

CYCLOTOMA KERINTJI SP. NOV. OF ENDOMYCHIDAE FROM SUMATRA (COLEOPTERA: CUCUJOIDEA)

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Abstract.— *Cyclotoma kerintji* sp. nov. from Sumatra is described and illustrated. An updated key to the world species of *Cyclotoma* is presented.



Key words.— Entomology, taxonomy, new species, Cucujoidea, Endomychinae, *Cyclotoma*.

INTRODUCTION

Cyclotoma Mulsant (1851) is a very distinctive group within Endomychidae in having typical coccinellid-like habitus, including body shape and colouration. Probably it was a reason, why some species in the past, were described in the genus *Niteta* Weise (1890) classified within Coccinellidae, synonymized subsequently with *Cyclotoma* by the same author (Weise 1903).

Cyclotoma is currently classified in the endomychid subfamily Endomychinae. The monophyly of this subfamily was confirmed by the phylogenetic analysis of the family Endomychidae (Tomaszewska 2000a; 2005). Postulated synapomorphies for this group include labial prementum longer than wide and larval mandibular mola replaced by membranous lobe (although only larva of *Endomychus* Panzer is known for the subfamily).

In the review of *Cyclotoma* (Tomaszewska 2000b) a detailed description of the genus was provided and the following characters were presented as diagnostic: body almost circular in outline, highly convex – almost hemispherical; antenna with a narrow, but not flattened club which is at least as long as the remaining antennomeres combined; pronotum without sulci; elytra with epipleura very wide, complete.

Further three new species were described by the present author (Tomaszewska 2002, 2003) and Shockley *et al.* (2009) in the updated checklist of the

entire family listed 17 species. A new species described here as *C. kerintji* brings the total number of known *Cyclotoma* species up to 18 – all widely distributed in the Oriental Region.

Presented key to known species of *Cyclotoma* is modified and updated. It includes, however, 17 species because *C. formosana* Chûjô has been regarded as species *incertae sedis* (Tomaszewska 2000b).

MATERIAL AND METHODS

I found the specimen of this new species studying the coccinellid collection during my recent visit to the Natural History Museum in London (England) (NHM).

The measurements were made using a filar micrometer as follows: body length, from apical margin of clypeus to apex of elytra; width, across both elytra at widest part; height, across elytra, at highest point; pronotal length, from the middle of anterior margin to margin of basal foramen; pronotal width at widest part; elytral length along suture, including scutellum. The genitalia (preserved in glycerine), were drawn using a camera lucida attached to an Olympus (SZH 10) dissecting microscope. Photographic image was produced using a digital camera and enhanced using AUTO MONTAGE software, and the SEM photographs were made using HITACHI S-3400N, in the laboratory of the MIZ.

SPECIES DESCRIPTION

Cyclotoma kerintji sp. nov.
(Figs 1–6)

Etymology. Named after Mount Kerintji, the type locality of this species.

Diagnosis. Elytral suture narrowly black and three, black spots on each elytron, those placed near suture, connected with sutural, black stripe (Fig. 1), separate this species from all *Cyclotoma* species that similarly have seven spots on each elytron and from all other congeners.

Description. Length 7.80 mm; body 1.14 times longer than wide; strongly convex, about 0.48 times as high as long, very smooth, strongly shiny. Dorsal surfaces brown with head, scutellum, markings on pronotum and on elytra black (Fig. 1); ventral surfaces dark brown with elytral epipleura lighter, antennae and legs (especially femora, tibiae and tarsi) at least infuscate. Antenna (Fig. 4) 11-segmented with scape long and stout, 3 times longer than pedicel; antennomeres 2 and 6–8 quadrate, antennomeres 3 and 5 hardly longer than wide, about 0.75 times as long as antennomere 4 that is distinctly elongate; club almost as long as remaining antennomeres combined with all segments longer than wide; terminal segment twice as long as wide. Maxilla with terminal palpomere elongate, weakly tapering towards apex, truncate apically (Figs 3, 5). Pronotum 1.45 mm long, 3.95 mm wide; about 0.37 times as long as wide; anterior and lateral edges very narrowly bordered; disc weakly convex. Pronotal surface polished between punctures, punctuation sparse and fine. Prosternal process (Figs 3, 5) widely separates front

coxae, about 1.15 times as wide as longest coxal diameter and slightly narrower than intercoxal process of mesoventrite, widening behind front coxae and rounded at apex. Elytra (Fig. 1) 6.60 mm long, 6.85 mm wide; 0.96 times as long as wide; 4.55 times longer than pronotum, 1.73 times wider than pronotum; humeri moderately prominent; elytral surface polished between punctures, punctuation rather sparse and fine. Ventrite I with lines bordering edge of coxal cavity extending posteriorly, looking like postcoxal lines (Fig. 6); ventrite V somewhat truncate at apex. Aedeagus typical for the genus – long, thin, scarcely curved, with penis curled at its base and a tegmen with large, sub-membranous tegminal plate (Fig. 2).

Female unknown.

Types. Holotype ♂: “Sumatra, Mt. Kerintji, Aro Estate, Au Kayo, 1–5.III.1954, A.H.G. Alston, B.M. 1954-414” (NHM).

Distribution. Indonesia: Sumarta.



Figure 2. *Cyclotoma kerintji* sp. nov. Aedeagus, ventral.

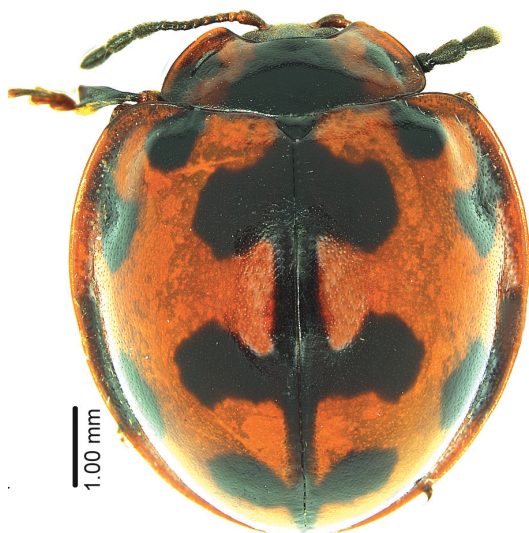
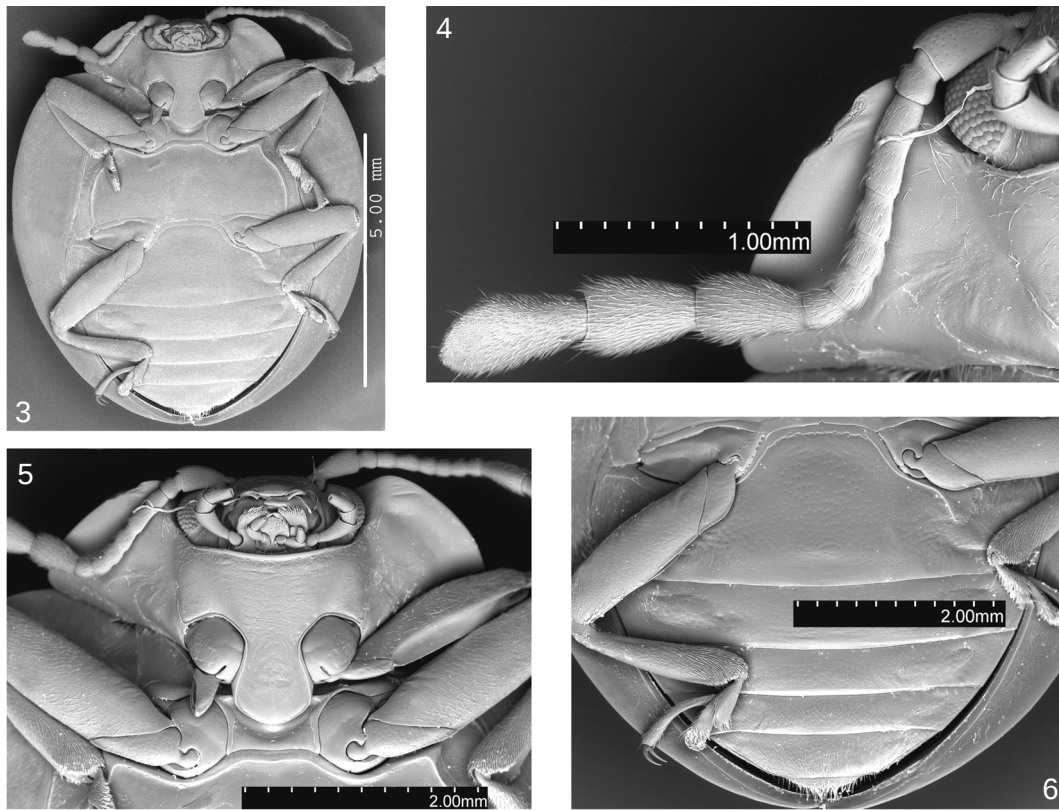


Figure 1. *Cyclotoma kerintji* sp. nov., male.

Key to species of *Cyclotoma*

1. Antennae 10-segmented 2
- Antennae 11-segmented 4
2. Dorsum uniformly blackish; India (Sikkim)
..... *C. nigra* Tomaszewska
- Dorsum predominantly brownish with black contrasting areas 3
3. Clypeus with horn-like, antero-dorsal processes (Figs 1, 4: Tomaszewska 2003); antennomere 4 weakly elongate (Fig. 6: Tomaszewska 2003); each elytron with disk reddish brown surrounded by moderately wide black area (Figs 1, 2: Tomaszewska 2003); South India *C. alleni* Tomaszewska
- Clypeus simple; antennomere 4 very short, transverse (Fig. 16: Tomaszewska 2000b); each elytron yellowish brown with five, large, black oval spots and suture blackish; Sri Lanka
..... *C. cingalensis* (Gorham)



Figures 3–6. *Cyclotoma kerintji* sp. nov. (3) Ventral view; (4) antenna; (5) head, pro- and mesothorax, ventral; (6) abdomen, ventral.

4. Elytra uniformly reddish brown, without contrasting markings; Sumatra *C. sumatrensis* (Gorham)
- . Elytra pale yellow to reddish brown with dark brown or black contrasting markings 5
5. Elytral markings of irregular shapes (Figs 34, 35: Tomaszewska 2000b); epipleura very wide; body weakly conical; Taiwan . . . *C. conica* Tomaszewska
- . Elytral markings more or less regular (round, oval or transverse); epipleura moderately wide; body almost hemisphaerical in shape 6
6. Antenna with segments 4–8 very short, transverse (Fig. 38: Tomaszewska 2000b); elytra with five spots – two spots on each elytron and one largest, common for both elytra in about mid length (Fig. 41: Tomaszewska 2000b); Laos *C. quinquepunctata* Arrow
- . Antenna with at most antennomeres 6–8 transverse; each elytron with at least five spots 7
7. Each elytron with five, six or eight spots 8
- . Each elytron with seven spots 11
8. Elytron with eight spots; pronotum with four, oval, black spots placed transversely; antennal club black 9
- . Elytron with five or six spots; pronotum with one transverse, basal macula; antenna brown 10
9. Spots on elytra of different size and shape (second sutural largest, somewhat triangular (Fig. 48: Tomaszewska 2000b)); antennomere 3 almost 2 times as long as antennomere 4; abdominal ventrite I with lines bordering edge of coxal cavity simple; Vietnam *C. nicoleae* Tomaszewska
- . Spots on elytra more regular in size and shape (large and very large, rounded or oval (Fig. 13: Tomaszewska 2002)); antennomere 3 slightly longer than 4; abdominal ventrite I with lines bordering edge of coxal cavity extending posteriorly, looking like postcoxal lines (Fig. 15: Tomaszewska 2002); Myanmar *C. octomaculata* Tomaszewska
10. Antennomeres 2 and 3 at least weakly longer than wide; antennomere 3 about twice as long as 4 (Fig. 52: Tomaszewska 2000b); each elytron with six spots (Figs 55, 56: Tomaszewska 2000b), (two posterior sometimes partially connected); scutellum black or brownish black at least medially; abdominal ventrite I with two, transverse, black maculae medially (sometimes fused); Borneo *C. borneensis* Tomaszewska
- . Antennomeres 2 and 3 subquadrate; antennomere 3 as long as 4 (Fig. 60: Tomaszewska 2000b); each elytron with five spots (Figs 61, 62: Tomaszewska 2000b); scutellum brown; abdominal ventrite I

- without black maculae; Borneo *C. undecimnotata* Frivaldszky
11. Antennomere 4 distinctly longer than 3 (Fig. 4: present paper); elytral suture black and three spots, these placed near suture fused with sutural band (Fig. 1: present paper); Sumatra *C. kerintji* sp. nov.
- . Antennomere 4 at most as long as 3 or shorter; elytral suture brown and spots separated from it ... **12**
12. Pronotum with four, black spots, placed transversely **13**
- . Pronotum without spots or with at most two, medio-basal spots **14**
13. Antennomere 4 longer than wide, about as long as 3 and longer than antennomere 5 (Fig. 65: Tomaszewska 2000b); legs uniformly brown; venter of body yellow or brown, most often with black, transverse maculae on abdominal ventrite I and sometimes on sides of metaventrite; Northeastern India, Myanmar, Vietnam, Taiwan *C. indiana* (Gorham)
- . Antennomere 4 subquadrate, about twice shorter than antennomere 3 and as long as 5 (Fig. 73: Tomaszewska 2000b); femora with elongate blackish, stripes; venter of body dark reddish brown, with abdominal ventrites I–IV with black, transverse maculae; Laos *C. merkli* Tomaszewska
14. Mesoventral process almost 1.5 times wider than prosternal process (Fig. 82: Tomaszewska 2000b); pronotum without contrasting markings, 0.55–0.57 times as wide as elytra; body dark reddish brown with metaventrite and abdominal ventrite I blackish brown; South India *C. monticola* Arrow
- . Mesoventral process at most 1.3 times as wide as prosternal process (Figs 91, 99, 105: Tomaszewska 2000b); pronotum most often with black spots at base, 0.49–0.53 times as wide as elytra; body yellow to dark brown, sometimes with small black spots on abdominal ventrite I; Java, Philippines **15**
15. Antennomere 3 about 2 times as long as 4 (Fig. 86: Tomaszewska 2000b); elytral spots larger (Figs 89, 90: Tomaszewska 2000b); pronotum with transverse, medio-basal, black macula (Fig. 88: Tomaszewska 2000b) or two oval, connected basally, black spots; Java *C. testudinaria* Mulsant
- . Antennomere 3 subequal in length to antennomere 4; elytral spots smaller (Figs 95, 96, 103, 104: Tomaszewska 2000b); pronotum without maculae or sometimes with two, small, separated, black spots at base; Philippines **16**
16. Lateral margins of elytra narrowly flattened (Fig. 96: Tomaszewska 2000b); antennomere 3 as long as 4 or slightly shorter (Fig. 94: Tomaszewska 2000b); elytra 0.81–0.85 times as long as wide and 4.01–4.28

- times as long as pronotum; aedeagus stout and straight (Fig. 98: Tomaszewska 2000b) *C. coccinellina* (Gerstaecker)
- . Lateral margins of elytra widely flattened (Fig. 103: Tomaszewska 2000b); antennomere 3 slightly longer than 4 (Fig. 100: Tomaszewska 2000b); elytra almost 0.9 times as long as wide and 4.82–4.87 times as long as pronotum; aedeagus thin and curved in about $\frac{1}{3}$ of its basal length (Fig. 106: Tomaszewska 2000b) *C. acleta* Strohecker

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