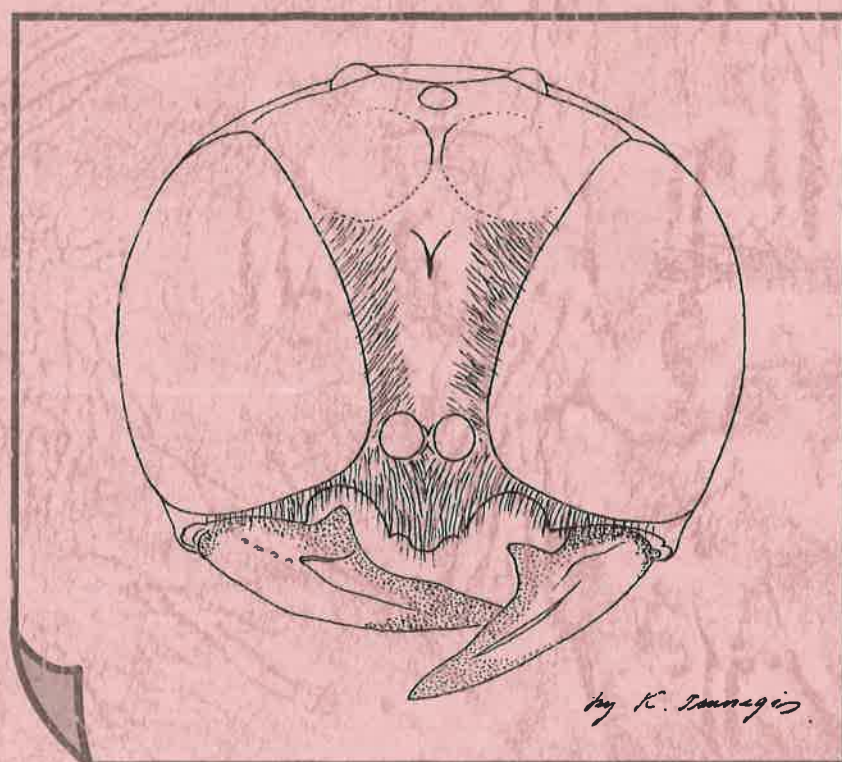


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A new species of the Crabronid wasp genus *Rhopalum* Stephens, 1829, from Vietnam (Hymenoptera : Crabronidae), with a taxonomic note on the genus *Crorhopalum*, Tsuneki, 1984

Mamoru Terayama¹⁾, Tadashi Tano²⁾ and Hideyoshi Kurokawa³⁾

¹⁾ Nakacho 2-12-29, Iwatsuki-ku, Saitama, 339-0054 Japan

²⁾ Kamokawara 1-5-5, Fukui-shi, Fukui, 918-8057 Japan

³⁾ Kaihotsu 3-1708, Fukui-shi, Fukui, 910-0842 Japan

Abstract : A new species of the genus *Rhopalum* Stephens, 1829, *R. babe* sp. nov., in the subfamily Crabroninae is described from Vietnam. This genus is recorded for the first time from Vietnam. The genus *Crorhopalum* Tsuneki, 1984, is synonymized with the genus *Rhopalum* and positioned it as a subgenus state.

The genus *Rhopalum* Stephens, 1829 in the subfamily Crabroninae consists of about 280 described species, and there are several taxonomic studies in geographic regional level : Europe (Bitsch & Leclercq, 1993), Australia (Leclercq, 1997), South America (Leclercq, 2002), Africa (Leclercq, 2012) and Asia (Leclercq, 2011 ; Jacobs, 2016 ; Li & Xue, 1998). It is represented by 75 species in 4 subgenera from Asia and Pacific islands (Leclercq, 2011 ; Jacobs, 2016).

In the course of our study on the aculeate wasps of Asia, we have examined an undescribed species in the genus *Rhopalum* from Vietnam. In this paper, we describe and illustrate it herein.

The following abbreviations are used in this paper : HL-head length ; HW-head width ; WF-width of frons ; FWL-fore wing length ; TL-total body length ; EL-eye length ; POL-distance between posterior ocelli ; AOL-distance between posterior ocellus and anterior ocellus ; OOL-distance from a posterior ocellus to nearest eye margin ; WOT-distance across and including posterior ocelli ; DAO-diameter of anterior ocellus.

Family Crabronidae

Subfamily Crabroninae

Rhopalum babe sp. nov.

(Figs. 1-7, 12)

Diagnosis. This species belongs to the subgenus *Corynopus* Lepeletier & Brullé, 1835, by the broad and flat pygidium without median longitudinal carina, and shining head and mesosoma. It is separated in female from the other Asian species in the subgenus *Corynopus* (8 species) by the shape of anterior margin of clypeus, reddish brown petiole and metasoma, and large body size.

Description. Holotype. Female. **Structure :** Head including eyes slightly wider than long, 0.94 times

as long as wide, widest at posterior 1/5 and narrowest at anterior end, with weakly convex posterior margin in full-face view; posterolateral corner rounded, not forming angle; frons with small shallow punctures moderately and smooth interspaces; frontal impression present, but weak. Mandible with two apical teeth; dorsal and ventral margins subparallel in profile. Clypeus covered with silver pubescence; anterior margin with 3 lobes; lateral margin with dull projection. Antenna short; first 5 antennomeres in a ratio of about 12 : 7 : 4 : 5 : 5.5 in length; scape, 2.2 times as long as wide, pedicel 1.8 times as long as maximum width; 3rd antennomere as long as wide; 4th 1.3 times as long as wide; 5th 1.4 times as long as wide; terminal antennomere 2.3 times as long as wide. Eye large and convex, with ratio of minimum width to length 16.5 : 27. WF narrow, 0.29 times EL. Head from above thick, with ratio of width to length 46 : 33; posterior margin straight, posterolateral corner rounded. Vertex with small shallow punctures and smooth interspaces. Ocelli forming obtuse triangle; posterior ocelli larger than anterior ocellus; POL : AOL = 3 : 2; OOL 0.63 times WOT; DAO ca. 0.10 mm in diameter.

Mesosoma in profile, with ratio to length to height 52 : 37. Pronotal disc narrow, rectangular, 0.13 times as long as wide, smooth with small shallow punctures, medially furrowed, with almost straight anterior margin and concave posterior margin in dorsal view; anterolateral corner forming dull angle. Mesonotum and metanotum each with small punctures densely. Scutum with small shallow punctures; punctures on scutellum sparser than those on scutum. Mesopleurum smooth and shining, with small punctures sparsely. Propodeum smooth and shining, with a median transverse furrow; anterior portion with about 16 short longitudinal rugae.

Metasoma long, 1st segment petiolate, 4.1 times as long as high in lateral view, 4.3 times as long as wide in dorsal view; location of stigma ca. 1/2 from base; surface smooth and shining. 2nd segment to 5th segments smooth, 1.25 mm in maximum dorsal width. Pygidium broad subtriangular, with ratio of maximum width to length 16 : 13, without median longitudinal carina; surface flat and microreticulate, with a median furrow at apical 1/3; basal 1/3 of lateral margins carinate. Legs microreticulate.

Pilosity. Head and mesosoma covered with whitish decumbent pubescences, and metasoma with yellowish decumbent pubescences.

Color. Head black; mandible with black basal 1/3 and blackish brown apical 2/3; antennal scape yellow, pedicel and funicles black. Mesosoma black excepting pronotal lobe yellow; tegula brown. Petiolar segment of metasoma with anterior half yellow and posterior half reddish brown; other segments of metasoma reddish brown. Fore and middle legs yellow excepting coxae brown; upper surfaces of femora and trochanters brown; hind leg including coxa reddish brown. Wings hyaline, veins and pterostigma brown.

Measurements (mm). HL 1.03, HW 1.18, WF 0.23, EL 0.80, FWL 6.3, TL 9.0.

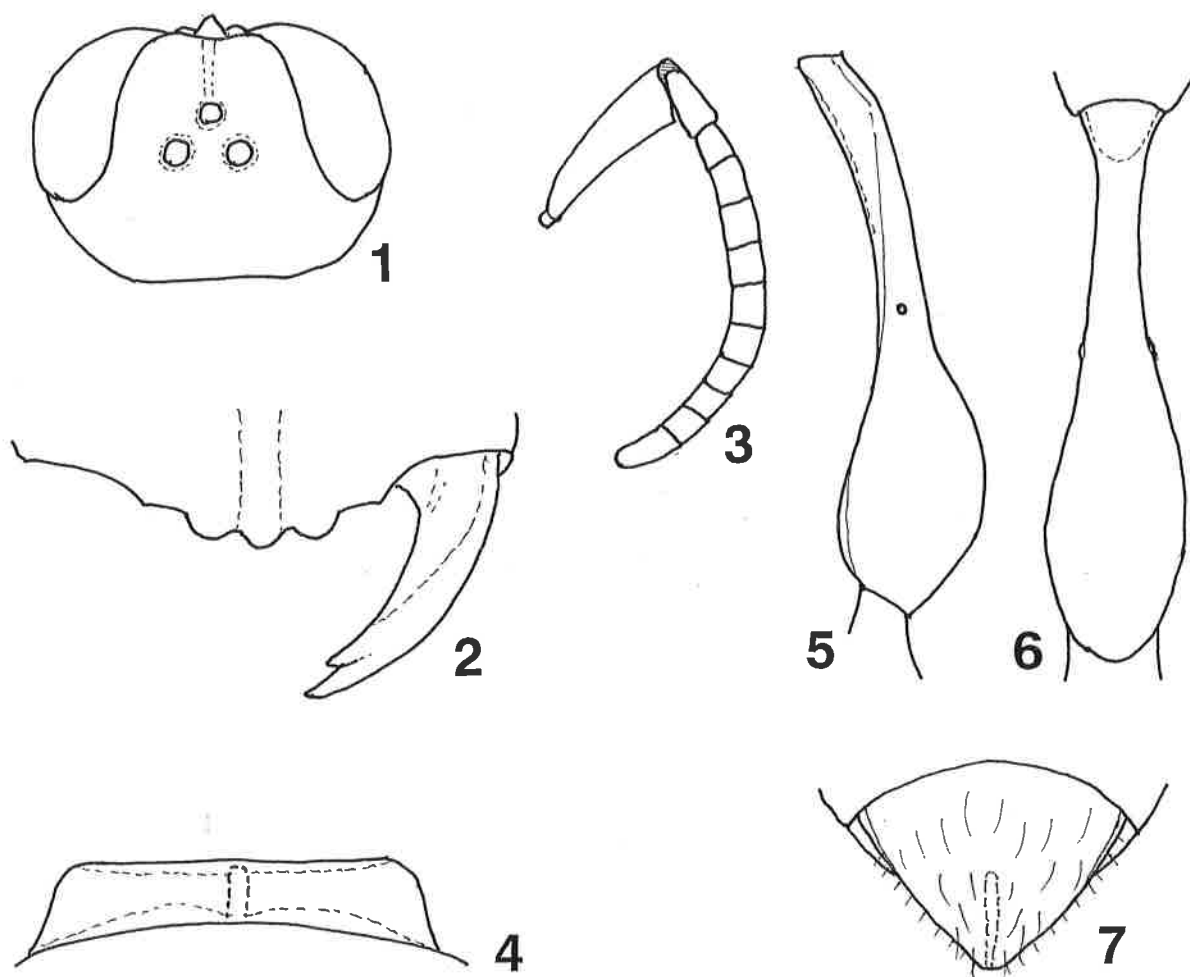
Holotype. Female, Babe (200 m alt.), Bac Can Prov., Vietnam, 1. May, 2006, R. Matsumoto leg.

Paratype. 1♀, same data as holotype.

Type depository. Osaka Museum of Natural History, Osaka, Japan (OHNM).

Etymology. The specific epithet is based on the name of type locality.

Remarks. The genus *Rhopalum* is recorded for the first time from Vietnam (Pham et al., 2015).



Figs. 1-7. *Rhopalum babe* sp. nov., female. —1, Head, dorsal view ; 2, anterior margin of clypeus and left mandible ; 3, antenna ; 4, pronotum, dorsal view ; 5, 1st metasomal segment, lateral view ; 6, *ditto*, dorsal view ; 7, pygidium, dorsal view.

On the genus *Crorhopalum* Tsuneki, 1984

The Genus *Crorhopalum* is established by Tsuneki in 1984 based on *C. cornicum* from the Philippines. The differences between *Rhopalum* Stephens, 1929 and *Crorhopalum* are the presence of intercalary tooth of mandibles and the shape of mesopleura in male. Tsuneki (1984) mentioned that it is close to *Rhopalum* s. l. and may be a subgenus of it.

The holotype is not known to the depository now (Pulawski, 2018). However, we examined a paratype specimen deposited in the Kurokawa's collection. The intercalary tooth of the specimen is blunt and small, and the shape of mesopleura is not find significant difference to separate the genus. We concluded that *Crorhopalum* is a synonym of the genus *Rhopalum*, and positioned it as a subgenus state in the genus *Rhopalum*.

Rhopalum Stephens, 1929 : 366. Type species : *Crabro rufiventris* Panzer, 1799 [= *Sphex clavipes* Linnaeus, 1758 ; ICZN, 1978 : 237 (Opinion 1106)].

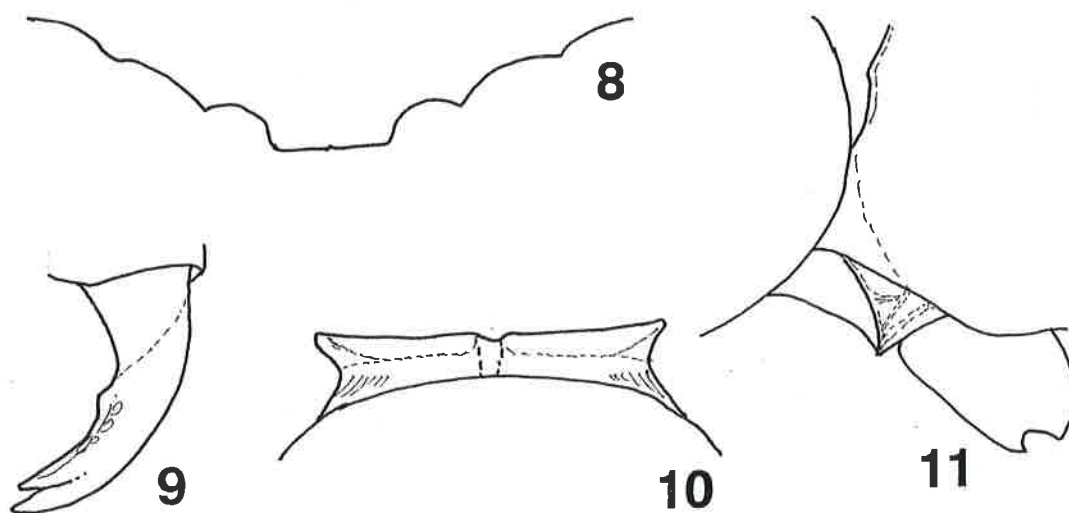
Crorhopalum Tsuneki, 1984 : 4. Type species : *Crorhopalum cornicum* Tsuneki, 1984, by original designation and monotypy. Syn. nov.

Rhopalum (*Crorhopalum*) *cornicum* (Tsuneki, 1984) comb. nov.

Crorhopalum cornicum Tsuneki, 1984 : 5.

Specimen examined (Figs. 8-11, 13). 1♂ (paratype), PHIL. : MINDANAO, Sungco, BUKIDON, 28, 29.vii.1983, H. KUROKAWA leg. (deposited in the Kurokawa's collection).

Remarks. Female is not known.



Figs. 8-11. *Rhopalum cornicum* (Tsuneki, 1984), comb. nov., male. —8, Anterior margin of clypeus ; 9, left mandible ; 10, pronotum, dorsal view ; 11, propleuron, lateral view.



Figs. 12, 13. Profile. 12, *Rhopalum babe* sp. nov., female, holotype ; 13, *Rhopalum cornicum* (Tsuneki, 1984), comb. nov., male, paratype.

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