

## A Revision of the Buprestid Beetles of the Genus *Megaloxantha* KERREMANS<sup>1)</sup>

By

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The buprestid genus *Megaloxantha*, which was established by Ch. KERREMANS (1902) as a subgenus of the genus *Chrysochroa* SOLIER, 1833, includes the largest buprestid species in the Eastern Hemisphere. It is characterized by the huge body, the shorter marginal carinae of pronotum and the dilated anal sternite. In view of these peculiarities, it can be regarded as a genus independent from *Chrysochroa* SOLIER, 1833, though it is generally included in the *Chrysochroa* complex together with *Catoxantha* SOLIER, 1833, *Demochroa* WHITE, 1859, *Agelia* CASTELNAU et GORY, 1835, etc. Its range covers a vast area from India to Java and the Philippines, through Indochina and the Malay Peninsula, where it prevails in tropical rain forests. However, it has not been known in the areas east of WALLACE'S Line, which runs between Bali and Lombok, between Borneo and Celebes, and south of the Philippines.

Within its distributional range, Sundaland including the Malay Peninsula, Borneo and Sumatra harbours the largest number of species, whereas in such peripheral areas as India, Indochina, Java and the Philippines (excluding Palawan), only one or two species have been recorded. It is, therefore, safely inferred that the centre of dispersal of the genus lay in Sundaland, where six species occur in the Malay Peninsula and three each in Sumatra and Borneo. This appears to indicate that the genus arose in the Malay Peninsula, but the discoveries of magnificent Malayan species to be described in the present paper were mainly made by native collectors which are numerous in the peninsular country. It is highly probable that other interesting species will be found in Borneo and Sumatra when extensive researches are made in these areas.

In his revision of the *Chrysochroa* complex made in 1908-'09, KERREMANS classified many species described by various authors under three names, *bicolor* FABRICIUS, 1778, *netscheri* LANSBERG, 1879, and *daleni* VAN DER HOEVEN, 1838. On the other hand, J. OBENBERGER recognized five species in the "Coleopterorum Catalogus, Buprestidae I" published in 1926: *bicolor* FABRICIUS, *daleni* VAN DER HOEVEN, *immaculata* THÉRY, 1908, *jansoni* THÉRY, 1922, and *netscheri* LANSBERG. In the same year, A. THÉRY regarded *hemixantha* SNELLEN VAN VOLLENHOVEN, 1864, and *purpurascens* RITSEMA, 1879, both regarded by KERREMANS as synonyms of *daleni*

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VAN DER HOEVEN, as good species, and synonymized his own *immaculata* with *purpurascens*, and *jansoni* THÉRY and *mniszechii* H. DEYROLLE, 1864, formerly regarded as a synonym of *daleni*, with *hemixantha*. After that, no entomologist ever attempted to revise the buprestid beetles belonging to this genus.

The present author has had opportunities to examine almost all the described species of the genus, and also to see two species and four subspecies, which seem to be new to science. The discoveries of these undescribed forms are almost incredible seeing that the genus is composed of beautiful gigantic species. It is possible that the specimens formerly brought to Europe were mainly obtained in such cultivated and densely populated lands as India or Java, which lie in the peripheral areas of the generic range. So far as concerned with these beetles, lowland rain forests in Sundaland remained uninvestigated until quite recently, and a few specimens formerly collected there have been scattered to public and personal collections.

Although all the previous authors have regarded *Megaloxantha* as a subgenus of *Chrysochroa* SOLIER since KERREMANS created it in 1902, the present author prefers to regard it as a full genus. A discussion on the so-called genus *Chrysochroa* will be made in another paper.

The present author must express his sincere gratitude to Dr. A. DESCARPENTRIES of the Muséum National d'Histoire Naturelle, Paris, who enabled the present author to start in this study by giving him opportunities to examine many specimens under his charge, including various type materials, and gave him valuable criticism in the course of the study. He also wishes to express gratitude to Dr. S.-I. UÉNO of the National Science Museum, Tokyo, for reading the original manuscript. He is indebted to Mr. K. AKIYAMA, Mr. S. NAGAI, Dr. K. SAKAGUTI, Mr. T. SHIBATA and many other entomologists who offered many valuable specimens for his study.

#### Genus *Megaloxantha* KERREMANS, 1902

*Megaloxantha* KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47 (subgenus of *Chrysochroa* SOLIER, 1833).

*Catoxantha*: CASTELNAU et GORY, 1835, Monogr. Bupr., 1, p. 3 (pars).

Type-species: *Catoxantha bicolor* (FABRICIUS, 1778).

Body large, subparallel or slightly dilated behind and metallic coloured, but the abdomen is always yellowish or brownish ivory.

Head moderate, excavated between eyes; clypeal suture obsolete or absent; clypeus with the anterior margin deeply and triangularly emarginate; eyes large, larger in male than in female, with the interior rim oblique and converging above; antennae long and rather lax, extending to near each posterior angle of pronotum, serrate from the fourth segment, with the third segment about three times as long as the second, which is subglobular and the smallest, each serrate segment from the fourth being longer than wide or rarely wider than long.

Pronotum subtrapezoidal, wider than long; sides more or less sinuate anteriorly,

with the marginal carinae short, not extending beyond the middle, though they are sometimes traceable to near the anterior angle as an impunctate line; anterior margin subtruncate or slightly bisinuate, with the median lobe obsolete or almost absent; anterior angles acute, sometimes sharply pointed in dorsal aspect, blunt and obsolete in lateral aspect; posterior margin bisinuate, with the median lobe broad and produced; posterior angles acute and pointed; disc somewhat deplanate, usually with a trace of median groove which is sometimes entirely absent. Scutellum invisible.

Elytra long and subparallel, sometimes dilated posteriorly; disc more or less costate; epipleura sulcate or excavated, with the suture bordering from the disc entirely carinate and sinuate.

Body beneath with the hairs sparse and inconspicuous; prosternal process deplanate, without groove or carina; meso- and metasterna not grooved, with the suture between them arcuate or bilobed, but it is sometimes horizontal at the middle. Abdomen beneath deplanate, with anal sternite deplanate, hardly convex, and the apex triangularly but shallowly and broadly emarginate in the male, rounded with a small incision at the middle in the female.

Legs rather slender and long, with the posterior basi-tarsi slender and about as long as the following two segments united; posterior coxae broad and dilated interiorly, with the postinterior angles acute and sometimes pointed.

*Range.* Nepal, East India, Assam, Bhutan, Burma, Thailand, Indochina, Tenasserim, Malay Peninsula, Sumatra, Banka Is., Java, Borneo, Palawan, Philippines.

#### Key to the Species and Subspecies of the Genus *Megaloxantha* KERREMANS

1. Pronotum bicolorous, with the posterior angles yellowish or brownish ivory or reddish brown ..... 2.
- Pronotum concolorous, without ivory or brown parts ..... 9.
2. With large tubercle at each posterior angle of pronotum ..... 3.
- Without tubercle at the posterior angles of pronotum ..... 8.
3. Ivory or brown parts on the posterior angles of pronotum smaller, not extending beyond the middle of the sides; legs metallic green and concolorous with the body above ..... *bicolor bicolor* (FABRICIUS, 1778).
- Ivory or brown parts on the posterior angles of pronotum larger, extending beyond the middle of the sides; legs darker, blackish with a bluish or cyaneous tinge ..... 4.
4. Marking on each elytron forming a transverse arcuate band and touching both suture and lateral margin ..... *bicolor arcuatifasciata* Y. KUROSAWA, nov.
- Marking on each elytron not touching suture, often neither suture nor margin ..... 5.
5. Marking on each elytron transverse; elytral punctuation denser, rather uniform; costae obsolete at the base ..... 6.
- Marking on each elytron rounded, sometimes reduced; not transverse; elytral

- punctuation sparser, consisting of two kinds of punctures, larger and finer; costae distinct from base to apex ..... 7.
6. Elytra darker, less shining, with the marking on each elytron not touching the lateral margin ..... *bicolor nigricornis* (H. DEYROLLE, 1864).  
 — Elytra brighter, more shining, with the marking on each elytron larger and touching the lateral margin ..... *bicolor palawanica* Y. KUROSAWA, nov.
7. Elytra purplish-brown, with the markings smaller and reduced .....  
 ..... *bicolor brunnea* (E. SAUNDERS, 1866).  
 — Elytra greenish or bluish, with the markings larger and distinct .....  
 ..... *bicolor gigantea* (SCHALLER, 1783).
8. Body beneath almost entirely yellowish or brownish ivory; marginal carinae of pronotum shorter, but recognizable in dorsal aspect; sides of pronotum distinctly angulate at the posterior third; elytral markings smaller, rounded, sometimes reduced, and rather corresponding to those of *gigantea* and *brunnea* ..... *mouhotii* (E. SAUNDERS, 1869).  
 — Body beneath with sterna and posterior coxae dark metallic bluish green, abdomen beneath and a narrow part along suture between meso- and metasterna yellowish or brownish ivory; marginal carinae of pronotum invisible from above; sides of pronotum arcuate but not angulate; elytral marking transverse, corresponding to those of *nigricornis* and *bicolor* .....  
 ..... *netscheri* (LANSBERG, 1879).
9. Sterna and posterior coxae metallic green or golden green ..... 10.  
 — Sterna and posterior coxae concolorous with abdomen, yellowish or brownish ivory ..... 11.
10. A transverse marking on each elytron distinct; sides of pronotum sinuate anteriorly, with the marginal carinae recognizable from above; body smaller ..... *daleni* (VAN DER HOEVEN, 1838).  
 — Elytra concolorous, without any marking, and strongly dilated posteriorly; sides of pronotum not sinuate, with the marginal carinae invisible from above; body larger ..... *concolor* Y. KUROSAWA, nov.
11. Elytra greenish, metallic, with markings ..... 12.  
 — Body above purpureous or violaceous red, with the sutural and marginal parts of elytra narrowly tinged with green, but without any marking; elytra not dilated posteriorly ..... 14.
12. Elytra subparallel, strongly punctured and rugose, with the costae distinct from base to apex; dorsal surface entirely purpureous or dark bronzy green ....  
 ..... *hemixantha* (SNELLEN VAN VOLLENHOVEN, 1864).  
 — Elytra slightly dilated posteriorly, finely punctured, with the costae becoming obsolete at the base ..... 13.
13. Elytra with markings broad and oblique, and with apex finely dentate at the sutural angle ..... *descarpentriesi descarpentriesi* Y. KUROSAWA, nov.  
 — Elytra with markings small and reduced, and with apex distinctly emarginate

- and sharply dentate or spinose at the sutural angle .....  
 .....*descarpentriasi asahinai* Y. KUROSAWA, nov.
14. Punctuation of elytra weaker, not rugose; sutural and marginal greens of elytra broader; elytral apex distinctly emarginate, with dentate outer angle .....  
 .....*purpurascens purpurascens* (RITSEMA, 1879)
- Punctuation of elytra stronger and somewhat rugose on the interstices of costae; sutural and marginal greens of elytra narrower; elytral apex sinuate or slightly emarginate .....*purpurascens peninsulae* Y. KUROSAWA, nov.

***Megaloxantha bicolor* (FABRICIUS, 1778)**

*Buprestis bicolor* FABRICIUS, 1778, Syst. Ent., App., p. 825.

*Buprestis heros* WIEDEMANN, 1823, Zool. Mag., p. 99.

*Catoxantha bicolor*: CASTELNAU et GORY, 1835, Monogr. Bupr., 1, p. 3, pl. 1, fig. 1.

*Chrysochroa (Megaloxantha) bicolor*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.

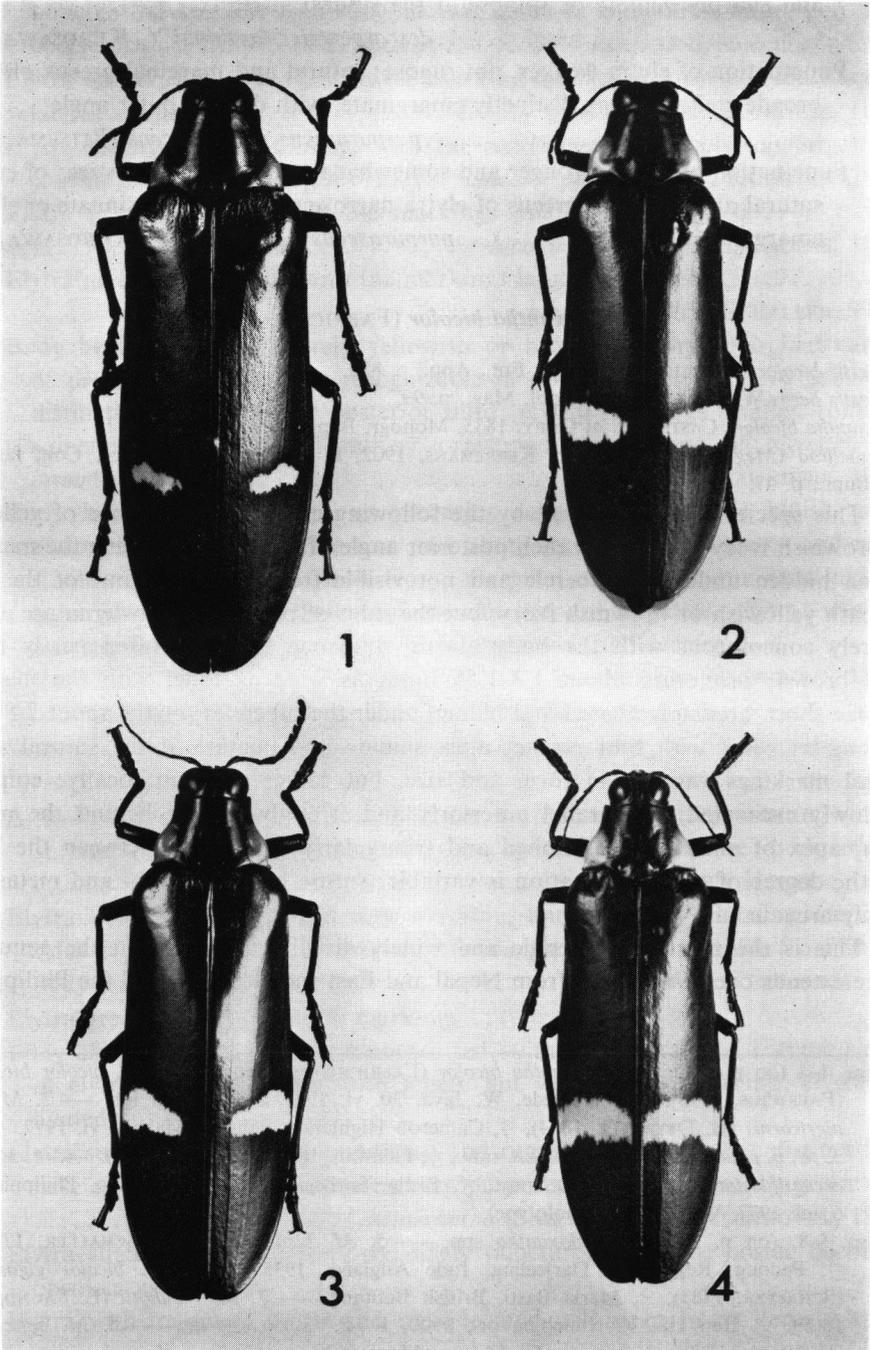
This species is characterized by the following characters: existence of yellowish or brownish ivory tubercle on each posterior angle of pronotum, causing the marginal carina hidden under the tubercle and not visible from above; colour of the body beneath yellowish or brownish ivory, but the sides of pro- and mesosterna are almost entirely concolorous with the body above; antennae blackish, often partly tinged with brown; pronotum about 1.3–1.55 times as wide as long, with the marginal carinae short, arcuately abased and hidden under the tubercles; elytra about 2.5 times as long as wide, with four costae; apex sinuate and dentate at the sutural angle; elytral markings variable in form and size, but rather constant locally; epipleura shallowly excavated, subparallel anteriorly and strongly sinuate behind the middle coxa; apex of anal sternite bilobed and triangularly emarginate between the lobes, but the degree of the emargination is variable; suture between meso- and metasterna simply arcuate.

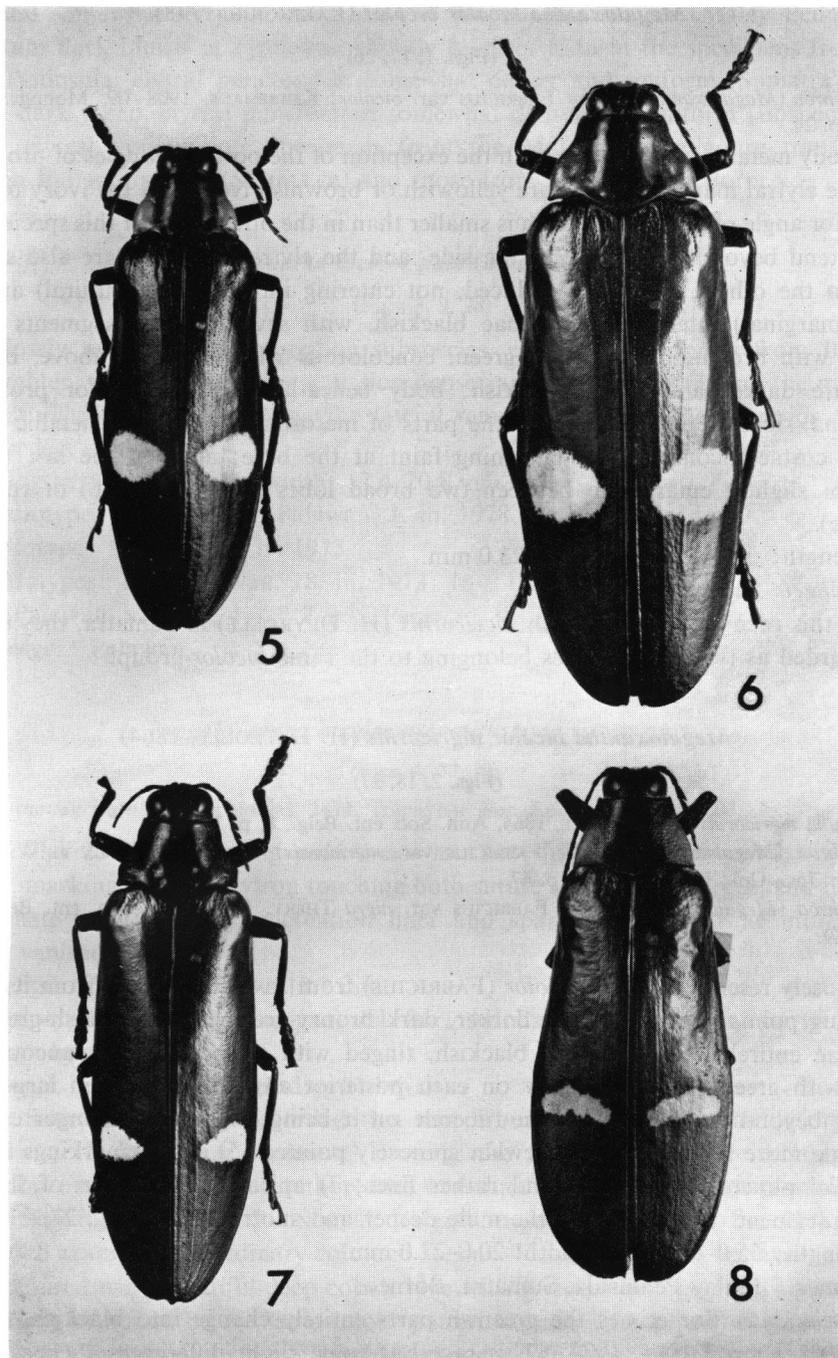
This is the most polymorphic and widely distributed species in the genus. Its range extends over a vast area from Nepal and East India to Java and the Philippines.

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Figs. 1–4 (on p. 212). *Megaloxantha bicolor* (FABRICIUS), subspp. — 1. *M. bicolor bicolor* (FABRICIUS, 1778), ♀, Mt. Gede, W. Java, 30. vi. 1972, S. IGARASHI lgt. — 2. *M. b. nigricornis* (H. DEYROLLE, 1864), ♂, Cameron Highlands, Pahang, Malaya, vi. 1977. — 3. *M. b. palawanica* Y. KUROSAWA, nov., ♂, Palawan, 18. iii. 1973 (paratype). — 4. *M. b. arcuatifasciata* Y. KUROSAWA, nov., ♂, Bislig, Surigao del Sur, Mindanao, Philippines, 6. vii. 1977, V. SOLON lgt. (holotype).

Figs. 5–8. (on p. 213). *Megaloxantha* spp. — 5. *M. bicolor gigantea* (SCHALLER, 1783), ♂, Pedong, Région de Darjeeling, Inde Anglaise, 1935. — 6. *M. bicolor gigantea* (SCHALLER, 1783), ♀, Maria Basti, British Bootang. — 7. *M. mouhotii* (E. SAUNDERS, 1869), ♀, Reu Hai, Cochinchina or., 1900, R. P. GUERLACH lgt. — 8. *M. netscheri* (LANSBERG, 1879), ♂, Sumatra (ex Musaeo Muniszech) (syntype).





*Megaloxantha bicolor bicolor* (FABRICIUS, 1778)

(Figs. 1, 17, 26)

*Chrysochroa* (*Megaloxantha*) *bicolor* FABRICIUS var. *bicolor*: KERREMANS, 1908-'09, Monogr. Bupr., 3, p. 24.

Body metallic green above, with the exception of the posterior angles of pronotum and the elytral markings which are yellowish or brownish ivory, but the ivory on each posterior angle of pronotum which is smaller than in the other races of this species does not extend beyond the middle of the side, and the elytral markings are also smaller than in the others, somewhat reduced, not entering into the first (sutural) and the fifth (marginal) interstices; antennae blackish, with several apical segments partly tinged with brown; legs metallic green, concolorous with the body above, but the tarsi are darker and partly blackish; body beneath ivory, except for prosternal episterna, sides of prosternum and the parts of mesosternal episterna metallic green; elytral costae inconspicuous, becoming faint at the base; apex of the last ventral segment slightly emarginate between two broad lobes (male) (Fig. 26) or rounded (female).

Length: 60.0–71.5 mm; 20.0–23.0 mm.

Range. Java, Sumatra.

If this race is sympatric with *nigricornis* (H. DEYROLLE) in Sumatra, they should be regarded as two good species belonging to the same *bicolor*-group.

*Megaloxantha bicolor nigricornis* (H. DEYROLLE, 1864)

(Figs. 2, 18, 27)

*Catoxantha nigricornis* H. DEYROLLE, 1864, Ann. Soc. ent. Belg., 8, p. 1.*Chrysochroa* (*Megaloxantha*) *bicolor* FABRICIUS var. *nigricornis*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.*Chrysochroa* (*Megaloxantha*) *bicolor* FABRICIUS var. *nigra* THÉRY, 1908, Ann. Soc. ent. Belg., 52, p. 69.

Closely resembles *M. b. bicolor* (FABRICIUS) from Java, but differs from it in the following points: 1) body above darker, dark bronzy-green to dark bluish-green; 2) antennae entirely black; 3) legs blackish, tinged with violaceous or cyaneous, but never with green; 4) ivory-yellow on each posterior angle of pronotum larger, extending beyond the middle and the tubercle on it being larger and stronger causing the angle more strongly and somewhat spinosely pointed; 5) elytral markings larger; 6) elytral punctuation weaker and rather finer; 7) apical emargination of the last ventral segment of abdomen in the male deeper and subtriangular (Fig. 27).

Length: 55.0–69.0 mm; width: 20.0–22.0 mm.

Range. Malay Peninsula, Sumatra, Borneo.

*Variations.* Sometimes the greenish parts entirely change into blackish. It was named ab. *nigra* THÉRY, 1908. This race has some slight differences such as: pronotum blackish, sometimes tinged with dark bronzy-blue or -green; elytral punctures

finer and somewhat irregular-sized and the punctuation sparser (Malay Peninsula); pronotum dark bluish or cyaneous, slightly brighter than in the specimens from the Malay Peninsula, elytral punctuation somewhat denser and uniform (Sumatra); pronotum dark green, elytral punctuation somewhat denser and uniform (Borneo). As to the elytral punctuation, specimens from the Malay Peninsula are transitional between Indian *gigantea* (SCHALLER) and those from Sumatra and Borneo.

*Megaloxantha bicolor palawanica* subsp. nov.

(Figs. 3, 9, 28)

Closely resembles the preceding subspecies, especially specimens from Borneo, but brighter, with the elytral punctuation denser and more uniform, and the marking on each elytron larger, touching the lateral margin, and with the posterior margin more or less arcuate.

Length: 56.6–65.5 mm; width: 17.4–20.8 mm.

Holotype: ♂, Maynitto, Palawan, 1. iii. 1978, Y. KAWASAKI lgt.

Allotype: ♀, Palawan, iv. 1973.

Paratypes: 1 ♂, Palawan, 18. iii. 1973; 1 ♂, Palawan, iv. 1973; 2 ♂♂, Brooke's Point, Palawan, v. 1977; 4 ♂♂ 2 ♀♀, Palawan, iv. 1978.

Range. Palawan.

*Megaloxantha bicolor arcuatifasciata* subsp. nov.

(Figs. 4, 20, 29)

*Catoxantha nigricornis*: E. SAUNDERS, 1874, Trans. ent. Soc. London, 1874, p. 303.

Similar to the preceding *palawanica* m., but differs from it in the following points: marking on each elytron touching both suture and lateral margin, and forming an arcuate band; elytral punctuation finer and sparser; elytral costae more faint, almost vanished.

Length: 61.0 mm; width: 19.2 mm.

Holotype: ♂, Bislig, Surigao del Sur, Mindanao, Philippines, 6. vii. 1977, V. SOLON lgt.

Range. Philippines (excluding Palawan).

E. SAUNDERS already recorded this race from the Philippines as "*Catoxantha nigricornis*, H. DEYR. A fragment, showing the transverse band on elytra, from North Luzon." The present author once examined in Mr. R. LUMAWIG's collection a specimen identical with SAUNDERS' description somewhere from the Philippines. These two examples are ordinary coloured form. The holotype is, however, a specimen coloured with beautiful deep cobalt blue with a violaceous tinge. This seems to the present author to be the same colour pattern seen in *Chrysochroa chrysura* GORY, 1840, from Mindanao, which was named var. *cobaltina* FISHER, 1922, not a geographical form.

*Megaloxantha bicolor brunnea* (E. SAUNDERS, 1866)

*Catoxantha gigantea* LINNÉ var. *brunnea* E. SAUNDERS, 1866, Trans. ent. Soc. London, (3), 5, p. 300, pl. 21, fig. 1.

*Chrysochroa* (*Megaloxantha*) *bicolor* FABRICIUS var. *brunnea*: KERREMANS, 1908, Monogr. Bupr., 3, p. 22.

“Differs from the ordinary form by having the whole upper surface purplish-brown, except the tubercles on the thorax, which are of the ordinary colour; and the yellow spots on the elytra are represented by dull-green spots. Siam.” (after the original description by E. SAUNDERS).

In Ch. KERREMANS’ “Monographie des Buprestides” III, p. 24, he attributed *brunnea* E. SAUNDERS, 1866, to the group belonging “Tubercles du pronotum moins saillants, nettement limités par la couleur jaune qui les courbe” together with *mouhotii* E. SAUNDERS, 1869. According to the illustration given in the original description by E. SAUNDERS himself, however, *brunnea* does not belong to the *mouhotii* group, but belongs to the *bicolor* group, and appears to have no character to be separated specifically from *bicolor*. It may be placed between the subspecies *gigantea* and *nigricornis*. The *mouhotii* group consists of *mouhotii* (E. SAUNDERS, 1869), and *netscheri* (LANSBERG, 1879).

*Megaloxantha bicolor gigantea* (SCHALLER, 1783)

(Figs. 8, 20, 29)

*Buprestis gigantea* SCHALLER, 1783, Act. Acad. Nat. Cur. Halle, p. 304, pl. 1, fig. 5.

*Buprestis heros* WIEDEMANN, 1823, Zool. Mag., p. 99.

*Catoxantha bicolor* FABRICIUS var. *gigantea*: E. SAUNDERS, 1871, Cat. Bupr., p. 7.

*Catoxantha assamensis* H. DEYROLLE, 1864, Ann. Soc. ent. Belg., 8, p. 2.

*Catoxantha assamensis* THOMSON, 1879, Bull. Soc. ent. France, (5), 9, p. 70 (nec H. DEYROLLE, 1864).

*Catoxantha bicolor* FABRICIUS var. *cyanura* KERREMANS, 1892, Ann. Soc. ent. Belg., 36, p. 171.

*Chrysochroa* (*Megaloxantha*) *bicolor* FABRICIUS var. *gigantea*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., fasc. 12, Bupr., p. 47.

*Chrysochroa* (*Megaloxantha*) *bicolor* FABRICIUS var. *cyanura*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.

Body robuster and broader than in any other races of the species, *bicolor*, especially in the female; head and pronotum blackish blue or blackish with a bluish tinge; ivory on each posterior angle of pronotum broader and occupying two-thirds of the lateral margin; elytra bluish green to bronzy green, rarely cyaneous with a violaceous tinge (ab. *cyanura* KERREMANS, 1892); antennae blackish, often tinged with brown; legs blackish with a slight cyaneous tinge; ivory marking on each elytron rounded, transversely elliptical, but touching neither suture nor lateral margin; elytral punctuation very sparse, formed by sparsely scattered small punctures; intervals almost smooth, with sparsely scattered minute punctures; elytral costae faint

but distinct at the basal part; apex of the last ventral segment of abdomen triangularly emarginate between two lobes, the emargination being shallow, somewhat deeper than that of *nigricornis* and distinctly deeper than that of *bicolor* (male) (Fig. 29), or slightly bilobed (female).

Length: 58.0–75.2 mm; width: 18.0–26.5 mm.

*Range.* Nepal, India, Assam, Bhutan, Burma (including Shan State).

The distributional range of this race extends from India to Burma, where it extends beyond the Irrawaddy River to the southeastern districts bordering on Thailand. If this race coexists with *brunnea* or *nigricornis* somewhere in southeastern Burma or Tenasserim, it should be regarded as a good species.

### *Megaloxantha netscheri* (LANSBERG, 1879)

(Figs. 8, 31)

*Catoxantha netscheri* LANSBERG, 1879, C. R. Soc. ent. Belg., **24**, p. 47.

*Chrysochroa (Megaloxantha) netscheri*: KERREMANS, 1903, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 49.

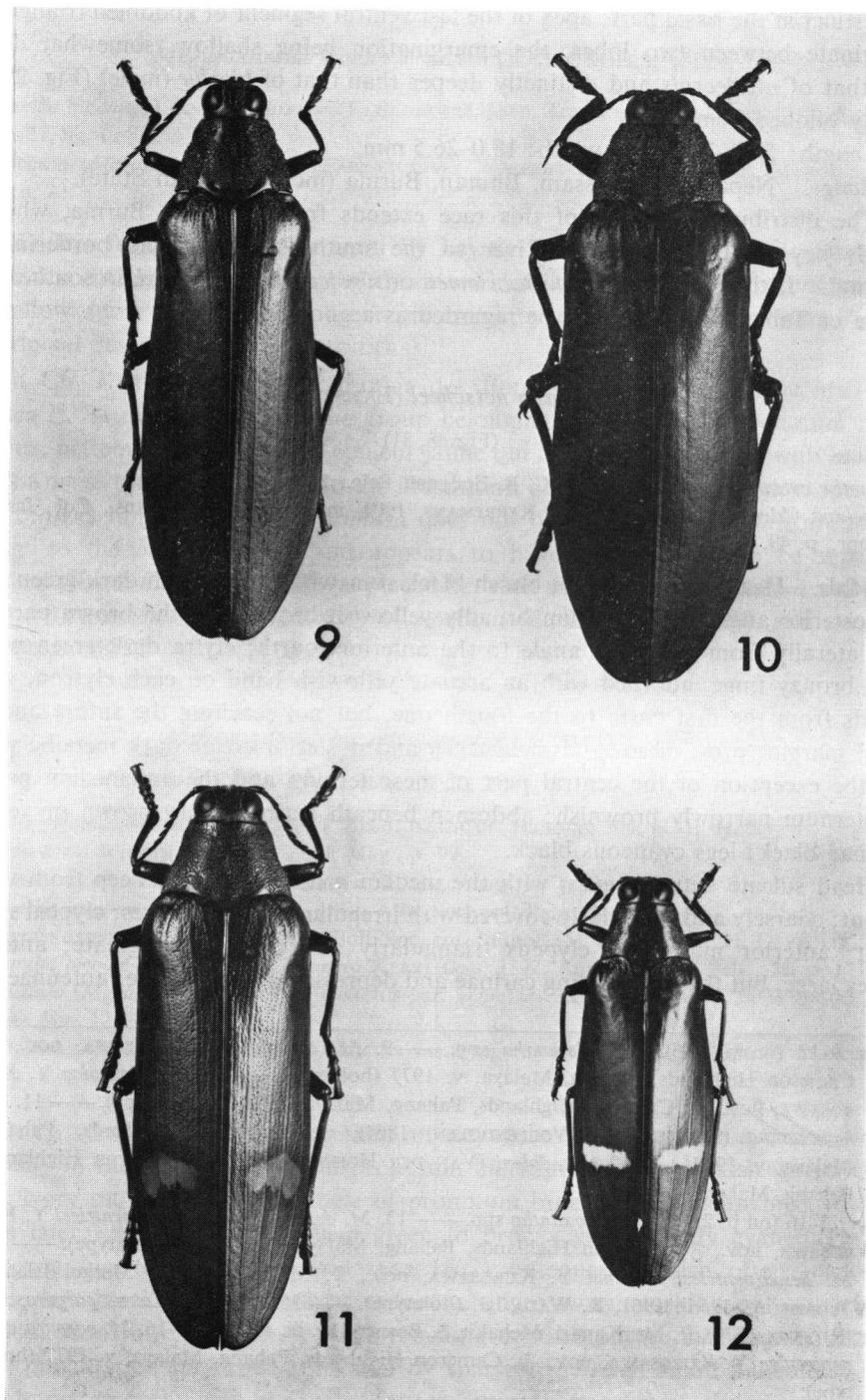
*Male.* Head and pronotum bluish black somewhat tinged with dark green, with the posterior angles of pronotum broadly yellowish brown, but the brown parts extend laterally from the basal angle to the anterior fourth; elytra dark green with a slight bronzy tinge, adorned with an arcuate yellowish band on each elytron, which extends from the first costa to the fourth one, but not reaching the suture and the lateral margin; pro-, meso- and metasterna and posterior coxae dark metallic green, with the exception of the central part of mesosternum and the antemedian part of metasternum narrowly brownish; abdomen beneath entirely ivory brown or yellow; antennae black; legs cyaneous black.

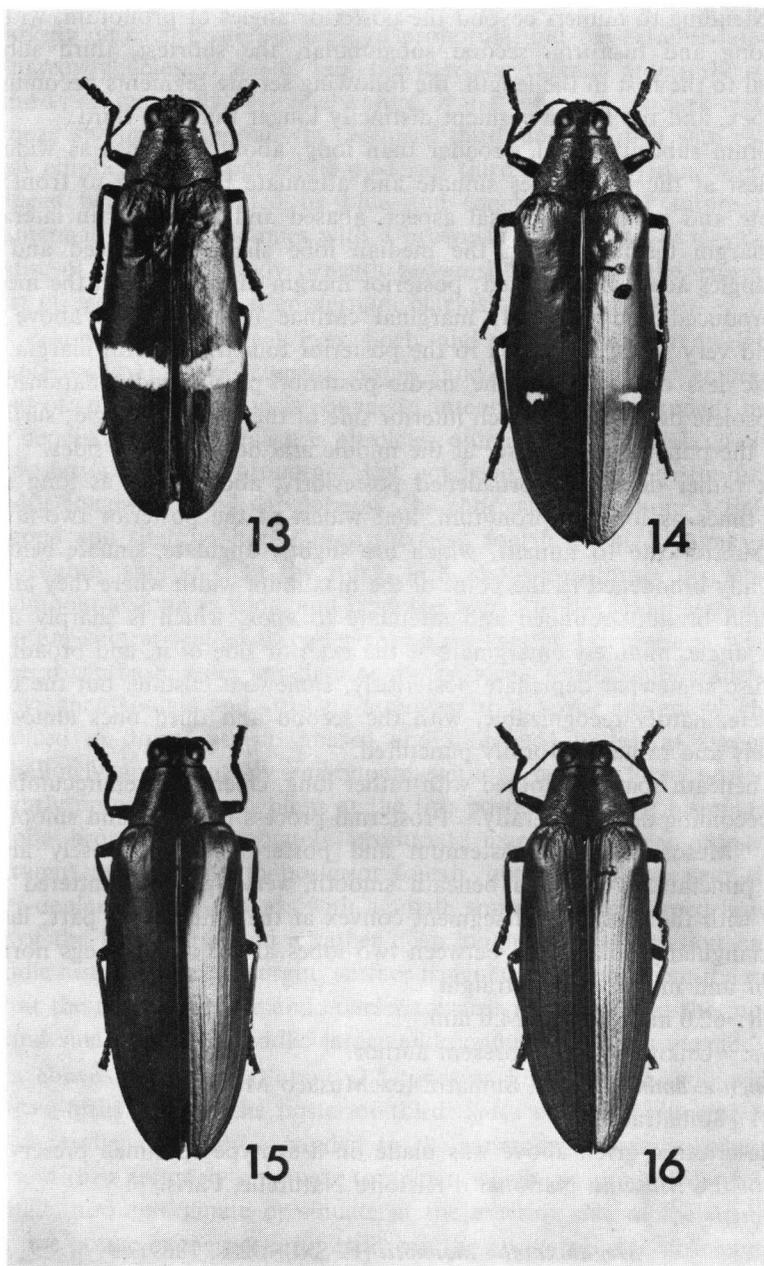
Head sulcate between eyes, with the median groove long and deep from vertex to front; coarsely and irregularly covered with irregular-sized punctures; clypeal suture absent; anterior margin of clypeus triangularly and deeply emarginate; antennal cavities large, but the surrounding carinae and depressions are obsolete; antennae long

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Figs. 9–12 (on p. 216). *Megaloxantha* spp. — 9. *M. concolor* Y. KUROSAWA, nov., ♂, Cameron Highlands, Pahang, Malaya, v. 1977 (holotype). — 10. *M. concolor* Y. KUROSAWA, nov., ♀, Cameron Highlands, Pahang, Malaya, 1974–'75 (allotype). — 11. *M. hemixantha* (SNELLEN VAN VOLLENHOVEN, 1864), ♀, Cameron Highlands, Pahang, Malaya, v. 1977. — 12. *M. daleni* (VAN DER HOEVEN, 1838), ♂, Cameron Highlands, Pahang, Malaya, v. 1977.

Figs. 13–16 (on p. 217). *Megaloxantha* spp. — 13. *M. descarpentriesi descarpentriesi* Y. KUROSAWA, nov., ♂, Cameron Highlands, Pahang, Malaya, ii–iv. 1976 (paratype). — 14. *M. descarpentriesi asahinai* Y. KUROSAWA, nov., ♀, Malcolm Island, Mergui Islands, Tenasserim, I. vii. 1961, R. WADA lgt. (holotype). — 15. *M. purpurascens purpurascens* (RITSEMA, 1879), ♀, Mt. Kapari, Mehakit, S. Borneo, 16. iii. 1973. — 16. *M. purpurascens peninsulae* Y. KUROSAWA, nov., ♂, Cameron Highlands, Pahang, Malaya, v. 1977 (holotype).





and lax, extending to humeri beyond the posterior angles of pronotum, with the first segment long and fusiform, second subglobular, the shortest, third subfusiform, about equal to the first in the length, the following serrate segments becoming shorter towards apex, and the fourth segment distinctly longer than the third.

Pronotum subtrapezoidal, broader than long, about 1.5 times as wide as long, and broadest at the base; sides sinuate and attenuate from base to front; anterior angles acute and pointed in dorsal aspect, abased and ill-defined in lateral aspect; anterior margin bisinuate, with the median lobe slightly produced and bilobed; posterior angles acute and pointed; posterior margin bisinuate, with the median lobe broadly produced and rounded; marginal carinae invisible from above, strongly sinuate, and very short, extending to the posterior fourth of lateral margin in lateral aspect; disc less convex, with the medio-posterior part broadly flattened, with a shallow obsolete depression at each interior side of the posterior angle; surface punctured, but the punctuation sparser at the middle and denser at the sides.

Elytra rather deplanate, broadened posteriorly, about twice as long as broad, about 5.2 times as long as pronotum, and widest at the posterior two-fifths; sides obliquely subtruncate to humeri, which are slightly angulate, sinuate behind them, then gradually broadened to the point of the maximum width where they are broadly rounded, and broadly rounded and attenuate to apex, which is sharply dentate at the sutural angle, minutely emarginate at the exterior side of it, and broadly swollen laterally; disc somewhat deplanate posteriorly, somewhat costate, but the costae are very obsolete, hardly recognizable, with the second and third ones almost absent; surface finely and rather uniformly punctured.

Body beneath sparsely clothed with rather long, cinereous, semirecumbent hairs, the hairs becoming denser laterally. Prosternal process flattened and smooth, hardly punctured. Mesosternum, metasternum and posterior coxae densely and rather uniformly punctate. Abdomen beneath smooth, very sparsely scattered with fine punctures, with the first ventral segment convex at the antemedian part; last ventral segment triangularly emarginate between two lobes at the apex. Legs normal, with the anterior and middle tibiae straight.

Length: 62.0 mm; width: 24.0 mm.

*Female.* Unknown to the present author.

*Specimen examined.* 1 ♂, Sumatra (ex Musaeo Muniszech).

*Range.* Sumatra.

The description given above was made on a syntype specimen preserved in the collection of the Muséum National d'Histoire Naturelle, Paris.

***Megaloxantha mouhotii* (E. SAUNDERS, 1869)**

(Fig. 7)

*Catoxantha mouhotii* E. SAUNDERS, 1869, Trans. ent. Soc. London, 1869, p. 3, pl. 1, fig. 1.

*Chrysochroa (Megaloxantha) bicolor* FABRICIUS var. *mouhoti*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.

Head and pronotum dark blackish or cyaneous blue, with a large subtriangular brown marking on each posterior angle of pronotum, but the extreme lateral margin becomes narrowly blackish again, and the marking extends anteriorly to near the anterior third and internally beyond the third of the width; elytra dark metallic green with a bronzy shimmer, especially in the basal third, and adorned with rounded and transversely elliptical ivory spot at the posterior third of each elytron, which is sometimes reduced being surrounded by blue and touching neither suture nor lateral margin; antennae black, sometimes with a brownish tinge apically; legs concolorous with the disc of pronotum; body beneath brownish ivory, with the exception of the lateral part of each mesosternal episternum blackish.

Head deeply sulcate between eyes, finely and sparsely punctured; clypeal suture absent; anterior margin of clypeus deeply and subtriangularly emarginate, but the bottom of the emargination is rounded; antennal cavities rounded, but the surrounding depression and carina are obsolete; antennae long and lax, extending to near the posterior angles of pronotum, but not beyond them, with the first segment fusiform, the longest, second subglobular, the shortest, third about 4 times as long as the second and slightly shorter than the first, fourth about 1.5 times as long as wide and slightly shorter than the third, fifth about two-thirds the length of the fourth and about as long as wide, and from the fourth to the apical serrate exteriorly.

Pronotum subtrapezoidal, broader than long, about 1.6 times as wide as long, and widest at the base; sides angulate at the posterior fourth, subparallel from base to that part, then sinuate and strongly attenuate to anterior angles, which are acute and produced in dorsal aspect, abased and ill-defined in lateral aspect; anterior margin shallowly and arcuately emarginate, without median lobe; posterior angles acute, slightly pointed, though blunt at the tip; posterior margin bisinuate, with the median lobe broadly and arcuately produced; marginal carinae dorsally visible, almost straight, and distinct in posterior fourth, but traceable to near the middle; disc rather deplanate, less convex, with a small, somewhat ear-shaped impression on each side of the basal lobe, and a rather deep longitudinal impression on each side at the middle near the lateral margin; surface irregularly punctate, but the punctuation is sparser at the middle, denser and coarser towards the sides, and the punctures are rounded and smaller at the middle, larger and confluent towards the sides.

Elytra convex, subparallel, about 2.5 times as long as wide, and widest at the posterior two-fifths or near the posterior third; sides obliquely truncate to rounded humeri, subparallel or feebly expanded to the posterior two-fifths, where they are rounded, and then arcuately attenuate to apices, which are pointed or dentate at the sutural angle, and emarginate or sinuate at the exterior side of the dentation; disc with four fine costae in the posterior half, but the costae become obsolete or entirely vanished in basal third; surface rather densely and uniformly covered with uniform-sized, small, rounded punctures, but the punctuation becomes somewhat sparser in the scutellar parts.

Body beneath clothed with inconspicuous, cinereous, semirecumbent hairs, but

the pubescence becomes denser towards the sides. Prosternal process flattened and smooth, with very sparse, minute, scattering punctures, narrowed by the anterior coxal cavities, dilated behind them, and acute at the tip. Meso- and metasterna and the posterior coxae smooth at the middle, irregularly, rather densely and finely punctured at the sides. Abdomen beneath smooth, sparsely and irregularly punctured, with the first ventral segment slightly depressed at the antemedian part; last ventral segment triangularly emarginate at the middle (male), or slightly bilobed (female). Legs normal, with tibiae straight.

Length: 61.2–64.5 mm; 19.0–19.2 mm.

Range. Indochina Peninsula.

The range of this species may be overlapped with that of *gigantea* at the western periphery and with that of *brunnea* at the southwestern parts. KERREMANS treated this as a race of *bicolor* and the arrangement was followed by OBENBERGER, but in view of the peculiarities of lateral tubercles and marginal carinae of pronotum, etc., this species is distinct from that species, although it apparently belongs to the *bicolor* species-group.

### *Megaloxantha daleni* (VAN DER HOEVEN, 1838)

(Figs. 12, 22, 33)

*Chrysochroa daleni* VAN DER HOEVEN, 1838, Tijdschr. Nat. Gesch. en Phys., 5, p. 338.

*Catoxantha daleni*: E. SAUNDERS, 1871, Cal. Bupr., p. 7.

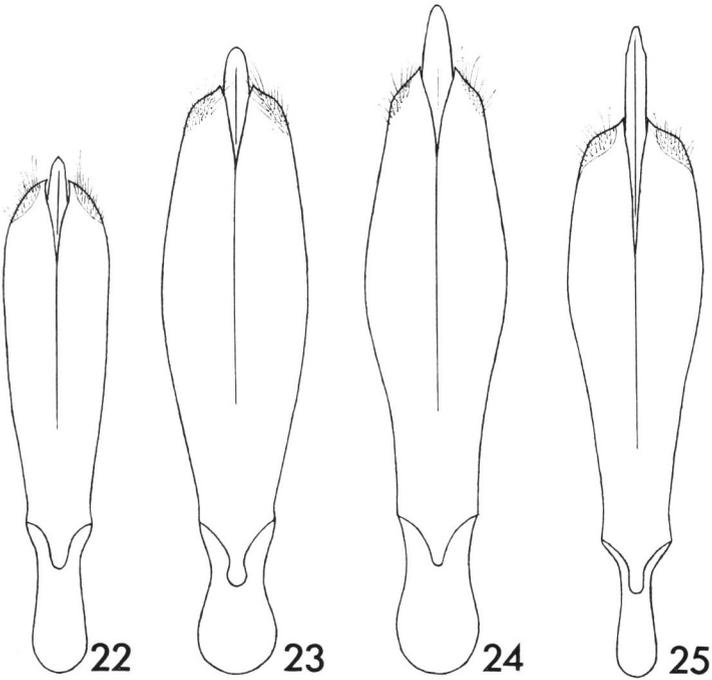
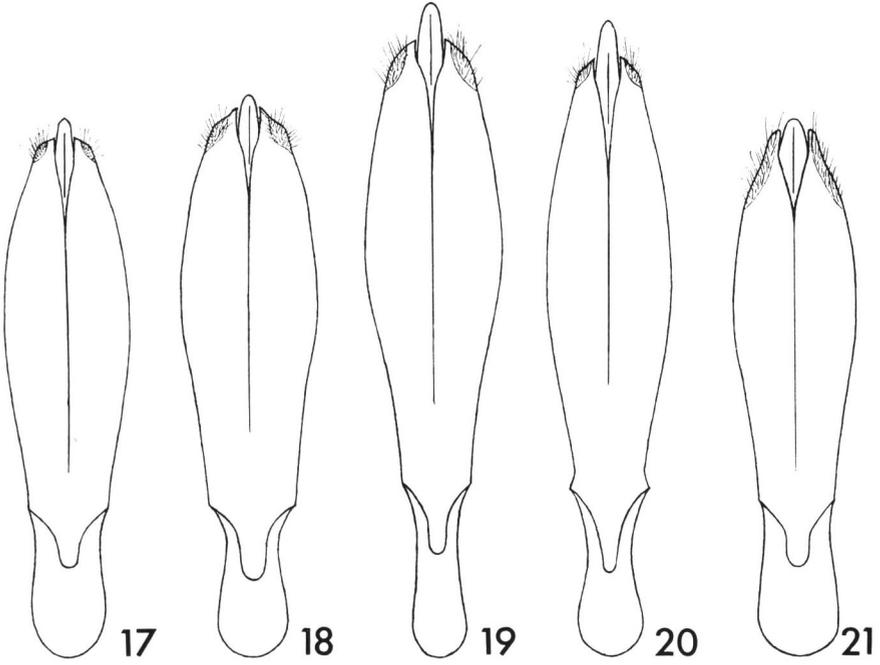
*Chrysochroa (Megaloxantha) daleni*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.

Body above metallic green, sometimes tinged with blue or bronzy, adorned on each elytron with transverse ivory band at the posterior two-fifths, extending from the inner side of the first costa to the fourth one, though not touching suture nor lateral margin; body beneath bicolorous, head, thorax and coxae metallic golden green, with the exception of the sutural parts between meso- and metasterna which are narrowly ivory, and abdomen beneath entirely ivory; antennae black, tinged with brown apically, with the exception of the greenish first segment; legs concolorous with the body above on the upper surface, and golden green on the under surface.

Head deeply sulcate between eyes; surface irregularly punctate, the punctuation being stronger, coarser, denser and confluent on frons and sparser and weaker on vertex; clypeal suture absent; clypeus coarsely punctate, the punctuation being stronger and coarser in the male, weaker in the female; anterior margin of clypeus

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Figs. 17–25. Male genital apparatus enlarged in the same magnification. — 17. *M. b. bicolor* (FABRICIUS). — 18. *M. b. nigricornis* (H. DEYROLLE). — 19. *M. b. palawanica* Y. KUROSAWA, nov. — 20. *M. b. arcuatifasciata* Y. KUROSAWA, nov. — 21. *M. b. gigantea* (SCHALLER). — 22. *M. daleni* (VAN DER HOEVEN). — 23. *M. concolor* Y. KUROSAWA, nov. — 24. *M. hemixantha* (SNELLEN VAN VOLLENHOVEN). — 25. *M. purpurascens peninsulae* Y. KUROSAWA, nov.



deeply and triangularly emarginate, though the emargination is blunt at the bottom; antennal cavities rather large, without surrounding depression or carina; antennae long, extending slightly beyond the posterior angles of pronotum (male) or not (female); first segment the longest, fusiform, second the shortest, subglobular, third about 4 times as long as the second and slightly shorter than the first, fourth about as long as the third, and from the fourth to the apical serrate exteriorly and becoming gradually shorter towards the apical one.

Pronotum subtrapezoidal, broader than long, about 1.4 times as wide as long, and widest at the base; sides oblique from base to front, somewhat angulate at the posterior third or fourth, then obliquely, strongly and straightly or somewhat sinuously attenuate to the anterior angles, which are acute and produced in dorsal aspect, abased and ill-defined in lateral aspect; anterior margin shallowly emarginate, with the median lobe obscure and obsolete and somewhat bilobed; posterior angles acute, sometimes produced; posterior margin bisinuate, with the median lobe arcuately produced; marginal carinae visible from above, distinct in the posterior third, but traceable to the anterior third; disc deplanate at the middle, obsoletely depressed at the posterior third near the sides; surface irregularly punctate, the punctuation being sparser and finer at the middle, becoming stronger, coarser, denser and confluent towards the sides.

Elytra less convex, dilated posteriorly, about 2.4 times as long as wide, about 5 times as long as pronotum, widest at the posterior two-fifths; sides obliquely expanded to rounded humeri, sinuously expanded from humeri to the part of maximum width, where they are rounded, then arcuately attenuate to apices, which are dentate at the sutural angle, minutely emarginate at the exterior side of the dentation, and broadly arcuate and rounded exteriorly; disc with four costae, which are fine, weak and almost vanished at the basal parts; surface finely punctured, but the punctuation is individually variable, not confluent, and becomes denser towards the sides.

Hairs of the body beneath very inconspicuous and seemingly absent. Prosternal process narrow, flattened, almost smooth though with fine irregular punctures; sides arcuately narrowed between the anterior coxal cavities, angulate behind them, then sinuously attenuate to the apex, which is acute and produced. Metasternum flattened, finely and very sparsely punctured at the middle, densely at the sides, with the anterior margin produced and slightly bilobed. Abdomen beneath smooth, minutely and sparsely punctured; first ventral segment flattened between posterior coxae; apex of the last ventral segment broadly and triangularly emarginate (male) (Fig. 33) or subtruncate (female). Legs normal, with tibiae straight.

Length: 48.0–54.2 mm; width: 16.0–17.8 mm.

*Range.* Malay Peninsula, Java.

The original locality of this species is Java. The above description is based on the specimens of three males and two females from the Malay Peninsula. Though expected from Sumatra and Borneo, there is no exact record of this species from those islands. KERREMANS confused it with *hemixantha* (SNELLEN VAN VOLLENHOVEN)

and *purpurascens* (RITSEMA), considering that all the insects having “angles postérieurs du pronotum concolores, parfois dorés ou cuivreux” belong to a single species. Because of this confusion, records of “*M. daleni*” from Borneo and Sumatra are not reliable and need confirmation.

*Megaloxantha descarpentriesi* sp. nov.

(Figs. 13, 34)

Closely resembles the preceding species, *daleni* (VAN DER HOEVEN), but it is distinguished from the latter by the following points: 1) elytral markings larger, oblique, touching the suture and extending exteriorly beyond the fourth costa and to near the lateral margin; 2) body beneath entirely ivory, with the exception of head and legs which are always metallic colored as in *daleni*; 3) pronotum broader, about 1.5 times as wide as long, broader at the base and narrower at the anterior margin, causing the sides strongly attenuate in front and dilated at the posterior third or fourth; 4) prosternal process more strongly flattened, broader and robuster; 5) apical emargination of anal segment of the male broader and shallower (Fig. 34); 6) middle tibiae slightly bent.

Length: 45.3–50.0 mm; width: 14.8–16.4 mm.

Holotype: ♂, Cameron Highland, Pahang, Malaya, iv. 1978.

Paratypes: 4♂♂, Cameron Highlands, Pahang, Malaya, iv. 1978; 1♂, do., ii–iv. 1976.

*Range.* Malay Peninsula.

This species is named in honour of Dr. A. DESCARPENTRIES of the Muséum National d'Histoire Naturelle, Paris.

*Megaloxantha descarpentriesi asahinai* subsp. nov.

(Fig. 14)

Distinguished from *descarpentriesi* s. str. by the elytral markings which are reduced, punctiform between the second and third costae and broadly surrounded by bluish area, and by the elytral apices which are distinctly but shallowly emarginate and have the sutural angles spinose.

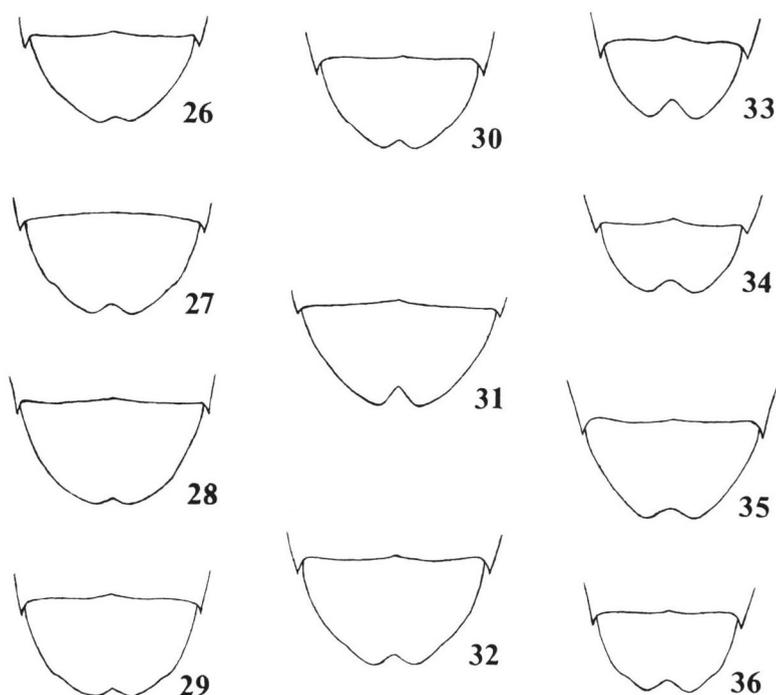
Length: 53.6 mm; width: 18.2 mm.

Holotype: ♀, Malcolm Island, Mergui Islands, Tenasserim, 1. vii. 1961, R. WADA lgt.

*Range.* Burma (Tenasserim).

The holotype has strong brassy tinge on the pronotum and elytra, especially on the former. The author cannot decide whether this brassy tinge is the individual variation or not.

This new subspecies is dedicated to Dr. S. ASAHINA, who gave the present author this valuable specimen.



Figs. 26-36. Last ventral segments of the male showing apical emargination. — 26. *Megaloxantha bicolor bicolor* (FABRICIUS). — 27. *M. b. nigricornis* (H. DEYROLLE). — 28. *M. b. palawanica* Y. KUROSAWA, nov. — 29. *M. b. arcuatifasciata* Y. KUROSAWA, nov. — 30. *M. b. gigantea* (SCHALLER). — 31. *M. netscheri* (LANSBERG). — 32. *M. concolor* Y. KUROSAWA, nov. — 33. *M. daleni* (VAN DER HOEVEN). — 34. *M. descarpentriensi descarpentriensi* Y. KUROSAWA, nov. — 35. *M. hemixantha* (SNELLEN VAN VOLLENHOVEN). — 36. *M. purpurascens peninsulae* Y. KUROSAWA, nov.

*Megaloxantha concolor* sp. nov.

(Figs. 9, 10, 23, 32)

Body above deep green to brassy green, unicolorous; body beneath bicolorous, head, sterna and coxae metallic green to golden green, with the exception of the narrow brownish or dark ivory part of mesosternum along the suture between meso- and metasterna, and abdomen entirely ivory; antennae entirely black or with the dilated parts from the fourth segment brownish; legs metallic green concolorous, with the exception of blackish tarsi.

Head deeply sulcate between eyes; surface sparsely covered with separated round punctures on vertex, irregularly, coarsely, strongly and confluent punctate on frons; clypeal suture transverse between the antennal cavities, though very obsolete; clypeus irregularly and coarsely punctate, with the anterior margin deeply and trian-

gularly emarginate between two triangular lobes; antennal cavities large, surrounded anteriorly by an obsolete depression; antennae long and lax, extending to near (female) or beyond (male) the posterior angles of pronotum, with the first segment fusiform, the longest, but slightly longer than the third, the second subglobular, the shortest, the third somewhat fusiform, slightly longer than 3 times the second, the fourth about as long as the third, dilated exteriorly, the fifth to the apical becoming shorter towards apex, each longer than wide and oblong subauriculate.

Pronotum subtrapezoidal, broader than long, less than 1.4 times as wide as long, and widest at the base (male) or just before the base (female); sides oblique from base to front, somewhat swollen and sinuate at the middle (male) or arcuately attenuate from base to front (female) and erosely crenulate; anterior angles acute but slightly produced in dorsal aspect, abased, subrectangular, and ill-defined in lateral aspect; anterior margin subtruncate or very slightly emarginate, without median lobe; posterior angles acute and pointed (male) or subrectangular (female); posterior margin bisinuate with the median lobe broadly produced; marginal carinae short, invisible from above, slightly sinuate, extending to posterior two-fifths, but impunctate and traceable to the anterior angle; disc deplanate, with a longitudinal obscure impression on each side closer to lateral margin, and impunctate reliefs along the median lobe of the posterior margin, and two obsolete reliefs on each side just behind the centre of the anterior margin; surface strongly, coarsely, and confluent punctate, but the punctuation becomes stronger, coarser and more strongly confluent towards the sides causing the intervals somewhat rugoso-reticulate.

Elytra convex, somewhat deplanate and dilated posteriorly, about 2.5 times (male) or 2.3 times (female) as long as wide, about 5.2 times (male) or 5.1 times (female) as long as pronotum, and widest near the posterior third; sides obliquely truncate to humeri, which are angulate and expanded, sinuate to the posterior third, where they are expanded and broadly rounded, then arcuately attenuate to apices, which are dentate at the sutural angle, sinuate at the exterior side of the dentation and broadly rounded and swollen exteriorly; disc with four faint costae, which are faint and traceable from humeral parts to apices (male) or almost effaced (female); surface densely and rather uniformly punctate, the punctures being rounded, uniform-sized, and not confluent.

Body beneath punctate, the punctuation becoming denser towards the sides, and clothed with silver-greyish, semirecumbent hairs, which are sparser and inconspicuous at the middle, denser and somewhat distinct at the sides. Prosternal process narrow, smooth, very sparsely punctate; sides narrowed by the insertion of anterior coxae, dilated and angulate behind them, then sinuously and obliquely attenuate to the apex, which is acute and produced. Metasternum flattened and very sparsely punctured at the middle, with the anterior margin produced and bilobed. Abdomen beneath sparsely and irregularly scattered with small, rounded, rather uniform-sized punctures; first ventral segment flattened or slightly depressed between posterior coxae; apex of the last ventral segment broadly and triangularly emarginate between two

lobes (male) (Fig. 32) or evenly rounded (female). Legs long and normal, with tibiae straight.

Length: 67.4–71.3 mm; width: 20.2–23.6 mm.

Holotype: ♂, Cameron Highlands, Pahang, Malaya, v. 1977.

Allotype: ♀, Cameron Highlands, Pahang, Malaya, 1974–'75.

This species is readily distinguished from any other species of this genus by its coloration and form. In view of the coloration of the body beneath and the structure of the pronotum, it may be placed next to *M. netscheri* LANSBERG from Sumatra.

*Megaloxantha hemixantha* (SNELLEN VAN VOLLENHOVEN, 1864)

(Figs. 11, 24, 35)

*Catoxantha hemixantha* SNELLEN VAN VOLLENHOVEN, 1864, Tijdschr. Ent., 7, p. 160, pl. 2, figs. 1, 2.

*Catoxantha mniszcehii* H. DEYROLLE, 1864, Ann. Soc. ent. Belg., 8, p. 2.

*Chrysochroa (Megaloxantha) daleni*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.

*Chrysochroa (Megaloxantha) jansoni* THÉRY, 1922, Ann. Soc. ent. Belg., 62, p. 196.

*Chrysochroa (Catoxantha) hemixantha*: THÉRY, 1926, Bull. Ann. Soc. ent. Belg., 66, p. 58.

Body above metallic green, with strong coppery shimmer or entirely dark bronzy green, adorned on each elytron with transverse, arcuate, ivory marking at the posterior third, which extends from the first costa to the fourth, but touching neither suture nor lateral margin, and the posterior margin of the marking is pointed along the costae into the ivory part; body beneath almost entirely ivory, with the exception of metallic green mesosternal episterna; antennae dark brown, with the first three segments metallic coloured; legs metallic green on the under surface, sometimes with a brownish marking on each posterior femur, and golden coppery on the upper surface.

Head deeply sulcate between eyes, but the groove is shallower than in the other species; surface sparsely and irregularly punctate on vertex, strongly, coarsely, irregularly and confluent punctate on frons; clypeal suture obsolete between the antennal cavities; clypeus irregularly and sparsely punctate, with the anterior margin deeply and triangularly emarginate between two narrowly produced lobes; antennal cavities large, without surrounding carina or depression; antennae long, but rather compact, not extending beyond the posterior angles of pronotum, with the first segment fusiform, the longest, the second subglobular, the shortest, the third about 3 times as long as the second, the fourth subtriangular, slightly longer than twice, but shorter than 3 times as long as, the second, the following seven segments serrate, and broader than long.

Pronotum subtrapezoidal, about 1.5 times as wide as long, and widest at the base; sides oblique from base to front, somewhat angulate and swollen at the posterior third, then sinuously attenuate from that part of the anterior angles, which are acute in dorsal aspect, abased in lateral aspect, but blunt at the tip and rather ill-defined; anterior margin subtruncate or slightly emarginate, sometimes with a small obsolete incision at the middle; posterior angles acute, and sharply pointed; posterior margin

bisinate, with the median lobe broadly and arcuately produced; disc deplanate posteriorly, with an impunctate relief just before each basal lobe of elytron; surface strongly, coarsely, irregularly and confluent punctate, the punctuation becoming stronger, denser and more confluent towards the sides, causing the intervals rugose-reticulate.

Elytra subparallel, convex, about 2.5 times as long as wide, about 5.3 times as long as pronotum; sides obliquely subtruncate to rounded humeri, subparallel or very slightly dilated to the posterior two-fifths or third, then arcuately attenuate to apices, which are sharply dentate at the sutural angle, emarginate at the exterior side of the dentation and broadly dilated and rounded at the exterior side of the emargination; disc obsolete depressed at the interior side of each humeral truncature, and with four costae which are weak but recognizable from humeri to apices; surface densely and rugosely punctate, with the intervals somewhat longitudinally rugose between the costae.

Body beneath sparsely and finely punctured, with the hairs silver-greyish, sparse and inconspicuous. Prosternal process broad, flattened, smooth, sparsely scattered with fine punctures; sides slightly narrowed by the anterior coxal cavities, dilated and angulate behind them, then sinuously and obliquely attenuate to the apex. Metasternum elevated anteriorly, flattened at the middle, with the suture between mesosternum arcuately produced or slightly bilobed. First ventral segment of abdomen flattened between the posterior coxae; last ventral segment broadly, shallowly, and triangularly emarginate (male) (Fig. 35) or rounded, sometimes with a small obsolete incision at the middle (female). Legs normal, with tibiae straight.

Length: 57.2–67.8 mm; width: 18.0–21.0 mm.

*Range.* Malay Peninsula, Banka Islands, Sumatra.

As was already pointed out by A. THÉRY, this species is markedly different from *daleni* (VAN DER HOEVEN). The above description is based upon five males and a female from the Cameron Highlands of West Malaysia.

### *Megaloxantha purpurascens* (RITSEMA, 1879)

(Fig. 15)

*Catoxantha purpurascens* RITSEMA, 1879, Notes Leyden Mus., 1, p. 48.

*Chrysochroa (Megaloxantha) daleni*: KERREMANS, 1902, in WYTSMAN, Gen. Ins., Col., fasc. 12, Bupr., p. 47.

*Catoxantha daleni* VAN DER HOEVEN var. *immaculata* THÉRY, 1908, Ann. Soc. ent. Belg., 52, p. 69.

*Chrysochroa (Catoxantha) purpurascens*: THÉRY, 1926, Bull. Ann. Soc. ent. Belg., 66, p. 57.

Body above cupreo-purpureous, with the sides of pronotum, marginal and sutural parts of elytra green or bluish green; body beneath entirely ivory, with the exception of mesosternal episterna which are golden or golden-green; antennae dark brown and partly black, or black and partly tinged with brown, with the exception of basal two or three segments cupreous; legs golden-coppery, with the upper surface of tibiae red-

dish cupreous.

Head deeply sulcate between eyes, coarsely, strongly and confluent punctate, with the intervals irregularly elevated and somewhat rugose; clypeal suture very obsolete, transverse between the antennal cavities; clypeus triangularly emarginate between two triangular lobes; antennal cavities rather large, with the surrounding depression obsolete, recognizable anteriorly; antennae long but not reaching the posterior angles of pronotum, with the first segment fusiform, curved, the longest, the second subglobular, the shortest, the third slightly shorter than the first, more than 3 times as long as the second, the fourth slightly shorter than the third, and distinctly longer than wide, the following seven segments serrate exteriorly, each about as long as or slightly longer than wide.

Pronotum subtrapezoidal, broader than long, about 1.4 times as wide as long, and widest at the base or the posterior fourth; sides subparallel in the posterior fourth, where they are angulate, then obliquely and sinuously attenuate to anterior angles, which are acute, slightly produced in dorsal aspect, abased, acute, but ill-defined and blunt at the tip in lateral aspect; anterior margin arcuately and shallowly emarginate, without median lobe; posterior angles subrectangular, but sharply pointed at the tip; posterior margin bisinuate, with the median lobe broadly produced; marginal carinae short, straight, and extending from base to the posterior fourth; disc moderately convex, rather flattened at the middle, with a trace of short median carina posteriorly; surface sparsely and irregularly punctate at the middle, strongly, coarsely and confluent punctate at the sides, with the intervals somewhat rugoso-reticulate.

Elytra moderately convex, not dilated, about 2.5 times as long as wide, about 5 times as long as pronotum, and widest at the middle; sides obliquely truncate to humeri, feebly dilated to the middle, and then arcuately attenuate to apices, which are arcuately emarginate between two sharp dentation; disc with four costae, which are slightly elevated and run from base to apex; surface finely and irregularly punctate, with the intervals somewhat rugoso-reticulate partially.

Body beneath very finely and sparsely punctate, with the hairs very sparse and inconspicuous. Prosternal process flattened or slightly convex, hardly punctate; sides slightly narrowed by anterior coxal cavities, slightly dilated and subrectangular just behind them, then obliquely and sinuously attenuate to the apex, which is produced though blunt at the tip. Metasternum flattened at the middle, with the anterior margin produced, arcuate or bilobed. First ventral segment of abdomen flattened between posterior coxae; last ventral segment broadly and shallowly emarginate between two lobes (male) (Fig. 36), or rounded and sometimes with a small incision at the middle (female). Legs normal, with the middle and posterior tibiae straight.

Length: 51.4 mm; width: 16.8 mm.

*Range.* Borneo.

Specimens of this species from the Malay Peninsula have several constant characters different from the typical race from Borneo.

*Megaloxantha purpurascens peninsulae* subsp. nov.

(Figs. 16, 25, 36)

Different from the nominate race from Borneo in the following points: 1) elytral apices sharply dentate at the sutural angle, sinuate and broadly swollen at the exterior side of the dentation, and not emarginate, without exterior dentation; 2) elytral punctuation rather regularly and longitudinally arranged forming three longitudinal subcostae in each interstice of costae; 3) purpureous parts broader, with the sutural and marginal greens of elytra narrower and the marginal greens of pronotum narrower and fainter.

Length: 46.0–56.0 mm; width: 14.5–17.0 mm.

Holotype: ♂, Cameron Highlands, Pahang, Malaya, v. 1977.

Allotype: ♀, Cameron Highlands, Pahang, Malaya, v. 1971.

Paratypes: 1 ♂, Cameron Highlands, Pahang, Malaya, 1975–'76; 3 ♂♂, 3 ♀♀, do., v–vi. 1977; 2 ♂♂, do., iv. 1978.

**Postscript**

The male genital apparatus of the species examined are shown in Figs. 17–25. Though genitalic difference is not so great between the species of the genus *Megaloxantha*, *concolor* and *hemixantha* stand closer to *bicolor* than to the other species, and *daleni* has peculiarly shaped male genitalia unlike those of any other species. It is, however, premature to go discussing the phylogeny, since the author failed to examine those of *mouhotii* and *netscheri* whose unique specimens examined were available on loan from the Muséum National d'Histoire Naturelle, Paris. *Mouhotii* is presumed to stand by *bicolor*, and *netscheri* seems to be situated between *bicolor* and *concolor*.

Among the subspecies of *bicolor*, the male genital apparatus of *gigantea* is evidently different from those of the others. As mentioned in the redescription of *gigantea* given on the page 216, it is rather distinctive in its external morphology, and is probably separated from *bicolor* and its races as a full species.

After completing the manuscript of this paper, the present author obtained, through the courtesy of Mr. S. NAGAI, five male specimens of *M. d. descarpentriesi* nov., from the Malay Peninsula, which are herewith designated as additional paratypes. As the male genital apparatus of the original specimen of this species was not examined due to his technical error, it is illustrated in Fig. 37. Though *descarpentriesi* resembles *daleni* (VAN DER HOEVEN) in external appearance, its male genital apparatus shows that it stands more closely to *hemixantha* (SNELLEN VAN VOLLENHOVEN). Additional accounts to the description of *descarpentriesi* given on the page 225 are as follows: The colour of the body above varies from dark metallic green with a slight bluish tinge to dark bronzy green with a slight cuprescent tinge; elytral punctuation is denser, coarser, and stronger than in *daleni*; posterior coxae are always ivory coloured; apical emargination of the anal segment in the male is individually

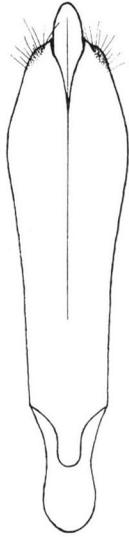


Fig. 37. Male genital apparatus of *M. d. descarpentriesi* Y. KUROSAWA, nov., enlarged in the same magnification as Figs. 17–25.

variable and not available for discriminating *descarpentriesi* from *daleni*; middle tibiae are usually straight, often slightly bent but not so different from those of *daleni*. The principal points to distinguish this species from *daleni* are in the coloration of the body beneath, which is entirely ivory coloured, and in the shape of the marking on each elytron.