. Siberia, China.

Trachys inconspicua E. SAUNDERS, 1873

Trachys inconspicua E. SAUNDERS, 1873, J. Linn. Soc. London, 11: 522.

Trachys ogumensis OBENBERGER, 1924, Jub. Sbornik Čs. Spol. ent., 1924: 57.

Trachys galloisi OBENBERGER, 1940, Časopis Čs. Spol. ent., 37: 41.

Host plants: *Prunus mume* SIEB. et ZUCC., *P. armeniaca* L. and *P. salicina* LINDL. (confirmed by the author, etc.).

Range. Japan (Honshu, Shikoku, Kyushu, Tsushima), Korea, China.

Trachys reitteri OBENBERGER, 1930

Trachys reitteri OBENBERGER, 1930, Časopis Čs. Spol. ent., 27: 114.

Trachys falcatae Y. KUROSAWA, 1959, Bull. natn. Sci. Mus., Tokyo, 4: 223.

Host plants: *Amphicarpaea edgeworthii* BENTH. var. *japonica* OLIVER, *Pueraria thunbergiana* BENTH., *Rhynchosia volubilis* LOUR., and *Glycine max* MERRILL (Leguminosae) (confirmed by the author, etc.).

***Trachys tokyoensis* OBENBERGER, 1940**

Trachys tokyoensis OBENBERGER, 1940, Časopis Čs. Spol. ent., **37**: 42.

Trachys japonica: Y. KUROSAWA, 1959, Bull. Natn. Sci. Mus., Tokyo, **4**: 225, fig. 8a.

The species regarded by the author in 1959 as *T. japonica* is not true *japonica* OBENBERGER, 1923, but identical with *T. tokyoensis* OBENBERGER, 1940.

Host plant: *Desmodium racemodum* DC. (Leguminosae) (confirmed by T. YANO and the author).

Range. Japan (Honshu, Shikoku, Kyushu).

***Trachys tsushimae* OBENBERGER, 1922**

Trachys tsushimae OBENBERGER, 1922, Časopis Čs. Spol. ent., **19**: 70.

Trachys japonica OBENBERGER, 1923, Sbornik Ent. odd. Nar. Mus. Praha, **1**: 65.

Trachys medita MATSUMURA, 1931, 6000 Ill. Ins. Japan: 179, fig. 384.

Trachys ornata THÉRY, 1934, Bull. Soc. ent. Fr., **39**: 86.

Trachys inedita: Y. KUROSAWA, 1959, Bull. natn. Sci. Mus., Tokyo, **4**: 227 (nec E. SAUNDERS, 1873).

The species considered *T. inedita* E. SAUNDERS, 1873, by the author in 1959 is not true *inedita*, but identical with *T. tsushimae* OBENBERGER, 1922. *T. japonica* OBENBERGER, 1923, and *ornata* THÉRY, 1934, are also identical with *tsushimae*.

Host plant: *Deutzia crenata* SIEB. et ZUCC. (Saxifragaceae) (confirmed by T. YANO and the author).

Range. Japan (Honshu, Shikoku, Kyushu, Tsushima), China.

***Trachys inedita* E. SAUNDERS, 1873**

Trachys inedita E. SAUNDERS, 1873, J. Linn. Soc. London, **11**: 522.

Trachys oviformis Y. KUROSAWA, 1959, Bull. natn. Sci. Mus., Tokyo, **4**: 229, fig. 7b.

Trachys oviformis Y. KUROSAWA, 1959, is nothing but a synonym of *T. inedita* E. SAUNDERS, 1873.

***Trachys broussonetiae* sp. nov.**

Trachys tsushimae: Y. KUROSAWA, 1959, Bull. natn. Sci. Mus., Tokyo, **4**: 231, fig. 8c.

Since true *tsushimae* OBENBERGER, 1922 was proved identical with the species regarded by the author in 1959 as *T. inedita* E. SAUNDERS, 1873, and since there is no available name for this species redescribed by the author in 1959 under the name of *T. tsushimae*, a new name is herewith proposed for the latter. A detailed description was already given in the author's work in 1959.

Holotype: ♂, Kinuta, Setagaya, Tokyo, Japan, 2. i. 1966, Y. KUROSAWA lgt.; paratypes: 2 exs., Aizu-Wakamatsu, Fukushima Pref., Honshu, 15. iii. 1951, Y. KUROSAWA lgt.; 1 ex., do., 27. v. 1947, Y. KUROSAWA lgt.; 1 ex., Ogurazawa, Mt.

Zawo-san, Yamagata Pref., Honshu, 26. vi. 1947, K. SHIRAHATA lgt.; 1 ex., Myôkô, Niigata Pref., Honshu, 5. viii. 1932, T. IIDA lgt.; 7 exs., Migimomi, Tsuchiura, Ibaragi Pref., Honshu, 1. x. 1978, S. OHMOMO lgt.; 2 exs., Ongata, Hachiôji, Tokyo, 3. v. 1979, A. SHINOHARA lgt.; 2 exs., Kurasawa, Oku-tama, Tokyo, 27. vi. 1938, H. ARAKI lgt.; 1 ex., Yokohama, 17. v. 1946, K. OHBAYASHI lgt. (labeled and determined by J. OBENBERGER as *Trachys* (s. str.) *japonica* OBENB.); 2 exs., Jinmuji, Kanagawa Pref., Honshu, 8. v. 1957, S. TSUYUKI lgt.; 2 exs., Asuke, Aichi Pref., Honshu, 13. v. 1948, T. NAKANE lgt.; 1 ex., Hirakura, Mie Pref., Honshu, 14. v. 1956, H. ICHIHASHI lgt.; 4 exs., Mt. Ryûmon-zan, Wakayama Pref., Honshu, 25. viii. 1951, M. YOSHIDA lgt.; 1 ex., Arashiyama, Kyoto, 5. vi. 1947, M. AZUMA lgt.; 1 ex., Mt. Tokusamine, Yamaguchi Pref., Honshu, 11. v. 1973, H. IRIÉ lgt.; 2 exs., Sammyo, Tokushima Pref., Shikoku, 3. v. 1948, M. CHÛJÔ lgt.; 1 ex., Matsuyama, Shikoku, 31. vii. 1949, T. YANO lgt.; 1 ex., do., 24. v. 1949, T. YANO lgt.; 2 exs., Sashi, Karatsu, Saga Pref., Kyushu, 27. vi. 1950, Y. SHIBUYA lgt.; 1 ex., Hirao, Fukuoka, Kyushu, 23. ix. 1938, T. SHIRÔZU lgt.; 2 exs., Mt. Inunaki-yama, Fukuoka Pref., 11. v. 1933, T. SHIRÔZU lgt.; 1 ex., Mt. Wakasugi-yama, Fukuoka Pref., 21. vii. 1932, T. SHIRÔZU lgt.; 1 ex., do., 3. vi. 1973, H. IRIÉ lgt.; 1 ex., Mt. Ohboshiyama, N. Tsushima, 19. x. 1968, J. AOKI lgt.; 3 exs., do., 19–20. v. 1980, H. IRIÉ lgt.; 7 exs., Mt. Kurokuma-yama, N. Tsushima, 28. iii. 1965, K. SUGA lgt.

Host plants: *Broussonetia kazinoki* SIEB., *B. kaempferi* SIEB. and *Morus bombycis* KOIDZ. (Moraceae) (confirmed by T. YANO, the author, etc.).

Range. Japan (Honshu, Shikoku, Kyushu, Tsushima), China.

Trachys saundersi LEWIS, 1893

- Trachys saundersi* LEWIS, 1893, J. Linn. Soc. London, **24**: 337.
Trachys mariola OBENBERGER, 1929, Sbornik Ent. odd. Nar. Mus. Praha, **7**: 74.
Trachys yunnana OBENBERGER, 1929, Časopis Čs. Spol. ent., **26**: 11.
Trachys jakovlevi OBENBERGER, 1929, Časopis Čs. Spol. ent., **26**: 126.
Trachys vimmeri OBENBERGER, 1930, Časopis Čs. Spol. ent., **27**: 113.
Trachys opsigona OBENBERGER, 1937, Sbornik ent. odd. Nar. Mus. Praha, **15**: 43.

Trachys mariola OBENBERGER, 1929, from Formosa, *jakovlevi* OBENBERGER, 1929, *vimmeri* OBENBERGER, 1930, and *opsigona* OBENBERGER, 1937, all described from China are synonyms of this species described from Japan. One of the two types of *T. yunnana* OBENBERGER, 1929, is identical with this species, while the other is different.

Host plant: *Deutzia crenata* SIEB. et ZUCC. (confirmed by the author).

Range. Japan (Honshu, Shikoku, Kyushu), China, Formosa.

Paratrachys mixtipubescens sp. nov.

Stands closely by Japanese *P. hederac* E. SAUNDERS, 1873, and *P. princeps* Y. KUROSAWA, 1976, from the Ryukyu Archipelago, but differs from them in the following

points: 1) Body ovate, slenderer, without humeral dilatation; 2) pubescence on the body above rather uniform and partially mixed with brownish or brownish-grey semi-recumbent hairs in silvery hairs and not forming a particular design; 3) punctures weaker and smaller, but rather uniformly scattered and sometimes arranged in somewhat oblique rows from humeri to apices.

Length: 3.0–3.2 mm; width: 1.6–1.8 mm.

Holotype and a paratype: 2 exs., Kita-daito-jima (=N. Borodino Island), Ryukyu Is., 15. iii. 1979, H. OKAMURA lgt.

Host plant: *Ficus pumila* LINNÉ (Moraceae) (confirmed by H. OKAMURA).

Range. Ryukyu Is. (N. Daito-jima).

Paratrachys princeps kasaharai subsp. nov.

Stands closely by *P. princeps chujoi* Y. KUROSAWA, 1976, described from the northern part of the Okinawa Island, but it is different from the latter in the following points: 1) Body slenderer with less prominent humeri and tinged with aeneous; 2) elytral pubescent designs of silvery hairs broader and more distinct.

Length: 2.5–3.0 mm; width: 1.7–2.0 mm.

Holotype and paratopotypes: 5 exs., Urabu-dake, Yonaguni-jima, Ryukyu Is., 10. iv. 1980, S. KASAHARA lgt.

Range. Ryukyu Is. (Yonaguni-jima).

Paratrachys hederæ formosana subsp. nov.

Different from Japanese nominotypical race of this species in the finer elytral punctures which are arranged in oblique rows from humeri to apex.

Holotype: 1 ex., Shihting, Taipeh Hsien, N. Formosa, 8. vi. 1975, S. TAKEDA lgt.

Length: 3.0 mm; width: 1.8 mm.

Range. Formosa.

A. COBOS (1980) regarded *P. princeps* Y. KUROSAWA, 1976, from the Ryukyus, *hypocrita* (FAIRMAIRE, 1888), from S. China and Tonkin (N. Vietnam), and *miyatakei* Y. KUROSAWA, 1976, from N. Thailand, as the subspecies of *hederæ* E. SAUNDERS, 1873, from Japan. Though it is admitted to treat *princeps* as conspecific with *hederæ*, it cannot be agreed to put *hypocrita* and *miyatakei* in the same category. The latter two species have different form and colour pattern from *hederæ*. It is illogical that there occur two subspecies of *hederæ* in Tonkin and S. China, namely *hederæ* s. str. and *hypocrita*.

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