

A New Species of the Genus *Pseudopyrochroa* (Coleoptera, Pyrochroidae) from the Ryukyus, Japan

Tatsuya KAI and Hiroyuki YOSHITOMI

Entomological Laboratory, Faculty of Agriculture, Ehime University,
Tarumi 3-5-7, Matsuyama, 790-8566 Japan
E-mail: tty.kai.lb@gmail.com

Abstract A new species of the genus *Pseudopyrochroa*, *P. yaeyamana* sp. nov., is described from the Yaeyama Islands, Japan.

Introduction

The genus *Pseudopyrochroa* PIC, 1906 (Coleoptera, Pyrochroidae, Pyrochroinae) comprises about 60 species, and is distributed in the Eastern Palaearctic and the Oriental Regions (YOUNG, 1996; POLLOCK & YOUNG, 2008). Although twelve species among them with one subspecies are recorded from Japan (NAKANE, 1960; POLLOCK & YOUNG, 2008), there is no record from the Yaeyama Islands. Recently, we found a remarkable species of *Pseudopyrochroa* collected from the islands in the collections of Ehime University Museum. After a close examination, we concluded that it should be a new species as described below.

Materials and Methods

All the specimens examined are preserved in the Ehime University Museum, Matsuyama, Japan (EUMJ).

The specimens were prepared by soaking the whole body in hot water for about five minutes. The abdomen was removed with forceps under a stereoscopic microscope. The genital organ was extracted from the abdomen after a few minutes of soaking in 10% KOH. Then, the muscles and visceral tissues were removed.

The general observation and dissection were made under a stereoscopic microscope (Leica S8A-PO) and photographed using a microscopy camera system (Nikon DS-Fi1-L2). Head and pronotum (Figs. 7–10) were observed with a SEM (Hitachi S-225) after coating with gold; female genitalia (Figs. 19–22) were observed with a digital microscope HiROX KH-1300 and images were captured with the 2D measurement software SHX-13M ver. 2.9.0.

The verbatim label data indicated by double quotation marks (“ ”) are given for holotype and line breaks of the label are indicated by a slash (/).

Terminology follows YOUNG (2000) for male genitalia and WATT (1974) for female genitalia. The abbreviations used in this study are as follows: HL: head length (from apical margin of clypeus to end of occiput); HW: maximum width of head; ID: minimum interocular distance; PL: maximum length of pronotum; PW: maximum width of pronotum; EL: elytral length (from basal margin to apex in suture); EW: elytral maximum width; TL=HL+PL+EL. The arithmetic means of the measurement are given in parenthesis after the range.



Figs. 1–4. *Pseudopyrochroa yaeyamana* sp. nov., holotype, male (1–2) and paratype, female (3–4). — 1 & 3, Dorsal view; 2 & 4, ventral view.

***Pseudopyrochroa yaeyamana* sp. nov.**

(Figs. 1–22)

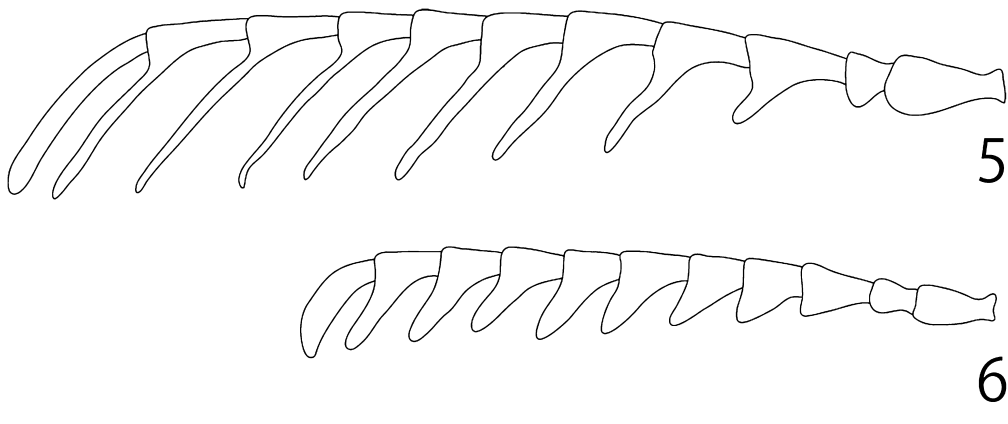
Type Materials. Holotype (EUMJ): ♂, “ Komi, Iriomote / Ryukyus / 7–II–1999 / M. KIMURA leg.” Paratypes: 2 ♂♂ (EUMJ), same locality and date as holotype, H. HIRASAWA leg.; 1 ♂, 1 ♀ (EUMJ), same locality and date as holotype, M. SUGIMOTO leg.; 1 ♀ (EUMJ), same data as holotype.; 1 ♀ (EUMJ), Yassa-dake (Mt.), Hirakubo, Ishigaki Is., Okinawa Pref., 9–I–1999 (pupa), 12–I–1999 (emerged), K. TAKAHASHI leg.

Description. Male. Coloration of antennae, apex and basal parts of mandibles, maxillary and labial palpi, cranium, venter and legs black; pronotum, scutellum and elytra reddish orange; middle parts of mandibles and clypeus, labrum brackish brown; claws brown.

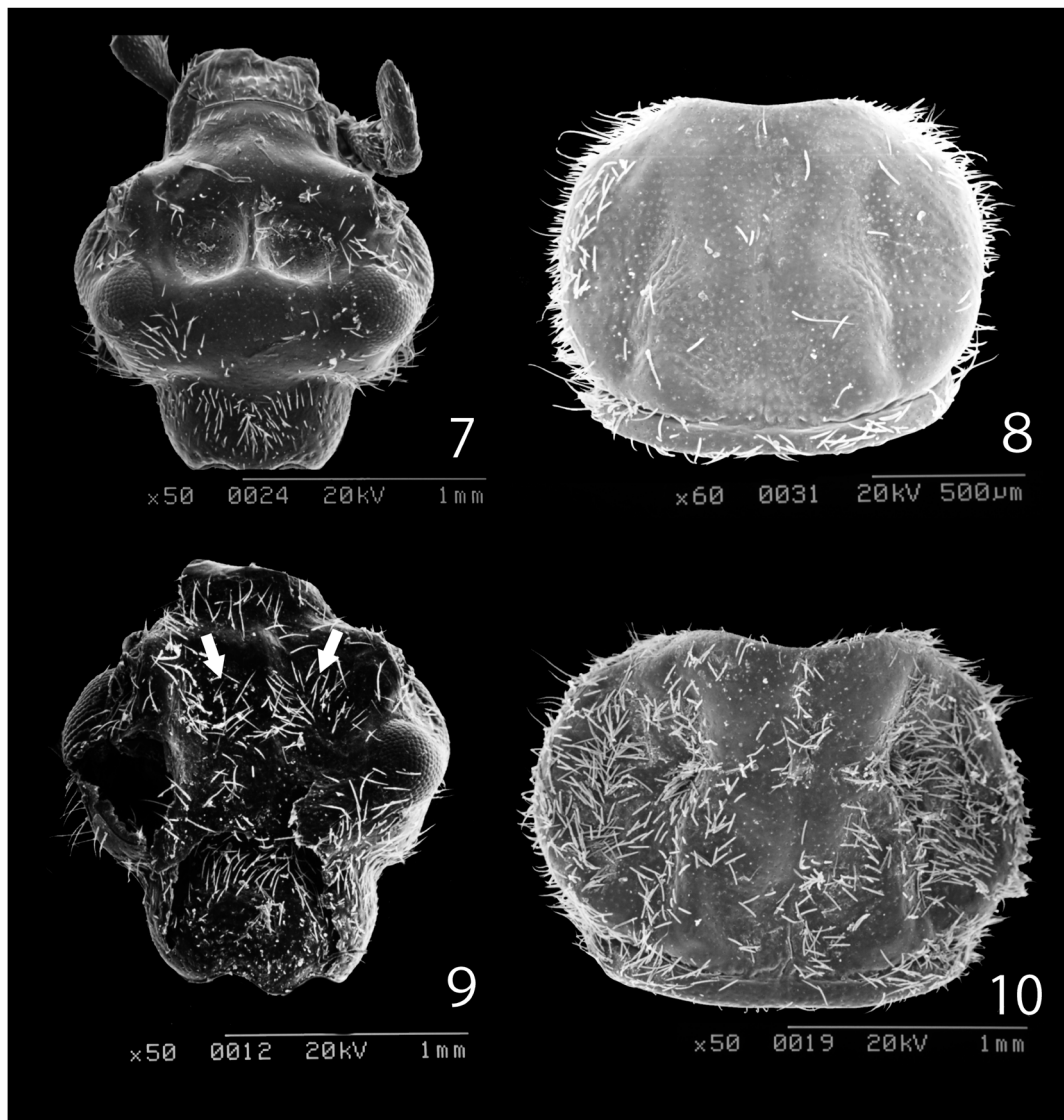
Cranial surface (Figs. 1, 7) sparsely covered with punctures and yellowish setae except for frons; HW/HL 1.13–1.33 (1.21). Frons somewhat swelled along frontal ridge. Cranial pits located interocularly, paired, deeply and distinctly excavated; surface roughly punctate; each pit with barely and inwardly decumbent setae. Vertex broadly gibbose. Neck surface with yellowish setae. Compound eyes moderately coarsely faceted; HW/ID 1.85–1.87 (1.86). Antennae (Figs. 1, 5) relatively short, reaching about basal 1/4 of elytra; antennomeres I–II shining, moderately clothed with short setae; antennomere II small, triangulate; antennomeres III–XI densely clothed with short setae; antennomeres III–X pectinate; approximate ratio of each antennomere and ramus ($n=1$, ramus showing in each parenthesis) as 2.12 : 1.00 : 2.08 (1.68) : 1.88 (2.52) : 1.72 (3.16) : 1.88 (3.32) : 1.64 (3.60) : 1.72 (3.72) : 1.48 (4.08) : 1.76 (3.38) : 4.48.

Pronotum (Figs. 1, 8) rounded octagonal in shape, slightly depressed in lateral part, densely and shallowly punctate; PW/PL 1.19–1.22 (1.20), PW/HW 1.04–1.08 (1.06); vestiture consisting of dense, fine, erect reddish orange to golden setae. Scutellum lingulate, covered with recumbent, yellowish to golden setae. Elytra elongate, somewhat widened apically; longitudinal costae obsolete; EL/EW 1.81–2.29 (2.11), EW/HW 1.88–2.29 (2.11), EW/PW 1.75–2.13 (1.99); vestiture consisting of short, dense, suberect yellowish golden setae.

Sternite VIII (Fig. 11) trapezoidal, narrowed apically; distal margin somewhat emarginate and closely bearing short setae. Tergite VIII (Fig. 12) trapezoidal, narrowed apically; distal margin barely emarginate and sparsely bearing setae; basal margin deeply emarginate. Sternite IX forming V-shaped



Figs. 5–6. Antennae of *Pseudopyrochroa yaeyamana* sp. nov., paratypes, male (5) and female (6). Scale bar = 1.0 mm.



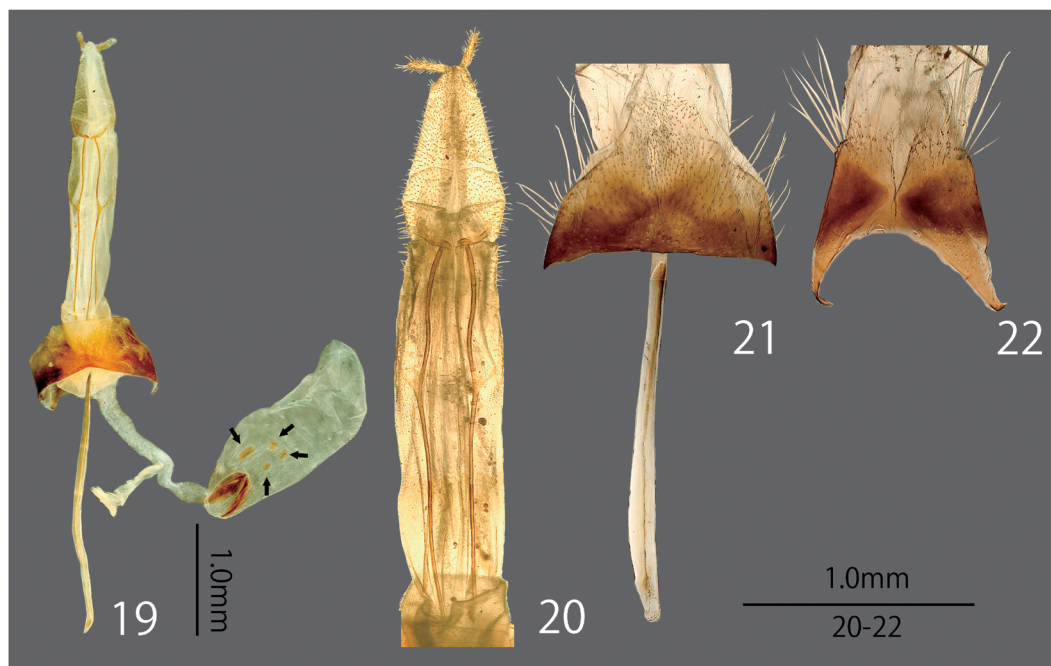
Figs. 7–10. *Pseudopyrochroa yaeyamana* sp. nov., paratypes, male (7–8) and female (9–10). — 7, 9, Head (left compound eye and dorsal neck damaged in Fig. 9; arrows showing concavities); 8, 10, pronotum.

spiculum gastrale. Tergite IX truncate, bearing long setae in apical margin. Tergite X inverted triangular, broadly rounded and bearing short setae in apical margin. Tegmen (Figs. 15, 16) relatively stout; paramere about 1.28 times as long as basal piece, deeply excised at apex, with a pair of small hook-like projections in dorso-lateral parts. Penis (Figs. 17, 18) rather flattened, gently tapered apically, subparallel-sided in basal half; apical hook about 1/12 times as long as the length of penis.

F e m a l e. Coloration of vertex and basal parts of neck faintly reddish. Cranial surface (Figs. 2, 9) coarsely and densely covered with punctures and yellowish setae; HW/HL 1.30–1.50 (1.40), HW/ID 1.60–1.76 (1.70). Frons with a pair of shallow concavities between interocular region (Fig. 9: arrows). Antennae (Figs. 3, 6) short and stout, reaching about basal 1/6 of elytra, densely setose with



Figs. 11–18. *Pseudopyrochroa yaeyamana* sp. nov., paratype, male. — 11, Sternite VIII; 12, tergite VIII; 13 & 14, sternite and tergite IX (13, dorsal view; 14, lateral view); 15 & 16, tegmen (15, dorsal view; 16, lateral view); 17 & 18, penis (17, dorsal view; 18, lateral view).



Figs. 19–22. *Pseudopyrochroa yaeyamana* sp. nov., paratype, female. — 19, Female genitalia (arrows showing spermathecal small sclerites) (ventral view); 20, ovipositor (ventral view); 21, sternite VIII; 22, tergite VIII.

velvet-like appearance; antennomere II small, oval; antennomeres III–X slightly pectinate; approximate ratio of each antennomere and ramus ($n=1$, ramus showing in each parenthesis) as 1.74 : 1.00 : 1.68 (0.42) : 1.32 (1.00) : 1.58 (1.42) : 1.53 (1.74) : 1.58 (1.84) : 1.53 (1.89) : 1.47 (1.95) : 1.58 (1.89) : 2.84. PW/PL 1.29–1.35 (1.32), PW/HW 1.13–1.30 (1.21); EL/EW 1.68–1.89 (1.78), EW/HW 2.33–2.79 (2.55), EW/PW 2.07–2.15 (2.11).

Sternite VIII (Fig. 21) semicircular, densely bearing short setae; lateral margin with long setae; rod-like spiculum long. Tergite VIII (Fig. 22) trapezoidal, narrowed apically, deeply emarginate in caudal margin, bearing long and short setae. Ovipositor (Fig. 20) long, densely bearing short setae in stylus to apico-lateral part of paraproct; paraproct about 2.07 times as long as combined coxite and valvifer; spermatheca with a pair of large sclerites and four (Fig. 19: arrows; from Iriomote Is.) or six (from Ishigaki Is.) small sclerites.

Measurements. Male ($n=3$). TL 7.8–8.3 (8.0) mm, HL 0.9–1.2 (1.1) mm, HW 1.2–1.4 (1.3) mm, ID 0.7–0.8 (0.7) mm, PL 1.1–1.3 (1.2) mm, PW 1.3–1.5 (1.4) mm, EL 5.6–5.8 (5.7) mm, EW 2.5–3.2 (2.8) mm. Female ($n=3$). TL 6.5–10.2 (8.8) mm, HL 0.8–1.2 (1.0) mm, HW 1.2–1.5 (1.4) mm, ID 0.8–0.9 (0.8) mm, PL 1.0–1.5 (1.3) mm, PW 1.4–2.0 (1.7) mm, EL 4.7–7.6 (6.5) mm, EW 2.8–4.3 (3.6) mm.

Distribution. Yaeyama Islands (Iriomote and Ishigaki Islands).

Remarks. This is a distinct species in having reddish orange pronotum and paired cranial pits deeply and distinctly excavated, and is easily distinguished from other Japanese species. A Taiwanese species, *P. punctifrons*, is related to this new species in having reddish orange pronotum and paired cranial pits, and similar features in sternite VIII and tegmen, but the new species differs from it in the following characteristics: Male cranium with vertex black (yellowish orange in *punctifrons*), spacing

between cranial pits narrowed (wide in *punctifrons*); female with a pair of shallow concavities between interocular region (shallowly sulcate transversely in *punctifrons*).

Acknowledgments

We thank the late Dr. Masataka SATÔ and Dr. Keiichi TAKAHASHI, Messrs Hanmei HIRASAWA, Masaaki KIMURA and Masashi SUGIMOTO for their generous cooperation in collecting materials for this study. We would also like to acknowledge Prof. Masahiro SAKAI (EUMJ) for his kind guidance and useful suggestion.

要 約

甲斐達也・吉富博之：沖縄からのアカハネムシ属（コウチュウ目アカハネムシ科）の1新種の記載。——これまでアカハネムシ属は八重山諸島から未記録であったが、西表島、石垣島から得られた標本を検視した結果、新種であることが判明したためヤエヤマアカハネムシ *Pseudopyrochroa yaeyamana* sp. nov. を記載した。本種はオレンジ色の前胸背板と頭部前方にある1対の丸型の窪みから他の日本産と明確に区別できる。また本種と近縁な *P. punctifrons* が台湾に生息しているが、♂♀ともに頭部形状の違いから容易に、区別することができる。

References

- NAKANE, T., 1960. On the Pyrochroidae of Japan (Coleoptera). *Ent. Rev. Japan, Osaka*, **11**: 59–66.
- POLLOCK, D. A., & D. K. YOUNG, 2008. Pyrochroidae. Pp. 414–417. In LÖBL, I., & A. SMETANA (eds.), *Catalogue of Palaearctic Coleoptera*, Vol. 5. 670 pp. Apollo Books, Stenstrup.
- YOUNG, D. K., 1996. Status of *Pseudopyrochroa* types in the Museum National d'histoire Naturelle, Paris (Coleoptera: Pyrochroidae: Pyrochrinae). *Orient. Insects*, **30**: 213–235.
- 2000. Five new species of *Pseudopyrochroa* (Coleoptera: Pyrochroidae: Pyrochrinae) from Taiwan. *Ibid.*, **34**: 245–262.
- WATT, J. C., 1974. A revised subfamily classification of Tenebrionidae (Coleoptera). *N. Z. J. Zool.*, **1** (4): 381–452.

Manuscript received 25 August 2013;
revised and accepted 20 November 2013.