

INSECTA MUNDI

A Journal of World Insect Systematics

0696

Two new tiger beetle species of the genus *Calochroa* Hope, 1838
(Coleoptera: Cicindelidae) from Myanmar.

150. Contribution towards the knowledge of the Cicindelidae

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Date of issue: March 29, 2019

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Insecta Mundi 0696: 1–7

ZooBank Registered: urn:lsid:zoobank.org:pub:8FFBCA14-A6C9-489F-91A6-E13BFBCA3431

Published in 2019 by

Center for Systematic Entomology, Inc.

P.O. Box 141874

Gainesville, FL 32614-1874 USA

<http://centerforsystematicentomology.org/>

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Electronic copies (Online ISSN 1942-1354, CDROM ISSN 1942-1362) in PDF format

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Layout Editor for this article: Robert G. Forsyth

Two new tiger beetle species of the genus *Calochroa* Hope, 1838 (Coleoptera: Cicindelidae) from Myanmar. 150. Contribution towards the knowledge of the Cicindelidae

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Abstract. *Calochroa horii* Wiesner and Phyu, new species, and *Calochroa fumikoe* Wiesner and Phyu, new species (Coleoptera: Cicindelidae) are described from Myanmar. A key to all members of the genus known to occur in Myanmar is provided.

Key words. Cicindelini, diagnosis, *Calochroa horii*, *Calochroa fumikoe*, new species, key.

Introduction

Due to the kindness of Michio Hori, we were once more able to study specimens of two tiger beetle species he recently collected in Myanmar. Both proved to be new to science and are described herein, representing members of the genus *Calochroa* Hope, 1838, now raising the number of Myanmar species of *Calochroa* to 20 (Sawada and Wiesner 2000; Wiesner, 2004).

Materials and Methods

All measurements were made using a stereomicroscope. Measurements of total body length were made from the front of the clypeus to apex of elytra. The label data of type specimens were collated using the following system: in order from pinhead to pin point the label data were copied with label lines. Printed white labels and rectangular shape, however, were not explicitly noted. All remaining pertinent data were recorded within brackets.

Specimens mentioned here are deposited in the following collections:

DARM Department of Agricultural Research, Yezin, Myanmar.
JWGC Jürgen Wiesner Collection, Wolfsburg, Germany.
MHWJ Michio Hori Collection, Wakayama, Japan.
OMNS Osaka Museum of Natural History, Osaka, Japan.
YAUM Yezin Agricultural University, Yezin, Myanmar.

Results

Calochroa horii Wiesner and Phyu, new species

(Fig. 1)

Type depository. Holotype male in OMNS, one paratype female each in JWGC, DARM and YAUM, two paratype females in MHWJ.

Type status. *Holotype male*, type labels: “5 km W from Ainggyi (teak / plantation), Magway Region, / MYANMAR / May 31, 2018 / Michio HORI & Thanda Moe leg.”, “HOLOTYPE / Calochroa / horii new species / Wiesner & Phyu ded. 2019 [printed, red]”.

Paratypes: 1 female each with same label in JWGC, DARM, and YAUM, and “PARATYPE/ Calochroa / horii new species / Wiesner & Phyu ded. 2019 [printed, red]”. 2 females with same labels in MHWJ.

Distribution. Myanmar (Magway Region).

Etymology. This new species is cordially dedicated to one of its discoverers, Prof. Dr. Michio Hori.

Diagnosis. Similar to *Calochroa schillhammeri* Wiesner, 2004, distinguished by the colour of the labrum, shape of elytral maculation and aedeagus.

Description. *Size*: Total length (without labrum) 13.0–15.7mm (mean = 14.6 mm, $n = 6$). *Head*: Glabrous, with two setigerous punctures next to each of the eyes in front and at the centre; clypeus coppery greenish, marginal part of frons near the eyes green, genae coppery green in front and bluish green at base, remainder of head coppery brown or greenish; frons and orbital plates with distinct longitudinal striae, genae with fine longitudinal striae, vertex distinct and irregularly wrinkled. Eyes pale whitish with some small darker areas. Ratio of width of head to width of elytra = 0.7 in medium. Labrum (male Fig. 2, female Fig. 3) distinctly wider than long, ratio of length to width = 0.6 in medium, yellowish, black at margins and at the four setal pits, with five pointed apical teeth, the middle three larger, the outer two smaller. Mandibles yellow, teeth black. Labial palpi yellowish, apical joint black, the distal segments brown. Maxillary palpi yellowish, apical joint black, basal segment of labial palpi with long erected white setae. Antennae slender, reaching back a third of the elytral length in the male, a little shorter in the females; antennomeres one to four dark, with metallic green luster; scape with one long apical seta, the other three antennomeres almost glabrous; antennomeres five to eleven black, dull, finely and evenly pubescent. *Thorax*: Pronotum slightly wider than long (ratio of length to width = 0.8 in medium), sides somewhat rounded between the transversal constrictions; glabrous, with white setae at lateral margin; with irregular wrinkles on disc; color brown or greenish, lateral margin greenish or coppery. Proepisternum blue violet, other sternae and episternae greenish black, proepisternum with a few white setae in male, glabrous in females, mesepisternum, metepisternum, mesepimeron and metasternum setose; mesepisternum of females with a longitudinal furrow in the upper half. *Elytra*: (Fig. 5–7) wider than head with eyes, parallel-sided, apices microserrulate, rounded, with distinct sutural edge; shoulders well marked, subsquare; surface smooth with a fine microsculpture, ground color greenish; elytral testaceous maculations consist of a large comma-shaped apical dot, a triangular central dot subhumeral and humeral dot, all three transversally arranged and connected with each other, the humeral one covering the shoulder. Epipleurae brownish. *Ventral aspect*: Venter greenish black, abdominal segments setose; coxae with white setae; trochanters testaceous; coxae, femora, tibiae and tarsi dark, with greenish or coppery reflections; legs covered with sparse setae, mesotibiae more densely setose. *Aedeagus*: (Fig. 4) on left lateral view fusiform, straight, tapering, slightly enlarged in the middle, with a straight, pointed tip (total length 3.9mm).

Calochroa fumikoe Wiesner and Phyu, new species

(Fig. 8)

Type depository. Holotype male in OMNS, one paratype male and one paratype female each in DARM and YAUM, two paratype males and two paratype females in JWGC, sixteen paratype males and six paratype female in MHWJ.

Type status. *Holotype male*, type labels: “Pyon village, near Ainggyi, / 13 miles from Saw, / Magway Region, MYANMAR / June 1, 2016 / Michio HORI & Thanda Moe leg.”, “HOLOTYPE / Calochroa / fumikoe new species / Wiesner & Phyu ded. 2019 [printed, red]”.

Paratypes: 1 male and 1 female with same label in DARM, and “PARATYPE, Calochroa / fumikoe new species / Wiesner & Phyu ded. 2019 [printed, red]”. 1 male with same labels in JWGC. 1 male and 1 female with same labels in YAUM. 4 males with same labels in MHWJ. 1 female in MHWJ: “5 km W from Ainggyi (teak / plantation), Magway Region, / MYANMAR / May 31, 2018 / Michio HORI & Thanda

Moe leg.”, and “PARATYPE, *Calochroa* / *fumikoe* new species / Wiesner & Phyu ded. 2019 [printed, red]”. 1 male and 2 females in JWGC: “Pyon village, near Aingyi, / 13 miles from Saw, / Magway Region, MYANMAR / June 1, 2016 / Michio HORI & Thanda Moe leg.”, and “PARATYPE, *Calochroa* / *fumikoe* new species / Wiesner & Phyu ded. 2019 [printed, red]”. 9 males and 3 females with same labels in MHWJ. 1 male and 1 female in MHWJ: “Pyon village, near Aingyi, / 13 miles from Saw, / Magway Region, MYANMAR / June 8, 2015 / Michio HORI & Thanda Moe leg.”, “PARATYPE / *Calochroa* / *fumikoe* new species / Wiesner & Phyu ded. 2019 [printed, red]”. 2 males and 1 female in MHWJ: “Pyon village, near Aingyi, / 13 miles from Saw, / Magway Region, MYANMAR / June 10, 2017 / Michio HORI & Thanda Moe leg.”, “PARATYPE / *Calochroa* / *fumikoe* new species / Wiesner & Phyu ded. 2019 [printed, red]”.

Distribution. Myanmar (Magway Region).

Etymology. This new species is cordially dedicated to Fumiko Hori, wife of Prof. Dr. Michio Hori.

Diagnosis. Similar to *Calochroa nosei* Sawada and Wiesner, 2000, but distinguished by the shorter tarsal and antennae segments and the shape of aedeagus.

Description. *Size:* Total length (without labrum) 12.2–16.5mm (mean = 14.3mm, $n = 30$). *Head:* Glabrous, with two setigerous punctures next to each of the eyes in front and at the centre; clypeus brassy greenish, marginal part of frons near the eyes bluish green, genae brassy greenish in front and bluish green at base, remainder of head coppery brown or greenish in males, black in females; frons and orbital plates with distinct longitudinal striae, genae with fine longitudinal striae, vertex distinct and irregular wrinkled. Eyes pale whitish with some small darker areas. Ratio between width of head and elytra = 3.5 in medium. Labrum (male Fig. 9, female Fig. 10) distinctly wider than long, ratio of length to width = 0.6 in medium, yellowish, irregularly black at margins, with four setae in front, with three pointed apical teeth and two small bulges each on left and right side of the three teeth. Mandibles yellow, teeth black. Labial palpi yellowish, apical two joints black. Maxillary palpi yellowish, apical joint black, basal segment of labial palpi with long erect white setae. Antennae slender, reaching back a third of the elytral length in the males, a little shorter in the females; antennomeres one to four dark, with metallic green luster; scape with one long apical seta, the other three antennomeres almost glabrous; antennomeres five to eleven black, dull, finely and evenly pubescent. *Thorax:* Pronotum slightly wider than long (ratio of length to width = 0.9 in medium), sides somewhat rounded between the transversal constrictions; glabrous, with a few white setae at front in lateral margin; with irregular wrinkles on disc; color brown or greenish in males, black in females, lateral margin greenish blue in males, coppery in females. Sternae and episternae bluish black, proepisternum with a few white setae in males, glabrous in females, mesepisternum and metepisternum glabrous, mesepimeron and metasternum setose; mesepisternum of females with a longitudinal furrow in the upper half. *Elytra:* (Fig. 12–15) wider than head with eyes, parallel-sided, apices microserrulate, rounded, with distinct sutural edge; shoulders well marked, subsquare; surface smooth with a fine microsculpture, ground color black; elytral testaceous maculations consist of a roundish apical dot, an oblong oval central dot small and a triangulate humeral dot, which is mostly enlarged onto the disk forming a lunule with variably extended distal part. Epipleurae brownish. *Ventral aspect:* Venter bluish black, abdominal segments 1, 2 and 3 setose apically; coxae with white setae; trochanters testaceous; coxae, femora, tibiae and tarsi dark, with metallic reflections; legs covered sparsely with setae, mesotibiae more densely setose. *Aedeagus:* (Fig. 11) on left lateral view fusiform, straight, tapering, slightly indented in the middle, with a straight, blunt, and upturned apex (total length 3.9mm).

Provisional key to the *Calochroa* of Myanmar

1. Abdominal segments reddish 2
- Abdominal segments black or metallic black colored 4
- 2(1). Elytra unicolored, without yellow maculation *Calochroa bicolor bicolor* (Fabricius, 1781)
- Elytra with yellow maculation 3
- 3(2). Maculation of elytra consists of humeral, basal, subhumeral, central and apical dot.
- *Calochroa chatthinensis* Wiesner and Phyu, 2015

- Maculation of elytra consists of humeral dot and central band only *Calochroa corbetti* (Horn, 1899)
- 4(1). Elytra lacking humeral dot; maculation of elytra consists of small, transversally arranged subhumeral, central and apical dot *Calochroa flavomaculata flavomaculata* (Hope, 1831)
- Elytral maculation contains a humeral dot 5
- 5(4). Ground color of elytra bright blue; body length > 20 mm *Calochroa octonotata* (Wiedemann, 1819)
- Ground color black, greenish or green; body length ≤ 20 mm 6
- 6(5). Elytra lacking apical dot 7
- Elytral maculation contains an apical dot 8
- 7(6). Labrum completely dark; body length > 15 mm *Calochroa assamensis* (Parry, 1844)
- Disc of labrum yellow; body length ≤ 15 mm *Calochroa salvazai* (Fleutiaux, 1919)
- 8(6). Ground color of elytra black or black with greenish luster 12
- Ground color of elytra green 9
- 9(8). Elytral maculation contains a narrow longitudinal band, originating at the shoulder, extending at least to the elytral half 10
- Elytra without a narrow longitudinal band 11
- 10(9). Longitudinal band reaching from shoulder to apex *Calochroa interruptofasciata flavolineata* (Chaudoir, 1865)
- Longitudinal band divided into several (mostly two or three) segments *Calochroa interruptofasciata interruptofasciata* (Schmidt-Goebel, 1846)
- 11(9). Labrum broad metallic green at lateral margin; central dot isolated *Calochroa schillhammeri* Wiesner, 2004
- Labrum with small black border; central dot connected to subhumeral dot *Calochroa horii* Wiesner and Phyu, new species
- 12(8). Elytral maculation contains an isolated, short, roundish humeral dot 13
- Humeral dot triangular, extending towards elytral disk, often connected to a subhumeral dot and together forming a lunule 15
- 13(12). Labrum with metallic reddish luster; elytral maculation with subhumeral dot *Calochroa octogramma octogramma* (Chaudoir, 1852)
- Labrum blackish, disc yellow; elytral maculation without subhumeral dot 14
- 14(13). Subapical dot of elytral maculation somewhat smaller only than central dot; central dot roundish *Calochroa nosei* Sawada and Wiesner, 2000
- Subapical dot of elytral maculation much smaller than central dot; central dot transverse ... *Calochroa myinthlaingi* Wiesner, 2004
- 15(12). Humeral dot, not isolated and triangular; humeral and subhumeral dot forming a straight longitudinal band 16
- Elytral maculation not as above 17
- 16(15). Labrum black, with metallic luster *Calochroa laurae* (Gestro, 1893)
- Labrum yellow with dark border *Calochroa tritoma* (Schmidt-Goebel, 1846)
- 17(15). Head and pronotum red *Calochroa cariana* (Gestro, 1893)
- Head and pronotum dark coppery, green or black 18
- 18(17). Body length > 15 mm *Calochroa pseudosiamensis* (Horn, 1913)
- Body length ≤ 15 mm 19
- 19(18). Abdominal segments four, five and six setose *Calochroa mariae* (Gestro, 1893)

- Abdominal segments four, five and six glabrous 20
- 20(19). Trochanters black and/or aedeagus ≥ 5 mm *Calochroa anometallescens* (Horn, 1893)
- Trochanters yellow; aedeagus < 5 mm 21
- 21(20). Antennal and tarsal segments thicker (ratio between length and width of basal tarsal segment of male = 9, ratio between length and width of apical antennal segment of female = 3) *Calochroa fumikoe* Wiesner and Phyu, new species
- Antennal and tarsal segments thinner (ratio between length and width of basal tarsal segment of male = 12, ratio between length and width of apical antennal segment of female = 6) *Calochroa nosei* Sawada and Wiesner, 2000

Acknowledgments

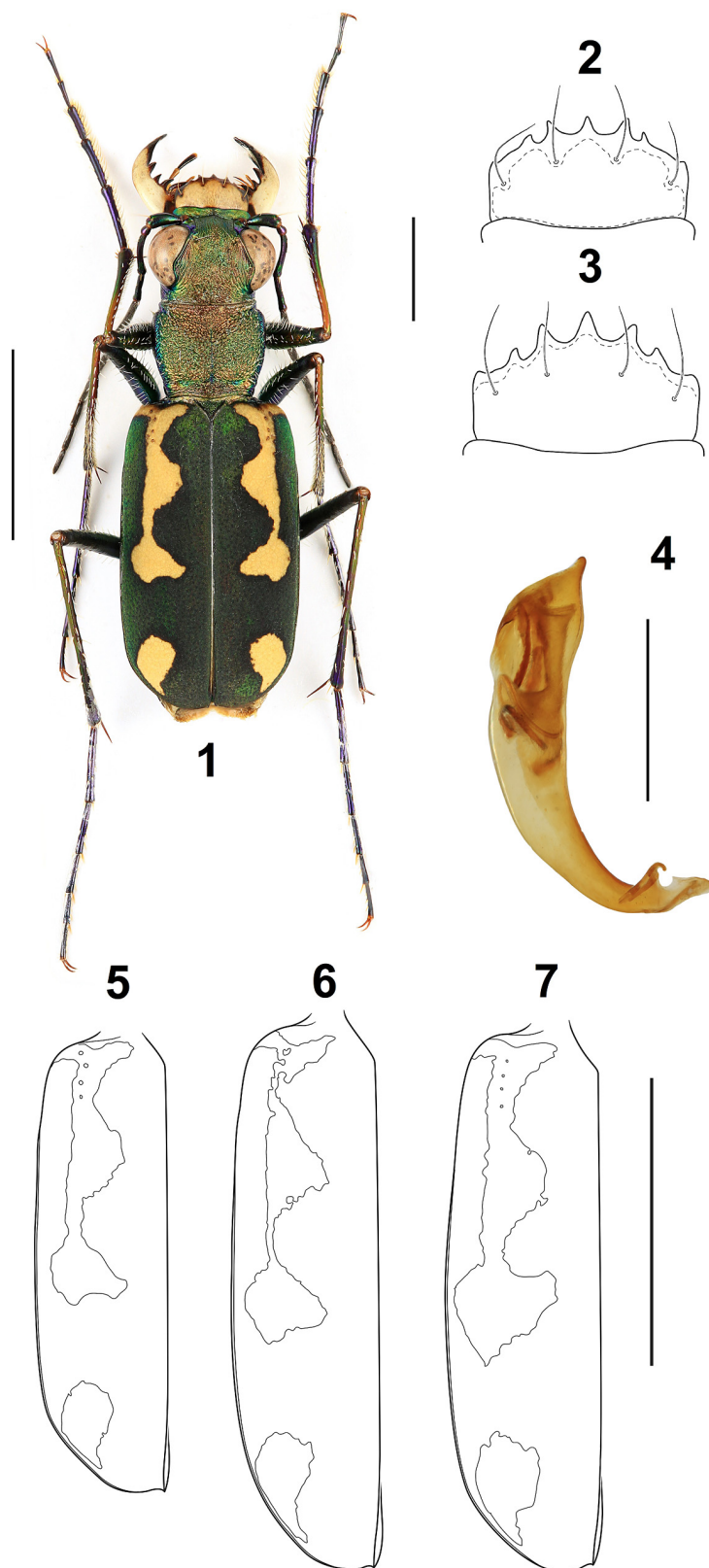
The authors are indebted to Prof. Dr. Michio Hori (Wakayama, Japan) for providing the beetles for study. Many thanks to Prof. David L. Pearson (Tempe, AZ) and Radomir Jaskuła (Łódź) for proofreading and Peter Schüle (Herrenberg) for providing the excellent pictures and drawings.

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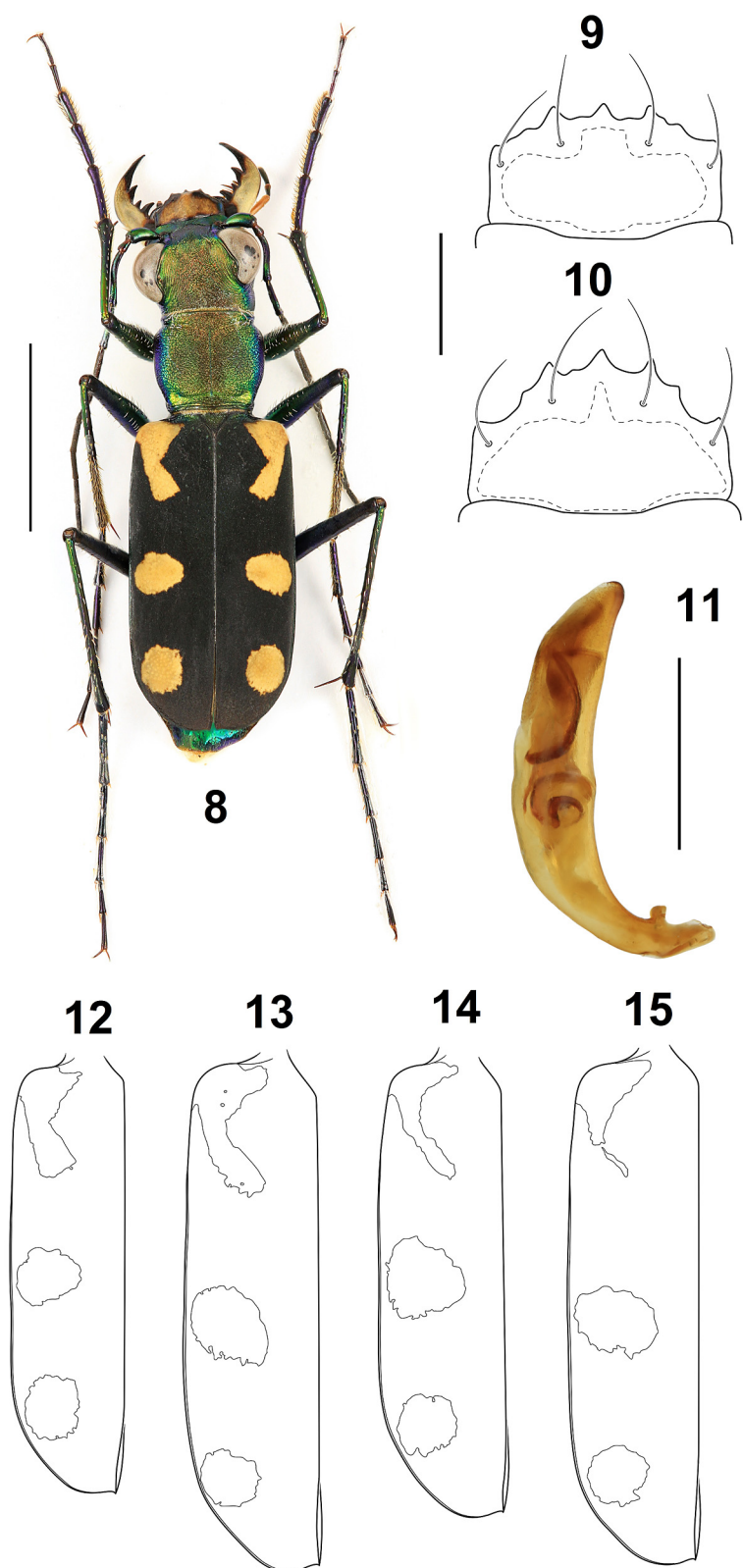
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Received February 4, 2019; accepted March 2, 2019.

Review editor Gareth S. Powell.



Figures 1–7. *Calochroa horii* new species. **1)** Habitus, holotype male, scale = 5 mm. **2–3.** Labrum, scale 1 mm. **2)** Holotype male. **3)** Paratype female. **4)** Left lateral view of aedeagus, holotype, scale = 2 mm. **5–7.** Left elytron, scale = 5 mm. **5)** Holotype male. **6)** Paratype male. **7)** Paratype female.



Figures 8–15. *Calochroa fumikoeae* new species. **8)** Habitus, holotype male, scale = 5 mm. **9–10.** Labrum, scale = 1 mm. **9)** Paratype male. **10)** Paratype female. **11)** Left lateral view of aedeagus, holotype, scale = 2 mm. **12–15.** Left elytron, scale = 5 mm. **12)** Holotype male. **13)** Paratype female. **14)** Paratype male. **15)** Paratype female.

