

Two New Species of the Genus *Pachyrhynchus* GERMAR (Coleoptera, Curculionidae, Entiminae) from Luzon, the Philippines

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Abstract Two new species of the genus *Pachyrhynchus* GERMAR are described from Luzon, the Philippines: *P. maruyamai* sp. nov. (Catanduanes Island in the Bicol Region) and *P. yukaе* sp. nov. (Quezon province in the Calabarzon Region).

Introduction

To date, 158 species of the genus *Pachyrhynchus* GERMAR (Curculionidae, Entiminae, Pachyrhynchini) have been known mainly from the Philippine Islands (RUKMANE, 2019; YOSHITAKE, 2019). In the course of my taxonomic research of Pachyrhynchini weevils, two additional species were found from Luzon in the Philippines, one of which from Catanduanes Island in the Bicol Region and the other from Quezon province in the Calabarzon Region. After careful examination, I concluded that both of them are new to science. In this paper, I describe the two species as new.

Material and Methods

This study was based on specimens deposited in the Munetoshi MARUYAMA Collection at the Kyushu University Museum, Fukuoka (MCKUM) and Hiraku YOSHITAKE Collection at the Institute for Agro-Environmental Sciences, NARO, Tsukuba (NIAES). The methods used in this study were the same as those explained in YOSHITAKE (2017). In addition, the holotypes of related species were examined at the Natural History Museum, London (NHML) and Senckenberg Naturhistorisches Sammlungen, Museum für Tierkunde, Dresden (SMTD). The holotypes of the new species described herein are preserved in NIAES.

Taxonomy

Pachyrhynchus maruyamai sp. nov.

(Figs. 1–4 & 9–12)

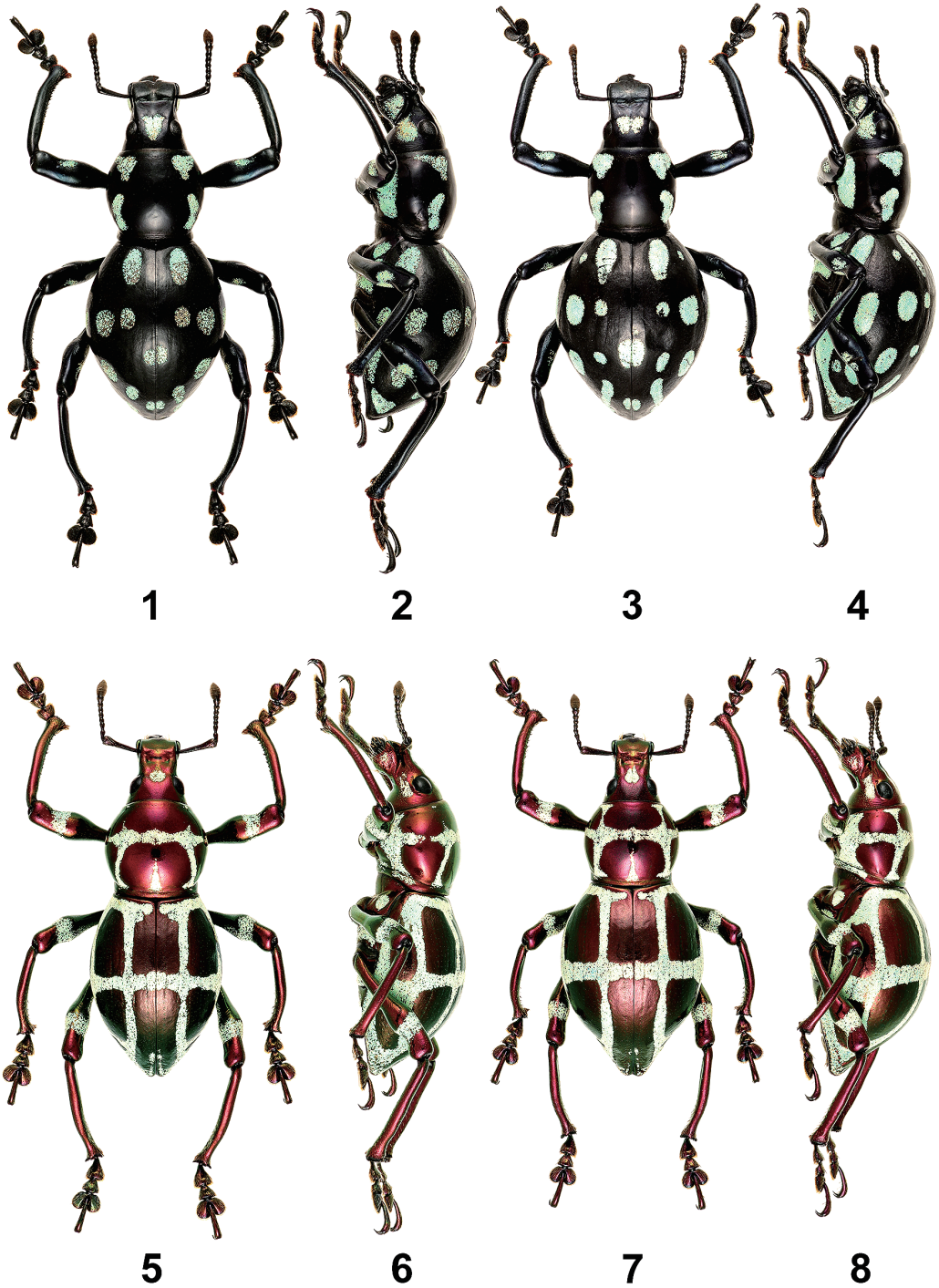
Diagnosis. *Pachyrhynchus maruyamai* is distinctive enough not to be confused with any other congeners by the black large stout body with characteristic scaly markings.

Description. Male. Dimensions (in mm): LB: 16.20–17.05 (holotype 16.20); LR: 2.80–2.85 (2.85); WR: 3.15–3.30 (3.15); LP: 5.30–5.65 (5.30); WP: 5.75–6.00 (5.75); LE: 10.90–11.40 (10.90); WE: 8.20–8.45 (8.20). N = 2 for all measurements. Habitus as shown in Figs. 1 & 2.

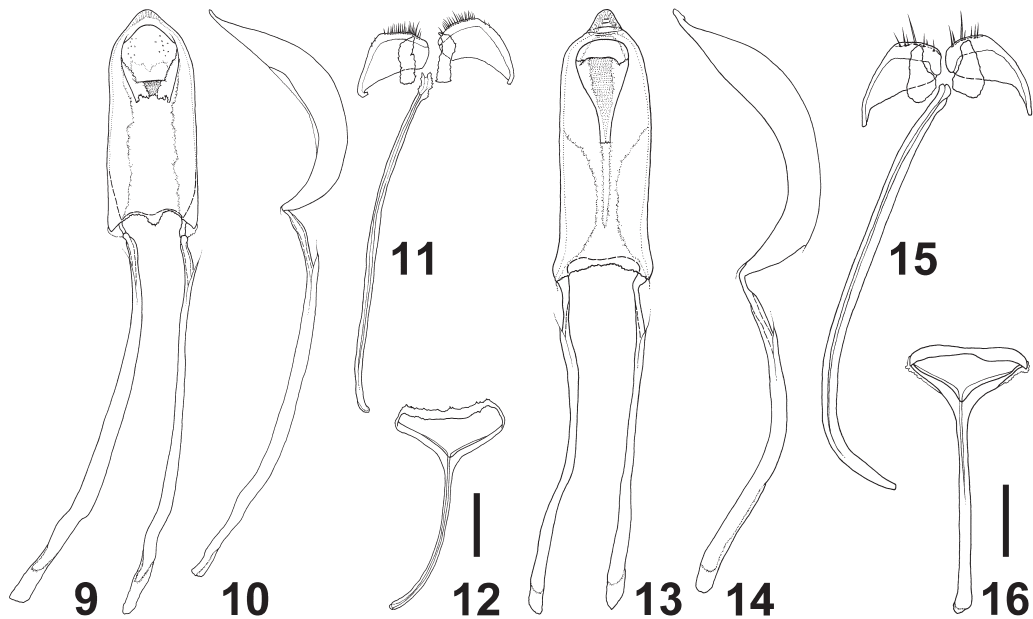
Integument black. Body surface mostly shiny; elytra with slightly stronger luster; underside with weaker luster; metasternum and venter subopaque.

Body mostly minutely pubescent, with glittery pale green markings of recumbent round scales. Forehead with large subobtriangular scaly patch which sometimes extends over and covers base of rostrum. Lateroventral parts of head and rostrum behind antennal scrobes each with large patch which is composed of general scales but fringed along lower margin with smaller, aciculate to lanceolate ones; lateroventral parts of rostrum before antennal scrobes mostly covered with general scales, mingled with smaller, aciculate to lanceolate ones, and each furnished with a few long golden setae on lower part of apex. Prothorax with the following markings of general scales: 1) comma-shaped patch on each side of pronotum, which ranges from just before subbasal groove to middle; 2) oblique, broadly subtriangular patch on each side of apical part of pronotum; and 3) broad lateroventral stripe on each side, which extends from subbasal groove to apical margin. Each elytron with the following markings of general scales: 1) two elliptic patches on basal part, sometimes with small spot between those; 2) four antimedial round to elliptic patches of irregular size, of which inner two patches are small while remaining two are larger and elongate; 3) lateral stripe extending from postmedian to subapical parts, which is sometimes reduced into two subtriangular patches; 4) elliptic sutural and three external patches of irregular size on postmedian part, of which small patch next to sutural one is sometimes diminished; and 5) elliptic sutural and larger external patches on subapical part, of which external one is sometimes produced basad. Fore coxae densely covered with general scales on anterior parts, each with round scaly patch on middle of posterior part. Mid coxae each with scaly patch on external half of posterior part. Femora each with fine stripe and broad band of general scales; scaly stripe being on basal part of each femur, one on fore femur being on anterior margin while those on mid and hind femora on posterior margin; scaly band being on subapical part of each femur, one on fore femur more or less interrupted posteriorly while those on mid and hind femora interrupted anteriorly. Tibiae fringed with light-colored hairs and sparse dark setae along internal margins, rather densely covered with golden setae apically. Prosternum mostly covered with general scales. Intercoxal portion of mesosternum with longitudinal scaly patch. Mesepisterna each with broadly subtriangular scaly patch. Mesepimera mostly covered with general scales. Metasternum with large subtriangular patch on each side, which is composed of general scales but sparsely mingled with minute hair-like ones. Ventrites I and II each with a pair of transversely lanceolate to stilliform scaly patches along apical margin, each of which is mainly composed of general scales but sparsely with hair-like ones; patches on ventrite II larger than those on ventrite I and sometimes confluent with each other. Ventrites III and IV each with a pair of obscure scaly patch along apical margin. Ventrite V almost immaculate, rather densely pubescent on lateral margins, and furnished with long suberect hairs on each side of apical margin.

Head moderately and minutely punctured; forehead flattish, 2.71–2.87 times as wide as eye width, foveate at middle of apex; eyes relatively small, moderately convex from lateral contour of head; each eye highest at middle. Antennae with scape flattened, moderate in length but stout, nearly 0.7 times as long as funicle, rather strongly widened apicad; funicular segment I nearly 1.4 times as long as wide, nearly as long and as wide as II; segment II nearly 1.4 times as long as wide, nearly 1.6 times as long as III; segments III–VI subequal in length, nearly as long as wide; segment VII slightly longer than VI, slightly wider than long; club subovoid, 1.65 times as long as wide, nearly as long as funicular segments V–VII combined. Rostrum slightly shorter than wide, LR/WR 0.85–0.90 (holotype 0.90); dorsum moderately and finely punctured, with shallow, broadly obtriangular concavity on basal half, moderately bulging on apical half; apical bulge flattish dorsally, slightly depressed on middle of basal part; dorsal contour of frons and rostrum subcontinuous; dorsal contour of rostrum weakly arcuately declined from base to middle, then raised from middle to apical 1/3, and finally arcuately declined to apex; lateral contour strongly dilated apicad, subangulate at apicolateral corners; ventral



Figs. 1–8. Habitus images of *Pachyrhynchus* spp. — 1–4, *P. maruyamai* sp. nov.; 5–8, *P. yukae* sp. nov. — 1, 3, 5 & 7, Dorsal habitus; 2, 4, 6 & 8, lateral habitus. — 1, 2, 5 & 6, Male; 3, 4, 7 & 8, female.



Figs. 9–16. Male genitalia of *Pachyrhynchus* spp. — 9–12, *P. maruyamai* sp. nov.; 13–16, *P. yukae* sp. nov. — 9 & 13, Aedeagus in dorsal view; 10 & 14, ditto in lateral view; 11 & 15, sternites VIII and IX in dorsal view; 12 & 16, tegmen in dorsal view. Scale bars: 1.00 mm.

surface simple, not convex along midline. Prothorax subspherical, barely wider than long, WP/LP 1.06–1.08 (holotype 1.08); dorsum moderately and minutely punctured, weakly convex, simple on each side, not costate basally; dorsal contour highest just behind middle; lateral contour rather strongly dilated from strongly constricted base, widest at apical 1/3 (holotype) or strongly dilated to basal 1/3, weakly gradually dilated to widest point at apical 1/3 (paratype), then strongly convergent apicad, and finally faintly constricted just behind apex; basal margin shallowly arched anteriorly; apical margin subtruncate; subbasal groove entirely distinct; subapical groove become obscure dorsally. Elytra broadly subobovate, LE/WE 1.33–1.35 (holotype 1.33), nearly twice as long as prothorax, LE/LP 2.02–2.06 (2.06), moderately wider than prothorax, WE/WP 1.40–1.43 (1.43), not striate-punctured except outer two striae partially marked, with smooth and evenly flat intervals; dorsum strongly convex; dorsal contour highest at basal 1/3; lateral contour rather strongly linearly dilated from base, widest at middle, then more strongly convergent to weak subapical constrictions, and finally moderately rounded at apices. Legs slender; femora weakly clavate; anterior margins of fore femora and posterior margins of mid and hind femora shallowly emarginate in subapical parts, respectively; tibiae moderately incurved apicad, sparsely bluntly serrate along internal margins, mucronate at apices; apical mucrones on hind legs smaller than those on fore and mid legs. Metasternum and ventrite I conjointly depressed on disk; depression large but very shallow, become deeper on ventrite I than on metasternum, and hardly (holotype) or barely (paratype) reaching apical margin of ventrite I at apex. Ventrite I moderately minutely punctured and weakly rugose on middle. Ventrite II shallowly widely depressed and moderately minutely punctured on disk. Ventrite V broad, nearly twice as wide as long, mostly flattened except on lateromarginal parts basally slightly depressed, rather densely punctured on apical 1/3 of disk, and subtruncate at apex. Genitalia as illustrated (Figs. 9–12).

F e m a l e. Dimensions (in mm): LB: 17.65; LR: 2.70; WR: 2.90; LP: 5.15; WP: 5.45; LE: 12.50; WE: 9.45. N = 1 for all measurements.

Rostrum LR/WR 0.93. Prothorax WP/LP 1.06; lateral contour strongly dilated from base to basal 1/3, weakly gradually dilated to widest point at apical 1/3, and then more weakly convergent to faint subapical constriction. Elytra LE/WE 1.32, much wider and longer than prothorax, WE/WP 1.73, LE/LP 2.43; dorsum more strongly convex; dorsal contour highest at basal 1/4; lateral contour more strongly dilated apically from base to widest point, and then more sharply convergent to subapical constrictions. Metasternum simple, not depressed on disk. Ventrite I flattened on disk except with faint narrow depression in middle. Ventrite V longer, widely depressed on lateromarginal parts, with lateral contour more sharply narrowed apicad; apex narrower, shallowly rounded. Otherwise, essentially as in male.

Type material. Holotype: male (NIAES), “Philippines: Catanduanes / San Miguel, Kilikilihan, / Barangay. / 9 III, 2017 . Local Collector” (typed on white card); “[H O L O T Y P E] Male / *Pachyrhynchus* / *maruyamai* / Yoshitake, 2019 / det. Hiraku Yoshitake, 2019” (typed on red card). Paratype: 1 male and 1 female, same data as the holotype (MCKUM).

Distribution. Philippines (Luzon: Bicol Region: Catanduanes Island).

Etymology. This new species was named in honor of Dr. Munetoshi MARUYAMA (KUM), a keen Japanese entomologist who deeply loves Pachyrhynchini jewel weevils, for our long-lasting friendship.

Pachyrhynchus yukae sp. nov.

(Figs. 5–8 & 13–16)

Diagnosis. *Pachyrhynchus yukae* is similar in general appearance to *P. inclytus* PASCOE, 1871, but the body of *P. yukae* is dark coppery red and stout while that of *P. inclytus* is glossy dark green and slender. Additionally, the prothorax and elytra of this new species are more strongly convex dorsally than those of *P. inclytus*.

Description. M a l e. Dimensions (in mm): LB: 14.65–16.35 (holotype 15.40, mean 15.56); LR: 2.50–2.90 (2.75, 2.76); WR: 2.20–2.55 (2.38, 2.44); LP: 4.85–5.35 (5.20, 5.18); WP: 5.15–5.90 (5.50, 5.59); LE: 9.80–11.00 (10.20, 10.54); WE: 6.60–7.50 (7.00, 7.18). N = 5 for all measurements. Habitus as shown in Figs. 5 & 6.

Integument dark coppery red; antennae black but partially with coppery-red sheen; elytra slightly darker; head and legs partially with green sheen; underside partially with green or purplish sheen. Body surface mostly shiny; elytra weakly shiny; underside subopaque.

Body mostly minutely pubescent, with glittery, yellowish to pale green markings of recumbent round scales. Forehead with lanceolate scaly patch on middle, which extends over and covers middle of basal part of rostrum. Lateroventral parts of head and rostrum behind antennal scrobes each with transverse subrectangular patch which is composed of general scales but fringed on periphery with smaller hair-like to lanceolate ones; lateroventral parts of rostrum before antennal scrobes with small patch of general scales, mingled with smaller hair-like to lanceolate ones, and each furnished with long golden setae along apical margin. Prothorax with the following markings of general scales: 1) narrowly triangular median patch on basal part of pronotum, which extends from just before subbasal groove to basal 1/3 along midline; 2) transverse sinuate band extending across middle, which is sometimes interrupted dorsolaterally on each side; 3) longitudinal stripe on each side of pronotum, which extends from just before base to just behind apex, sometimes interrupted subapically, and strongly expanded at both extremities and in middle; and 4) broad lateroventral stripe on each side, which ex-

tends from base to apex, which is arcuate ventrally. Each elytron with the following markings of general scales: 1) transverse band along basal margin, which extends across entire width except lateromarginal part but is often reduced on sutural part in various degrees; 2) transverse band extending across middle, which is widened laterally; 3) short sutural stripe on apical part, which is often reduced and sometimes becomes vestigial; 4) long stripe extending from subbasal to subapical parts of interval III, which is connected basally with marking 1) and intersected medially with 2); 5) long stripe extending from subbasal to subapical parts of interval VII, which is connected basally with marking 1), intersected medially with 2), and connected apically with 4); and 6) lateral stripe extending from subbasal part to apex, which is connected basally with markings 1) and 5), medially with 2), and apically with 3), 4), and 5). Fore coxae each with transversely oblong patch of general scales on anterior parts. Mid and hind coxae immaculate. Femora each with fine stripe and broad band of scales; scaly stripe composed of smaller hair-like to lanceolate scales, being on basal part of each femur, one on fore femur being on anterior margin while those on mid and hind femora on posterior margin; scaly band composed of general scales, being on subapical part of each femur, one on fore femur more or less interrupted posteriorly. Tibiae fringed with light-colored hairs and sparse dark setae along internal margins, more densely covered with longer setae apically. Prosternum mostly covered with general scales. Intercostal portion of mesosternum with longitudinal patch of general scales, mingled with aciculate to lanceolate ones. Mesepisterna each with semicircular scaly patch. Mesepimera immaculate. Metasternum mostly covered with general scales, sparsely mingled with aciculate to lanceolate ones, except basal and apical marginal parts glabrous. Ventrites I and II each with a pair of transversely subrectangular scaly patches along apical margin, each of which is mainly composed of general scales but sparsely mingled with aciculate to lanceolate ones; patches on ventrite II often confluent with each other. Ventrites III and IV immaculate. Ventrite V immaculate, furnished with long suberect hairs on apical part.

Head moderately and finely punctured; forehead flattish, nearly 2.6 times as wide as eye width; eyes relatively small, moderately convex from lateral contour of head; each eye highest at middle. Antennae moderately slender, with scape moderate in length, nearly 0.8 times as long as funicle, moderately clavate; funicular segment I nearly twice as long as wide, nearly 1.5 times as long as and as wide as II; segment II 1.45 times as long as wide, nearly 1.6 times as long as III; segments III–VI subequal in length, nearly as long as wide; segment VII nearly 1.4 times as long as VI, slightly wider than long; club subovoid, 1.65 times as long as wide, nearly as long as funicular segments V–VII combined. Rostrum relatively slender, slightly longer than wide, LR/WR 1.10–1.16 (holotype 1.16, mean 1.13); dorsum moderately and finely punctured, foveate at middle of base, with broadly obtriangular concavity on basal half, moderately bulging on apical half; apical bulge flattish dorsally, slightly depressed on middle of basal part; dorsal contour of frons and rostrum subcontinuous; dorsal contour of rostrum weakly arcuately declined from base to middle, then gradually raised from middle to apical 1/3, and finally arcuately declined to apex; lateral contour strongly dilated apicad; apicolateral corners invisible from above due to well-developed pterygia; ventral surface simple, not convex along midline. Prothorax subspherical, barely wider than long, WP/LP 1.06–1.10 (holotype 1.06, mean 1.08); dorsum moderately and minutely punctured, moderately convex, simple on each side, not costate basally; dorsal contour highest just behind middle; lateral contour strongly dilated from strongly constricted base, widest before middle, then more strongly convergent apicad, and finally weakly constricted just behind apex; basal margin subtruncate; apical margin shallowly arched anteriorly; subbasal groove entirely distinct; subapical groove become obscure dorsally. Elytra broadly subobovate, LE/WE 1.45–1.48 (holotype 1.46, mean 1.47), nearly twice as long as prothorax, LE/LP 1.96–2.08 (1.96, 2.03), moderately wider than prothorax, WE/WP 1.27–1.32 (1.27, 1.28), vestigially striate-punctured, with

flat coriaceous intervals; dorsum moderately convex; dorsal contour highest at middle; lateral contour moderately arcuately dilated from base to widest point at middle, then more strongly convergent to faint subapical constrictions; apices separately acutely rounded. Legs slender; femora rather strongly clavate; anterior margins of fore femora and posterior margins of mid and hind femora moderately emarginate in subapical parts, respectively; tibiae moderately incurved apicad, sparsely bluntly serrate along internal margins, sharply mucronate at apices; apical mucrones large on fore legs, medium-sized on mid legs, and small on hind legs. Metasternum and ventrite I conjointly depressed on disk; depression large, reaching apical margin of ventrite I at apex. Ventrite I rugose and finely granulate on disk; each granule bearing short fine hair. Ventrite II widely flattened and moderately minutely punctured. Ventrite V nearly 1.8 times as wide as long, weakly rugose, flattish but slightly depressed on lateromarginal parts, widely truncate at apex. Genitalia as illustrated (Figs. 13–16).

F e m a l e. Dimensions (in mm): LB: 15.80–16.80 (mean 16.37); LR: 2.50–2.90 (2.74); WR: 2.25–2.53 (2.41); LP: 4.78–5.10 (4.92); WP: 5.15–5.65 (5.41); LE: 11.00–11.80 (11.40); WE: 8.00–8.45 (8.20). *N* = 5 for all measurements.

Forehead slightly wider, nearly 2.8 times as wide as eye width. Rostrum LR/WR 1.11–1.17 (mean 1.14). Prothorax WP/LP 1.07–1.14 (mean 1.10). Elytra LE/WE 1.37–1.42 (mean 1.39), much longer and wider than prothorax, LE/LP 2.22–2.41 (2.32), WE/WP 1.44–1.56 (1.52); dorsum more strongly convex; dorsal contour highest just before middle; lateral contour more strongly dilated apically from base to widest point, then more sharply convergent to stronger subapical constrictions, and finally more acutely produced at apices. Conjoint depression on metasternum and ventrite I much smaller, limited on ventrite I in basal part between hind coxae. Ventrite I not granulate, widely truncate at apex. Ventrite V slightly longer, nearly 1.6 times as wide as long, widely depressed on lateromarginal parts, with lateral contour more strongly narrowed apicad; apex narrower, subtruncate. Otherwise, essentially as in male.

Type material. Holotype: male (NIAES), “[PHILIPPINES: Luzon] / Calabarzon region, Quezon / province, Dolores, Barangay / Kinabuhayan, Sitio Bangkong / Kahoy, 5–6. I. 2017” (typed on white card); “[H O L O T Y P E] Male / *Pachyrhynchus* / *yukae* / Yoshitake, 2019 / det. Hiraku Yoshitake, 2019” (typed on red card). Paratypes: 45 exs. from same locality as the holotype (MCKUM & NIAES).

Distribution. Philippines (Luzon: Calabarzon Region: Quezon province).

Etymology. This new species was named in honor of Mrs. Yuka MARUYAMA (Fukuoka), the beloved wife of Dr. Munetoshi MARUYAMA.

Acknowledgments

I appreciate Munetoshi MARUYAMA (KUM) for his cooperation so far in my study of the *Pachyrhynchini*. I would like to dedicate this small paper to him and his wife as their wedding anniversary. I thank Maxwell V. L. BARCLAY (NHML), Olaf JÄGER (SMTD), Klaus-Dieter KLASS (SMTD), Christopher H. C. LYAL (NHML), Matthias NUSS (SMTD), and Christian SCHMIDT (SMTD) for their support in specimen examinations. My thanks are also due to Naoko NAKAHARA (Tsukuba) for her assistance while preparing the manuscript, and to Mao TSUKAMOTO (Tsukuba) and Chiaki MINE (Chikusei) for their valuable suggestions on the descriptions of structural color. Finally, I acknowledge two anonymous reviewers for their prompt and constructive comments on the manuscript.

要 約

吉武 啓: フィリピン・ルソン地方産カタゾウムシ属 (鞘翅目ゾウムシ科クチブトゾウムシ亜科) の2新種. ————カタゾウムシ族 *Pachyrhynchini* に属するカタゾウムシ属 *Pachyrhynchus* にフィリピン・ルソン地方産の2新種を認め, それぞれをマルヤマカタゾウムシ (新種新称) *P. maruyamai* sp. nov. およびユカカタゾウムシ (新種新称) *P. yukae* sp. nov. と命名し, 記載した.

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