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A NEW SPECIES OF THE GENUS *TAUMACERA* THUNBERG, *DEUSTA* SPECIES-GROUP (COLEOPTERA: CHRYSOMELIDAE: GALERUCINAE) FROM BORNEO

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ABSTRACT. – A new species in the galerucine genus *Taumacera* Thunberg is described, *T. dekatevi*, and a key provided for the species of the *Taumacera deusta* species-group. New information is provided for several species.

KEY WORDS. – *Taumacera*, Galerucinae, Chrysomelidae, south-east Asia.

INTRODUCTION

The beetle collection in the Zoology Museum, Bogor, Indonesia, was recently sorted to family and the family Chrysomelidae (leaf-beetles) largely sorted to species. As a result of this work, many specimens of the galerucine genus *Taumacera* Thunberg were examined, including one new species of the *deusta*-species group. *Taumacera* was recently redescribed (Reid, 1999), and the *T. deusta* species-group defined, distinguished by presence of a modified third antennal segment in the male. Species of Galerucinae are generally difficult to identify in south-east Asia, therefore it is useful to be able to update knowledge of a well-defined group which has been recently taxonomically revised. A key is presented for the species of the *T. deusta* species-group. Sadly, females of this species-group, and of related genera, are still indistinguishable at generic level.

Repositories: Australian National Insect Collection, Canberra (ANIC), Zoology Museum, Bogor, Indonesia (ZMB), Centre for Insect Systematics, Bangi, Malaysia (CIS).

Taumacera Thunberg

Type species: *Taumacera deusta* Thunberg

Generic diagnosis. – Medium sized, length 6-11mm; eyes moderately large (gena 0.4-0.2x eye length); male frontoclypeus not deeply pitted, without setose foveae, tubercles or spines; supra-antennal tubercles broad, rectangular and flat; male antennae often with dilated segments; some male antennal segments longitudinally ridged; male penultimate maxillary palp segment not greatly swollen, apical segment conical; pronotum slightly transverse and broadest at or anterior to middle, usually with a pair of discal depressions; anterior pronotal border absent; procoxae globular, adjacent, and prosternal process reduced to thin depressed ridge; procoxal cavities closed; elytra either non-striate, semistriate or slightly costate; apical half of elytra with scattered erect setae; epipleuron gradually narrowed to apex, where upper margin obsolete; male metasternum with produced lobe or pair of lobes (often bifid or deeply folded) between hind coxae; male metatibia usually with subapical lobe with apical short black spur (if lobe absent, spur also absent); female without tibial spurs; length of first metatarsal segment about equal to remainder; tarsal claws appendiculate with basal lobe small and rounded; male last ventrite apically tri-lobate; penis with longitudinal ventro-apical groove and split apex, and extreme base with two reflexed lobes.

Notes. – The genus includes several groups of species defined by single male secondary sexual characters, one of which has been designated the *deusta* species-group (Reid, 1999).

Taumacera deusta species-group

Diagnosis. – *Taumacera* species with expanded male third antennal segment (other segments may also be expanded). There is no known diagnostic character for the females of this group. Host plants are unknown.

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Key to males of *Taumacera deusta* species-group
(partly based on published descriptions; revised from Reid, 1999)

1. Elytral interstices regularly longitudinally ridged, each elytron with about 9 costae 2
– Elytra not evenly costate (mid tibia not excavate) 3

2. Outer face of mid tibia excavate in basal half; antennal segment 3 roughly circular in outline; elytra entirely reddish- to blackish-brown; length 6.2-7.0mm (Borneo) ..... *midtibialis* Mohamedsaid
– Midtibia not modified; antennal segment 3 elongate-cylindrical; elytra entirely black or basal half reddish-brown; length 7.5mm (Sumatra) ..... *costatipennis* (Jacoby)

3. Outer surface of fore-tibia excavate (antennal segment 4 angulate; segments 4-11 keeled) 4
– Without excavate tibiae 5

4. Elytral disc yellow, margins brown, pronotum brown; antennal segments 6-11 longitudinally keeled; pronotal disc with pair of depressions; clypeus not excavate; length 7-8mm (Borneo) ..... *tibialis* Mohamedsaid
– Elytra and pronotum uniformly red; antennal segments 6-11 without keels; pronotal disc even; clypeus excavate; length 7.0-7.5mm (Sarawak) ..... *mohamedsaidi* Reid

5. Lateral margins of pronotum angulate or lobate at middle (Fig. 3) (dorsum brownish-yellow; antennal segments 4-11 keeled; hind tibia without apical lobe) 6
– Lateral margins of pronotum evenly curved at middle 7

6. Antennal segment 4 simple, not expanded, segment 3 elongate with deep median excavation; first segment of hind tarsus simple, parallel-sided & without lobe of stiff setae; dorsum brownish-yellow with black scutellum (length 7.5-8.5mm; Pahang, Sumatra) ..... *evi* Reid
– Antennal segment 4 globular and convoluted, similar to 3 (Fig. 2); first segment of hind tarsus with brush of stiff setae (Fig. 5); dorsum entirely brownish-yellow (length 7.0mm; east Borneo) ..... *dekatevi*, new species

7. Antennal segment 4 medially angulate; (4 erect lobes at base of metasternal lobe; length 8-8.5mm) (Selangor) ..... *subapicalis* Mohamedsaid
– Antennal segment 4 parallel-sided 8

8 Antennal segment 3 broader than long or circular 9
– Antennal segment 3 elongate 10

9 Length 10-10.5mm; dorsum entirely brownish-yellow except black scutellum (hind tibia with apical lobe, armed with short articulated spur; frontoclypeus smooth, not rugose; antennal segments 4-11 not keeled; metasternum with 2 sharp spines above apical lobe) (south Borneo) ..... *sucki* (Weise)
– Length 7-8mm; elytral base and lateral margins broadly bluish-black with greenish reflection (structure of antennal segment 3, metasternum and midtibia unknown) (Palawan) ..... *philippina* (Weise)

10. Clypeus shining; first segment of antenna triangular with sharp edges; antennal segment 3 elongate rectangular but not flattened, shallowly depressed either side of median triangular tubercle; antennal segments 4-11 keeled; hind tibiae with apical lobe (6.4-7.0mm; Borneo) ..... *warisan* Mohamedsaid
– Clypeus dull, rugose; first antennal segment evenly curved, not keeled; segment 3 elongate, flattened, with median pit; antennal segments 4-11 not keeled; hind tibiae simple ... 11

11. Venter entirely reddish-yellow; only elytra and rarely tibiae black (clypeus swollen at base, elytra almost impunctate on disc; antennal segment 3 thumb-shaped, usually with deep nick on outer edge, length 7-8mm; Sumatra, Malaya, Sarawak) ..... *seminigra* Reid
– Venter partly black, including mesosternum, metasternum and/or abdomen ..... *deusta* complex (*deusta* Thunberg, *maculata* (Baly), *fulvicollis* (Jacoby), *laevipennis* (Jacoby))

Taumacera dekatevi, new species
(Figs 1-6)

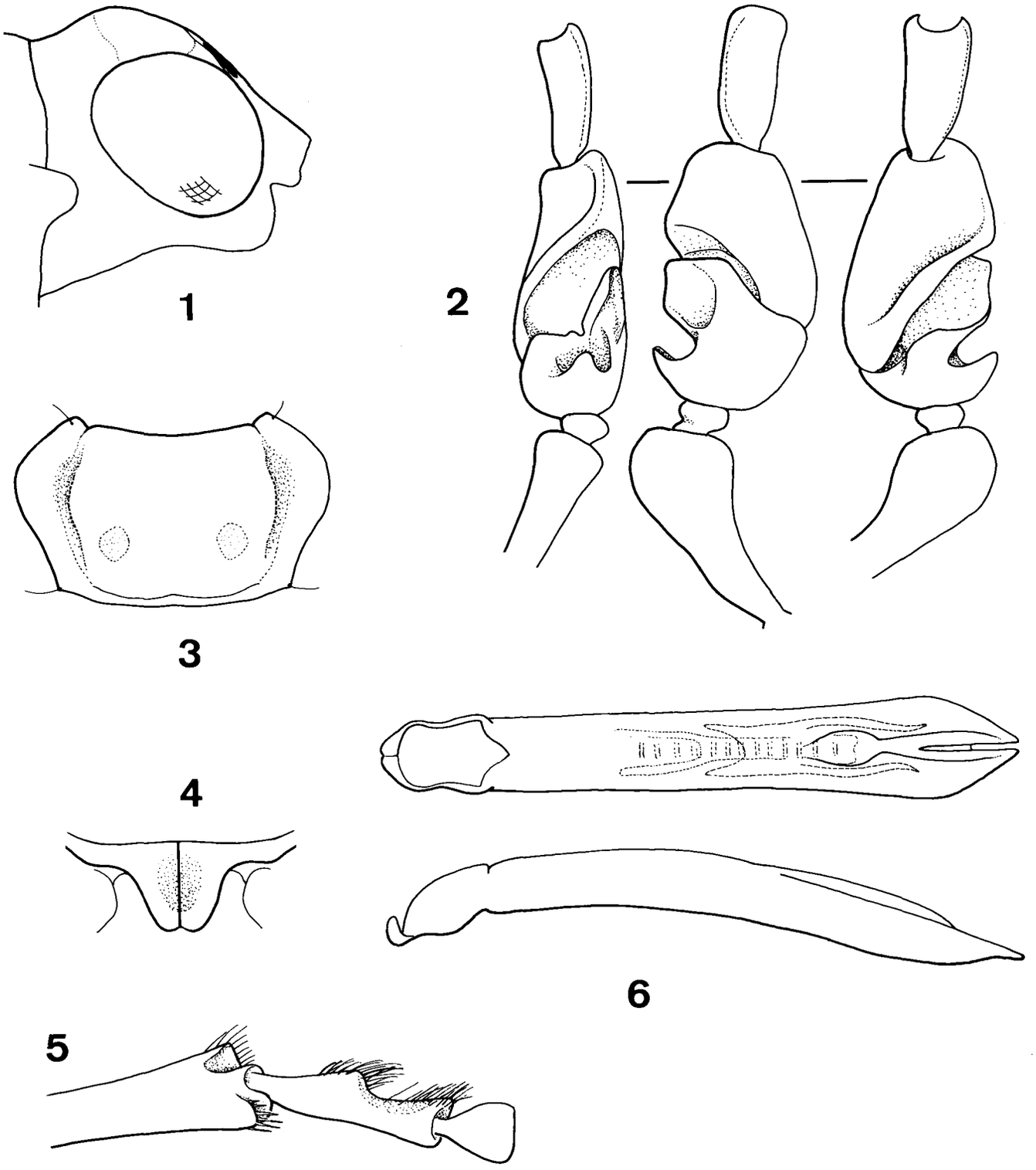
Material examined. – Holotype – male, INDONESIA, E. Borneo, 125m, Tabang, Bengen River, coll. A. M. R. Wegner, 20 May.1956 (ZMB).

Paratype – male, INDONESIA, Tanah Merah Lempake, Samarinda, S. Adis & Woro, 27 Jun.1976 (ANIC).

Description. – **Male**. With the generic characters of *Taumacera* listed above, and the following: length 7.0mm; dorsal colour entirely yellowish-brown or brownish-yellow, except lower margin of epipleuron and most of ventrites 1-4 of abdomen black to blackish-brown; eye relatively large, gena 1/5 eye length; inter-antennal area flat in profile, but supra-antennal tubercles enlarged, swollen in profile (Fig. 1) and almost quadrate; clypeus slightly elevated along midline; frontoclypeal surface smooth and shining, not rugosely punctured nor microsculptured; antennal segments (Fig. 2): 1-2 not pilose, 2 minute and transverse, 3 irregularly ovoid and excavated deeply at base and middle with length 1.5x width, 4 articulated at middle of 3 and irregularly swollen towards apex with strong dorsal keel; antennal segments 5-11 elongate, but slightly arched, lengths 2.5-5.0x width (gradually increasing to apex), longitudinally ridged; anterior pronotal margin truncate between produced angles; pronotum with 2 deep basal depressions (Fig. 3), and medially convex, distinctly transverse; pronotum shining, apparently impunctate (x50), without microsculpture; lateral margins of pronotum convexly expanded in front of middle, with projecting lobe at anterior angles; elytra strongly and irregularly punctured, microreticulate and dull; apex of metasternum with one pair of laminate apical lobes (Fig. 4), fused and shallowly depressed; fore and mid tibia without dorsal excavation; first segment of protarsus circular, of mid tarsus ovate; apex of hind tibia without lobes, without apical spur, but first segment of hind tarsus with lateral tubercle at midpoint, armed with tuft of long stiff setae (Fig. 5); penis with elongate-ovate apex (Fig. 6), ventrally split to a median chamber, endophallus with long paired basal struts.

Female. unknown.

Etymology. – Formed from a combination of the malay word dekat, meaning close to, and the species name *evi*.



Figs. 1-6. *Taumacera dekatevi*, new species, male: 1, head capsule, lateral; 2, antennal segments 1-5, three different views; 3, pronotum; 4, metasternal lobes; 5, apex of hind tibia with first tarsal segment; 6, penis, ventral (including endophallus), and lateral.

Notes. – In colour pattern and general shape, *T. dekatevi* is most similar to *T. evi*, but differs by a number of morphological characters, including the antennae, supra-antennal tubercles and explanate margins of pronotum (vide Reid, 1999: Figs 13-18). *Taumacera dekatevi* is the first *Taumacera* species known to show tarsal modification as a secondary sexual character. The specimen from Samarinda is covered in lepidopteran scales and therefore probably taken at light.

NEW RECORDS OR AMENDMENTS TO DESCRIPTIONS

Taumacera deusta species-complex

Notes. – In this group I have seen material representing 5 different species, if the small differences in the male third antennal segment are constant and indicate species. Without having seen type material it is not possible to definitely associate the names *deusta* Thunberg, *maculata* (Baly), *fulvicollis* (Jacoby) or *laevipennis* (Jacoby) with individual species in this material, but all belong to this species-complex.

Taumacera evi Reid

Notes. – The original description was slightly garbled. It should have read (Reid, 1999: 7, lines 9 and 11: "...[antennal] segments 1-2 not pilose..... junction with segments 4-11 apical, segments 4-11 elongate...". The first segment of the hind tarsus is simple in this species (Reid, 1999: Fig. 17).

Taumacera midtibialis Mohamedsaid

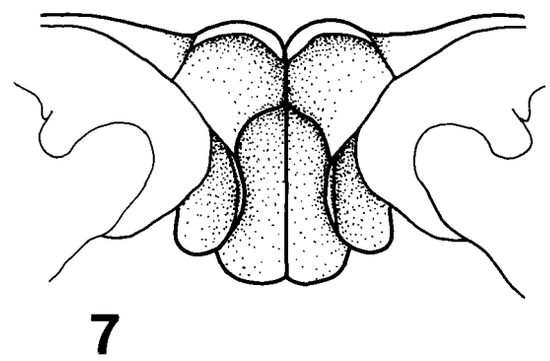
Material examined. – (2). Male, Kalimantan Barat, Gunung Nahaloh, 0°58N 113°40E, dipterocarp forest by Sungai Bara, 260m, coll. C. Reid, 31 Dec.1996 (ANIC); male, ditto except: 0°58N 113°42E, submontane forest on ridge, c1000m, 20-22 Dec.1996 (ZMB). Compared with holotype in CIS.

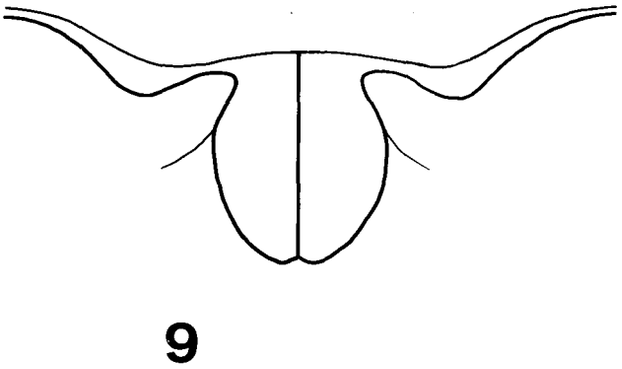
Notes. – These are the first records in Kalimantan Barat for this species, described from Sarawak (Mohamedsaid, 1998). In both specimens, the elytra are almost black in contrast to the reddish-brown pronotum, the metasternal process is large, concave and convoluted (Fig. 7), and the angulate blunt lobe of the metatibia is armed with a short spur in a dense tuft of short setae (Fig. 8).

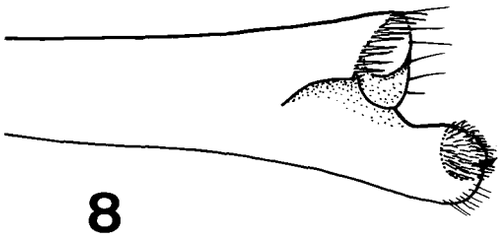
Taumacera tibialis Mohamedsaid

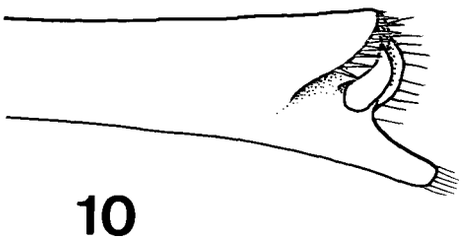
Material examined. – (5). Males, E. Borneo, Tabang, Bengen River, 125m, coll. A. M. R. Wegner 13 Sep.1956 & 18 Oct.1956, (ZMB); male, Sarawak, Miri Lambir, uv light, T17, C0151, coll. T. Itioka, 13-14 Jan.1994 (ANIC); female, ditto, except: T35, C0627, 3-4 Oct.1994 (ANIC); female, 'Sakai, Sarawak, 1110' (ANIC).

Notes. – The two females share the distinctive colour pattern of the males of this species (Mohamedsaid, 1994; Reid, 1999). *Taumacera tibialis* was described from Sarawak (Mohamedsaid, 1994), therefore the specimens from Kalimantan Timor are new records for the eastern part of Borneo.









Figs. 7-10. *Taumacera* species, males: *T. midtibialis* Mohamedsaid: 7, metasternal process; 8, apex of metatibia; *T. warisan* Mohamedsaid: 9, metasternal process; 10, apex of metatibia.

Taumacera warisan Mohamedsaid

Material examined. – (2). Males, M. O. Borneo Exp., Marah, coll. H. C. Siebers, 10-28 Nov.1925 (ANIC, ZMB). Compared with male holotype in CIS.

Notes. – These specimens, the first recorded from Indonesian Borneo, are similar to the original material from Sabah (Mohamedsaid, 1998), except in colour: entirely brownish-yellow, except ventrites 1-5 blackish-brown and external face of each tibia streaked brown. One specimen is teneral and significantly paler. Both specimens are 7mm long. In this species, the first antennal segment is triangular and strongly keeled, segments 4-11 are longitudinally keeled, the clypeus is medially convex and shining, with microsculpture confined to the lateral margins, the metasternal median process is flat and ovate (Fig. 9), and the metatibia has a thin straight unarmed apical lobe (Fig. 10). The key to *Taumacera* species (Reid, 1999) has been rewritten (vide supra), to accommodate the colour variation noted.

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