

## Four Pachyrhynchini Weevils Exhibiting Allopatric Convergence in Color and Markings, with Descriptions of Three New Taxa from Luzon, the Philippines

Hiraku YOSHITAKE<sup>1)</sup> and Sheryl A. YAP<sup>2)</sup>

<sup>1)</sup>Institute for Agro-Environmental Sciences, NARO, 3–1–3 Kannondai, Tsukuba, Ibaraki, 305–8604 Japan

<sup>2)</sup>Institute of Weed Science, Entomology and Plant Pathology, College of Agriculture and Food Science, University of the Philippines Los Baños, Los Baños, Laguna, Philippines 4031

**Abstract** Four Pachyrhynchini weevils exhibiting convergent color and body pattern characteristics were studied taxonomically. A new species and a new subspecies of the genus *Pachyrhynchus* GERMAR are described from southern Luzon: *P. masatoshii* YOSHITAKE et YAP, sp. nov. (Quezon province) and *P. rukmanee paucisignatus* YOSHITAKE, subsp. nov. (Marinduque Is.). In addition, *Macrocyrtus rukmanee* BARŠEVSKIS, which was originally described on the basis of five female specimens, is transferred to the genus *Eupachyrrhynchus* HELLER (comb. nov.). The male of *E. rukmanee* is described for the first time, but it is essential to confirm the sex of the type specimens since the original description strongly suggests that the author made a mistake in determining the sex of the specimens in question. Furthermore, a new species of the genus *Eupachyrrhynchus* is described from northeastern Luzon: *E. badiovittatus* YOSHITAKE, sp. nov. (Cagayan province). A diagnosis of each taxon is provided. Habitus photographs and illustrations of male genitalia for these taxa are also included. This paper deals with a very interesting example of convergence among Pachyrhynchini weevils, including species occurring allopatrically.

### Introduction

Pachyrhynchini weevils and other insects exhibiting convergent color and body pattern characteristics are widely known as outstanding examples of mimicry relationships. SCHULTZE (1923) gave an outline of this interesting phenomenon with 19 concrete examples, demonstrating for the first time that more than three species were sometimes involved in a mimicry relationship. This phenomenon is not only exhibited by several genera of the tribe Pachyrhynchini but also by many weevils belonging to other Entiminae tribes, such as the Celeuthetini; Molytinae weevils represented by the genus *Alcidodes* MARSHALL, 1939; some coleopteran families such as Cerambycidae: Lamiinae species represented by the genus *Doliops* WATERHOUSE, 1841; some other insects belonging to the orders Heteroptera and Orthoptera; and even some spiders (YOSHITAKE, 2017 a). Many other authors, such as SAKAGUTI (1979), CABIGAS (2010), VIVES (2013) and MARUYAMA (2015), have observed this occurrence based on superficial similarity and showed it visually through photographs.

Recently, BARŠEVSKIS (2016) added a new example of “mimetic species pair” by describing two new species, *Pachyrhynchus rukmanee* and *Macrocyrtus rukmanee*, both of which were named after his beloved student, Anita RUKMANE. In the paper in question, he stated explicitly that “This is the first example of mimicry between genera *Pachyrhynchus* and *Macrocyrtus*”. However, YOSHITAKE (2017 d) pointed out that it was a fundamental mistake ignoring the fact that *Pachyrhynchus taylori* SCHULTZE, 1922 and *Macrocyrtus kalinganus* SCHULTZE, 1922 have already been reported as an example of “mimetic relations” by SCHULTZE (1923: 617, Table 1). In addition, we have doubts about the generic placement of *M. rukmanee*, as well as the sex identification of the type specimens.

During our study of the tribe Pachyrhynchini, we found two undetermined species showing re-

markable resemblance to *P. rukmanee* and *M. rukmanee* in color and body pattern characteristics. We also found three unique specimens which seemed to be conspecific with *P. rukmanee*, but are clearly different from the typical form in scaly markings. After careful examination, we concluded that there are two species and one subspecies new to science. The new subspecies is very distinct that it belongs to a local population which is separable from the typical form of *P. rukmanee*. Also, we found out that it is appropriate to place *M. rukmanee* in the genus *Eupachyrrhynchus* HELLER, 1912.

In this paper, we describe a new species of *Pachyrhynchus* and *Eupachyrrhynchus* and a new subspecies of *P. rukmanee*, all of which are considered to occur allopatrically to the two known taxa. Furthermore, *M. rukmanee* is newly combined with *Eupachyrrhynchus* and the male is described for the first time, though the type specimens are suspected to be males.

We would like to dedicate this small paper to the late Dr. Masatoshi TAKAKUWA for his life-time dedication to natural history in Japan.

### Materials and Methods

This study was based on specimens deposited at the Kyushu University Museum, Fukuoka (KUM), Institute for Agro-Environmental Sciences, NARO, Tsukuba (NIAES), Senckenberg Deutsches Entomologisches Institut (SDEI), Senckenberg Naturhistorische Sammlungen Dresden, Museum für Tierkunde, Dresden (SMTD), and University of the Philippines Los Baños, Los Baños (UPLB). In addition, concerned specimens in the private collections of Maurizio BOLLINO, Lecce, Italy (MBLI) and Franco SANDEL, Miane, Italy (CFS) were examined by each of the private collectors on behalf of ourselves. The methods used in this study were the same as those explained in YOSHITAKE (2017 c). The holotypes of *Pachyrhynchus masatoshii* sp. nov., *Pachyrhynchus rukmanee paucisignatus* subsp. nov., and *Eupachyrrhynchus badiovittatus* sp. nov. will be deposited in the collections of UPLB, KUM, and NIAES, respectively.

### Taxonomy

#### *Pachyrhynchus masatoshii* YOSHITAKE et YAP, sp. nov.

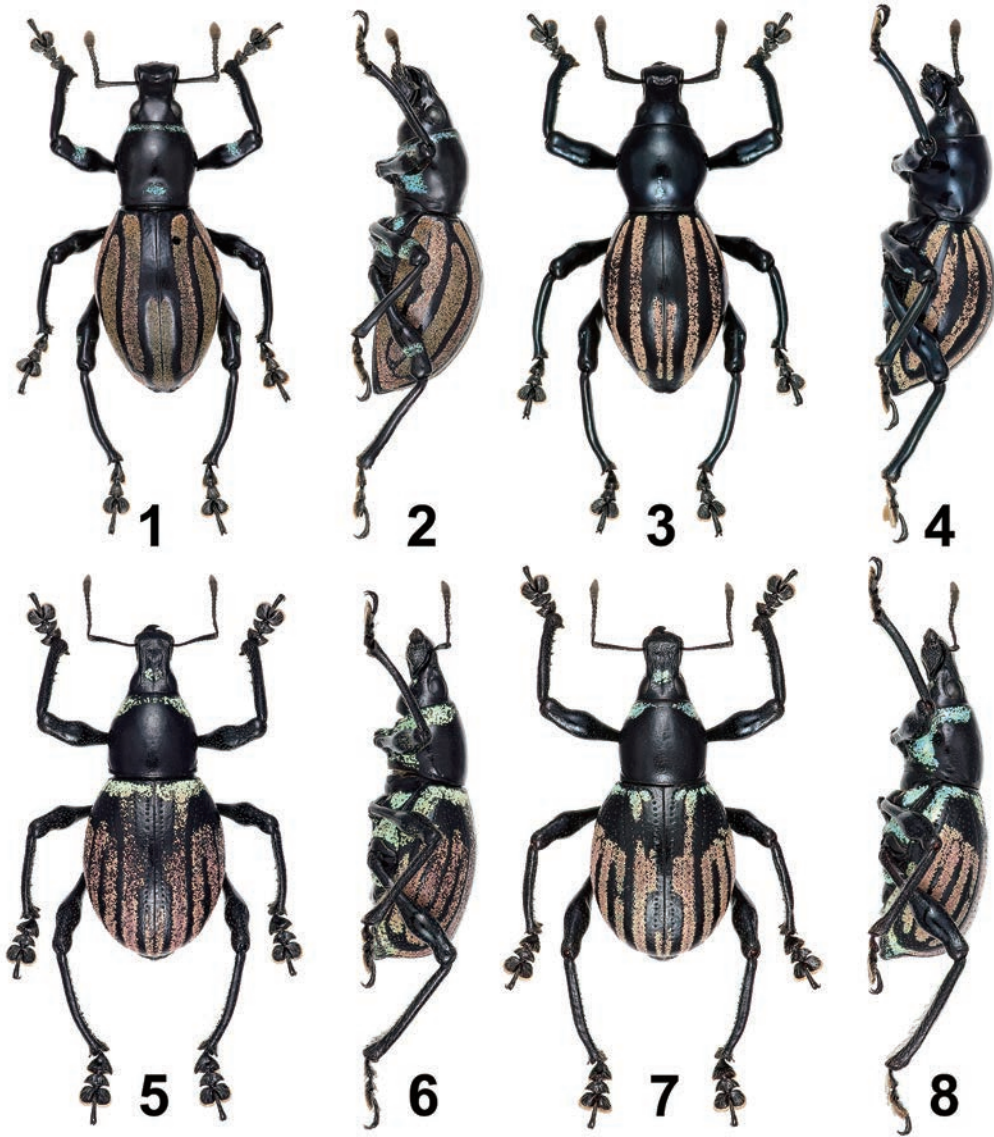
(Figs. 1, 2, 9–12)

*Diagnosis.* In having the similar scaly markings, *Pachyrhynchus masatoshii* shows a superficial resemblance to *P. rukmanee* BARŠEVSKIS, 2016. However, *P. masatoshii* clearly differs from *P. rukmanee* by the following points: forehead flattish, wider, 2.50 times as wide as eye width; antennae slenderer; rostrum slightly more elongate, longer than wide; prothorax narrower, with sides distinctly widened apically, but the degree of expansion much weaker; tibiae weakly incurved, more weakly emarginate behind apices along external margins on mid and hind pairs; and male ventrites I and II with denser punctures. Also, *P. masatoshii* male has the slightly more elongate elytra than in *P. rukmanee*.

*Description.* Male. Dimensions: LB: 14.00. LR: 2.55. WR: 2.30. LP: 4.25. WP: 4.20. LE: 9.75. WE: 6.50. N = 1 for all measurements. Dorsal and lateral habitus as shown in Figs. 1 & 2.

Integument black. Body surface mostly moderately shiny except elytra and underside with weaker luster.

Body mostly subglabrous, with markings of glossy recumbent round to lanceolate scales, more or less mingled with minute hairs and scales. Head sparsely minutely pubescent. Each side of rostrum



Figs. 1–8. Dorsal and lateral habitus of *Pachyrhynchus* and *Eupachyrrhynchus* spp. — 1, 2, *Pachyrhynchus matsushii* YOSHITAKE et YAP, sp. nov., holotype male; 3, 4, *P. rukmanee paucisignatus* YOSHITAKE, subsp. nov., holotype male; 5, 6, *Eupachyrrhynchus rukmanee* (BARŠEVSKIS, 2016), comb. nov., male; 7, 8, *E. badiovitatus* YOSHITAKE, sp. nov., holotype male. — 1, 3, 5, 7, Dorsal habitus; 2, 4, 6, 8, lateral habitus.

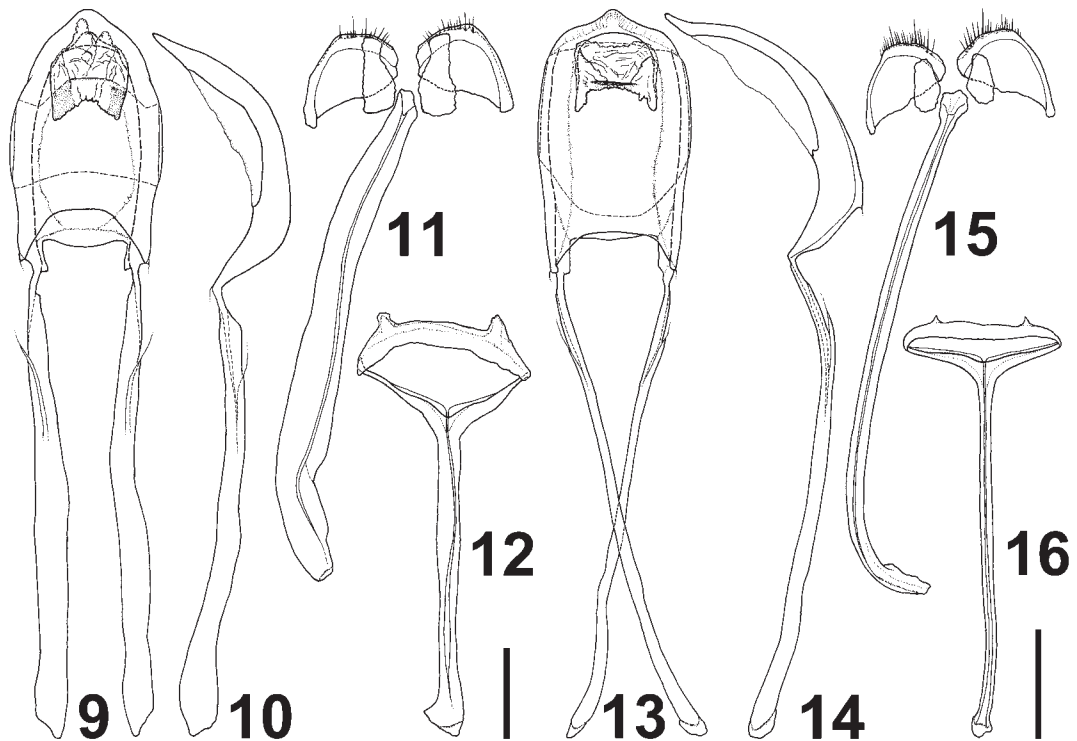
with patch of short hairs and with some pale blue to green scales on lateroventral part behind antennal scrobe, furnished with long grayish to pale brown hairs near apex. Prothorax with the following three markings of pale blue scales: 1) transversely elliptic patch on middle of subbasal part; 2) fine transverse band on subapical part; 3) broad stripe on lateroventral part of each side, ranging from subbasal

to subapical grooves; apical band connected with lateral stripe on each side. Each elytron with five stripes of pale natural beige scales; first stripe short, extending from middle to just behind apex of suture; second much longer, extending from just behind base to subapical part; third extending from behind base to subapical part; fourth nearly as long as second, confluent with fifth basally; fifth extending from just behind base to just behind apex, slightly arched posteriorly in apical part. Fore femora each with band of pale blue to green scales on subapical part; band interrupted on posterior margin. Mid and hind femora each with vestiture as that on fore pair, but subapical band interrupted on anterior margin. Each tibia fringed with long light-colored hairs along internal margin, sparsely mingled with brown stout hairs. Each mesepisternum with small round patch of pale blue to green scales. Fore coxae each with patch of pale blue to green scales. Underside with markings of pale blue to green scales; metasternum with subtriangular patch on each side; ventrite I with a pair of transverse patches on sides along apical margin; ventrite II with a pair of transversely elliptic patches along apical margin; ventrite V furnished with long light-colored hairs along apical margin.

Body moderately minutely punctured. Forehead flattish, 2.50 times as wide as eye width. Eyes moderate in size, moderately prominent from lateral contour of head. Antennae relatively slender, with scape flattened, moderate in length, nearly as long as funicle, gradually widened apicad; funicle moderate in length; funicular segment I 1.50 times as long as wide, 1.08 times as long as II; segment II 1.43 times as long as wide, 1.50 times as long as III; segments III–VI subequal in length and width, nearly as long as wide, 0.80 times as long as and 0.77 times as wide as VII; segment VII nearly as long as wide; club subellipsoidal, relatively long, 2.21 times as long as wide, 1.22 times as long as funicular segments V to VII combined. Rostrum slightly longer than wide, LR/WR 1.11; dorsum with large and deep semicircular depression on middle, faintly sulcate on basal half along midline, rather strongly bulging on apical half; apical bulge widely and rather strongly depressed medially, not sulcate; dorsal contour of forehead and rostrum subcontinuous; dorsal contour of rostrum gradually declined apicad in basal half, then gradually raised from middle to apical 1/3, and finally arcuately declined to apex; sides moderately gradually widened to apex; ventral surface simple, not convex along midline. Prothorax subbarrel-shaped, nearly as wide as long, WP/LP 0.99, moderately convex dorsally; dorsum slightly depressed on basal scaly patch; dorsal contour highest at apical 1/3; sides moderately dilated from constricted base, widest at basal 3/5, then slightly more strongly convergent apicad, and finally weakly constricted in subapical part; basal margin shallowly arched anteriorly; apical margins subtruncate but shallowly and narrowly emarginate in middle; subbasal and subapical grooves become obscure dorsally. Elytra subellipsoidal, LE/WE 1.50, much wider than prothorax, WE/WP 1.55, more than twice as long as prothorax, LE/LP 2.30, not striate-punctured, slightly depressed on scaly stripes; sides gradually dilated from base to the widest point of basal 2/5, then gently narrowed to faint subapical constrictions, and finally arcuately attenuate to apices, which are separately narrowly rounded. Legs slender; femora strongly clavate; fore tibiae with simple external margins, weakly incurved apically; fore and mid tibiae sparsely bluntly serrate along internal margins and acutely mucronate at apices; mid and hind tibiae slightly emarginate behind apices along external margins, weakly incurved apically; hind tibiae not serrate internally and with vestigial mucrones at apices. Metasternum depressed on disc. Disc of ventrite I widely shallowly depressed, rather densely punctured; apex of depression not reaching apical margin of ventrite I. Disc of ventrite II flattish, with denser punctures. Ventrite V with denser punctures, which become larger apically, widely rounded at apex; lateral margins widely depressed. Genitalia as illustrated (Figs. 9–12).

*F e m a l e.* Unknown.

*Type material.* Holotype male (UPLB), “[ PHILIPPINES: Luzon ] / Calabarzon region, Quezon, / Dolores, Brgy. Kinabuhayan, / Mt. Banahaw, 11-13.V.2011, / Sheryl A. YAP leg.” (typed on a white



Figs. 9–16. Male genitalia of *Pachyrhynchus* spp. — 9–12, *Pachyrhynchus masatoshii* YOSHITAKE et YAP, sp. nov., holotype male; 13–16, *P. rukmanee paucisignatus* YOSHITAKE, subsp. nov., holotype male. — 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.

card), “♂” (typed on a white card), “[ HOLOTYPE ] Male / *Pachyrhynchus / masatoshii /* YOSHITAKE & YAP, 2017 / Det. Hiraku YOSHITAKE, 2017” (typed on a red card).

*Distribution.* Philippines (Luzon: Calabarzon region).

*Etymology.* This species is named after the late Dr. Masatoshi TAKAKUWA who contributed greatly to the development of natural history in Japan.

*Notes.* The discovery of *Pachyrhynchus masatoshii* from Luzon Is. is very interesting since this new species shows a remarkable resemblance in color and body pattern characteristics with *P. rukmanee*, which is an allopatric species known only from Marinduque Is.

***Pachyrhynchus rukmanee paucisignatus* YOSHITAKE, subsp. nov.**

(Figs. 3, 4, 13–16)

*Diagnosis.* This new subspecies is clearly differs from the nominotypical subspecies in having the following unique features: pronotum with a narrow elliptic scaly patch of glossy pale blue to green scales on middle of subbasal part; lateroventral part of prothorax with a small, subapical scaly spot on each side; elytra with five narrower, well-separated stripes of pale natural beige scales, except second and fifth stripes connected apically with each other; and femora with reduced markings of glossy pale

blue to green scales on subapical parts.

*Description.* M a l e. Dimensions: LB: 12.35–13.00 (holotype 12.35). LR: 2.15–2.20 (holotype 2.15). WR: 1.95–2.10 (holotype 1.95). LP: 3.90–4.25 (holotype 3.90). WP: 4.20–4.45 (holotype 4.20). LE: 8.20–8.60 (holotype 8.20). WE: 5.90–6.20 (holotype 5.90). N = 2 for all measurements. Dorsal and lateral habitus as shown in Figs. 3 & 4.

Body with markings of glossy recumbent round to lanceolate scales, more or less mingled with minute hairs and scales. Each side of rostrum with patch of short hairs and some pale blue to green scales on lateroventral part behind antennal scrobe. Prothorax with markings of pale blue to green scales; dorsum with narrow elliptic scaly patch on middle of subbasal part; lateroventral part with small, subapical scaly spot on each side. Each elytron with five stripes of pale natural beige scales; first stripe short, extending from behind middle to subapical part of suture; second much longer, extending from just behind base to behind apex; third extending from just behind base to subapical part; fourth nearly as long as third, but arising from behind base; fifth extending from just behind base to behind apex; each stripe relatively fine, well-separated except second and fifth stripes connected apically with each other. Femora with markings of pale blue to green scales; fore femora each with scaly patch on subapical part along anterior margin. Mid and hind femora each with two scaly patches on subapical part; one along anterior margin small; another along posterior margin much larger. Mesepisternum glabrous. Fore coxae each with patch of pale blue to green scales. Underside with markings of pale blue to green scales; metasternum with scaly patch on each side; ventrites I and II each with a pair of transversely elliptic lateral patches along apical margin; paired patches on ventrite I larger and more widely separated from each other than those on ventrite II.

Rostrum nearly as long as or slightly longer than prothorax, LR/WR 1.05–1.10 (holotype 1.10). Prothorax WP/LP 1.05–1.08 (holotype 1.08); dorsum slightly narrowly depressed on subbasal scaly patch. Elytra LE/WE 1.39 (holotype 1.39), WE/WP 1.39–1.40 (holotype 1.40), LE/LP 2.02–2.10 (holotype 2.10), slightly narrowly depressed on scaly stripes. Genitalia as illustrated (Figs. 13–16).

F e m a l e. Dimensions: LB: 12.65. LR: 2.05. WR: 2.05. LP: 4.00. WP: 4.30. LE: 8.50. WE: 6.40. N = 1 for all measurements.

Rostrum as long as wide, LR/WR 1.00. Prothorax WP/LP 1.08. Elytra wider, LE/WE 1.33, WE/WP 1.49, LE/LP 2.13. Metasternum flattish on disc. Ventrites I and II slightly inflated. Ventrite V with slightly deeper lateral depressions, more narrowly rounded at apex. Otherwise, essentially as in male.

*Type material.* Holotype male (KUM), “Philippines: S. Luzon, / Boac, Marinduque, / X. 2015, / Local Collector” (typed on a white card), “♂” (typed on a white card), “[ HOLOTYPE ] Male / *Pachyrhynchus / rukmanee paucisignatus* / YOSHITAKE, 2017 / Det. Hiraku YOSHITAKE, 2017” (typed on a red card). Paratypes. 1 male (KUM) and 1 female (NIAES) from Boac.

*Distribution.* Philippines (Luzon: Marinduque Is.).

*Etymology.* This new subspecies is named after the unique scaly markings on the integument.

*Notes.* Current distributional information on the nominotypical subspecies and *P. rukmanee paucisignatus* is very limited. BARŠEVSKIS (2016: 3, Fig. 3) regarded the locality names “Boac” and “Buenavista” as small areas in Marinduque Is., respectively. In fact, however, each name merely means that the specimens examined by the Latvian author were collected somewhere in the municipality of Boac or Buenavista, each of which covers a considerable extent in the island of Marinduque.

Reliable information available for HY suggests that specimens of the nominotypical subspecies were collected from mountainous areas, such as “Sihi” and “Mt. Malindig”, in the municipality of Buenavista located in southern part of Marinduque Is. The type series of the nominotypical subspecies contains the holotype and two paratypes from “Boac”, but all other paratypes were collected from “Buenavista” or “Mt. Malindig”. Therefore, he suspects that the three specimens were mislabeled

during the distribution process on a commercial basis. Otherwise, the specimens in question might be collected from a mountainous area in southern part of the municipality of Boac, which is close or partially adjacent to Buenavista. Based on the holotype and two paratypes being examined, the exact location in Boac is still unclear, but we consider that the type specimens were collected from a remote, local mountainous area where collectors rarely visit. Further study is necessary to elucidate distribution ranges of the two subspecies under *P. rukmanee* in the island.

In addition, HY examined a large number of specimens of the nominotypical subspecies and confirmed that they are rather uniform in scaly markings.

*Eupachyrrhynchus rukmanee* (BARŠEVSKIS, 2016), comb. nov.

(Figs. 5, 6, 17–20)

*Macrocyrtus rukmanee* BARŠEVSKIS, 2016, 4 (type locality: “Marinduque Isl., Boac”).

*Diagnosis.* In addition to the remarkable scaly markings, *Eupachyrrhynchus rukmanee* is characterized by the smooth prothorax, broadly elliptic elytra with larger punctures, male metasternum and ventrite I, which are moderately conjointly depressed on the middle and subopaque in the depressions, and male aedeagus with slightly shorter apodemes than its body.

*Description.* Male. Dimensions: LB: 12.0–13.6. LR: 2.05–2.10. WR: 1.85–2.05. LP: 3.85–4.32. WP: 3.90–4.60. WE: 6.20–7.20. LE: 8.60–9.70. N = 2 for all measurements. Dorsal and lateral habitus as shown in Figs. 5 & 6.

Integument black. Body surface mostly moderately shiny except underside partially with weaker luster.

Body mostly subglabrous, with markings of glossy recumbent round scales. Head sparsely minutely pubescent; forehead between eyes with circular patch of pale green to pale yellow scales on middle of apical half; patch subdivided along midline. Each side of rostrum with small spot of narrowly elliptic to aciculate scales and short hairs on lateroventral part just behind antennal scrobe, moderately clothed with more or less long light-colored hairs near apex. Prothorax with the following two markings of pale green to pale yellow scales: 1) apical transverse band becoming thinner medially, with anterior margin arched posteriorly and posterior margin arched anteriorly; and 2) broad stripe ranging from subbasal part to apex on lateroventral part of each side, with upper margin arched ventrally; apical band connected with lateroventral stripes. Each elytron with basal transverse band, which is composed of pale green to pale yellow scales, slightly produced posteriorly on interval III and strongly caudad laterally, and with seven longitudinal stripes of pale natural beige scales; first stripe short, extending from apical 1/4 to behind apex of suture; second long, extending from behind base to behind apex, confluent or subconfluent with, or sometimes widely separated from basal transverse band, and slightly expanded internally in median part; third extending from basal 1/3 to subapical part, basally connected with fourth; fourth slightly longer than third; fifth nearly as long as third, basally connected with sixth; third, fourth, and fifth apically connected with each other; sixth as long as fourth; seventh extending from basal 1/3 to behind apex, apically becoming paler and connected with second. Femora moderately clothed with short fine light-colored hairs; fore femora each with obscure patch of pale green to natural beige scales and denser hairs on ventral surface of subapical part. Tibiae fringed with long light-colored hairs along internal margins, sparsely mingled with dark setae on fore and mid legs. Each mesepisternum with subtriangular patch of pale blue to green scales. Fore coxae each with patch of pale blue to green scales. Underside partially covered with pale blue to green scales; prosternum except intercoxal part mostly sparsely covered with scales, mingled with fine hairs; mesosternum sparsely covered with scales and fine hairs; metasternum sparsely clothed with fine

hairs, with a pair of large subtriangular patches; ventrite I sparsely clothed with fine hairs, with a pair of transverse patches on sides along apical margin; ventrites II to IV sparsely clothed with fine hairs; ventrite V more densely clothed with fine hairs, furnished with long light-colored hairs along apical margin.

Body mostly finely punctured; punctures moderate in density, becoming much larger on elytra. Forehead flat, twice as wide as eye width. Eyes moderate in size, weakly convex, slightly prominent from lateral contour of head. Antennae slender, with scape flattened, sinuate, and fine, 9.00 times as long as wide, slightly longer than funicle, gradually widened apicad; funicle composed of relatively fine segments; funicular segment I 3.50 times as long as wide, 1.75 times as long as II; segment II twice as long as wide, 1.60 times as long as III; segment III 1.25 times as long as wide, slightly longer than but as wide as IV; segments IV–VI equal in length and width, as long as wide, as long as and 0.80 times as wide as VII; segment VII wider, 0.80 times as long as wide; club lanceolate, long, 2.63 times as long as wide, 1.62 times as long as funicular segments V to VII combined. Rostrum slightly longer than wide, LR/WR 1.02–1.11, weakly curved ventrally; dorsum with shallow, narrowly obtriangular depression on middle of basal half, faintly sulcate on basal half along midline, weakly bulging on apical half; apical bulge flattish dorsally; dorsal contour of forehead and rostrum subcontinuous; dorsal contour of rostrum gradually declined apicad in basal half, then gradually raised from middle to apical 1/3, and finally gradually declined to apex; sides moderately gradually widened to apex; ventral surface simple, not convex along midline. Prothorax subhexagonal, slightly wider than long, WP/LP 1.01–1.06, flattish dorsally, with short oblique costa on each side of dorsum; dorsal contour highest at subbasal part, and then weakly arcuately declined to apex; sides subparallel from constricted base, widest at middle, gradually convergent apicad, and weakly constricted in subapical part; basal and apical margins subtruncate; subbasal groove entirely distinct; subapical groove become obscure dorsally. Elytra broadly elliptic, LE/WE 1.35–1.39, much wider than prothorax, WE/WP 1.57–1.59, more than twice as long as prothorax, LE/LP 2.23–2.25, rather strongly striate-punctured; striae irregularly distorted; intervals slightly depressed on scaly stripes; sides gradually dilated from base to widest point at middle, then gently narrowed to subapical part, and finally arcuately convergent toward apices, which are conjointly roundly projected; apical declivity abrupt and steep. Legs slender; femora strongly clavate; tibiae sparsely coarsely serrate along internal margins, rather strongly incurved apically, and acutely mucronate at apices; internal surfaces on mid and hind tibiae granulate. Metasternum widely depressed on disc. Venter subopaque; disc of ventrite I rugose, widely depressed; apex of depression not reaching basal margin of ventrite II; disc of ventrite II flattish, sparsely punctured; ventrites III and IV sparsely punctured; ventrite V with denser punctures, subtruncate at apex. Genitalia as illustrated (Figs. 17–20); aedeagal apodemes slightly shorter than aedeagal body.

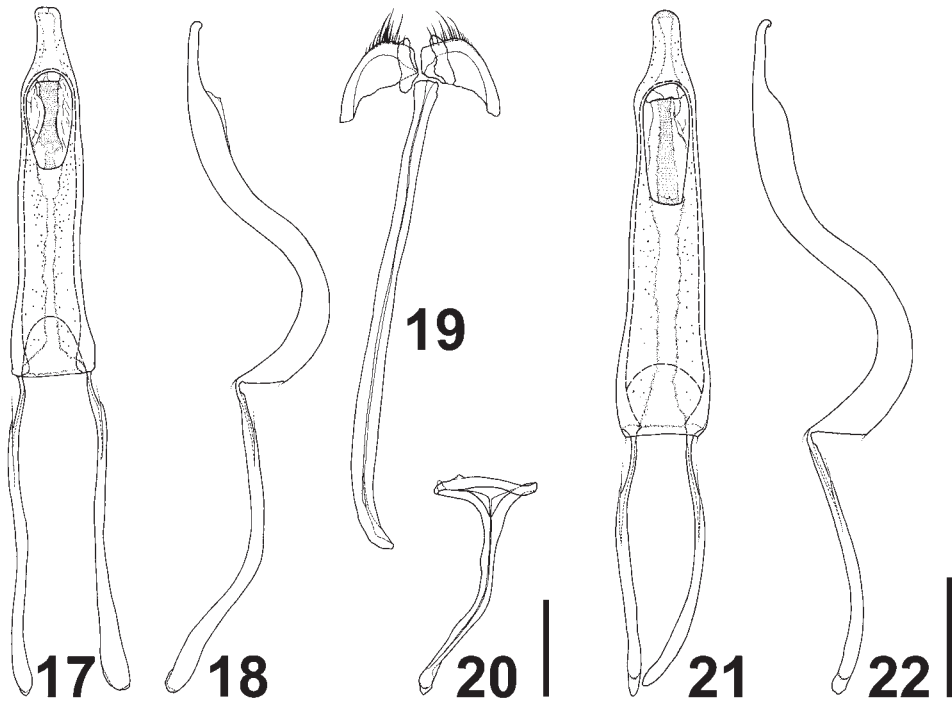
**F e m a l e.** Unknown for us.

*Specimens examined.* Two males from Buenavista, Marinduque Is. (KUM & NIAES).

*Distribution.* Philippines (Luzon: Marinduque Is.).

*Notes.* At present, the tribe Pachyrhynchini comprises 15 genera (YOSHITAKE, 2013), but its classification is rather confused with several ill-defined genera and subgenera, as well as with many species and subspecies placed in inappropriate taxonomic positions after their original descriptions (YOSHITAKE, 2017 b). Therefore, taxonomic positions of many species should be revised in a comprehensive revision of the generic and subgeneric classification system of the tribe. As to the generic placement of '*Macrocyrtus rukmanee*', we decided to transfer it to the monotypic genus *Eupachyrhynchus* HELLER, 1912 at this time, since our examination of the two female syntypes (SDEI & SMTD) of the type species, *E. superbus* HELLER, 1912, revealed that '*M. rukmanee*' is apparently congeneric with *E. superbus* in sharing several important characters for generic delimitation in the





Figs. 17–22. Male genitalia of *Eupachyrrhynchus* spp. — 17–20, *Eupachyrrhynchus rukmanee* (BARŠEVSKIS, 2016), comb. nov.; 21, 22, *E. badiovittatus* YOSHITAKE, sp. nov., holotype male. — 17, 21, Aedeagus in dorsal view; 18, 22, ditto in lateral view; 19, sternites VIII and IX in dorsal view; 20, tegmen in dorsal view. Scale bars: 1.00 mm.

tribe Pachyrhynchini (YOSHITAKE, unpubl.). As far as we know, there are some undescribed species of the genus *Eupachyrrhynchus* in northeastern Luzon. *Eupachyrrhynchus* will be redefined in detail in the future, as well as some ill-defined genera related to this genus.

As “Male unknown.” (BARŠEVSKIS, 2016: 5, Fig. 4A & B), ‘*M. rukmanee*’ was described based only on five female specimens in the original description. Based on the dorsal and lateral habitus images provided by the Latvian author, it is quite evident for us that at least one of the type specimens is a male showing some secondary sexual traits, such as the weakly produced elytral apices and stout legs. These traits are typical in males of some species groups belonging to the *Macrocyrtus* complex in the tribe Pachyrhynchini. Therefore, the type series of ‘*M. rukmanee*’ is probably composed only of male specimens, if the remaining three type specimens showed no significant differences for the Latvian author. In addition, he did not observe the underside of this species and no description was provided by him for ventral structures, which often show conspicuous secondary sexual traits of males, such as median depressions on metasternum and basal two ventrites. We, therefore, disagree with the description done by the Latvian author, and in this paper, we are rectifying the wrong taxonomic information he wrote for the Pachyrhynchini. Furthermore, the Latvian author should be severely criticized not only for mistaking a fact but also the inadequacy in descriptive work that were apparently caused by the lack of fundamental knowledge of weevils in general.

BARŠEVSKIS (2016) arbitrarily regarded this species as a mimic of *Pachyrhynchus rukmanee* with no explanation for it, but his opinion might be merely based on morphological and topological rea-

sons. Recently, YOSHITAKE (2017 a) gave an outline of Pachyrhynchini weevils and other insects exhibiting convergent color and body pattern characteristics, with many concrete examples. He pointed out some fundamental problems to be verified on a widely accepted opinion that other insects mimic Pachyrhynchini species armed with a hard exoskeleton, suggesting that camouflage could be one of the major factors causing this interesting phenomenon. Therefore, further study is necessary to elucidate the relationship between *P. rukmaneeae* and *E. rukmaneeae*.

***Eupachyrrhynchus badiovittatus* YOSHITAKE, sp. nov.**

(Figs. 7, 8, 21, 22)

*Diagnosis.* *Eupachyrrhynchus badiovittatus* is closely similar in general appearance to *E. rukmaneeae* (BARŠEVSKIS, 2016) from Marinduque Is. However, *E. badiovittatus* is clearly distinguishable from *E. rukmaneeae* by the subopaque prothorax, napiform elytra, male metasternum and ventrite I, which are more deeply conjointly depressed on the middle and more strongly shiny in the depressions, and male aedeagus with much shorter apodemes.

*Description.* Male. Dimensions: LB: 11.20. LR: 1.92. WR: 1.75. LP: 3.60. WP: 3.75. LE: 7.85. WE: 6.10. N = 1 for all measurements. Dorsal and lateral habitus as shown in Figs. 7 & 8.

Apical transverse band on prothorax composed mainly of pale blue scales, widely interrupted in middle. Fore femora devoid of scales. Eyes less convex, not prominent from lateral contour of head. Rostrum slightly longer than wide, LR/WR 1.10. Prothorax nearly as wide as long, WP/LP 1.04, subopaque with fine surface structure of interstices between punctures. Elytra shorter and wider, LE/WE 1.29, WE/WP 1.63, LE/LP 2.18, with sides arcuately convergent apically from widest point. Discs of metasternum and ventrite I conjointly more strongly depressed, shiny in depression. Genitalia as illustrated (Figs. 21 & 22); aedeagal apodemes much shorter, nearly half as long as aedeagal body. Otherwise, practically as in *E. rukmaneeae*.

Female. Unknown.

*Type material.* Holotype male (NIAES), “[ PHILIPPINES: Luzon ] / Cagayan Valley region, / Babuyan Isls., Prov. of / Cagayan, Calayan Is., / VIII. 2011, native collector leg.” (typed on a white card), “♂” (typed on a white card), “[ HOLOTYPE ] Male / *Eupachyrrhynchus* / *badiovittatus* / YOSHITAKE, 2017 / Det. Hiraku YOSHITAKE, 2017” (typed on a red card).

*Distribution.* Philippines (Luzon: Cagayan Valley region: Calayan Is.).

*Etymology.* The species epithet refers to the elytral markings of natural beige scales.

*Notes.* HY was quite confident that it was a mislabeled specimen at the first time when he saw the holotype of this new species, since he immediately regarded it as a male of *E. rukmaneeae* known only from Marinduque Is. After careful examination, however, he concluded that it was distinguishable from *E. rukmaneeae* by some taxonomically important characters, as was mentioned in the diagnosis, and decided to describe it as a new species in this paper. The distribution range of this new species described based on a single specimen still warrants attention, but there are some more undescribed species of this genus in the Sierra Madre Mountain Range, northeastern Luzon, bridging a vast distributional gap between *E. rukmaneeae* and *E. badiovittatus*.

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## 要 約

吉武 啓・Sheryl A. YAP: 体色と斑紋パターンに異所的に生息する種間での類似性を示すカタゾウムシ類4種(鞘翅目ゾウムシ科クチブトゾウムシ亜科)に関する覚書(含ルソン地方産3新タクサの記載). ———— 体色と斑紋パターンに類似性を示すカタゾウムシ類数種について分類学的研究を行った. 結果として, カタゾウムシ属 *Pachyrhynchus* GERMAR にフィリピン・ルソン南部産の1新種と1新亜種を認め, それぞれ *P. masatoshii* YOSHITAKE et YAP, sp. nov. (ケソン州) および *P. rukmanee paucisignatus* YOSHITAKE, subsp. nov. (マリンドゥケ島) として命名・記載した. また, 2016年に♀標本5個体に基づいてマリンドゥケ島から記載された *Macrocyrtus rukmanee* (BARŠEVSKIS) をヒラタカタゾウムシ属(和名新称) *Eupachyrhynchus* に移したうえで, ♂の形態的特徴を初めて記載した. ただし, 本種の原記載で♀とされたタイプ標本は実際には全て♂である可能性が高いと考えられるため, 性別の確認が必要である. さらに, ルソン島北東部に位置するカガヤン・バレー地方産のヒラタカタゾウムシ属の1新種を *E. badiovittatus* YOSHITAKE, sp. nov. (カガヤン州) として命名・記載した. 各新種と新亜種について, 近似種・亜種との区別点を明記したうえでその形態的特徴を記載し, 全形写真と♂交尾器図を付した. なお, 本論文で扱った異所的に分布する種間に見られる類似性は, カタゾウムシ類をめぐる体色と斑紋パターンの収斂を考えるうえでたいへん興味深い事例である.

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