

## Two New Species of the Genus *Donacia* (Coleoptera, Chrysomelidae, Donaciinae) from Indochina

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**Abstract** Two new species of Donaciinae, *Donacia takakuwai* sp. nov. from Laos and *Donacia dorsohirsuta* sp. nov. from Vietnam, are described. A checklist for Donaciinae from the Indochina region is provided.

**Key words:** Chrysomeloidea, *Donacia*, leaf beetle, new species, Indochina, reed beetle

### Introduction

The subfamily Donaciinae is a small group of Chrysomelidae that eats aquatic plants such as Poaceae, Cyperaceae, Typhaceae, Sparganiaceae, Nymphaeaceae, and Potamogetonaceae. Most species are distributed in the Palaearctic and Nearctic Regions. Six known species of the genus *Donacia* are from Southeast Asia: *D. (Donaciomima) yoshitomii* HAYASHI, *D. (D.) thaiensis* MEDVEDEV, *D. (Cypogaster) miyatakei* HAYASHI, *D. (C.) provostii* FAIRMAIRE, *D. (C.) lenzi* SCHÖNFELDT, and *D. (C.) javana* WIEDEMANN (KIMOTO & GRESSITT, 1979; HAYASHI, 2003, 2004; MEDVEDEV, 2003). Recently, we obtained two species of the genus *Donacia* from Laos and Vietnam, and recognized them as undescribed species. In this paper, we describe them as new species and prepare a checklist for Donaciinae from the Indochina region.

The present paper is dedicated to the memory of the late Dr. Masatoshi TAKAKUWA, who passed away on August 25, 2016.

### Observation Methods

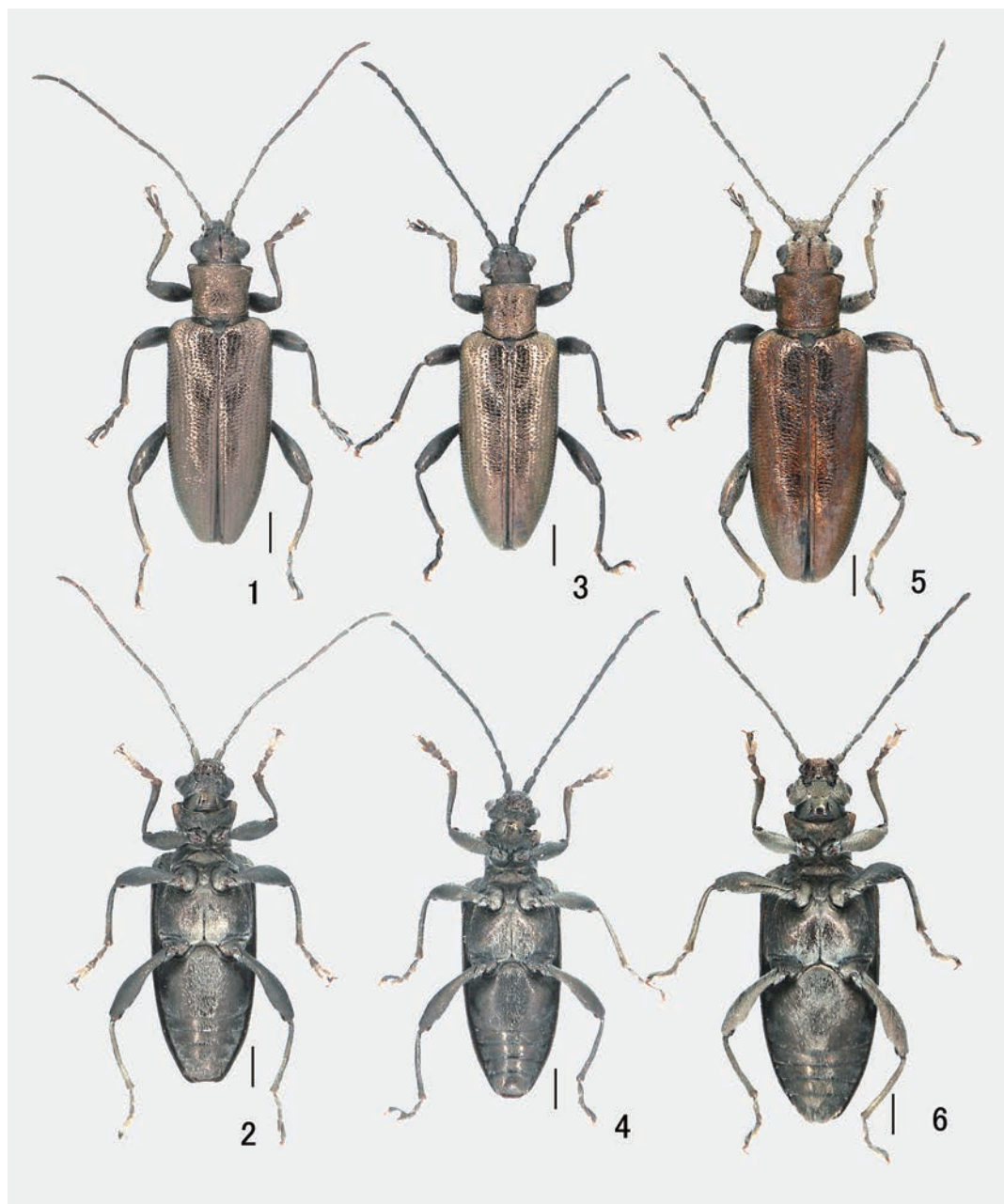
Adult specimens of Donaciinae were examined and photographed in color to examine their external structures under a stereoscopic microscope (Nikon SMZ-1000 with a CCD camera, Nikon Digital Sight, DS-L2). Two to three digital images were captured by focus stacking, using a digital image processing software (Adobe Photoshop CS4 for Macintosh). The minute structures on the body surface were photographed using a scanning electron microscope (SEM, JEOL JCM-6000 Neoscope Scanning Electron Microscope). All samples were not coated. Terminology of the morphological feature of adults follows ASKEVOLD (1990, 1991).

*Donacia (Donaciomima) takakuwai* sp. nov.

(Figs. 1–19)

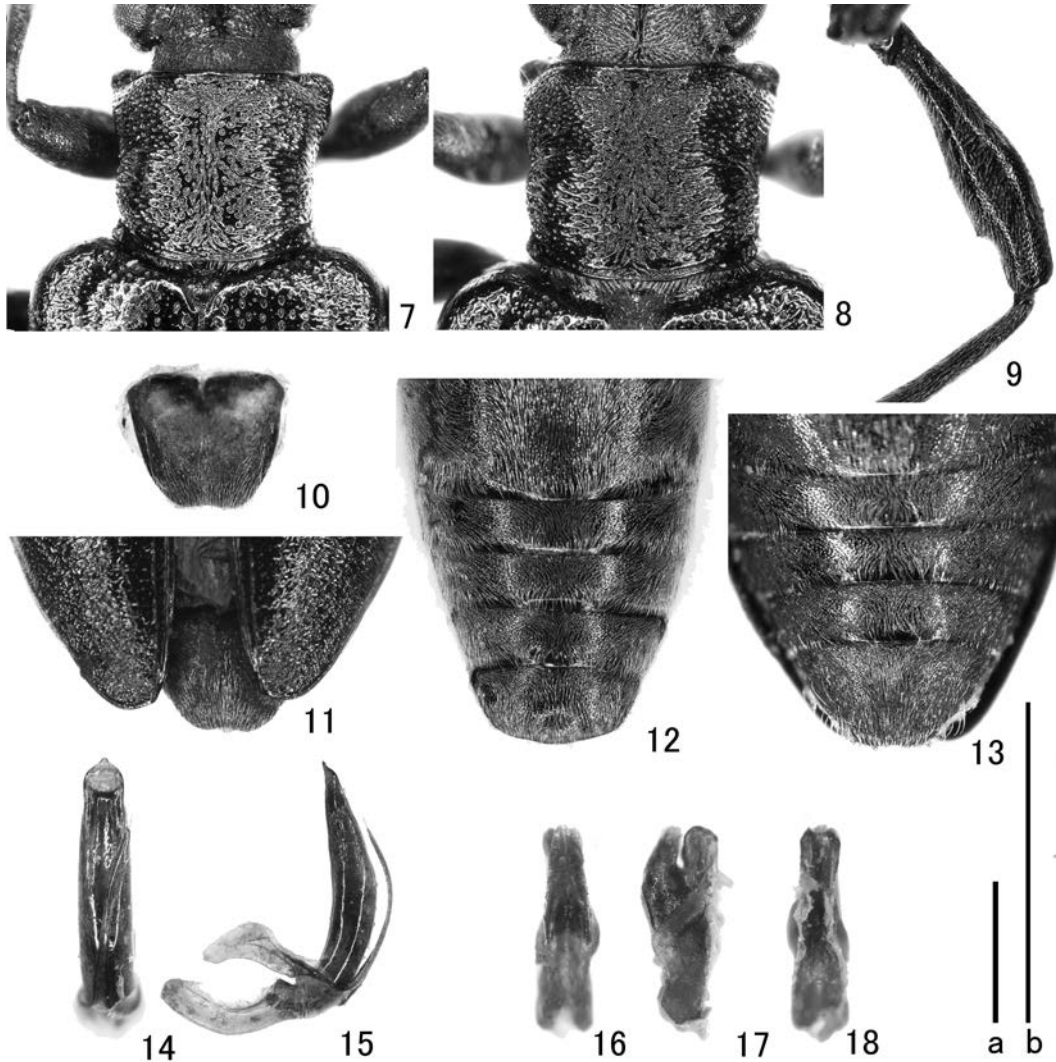
**Diagnosis.** Pronotal outline trapezoid, without setae on disc; legs metallic, with small metafemoral tooth; pygidial apex shallowly emarginated in both sexes; endophallus of male genitalia short, with apex of median process acute.

**Description.** Male. Body entirely coppery. Eyes small; supraocular furrow present but shallow.



Figs. 1–8. *Donacia takakuwai* sp. nov. — 1–4, Male (3, 4, holotype); 5–6, female. — 1, 3 & 5, Dorsal view; 2, 4 & 6, ventral view. Scale bars = 1.0 mm.

Vertex pubescent and swollen, with deep median line. Antenna entirely blackish coppery; antennomere 5 the longest of 2 to 6; antennomere 4 1.2 times as long as 3; antennomere 4 twice as long as 2. Pronotal outline inverted trapezoid, slightly longer than wide, with anterior and posterior corners prominent; anterolateral calli present but callosal sulcus indistinct; disc densely punctate with trans-



Figs. 7–18. *Donacia takakuwai* sp. nov. — 7 & 8, Pronotum; 9, right hind leg; 10 & 11, pygidium; 12 & 13, abdominal sternite; 14 & 15, male genitalia; 16 & 18, endophallus. — 7, 9, 10 & 14–18, Male; others, female. — 7, 8, 10, 11, 14 & 16, Dorsal view; 9, 15 & 17, lateral view; 12, 13 & 18, ventral view. Scale bars: 1.0 mm (a, 7–15; b, 16–18).

verse rugae; median line present but indistinct; basal sulcus present but shallow and punctate with rugae. Elytron with a shallow depression on base near suture; sutural interval finely punctate with rugae, gradually narrowed towards apex; other intervals with transverse deep rugae and finely punctate; apex narrowly rounded. Legs entirely metallic colored; outer apical angle of protibia acute with a small spine; metafemur with a blunt tooth. Pygidial apex shallowly emarginate. Median lobe of genitalia narrowed subapically, with a median lip; cap of tegmen slender; median process of endophallus short, acute at apex, with paired dorsal sclerites short, as long as median process, basal supporting block short, as long as median process. Sterna entirely coppery and pubescent; last sternite (sternum VII) punctate, gently rounded at apical margin, with apical depression shallow.

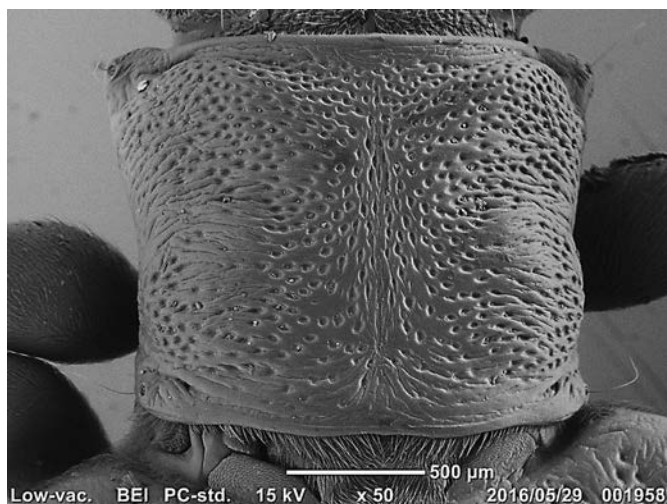


Fig. 19. *Donacia takakuwai* sp. nov. — SEM photograph (low vacuum) of female pronotum.

**F e m a l e.** Pronotal outline trapezoid, narrowing from front to base, as long as wide. Pygidial apex shallowly emarginate. Apical shape of last sternite (sternum VII) obtusely acute.

Body length: Males 7.6–7.7 mm, females 9.1–9.5 mm.

**Comparison.** The new species is similar to a Taiwanese species, *Donacia lusow* HAYASHI et LEE with slender body shape, glabrous pronotum with punctures and transverse rugae, metallic legs, and short endophallus (HAYASHI & LEE, 2007). The new species has small metafemoral tooth but *D. lusow* lacks the tooth. A Laotian species, *Donacia yoshitomii* HAYASHI is also similar to the new species in dorsal morphology (HAYASHI, 2004). They are easily distinguished by the following features: pronotal outline trapezoid in the new species, quadrate in *D. yoshitomii*; pronotal disc with transverse rugae (Fig. 19) in the new species, but without rugae in *D. yoshitomii*.

**Remarks.** The new species is the second species of the subgenus *Donaciomima* MEDVEDEV from Laos.

**Host plants.** Unknown.

**Type series.** Holotype: ♂, Mt. Phu Pane (Pan), alt. 900–1,600 m, Hua Phen (Pan) Prov., NE Laos, 20°12'N, 103°59'E, 10–21.VI.2010, S. JAKL *et al.* leg. Paratypes: 6 ♂♂, 3 ♀♀, same as holotype. 4 ♂♂, 3 ♀♀, Ban Saluei (Saleui) v. env., Mt. Phu Pane (Pan), (Huaphanne Pr.), NE Laos, alt. 1,200–1,900 m, 20°12'N, 103°59'E, 26.IV.–10.V.2013, S. JAKL *et al.* leg. The holotype is housed in the Ehime University Museum (EUM), Matsuyama, and the paratypes are in EUM, Hoshizaki Institute of Wildlife Protection (HOWP), Izumo, Osaka Museum of Natural History (OMNH), Osaka, and Masayuki MINAMI Collection, Tokyo.

**Etymology.** The specific name of the new species is dedicated to the late Dr. Masatoshi TAKAKUWA, an entomologist of Japan who adores donaciine beetles.

***Donacia (Donaciomima) dorsohirsuta* sp. nov.**

(Figs. 20–41)

**Diagnosis.** Pronotal outline quadrate, dense setae on disc; legs metallic, with metafemoral tooth prominent; pygidial apex shallowly truncate in male, rounded in female; endophallus of male genitalia elongate, with median process acute at apex, paired dorsal sclerites slender and short, basal sup-

porting block long, as long as median process.

*Description.* M a l e. Body entirely coppery. Eyes small, with supraocular furrow present but shallow. Vertex pubescent and swollen, with deep median line. Antenna entirely blackish coppery; antennomere 5 the longest of 2 to 6; antennomere 4 as long as 3; antennomere 4 1.8 times as long as 2. Pronotal outline quadrate, narrowing from front to base, as long as wide, with anterior and posterior corners prominent; anterolateral calli present but callosal sulcus shallow; disc densely and finely punctate with transverse rugae and fine setae; median line present; basal sulcus present but shallow and punctate with rugae. Elytron without depressions on base and middle near suture; sutural interval finely punctate with rugae, gradually narrowed towards apex; other intervals with transverse rugae and finely punctate; apex rounded. Legs entirely metallic colored; outer apical angle of protibia acute with a small spine; metafemur with a tooth. Pygidial apex entirely rounded but slightly emarginate in middle. Median lobe of genitalia without subapical depressions, with a median lip; cap of tegmen slender; median process of endophallus elongate, with paired dorsal sclerites slender and short, basal supporting block long, as long as median process. Sterna entirely coppery and pubescent; last sternite (sternum VII) punctate, truncate at apical margin, with apical depression shallow.

F e m a l e. Pronotal outline quadrate, as long as wide. Pygidial apex rounded. Last sternite (sternum VII) acute at apex.

Body length: Males 8.3–8.4 mm, females 8.4–9.2 mm.

*Comparison.* The new species is characterized by the setae on pronotal disc, but several species having similar setae are known from the Oriental and eastern Palaearctic Regions. The new species is similar to a Chinese species, *Donacia fukiensis* GOECKE, but they differ from each other in the apical shape of median lobe of male genitalia: entirely rounded with a median lip in the new species but entirely narrowly rounded without median lip in *D. fukiensis* (see CONG & YU, 1997).

*Host plants.* *Carex* sp. and/or *Schoenoplectus* sp. The adults were collected from the leaves of these plants in a small marsh (Figs. 42 & 43).

*Type series.* Holotype and six paratypes are designated. Holotype: ♂, Kong Plong District, Kon Tum Province, Vietnam, 18.IV.2016, alt. 1,130 m, O. TOMINAGA leg. Paratypes: 2 ♂♂, 4 ♀♀, same as the holotype. The holotype is housed in EUM, and the paratypes at EUM, HOWP, and OMNH.

*Etymology.* The specific name of the new species refers to its dorsal features.

### Checklist of Donaciinae from the Indochina Region

In total, nine species belonging to three genera are known from the Indochina region, including the two new species described in this paper.

#### Genus *Sominella* JACOBSON

##### *Sominella longicornis* (JACOBY, 1890)

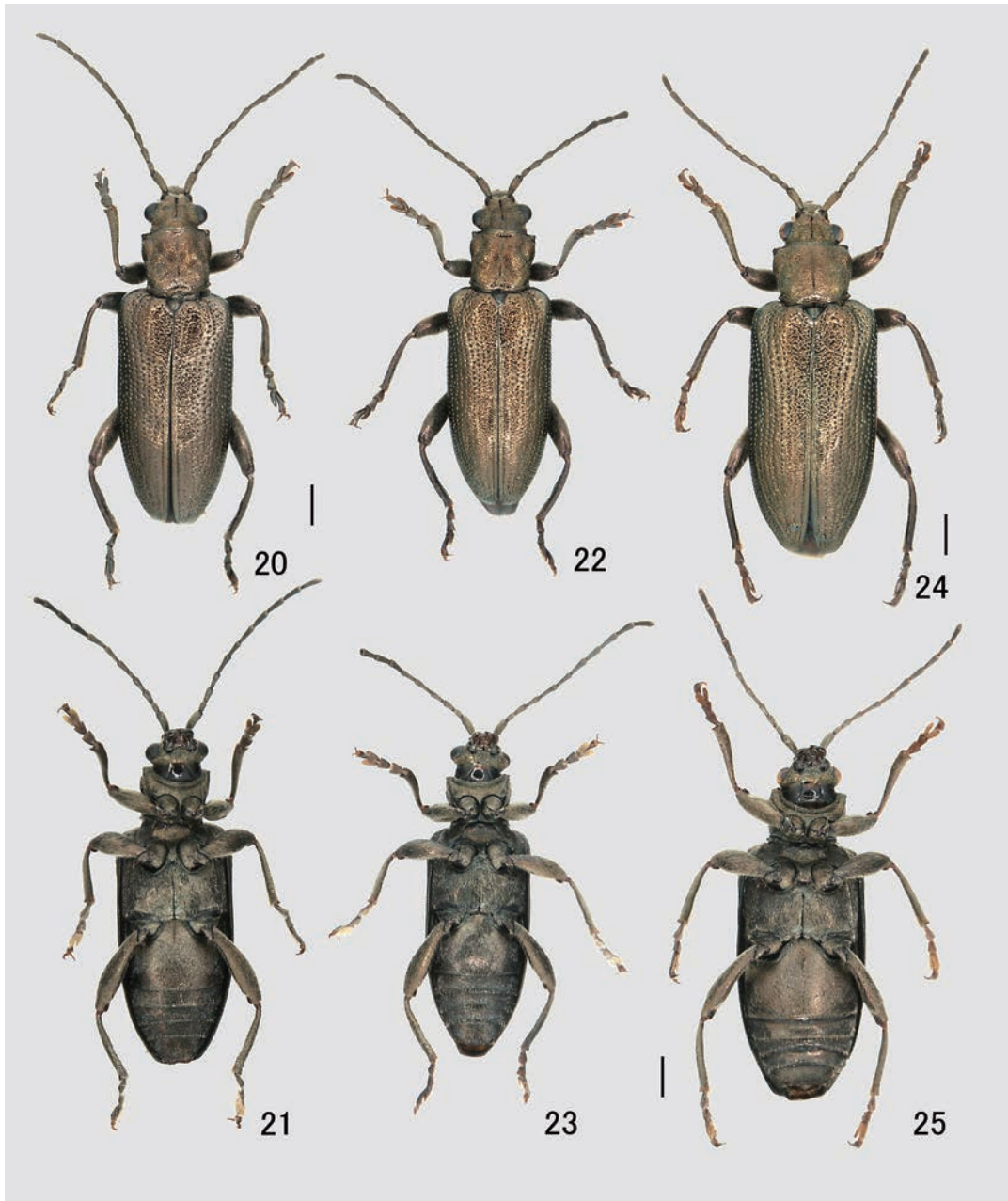
*Donacia longicornis* JACOBY, 1890: 84 (original description).

*Sominella longicornis*: GOECKE, 1931: 158; GRESSITT & KIMOTO, 1961: 2; JOLIVET, 1970: 61; TAN *et al.*, 1980: 64; BOROWIEC, 1984: 454; ASKEVOLD, 1990: 640; HAYASHI, 2003: 35.

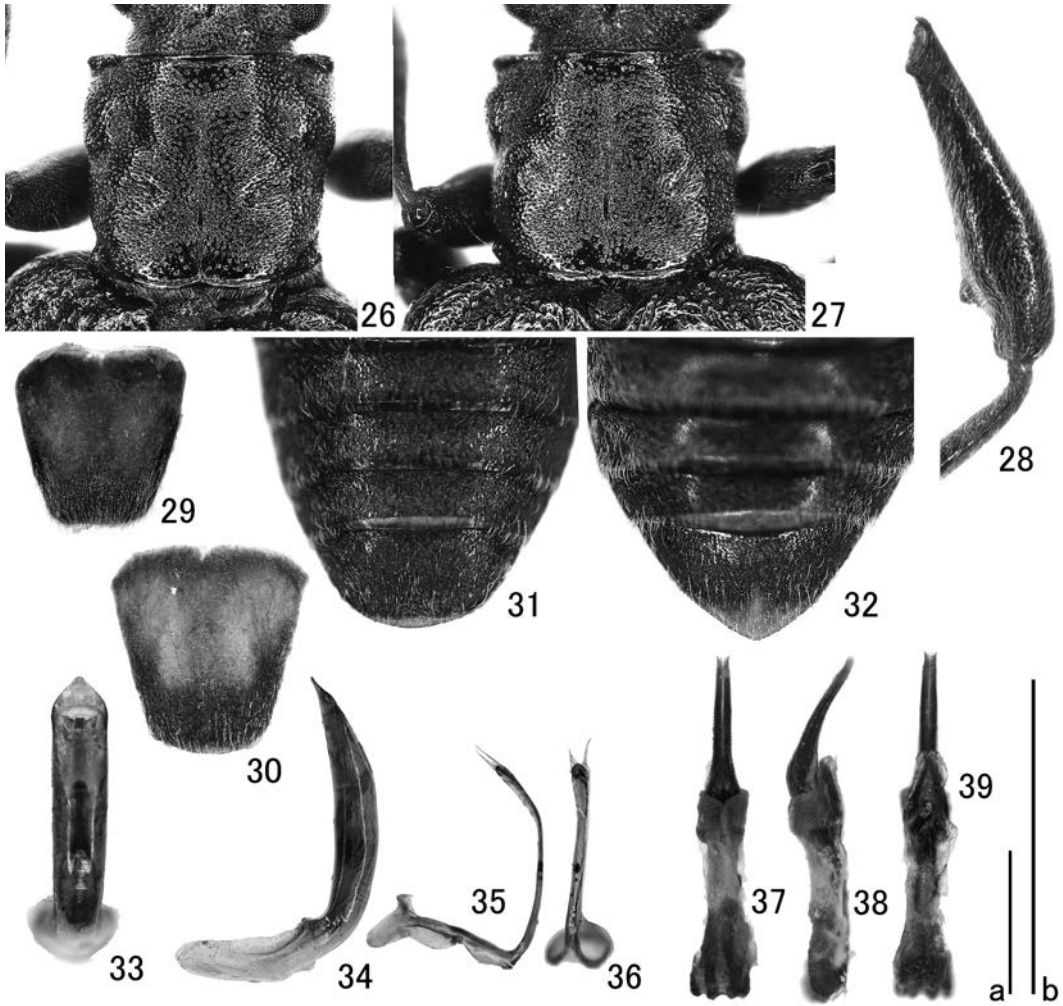
*Additional records.* 3 exs., Mt. Phu Pane (Pan), alt. 900–1,600 m, Hua Phen (Houaphan) Prov., NE Laos, 20°12'N, 103°59'E, 10–21.VI.2010, S. JAKL *et al.* leg.

*Distribution.* China (Zhejiang, Hubei, Fujian), Laos.

*Host plant.* Unknown.



Figs. 20–25. *Donacia dorsohirsuta* sp. nov. — 20 & 22, Male (20 & 21, holotype); 24 & 25, female. — 20, 22 & 24, Dorsal view; 21, 23 & 25, ventral view. Scale bars: 1.0 mm.



Figs. 26–39. *Donacia dorsohirsuta* sp. nov. — 26 & 27, Pronotum; 28, right hind leg; 29 & 30, pygidium; 33–36, male genitalia (33 & 34, median lobe; 35 & 36, tegmen); 37–39, endophallus. — 26, 29, 31 & 33–39, Male; others, female. — 26, 27, 29, 30, 33, 36 & 39, Dorsal view; 28, 34, 35 & 38, lateral view; 31, 32 & 37, ventral view. Scale bars: 1.0 mm (a, 26–36; b, 37–39).

Genus *Donacia* FABRICIUS

Subgenus *Donaciomima* MEDVEDEV

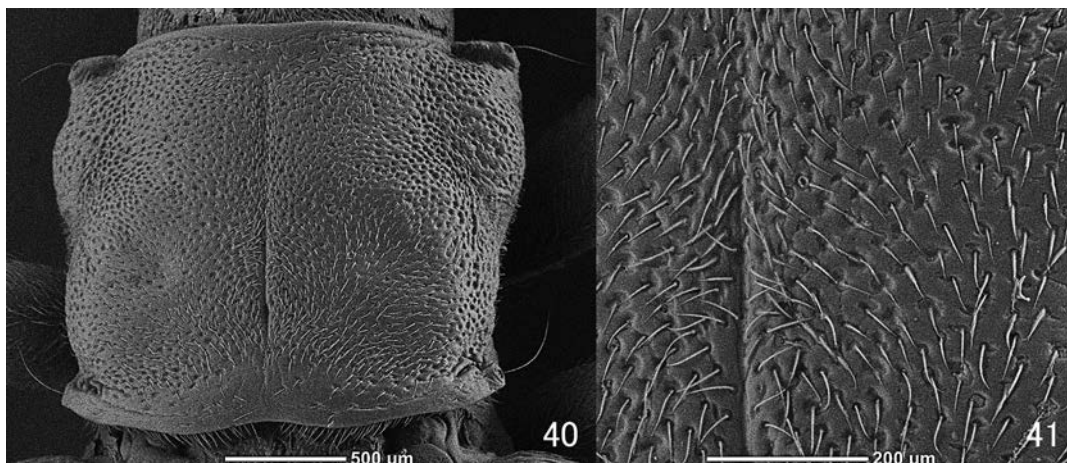
*Donacia (Donaciomima) yoshitomi* HAYASHI, 2003

*Donacia yoshitomi* HAYASHI, 2003: 31 (original description).

*Additional records.* 8 exs., Ban Saluei (Saleui) v. env., Mt. Phu Pane (Pan), Huaphanne (Houaphan) Pr., NE Laos, alt. 1,200–1,900 m, 20°12'N, 103°59'E, 26.IV.–10.V.2013, S. JAKL *et al.* leg.

*Distribution.* Laos.

*Host plant.* Unknown.



Figs. 40–41. *Donacia dorsohirsuta* sp. nov. — SEM photograph (low vacuum) of female pronotum.

***Donacia (Donaciomima) thaiensis* MEDVEDEV, 2003**

*Donacia thaiensis* MEDVEDEV, 2003: 149 (original description).

*Distribution.* Thailand.

*Host plant.* Unknown.

***Donacia (Donaciomima) takakuwai* sp. nov.**

*Distribution.* Laos.

*Host plants.* Unknown.

***Donacia (Donaciomima) dorsohirsuta* sp. nov.**

*Distribution.* Vietnam.

*Host plants.* Cyperaceae.

Subgenus *Cyphogaster* GOECKE

***Donacia (Cyphogaster) javana* WIEDEMANN, 1821**

*Donacia javana* WIEDEMANN, 1821: 173 (original description).

*Donacia malayana* CSIKI, 1900: 403 (original description).

*Donacia javana*: GOECKE, 1934: 22; 1935: 290; 1960: 4; GRESSITT & KIMOTO, 1961: 20; JOLIVET, 1970: 40; KIMOTO & GRESSITT, 1979: 203; ASKEVOLD, 1990: 646.

*Distribution.* India, Myanmar, Thailand, Vietnam, Laos, Cambodia, Malaysia, Singapore, Borneo, Celebes, Sumatra, Java.

*Host plants.* Floating leaved plants.





Figs. 42–43. Habitat of *Donacia dorsohirsuta* sp. nov. — 42, Habitat in the type locality; 43, adult on leaf of *Carex* sp. (Photo by O. TOMINAGA).

***Donacia (Cyphogaster) miyatakei* HAYASHI, 2004**

*Donacia miyatakei* HAYASHI, 2004: 415 (original description).

*Distribution.* Malaysia (Perak).

*Host plants.* Floating leaved plants.

***Donacia (Cyphogaster) provostii* FAIRMAIRE, 1885**

*Donacia provostii* FAIRMAIRE, 1885: 64 (original description).

*Donacia provosti:* JACOBSON, 1892: 420, GOECKE, 1934: 218; 1935: 290; 1960: 5; CHEN, 1941: 14; 1966: 141; GRESSITT & KIMOTO, 1961: 20; JOLIVET, 1970: 41; 1972: 198; TAN *et al.*, 1980: 62; BOROWIEC, 1984: 448; MEDVEDEV, 1992: 544.

*Donacia nitidicollis* WEISE, 1898: 17 (original description).

*Donacia brevicollis* WEISE, 1898: 17 (original description).

*Donacia sikanga* GRESSITT, 1942: 277 (original description).

*Donacia provostii:* CHÛJÔ, 1951: 49; CHÛJÔ & KIMOTO, 1961:120; KIMOTO, 1964: 113; 1967: 369; 1983: 10; ASKEVOLD, 1990: 646; HAYASHI, 2001: 69; HAYASHI & SHIYAKE, 2004: 124.

*Distribution.* Japan, Far East Russia, Korea, China, Taiwan, Indochina (Thailand).

*Host plants.* *Potamogeton*, *Nelumbo*, *Trapa*, *Nyphoides*.

**Genus *Donaciasta* FAIRMAIRE**

***Donaciasta assama* (GOECKE, 1936)**

*Donacia assama* GOECKE, 1936: 224 (original description).

*Donacia assama:* GOECKE, 1960: 2; JOLIVET, 1970: 12; BOROWIEC, 1984: 438.

*Prodonacia shishona* CHEN, 1966: 14 (original description).

*Donacia vietnamensis* KIMOTO et GRESSITT, 1979: 202 (original description).

*Donacia shishona:* BOROWIEC, 1984: 443.

*Donaciasta assama:* ASKEVOLD, 1990: 647.

*Distribution.* Assam, Vietnam, Yunnan.

*Host plants.* Unknown.

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### 要 約

林 成多・富永 修：インドシナ産ネクイハムシ属(鞘翅目ハムシ科)の2新種。——東南アジア産ネクイハムシ亜科のうち、ネクイハムシ属 *Donacia* のフトネクイハムシ亜属 *Donaciomima* には、ラオスから *D. yoshitomii* HAYASHI が知られていたが、同じ亜属の新種が確認されたため、*D. takakuwai* HAYASHI et TOMINAGA として記載した。種小名は、2016年に亡くなられた高桑正敏博士に献名をしたものである。さらにベトナムからも、筆者のひとりである富永によって1新種が新たに採集され、*D. dorsohirsuta* HAYASHI et TOMINAGA として記載した。合わせて、インドシナ地域のネクイハムシ亜科のチェックリストを作成し、今回記載した2種を加えた9種を認めた。

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