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Two New Species of the Lomechusini (Coleoptera: Staphylinidae: Aleocharinae) from Laos

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Abstract Myrmecophilous staphylinid beetles, *Drusilla takashii* n. sp. and *Wroughtonilla watanabei* n. sp. (Aleocharinae, Lomechusini), are described from Laos. *Drusilla takashii* was collected from colonies of *Crematogaster* (*Physocrema*) sp. (Hymenoptera, Formicidae, Myrmicinae). This species is very similar to the ants in coloration and considered to be a Batesian mimic to the host. *Wroughtonilla watanabei* was collected from a colony of Ponerinae ants, but the ants were not collected for identification. This species may be associated with the ants of the genus *Leptogenys* (Ponerinae) judging from the host records of the allied species. Additionally, *Trachydonia leptogenophila* KISTNER is synonymized with *Maschwitzia ulrichi* KISTNER.

Introduction

Through the courtesy of Mr. Takashi WATANABE, I have recently had an opportunity to examine several interesting specimens of the staphylinid tribe Lomechusini collected by himself in Laos. The materials include two undescribed species which are assigned to the genera *Drusilla* LEACH, 1819, and *Wroughtonilla* WASMANN, 1899, respectively. The *Drusilla* species was collected from the colonies of *Crematogaster* (*Physocrema*) sp. in Sevannakhet and Vientiane of Central Laos. This species is closely similar to the host ant in coloration and is considered to be a Batesian mimic. The *Wroughtonilla* species was collected from a colony of ants of the subfamily Ponerinae in Bolikhamsai (Watanabe, pers. comm.), but the ants were not collected for identification. All the allied species of the staphylinid have been known to be myrmecophiles associated with the ants of the genus *Leptogenys* ROGER, 1861, of the Ponerinae. Therefore, this species is also considered to be associated with the ants of the same genus. In the present paper I am going to describe the two species.

Methodology and terminology employed in the present paper follow MARUYAMA *et al.* (2003), and the number of setae on pores are confined to one side of the body. Holotypes and some paratypes are deposited in the National Science Museum, Tokyo.

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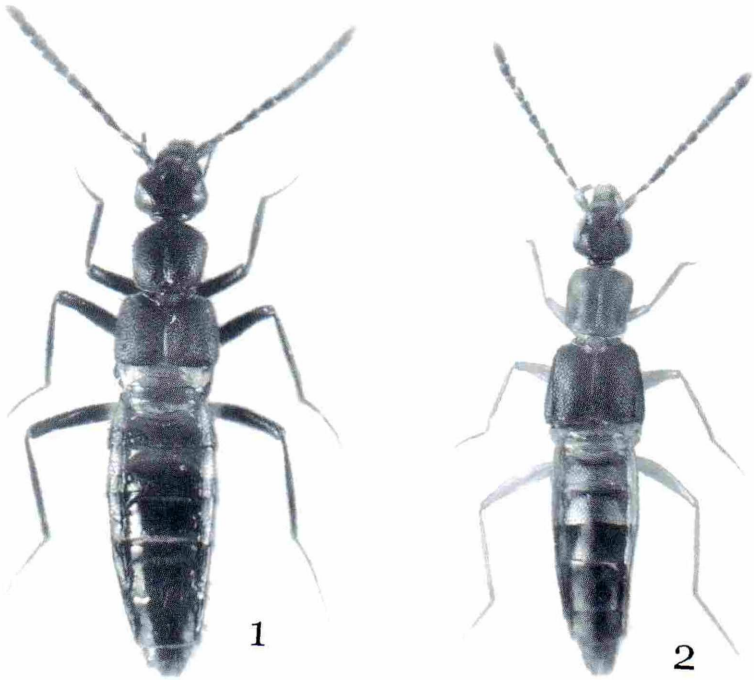


Figs. 1–2. Facies of holotypes. — 1, *Drusilla takashii* n. sp.; 2, *Wroughtonilla watanabei* n. sp.

Genus *Drusilla* LEACH

Drusilla LEACH, 1819: 177 [type species: *Staphylinus canaliculatus* FABRICIUS, 1801, by monotypy]. — MARUYAMA, 2000: 351 (synonymy, literature, diagnosis). — MARUYAMA, YEK, HASHIM & ITO, 2003: 268 (discussion on morphology).

Drusilla takashii n. sp.

(Figs. 1, 3–12)

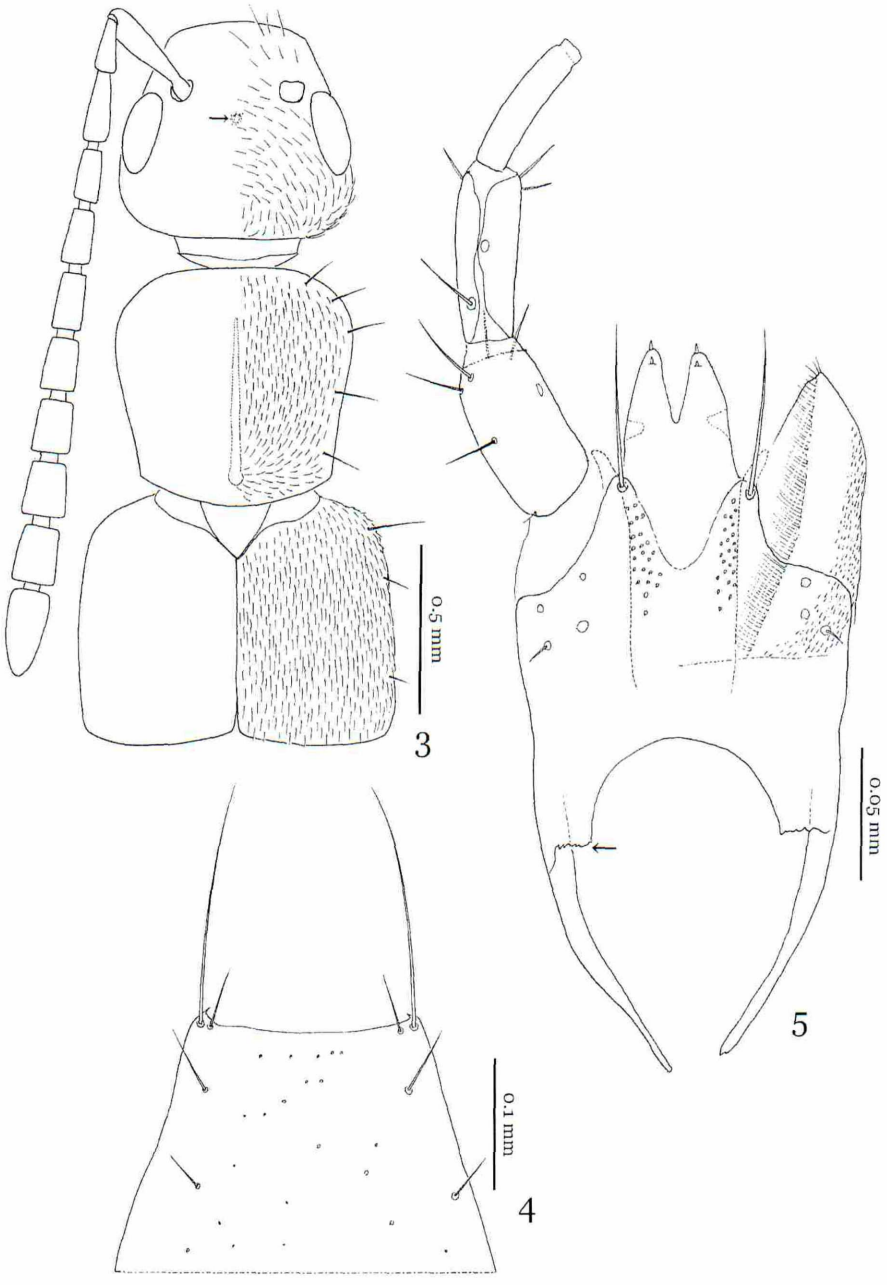
Type series. Holotype, male: 10 km east of Seno, Sevannakhet, Laos, 10. XII. 2002, T. WATANABE leg. Paratypes, 16 exs., same data as holotype; 1 ex., Sakai, Vientiane, Laos, 13. XII. 2002, T. WATANABE leg.

Type locality. Sevannakhet, Laos.

Host ant. *Crematogaster* (*Physocrema*) sp. (Myrmicinae)

Etymology. Named in honour of Takashi WATANABE, collector of the type series.

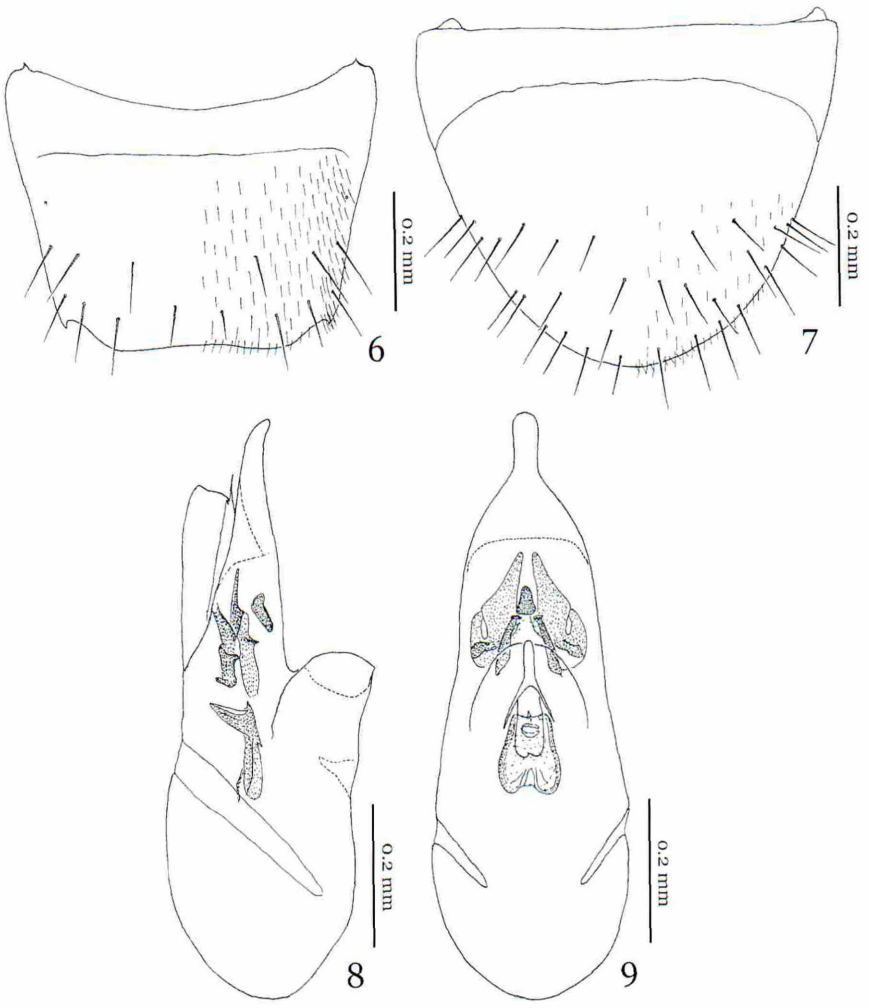
Diagnosis. About 10 species of *Drusilla* have hitherto been known from the Indochina Region. This species is distinguished from them by a combination of the following character states: frons of head with a small projection in male; antennae with all segments elongate; pronotum panduriform, with posterolateral corners angled, and with five pairs of long bristles; 3rd and 4th abdominal segments yellow in basal halves; 8th tergite not dentate or crenulate on posterior margin in male. This species is similar in facies to several species of the genus described from Asia, but close relatives remain uncertain.



Figs. 3–5. *Drusilla takashii*. — 3, Fore body, dorsal view; 4, mentum, ventral view; 5, labium, ventral view (labial palpus is omitted and hypopharynx is indicated at the right side).

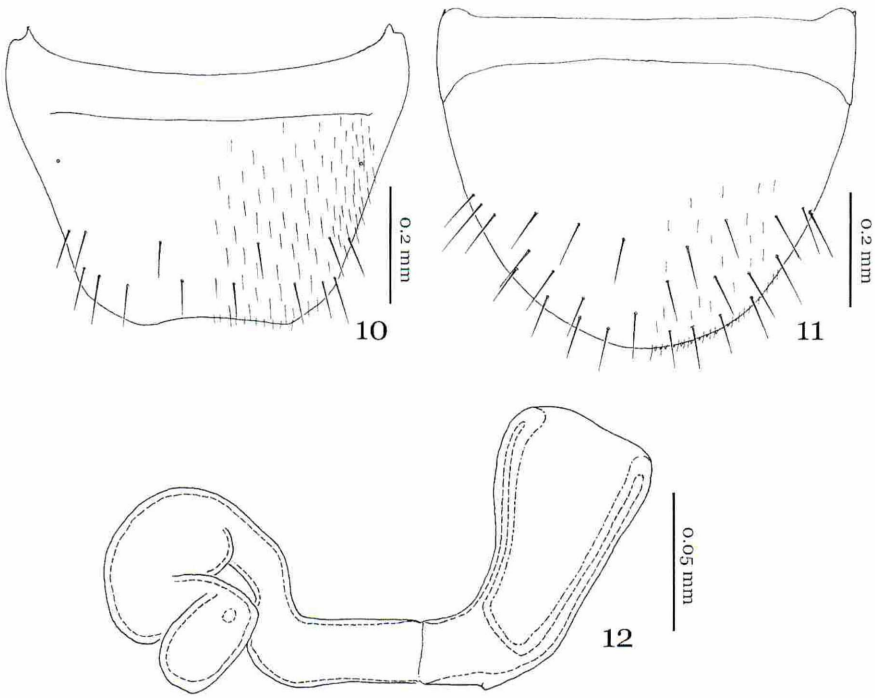
Description. Body (Fig. 1) slender. Blackish brown in ground colour; 3rd and 4th abdominal segments yellow in basal halves; apices of tibiae and tarsi reddish brown.

Head (Figs. 1, 3) subtrapezoidal (width/length=1.03–1.05), moderately convex, broadest behind eyes; surface shining and moderately covered with setae; eyes moderate in size, much smaller than postocular part, with pubescence between facets; clypeus gently rounded, slightly depressed laterally. Antennae with all segments longer than wide; 1st segment slender and dilat-



Figs. 6–9. *Drusilla takashii*, male. — 6, Eighth abdominal tergite, dorsal view; 7, 8th abdominal sternite, ventral view; 8, median lobe of aedeagus, lateral view; 9, ditto, ventral view.

ed apicad; 2nd shorter than half of 1st; 3rd 1.5 times as long as 2nd; 4th to 10th dilated apicad, becoming broader toward 10th segment; 11th conical, 1.9 times as long as broad; relative lengths of segments from basal to apical: 29: 12: 18: 15: 15: 15: 14: 13: 12: 12: 19. Labrum transverse, truncate anteriorly but slightly emarginate antero-medially. Mandible slightly curved, pointed at apex, and edentate. Maxilla moderately elongate; galea nearly parallel-sided, slightly curved near apex, finely pubescent apically; lacinia much broader than galea, with fine pubescence on inner margin; maxillary palpus with 1st segment very short, 2nd slightly curved, thickened toward apex, 3rd slightly longer than 2nd, and 4th subulate. Mentum (Fig. 4) completely fused with submentum; anterior margin slightly emarginate, ending with prominent lateral corners; surface sparsely covered with pseudopores. Prementum (Fig. 5) with about 20 minute pseudopores near base of each medial seta, two real pores and one setal pore mesolaterally. Ligula (Fig. 5) bilobed and long; each lobe with two setulae and a small sclerite laterally. Labial palpus (Fig. 5) with 1st segment short; 2nd almost as long as 1st; 3rd much shorter and



Figs. 10–12. *Drusilla takashii*, female. — 10, Eighth abdominal tergite, dorsal view; 11, 8th abdominal sternite, ventral view; 12, spermatheca.

narrower than 2nd. Premental apodeme (Fig. 5) truncate posterolaterally (Fig. 5: arrow), roundly emarginate posteromedially.

Pronotum (Figs. 1, 3) rounded anteriorly, narrowed posteriad, angled posterolaterally, as long as wide (width/length = 1.04–1.07), almost as wide as head, and widest behind anterior margin; disc well convex, with a long median sulcus and a deep posteromedial depression; surface densely covered with small setae and with five bristles (three anterolaterally, one at middle, and one near posterior angle).

Metasternal process rounded at apex. Elytra (Figs. 1, 3) widest at middle, broader than long, and much broader than pronotum; posterior margin of each elytron nearly truncate but rounded at inner angle, thus forming a re-entrant angle at suture, posterolateral corner rounded; dorsal surface slightly convex, coarsely punctured, and densely covered with short setae; puncturation becoming sparser posteriad; lateral margin with three bristles (one on shoulder long, twice as long as others). Hind wing entire.

Legs (Fig. 1) long and slender; each tibia and femur slightly narrowed apicad; relative lengths of tarsomeres from basal to apical: foretarsus:— 8: 9: 6.5: 16; midtarsus:— 15: 11: 8: 7: 13; hindtarsus:— 21: 14: 11: 9: 13.

Abdomen (Fig. 1) elongate; 3rd to 4th segments moderately expanded and 5th to 8th narrowing posteriad; surfaces of 3rd to 8th tergites shining, sparsely covered with small setae; 9th and 10th tergites each with four short bristles.

Male. Frons of head with a small projection, which bears three or four erect setae (Fig. 3:

arrow). Eighth tergite (Fig. 6) with seven bristles, its posterior margin shallowly emarginate and with a short projection laterally; 8th sternite (Fig. 7) entire, with 15 or 16 bristles; 9th sternite truncate at apex, with a pair of small bristles. Median lobe of male genitalia (Figs. 8, 9) oval; apical lobe acutely pointed and slightly curved ventrad near apex. Paramere with apical lobe of paramerite spatulate, parallel-sided and obliquely truncate at apex.

Female. Eighth tergite (Fig. 10) with seven bristles, its posterior margin shallowly emarginate; 8th sternite (Fig. 11) shaped as in male but bristles are shorter, with short and flattened sensory setae on apical margin. Spermatheca (Fig. 12) chamber much longer than capsule, three or four times curved near base, narrowed apicad; capsule dilated apicad, truncate at apex, deeply and largely excavated at apex.

Measurements. Body length: ca. 5.1–5.2 mm; forebody length (from front margin of head to apices of elytra): ca. 2.0–2.1 mm; head length: 0.73–0.75 mm; head width: 0.76–0.78 mm; antennal length: 2.16–2.17 mm; pronotal length: 0.72–0.73 mm; pronotal width: 0.75–0.78 mm; elytral length: 0.71–0.73 mm; elytral width: 1.01–1.03 mm; foretibial length: 0.85–0.86 mm; midtibial length: 1.04–1.06 mm; hindtibial length: 1.18–1.20 mm.

Remarks (possibility of Batesian mimicry). In the field observation by the collector, *Drusilla takashii* was hardly discriminated from the host ant *Crematogaster* (*Physocrema*) sp. because of their similarity in coloration. MARUYAMA *et al.* (2003) reported that *D. inflatae* MARUYAMA *et al.*, 2003, is a possible Batesian mimic of its host ant *C.* (*P.*) *inflata* F. SMITH, 1857, which is known to secret sticky liquid from the metapleural glands, and the secretion considered to serve primarily as a repellent (MASCHWITZ, 1974; BUSCHINGER and MASCHWITZ, 1984). The host ant of *D. takashii* belongs to the same subgenus as *C. inflata* and also characterized by well-developed metapleural glands. Therefore, the host ant of *D. takashii* may also reserve a repellent in the metapleural glands against predators, and *D. takashii* may be a Batesian mimic of the host ant.

Genus *Wroughtonilla* WASMANN

Wroughtonilla WASMANN, 1899 : 157 [type species: *W. lobopeltae* WASMANN, 1889, by monotypy]. — FENYES, 1920: 293 [redescription]. — CAMERON, 1939: 450 [redescription].

Wroughtonilla watanabei, n. sp.

(Figs. 2, 13–16)

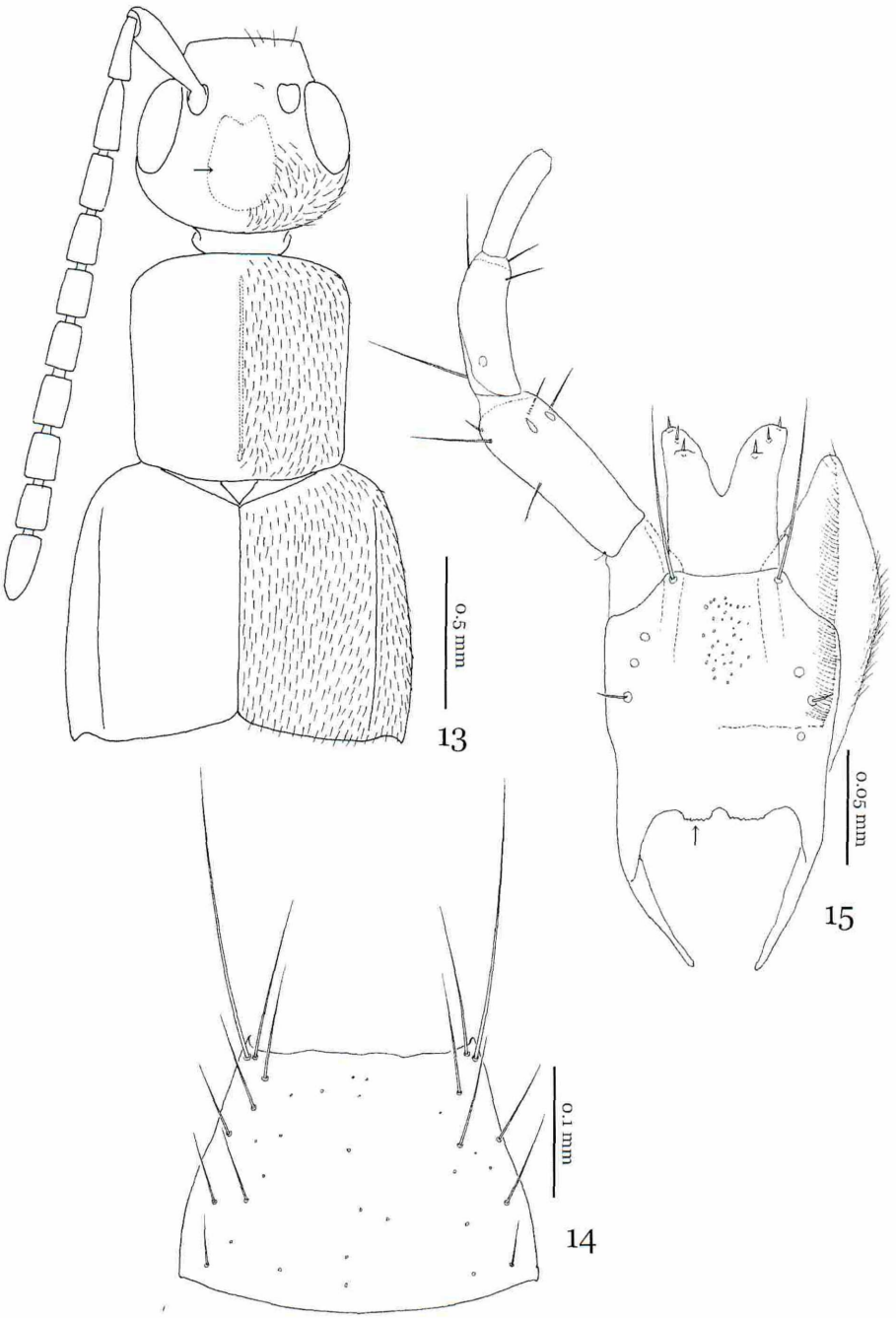
Type series. Holotype, male: Theun-Hinbon Reservoir, Bolokhamsai, Laos, 11. XII. 2002, T. WATANABE leg.

Type locality. Bolokhamsai, Laos.

Host ant. Probably, *Leptogenys* sp.

Etymology. Named in honour of Takashi WATANABE, collector of the holotype.

Diagnosis. This species is closely similar in facies and general structure of aedeagus to *W. derougemonti* PACE, 1984, described from Myanmar, but distinguished from the latter by the body smaller and the ventral crest of the median lobe smaller. This species is also similar to *W. borneensis* PACE, 1986, described from Borneo in the body size and the shape of abdomen, but is distinguished from it by the smaller eyes, the thicker antennae and the subparallel-sided



Figs. 13–15. *Wroughtonilla watanabei*. — 13, Fore body, dorsal view; 14, mentum, ventral view; 15, labium, ventral view (labial palpus is omitted and hypopharynx is indicated at the right side).

pronotum.

Description. Body (Fig. 2) slender. Pale brown in ground colour; head and elytra slightly darker; 5th to 7th abdominal segments brown; apices of tibiae and tarsi reddish brown.

Head (Figs. 2, 13) circular (width/length = 1.09), shallowly hollowed dorsally, and finely and densely punctured in the hollow (Fig 13: arrow), broadest just behind eyes; surface shining and sparsely covered with small setae except around frons; eyes large, half as long as head capsule, without pubescence between facets; clypeus truncate, slightly depressed laterally. Antenna with all segments elongate; 1st segment slender and dilated apicad, shorter than 2nd and 3rd combined; 2nd shorter than half of 1st; 3rd 1.5 times as long as 2nd; 4th to 10th dilated apicad, becoming shorter and broader toward 10th segment; 11th conical, 1.8 times as long as broad; relative lengths of segments from basal to apical: 33: 13: 21: 14: 14: 12: 12: 11: 11: 11: 20. Labrum transverse, rounded anteriorly. Mandible slightly curved, pointed at apex, slightly emarginate at middle of inner margin. Maxilla moderately elongate; galea nearly parallel-sided, slightly curved near apex, finely pubescent apically; lacinia much broader than galea, with fine pubescence on inner margin; maxillary palpus with 1st segment very short, 2nd slightly curved, thickened toward apex, 3rd slightly longer than 2nd, and 4th subulate. Mentum (Fig. 14) with anterior margin truncate and weakly sinuate, with prominent lateral corners; surface very sparsely covered with pseudopores. Prementum (Fig. 15) with about totally 30 minute pseudopores on mesal area, two real pores and one setal pore mesolaterally. Ligula (Fig. 15) bilobed and long; each lobe with three setulae. Labial palpus (Fig. 15) with 1st segment long; 2nd slightly shorter and narrower than 1st; 3rd much shorter and narrower than 2nd. Premental apodeme (Fig. 15) with a pair of medial projections (Fig. 15: arrow), which are dentate but nearly truncate on apical margin; lateral lobe gently curved and narrowed apicad.

Pronotum (Figs. 2, 13) subquadrate, as long as wide (width/length = 1.0), almost as wide as head, and widest just behind anterior margin; disc flattened, slightly depressed mesolaterally, with a long median sulcus and a small posteromedial depression; surface finely and densely punctured, densely covered with short setae and with 3 small bristles along anterior margin.

Metasternal process rounded at apex. Elytra (Fig. 2, 13) widest before posterior margin, broader than long, and much broader than pronotum; posterior margin of each elytron obliquely truncate but rounded at inner angle, re-entrant angle at suture, slightly emarginate near posterolateral corner which is pointed; dorsal surface flattened, surface finely and densely punctured, and densely covered with short setae; lateral margin without bristles. Hind wing entire.

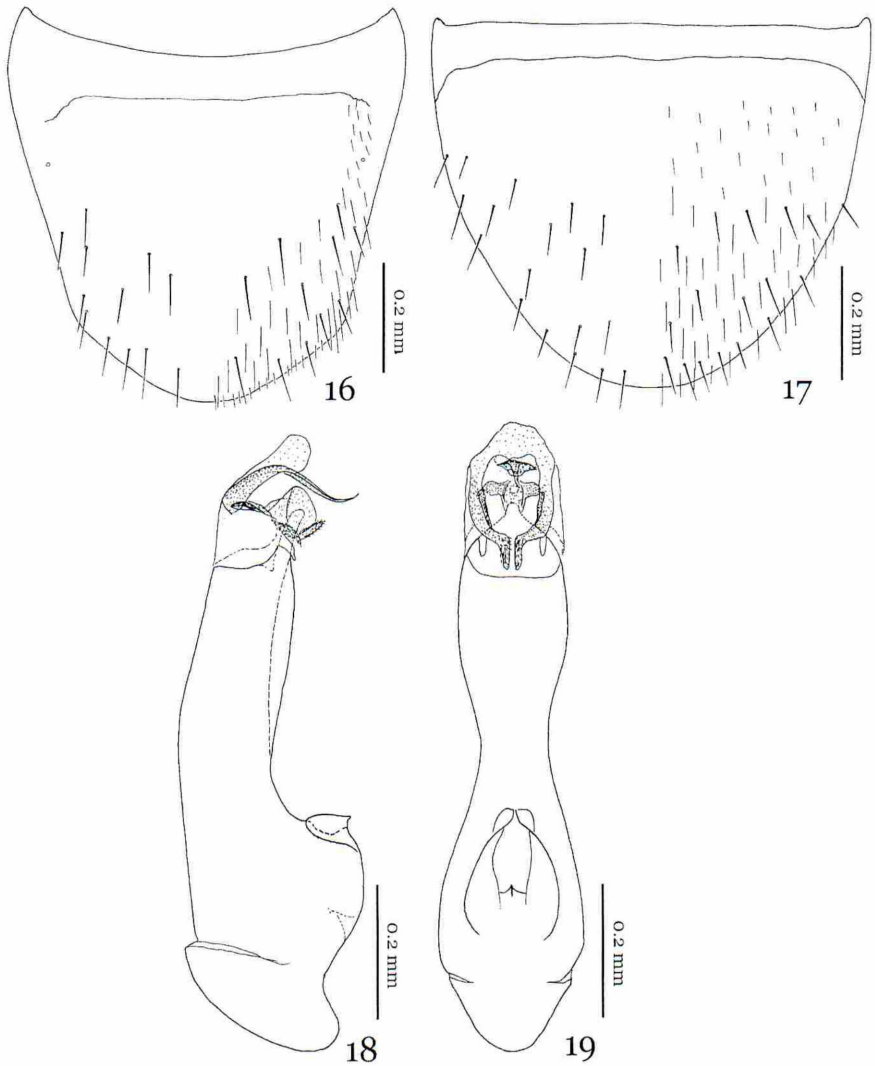
Legs long (Fig. 2) and slender; each tibia and femur slightly narrowed apicad; relative lengths of tarsomeres from basal to apical: foretarsus:— 8: 8: 6: 14; midtarsus:— 17: 15: 8: 6: 14; hindtarsus:— 30: 17: 12: 10: 19.

Abdomen elongate (Fig. 2); 3rd segment moderately expanded and 4th to 8th narrowing posteriad; surfaces of 3rd to 8th tergites shining, moderately covered with small setae; 9th and 10th tergites each with three and six short bristles.

Male. Eighth tergite (Fig. 8) with 11 or 12 bristles, its posterior margin rounded; 8th sternite entire, on each side with 17 or 18 bristles, and devoid of short sensory setae on apical margin; 9th sternite truncate at apex, with a pair of small bristles. Median lobe of male genitalia (Figs. 18, 19) elongate; apical lobe small and almost straight; median foramen margined with ridges; ventral crest small; capsule prominent ventrad at base. Paramere parallel-sided in basal 3/4, spatulate and rounded at apex.

Female unknown.

Measurements. Body length: ca. 5.0 mm; forebody length (from front margin of head to apices of elytra): ca. 2.3 mm; head length: 0.69 mm; head width: 0.75 mm; antennal length: 2.38 mm; pronotal length: 0.81 mm; pronotal width: 0.81 mm; elytral length: 0.96 mm; elytral width:



Figs. 16–19. *Wroughtonilla watanabei*, male. — 16, Eighth abdominal tergite, dorsal view; 17, 8th abdominal sternite, ventral view; 18, median lobe of aedeagus, lateral view; 19, ditto, ventral view.

1.23 mm; foretibial length: 0.81 mm; midtibial length: 0.98 mm; hindtibial length; 1.14 mm.

Remarks. *Wroughtonilla lobopeltae* and the members of the allied genera, *Leptogenoxenus wilsoni* KISTNER, 1975, *Maschwitzia ulrichi* KISTNER, 1989, *Togpelenys gigantea* KISTNER, 1989, and *Neowroughtonilla steghausae* KISTNER, 1989, have been known to be associated with the ants of the genus *Leptogenys* (KISTNER, 1975, 1989). *W. watanabei* may also be associated with *Leptogenys* ants.

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要　　約

丸山 宗利：ラオスで採集されたアリノスハネカクシ族（コウチュウ目：ハネカクシ科：ヒゲブトハネカクシ亜科）の好蟻性2新種．——— 渡辺　崇氏によってラオスで採集されたアリノスハネカクシ族 Lomechusini の標本を検する機会を得，そのなかに2新種を見出したので，*Drusilla takashii*, *Wroughtonilla watanabei*として記載した．*D. takashii* はシリアゲアリ属 *Crematogaster* の1種の巣周辺で採集され，そのアリと体色がよく似ている．寄主は後胸に大きな分泌腺を持ち，おそらくそこに強い忌避物質を貯蔵する．したがって，*D. takashii* が奇主に対するベーツ型擬態者である可能性が考えられる．*W. watanabei* はハリアリ亜科のアリより採集されたが，アリの標本は採集されていない．属のタイプ種と近縁属のすべての種がハシリハリアリ属 *Leptogenys* のコロニーに生息するので，本種も同じ属のアリと共生すると考えられる．補足として，*Trachydonia leptogenophila* KISTNER を *Maschwitzia ulrichi* KISTNER のシノニムとして処理した．

Appendix

A New Synonymy of the Lomechusini

Maschwitzia ulrichi KISTNER

Maschwitzia ulrichi KISTNER, 1989: 307 [original description].
Trachydonia leptogenophila KISTNER, *in* KISTNER *et al.*, 2003: 386 [original description]. **N. syn.**

Additional records. 2 exs., Ulu Gombak, Selangor, Malaysia, 21. V. – 3. VI. 2003, M. MARUYAMA leg. (by flight interception traps).

Remarks. KISTNER *et al.* (2003) described *Trachydonia leptogenophila* collected from Ulu Gombak, Selangor, Malaysia, in association with *Leptogenys distinguenda* (EMERY, 1887), but this species is apparently identical with *Maschwitzia ulrichi* taken from the same locality and the ant colonies of the same species. Therefore, *T. leptogenophila* is synonymized herewith with *Maschwitzia ulrichi*.

This species is also similar to *Wroughtonilla watanabei* in general appearance, but distinguished from it by the posterior part of the pronotum narrower, the setae on the 8th to 10th abdominal segments longer, and the ventral crest of the aedeagal median lobe smaller.

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