

On the Genus *Thymedes* WATERHOUSE (Coleoptera, Buprestidae) Endemic to the Philippines¹⁾

By

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The genus *Thymedes* WATERHOUSE, 1905, was described as a monotypic genus based upon *Chrysodema flavicornis* E. SAUNDERS, 1874, which was then known from Bohol of the Philippines and recorded by W. FISHER (1926, Philipp. J. Sci., **31**, p. 236) from Samar of the same island chain but nowhere else. It was later regarded by Ch. KERREMANS (1909, Monogr. Bupr., **3**, pp. 501–504, 512) as a subgenus of the genus *Chrysodema* CASTELNAU et GORY, 1835. The main points to separate *Thymedes* from *Chrysodema* are in the pronotal marginal carinae, which are entire and connect with the anterior margin, and in the uniform disc of pronotum without any trace of basal depression. Besides these characters, the male genital apparatus of *Thymedes*-species are shorter and robuster than those of *Chrysodema*-species. From these points of view, the author regards *Thymedes* WATERHOUSE, 1905, as a genus independent from *Chrysodema* CASTELNAU et GORY, 1835, and is going to describe two new species of the genus from the Philippines.

Of the three species to be redescribed and newly described in the following lines, *apoensis* m. is the most primitive and *marinduquensis* m. may be regarded as the most advanced. As was once noticed by the author (1977, Mem. Natn. Sci. Mus., Tokyo, (10), pp. 163–169), *Tamamushia virida* MIWA et CHÛJÔ, 1935, known from the Bonin Islands, Japan, is presumed to be a primitive branch of the *Thymedes*-stock. An ancestral buprestid, which may have been similar to the existing species of *Tamamushia*, may have invaded into the Philippines, perhaps some time in the Neogene, from Continental Asia through Formosa, and evolved into *Thymedes*. It is very interesting to note that the three known species of this genus occur from south to north in an evolutionary order. The most primitive species, *apoensis* m. is a relict in the Apo District of Mindanao and the most evolved species, *marinduquensis* m. is an inhabitant of Marinduque Island, the Central Philippines, while the intermediate species, *flavicornis* E. SAUNDERS occupies the Islands of Bohol and Samar, which are geographically intermediate between Mindanao and Marinduque. It is usual that the most primitive species of a genus survives in areas most distant from the centre of dispersal.

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Genus *Thymedes* WATERHOUSE, 1905

Thymedes WATERHOUSE, 1905, Ann. Mag. nat. Hist., (7), 15, p. 458; KERREMANS, 1909, Monogr. Bupr., 3, pp. 501–504, 512 (subgenus of *Chrysodema* CASTELNAU et GORY, 1835).

Type-species: *Chrysodema flavicornis* E. SAUNDERS, 1874.

Closely resembles the genus *Chrysodema* CASTELNAU et GORY, 1835, but differs from it in the following points: 1) antennae brownish from the second segment, with the exception of the cuprescent first one; 2) median line of pronotum weaker and finer; 3) pronotum without any depression on each side of the base; 4) marginal carinae of pronotum entire, connected with the anterior margin, with the anterior angles sharply defined; 5) each elytron without submarginal carina which extends from just behind the shoulder to near apex along the margin; 6) legs rather robust.

Range. Philippine Islands.

Key to the Species

1. Each elytron with eight punctato-striae causing the marginal depression narrower, and with two distinct depressed metallic markings just behind shoulder and at the posterior third; entirely dark cupreo-ferrugineous above.....
.....*apoensis* Y. KUROSAWA, nov.
- Each elytron with seven punctato-striae, broader marginal depression, and without depressed marking, sometimes with an obscure marking at the posterior third; elytral punctures bronzy or bluish bronzy 2.
2. Legs slenderer, with tibiae straight and normal; female with elytra bronzy in punctures and depressed parts*flavicornis* (E. SAUNDERS, 1874).
- Legs robust, with tibiae more or less arcuate interiorly or exteriorly, and in the male, strongly and interiorly dilatato-dentate at the apex of the middle pair; female with elytra bluish-bronzy in punctures and depressed parts and blackish violaceous on the elevated parts.....*marinduquensis* Y. KUROSAWA, nov.

Thymedes apoensis sp. nov.

(Figs. 1, 2, 5)

Body moderate, rather slender, somewhat navicular in lateral aspect; above entirely dark cupreo- or aeneo-ferrugineous, sometimes with a slight violaceous tinge; body beneath and legs entirely bright or dark metallic cupreo-ferrugineous; antennae dark brownish with the exception of the first segment blackish.

Head not so large, not broader than the anterior margin of pronotum, broadly excavated between eyes, with the median line distinctly impressed from vertex to clypeal suture; vertex rather uniformly punctate, but the punctuation is not so strong and not confluent; frons excavated, subcarinate along each eye, and finely but irregularly punctate, with a large depression at the anterior half just above clypeal suture, which is obsolete between antennal cavities; clypeus thin, with the anterior margin arcuately or subtrapezoidally emarginate; antennal cavities small, without distinct surrounding depression; antennae slender, serrate from the fourth segment, the third segment the longest, slightly longer than the first, and longer than 4 times the second, which is subglobular and the shortest, the fourth about two-thirds as long as the third and slightly but distinctly longer than the fifth.

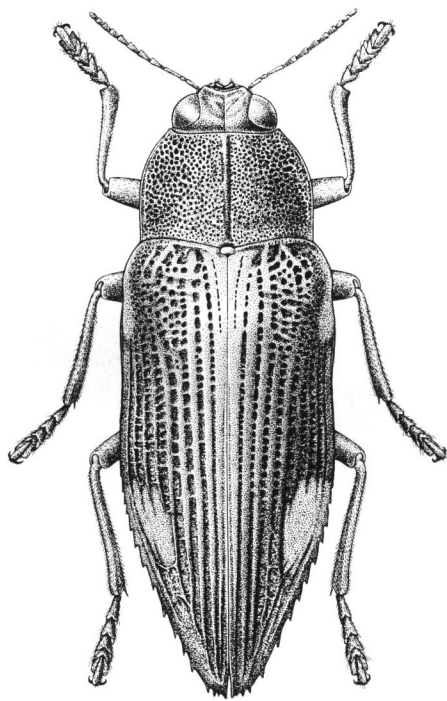


Fig. 1. *Thymedes apoensis* Y. KUROSAWA, nov., dorsal aspect (del. T. SEKIGUCHI).

Pronotum transverse, about 1.6 times as wide as long, and widest at the base, or sometimes at the middle; sides subparallel from base to near the middle, then arcuately attenuate to anterior angles, though always feebly sinuate just before the base; marginal carinae sharply defined, entire, almost straight or feebly sinuate; anterior angles sharply defined, acute, produced anteriorly and abased in lateral aspect; anterior margin arcuately emarginate, without median lobe; posterior margin bisinuate, with the median lobe obsolete; posterior angles subrectangular; disc evenly

convex, without any depression; surface irregularly and coarsely punctate, with the punctures irregularly confluent causing the intervals irregularly elevated. Scutellum transverse, somewhat elliptical, and slightly depressed.

Elytra widest at or just behind humeri, about twice as long as wide, and about 4 times as long as pronotum; sides obliquely truncate at humeri, slightly sinuate from humeri to the basal fourth, subparallel or sinuate from the basal fourth to just behind the middle, then obliquely and rather straightly attenuate to apices, which are sharply dentate or subspinose; sutural margin narrowly reflexed in apical half or two-thirds; basal margin very feebly arcuate on each side; lateral margin narrowly reflexed in basal half, and strongly, sharply, but irregularly dentato-serrate in apical half; disc convex, punctato-striate, with eight irregularly and coarsely punctate striae, the interstices being elevated as costae; the punctuation becomes coarser towards the sides, and adorned with two depressed markings on each elytron arranged as follows: smaller subtriangular one at humeri, and larger one at the marginal part of the apical third from sixth costa to the margin.

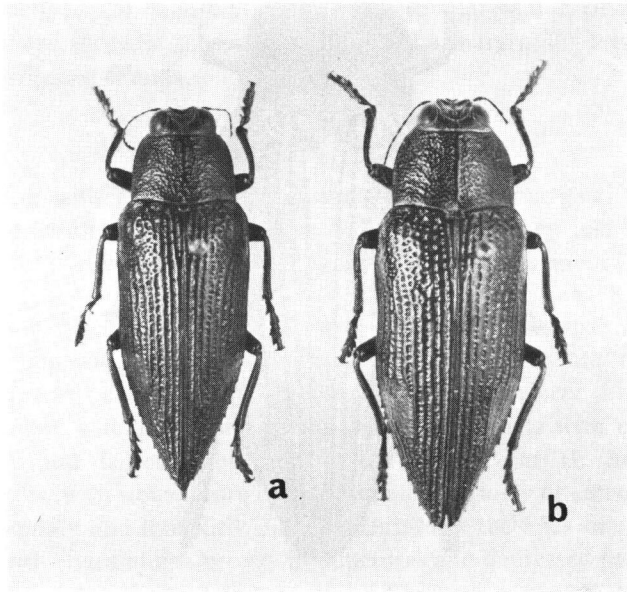


Fig. 2. *Thymedes apoensis* Y. KUROSAWA, nov., dorsal aspect; a: male (holotype), b: female (allotype).

Prosternum slightly impressed along the anterior margin at the middle, with the anterior margin arcuately emarginate; prosternal process broadly sulcate at the middle, slightly expanded laterally just behind anterior coxae and broadly truncate at the apex. Metasternum finely and sparsely punctate at the middle, with the median lines slightly impressed. Abdomen beneath punctate densely at the sides, sparsely at the middle, with the first sternite broadly and strongly sulcate at the middle, last sternite broadly,

deeply and somewhat triangularly emarginate at the apex (male) or acute with a minute triangular incision at the middle (female).

Legs normal; tibiae rather straight, the middle pair in the male adorned with a small tubercle on the interior side of the apex.

Male genital apparatus short and robust, angulately expanded at the middle and sinuously attenuate to the apices which are sharply pointed (Fig. 5).

Length: 21.3–28.0 mm; width: 7.2–10.0 mm.

Holotype: ♂, Mt. Apo, Mindanao, Philippines, 5–15. i. 1977, Y. NISHIYAMA lgt.

Allotype: ♀, Mt. Apo, Mindanao, Philippines, x. 1976, Y. NISHIYAMA lgt.

Paratypes: 2 ♂♂, 2 ♀♀, Mt. Apo, Mindanao, Philippines, 5–15. i. 1977, Y. NISHIYAMA lgt.; 1 ♂, 1 ♀, Mt. Apo, 4. ix. 1976, Y. NISHIYAMA lgt.; 1 ♀, Mt. Apo, xi. 1976, H. KEZUKA lgt.; 1 ♂, 1 ♀, Mt. Apo, 20. iii. 1977, Y. GUNJI lgt.; 1 ♂, 1 ♀, Mt. Apo, xii. 1977, Y. NISHIYAMA lgt.

Range. Philippines (Mindanao).

This species seems to be confined in the forests at the foot of Mt. Apo in the Island of Mindanao, the Philippines.

Thymedes flavicornis (E. SAUNDERS, 1874)

(Figs. 3, 6)

Chrysodema flavicornis E. SAUNDERS, 1874, Trans. ent. Soc. London, 1874, p. 306.

Thymedes flavicornis: WATERHOUSE, 1905, Ann. Mag. nat. Hist., (7), 15, p. 584.

Chrysodema (Thymedes) flavicornis: KERREMANS, 1909, Monogr. Bupr., 3, p. 512.

The original description given by E. SAUNDERS goes as follows:

“Head coppery-purple, punctured, excavated in front. Thorax largely and irregularly punctured, and somewhat rugose, obscure purplish-black, the base with coppery reflections, dorsal line raised. Sides rounded slightly in front, base twice as wide as the anterior margin. Scutellum coppery. Elytra considerably wider than the thorax, slightly sinuate below the shoulders, gradually narrowing from the middle to the apex, and sharply denticulate; purple-black, with their apex coppery; very largely and deeply punctato-striate, the punctures green, each margin with a golden-green impression extending from the base to the apex and filled with yellow powdery pubescence. Beneath and legs punctures golden-coppery colour. Antennae flavous.

“Length 13 lines; breadth 5 lines.

“*Hab.*—Bohol. Unique in the collection.

“This very distinct species may be known from any of the genus by its thorax being entirely destitute of foveae.”

A detailed redescription based upon newly collected specimens is given in the following lines.

Body moderate, somewhat navicular with the ventral segments arcuate, not straight in lateral aspect. Body above entirely cupreo-aeneous with the exception of head which is cupreous, body beneath and legs cupreous; antennae pale brown with

the exception of the basal segment darkened with a slight cupreous tinge (male). Head bright cupreous, pronotum nigro-violaceous on the elevated parts and reliefs, viridi-aeneous in the punctures and the depressed parts, elytra dark cyaneo-violaceous on the elevated parts and viridi- or aureo-aeneous in the punctures and the depressed parts, body beneath and legs cupreous, and antennae dark brown with the exception of the first and second segments which are cupreous and concolorous with the colour of frons (female).

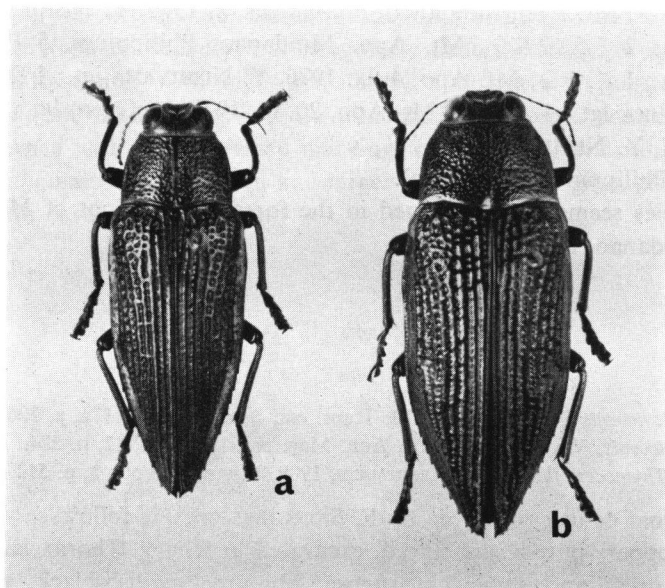


Fig. 3. *Thymedes flavicornis* (E. SAUNDERS, 1874), dorsal aspect; a: male, b: female.

Head not large, not broader than the anterior margin of pronotum, broadly excavated between eyes, with the median line deeply grooved from vertex to just above clypeus; vertex with the punctures somewhat irregularly scattered and confluent along the margin of each eye; frons broadly excavated, with a large depression at the anterior half just above clypeus; clypeal suture absent; clypeus thin, obsolete, with the anterior margin arcuately emarginate between triangular projections; antennal cavities rather small, surrounded with irregular carinae, but without distinct surrounding depression; antennae slender, serrate from the fourth segment, with the third segment about as long as the first, the longest, longer than 4 times the second which is subglobular and the shortest, and slightly longer than the fourth which is slightly longer than the fifth.

Pronotum less than 1.6 times, but more than 1.5 times, as wide as long, and widest at the base; sides arcuately attenuate from base to anterior angles, which are acute in dorsal aspect, sharply defined, acute and abased in lateral aspect; anterior

margin arcuately emarginate, the emargination flattened at the bottom but without median lobe; posterior margin bisinuate, with a broad median lobe; posterior angles subrectangular or acute, and slightly and latero-posteriorly pointed; marginal carinae sharply defined, entire, and somewhat reflexed dorsally; disc moderately convex, impressed just before scutellum, narrowly and slightly depressed along lateral margins at the middle of the sides causing the margin reflexed, with the median carina stronger and broader in male and finer and narrower in female; surface coarsely and irregularly punctate with the intervals smooth, irregularly elevated, sometimes forming irregularly formed reliefs, punctures coarsely and irregularly confluent. Scutellum small, subtrapezoidal, with the angles rounded and the surface impunctate.

Elytra widest just behind humeri or just behind the middle, about twice as long as wide, and about 4 times as long as pronotum; sides obliquely truncate at humeri, which are rounded at the tips, bisinuate to just behind the middle, where they are arcuate, then obliquely and rather straightly attenuate to apices, which are sharply dentate or subspinose; sutural margin narrowly elevated in apical half; basal margin slightly sinuate on each side; lateral margins narrowly reflexed in basal half, and strongly, sharply, but coarsely and irregularly dentato-serrate in apical half; disc moderately convex, coarsely and strongly punctato-striate, broadly impressed along the margin from humeral parts to apex, with seven irregularly and coarsely punctate striae, the interstices being elevated as costae; the punctuation becomes coarser and somewhat reticular at the base and the sides, and sometimes adorned in female with an obscure transverse and slightly depressed marking at the apical two-thirds, which extends from the lateral margin to the fifth stria.

Prosternum slightly impressed along the anterior margin, which is broadly and arcuately emarginate between lateral lobes; prosternal process sulcate and coarsely, confluent punctate in the groove, with the sides slightly expanded laterally just behind anterior coxae and rounded at the apex. Metasternum shallowly impressed at the middle. Abdomen beneath punctate densely at the base of each segment, sparsely at the apical part, and impunctate and smooth along the posterior margin, with the first sternite broadly and strongly sulcate and punctate at the middle (male) or shallowly sulcate and densely and finely punctate at the middle (female), last sternite arcuately and subtriangularly emarginate (male) or bilobed with a small subtriangular incision between the lobes (female) at the apex.

Legs normal; tibiae straight, with a small tubercle on the interior side of the apex of each middle tibia.

Male genital apparatus short and robust, but the sides are not expanded laterally. Length: 25.5–29.0 mm; width: 8.8–9.0 mm.

Specimens examined. 1 ♂, 1 ♀, Bansalan, Philippines, 1976; 1 ♀, Marinduque I. (?), Philippines, v. 1977.

Range. C. Philippines (Bohol, Samar, etc.).

Thymedes marinduquensis sp. nov.

(Figs. 4, 7)

Body moderate, rather robust, with the ventral line weakly arcuate in lateral aspect. Body above entirely fusco-aeneous with a purplish tinge (male), or head, sides of pronotum, scutellum, and extreme apex of each elytron cupreous, pronotum aeneous, and elytra nigro-violaceous with the punctures and the depressed parts viridi-aeneous (female); body beneath fuscous, aeneo-cupreous; legs cupreous or dark aeneo-cupreous; antennae dark or bright brown, with the exception of the first segment, sometimes the first and second, darkened or blackish.

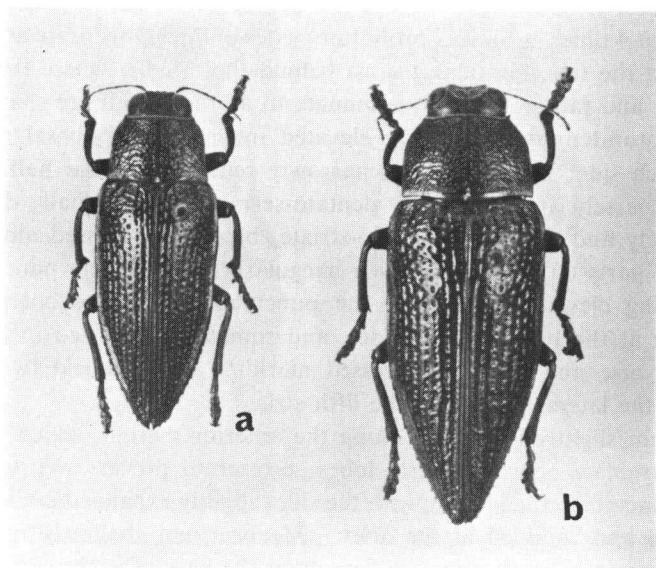


Fig. 4. *Thymedes marinduquensis* Y. KUROSAWA, nov., dorsal aspect; a: male (holotype), b: female (allotype).

Head moderate, not broader than the anterior margin of pronotum, broadly excavated between eyes, with the median line deeply grooved from vertex to clypeus, and somewhat carinate along the interior margin of each eye; vertex rather uniformly and finely punctured, but the punctures are not confluent; frons excavated, very sparsely, irregularly and finely punctured, with a large round depression at the anterior half just above clypeus; clypeal suture absent or very obsolete; clypeus thin, with the anterior margin broadly and arcuately emarginate; antennal cavities small, without distinct surrounding depression or carina; antennae slender, serrate from the fourth segment, but not so long, not extending beyond the middle of pronotum, with the first segment the longest, fusiform, the second the shortest, subglobular, the third slightly shorter than the first, slightly longer than three times the second and slightly longer than the fourth, which is slightly longer than the fifth.

Pronotum transverse, about 1.25–1.55 times as wide as long, always broader in the female than in the male, and widest at the base; sides slightly sinuate or subparallel from base to anterior third, where they are arcuately rounded, then arcuately attenuate to anterior angles, which are acute and pointed in dorsal aspect and acute, abased and sharply defined in lateral aspect; anterior margin slightly bisinuate, with the median lobe feebly observable; posterior margin slightly bisinuate, with the median lobe broadly but slightly produced; posterior angles acute or subrectangular, and slightly produced; marginal carinae sharply defined and entire; disc moderately convex, shallowly impressed just before scutellum, narrowly depressed along the marginal carina at the middle on each side, with the median carina obsolete, a little elevated, and individually variable; surface coarsely and irregularly punctate, with the intervals smooth, irregularly elevated and forming irregular reliefs. Scutellum smooth, subtrapezoidal, and about as wide as or slightly wider than long.

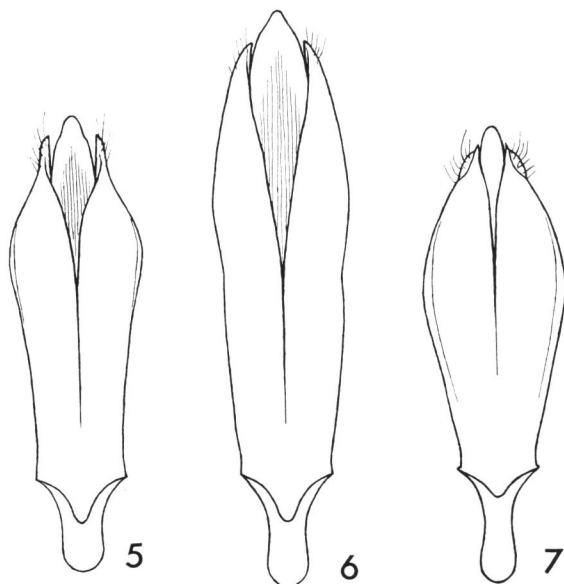
Elytra widest just behind humeri, about twice as long as wide, and about 4 times as long as pronotum; sides obliquely rounded at humeri, somewhat sinuously expanded to the level of the maximum width, which is just behind humeri, feebly attenuate or subparallel from there to near the middle, where they are rounded, then obliquely and rather straightly attenuate to apices, which are sharply acute or dentate; sutural margin narrowly reflexed in posterior two-thirds; basal margin obliquely truncate or feebly sinuate on each side; lateral margins narrowly reflexed in basal half, and strongly, sharply but coarsely and irregularly dentato-serrate in apical half; disc moderately convex, broadly impressed along the lateral margin from base to apex, and strongly punctato-striate with seven striae, which are irregularly and coarsely punctate and become irregular and coarser towards the base and sides, and the interstices being somewhat elevated as costae in apical half.

Prosternum shallowly impressed along the anterior margin, which is broadly and arcuately emarginate, but without lateral lobe; prosternal process broadly and obsoletely grooved, coarsely, irregularly and somewhat confluent punctate in the groove, with the sides slightly constricted by the anterior coxal cavities and dilated laterally and angulate just behind them, and rounded at the apex. Metasternum shallowly impressed or depressed at the middle. Abdomen beneath punctate densely and confluent at the sides and sparsely at the middle; first sternite broadly and sometimes strongly sulcate at the middle; last sternite deeply and subtriangularly emarginate between two narrow lobes (male), or finely and narrowly bilobed with a small obsolete incision at the apex (female).

Legs robuster than in the other two species; anterior and middle pairs of tibiae slightly bent at the base, and the posterior pair slightly curved interiorly; middle pair of male tibiae adorned at the interior side of the apex with large hooked dentation, but they are normal and not adorned with distinct dentation in the female.

Male genital apparatus very short and robust, with the sides strongly rounded and expanded laterally.

Length: 23.2–30.0 mm; width: 8.0–10.8 mm.



Figs. 5-7. Male genital apparatus of *Thymedes apoensis* Y. KUROSAWA, nov. (5), *T. flavicornis* (E. SAUNDERS, 1874) (6), and *T. marinduquensis* Y. KUROSAWA, nov. (7).

Variations: Elytra often become concolorous, cuprescent, aenescent, or cyanescent.

Holotype: ♂, Marinduque Island, Philippines, 1974.

Allotype: ♀, Marinduque Island, Philippines, 1974.

Paratypes: 1 ♀, Marinduque Island, Philippines, vii. 1975; 2 ♀♀, do., x. 1976.

Range. Philippines (Marinduque).

The present species closely resembles the preceding species, *flavicornis* E. SAUNDERS, but differs from it in the robuster legs and the form of the male middle tibiae having a large hook at the apex, and somewhat robuster body. These two species can be distinguished at a glance by the shape of the male genital apparatus.