Elytra, *Tokyo*, New Series, **4** (2): 163–180
December 25, 2014

The Genus *Merionoeda* (Coleoptera, Cerambycidae) from Sulawesi and its Vicinities

Yaheita Yokoi[1] and Tatsuya Niisato[2]

[1] Beerenkothen 33, 40882 Ratingen, Germany
[2] Bioindicator Co., Ltd., Nikko-Kagurazaka Building,
Iwato-chô 18, Shinjuku, Tokyo, 162–0832 Japan

Abstract *Merionoeda* fauna of Sulawesi and its vicinities is observed in the introduction. *Merionoeda puella* Pascoe and *M. muschenbroeki* Gestro are redescribed. *Merionoeda childersi* sp. nov. and *M. puella saitorum* ssp. nov. are described. In addition, their taxonomical positions within the genus and the *Merionoeda* fauna of Sulawesi are discussed.

Introduction

The genus *Merionoeda* was first introduced by F. P. Pascoe in 1858 with the description of *M. puella* (Pascoe, 1858). It was based on a single specimen from "Macassar", with an assumption that it was a male. In reality, however, this example was a female, as we recently confirmed after an examination of the holotype preserved in the Natural History Museum, London. Accordingly, the previous author did not observe a truly male specimen, so important characteristics found only in the male were neither recognized nor mentioned. Recently, however, many specimens, both male and female, of this species have been collected in and near Sulawesi, after almost 150 year of absence of any record (Niisato, 2012). We were fortunate enough to be able to study these new materials in detail. In the course of this examination, some hitherto unnoticed characteristics have been discovered, with a profound implication on taxonomical and bio-geographical consideration of this genus. Meanwhile, the male and female genital organs of this species could be studied for the first time. In the following, we will therefore redescribe this nominotypical species in a detailed manner. Further, its pivotal position within the genus will be discussed. *Merionoeda muschenbroeki* was described by R. Gestro based on a single female specimen collected in Southeast Sulawesi (Gestro, 1877). Since then, there has been no record of this species for a long period. Recently, however, some more examples have been collected again. As the original description was rather short, conducted at the time with rather insufficient knowledge of the genus, a closer observation is necessary. Secondly, a geographical variation of the species has some interesting aspects. We will therefore redescribe *M. muschenbroeki* in detail, followed by a discussion on its taxonomical affiliation within the genus. In addition, a geographical variation will be observed.

Finally, we will describe a new species, *M. childersi* sp. nov., which has been discovered recently in South Sulawesi and vicinity. It is quite singular in appearance, with a peculiar morphological characteristic regarding the elytra. Its classification within the genus poses another interesting question. A short discussion on its affiliation within the genus will be attached.

Materials and Methods

The type specimens of *Merionoeda puella* Pascoe and *M. muschenbroeki* Gestro preserved in

the Natural History Museum, London and Museo Civico di Storia Naturale in Genoa, respectively, were examined, through the courtesy of the curators of the museums. The other specimens examined including the type series of new taxa were obtained by the recent researches in Sulawesi and its vicinities, Indonesia by YOKOI, NIISATO, Mr. and Mrs. SAITO. The holotypes and allotype of new taxa designated herein will be preserved in the National Museum of Nature and Science, Tsukuba, and the paratypes are in the private collections of YOKOI, NIISATO, Mr. and Mrs. SAITO.

The abbreviations used for the ratio of the measurement in the descriptions are as follows: HW− head width across eyes, FA− apical width of frons, FB− basal width of frons, PL− length of pronotum, PW− maximum width of pronotum across lateral swellings, PA− apical width of pronotum, PB− basal width of pronotum, EL− length of elytra, EW− humeral width of elytra, M− arithmetic mean.

Taxonomy

Merionoeda puella puella PASCOE, 1858

(Figs. 1, 2, 4, 5, 11−14, 15−25, 26−29)

Merionoeda puella PASCOE, 1869: 238; type locality: "Macassar".

M a l e. Body length 6.8–9.1 mm (from apical margin of clypeus to abdominal apex).

Colour black, moderately shiny though more or less matted in elytra, peduncles of all femora pale yellow.

Head moderately projected forward, with moderately elongated neck, well convex, distinctly wider than the maximum width of pronotum, HW/PW 1.08−1.18 (M 1.11), provided very densely with deep and coarse punctures with somewhat rugose or asperous appearance in belts along the upper eye-lobes throughout; vertex with larger, more coarse punctures except on the very narrow, irregular and nitid costa in the middle; occiput with dense, large, deep and coarse punctures on top, laterally with more irregular ones or rugose; frons about 11/20 the length of basal width, FA/FB 0.50–0.65 (M 0.56), moderately declivous towards a deep, rather short median groove, provided with fairly large, deep and coarse punctures more or less throughout, densely so near the median groove, the antennal socket and the upper eye-lobes; clypeus rather long, about 2/3 the length of basal width, squeezed-pentagonal in form, distinctly narrowed towards apex, weakly raised near middle, scattered with coarse and shallow punctures except on the apical part; mandibles provided with coarse oval-shaped punctures of varying size on the sides; gula well bordered in semi-rectangular form, widely and coarsely punctured; eyes large and prominent, deeply and narrowly emarginated under antennal scapes, separated from one another by 1/5 the width of occiput. Antennae medium in length, well attaining the apex of first ventrite, clothed with minute yellowish pubescence on segments 2−11 and sparsely with short yellowish hairs on undersides of segments 2−6; scape moderately clavate and arcuate, provided with shallow, coarse punctures of medium size, segments 3 as long as segment 4 and a half the length of scape, segment 5 moderately, segments 6–11 strongly flattened, segments 5–10 distinctly serrate, terminal segment bluntly toothed at the apex.

Pronotum a little longer than wide, moderately narrowed to apex; PL/PW 1.08–1.14 (M 1.09), PA/PW 0.76–0.80 (M 0.79), PB/PW 0.94–1.00 (M 0.97); sides with fairly large though rather flattened lateral swellings near middle, moderately constricted before and weakly so behind swellings; apex and base thickly bordered; disc with three distinct callosities, of which the median one is the smallest, club-shaped, raised at a level between basal fifth to apical 2/5 and linked to the middle of apical margin by a flattened longitudinal costa, a pair of large oblique semi-elliptical ones 3/5 the length of pronotum at a level between basal fifth to apical fifth though interrupted by a large and deep

Fig. 1. *Merionoeda puella puella* Pascoe, ♂, from Camba, South Sulawesi, Indonesia.

Figs. 2–3. Holotypes of *Merionoeda* spp. from Sulawesi, Indonesia. —— 2, *M. puella* Pascoe, ♀, from "Macassar" (in the Natural History Museum, London); 3, *M. muschenbroeki* Gestro, ♀, from "Celebes, Kandari" (in Museo Civico di Storia Naturale in Genoa).

depression in the apical fourth, all three callosities dorsally flattened, furnished with coarse, irregular, sometimes large punctures throughout including on the callosities, densely so with coarse punctures in irregular two rows in the interspaces of callosities, with more regular ones on the apical and basal margins; basal half clothed with silvery pubescence, though sparser or lacking such pubescence near the middle. Scutellum trapezoidal with rounded apical edges and weakly emarginated apex, depressed

in the middle, furnished with silvery pubescence.

Elytra subulata, fairly long, almost reaching the middle of second ventrite, rather narrow; EL/EW 2.12–2.44 (M 2.25); sides projected forward at humeri, weakly emarginated between basal sixth to apical sixth, strongly dehiscent in apical 2/3, apicad gradually reduced in width, with apex moderately acute; disc nearly flat, declivous on sides, provided with an obtuse longitudinal costa in apical 3/4, with medium to large dense punctures in irregular rows which decrease in number from 9 to 2 towards apex, clothed with minute silvery or blackish pubescence solely on base or along suture near bases.

Venter of thoraces thickly clothed with short, lying silvery pubescence, though the apical third of prosternum naked and sides of metasternum only sparsely with short erect pale hairs; metasternum and metepisternum provided regularly with medium-sized deep punctures; prosternum moderately prominent behind apical margin, with intercoxal process very strongly compressed between coxae; mesosternal process very broad, widely and moderately emarginated on sides, deeply triangularly concave at apex; metasternum well convex, with groove along median line and just before hind coxae very deep.

Abdomen moderately arcuate on sides, shagreened, scattered with a few small punctures, sparsely clothed with silvery pubescence, though densely so on basal two ventrites except for each median part; basal ventrite 2/5 the length of abdomen; second ventrite 1/5 the length of abdomen; anal ventrite thickly bordered along apical margin which is deeply concave near middle and sinuate on sides; anal tergite in apical half distinctly narrowed in sinuate line to rounded apex.

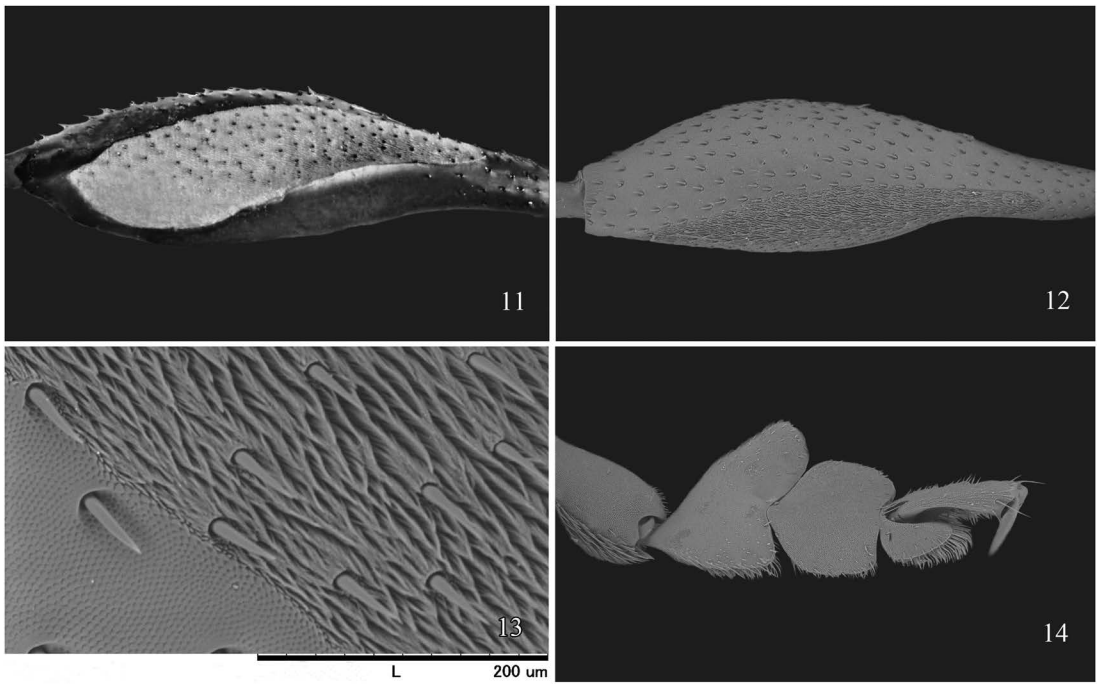
Legs rather slender; mid tarsus dilated and flattened, the first segment so in asymmetrical arrow-head form with elongated external side, the second segment in a symmetrical, broad shovel-form and 1/4 wider than long, the third smaller, almost symmetrical, bi-lobed in form and more than 1/3 wider than long; hind femur moderate in length, surpassing abdominal apex by about apical 2/5, slightly arcuate, clothed with short erect hairs, asymmetrically clavate in apical 2/3, with the external side rather flattened, bearing a velvet-surfaced maculation half the length of femur in irregular club-form; hind tibia 4/5 the length of femur, distinctly arcuate, with rather short, stout dents in two rows at external sides, terminal spur rather short, hardly reaching the apex of 1st tarsal segment, adjacent secondary terminal spur very short, only 1/5 the length of main spur.

Genital organs. Median lobe nearly 2/5 the length of abdomen, arcuate and weakly convex in profile, very wide though suddenly attenuate in the apical half, which is bluntly produced apicad; dorsal plate widely separated in two pieces in sinuate lines, supplemented with an elongate oar-shaped plate between these two plate-pieces, each of which provided with a blunt projection at the basal part of inner margin; ventral plate distinctly longer than dorsal plate, strongly turned up at the apical part in profile; median struts thin, 3/5 the length of median lobe; copulatory piece as in Figs. 12 and 13. Tegmen moderately wide, almost trapezoidal; parameres fused with sides weakly narrowed to apex which is broadly shallowly emarginated, provided with three semilong setae near each side and a few short one near middle; ring part with basal corners strongly arcuately produced inwardly. Eighth abdominal segment subovate in outline, though provided with a large concavity on the apical margin; tergite smaller than sternite, with thick, more or less arcuate lobes on sides of apical margin, which is deeply concave and almost transversely truncate near middle; sternite strongly arcuate on sides, triangularly produced inwardly on sides of apical margin, which is distinctly concave in sinuate declivous lines.

F e m a l e. Body length 6.2–10.3 mm (from apical margin of clypeus to abdominal apex).

Differing from male in the following points: Pronotum dull yellowish to brownish red, ventral side of head near the median line, prosternum, fore coxa and trochanter as well as the base of mesosternum reddish yellow, extremity of antennal segment 11 more or less reddish yellow.

Figs. 4–10. *Merionoeda* spp. from Sulawesi and its vicinities, Indonesia. —— 4, *M. puella puella* Pascoe, ♂, from South Sulawesi, Sulawesi Is.; 5, ditto, ♀; 6, *M. puella saitorum* ssp. nov., holotype ♀, from Peleng Is.; 7, *M. muschenbroeki* Gestro, ♀ with black head, from South Sulawesi, Sulawesi Is.; 8, ditto, ♀ with reddish head, from Southeast Sulawesi, Sulawesi Is.; 9, *M. childersi* sp. nov., holotype ♂, from South Sulawesi, Sulawesi Is.; 10, ditto, paratype (allotype) ♀.

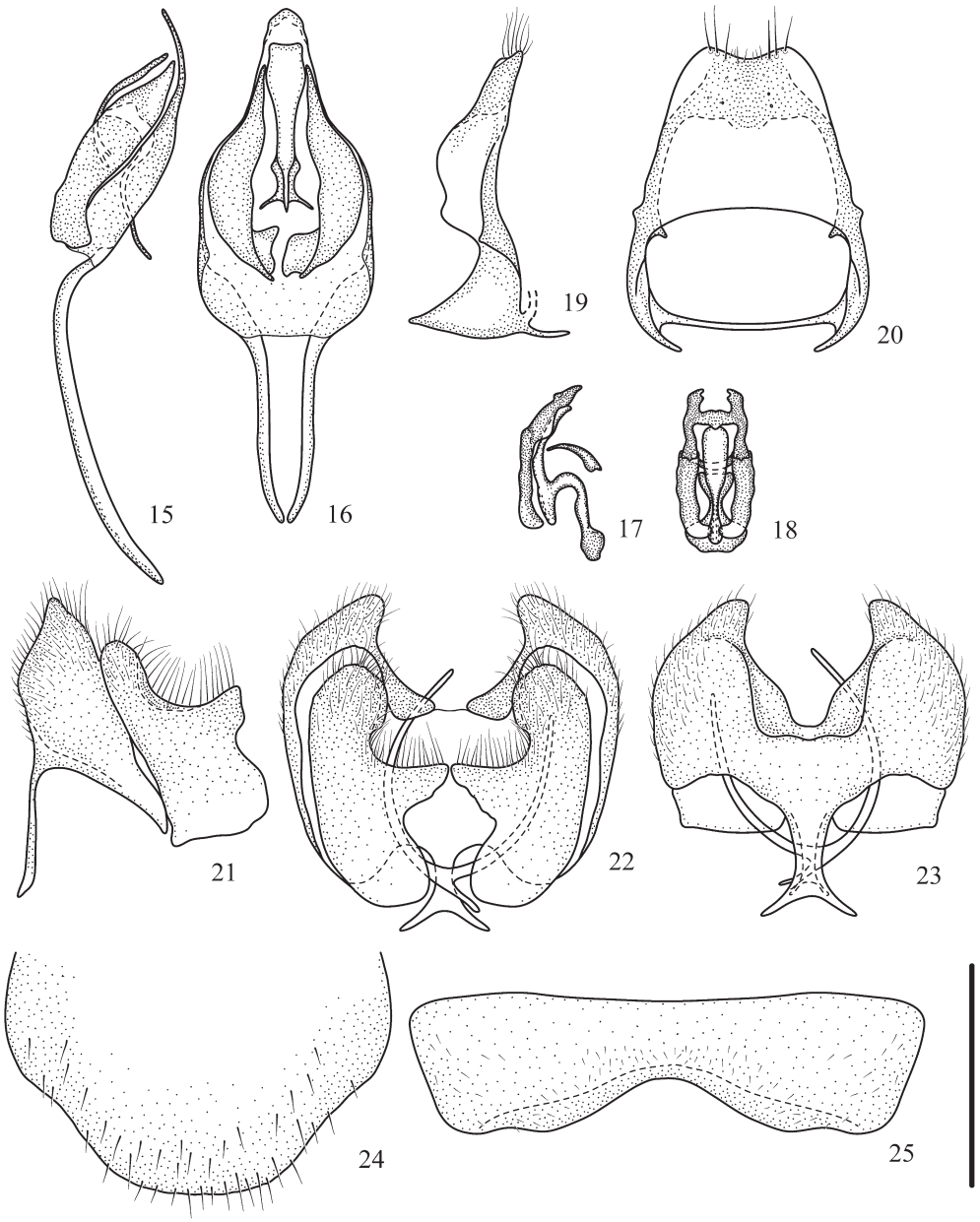


Figs. 11–14. Male hind femur and mid tarsus of *Merionoeda puella puella* PASCOE from Sulawesi, Indonesia. —— 11, Velvet-surfaced maculation of hind femur by optical image; 12, ditto by SEM image; 13, ditto, enlarged; 14, mid tarsus by SEM image.

Head as wide as the maximum width of pronotum. Eyes separated from one another by 1/3 the width of occiput. Antennae attaining the middle of first ventrite. Pronotum about as long as wide, clothed with yellowish pubescence on basal half. Scutellum furnished with yellowish pubescence. Elytra almost reaching the first ventrite. Venter of thoraces often clothed with yellowish pubescence. Legs with mid tarsus normal though a little wide and flattened, hind femur rather suddenly and strongly clavate in apical half. Standard ratios of body parts as follows: HW/PW 0.95–1.09 (M 1.00), FA/FB 0.48–0.60 (M 0.58), PL/PW 1.03–1.16 (M 1.06), PA/PW 0.74–0.82 (M 0.78), PB/PW 0.92–1.00 (M 0.95), EL/EW 2.12–2.33 (M 2.23).

Abdomen broad, strongly arcuate on sides, minutely punctured, clothed with yellowish pubescence; basal ventrite a little longer than half the whole length of abdomen, moderately dilated apicad, well convex, truncate in straight line at the apical margin; ventrite 2 about half the length of the preceding, arcuately concaved in depth of apical 3/5, provided with three kinds of yellowish setae and hairs (rake organ), of which the five to eight irregular rows of reddish yellow setae with spoon-shaped extremities are placed near the middle (a few of them near the apical row are strongly arcuate), the waved very long light yellow setae on the external sides of these rows, and the fine moderately long light yellow hairs near the middle of the margin of concavity; ventrite 3 distinctly reduced, nearly 1/3 the length of the preceding, markedly concave in arcuate line at apical margin, which is clothed with fine light yellow setae near middle; ventrite 4 markedly narrowed apicad, clothed with light yellow hairs on sides; anal ventrite haired as on the preceding, widely triangularly concave along the apical margin.

Genital organs. Paraproct short, divided into two arcuate plate-lobes on sides; coxite sinuately



Figs. 15–25. Male genital organs and 7th to 9th abdominal segments of *Merionoeda puella puella* Pascoe from Sulawesi, Indonesia. —— 15, Median lobe, lateral view; 16, ditto, dorsal view; 17, copulatory piece, lateral view; 18, ditto, dorsal view; 19, tegmen, lateral view; 20, ditto, dorsal view; 21, 8th abdominal segment, lateral view; 22, 8th and 9th abdominal segments, dorsal view; 23, ditto, ventral view; 24, 7th abdominal tergite; 25, 7th abdominal sternite. Scale bars: 0.5 mm.

narrowed apicad, provided with short to medium-sized setae near apical part; coxite lobes indistinct; stylus elongate ovate, slightly narrowed apicad, with four short setae at apex; spermatheca moderately sclerotized, almost C-shaped with constricted basal part, moderately thickened to apex which is bluntly produced, with thin gland near basal end; spermathecal duct long and coiled repeatedly.

Specimens examined. 1 ♀ (holotype in the Natural History Museum, London), "Macassar 185"; 2 ♂♂, 1 ♀, Laiya Camba, S. Sulawesi, Indonesia, XII–2007, local collector leg.; 3 ♂♂, 2 ♀♀, same location and collector, 15–V–2009; 4 ♂♂, ditto, 9 to 10–XII–2009; 3 ♀♀, ditto, 10 to 11–XI–2009; 1 ♀, ditto, 25 to 30–IV–2009; 1 ♀, ditto, 10 to 15–XI–2011; 8 ♂♂, 2 ♀♀, ditto, 10 to 15–X–2012; 5 ♂♂, 3 ♀♀, ditto, 1 to 3–XII–2012; 3 ♂♂, same location, 14–XI–2008, T. NIISATO leg.; 1 ♂ same location and data, Y. YOKOI leg.; 2 ♂♂, Puncak Palopo, S. Sulawesi, 27 to 30–X–2008, Y. YOKOI leg. The specimens examined except for the holotype are in the private collections of YOKOI and NIISATO.

Distribution. Sulawesi Is. (South Sulawesi), Indonesia.

Comparative notes. See "Diagnosis of the type species" in Discussion.

Merionoeda puella saitorum ssp. nov.

(Fig. 6)

F e m a l e. Body length 6.5–8.7 mm (from apical margin of clypeus to abdominal apex).

Basically similar to the nominotypical subspecies from South Sulawesi, but different from it mainly by the coloration in female and external morphology as follows: Integument distinctly matted, prothorax, mesothorax including intercoxal process (or sometimes in scutellum) as well as the last two antennal segments dull light yellow, fore and mid coxae and trochanters reddish yellow, hind coxae dark brown with pale yellow inner sides, peduncles of all femora pale yellow though blackish in apical third of the hind pair; pronotum with lateral swellings distinctly swollen in arcuate line, discal punctuation deeper and more or less larger than in that of the nominotypical subspecies; mesosternum shallowly punctured, densely silvery pubescent throughout. The standard ratios of body parts are as follows: HW/PW 0.98–1.12 (M 1.05), FA/FB 0.70–0.81 (M 0.75), PL/PW 0.96–1.12 (M 1.02), PA/PW 0.78–0.92 (M 0.82), PB/PW 0.89–0.95 (M 0.82), EL/EW 2.09–2.31 (M 2.21).

Type series. Holotype ♀, Salakan, East Peleng, Peleng Is., C. Sulawesi, 3–V–2010, S. SAITO leg. Paratypes: 4 ♀♀, same data as the holotype; 2 ♀♀, Mata, East Peleng, Peleng Is., 2–V–2010, A. SAITO leg. The holotype is preserved in the National Museum of Nature and Science, Tsukuba, and the paratypes are in the private collections of YOKOI, NIISATO, Mr. and Mrs. SAITO.

Distribution. Peleng Is. (Central Sulawesi), Indonesia.

Etymology. The name of this new subspecies is dedicated to Mr. and Mrs. SAITO, who are the collectors of the type series.

Merionoeda muschenbroeki GESTRO, 1877

(Figs. 3, 7, 8, 30–33)

Merionoeda muschenbroeki GESTRO, 1877: 653; type locality: "Kandari, Ins. Selebes".

F e m a l e. Body length 8.3–11.2 mm (from apical margin of clypeus to abdominal apex).

Colour pale yellow to light brown, prothorax somewhat reddish yellow; head including eyes and mandibles, basal ten or often all antennal segments and the swollen parts of all legs black; hind tarsus, about apical half of hind tibia, mesepimeron and sides of metasternum more or less darkened.

Head almost as in *M. puella* PASCOE, moderately projected forward, with moderately elongated neck, well convex, as wide as the maximum width of pronotum, HW/PW 0.93–1.04 (M 0.98); punctu-

ation almost as in *M. puella*, provided with very dense, deep, coarse, punctures all along the upper eye-lobes in narrow bands with somewhat asperous appearance, vertex also densely punctured except on an irregular, narrow costa in the middle, occiput dorsally with large, coarse punctures and largely rugose on sides; frons about 3/5 the length of basal width, declivous towards a deep and sharp median groove, provided rather densely with deep, coarse punctures near the median groove and the eye-lobes, FA/FB 0.53−0.60 (M 0.57); clypeus rather long, about 2/3 the length of basal width, squeezed-pentagonal in form, distinctly narrowed towards apex, raised near middle, scattered with coarse punctures; mandibles densely provided with large, coarse punctures on the sides; gula moderately bordered in rectangular form with rounded edges, widely and coarsely punctured; eyes fairly large and prominent, deeply and narrowly emarginated under antennal scapes, separated from one another by 1/3 width of occiput. Antennae moderate in length, by far not attaining the apex of first abdominal ventrite, clothed with minute yellowish pubescence on segments 2–11 and sparse short yellowish hairs on undersides of segments 2–5; scape moderately clavate and arcuate, scattered with medium-sized punctures, segments 3 a little longer than 4 and 2/3 the length of scape, segment 5 moderately, segments 5–11 strongly flattened, segments 5–10 distinctly serrate, terminal segment bluntly toothed at apex.

Pronotum nearly as in *M. puella*, about as long as wide, moderately narrowed to apex, PL/PW 0.96–1.08 (M 1.02), PA/PW 0.70–0.79 (M 0.76), PB/PW 0.90–0.98 (M 0.93); sides with fairly large lateral swellings near middle, distinctly constricted before and weakly so behind swellings; apex and base thickly bordered; disc with three distinct callosities, of which the median one is the narrowest, club-shaped, raised at a level between basal fifth to apical third and linked to the middle of apical margin by a flattened longitudinal costa, a pair of large oblique semi-elliptical one 2/3 the length of pronotum at a level between basal fifth to apical fifth though interrupted by a deep, large depression in the apical fourth, all three callosities more or less dorsally flattened; punctuation as in *M. puella*, furnished with dense coarse punctures in irregular 2 to 3 rows in the interspaces of callosities, both oblique callosities provided with often large coarse punctures except on top, basal margin shagreened and with medium sized punctures, furnished with a few erect yellow hairs on sides. Scutellum trapezoidal with rounded apex, depressed in the middle and furnished with short yellow hairs on apical part.

Elytra almost as in *M. puella* or in *M. scitella* Pascoe in outline, though a little wider, fairly long and wide, surpassing the apex of the first visible ventrite, EL/EW 2.05–2.38 (M 2.20); sides projected forward at humeri, obtusely emarginated between basal fifth to apical fifth, strongly dehiscent in apical 3/5, reduced apicad gradually in width in almost straight line, with apical part broadly knife-shaped; disc nearly flat, moderately declivous on sides, provided with a obtuse longitudinal costa in basal 3/4, with medium to large punctures in irregular rows which decrease in number from 11 to 2 towards apices, without any hair or pubescence except for the sparse on suture near base which is clothed with short yellow hairs.

Prosternum and mesosternum widely naked though furnished with short yellowish hairs in and near their processes; metasternum sparsely clothed with short erect hairs, more densely so near mid- and hind coxae; mesepisternum, mesepimeron and metepisternum with similar though rather thick hairs; metepisterum and sides of metasternum provided with regular, rather large punctures, mesepisternum and mesepimeron obtusely so; prosternum moderately prominent behind apical margin, with intercoxal process very strongly compressed between coxae; mesosternal process very broad and widely and moderately emarginated on sides and apex; metasternum well convex and sub-parallel on sides, furnished with rather deep longitudinal groove in the middle and somewhat oblique transversal one near hind coxae.

Abdomen similar to that of *M. puella*; basal ventrite 3/5 the length of abdomen, with sides apicad moderately widened in straight line, transversely truncate on the apical margin, scattered with a few small punctures, widely nitid except for short hairs on sides near base and apex; second ventrite 1/4 the length of abdomen, widely emarginated in crescent form in depth of apical 2/3, similarly provided with setae and hairs as in *M. puella*, though setae are more fine and sparse; ventrites 3–5 clothed with yellowish, flying hairs of varying length and density on sides and each apex; ventrite 3 widely and deeply concave, clothed with long light yellow hairs near middle of apical margin; anal ventrite bilobed in gently arcuate line.

Legs stout; hind femur rather short in length, surpassing abdominal apex by about apical fourth, slightly arcuate, rather suddenly and strongly clavate in apical half, clothed with short erect hairs; hind tibia 7/10 the length of femur, distinctly arcuate, with rather short, stout dents in two rows on external sides, terminal spur long, reaching the apex of 1st tarsal segment, adjacent secondary terminal spur very short, only 1/5 the length of main spur.

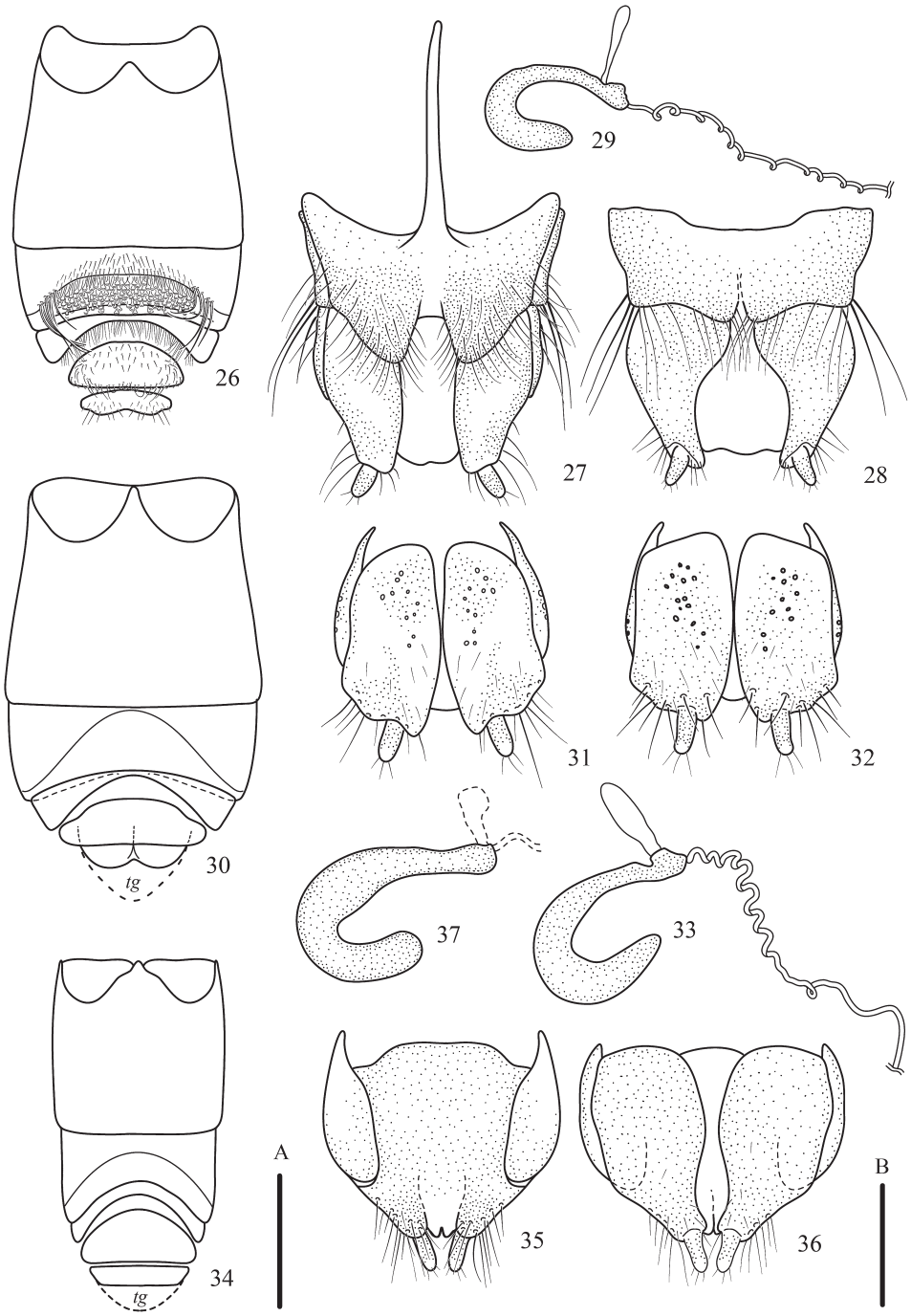
Genital organs. Almost identical with those of *M. puella puella*, but are different from them in the following points: Coxite oblique on sides in apical part, with stylus longer; spermatheca in apical part more strongly pointed.

Specimens examined. 1 ♀ (holotype in Museo Civico di Storia Naturale in Genoa), "Celebes, Kendari" "III. 74" "O. Beccari"; 2 ♀♀, Abuki Unaha, SE. Sulawesi, 13 & 14–I–2009, local collector leg.; 1 ♀, Tambea (70 m), Pomalaa, Kolaka, SE. Sulawesi, 30–XII–1999, A. SAITO leg.; 2 ♀♀, Puncak Palopo, S. Sulawesi, Indonesia, 27 to 30–XI–2008, Y. YOKOI leg.; 1 ♀, same locality, 11–XII–2009, local collector leg.; 1 ♀, Erleang env., S. Sulawesi, V–2000, BENES & SECKY leg.; 1 ♀, Sumpuraga, S. Sulawesi, 28–XI–2012; 1 ♀, Buton Is. BauBau rgt. Lasalimu env., I–2008. The specimens examined except for the holotype are in the private collections of YOKOI, NIISATO, Mr. and Mrs. SAITO.

Distribution. Sulawesi Is. (South and South East Sulawesi), Indonesia; Buton Is., Indonesia.

Comparative notes. The examined specimens of *M. muschenbroeki*, all female, were compared to female examples of other species. Regarding the head, *M. muschenbroeki* resembles above all the sympatric *M. puella*. It is similarly densely punctured along the upper eye-lobes and near vertex, with large, coarse punctures on occiput. It shares well bordered and densely punctured gula in addition. Secondly, it resembles *M. baliana* YOKOI et NIISATO, *M. lombokiana* NIISATO et YOKOI and *M. scitella* PASCOE, though in less degree, as far as the puncture on head is concerned. Regarding the pronotum, however, the same pattern is shared only by *M. puella*. The puncture is remarkably dense and observed even on the oblique callosities which are depressed near apex and more or less dorsally flattened. As to the elytra, the same simple subulata-form is observed firstly in *M. puella* and the affiliated species *M. scitella*, *M. baliana* and *M. lombokiana*; secondly in *M. flavitarsis* PASCOE as well as *M. melanopsis* PASCOE from New Guinea and its vicinity; and lastly, though in less degree because of the different relative length, in some species now included in *M.* (*Ocytasia*). The rather stout legs differ, on the other hand, clearly from those of *M. puella* and the three affiliated species, as well as from those of *M. flavitarsis* and *M. melanopsis*. Rather, they resemble those species described as belonging to *Ocytasia* or *M. mehli* YOKOI et NIISATO (YOKOI & NIISATO, 2008). Finally, the colouration pattern is shared by *M. lombokiana* and *M. mehli*. Thus, *M. muschenbroeki* shares common external characteristics firstly with sympatric *M. puella*, secondly with the three affiliated species *M. scitella*, *M. baliana* and *M. lombokiana* from neighbouring areas, thirdly, though in less degree, with the species now included in the subgenus *Ocytasia*, and finally with species occurring eastward in Australian Region. Final affiliation of the species, however, is still pending, as a male example is still not available for comparison.

Geographical variation. The specimens collected in South Sulawesi have yellowish head,



Figs. 26–37. Female genital organs and abdominal segments of *Merionoeda* spp. from Sulawesi, Indonesia. —— 26–29, *M. puella puella* PASCOE; 30–33, *M. muschenbroeki* GESTRO; 34–37, *M. childersi* sp. nov. —— 26, 30 and 34, Abdominal ventrites (*tg*: anal tergite); 27, 31 and 35, ovipositor and 8th tergite, dorsal view; 28, 32 and 36, ovipositor and 8th sternite, ventral view; 29, 33 and 37, spermatheca with coil. Scale bars: A: 1.0 mm for Figs. 26, 30 and 34; B: 0.25 mm for Figs. 27–29, 31–33 and 35–37.

obviously differing from the totally black one of the holotype and those collected in the Southeast Sulawesi and Buton Island. The underside of the body is, on the contrary, more blackened than the latters. Those from South Sulawesi differ, therefore, not in degree of over-all melanisation, but in its pattern. Thus they represent a closed, coherent group as a geological variation. In this connection, it is interesting to note that Southeast Sulawesi was most probably separated from the other part of Sulawesi in inter-glacial periods, whereas connected with Buton Island in various Ice Ages. As the colouration pattern is the only difference, however, this geographical group should be considered as a variation and not as a subspecies.

Merionoeda childersi sp. nov.

(Figs. 9, 10, 34–46)

M a l e. Body length 6.8–8.4 mm (from apical margin of clypeus to abdominal apex).

Colour black, though widely yellowish in dorsally visible parts; prothorax and the middle of mesosternum somewhat reddish yellow, elytra pale yellow, entire fore- and mid- legs except the swollen part of femur, hind coxa and trochanter, peduncles of hind femur, about half to 1/3 of hind tibia and the entire hind tarsus yellowish light brown; last two segments and often the apex of 9th segment of antennae as well as the base of scape yellowish light brown; maxillary palpus, galea, lacinia and labial palpus more or less yellowish light brown.

Head almost as in *M. nigriceps* in outline, moderately projected forward, with rather elongated neck, well convex, distinctly wider than the maximum width of pronotum, HW/PW 1.08−1.15 (M 1.10), provided with coarse, deep, medium-sized punctures of elliptical form near upper eye-lobes, with vertex closely covered with such punctures and almost rugose except in the middle, furnished sparsely with erect, yellowish hairs of medium length near the upper eye-lobes; occiput provided with dense punctures behind upper eye-lobes with sides rugose or coarsely punctured; frons about 2/3 the length of basal width, FA/FB 0.57–0.68 (M 0.54), declivous towards a deep and sharp median groove, provided with deep, coarse punctures near the median groove; clypeus rather long, about 2/3 the length of basal width, squeezed-pentagonal in form, distinctly narrowed towards apex, raised near middle, furnished with several coarse, rather shallow punctures and a few flying hairs; gula moderately bordered in semi-rectangular form, coarsely punctured except in the middle; eyes very large and prominent, very deeply and narrowly emarginated under antennal scapes, separated from one another by 1/4 the width of occiput at vertex. Antennae medium in length, nearly attaining the abdominal apex, clothed with minute yellowish pubescence on segments 5−11 and short yellowish hairs on segments 1−5, additionally with sparse short yellowish hairs on undersides of segments 2−6; scape moderately clavate and arcuate, scattered with shallow punctures, segments 3 and 4 sub-equal in length and 2/3 the length of scape, segment 5 obtusely, segments 5−11 moderately flattened, segments 6−10 moderately serrate, terminal segment bluntly toothed at apex.

Pronotum as in *M. nigriceps*, about as long as wide, moderately narrowed to apex; PL/PW 0.95–1.04 (M 1.00), PA/PW 0.68–0.76 (M 0.70), PB/PW 0.84–0.91 (M 0.88); sides with large lateral swellings near middle, moderately constricted before but hardly so behind swellings; apex and base thickly bordered; disc with three prominent callosities, of which the median one is the smallest, drop-shaped, raised at a level between basal 1/4 to 1/2 and linked to the middle of apical margin by a flattened longitudinal costa, a pair of large oblique semi-elliptical one of half the length of pronotum at a level between basal fifth to apical fourth; surface glabrous, lacking the usual punctures in interspaces of callosities, though clothed with more or less dense short yellowish hairs except on top of the callosities; shagreened on basal fifth. Scutellum rather small, trapezoidal with emarginate apex, clothed with pale

yellow pubescence.

Elytra resemble none of those of known *Merionoeda* species, long, almost reaching abdominal apex by 15/16, with apical halves not gradually reduced in width as usual but remain wide before rather suddenly decreased to apices; EL/EW 2.86–3.07 (M 2.95); sides projected forward at humeri, distinctly emarginated between basal fourth to apical sixth, strongly dehiscent in apical 3/4, with apical part broadly knife-shaped, with a sharp apical dent; disc nearly flat, moderately declivous on sides, provided with an obtuse longitudinal costa in basal 2/3, with medium to large punctures in irregular rows which decrease in number from 10 to 4 towards apices, additionally clothed with more or less thick yellowish hair of medium length, less so near base.

Venter of thoraces without punctures except for obtuse ones on mesepisternum, widely clothed with yellowish lying hairs of short to middle length except for the apical margin and sides of prosternum as well as for middle of mese- and metasterna; fore and hind coxae also clothed with such hairs; middle of metasternum widely nitid and shiny; prosternum moderately prominent behind the apical margin, with intercoxal process very strongly compressed between coxae; mesosternal process broad, widely and moderately emarginated on sides and apex; metasternum well convex, sub-parallel, with an obtuse longitudinal groove in the middle and deep oblique one near hind coxae.

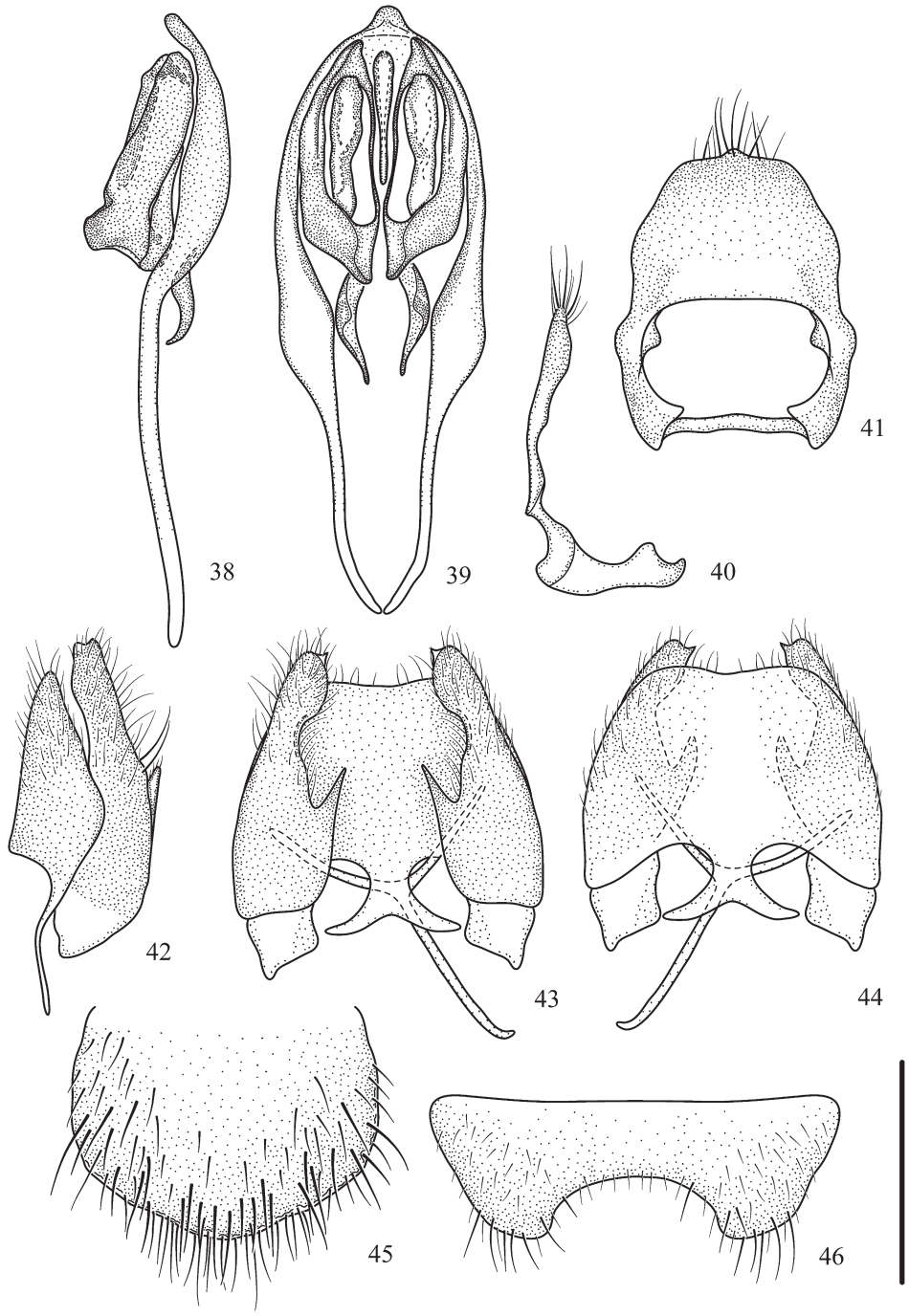
Abdomen arcuate on sides, microsculptured throughout, sparsely clothed with yellowish hairs, with silvery pubescence on sides of each ventrite; basal ventrite 3/7 the length of abdomen; second ventrite 1/5 the length of abdomen, ventrites 3–4 moderately emarginated on apical margins; anal ventrite transverse, deeply concave in transversally trapezi-form near middle of apical margin, which is exposing the large plate of 8th sternite; anal tergite simply semicircular.

Legs similar to those of *M. nigriceps*; hind femur medium in length, surpassing abdominal apex by about apical 2/5, slightly arcuate, rather suddenly clavate in apical half, clothed with short erect hairs; hind tibia 5/6 the length of femur, distinctly arcuate, with rather obtuse dents in two rows at external side, terminal spur long, reaching the apex of 1st tarsal segment, adjacent secondary terminal spur very short, only 1/5 the length of main spur.

Genital organs. Median lobe a little less than half the length of abdomen, with apical part markedly widened as an elongate semicircle; dorsal plate almost separated in two pieces throughout with sinuate inner margins, thus dorsally opened in elongate shape; each of these two plate-pieces provided with a blunt projection at the basal part of inner margin, supplemented with an elongate oar-shaped plate on inner side in the interspace; ventral plate a little longer than dorsal plate, moderately turned up near apex; median struts 2/5 the length of median lobe; copulatory piece absent. Tegmen broad, well convex, half the length of median lobe; parameres united with sides almost parallel in basal 3/5 then arcuately narrowed to apical fifth, apical part transverse trapezoidal though triangularly produced near the middle of apical margin, provided with semi-long setae near the projection; ring part bent 90 degree ventrad near the middle. Eighth abdominal segment subovate in outline, though provided with a large concavity along the apical margin; tergite smaller than sternite, with thick, more or less arcuate lobes on the sides of apical margin, which is deeply concave and almost transversely truncate near the middle; sternite arcuately emarginated on inner sides which have large dents near basal third, slightly produced inwardly on the sides of apical margin, with apical part weakly concave and provided with a small dent at lower corner.

F e m a l e. Body length 7.2–8.7 mm (from apical margin of clypeus to abdominal apex).

External appearance is basically identical with that of male, head however almost as wide as the maximum width of pronotum, eyes separated from one another by 1/3 the width of occiput at vertex, antennae attaining the first abdominal ventrite, and metasternum slightly widened apicad. Standard ratios of body parts are as follows: HW/PW 0.95–1.00 (M 0.97), FA/FB 0.56–0.70 (M 0.65), PL/PW



Figs. 38–46. Male genital organs and 7th to 9th abdominal segments of *Merionoeda childersi* sp. nov. from Sulawesi, Indonesia. —— 38, Median lobe, lateral view; 39, ditto, dorsal view; 40, tegmen, lateral view; 41, ditto, dorsal view; 42, 8th abdominal segment, lateral view; 43, 8th and 9th abdominal segments, dorsal view; 44, ditto, ventral view; 45, 7th abdominal tergite; 46, 7th abdominal sternite. Scale bar: 0.5 mm.

0.87–0.10 (M 0.96), PA/PW 0.70 (M 0.70), PB/PW 0.85–0.90 (M 0.88), EL/EW 2.94–2.08 (M 3.01).

Abdomen with basal ventrite 3/5 the length of abdomen, gently arcuate on side, shagreened near middle of basal half, scattered with shallow irregular-sized punctures, sparsely clothed with short yellowish hairs, partly with silvery white pubescence near middle of basal half and on sides of apical half, almost transverse on apical margin which is clothed with long hairs near middle; second ventrite 1/6 the length of abdomen, slightly dilated apicad, haired as on the preceding, clothed with silvery white pubescence on sides of apical half, widely and arcuately depressed in the almost whole width of apical third which is provided with long waved reddish yellow setae; ventrite 3 reduced, about half the length of the preceding, widely and deeply emarginated on apex, dorsally almost invisible; ventrite 4 semicircular, longer than the preceding, scattered with coarse irregular-sized punctures, clothed with sparse, rather long, flying hairs along the apical margin and middle-sized erect hairs on sides; anal ventrite reduced rather suddenly in length and width, almost truncate on apex, punctured as on the preceding, clothed with middle-sized, yellowish flying hairs of various density on sides and apex.

Genital organs. Paraproct short, divided into two arcuate plate-lobes on sides, though narrowly visible in ventral side; coxite strongly narrowed in almost straight line to apex, provided with short to medium-sized setae near apical part; coxite lobe indistinct; stylus moderate in length, slender, slightly narrowed apicad, with a few short setae at apex; spermatheca rather weakly sclerotized, almost C-shaped with constricted basal part, slightly broadened before middle, rounded at apex; (gland and spermathecal duct are unexamined).

Type series. Holotype ♂, Puncak Palopo, S. Sulawesi, Indonesia, VI–2009, local collector leg. Paratypes: 1 ♀ (allotype), same date as the holotype; 7 ♂♂, 2 ♀♀, same date as the holotype; 1 ♀, same date as the holotype except the date of collection May; 1 ♀, same date as the holotype except the date of collection X–2010. The holotype and the allotype are preserved in the National Museum of Nature and Science, Tsukuba, and the paratypes are in the private collections of YOKOI and NIISATO.

Distribution. Sulawesi Is. (South Sulawesi), Indonesia.

Comparative notes. *Merionoeda childersi* sp. nov. is easily recognized as a distinctive new species, owing to the peculiar form of its elytra. Indeed, no known species of the genus *Merionoeda* has such long elytra which remain wide well into the apical part. For any of the other external and genital characteristics, however, similar species can be found within the genus. The legs as well as the pronotum with prominent callosities resembles, for example, those of *M. nigriceps* (WHITE, 1855) while the outline of head is shared by various species of the genus as *M. nigriceps* or *M. karinae* YOKOI et NIISATO (YOKOI & NIISATO, 2012). As to the colouration, the similar pattern can be found in the sympatric *M. muschenbroeki* GESTRO for instance, though not exactly the same. Thus, the new species obviously differs from the other species of genus *Merionoeda* solely regarding the form of elytra. The elytral form itself is, however, very variable and therefore can hardly be regarded as stable in the genus. Considering these facts, it seems appropriate to place this new species within the genus *Merionoeda* in spite of the rather peculiar appearance. Its position within the genus is certainly singular, however. Further considerations regarding the taxonomical classification of the genus as a whole is necessary for the final affiliation of this species within the genus.

Etymology. The name of this new species is dedicated to Mr. Theodor L. CHILDERS, citizen of the United States of America, who has always reviewed our text and thus enabled its publication.

Key to Species and Subspecies of the Genus *Merionoeda* from Sulawesi and its Vicinities

1(2) Elytra strongly narrowed apicad, not attaining abdominal apex; pronotum with three discal callosities not prominent. ····· 3

2(1) Elytra almost normal, attaining abdominal apex; pronotum with three discal callosities markedly prominent; Sulawesi. ····· *M. childersi* sp. nov.

3(4) Elytra black in both sexes; hind femur asymmetrically clavate in apical 2/3, with rather flattened external side. ····· 5

4(3) Elytra reddish yellow at least in female; hind femur rather suddenly and strongly clavate in apical half; Sulawesi and Buton. ····· *M. muschenbroeki* GESTRO

5(6) Integument weakly matted; last antennal segment in female apicad reddish yellow; Sulawesi. ····· *M. puella puella* PASCOE

6(5) Integument distinctly matted; apical two antennal segments in female dull light yellow; Peleng. ····· *M. puella saitorum* ssp. nov.

Discussion

1) *Diagnosis of the type species*

As already mentioned in the introduction, a careful examination of the newly collected specimens of *Merionoeda puella* PASCOE has revealed some highly interesting, hitherto unnoticed characteristics of the species.

One of such characteristics is concerned with the mid tarsus of male. PASCOE, author of the genus *Merionoeda* with the nominotypical species *M. puella*, later in 1869 introduced the subgenus *Ocytasia* for those *Merionoeda* species with dilated mid tarsus of male. For *M. puella* itself however, such a dimorphism remained unnoticed, as a truly male specimens was not available then. The recent examination has revealed, however, that *M. puella* and the species now included in the subgenus *Ocytasia* share this important common sexual dimorphism with each other, though somewhat differing in form. It implies not only a certain mutual affinity, but it also indicates that the taxonomical classification within the genus *Merionoeda* itself must be rearranged. The authors of this publication will treat this aspect in another publication, as it will include more extensive considerations and will result in more far-reaching consequences, thus surpassing the scope of this publication.

No less important is the peculiar velvet-surfaced maculation now found on hind femur of the male. A similar maculation is observed only in three other known species from adjacent areas of Sulawesi at present. They include *M. scitella* PASCOE described simultaneously from Borneo (PASCOE, 1858), *M. baliana* YOKOI et NIISATO from Bali (YOKOI & NIISATO, 2007) and *M. lombokiana* NIISATO et YOKOI, from Lombok (NIISATO & YOKOI, 2008). It is interesting to note that all of these three are also provided with the above mentioned dilation of male mid tarsus in one way or another. The above four species, *M. puella* and the three other above, have thus more than one peculiar sexual dimorphism, indicating a stronger mutual affiliation.

In addition to the aforesaid rather peculiar sexual dimorphisms, *M. puella* are provided with other remarkable external characteristics. It shares, for example, a widely scattered, partly very dense puncture with a rugose or an asperous appearance on the head, notably near upper eye-lobes, on vertex and on dorsal occiput, with sympatric *M. muschenbroeki* GESTRO from Sulawesi. This characteristic is observed, incidentally, also in the above mentioned *M. lombokiana* and *M. baliana*, though in much less degree. The remarkably dense and widely scattered puncture on pronotum along with dorsally more or less flattened three callosities is shared, however, only by *M. muschenbroeki*. Further, its form of elytra has affinities with those of *M. muschenbroeki*, *M. baliana* and *M. scitella*, as well as with *M. flavitarisis* and *M. melanopsis*, both found in and near New Guinea. Finally, the basic coloration pattern has much common with the species found in and near New Guinea. Its female is, for example, totally black in body and reddish yellow in pronotum, like females of *M. flavitarsis* or *M.*

melanopsis, whereas the almost totally black coloration of the male reminds us of *M. baliana* from Bali as well as of a female specimens from New Guinea yet to be examined.

In conclusion, *M. puella* first of all seems to belong to one coherent group, together with the aforementioned three species *M. scitella*, *M. baliana* and *M. lombokiana*, within the genus. Biogeographical considerations seem to also support this affinity. The distribution of these species on the both sides of the WALLACE Line is in fact more compact and continuous, whereas the species hitherto included in the subgenus *Ocytasia* are more widely distributed in the Oriental and Australian Regions. Secondly, it shares one remarkable sexual dimorphism with those species now belonging to *Ocytasia*. Thirdly, *M. puella* and the sympatric *M. muschenbroeki* from Sulawesi have several external characteristics in common, including a remarkable structure of pronotum found nowhere else, though an observation of sexual dimorphisms of the latter species is still not possible without a male example. Lastly but no less important, *M. puella* shares a few external characteristics with a number of species occurring more eastward in and near New Guinea in the Australian Region.

2) Merionoeda *fauna of Sulawesi and its vicinities*

Merionoeda fauna of Sulawesi seems rather limited, in contrast to the neighboring island of Borneo west of the WALLACE Line. With only three recorded species at present, the genus seems to be indeed less prolific in the Sulawesi region. This area has not been well explored either, without any record for a long time since the time of PASCOE and GESTRO. It is nevertheless highly interesting. *Merionoeda* of Sulawesi and the neighboring smaller islands includes key species of profound implication for taxonomical and bio-geographical consideration. It seems to form a bridge between the Sundaland species in the west and those of the Australian Region in the east, relating also to the widespread species presently included in *Ocytasia*. It is at the same time unique and original with endemic species of rather peculiar appearance. In this respect, Sulawesi again seems to be an intermediate zone in a bio-geographical sense. These aspects were not properly considered earlier, as neither the knowledge nor the material of the genus was sufficient.

Acknowledgements

We would like to thank Mr. Maxwell V. L. BARCLAY and Mrs. Sharon SHUTE of the Natural History Museum, London for allowing us to study the collection preserved there. Important taxonomical observation, notably on the details of the key species *Merionoeda puella* were made there. We are grateful to Dr. Roberto POGGI as well as Dr. Maria TABANO of Museo Civico di Storia Naturale in Genoa for enabling us to examine the holotype of *M. muschenbroeki*. Identification of and bio-geographical consideration on this interesting species was thus enabled. And also due to Dr. Akiko SAITO and Mr. Shusei SAITO (Narashino City, Chiba) for their kind offer of *M. puella* specimens collected by themselves from Peleng Is. Finally, we would like to thank Mr. Theodore L. CHILDERS (San Diego, USA) and Dr. Nobuo OHBAYASHI (Miura City, Kanagawa) for their critical reading of the original draft of this paper.

要　　約

横井彌平太・新里達也：スラウェシと周辺島嶼のモモブトコバネカミキリ属（鞘翅目カミキリムシ科）．—— モモブトコバネカミキリ属*Merionoeda*は，東洋区を中心に旧北区およびエチオピア区から3亜属80種以上が記録されている多様な種群を含む大属である．インドネシアのスラウェシからはこれまで，*M. puella*

PASCOE と *M. muschenbroeki* GESTRO の 2 種が記録されていたが，いずれも原記載時に用いられた 1 点のタイプ標本以外に存在が知られていなかった．とくに *M. puella* は本属（名義タイプ亜属）のタイプ種であり，属と亜属の定義を再検討するうえでも，その正体を明らかにしておく必要があった．スラウェシおよび周辺島嶼における近年の調査，さらにタイプ標本の再調査により，同島のモモブトコバネカミキリ類は上記 2 種に加えて 1 新種および 1 新亜種を認めることができた．本論文ではこれら 4 タクサを記載および再記載するとともに，タイプ種の分類学的位置やスラウェシ周辺のモモブトコバネカミキリ相などについて考察を行った．

References

GESTRO, R., 1877. Descizioni di Alcuni Coleotteri. *Ann. Mus. Civ. Genova*: 653.

NIISATO, T., 2012. Rediscovery of *Merionoeda puella* (Coleoptera, Cerambycidae), for the first time in 150 years. *Gekkan-Mushi*, *Tokyo*, (492): 14–17. (In Japanese with English title.)

———— 2013. Short collecting trip to the island of Lombok, Indonesia — In search of *Merionoeda* —. *Ibid*., (505): 6–12. (In Japanese with English title.)

———— & Y. YOKOI, 2008. New *Kunbir* and *Merionoeda* (Coleoptera, Cerambycidae) from the island of Lombok, Indonesia. *Elytra*, *Tokyo*, **36**(1): 1–17.

PASCOE, F. P., 1857. On new genera and species of longicorn Coleoptera Part III. *Trans. ent. Soc. London*, (n. ser.), **4**, 1856–1858 **17**: 237–238, pl. 25, fig. 3.

———— 1869. Longicornia Malayana; or a descriptive catalogue of the species of the three longicorn families Lamiidae, Cerambycidae and Prionidae, collected by Mr. A. R. WALLACE in the Malay Archipelago. *Trans. ent. Soc. London*, (3), **3**: 570–575, pl. 21.

WHITE, A., 1855. Longicornia, 2. Catalogue of Coleopterous Insects in the Collection of the British Museum, Part 8. Pp. 175–412. Tayler & Francis.

YOKOI, Y., & T. NIISATO, 2007. A new *Merionoeda* (Coleoptera, Cerambycidae) from the Island of Bali, Indonesia. *Jpn. J. syst. Ent.*, *Matsuyama*, **13**: 187–192.

———— & ———— 2008. Two new *Merionoeda* (Coleoptera, Cerambycidae) from the islands of Seram and Biak, Indonesia. *Ibid*., **14**: 59–66.

———— & ———— 2012. Six new taxa of the genus *Merionoeda* (Coleoptera, Cerambycidae) from Borneo mainly from South Kalimantan, with a redescription of *M. cariniger* HOLZSCHUH. *Elytra*, *Tokyo*, (n. ser.), **2**(2): 165–180.

Manuscropt received 10 November 2014;
revised and accepted 17 November 2014.