

Four New Species of the *Holotrichia constricta* Group
(Scarabaeidae, Melolonthinae, Melolonthini) from the Philippines

Takeshi MATSUMOTO

Nishi-miyahara 2–6–20–102, Yodogawa-ku, Osaka city,
532–0004 Japan

Abstract Four new species of the genus *Holotrichia* belonging to the *H. constricta* group, are described from the Philippines under the following names: *H. bicallosicephala*, *H. mindoroensis*, *H. malindangensis*, and *H. tenuitibialis*.

Up to date, I have had opportunities to report on the *Holotrichia constricta* group including descriptions of new species and comments for the known species (Itoh, 2003 a, b; Matsumoto, 2008). As the result, the species group is now composed of thirty-three species in total. Of these, the members from the Philippines are twenty-five species and those from Indonesia are eight. A reliable estimate of the total number of the species of the genus *Holotrichia* is rather enormous and is presumed to attain to more than 240.

At this time, I have found four unknown species of the *H. constricta* group in the collections of two Philippine native collectors, and under a close examination they proved to be new species. I am therefore going to describe the four species herein.

The discovery of the four new species owes to two collectors' hard work for collecting beetles, namely, Messrs. Danny MOHAGAN and his younger brother, Noel MOHAGAN, who collected various beetles not only in their residential lands but also in other lands including those of other islands. Four new species were obtained in the course of their feverish activities. Before going further, I would like to express my heartfelt gratitude to them for their sending me the material and for giving me the opportunity of reporting on their material.

Abbreviations used herein are as follows: HW – head width; IN – interocular distance; PW – pronotal width; PL – pronotal length; PH – pronotal height; FL – metafemoral length; FW – metafemoral width; TA – protibial length; TB – distance between the base and the third denticle of protibia; M – arithmetic mean; OMNH – Osaka Museum of Natural History, Osaka; CA – author's collection.

Holotrichia bicallosicephala MATSUMOTO, sp. nov.

(Figs. 1, 6, 10)

Description. Length: 22.3–26.5 mm.

M a l e. Body long. Head, mouth parts, pronotum, scutellum, pro- to metasterna, coxae and legs except for femora dark brown, elytra, pygidium and abdomen brighter brown. Dorsal surface weakly shining.

Clypeus bilobed, rounded at each antero-lateral corner, distinctly emarginate at the middle of anterior margin, with distinct transverse ridge near base; frons rough, coarsely and rugosely punctate, with a pair of distinct callosities medially; vertex relatively sharply ridged; occiput sparsely with coarse punctures behind vertex, thence densely with fine punctures beyond the level of posterior margin of eye. Antennal club short, shorter than five preceding segments together.

Pronotum gently produced laterad, weakly compressed near base and having a slightly constricted appearance; anterior angle blunt, the apex gently rounded, neither produced nor lobed; posterior angle blunt, close to 135° in lateral view; lateral margin almost straight in both anterior and posterior halves; posterior margin rimmed throughout; disc coarsely and relatively densely punctate, the surroundings of punctures feebly concave. Scutellum about 2.2 times as wide as long.

Elytra coarsely and slightly rugosely punctate, the surroundings of punctures rather distinctly concave; sutural costa distinctly raised, 2nd one weakly raised and much widened toward apex, 4th faint, distinct only in small range of median portion, 5th vestigial or vanished. Pygidium slightly convex, sparsely and coarsely punctate.

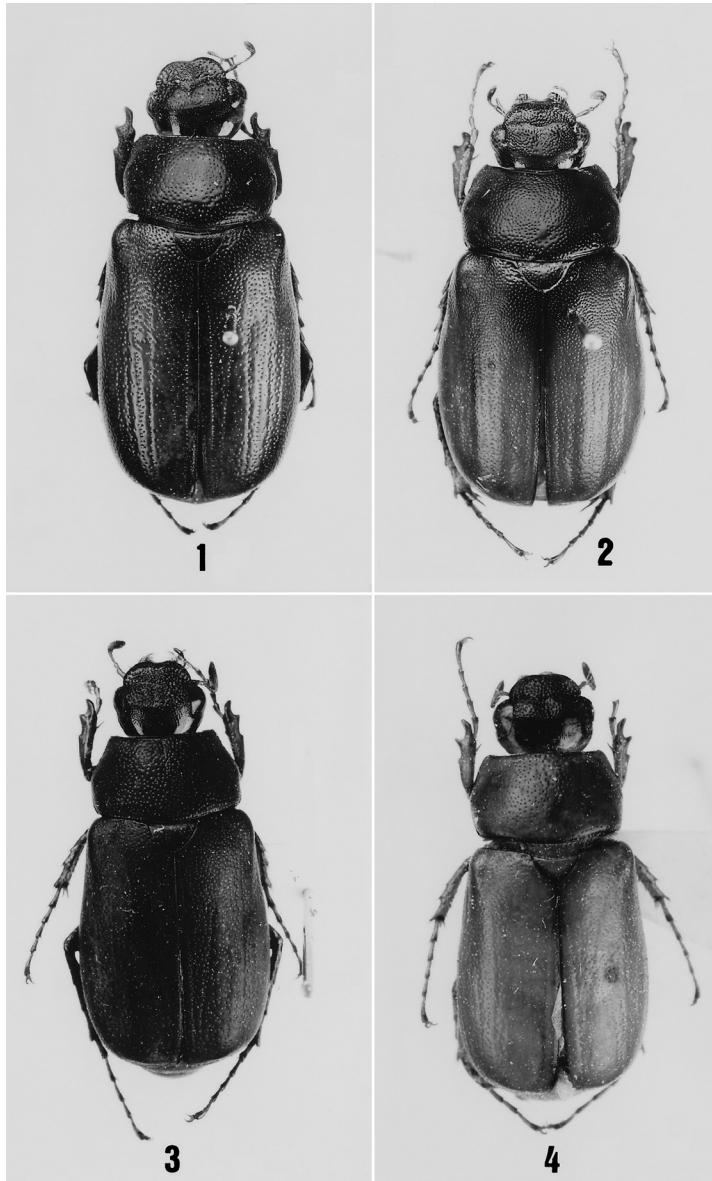
Prosternum with feebly raised, hill-shaped postcoxal process. Abdomen shining in central portion and on the 6th sternite, opaque in moderately large to rather large lateral portions, sparsely covered with short to longer hairs in the random manner; 2nd sternite more densely and widely with longer hairs in the lateral areas; 3rd to 5th sternites each with some long recumbent hairs in opaque latero-basal transverse portions; 5th sternite declivous toward apical 1/3, thence flattened in apical 1/3.

Metafemur stout, sparsely and coarsely punctate, with a row of relatively long hairs on surface, which are about 0.55 times as long as the metafemoral width; meso- and metatibiae with some sharp serrations on upper sides, average seven serrations on both tibiae; metatibia clearly longer than metatarsus, longer one of metatibial apical spurs far longer than 1st metatarsal segment, which is as long as the 2nd; claws each strongly bent, with sharp, small denticle near base; denticle of outer claw of metatarsus feebly smaller than that of inner claw.

Parameres of male genitalia subparallel toward apex in dorsal view, widened toward apical 1/3, loosely truncate at apex and having a sharp deflexed projection, respectively in lateral view; temones forming an apical sclerite, with a pair of vertically developed parts near apex, the apex gradually widened and emarginate at the middle.

F e m a l e. Antennal club as long as or shorter than five preceding segments together. Elytra distinctly rugose in the middle. Mesotibia with average six serrations on upper side, metatibiae with average seven; metatibia clearly longer than metatarsus. Coxite of female genitalia with normally slender frame on upper side and well sclerotized thick frame on lower half.

Arithmetic data. HW/PW ♂: 0.64–0.67 (M 0.66, n=2), ♀: 0.62–0.66 (M 0.64, n=



Figs. 1-4. Habitus of *Holotrichia* spp. — 1, *Holotrichia bicallosicephala*; 2, *H. malindangensis*; 3, *H. tenuitibialis*; 4, *H. mindoroensis*.

2); IN/HW ♂: 0.69–0.70 (M 0.70, n=2), ♀: 0.67–0.68 (M 0.68, n=2); PH/PW ♂: 0.50–0.51 (M 0.51, n=2), ♀: 0.51–0.52 (M 0.52, n=2); PL/PW ♂: 0.60–0.61 (M 0.61, n=2), ♀: 0.58–0.61 (M 0.60, n=2); FW/FL ♂: 0.33–0.35 (M 0.34, n=2), ♀: 0.40

(M 0.40, n=3); TB/TA ♂: 0.50–0.51 (M 0.51, n=2), ♀: 0.48–0.50 (M 0.49, n=3).

Distribution. Mindoro Island (the Philippines).

Type series. Holotype: ♂, Mt. Halcon, Mindoro, Philippines, VII–2007 (OMNH TI-395). Paratypes: 2 ♀♀, same data as for the holotype; 1 ♂, Mt. Halcon, Mindoro Is., Philippines, III–1998; 1 ♀, Mindoro Is., Philippines, 2001. The holotype is deposited in OMNH and the paratypes are housed in CA.

Etymology. This species was named after the presence of a pair of callosities on the frons.

Holotrichia mindoroensis MATSUMOTO, sp. nov.

(Figs. 4, 7, 11)

Description. Length: 12.0–15.5 mm.

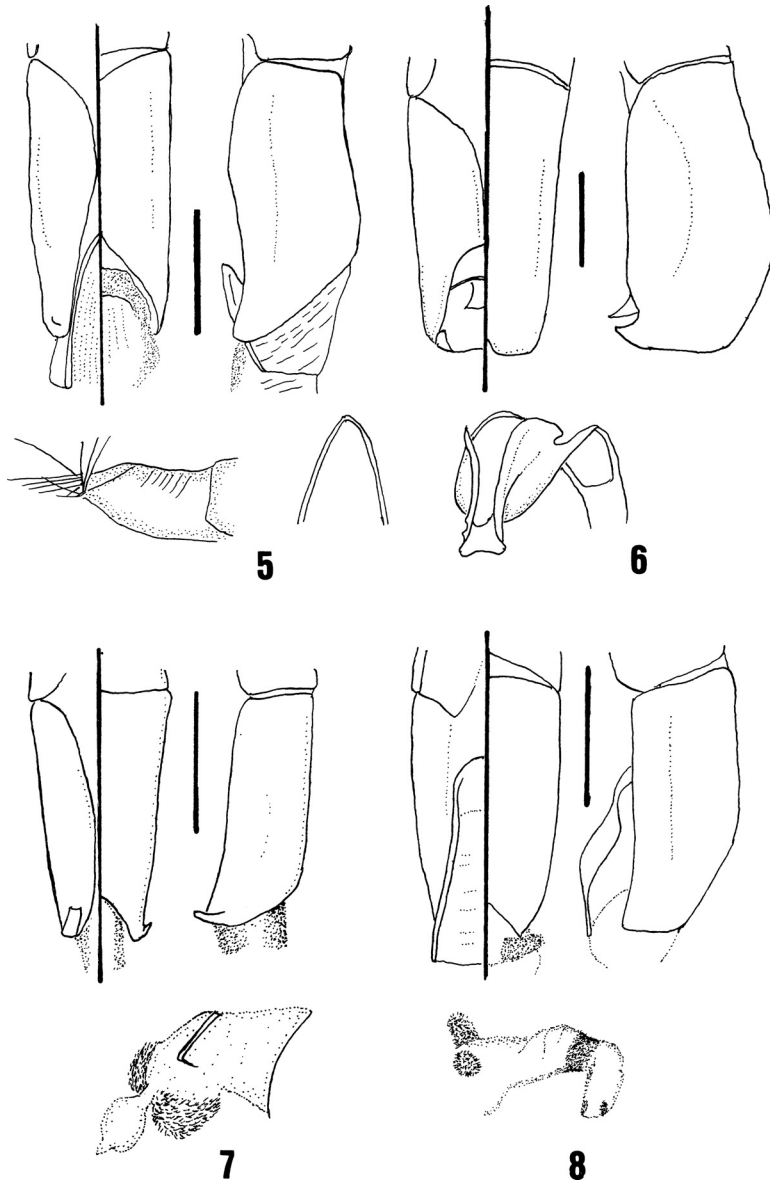
Male. Body elongate oval. Head blackish, pronotum, prosternum, mouth parts and protibia dark reddish brown, elytra, femora, meso- and metasterna and metacoxa pale to dark brown, abdomen and pygidium yellowish brown, but the body color sometimes darkened. Dorsal surface weakly shining.

Clypeus very feebly emarginate at the middle of anterior margin, much rounded at each antero-lateral corner and coarsely punctate; frons rough, coarsely punctate, with a pair of faint elevations; eyes not conspicuously prominent; vertex relatively sharply ridged; occiput shining and impunctate behind vertex, with an arcuate band of dense or sparse punctures at the position of posterior margin of eye; labrum with relatively distinct longitudinal ridge on each lobe; antennal club approximately as long as six preceding segments together.

Pronotum convex, smooth, moderately produced laterad and slightly compressed basad; anterior angle subrectangular, sharp and not produced forward; posterior angle distinct, 135° in lateral view; lateral margin straight both in anterior and posterior halves, sharply curved past the middle; posterior margin arranged with punctures throughout, not rimmed; disc smooth, sparsely and coarsely punctate, the surroundings of punctures not or hardly concave, without any impressions near lateral angle. Scutellum about 1.9 times as wide as long. Elytra smooth, with five costae; sutural and 5th costae conspicuous, 3rd and 4th often faint, 2nd usually conspicuous but sometimes faint.

Prosternum with narrow, distinctly raised and flattened postcoxal process. Metasternum shining and glabrous in central rhomboidal portion, opaque and haired in the remaining lateral portion; the hairs short to semilong and distributed mainly in basal portion. Abdomen shining, glabrous and sparsely and coarsely punctate in almost all central area; 2nd to 5th sternites opaque in latero-basal transverse portions, respectively; 2nd sternite sparsely with short hairs in lateral portions, 3rd to 5th more sparsely haired laterad; 3rd to 5th sternites also with some long recumbent hairs in latero-basal transverse portions, respectively.

Metacoxa rectangular at the postero-lateral corner, not produced posteriorly, with



Figs. 5–8. Male aedeagus [ventral (left half), dorsal (right half) and lateral views, scale: 1 mm] with internal sac and temones. — 5, *H. tenuitibialis*; 6, *H. bicallosicephala*; 7, *H. mindoroensis*; 8, *H. malindangensis*.

lateral margin feebly arcuate or straight; metafemur relatively stout, sparsely and coarsely punctate, metafemoral hairs on surface at most 0.2 times as long as metafemoral width; meso- and metatibiae with a few inconspicuous serrations on upper sides, 0 or 1 serration on mesotibia and 1–2 on metatibia; metatibial apical spurs sharp, far longer than 1st metatarsal segment, which is shorter than the 2nd; metatarsus distinctly longer than metatibia. Claws each gently bent, with sharp denticle near base; the denticle of outer claw of metatarsus feebly smaller than that of inner claw.

Parameres of male genitalia slender and feebly swollen in the middle, poorly sclerotized on ventral side, with each apex bent outward and sharply pointed; temones becoming thinner apically, narrowly connected with each other at apex; internal sac bearing a portion annularly covered with remarkably dense short and thick hairs, which are developing especially on the ventral surface.

F e m a l e. Antennal club as long as six preceding segments together. Scutellum about 1.9 times as wide as long. Metafemur stout; metafemoral hairs on surface at most 0.33 times as long as metafemoral width; meso- and metatibiae with average two serrations, respectively; metatibial apical spurs slender leaf-shaped, curved and distinctly longer than 1st metatarsal segment, which is shorter than the 2nd as in male; metatarsus about as long as metatibia. Coxite of female genitalia quadrate, with anterior margin straight and narrowly sclerotized.

Arithmetic data. HW/PW ♂: 0.65–0.67 (M 0.66, n=4), ♀: 0.64–0.66 (M 0.65, n=3); IN/HW ♂: 0.64–0.68 (M 0.66, n=4), ♀: 0.67–0.68 (M 0.67, n=3); PH/PW ♂: 0.46–0.49 (M 0.48, n=4), ♀: 0.48–0.53 (M 0.50, n=3); PL/PW ♂: 0.60–0.65 (M 0.62, n=4), ♀: 0.59–0.63 (M 0.61, n=3); FW/FL ♂: 0.32–0.33 (M 0.32, n=4), ♀: 0.38–0.39 (M 0.38, n=3); TB/TA ♂: 0.45–0.49 (M 0.47, n=4), ♀: 0.45–0.48 (M 0.46, n=3).

Distribution. Luzon, Mindoro, Palawan Islands (the Philippines).

Type series. Holotype: ♂, Mt. Halcon, Is. Mindoro, V-1998 (OMNH TI-396). Paratypes. [**Mindoro**] 3 ♂♂, Mindoro Is., 2001; 4 ♀♀, same data as for the holotype. [**Palawan**] 4 ♂♂, Mt. Mantalingjan, Is. Palawan, III-1996, D. MOHAGAN leg. [**Luzon**] 2 ♀♀, Mt. Banahao, Quezon, C. Luzon, 3-IV-2003. The holotype is deposited in OMNH and the remaining paratypes are housed in CA.

Etymology. This species was named after one of its localities, Is. Mindoro.

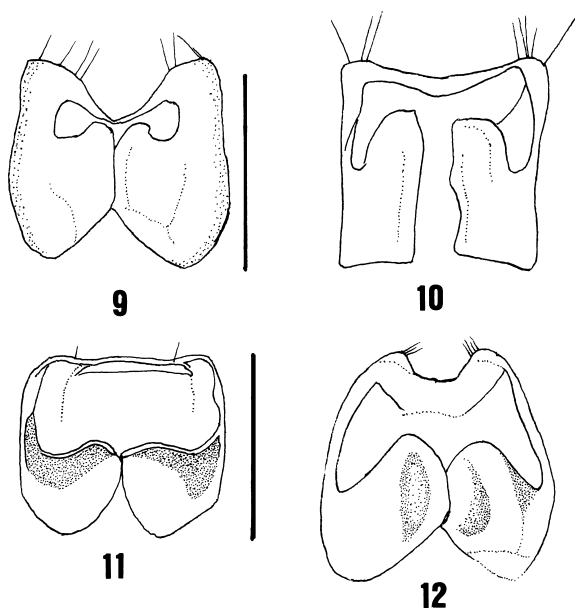
***Holotrichia malindangensis* MATSUMOTO, sp. nov.**

(Figs. 2, 8, 12)

Description. Length: 18.4–20.6 mm.

M a l e. Head, mouth parts, pronotum and scutellum almost blackish, antennae, elytra, pygidium, prosternum, legs and abdominal 6th sternite reddish brown, meso- to metasterna and metacoxa dark brown, abdomen yellowish brown. Dorsal surface weakly shining.

Clypeus gently bilobed, with antero-lateral corners rounded; basal portion transversely and weakly raised; frons rough, coarsely punctate, very weakly concave in



Figs. 9–12. Coxite of female genitalia (scale: 1 mm). — 9, *H. tenuitibialis*; 10, *H. bicallosicephala*; 11, *H. mindoroensis*; 12, *H. malindangensis*.

median portion; occiput coarsely punctate, the punctures extending beyond the level of posterior margin of eye; antennal club about as long as six preceding segments together.

Pronotum convex, well produced laterad, slightly compressed near base; anterior angle obtuse, not produced, the apex sharp; posterior angle blunt, about 135° in lateral view; lateral margin straight both in anterior and posterior margins; posterior margin rimmed throughout; disc densely and coarsely punctate, the surroundings of punctures distinctly concave, sometimes with an oblique concavity in each latero-posterior portion. Scutellum about 2.2 times as wide as long. Elytra feebly darker in basal portion; sutural to 3rd costae clear; 4th recognizable, 5th greatly reduced or vanished. Pygidium feebly convex.

Prosternum with a flattened postcoxal process. Metasternum shining in central rhomboidal portion, opaque in the remaining portions, covered with long hairs in almost all portions. Abdomen weakly shining in central portion, relatively widely opaque laterad, and sparsely haired in almost all area; 2nd to 5th sternites each with a transverse row of semilong hairs in central portion, 2nd relatively sparsely with short hairs laterad; 3rd to 5th each with a few long recumbent hairs in the opaque latero-basal transverse portion.

Metacoxa relatively deeply furrowed along the posterior margin, rectangular at the postero-lateral corner and feebly curved along lateral margin; metafemur rather strongly stout, coarsely and sparsely punctate, metafemoral hairs on surface long, approximately

half as long as metafemoral width or longer than this; meso- and metatibiae with some conspicuous serrations on upper sides, average seven serrations on mesotibia and average eight on metatibia; metatibial apical spurs sharp, longer one being longer than 1st metatarsal segment, which is about as long as the 2nd; metatarsus about as long as metatibia; claws each strongly bent, with sharp vertical denticle near base; both denticles of inner and outer claws of metatarsus of the same shape.

Parameres of male genitalia gradually tapering toward apex, loosely cut at apex in lateral view; suture between both parameres distinct in apical 2/5 only in dorsal view; tementes forming a structure of ligula-shaped frame apically.

F e m a l e. Antennal club as long as five preceding segments together or shorter than six preceding ones together. Scutellum 2.1 times as wide as long. Meso- and metatibiae with about eight serrations on upper side. Metatarsus distinctly shorter than metatibia. Coxite of female genitalia with normally slender frame on upper half and well sclerotized, thick frame on lower half.

Arithmetic data. HW/PW ♂: 0.63–0.65 (M 0.64, n=4), ♀: 0.61–0.63 (M 0.62, n=4); IN/HW ♂: 0.66–0.67 (M 0.67, n=4), ♀: 0.66–0.69 (M 0.67, n=4); PH/PW ♂: 0.48–0.52 (M 0.49, n=4), ♀: 0.48–0.51 (M 0.50, n=4); PL/PW ♂: 0.58–0.60 (M 0.59, n=4), ♀: 0.58–0.62 (M 0.60, n=4); FW/FL ♂: 0.34–0.37 (M 0.36, n=4), ♀: 0.38–0.41 (M 0.40, n=4); TB/TA ♂: 0.47–0.51 (M 0.49, n=4), ♀: 0.45–0.47 (M 0.46, n=4).

Distribution. Mindanao Island in the western region (the Philippines).

Type series. Holotype: ♂, Mt. Malindang, Mindanao Is., Philippines, XI-2005, D. MOHAGAN leg. (OMNH TI-397). Paratypes: 4 ♂♂, 4 ♀♀, same data as for the holotype. The holotype is deposited in OMNH and the remaining paratypes are housed in CA.

Etymology. This species was named after the type locality, Mt. Malindang, which is located at the base of the Zamboanga Peninsula, Is. Mindanao.

***Holotrichia tenuitibialis* MATSUMOTO, sp. nov.**

(Figs. 3, 5, 9)

Description. Length: 15.0–17.2 mm.

M a l e. Body almost dark blackish brown with head and pronotum completely blackish. Dorsal surface opaque.

Clypeus bilobed, gently rounded at each antero-lateral corner, feebly emarginate at the middle of anterior margin, coarsely and densely punctate, transversely and much weakly raised along fronto-clypeal suture; frons slightly rough, coarsely punctate, haired or not, with the surroundings of punctures largely concave; eyes slightly prominent; vertex distinctly ridged; occiput densely punctate, the punctures extending toward foramen beyond the posterior margin of eye; antennae with 3-segmented club approximately as long as six preceding segments together.

Pronotum convex, smooth, weakly produced laterad, feebly constricted basad; anterior angle almost rectangular, the apex not produced anteriorly; posterior angle blunt, sharper than 135° in lateral view; rim of anterior margin thin and distinct

throughout the margin; lateral margin very feebly sinuate in anterior half and straight in posterior half, serrate in anterior half only and not reflexed laterally in antero-lateral portion at all; posterior margin rimmed in central portion, the rim replaced by row of punctures in lateral portions; disc haired or not, coarsely and relatively densely punctate, the surroundings of punctures slightly concave, without a minute impression near each lateral angle. Scutellum wide, average 2.3 times as wide as long, sparsely and coarsely punctate.

Elytra relatively smooth, with five costae; sutural costa and 2nd one distinct, 3rd to 5th narrow and weakly raised, intermediate area between 2nd and 3rd costae and that between 3rd and 4th ones sometimes obscurely raised. Pygidium moderately convex and coarsely punctate.

Prosternum with hill-shaped postcoxal process. Metasternum covered with long hairs in whole area, shining in central rhomboidal portion and bearing a pair of weak oblique ridges in the shining area. Abdomen shining in relatively large, central rounded area and on 6th sternite, opaque in rather enlarged lateral areas; central principal area glabrous, 2nd sternite sparsely with short hairs laterad, 3rd to 5th sternites with some long recumbent hairs in latero-basal transverse portions, respectively.

Metacoxa bearing rectangular postero-lateral corner, which is not produced posteriorly; metafemur sparsely punctate, metafemoral hairs on surface about half to 0.75 times as long as metafemoral width; protibia slender and at most 0.25 times as wide as long; meso- and metatibiae with very sharp serrations on upper sides, average four on mesotibia and five on metatibia; metatibia approximately as long as metatarsus; metatibial apical spurs sharp, with longer one slightly longer than 1st metatarsal segment, which is approximately as long as the 2nd; claws each thick and strongly bent with sharp denticle near base; the denticles of outer and inner claws of metatarsus being of the same size.

Parameres of male genitalia obliquely truncate, widely cleft in about apical 1/3 in dorsal view; a pair of temones coalescent with each other at apex, giving an appearance of U-shaped structure and not forming any other thickly sclerotized enlarged structure; internal sac with a bundle of many long hairs apically.

F e m a l e. Clypeus with obscure transverse ridge basally as in male; antennal club approximately as long as five preceding segments together. Scutellum about 2.2 times as wide as long. Legs more robust; protibia about 0.25 times as wide as long as in male, but the apex blunt and more rounded; metafemoral hairs on surface half as long as the metafemoral width; mesotibia with five serrations on upper side and metatibia with six, respectively; metatibia distinctly longer than metatarsus; metatibial apical spurs narrow leaf-shaped and slightly widened in the middle. Coxite of female genitalia robust, bearing very thick frame, which is deeply and obliquely cut as a V-shape along anterior margin.

Arithmetic data. HW/PW ♂: 0.62–0.65 (M 0.64, n=5), ♀: 0.59–0.63 (M 0.61, n=3); IN/HW ♂: 0.68–0.69 (M 0.68, n=5), ♀: 0.68–0.72 (M 0.70, n=3); PH/PW ♂: 0.49–0.54 (M 0.51, n=5), ♀: 0.51 (M 0.51, n=3); PL/PW ♂: 0.57–0.63 (M 0.59, n=

5), ♀: 0.58–0.60 (M 0.59, n=3); FW/FL ♂: 0.27 (M 0.27, n=4), ♀: 0.34–0.36 (M 0.35, n=2); TB/TA ♂: 0.51–0.55 (M 0.53, n=5), ♀: 0.48–0.51 (M 0.50, n=2).

Distribution. Mindoro Island (the Philippines).

Type series. Holotype: ♂, Mt. Halcon, Is. Mindoro, Philippines, IV–2007 (OMNH TI-398). Paratypes. 14 ♂♂, 1 ♀, same data as for the holotype; 1 ♀, same locality as for the holotype, III–2008; 1 ♀, same locality as for the holotype, V–1999; 3 ♂♂, same locality as for the holotype, V–2002. The holotype is deposited in OMNH and the remaining paratypes are housed in CA.

Etymology. This species is named after its slender protibia.

要 約

松本 武: フィリピンのクロコガネ (コウチュウ目コガネムシ科) の 4 新種。—— 最近, 筆者にもたらされたフィリピンからのクロコガネの中に, *Holotrichia constricta* 群に含まれるべき 4 種の不明種が見出されたので, それぞれ *H. bicallosicephala* (ミンドロ島), *H. mindoroensis* (ミンドロ島, パラワン島, ルソン島), *H. malindangensis* (ミンダナオ島西部), *H. tenuitibialis* (ミンドロ島) と命名した。 *H. constricta* 群はこれでフィリピン産 29 種, インドネシア産 8 種の合計 37 種となり, 約 240 種強がいると予想されるクロコガネ属の中でも, きわめて大きい種数を占める一群となった。

References

- ITO, T., 2003 a. Notes on *Holotrichia constricta* group, with description of a new species and redescription of two species (Scarabaeidae, Melolonthinae, Melolonthini). *Kogane, Tokyo*, (4): 7–15.
- 2003 b. Two new species and a new record of the *Holotrichia constricta* group (Scarabaeidae, Melolonthinae, Melolonthini). *Elytra, Tokyo*, **31**: 371–378.
- MATSUMOTO, T., 2008. Three new species of the *Holotrichia constricta* group (Scarabaeidae, Melolonthinae, Melolonthini) from the Philippines. *Elytra, Tokyo*, **36**: 101–108.