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*Rhopalodontus lawrencei* n. sp. – the first *Rhopalodontus* species  
in the Oriental Region  
(Coleoptera: Tenebrionoidea: Ciidae)

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ABSTRACT. *Rhopalodontus lawrencei* n. sp. is described from Thailand. It is the first species of the genus *Rhopalodontus* known from the Oriental Region.

Key words: entomology, taxonomy, new species, Coleoptera, Ciidae, *Rhopalodontus*, Oriental Region, Thailand, mycetophages.

INTRODUCTION

The genus *Rhopalodontus* (*Ropalodontus* in original spelling) was created by J. MELLIE in 1847 to accommodate a single species, *Cis perforatus* GYLL.

*Rhopalodontus* is a well-defined genus among the subfamily Ciinae. Its diagnostic features are as follows: procoxae subconical, projecting below intercoxal process; intercoxal process very short, not extending to middle of procoxae; apical part of tibia forming tibial comb and bearing spines (usually a dozen or so); 1st ventrite of male with pubescent fovea partly concealed by subtriangular flap (THAYER & LAWRENCE 2002). The complex history of the synonymical and nomenclatural problems related to the genus in question was discussed in detail by LAWRENCE (1965).

To date, 10 species belonging to the genus are known (ABDULLAH 1973, LAWRENCE 1971). The majority of them inhabit the western Palearctic; the most widely distributed species, *R. perforatus*, ranges from Europe to Japan. *R. harmandi* is known only from Japan and *R. perrini* seems to be restricted to the Caucasus Mts. Only one species is known from North America. The Ciidae fauna of Oriental

Region is insufficiently studied. According to LAWRENCE (1982), hundreds of new taxa remain to be described.

LIST OF ALL DESCRIBED *RHOPALODONTUS* SPECIES

- |   |                          |
|---|--------------------------|
| 1. <i>Rhopalodontus americanus</i> LAWRENCE, 1971 | North America: Wisconsin |
| 2. <i>R. armifrons</i> REITTER, 1913              | North Africa: Algeria    |
| 3. <i>R. baudueri</i> ABEILLE de PERRIN, 1874     | Southern Europe          |
| 4. <i>R. camelus</i> ABEILLE de PERRIN, 1875      | North Africa: Lebanon    |
| 5. <i>R. harmandi</i> LESNE, 1917                 | Japan                    |
| 6. <i>R. lawrencei</i> n. sp.                     | Thailand                 |
| 7. <i>R. novorossicus</i> REITTER, 1902           | Southeastern Europe      |
| 8. <i>R. perforatus</i> (GYLLENHAL, 1813)         | Eurasia                  |
| 9. <i>R. perrini</i> REITTER, 1878                | Caucasus                 |
| 10. <i>R. populi</i> BRISOUT, 1877                | Southern Europe          |
| 11. <i>R. strandi</i> LOHSE, 1969                 | Scandinavia, Poland      |

MEASUREMENTS

All the measurements are given in millimeters; 12 males and 15 females from both type localities (see "Type material") were measured; mean and standard deviation are given in brackets.

***Rhopalodontus lawrencei* n. sp.**

(Figs. 1-9)

NAME DERIVATION

The species is named in honour of Dr. John F. LAWRENCE, a world-leading coleopterologist and specialist in the Ciidae, who was the first to recognize this species (LAWRENCE 1971) and supplied me with additional specimens for the study.

DIAGNOSIS

The author is not familiar with all species of the genus. In three cases (*R. harmandi*, *R. populi* and *R. americanus*), literature data (CHŪJŌ 1940, LAWRENCE 1971, LESNE 1917, LOHSE 1969, REITTER 1902) are cited. *R. lawrencei* n. sp. is well characterized by long vestiture, unicolourous dorsum, shiny pronotum devoid of microreticulation, shape of prosternum, and morphology of antennae. It can easily be distinguished from two much smaller species, *R. camelus* and *R. perrini* by its body size. A bicoloured body (elytra paler than rest of dorsum) is a unique feature of *R. perrini*. Several species with distinct microreticulation (at least on the lateral sides) of pronotum (*R. perrini*, *R. populi*, *R. harmandi*) are also easily distinguishable. Short vestiture is characteristic for few species: the vestiture of *R. camelus* consists of short, erect bristles; the dorsum of *R. novorossicus* is covered with much shorter hairs; *R. strandi* and *R. baudueri* have longer vestiture than the

previous species, but it is still shorter and sparser than that of *R. lawrencei*. *R. armifrons* and *R. perforatus* have stouter body form. *R. americanus* and *R. perforatus* can be easily distinguished by the different shape of their prosternum. The elytral puncturation of *R. armifrons* is stronger and the clypeal ridge forms two sharp subtriangular denticles separated by a deep emargination. *R. baudueri* has extremely strong elytral puncturation, shorter hairs and more elongate body form.

#### DESCRIPTION

*Male*. Body length (excluding head) 1.68 – 2.05 ( $1.85 \pm 0.11$ ) (holotype 1.90), greatest pronotal width 0.75 – 0.95 ( $0.86 \pm 0.06$ ) (holotype 0.85), greatest elytral width 0.83 – 1.00 ( $0.91 \pm 0.04$ ) (holotype 0.90). Body 1.86 – 2.33 ( $2.04 \pm 0.13$ ) (holotype 2.11) times as long as broad, strongly convex, subcylindrical, dark brown in fully pigmented adults (Fig. 1, 2). Colour of teneral specimens varies from light yellow to reddish brown. Legs brown (yellowish in teneral specimens). Palpi and antenna yellowish brown, with three terminal antennomeres darkened, brownish. Dorsum clothed with long, fine, soft, yellowish erect hairs which are



1, 2. *Rhopalodontus lawrencei* n. sp. 1 – male habitus; 2 – male, lateral view

often recurved. Their length slightly increases from anterior to posterior parts of pronotum and from posterior to anterior parts of elytrae.

Head (Fig. 4) subglobular, dorsal surface with sparse and inconspicuous punctures, shiny. Lateral surfaces densely punctate. Punctures fusing into longitudinal lines extending from eyes to posterior region of head. Vertex concave, transversely depressed in its central part. Surface of vertex with reticulate microsculpture. Frontoclypeal ridge upturned, bearing two distinct tubercles. Outer ridge of tubercles usually protruding into small nodes and frontoclypeal ridge appearing to be subtle quadridentate. Tubercles subtriangular, slightly blunted on apices, separated by deep emargination. Distance between apices of tubercles is equal to 1.5 basal width of tubercle. Posterior sides of the frontoclypeal ridge, especially inner sides of tubercles, covered by sparse, short and robust yellowish brown stiff bristles, evidently differing from vestiture on the other parts of body. Antenna capitate, 10-segmented (Fig. 3). Length ratio of antennomeres: 6.44 : 4.44 : 2.67 : 1.78 : 1.33 : 1.11 : 1.00 : 3.78 : 3.78 : 4.44; length/width ratio of antennomeres: 1.71 : 2.00 : 2.00 : 1.14 : 0.75 : 0.56 : 0.45 : 0.81 : 0.74 : 0.89. Each segment of club bearing four sensilliferes.

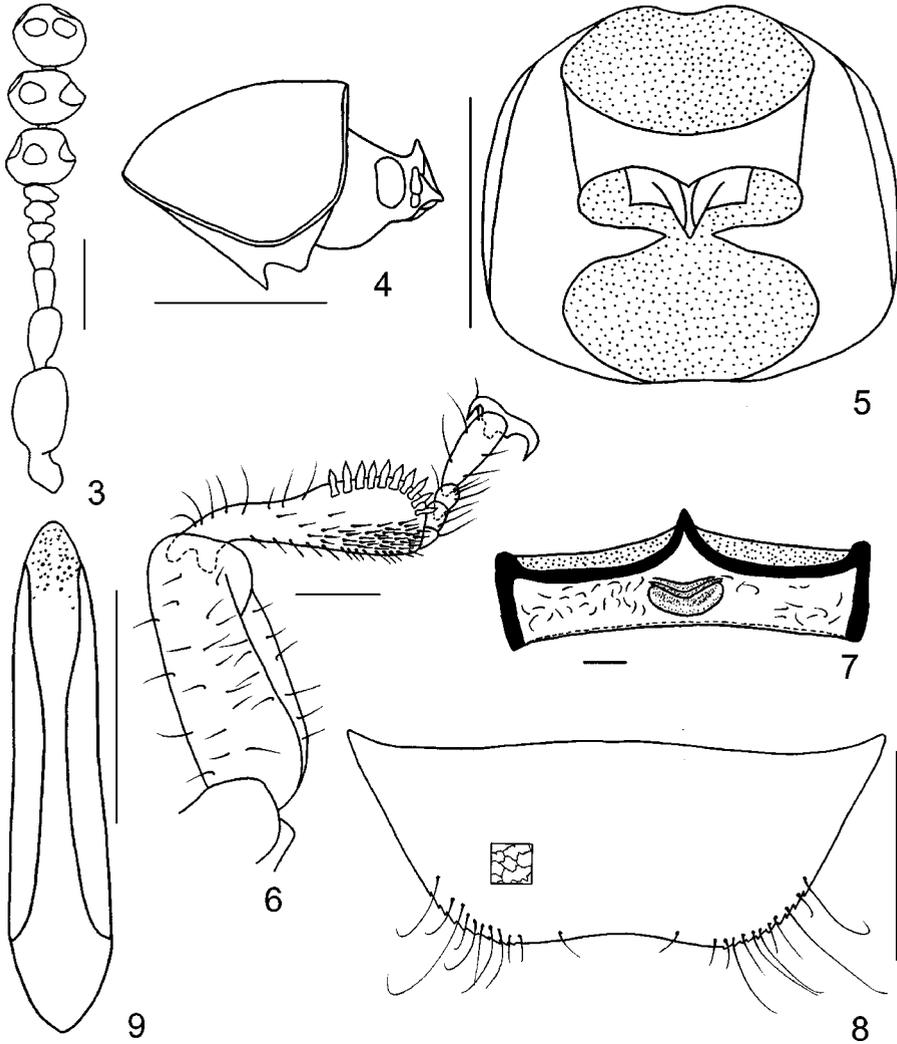
Pronotum (Figs 4, 5) 0.76 – 0.97 ( $0.86 \pm 0.05$ ) (0.85 in holotype) times as long as broad, widest in its posterior half. Anterior part regularly rounded, its anterior margin with weak emargination. Sides of pronotum slightly rounded, may appear straight in larger males; lateral margins not visible from above. Pronotal margins narrowly margined, anterior pronotal margination somewhat crenulate, invisible in emarginated area. Anterior angles not produced, rounded; pronotal disc convex, surface shiny, without microreticulation, punctures uniform, 0.2 times as large as scutellar base, separated by 0.3 – 1.5 (usually 1) diameter. Each puncture bearing a long yellowish hair. Antescutellar region of pronotum with a small longitudinal area devoid of punctures.

Scutellum readily visible, subtriangular.

Elytra 1.08 – 1.42 ( $1.22 \pm 0.09$ ) times as long as broad and 1.34 – 1.67 ( $1.51 \pm 0.09$ ) times as long as pronotum. Sides subparallel in basal two-thirds, then converging to apex. Lateral margins invisible from above. Humeri visible, sometimes indistinct, marked as a small node. Puncturation single, confused. Punctures larger than those on pronotum, 0.35 times as large as scutellar base, separated by 0.3 – 1.0 (usually 0.5) diameter; bearing fine, erect, yellowish hairs which are about 1.0 – 1.5 (usually about 1.2) times as long as scutellar base. A single row of smaller, more regular and somewhat elongated punctures is situated in the subsutural area, parallel to the suture. Elytral surface shiny, with indistinct microreticulation which can be seen under high magnification. Hind wings fully developed.

Legs (Fig. 6) of similar length, although fore legs better developed than mid- and hind legs; clothed by sparse hairs. Procoxae subconical, almost 2 times as long as wide, with a small sharp denticle on inner side, strongly projecting below intercoxal process. Mesocoxae slightly smaller than procoxae, subglobular, about 1.5 times as long as wide. Metacoxae strongly transverse, subcylindrical, 3 times as long as wide. Trochanters minute, elongated and subtriangular. Profemora

parallel-sided; mesofemora smaller than profemora, with slightly rounded sides; metafemora still smaller, with sides distinctly rounded. Tibia of similar morphology, with outer apical angles produced, rounded and bearing 9-12 (usually 9, mean 9.8) spines. Tibial comb is best developed on protibial apices. Tarsal formula 4-4-4, each tarsomere with a few relatively long hairs on ventral side. Tarsal claws toothed.



3-9. *Rhopalodontus lawrencei* n. sp. 3 - antenna; 4 - head and pronotum, ventral view; 5 - prothorax, ventral view; 6 - anterior leg; 7 - 1st ventrite of male; 8 - 8th sternite of male; 9 - tegmen (scale bar: 3, 6, 7, 8, 9 - 0.1 mm, 4, 5 - 0.5 mm)

Ventrum covered by short, sparse, yellowish hairs. Ventral surface of head glossy. Prosternum slightly concave, about 0.55 as long as procoxal cavity; intercoxal process very short, subtriangular. Procoxal cavities transverse. Mesosternum short, forming wide triangular process separating mesocoxae. Mesocoxal cavities oblique. Metasternum about 0.5 times as long as wide, convex, without metasternal suture, forming sharp process separating mesocoxae. Metacoxal cavities transverse. Five abdominal sternites visible. First ventrite with well visible median, transversely oval pubescent fovea partly covered by a posteriorly projecting, subtriangular, somewhat blunt flap (Fig. 7).

Male genitalia: tegmen (Fig. 9) tubular, with small granules on its apical part. Median lobe long, filiform, about 1.5 times as long as a tegmen. 8th abdominal sternite (Fig. 8) subtrapezoidal, with distinct microreticulation.

*Female.* Length 1.58 – 1.88 ( $1.77 \pm 0.08$ ) (allotype 1.75), greatest pronotal width 0.70 – 0.88 ( $0.81 \pm 0.04$ ) (allotype 0.80), greatest elytral width 0.70 – 0.95 ( $0.88 \pm 0.07$ ) (allotype 0.85), body 1.92 – 2.43 ( $2.02 \pm 0.12$ ) (allotype 2.06) times as long as broad. Pronotum 0.82 – 0.91 ( $0.86 \pm 0.02$ ) (allotype 0.84) times as long as broad, elytra 1.09 – 1.30 ( $1.19 \pm 0.06$ ) (allotype 1.24) times as long as broad. Vertex with very shallow central impression, punctures clearly visible. Clypeal ridge without tubercles, anterior pronotal margin without emargination, first ventrite without pubescent fovea. Anterior tibia with 8-10 spines (usually 9, mean 8.85).

#### TYPE MATERIAL

Holotype (male): Thailand, Chiang Mai, 11 III 1963, leg. P. MANICHOTE.

Allotype (female): same data as holotype. Paratypes (10 males and 9 females): same data as holotype; (1 male and 5 females): S Thailand, Yala distr., Betong Cunung Cangdun vil., 25 III – 22 IV 1993, leg. J. STRNAD.

Holotype, allotype and part of paratypes are deposited at the Museum of the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences (Kraków, Poland). Other paratypes are deposited at the Museum of Natural History, Wrocław University (Wrocław, Poland) and in private collections of Roman KRÓLIK (Kluczbork, Poland), Cristiano LOPES-ANDRADE (Viçosa, Brazil), and the author.

#### DISTRIBUTION

Malayan and Indochinese Peninsulas but probably widely distributed in continental south-east Asia.

#### REMARKS

The morphology of male genitalia is widely used as a taxonomic character in the Ciidae. In general, the tegmen and median lobe are well differentiated structures and provide valuable diagnostic features. In the genus *Rhopalodontus*, however, genital structures should be studied with special attention. Due to weak sclerotization, they should be examined in glycerin. Any clearing procedure (e.g.

in KOH) or dehydrating causes irreversible modifications of morphology and makes proper examination impossible.

Host fungi of the above described species are unknown. Related species were recorded from Polyporaceae: *Fomes fomentarius* (*R. perforatus*) and *Piptoporus betulinus* (*R. americanus*, *R. perforatus*) (LAWRENCE 1971, 1973); *R. harmandi* seems to feed on Hymenochaetaceae: *Inonotus radiatus* and *Phellinus hartiigi* (KAWANABE 1999). According to author's observations, the only host species of *R. perforatus* and *R. strandi* in Poland is *Fomes fomentarius*.

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