

Results of entomological expeditions to Misool Island, Part II. (Coleoptera: Scarabaeidae: Cetoniinae)

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Taxonomy, new species, new subspecies, new synonymy, new records, Scarabaeidae, Cetoniinae, Lomapterini, Lomaptera, Mycterophallus, Misool Island

Abstract. Only two lomapterine species are recently recorded from Misool Island. De Jong (1970) lists in his catalogue one male of *Lomaptera papua* Guérin-Méneville, 1830 from Misool and Kraatz (1886) described *Mycterophallus xanthopus* var. *viridicollis* from two specimens collected in Misool. Over the last few years, six species of *Lomaptera* Gory & Percheron, 1833 and one species of *Mycterophallus* Van der Pool, 1886 were collected during repeated expeditions to Misool Island (Indonesia, Eastern Moluccas). *Lomaptera misoolica* sp. nov., *Lomaptera pallidipes glabrata* ssp. nov., *Lomaptera humeralis moluccana* ssp. nov. and *Lomaptera allardi detanii* ssp. nov. are compared with their congeners flying in New Guinea Island and described here as new to science. *Lomaptera burgeoni* Valck Lucassen, 1961 is synonymised with *Lomaptera fasciata* Moser, 1923 based on abundant material from several localities across Indonesian part of New Guinea and newly collected population flying in Misool Island. *Mycterophallus xanthopus viridicollis* Kraatz, 1886 is recognised here as a distinct subspecies occurring in Misool Island. Occurrence of *Lomaptera papua* Guérin-Méneville, 1830 in Misool Island is confirmed here, this species seems to be commonest *Lomaptera* Gory & Percheron, 1833 in island. All species of *Lomaptera* Gory & Percheron, 1833 and *Mycterophallus* Van der Pool, 1886 are illustrated, including genitalia of males and dichotomical key for *Lomaptera* Gory & Percheron, 1833 and *Mycterophallus* Van der Pool, 1886 species occurring in Misool Island is given.

INTRODUCTION

Remote Misool Island lays east of Weber line and west of New Guinea Island. Its Cetoniinae fauna remains nearly virtually unknown, excepting only record of *Mycterophallus xanthopus* var. *viridicollis* Kraatz, 1886, record of *Lomaptera papua* Guérin-Méneville, 1830 and record of *Glycyphana (Euglycyphana) lateralis perviridis* Wallace, 1867 (probably mislabelled). In general, the fauna is predominantly of Papuan origin.

In first part about Cetoniinae beetles of Misool Island, Jákl (2020), representatives of *Ischiopsopha* Gestro, 1874 occurring in island have been studied. In this second part all representatives of *Lomaptera* Gory & Percheron, 1833 and *Mycterophallus* Van der Pool, 1886 which were recently collected in Misool Island are studied and compared. Total of six *Lomaptera* Gory & Percheron species and one species of *Mycterophallus* Van der Pool were found. All species have strong affinity to their congeners flying in Indonesian part of New Guinea Island. Excepting *Lomaptera fasciata* Moser, 1923 and *Lomaptera papua* Guérin-Méneville, 1830, the rest can be classified as a new species or new subspecies, probably endemic to Misool. Island population of *Lomaptera fasciata* Moser, 1923 seems to be completely same as population occurring in New Guinea mainland. This species seems to be widely distributed in western part of New Guinea Island. After comparison of populations from several different localities

across Indonesian part of New Guinea Island and population recently found in Misool Island with population from Fakfak area (type locality of *Lomaptera burgeoni* Valck Lucassen, 1961), all studied insects seems to be conspecific, with strong variability of elytral black pattern, but same structure of male parameres and other morphological characters.

Second collected species is tiny insect resembling *Lomaptera allardi* Rigout, 1997 described from highlands south of Nabire. Species from Misool differs in several characters and will be described in taxonomical part of the present article.

Other four species discovered in Misool are completely imitating each other, but due to large number of available specimens of both sexes of all four species, it was possible to find good characters for identification, including identification of females. This complex includes population of *Lomaptera papua* Guérin-Méneville, 1830, *Lomaptera pallidipes* Kraatz, 1895, *Lomaptera humeralis* Lansberge, 1880 and *Lomaptera hoyoisi* Rigout, 1997. All four species are in general of darker green colour, with reddish part of clypeus and reddish part of elytral apex, with usually completely green pronotum, rarely with smaller parts of reddish pronotal parts, especially in pronotal margins. Legs are always reddish. Excepting *Lomaptera papua* Guérin-Méneville, 1830 other three species can be classified as a new species or new subspecies, probably endemic to Misool Island.

Furthermore mimetic complex of four *Lomaptera* species is enriched with one species of *Mycterophallus* Van der Pool, which habitus is also very similar with mentioned mimetic complex of *Lomaptera*. This taxa is historically already described from Misool as *Mycterophallus xanthopus* var. *viridicollis* Kraatz, 1886. In this study it is considered as a distinct subspecies inhabiting Misool Island.

MATERIAL AND METHODS

The following codens of institutional and private collections are used in the text:

- DEIC Deutsches Entomologisches Institut, Eberswalde, Germany;
- MNHN Muséum National d'Histoire Naturelle, Paris, France;
- RMNH Rijksmuseum van Natuurlijke, Leiden, The Netherlands;
- SJCP Stanislav Jákł, private collection, Praha, Czech Republic;
- ZMHB Museum für Naturkunde, Leibniz-Gemeinschaft, Berlin, Germany.

Specimens of newly described species or subspecies are provided with red and yellow labels, red for HOLOTYPUS, yellow for PARATYPUS. Each holotype or paratype label is provided with sex symbol, number of paratype (in paratype label) and words St. Jákł det. Label data are cited for material examined, individual labels are indicated by a double slash (/), individual lines by a single slash (/).

TAXONOMY

Lomaptera allardi detanii ssp. nov.

(Figs. 1-5)

Type locality. Indonesia, Eastern Moluccas, Misool Island.

Type material. Holotype (♂) (SJCP) labelled: INDONESIA, West Papua/ pr., Misool Island/ XI. 2016/ local collector leg. Paratype Nos. 1-3 ♂♂, 4-6 ♀♀ (SJCP) labelled: same as holotype.

Description of holotype. Grassy green with medially developed golden lustre, legs green. Body size 20.0 mm (excluding pygidium).

Head. Green with mild reflection. Punctuation simple, in frons fine and rather sparse, punctuation of clypeus denser, especially in its apex. Tips of clypeal lobes blackish with purpleous reflection. Scapus green and shining, rest of antennae brown. Club slightly shorter than stalk.

Pronotum. Green with mild golden lustre. Sides striolated, striolation in posterior half more expressed. Rest of pronotum with simple and fine punctures and short, transversally running striolae. Basal lobe nearly impunctate. Sides with distinctly developed border in anterior half, more obtuse border in posterior half.

Scutellum. Absent.

Elytra. Completely green with medially developed golden reflection. Excepting both calli and part of elytral apex with complete transversally running striolation throughout total elytral length. Disc of elytron nearly gradually merging into lateral ridge. Humeral calli more obtuse than calli in apex. Posterior half of sutural ridge slightly elevated, sutural ending very slightly drawn out over elytral apex.

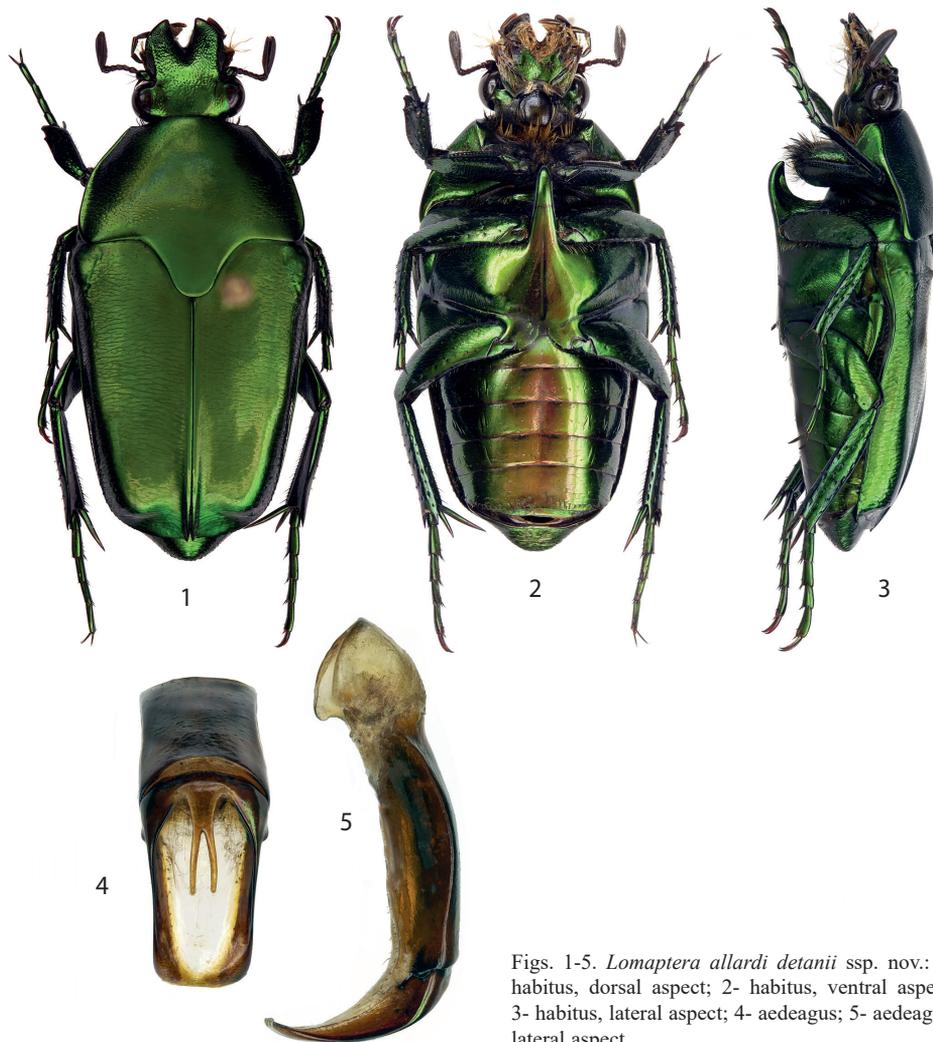
Pygidium. Green with reflection, conically shaped. Moderately dense and deep striolation present throughout total pygidial length. Setation absent.

Ventrum. Coloration same as in dorsum, green with mild lustre. Abdomen with moderately developed impression. Abdominal segments with sparse striolation at sides, rest of abdomen nearly impunctate. Posterior margin of fifth ventrite with row of blackish, short setae, in rest of abdomen setation absent. Metasternal sides with rather dense striolation, metasternal plate glabrous. Metasternal lustre stronger than in abdomen. Middle line of metasternum blackish. Mesometasternal process rather long and in apex sharp, apex reaches level of forecoxae and slightly heads downward. Mesepimeron shining, striolated. Prosternum and mentum green with golden lustre and rather dense striolae lines. Large part of prosternum with black setation.

Legs. Femora, tibiae and tarsi completely green with moderate lustre. Femora striolated. Meso- and metatibia with very short and rather sparse black setae in inner side. Protibia obtusely bidentate.

Genitalia. Branches of parameres parallel developed, very slightly asymmetrical (Figs. 4-5).

Variability. Size of three male paratypes 19.0-20.0 mm. Coloration of legs varies from green to reddish green to reddish. In other aspects same as holotype.



Figs. 1-5. *Lomaptera allardi detanii* ssp. nov.: 1- habitus, dorsal aspect; 2- habitus, ventral aspect; 3- habitus, lateral aspect; 4- aedeagus; 5- aedeagus, lateral aspect.

Sexual dimorphism. Size of females slightly smaller 18.0-19.0 mm. Punctuation and striolation less expressed, especially striolation of pronotal sides is nearly absent. Body lustre stronger. Legs green or reddish. Protibia tridentate. Pygidium similarly shaped, but its apex rather obtuse. Abdomen arched, setose, especially fifth ventrite with abundant reddish setae.

Differential diagnosis. Newly described subspecies is similar to *Lomaptera allardi* Rigout, 1997 described from Puspenssat, south of Nabire. Male differs from newly described subspecies in less protruding apical calli, more developed abdominal impression and not that thickened apex of parameres. Female of newly described species can be distinguished by

more developed punctuation of pronotum, reddish setation of abdomen (black in *Lomaptera allardi* Rigout) and pygidial apex heading upwards (straight in new species).

Etymology. Named after my friend and famous lepidopterologist, Hiromi Detani (Bali, Indonesia), who organised part of expeditions to Misool Island.

Distribution. Indonesia: Eastern Moluccas, Misool Island.

***Lomaptera humeralis moluccana* ssp. nov.**

(Figs. 6-10)

Type locality. Indonesia, Eastern Moluccas, Misool Island.

Type material. Holotype (♂) (SJCP) labelled: INDONESIA, West Papua / pr., MISOOL ISLAND / XI. 2016, local collector leg. Paratypes: (Nos. 1-5 ♂♂, 6-9 ♀♀) (SJCP) labelled: same as holotype; (No. 10 ♂) (SJCP) labelled: same as holotype, but V. 2017; (Nos. 11-21 ♂♂, 22-31 ♀) (SJCP) labelled: same as holotype, but III. 2017. PT No. 32 male and No. 33 female (SJCP) labelled: INDONESIA, West/ Papua pr., MISOOL I./ V.2018/ local collector leg

Description of holotype. Dark green with reddish part of clypeus, unclearly developed reddish macula in anterior half of sides and part of elytral apex. Antennae and legs reddish. Body size 23.4 mm (excluding pygidium).

Head. Frons and posterior part of clypeus green, anterior half of clypeus reddish. Punctuation of clypeus dense, but fine. Punctures in frons larger and deeper, but more sparse. Both parts of head with moderately developed metallic lustre. Widest point approximately in middle length of clypeus. Antennae reddish, part of scapus black. Antennal stalk longer than club.

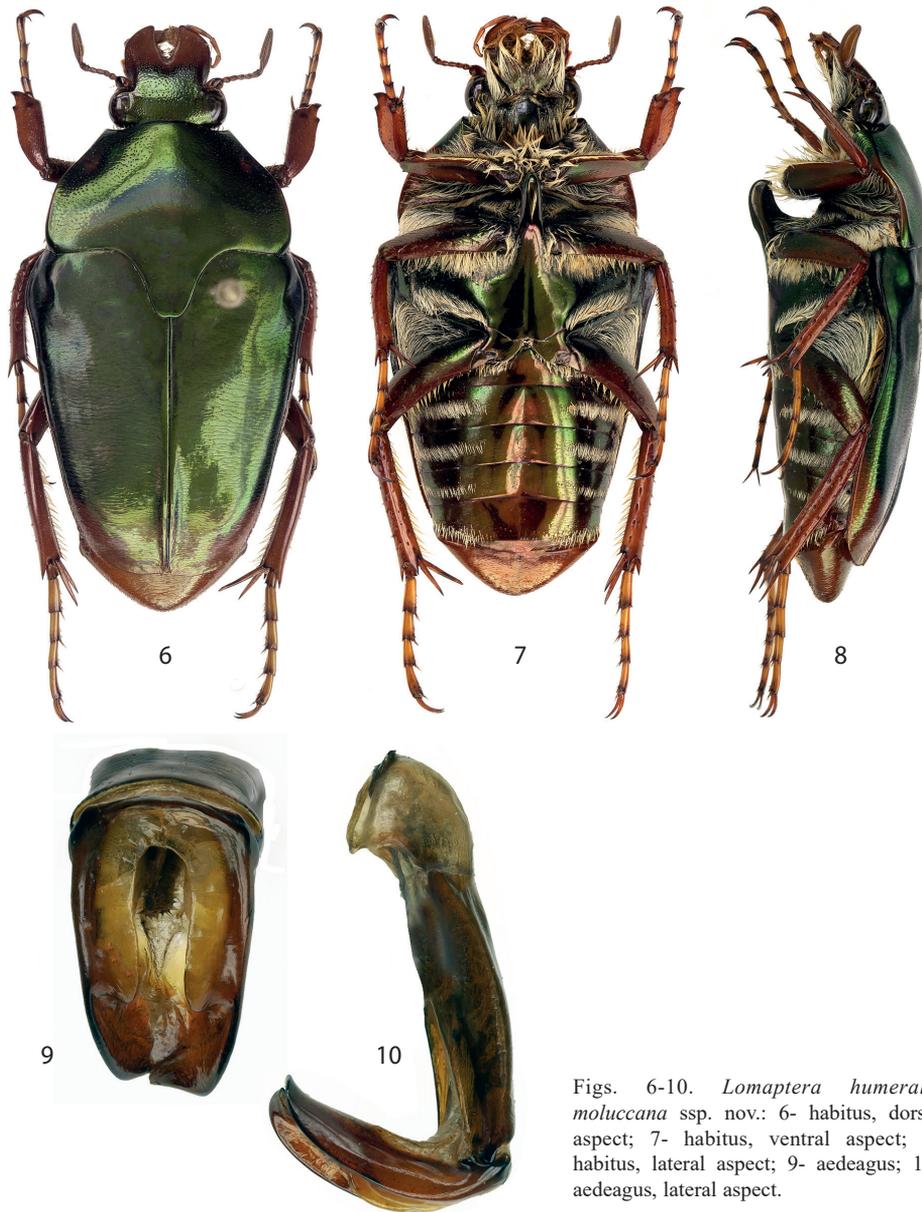
Pronotum. Completely dark green with unclearly developed, circularly shaped reddish maculae in front of anterolateral margins. Punctuation of disc fine and simple, basal lobe impunctate. Sides with moderate striolation, denser and more abundant in posterior half. Lateral border not developed. Whole surface with silvery tinge.

Scutellum. Not developed.

Elytra. Coloration of apical fifth reddish, rest of elytra dark green. Humeral calli slightly protruding with circularly shaped impression beside elytral sides. Except of elytral base, narrow part of subscutellar area and humeral calli, with rather dense and deep, transversally running striolation. Subhumeral emargination shallow. Glabrous epipleura rather wide and distinctly running to level of apical calli. Sutural ridge flat throughout total length, its termination not drawn out over elytral apex.

Pygidium. Coloration reddish, flattened. Whole pygidial surface with circularly shaped striolation and moderately developed reflection.

Ventrum. Abdomen dark green with long and wide impression. Excepting anal segment, broad sides of each ventrite with transversally running row of striolation and cover of white setation. Anal segment with very fine striolation at sides. Metasternum striolated at sides, its margins with cover of dense and long white setation. Metasternal plate impunctate and shining. Mesometasternal process long and robust, its apex slightly heading downwards. Mesepimeron, prosternum and part of mentum with dense striolation and cover of white setation.



Figs. 6-10. *Lomaptera humeralis moluccana* ssp. nov.: 6- habitus, dorsal aspect; 7- habitus, ventral aspect; 8- habitus, lateral aspect; 9- aedeagus; 10- aedeagus, lateral aspect.

Legs. Femora reddish with green tinge, tibiae and tarsi reddish, protibial teeth black. Meso- and metatibia with row of short, reddish setation. Terminal spurs of metatibia rather long.

Genitalia. As in nominotypical subspecies typical inner tongue of parameres absent. Branches of parameres gently narrowing towards its apex, ending is nearly straight (Figs. 9-10).

Variability. Body size 21.5-24.5 mm (excluding pygidium). Two paratypes with reduced, reddish, marginal band of pronotum, other males with pronotum completely green. Slight differences in size of reddish part of elytral apex also developed. In rest of morphological aspects same as holotype.

Sexual dimorphism. Size of females 22.5-24.5 mm (excluding pygidium). In general, elytra wider and shorter. Abdomen arched, abdominal impression absent. Pygidium not flattened. Protibia shorter and wider. Reddish part of pronotum more expressed.

Differential diagnosis. Newly described subspecies differs from nominotypical in following characters: I. Body more elongated and narrower in newly described subspecies; II. Subhumeral emargination rather shallow in newly described subspecies; III. Pronotal punctation in newly described subspecies less developed, lateral striolation very sparse with few short striolae, but moderately dense in nominotypical population; IV. In newly described subspecies pronotum completely green or with very reduced lateral, reddish band, which is always present throughout total pronotal length in nominotypical subspecies; V. Reddish parts of clypeus and elytral apex reduced, but distinctly more expressed in nominotypical subspecies; VI. Male parameres longer and more narrowing to its apex than it is in nominotypical subspecies.

Etymology. Named after Moluccas Archipelago. Misool Island is one of the easternmost islands belonging to it.

Distribution. Indonesia: Eastern Moluccas, Misool Island.

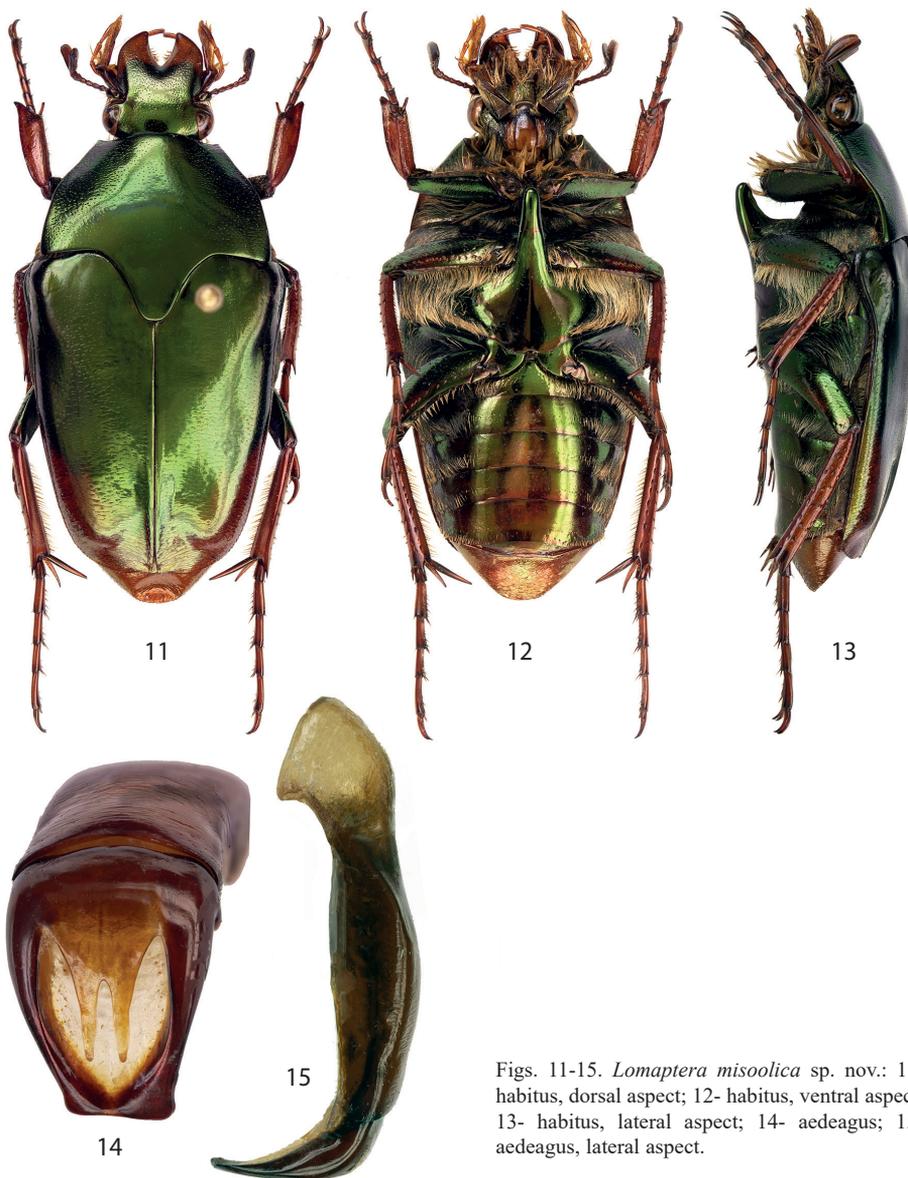
***Lomaptera misoolica* sp. nov.**
(Figs. 11-15)

Type locality. Indonesia, Eastern Moluccas, Misool Island.

Type material. Holotype (♂) (SJCP) labelled: INDONESIA, West/ Papua prov., MISOOL I. / East moluccas 0-200 m / V. 2018, local collector. Paratypes: (Nos. 1-5 ♂♂) (SJCP) labelled: same as holotype; (Nos. 6-8 ♂♂, 9-11 ♀♀) (SJCP) labelled: same as holotype, but XI. 2016; (No. 12 ♂) (SJCP) labelled: same as holotype, but V. 2017; (Nos. 13-19 ♂♂, 20-21 ♀♀) (SJCP) labelled: same as holotype, but III. 2017. PT Nos. 22-26 males (SJCP) labelled: INDONESIA, West/ Papua pr., MISOOL I./ V.2018/ local collector leg; PT Nos. 27-28 males (SJCP) labelled: INDONESIA, W. Papua/ MISOOL I./ I.2019/ local collector leg; PT Nos. 29-30 males and No. 31 female (SJCP) labelled: INDONESIA, W. Papua/ MISOOL I./ XII.2017/ local collector leg; PT No. 32 female (SJCP) labelled: INDONESIA, W. Papua/ MISOOL I./ V.2019/ local collector leg

Description of holotype. Completely dark green with reddish clypeal apex, elytral apex, pygidium and legs. Body size 27.8 mm (excluding pygidium).

Head. Dark green with metallic lustre, apex of clypeus reddish. Punctuation of clypeus, especially punctuation of clypeal apex fine and simple, moderately dense. Punctuation in frons much sparser. Antennae brownish, scapus black with green tinge. Setose antennal club shorter than stalk.



Figs. 11-15. *Lomaptera misoolica* sp. nov.: 11- habitus, dorsal aspect; 12- habitus, ventral aspect; 13- habitus, lateral aspect; 14- aedeagus; 15- aedeagus, lateral aspect.

Pronotum. Completely dark green with metallic reflection. Punctuation of pronotal disc fine and simple, pronotal lobe with only few very fine punctures. Sides with rather sparse striolation, most of striolae lines very short. In front of anterolateral margins very shallow emargination. Lateral border not developed.

Scutellum. Not developed.

Elytra. Completely green with reddish apex. Elytral base, subscutellar area and humeral calli impunctate, rest of elytra with moderately dense striolation. Most of striolae lines short, transversally running. Elytral disc merging gradually into lateral ridge. Lateral border running from elytral base to level of apical calli. Humeral calli obtuse, impunctate, apical calli slightly protruding, striolated. Apex of elytron with short, but rather deep emargination beside sutural ridge. Sutural ridge flat throughout total length.

Pygidium. Reddish with metallic reflection and green tinge. Pygidial striolation rather deep and dense, circularly shaped.

Ventrum. Completely green with metallic reflection. Abdomen with not very deep and rather narrow abdominal impression. Sides of abdomen striolated, inner parts of ventrites with cover of white setation. Sides of metasternum with broad and dense striolation and cover of white, long setation. Metasternal plate glabrous, reflecting. Mesometasternal process long, rather narrow, its apex rounded. Mesepimeron and prosternum gently striolated and covered with whitish setation. Setation in mentum reddish to ginger.

Legs. Femora green, shining, striolated. Tibiae, knees and tarsi reddish. Protibia unidentate, its outer margins blackish. Meso- and metatibia with row of short, reddish setation. Terminal spurs of metatibia not curved, slightly darkened.

Genitalia. Parameres rather short, but robust, narrowing from base to apex. Inner tongue with broad base and branches nearly reaching paramere apex (Figs. 14-15).

Variability. Size 25.0-28.0 mm (excepting pygidium). In other morphological characters same or very similar with holotype.

Sexual dimorphism. Size of females smaller 25.0-26.5 mm. Dorsal punctation less expressed than in males. Pronotal emargination deeper. Apex of elytron setose. Pygidium conically shaped. Abdomen arched. Punctation of abdominal segments, especially in fifth ventrite more expressed. Protibia shorter and more robust, bidentate.

Differential diagnosis. The closest congener of this newly described species seems to be *Lomaptera hoyoisi* Rigout, 1997 described from Nabire region in Indonesian part of New Guinea Island. It has similarly looking habitus and chopped off apex of male parameres. Species from Misool Island is larger, coloration of pronotum is completely green (with yellow broad, lateral band in *L. hoyoisi* Rigout); antennal club in newly described species is shorter than stalk, but same long or longer in its congener; with green metasternum and prosternum, but reddish in species from New Guinea and differently shaped parameres with longer inner tongue (reaching two thirds of length in *L. hoyoisi* Rigout).

Etymology. Named after the Misool Island, type locality of the newly described species.

Distribution. Indonesia: Eastern Moluccas, Misool Island.

***Lomaptera pallidipes glabrata* ssp. nov.**
(Figs. 16-20)

Type locality. Indonesia, Eastern Moluccas, Misool Island.

Type material. Holotype (♂) (SJCP) labelled: INDONESIA, West / Papua prov., MISOOL I. / E Moluccas 0-200 m / V. 2018, local collector. Paratypes: (Nos. 1-2 ♂♂, No. 3 ♀) (SJCP) labelled: same as holotype; (Nos. 4-6 ♂♂) (SJCP) labelled: same as holotype, but XII. 2017; (Nos. 7-9 ♂♂) (SJCP) labelled: same as holotype, but V. 2017; (Nos. 10-14 ♂♂) (SJCP) labelled: same as holotype, but XI. 2016; (No. 15 ♀) (SJCP) labelled: same as holotype, but VI. 2017; (No. 16 ♀) (SJCP) labelled: same as holotype, but I.2018; (Nos. 17-18 ♂♂, 19-23 ♀♀) (SJCP) labelled: same as holotype, but III. 2017. PT Nos. 24-30 males and Nos. 31-32 females (SJCP) labelled: INDONESIA/ W. Papua/ MISOOL I./ V.2019/ local collector leg; PT Nos. 33-34 females (SJCP) labelled: INDONESIA, E. Moluccas/ MISOOL I./ VI. 2017/ local collector leg; PT No. 35 female (SJCP) labelled: INDONESIA, W. Papua/ MISOOL I./ XII. 2017/ local collector leg

Description of holotype. Large species with body size 27.5 mm (excluding pygidium). Coloration completely darker green with reddish part of clypeus and elytral apex. Antennae and legs reddish.

Head. Frons and posterior half of clypeus green, anterior half of clypeus reddish with tinge of green. Lustre strong. Punctuation simple and fine, in frons sparser. Antennae completely reddish, stalk with few longer setae, club shortly setose in inner side.

Pronotum. Completely green with golden/metallic reflection. Fine and simple punctures in pronotal disc and short striolae in sides sparse and shallow. Posterior half of disc and basal lobe impunctate. Anterolateral margins with indistinctly developed border, border in sides not developed.

Scutellum. Not developed.

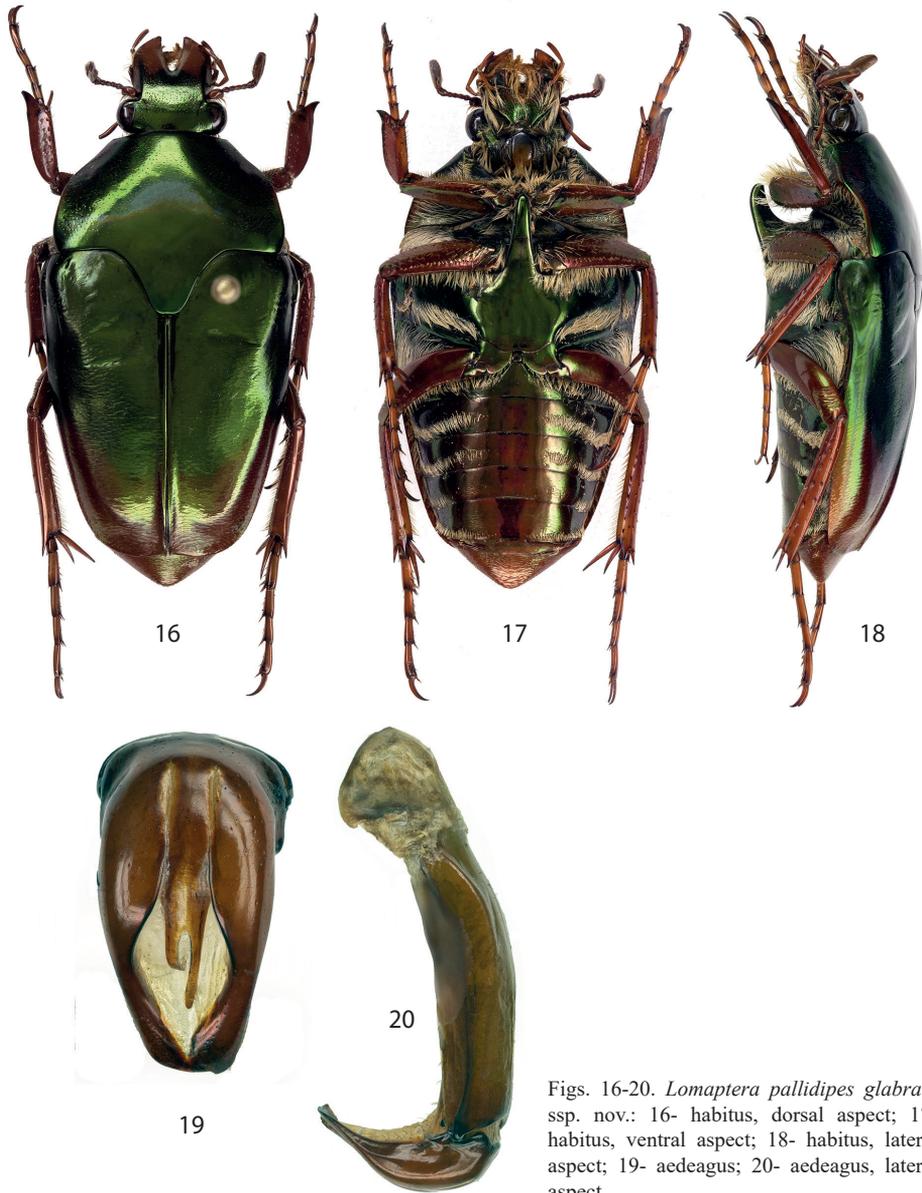
Elytra. Dark green with strong reflection, apex reddish with green tinge. Anterior fourth of disc nearly impunctate, rest of disc gently, shallowly striolated. Posterior half of lateral ridge and whole apex with transversally running striolation. Anterior half of lateral ridge glabrous. Subhumeral emargination very obtuse, nearly indistinct. Humeral and apical calli very obtuse, nearly not developed. Lateral border very obtuse, nearly not present. Sutural ridge flat throughout its total length, its ending indistinctly protruding over elytral apex. Apex of elytron rounded with shallow emargination beside sutural ridge.

Pygidium. Coloration reddish with green tinge, slightly flattened. Circularly developed striolation moderately dense and deep.

Ventrum. Dark green with strong golden - metallic reflection. Abdomen nearly flat, its impression very shallow. Each abdominal segment, mainly in posterior half with shallow striolation and cover of white, long setation. Metasternum glabrous, excepting posterior and anterior margins of metasternal sides, here with shallow striolation and cover of white setae. Mesometasternal process slender, long, narrowing to apex, in apex sharply rounded. Prosternum with abundant striolation and cover of white setation.

Legs. Femora, tibiae and tarsi reddish. Femora with very strong green to golden tinge. Metafemora with six notches in outer edge of outer side, rest impunctate. Meso- and metatibia with row of short, reddish setation in its inner side. Protibia unidentate, terminal half of dent blackish.

Genitalia. Parameres broad and short, branches of inner tongue nearly reaching apex (Figs. 19-20).



Figs. 16-20. *Lomaptera pallidipes glabrata* ssp. nov.: 16- habitus, dorsal aspect; 17- habitus, ventral aspect; 18- habitus, lateral aspect; 19- aedeagus; 20- aedeagus, lateral aspect.

Variability. Body size 23.5-29.0 mm (excluding pygidium). Abdominal impression always shallow and flat, but in some males more distinct than in holotype. Lateral border of elytra seems to be extremely variable. In most of male nearly not developed or very reduced, in few males present and reaching approximately half of total length. Coloration, punctation and striolation same to very similar.

Sexual dimorphism. Size of females 24.0-27.5 mm (excluding pygidium). Body shorter, wider and more robust. Punctuation and striolation of elytra very reduced. Pronotal disc nearly impunctate, pronotal sides in anterior third with shallow striolation. Two females with reddish macula beside anterolateral margins of pronotum. Elytral striolae present only in apex, rest of elytra glabrous and completely impunctate, and therefore reflection of females very strong. Apical calli protruding. Abdomen arched, ventral punctuation and setation similar as in males. Protibia bidentate.

Differential diagnosis. *Lomaptera pallidipes glabrata* new subspecies stays close to *Lomaptera pallidipes affinis* Valck Lucassen, 1961, flying in west part of Indonesian part of New Guinea. It differs from it in coloration of dorsum, which is completely green with reddish elytral apex and reddish part of clypeus, but with broad pronotal reddish to yellowish bands in its congener from continental part of New Guinea. Also reddish part of clypeus is larger in subspecies from mainland. Punctuation and striolation of elytra and pronotum in newly described subspecies is strongly reduced, especially in female. Border of elytral sides always developed and clearly visible in males of subsp. *affinis*, but only partially or fragmentally developed in subspecies from Misool Island. Metafemora are with 5-6 notches in newly described subspecies, but 7-9 in its congener. Pygidia of females are same. Parameres of males broader and shorter in newly described subspecies.

Etymology. Name of newly described subspecies refers to glabrous elytra and part of pronotum of insect.

Distribution. Indonesia: Eastern Moluccas, Misool Island.

Lomaptera papua papua (Guérin-Méneville, 1830)

(Figs. 21-25)

Cetonia papua Guérin-Méneville, 1830: 91, pl. 3, fig. 11 (original description); Boisduval, 1835: 224.

Lomaptera papua (Guérin-Méneville): Gory & Percheron, 1833: 309, pl. 60, fig. 4 (male); Burmeister, 1842: 315 (monograph); Wallace, 1868: 545 (catalogue); Mohnike, 1871: 37; Gestro, 1876b: 102; 1878: 27; Kraatz, 1895: 375; Schoch, 1895: 142; Allard, 1997: 78 (revision); Sakai & Nagai, 1998: 199, pl. 24, fig. 428-1 male, 428-2 female (iconography).

Ischiopsopha papua (Guérin-Méneville): Schenkling, 1921: 125 (catalogue).

Lomaptera (Chloroptera) papua (Guérin-Méneville): Schurhoff, 1935: 89 (key).

Lomaptera (Lomaptera) papua (Guérin-Méneville): Valck Lucassen, 1961: 122, figs. 35-36, 335-341 (revision); De Jong 1970: 259 (catalogue); Krajčik, 1999: 25 (catalogue).

Lomaptera amberbakiana J. Thomson, 1877: CLXXXVI (original description); Gestro, 1878: 26, 27 (= *L. papua* Guérin-Méneville); Type locality - Amberbaki (Nova Guinea septentr.).

Lomaptera chloris Gestro, 1876a: 516 (original description); 1876b: 100; 1878: 26, 27 (= *L. papua* Guérin-Méneville); Type locality: Andai (Nova Guinea) - (= Indonesia West Papua, Andai); Valck Lucassen, 1961: 122 (= *L. papua* Guérin-Méneville).

Lomaptera inermis Wallace, 1867: XCIV, pl. XII., fig. 2 (original description); Mohnike, 1871: 36.

Lomaptera (Lomaptera) inermis Wallace: Valck Lucassen, 1961: 126, fig. 350 (revision); Krajčik, 1999: 25 (catalogue).

Lomaptera papua var. *inermis* (Wallace): Allard, 1997: 79 (= *L. papua papua* Guérin-Méneville); Type locality - Nouvelle Guinée néerlandaise, Salavati.

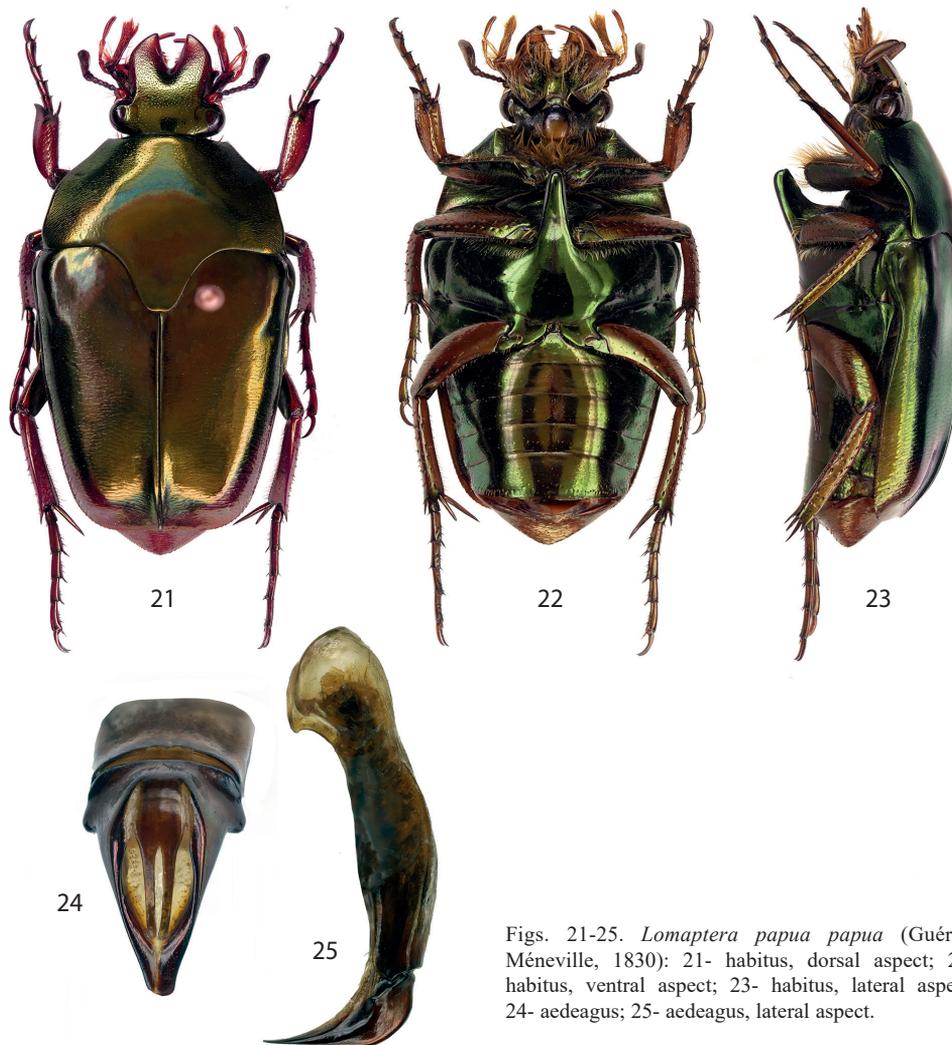
Lomaptera (Lomaptera) papua var. *roonensis* Valck Lucassen, 1961: 122 (original description); Type locality - Roon Island in Geelvink Bay; Allard, 1997: 79 (= *L. papua papua* Guérin-Méneville).

Lomaptera (Lomaptera) papua var. *rufovirens* Valck Lucassen, 1961: 122 (original description); Allard, 1997: 79 (= *L. papua papua* Guérin-Méneville); Type locality - Fak Fak.

Type locality. „la terre des Papous“ (= Papua).

Type material. Type in MNHN.

Additional material examined: 20 ♂♂, 3 ♀♀ (SJCP) labelled: IND. IRIYAN JAYA/ ARFAK MOUNTAINS / Local collector, 11.99; 3 ♂♂ (SJCP) labelled: Indonesia, C West Papua / MAPIA vill. env., 1200-1700 m / 12. 2006, local collectors lgt; 15 ♂♂, 2 ♀♀ (SJCP) labelled: Indonesia, SW Iriyan Jaya / FAK FAK REGION, 6. 2002 / local collectors lgt; 5 ♂♂ (SJCP) labelled: Indonesia, West Papua pr. / GORAS ENV., 12. 2007 / local collectors lgt; 4 ♂♂, 2 ♀♀ (SJCP) labelled: Indonesia, West Papua / KALADIRI env., cca 20 km S / of Nabire, 300 m alt. / 1. 2009, local collectors lgt; 2 ♀♀ (SJCP) labelled: Ind., West Irian Jaya / WAIGEO ISL. / Local coll., 4. 2000;



Figs. 21-25. *Lomaptera papua papua* (Guérin-Méneville, 1830): 21- habitus, dorsal aspect; 22- habitus, ventral aspect; 23- habitus, lateral aspect; 24- aedeagus; 25- aedeagus, lateral aspect.

10 ♂♂, 1 ♀ (SJCP) labelled: INDONESIA, West Papua / ARFAK MTS., Manokwari dist. / Maibri vill., 1670 m / 6.-19.XII. 2012, St. Jákl leg; 2 ♂♂ (SJCP) labelled: INDONESIA, West Papua pr. / MENTI vill. env. / XI. 1999 / local collector leg; 2 ♂♂ (SJCP) labelled: INDONESIA, West Papua prov. / Nabire distr., Kaladiri v. env. / XII. 2008, 300 m alt. / local collector leg; 45 ♂♂, 5 ♀♀ (SJCP) labelled: INDONESIA, West / Papua prov., MISOOL I. / E Moluccas, 0-200 m / VI. 2017, local collector.

Diagnosis. This species is very variable and it has large distributional areal. It can be bright green with golden reflection and bright green legs to darker green with reddish pronotal margins (narrow or broad), reddish legs, reddish anterior half of clypeus and reddish elytral apex and apical margins. Antennae are always reddish. Pronotum usually with broad and very dense transversally running striolation in large part of sides, sometimes reaching nearly centre of pronotal disc. Elytra also with dense, transversally developed striolation, sometimes running nearly throughout total elytral length. Apical calli usually glabrous and obtuse, humeral calli usually moderately produced, but always present. Lateral border of elytra distinct, rather high, usually running to level of apical calli. Sutural ridge flat, its ending very slightly drawn out over apex of elytron. Pygidium green or reddish. Pygidium of females with longitudinally developed keel in middle of pygidial length. Ventrum usually green, sometimes with reddish abdominal sides and reddish lateral parts of metasternum. Abdomen of males with wide and rather deep impression, setation missing or nearly missing. Abdominal segments gently striolated at sides. Striolation of metasternum deeper and denser, excepting metasternal plate, which is glabrous. Protibia of males unidentate, in females bidentate, rarely unidentate. Femora striolated throughout total length, deep notches absent.

Distribution. Indonesia: Salavati, Waigeo, Roon and Misool Islands; West Papua and Papua Provinces in Indonesian New Guinea; Papua New Guinea.

Lomaptera fasciata Moser, 1923

(Figs. 26-30)

Lomaptera fasciata Moser, 1923: 65 (original description); Allard 1997: 103 (revision).

Lomaptera (Chloroptera) fasciata Moser: Schurhoff, 1935: 87 (in key, revision).

Lomaptera (Lomaptera) nigroplagiata Valck Lucassen, 1961: 218, figs. 601-605 (original description); De Jong 1970: 274 (catalogue); Krajčič, 1999: 25 (catalogue). Type locality - Nouvelle Guinée néerlandaise septentrionale: Idenberg, Prouvenbivak; Type material - Holotype male in RMNH, Allotype female in ZMHB.

Lomaptera fasciata var. *nigroplagiata* Valck Lucassen: Allard 1997: 104.

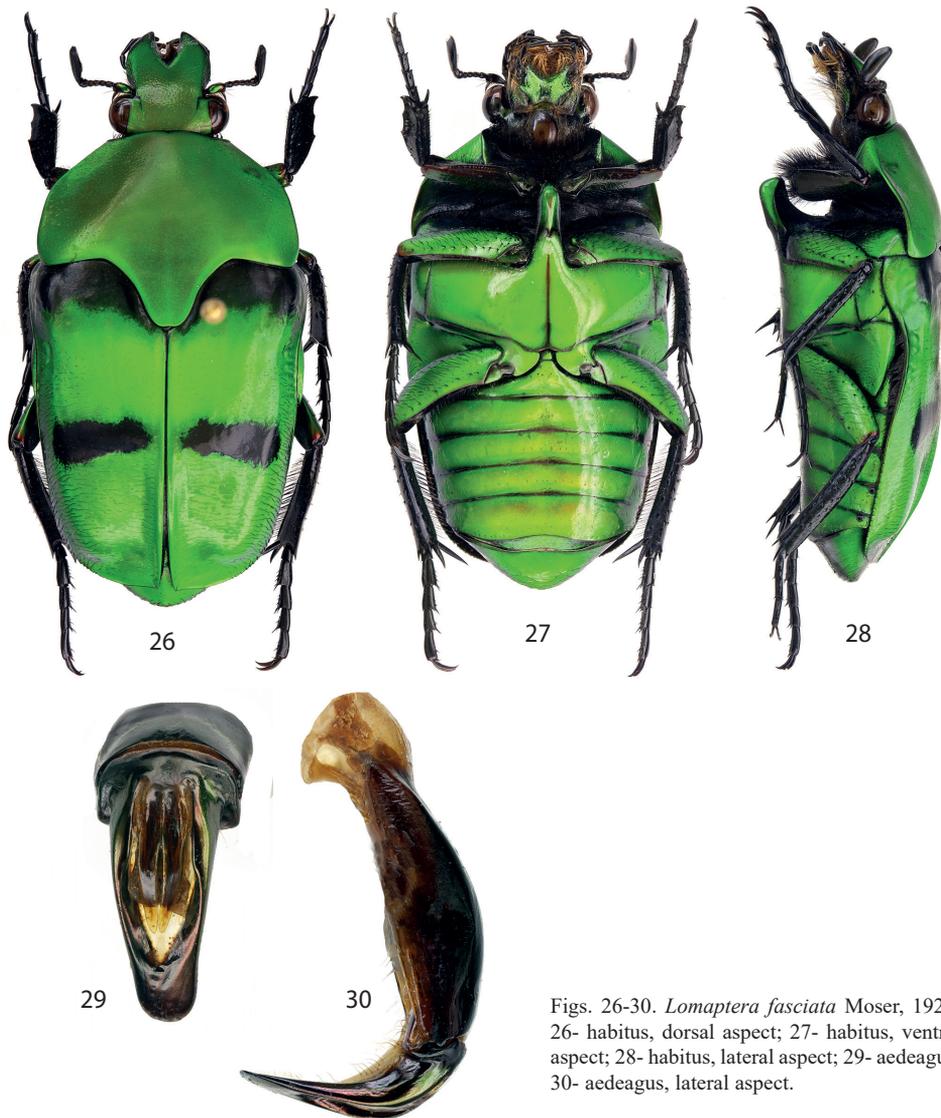
Lomaptera moseriana Burgeon, 1936: 198 (nom. nov. for *Lomaptera fasciata* Burmeister, 1842 nec Burmeister 1842).

Lomaptera (Lomaptera) moseriana Burgeon: Valck Lucassen, 1961: 215, figs. 74, 596-600 (revision); Krajčič 1999: 25 (catalogue).

Lomaptera burgeoni Valck Lucassen, 1961: 220, figs. 75, 606-610 (original description); De Jong 1970: 274 (catalogue); Allard 1997: 104 (revision); Sakai & Nagai, 1998: 199, pl. 24, fig. 432-1 male, 432-2 female (iconography); Krajčič 1999: 24 (catalogue); Type locality - Nouvelle Guinée septentrionale: Fakfak; Type material - Holotype male, Allotype female, 2 Paratype males in RMNH **syn. nov.**

Type locality. „Nouvelle Guinée méridionale: Kloofbivak“ (= Dutch New Guinea, Kloofbivak).

Type material. Holotype (♂) (ZMHB) and Allotype (♀) (RMNH).



Figs. 26-30. *Lomaptera fasciata* Moser, 1923:
 26- habitus, dorsal aspect; 27- habitus, ventral aspect; 28- habitus, lateral aspect; 29- aedeagus;
 30- aedeagus, lateral aspect.

Additional material examined: 7 ♂♂, 2 ♀♀ (SJCP) labelled: Indonesia, WEST PAPUA prov. / KALADIRI ENV., cca 25 km S of / Nabire, 12. 2007, 150-400 m / local collectors lgt; 1 ♂, 1 ♀ (SJCP) labelled: Indonesia, SE Irian Jaya / TIMIKA ENV., 11. 1999 / Local collectors; 2 ♂♂, 3 ♀♀ (SJCP) labelled: Indonesia, Irian Jaya / KEBAR, 1. 2003 / local collectors lgt; 5 ♂♂, 2 ♀♀ (SJCP) labelled: Indonesia, W Irian Jaya / SORONG DISTRICT / Local collectors; 5 ♂♂, 5 ♀♀ (SJCP) labelled: Indonesia, West Papua pr. / GORAS ENV., 12. 2007 / local collectors lgt; 1 ♂, 1 ♀ (SJCP) labelled: Indonesia, West Papua / pr., FAK FAK env. / VI. 2016 / local collector leg; 2 ♂♂ (SJCP) labelled: Indonesia, CN Irian Jaya / Schouten isls., JAPEN ISL. / 1. 2004, local collectors lgt.; 10 ♂♂, 4 ♀♀ (SJCP) labelled: INDONESIA, West Papua / pr., Misool Island / XI. 2016 / local collector leg.

Distribution. Indonesia: Indonesian part of New Guinea Island: Timika, Fak Fak, Nabire, Arfak Mts., Sorong, Japen and Misool Islands (**new island record**), Papua New Guinea.

Note 1. This species is variable and rather widespread across Indonesian New Guinea Island and probably west part of Papua New Guinea. It also occurs in Japen and Misool Islands. Black, transversally running bands on elytra are broad and long in specimens from western parts of Indonesian Papua, but can be strongly reduced in specimens from central and eastern part. Specimens completely missing black markings are also known. Specimens with broad bands can be also decorated with additional red maculae placed between elytral black bands. Author cannot find any morphological difference between *Lomaptera burgeoni* Valck Lucassen, 1961 and *Lomaptera fasciata* Moser, 1923. Therefore it is here proposed to consider *Lomaptera burgeoni* Valck Lucassen, 1961 as a junior synonym of *Lomaptera fasciata* Moser, 1923.

Note 2. *Lomaptera louisi* Audureau, 2000 described from Timika is probably also conspecific with *Lomaptera fasciata* Moser, 1923. Author did not see holotype, but all examined specimens from the type locality (Irian Jaya, Timika) of *Lomaptera louisi* Audureau, 2000 are conspecific with other populations occurring in eastern part of Indonesian New Guinea.

***Mycterophallus xanthopus viridicollis* (Kraatz, 1886) stat. nov.**
(Fig. 31)

Lomaptera distincta var. *viridicollis* Kraatz, 1886: 435 (original description).

Mycterophallus xanthopus var. *viridicollis* (Kraatz): Allard 1995: 22, 109 (revision).

Mycterophallus viridicollis (Kraatz): Krajčik 1999: 28 (catalogue).

Type locality. „von Mysole“ (= Misool Island, Indonesia).

Type material. 2 Syntype (DEIC).

Additional material examined: 150 ♂♂, 45 ♀♀ (SJCP) labelled: INDONESIA, E Moluccas / MISOOL I. / V. 2017 / local collector leg.

Diagnosis. Body size 25.0-28.0 mm (excluding pygidium). Frons always dark green, posterior half of clypeus green, anterior half reddish, rarely nearly whole clypeus reddish, but clypeal sides always green. Antennae always reddish, club darker and slightly shorter than stalk. Pronotum dark green with strong metallic lustre. More rarely anterolateral margins with reddish maculae or extremely with reduced marginal band. Disc impunctate, sides with rather sparse punctation, striolation nearly absent. Anterolateral margins shallowly emarginated. Elytra green, shining. Apical third, rarely fourth of elytral apex reddish with mild greenish tinge. In females reddish part of elytral apex much shorter. Anterior half of elytral disc impunctate, rest of elytra with moderately dense striolation, striolae longer and deeper from base to apex. Elytral striolation in females sparser. Lateral border of elytra ending in front of level of apical calli, in front of apex sides of elytra dentate. Apex of each elytron with rather deep emargination besides ending of sutural ridge. Pygidium of male

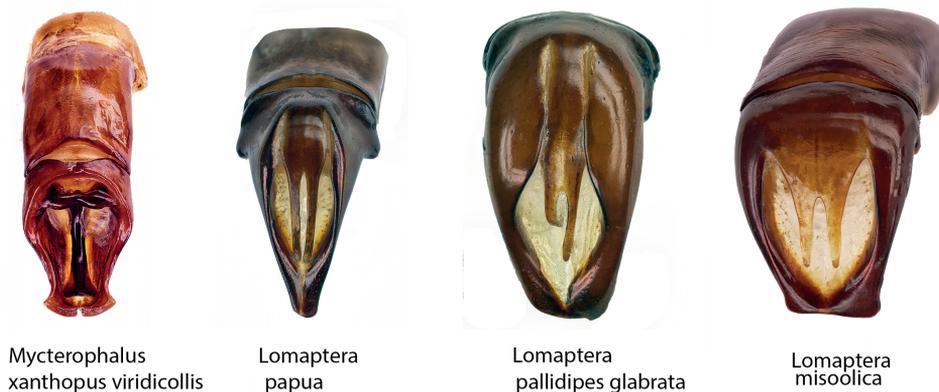


Fig. 31. Aedeagi.

flattened, in apex obtusely rounded. Pygidium of females similarly shaped, but in ventral side with large impression. Coloration of pygidium reddish with green to metallic tinge. Third to fifth abdominal segments in males with moderately deep and wide impression, abdomen of females arched. Sides of abdominal segments with transversally running row of striolation, which is covered by white, long setae. Abdominal disc nearly impunctate. Metasternum glabrous with strong reflection, excepting anterior and posterior margins of metasternal sides, which are striolated and covered with long, white setation. Mesometasternal process in profile view with highest point approximately in middle length, from here narrowing to apex and slightly heading downwards. Legs always reddish, femora with very strong green reflection. Metafemora very shallowly striolated. Protibia of males long, unidentate, in females shorter, wider and bidentate. Parameres of males longer, specially its apical part, than in nominotypical subspecies.

Due to constant characters based on nearly 200 specimens collected at different time of the year author consider *Mycterophallus xanthopus viridicollis* Kraatz, 1886 as distinct and valid subspecies endemic to Misool Island. It differs from nominotypical subspecies not only in slightly different shape of male parameres, but also in pronotal and elytral coloration and density of punctuation and striolation of dorsal side.

Distribution. Indonesia: Eastern Moluccas, Misool Island.

DICHOTOMICAL KEY TO SPECIES OF *LOMAPTERA* GORY & PERCHERON, 1833 AND *MYCTEROPHALLUS* VAN DER POOL, 1886 OCCURRING IN MISOOL ISLAND

- 1 (2) Sides of elytra in front of elytral apex dentate. More than half of pygidium in males and two thirds in females covered by elytra. Shape of pygidia same in both sexes.
..... *Mycterophallus xanthopus viridicollis* Kraatz, 1886
- 2 (1) Sides of elytra in front of elytral apex not dentate or unclearly dentate. Less than half of pygidium in males and less than two thirds in females covered by elytra. Pygidia of males and females different.

- 3 (4) Body size 18.0-20.0 mm (excluding pygidium). Coloration completely green with green legs. *Lomaptera allardi detanii* ssp. nov.
- 4 (3) Body size 22.0-29.0 mm. Green species with reddish part of clypeus, elytral apex and completely reddish legs or light green species with transversally developed bands or maculae in elytra.
- 5 (6) Light green species with black elytral bands or at least black reduced bands or maculae. Legs black or green to blue *Lomaptera fasciata* Moser, 1923
- 6 (5) Dark green species with reddish part of clypeus, elytral apex and reddish legs.
- 7 (8) Body size 21.5-24.5 mm (excluding pygidium). Elytra sharply narrowing from base to apex, especially in females. Apical calli of elytra clearly developed. Protibia bidentate in both sexes. Parameres of males without inner tongue *Lomaptera humeralis moluccana* ssp. nov.
- 8 (7) Body size 23.5-29.0 mm (excluding pygidium). Elytra oval shaped, not deeply narrowing from base to apex. Apical calli of elytra obtuse. Protibia usually unidentate in males and uni- or bidentate in females. Parameres of males with inner tongue.
- 9 (10) Abdominal impression moderately deep and wide. Ventrites without transversally running row of striolation and without rows of white setation. Lateral border of elytra running to level of apical calli *Lomaptera papuana papuana* Guérin-Méneville, 1830
- 10 (9) Abdominal impression present or not. Ventrites with transversally running row of striolation, each row of striolation with cover of white, long setae. Lateral border of elytra running to level of apical calli or very reduced.
- 11 (12) Lateral border of elytra reduced, never running to level of apical calli. Parameres of male moderately long, in apex obtusely rounded. Abdomen of male nearly flat, never with deep impression. Elytra of female impunctate, excepting only elytral apex, which is finely striolated. Metafemora impunctate, outer edge with 5-6 deep notches *Lomaptera pallidipes glabrata* ssp. nov.
- 12 (11) Lateral border of elytra running to level of apical calli. Parameres of male wide and short, in apex chopped off. Abdomen of male with distinctly developed impression. Elytra of female with striolation in posterior half, not only in elytral apex. Metafemora striolated throughout total length, notches absent..... *Lomaptera misoolica* sp. nov.

ACKNOWLEDGEMENT. I am very grateful to Arnošt Kudrna (Rudolfov, Czech Republic) for his never ending help with digital photography and to Jiří Háva (Praha, Czech Republic) for technical help with the manuscript.

REFERENCES

- ALLARD V. 1997: Etude du genre *Lomaptera*. Pp: 49-123. In: RIGOUT J. & ALLARD V. (eds.): *The Beetles of the World*. 25. *Schizorhinini 3: Vols. 1 & 2 Supplement & Lomaptera*. Canterbury: Hillside Books, 128 pp.
- BOISDUVAL D. 1835: Voyage de l' Astrolabe. *Faune Entomologique de l' Océan Pacifique avec l' illustration des insectes nouveaux recueillis pendant le voyage*. Deuxième Partie. Coléoptères et autres ordres. Paris 36, 659 pp.
- BOUSQUET Y. 2016: Litteratura Coleopterologica (1758-1900): a guide to selected books related to the taxonomy of Coleoptera with publication dates and notes. *ZooKeys* 583: 1-776.
- BURGEON L. 1936: Note Assemblée mensuelle du 2 mai 1936. *Bulletin et Annales de la Société Entomologique de Belgique* 76: 198.
- BURMEISTER H. 1842: *Handbuch der Entomologie. Dritter Band. Coleoptera Lamellicornia Melitophila*. Berlin: Theod. Chr. Friedrich. Enslin, XX + 826 + 1 pp.
- DE JONG C. 1970: A catalogue of the species of the genus *Lomaptera* in the Leiden and Amsterdam Museum. *Zoologische Mededelingen* 44(18): 251-278.
- GESTRO R. 1874: Enumerazione dei Cetonidi raccolti nell' Arcipelago Malese e nella Papuasias dai signori G. Doria, O. Beccari e L. M. D' Albertis. *Annali del Museo civico di Storia Naturale di Genova* 6: 487-535.
- GESTRO R. 1876a: Diagnose di alcuni nuove species di Coleotteri raccote nella regione Austro-Malese dai signori Dott. G. Doria, O. Beccari, L. M. D' Albertis e A. A. Bruyn. *Annali del Museo civico di Storia Naturale di Genova* 8: 512-524.
- GESTRO R. 1876b: Appendici all' enumerazione dei Cetonidi raccolti nell' Arcipelago Malese e nella Papuasias dai signori G. Doria, O. Beccari e L. M. D' Albertis. *Annali del Museo civico di Storia Naturale di Genova* 9: 83-110.

- GORY M. H. & PERCHERON M. A. 1833: *Monographie des Cétoines et genres voisins, formant, dans les familles naturelles de Latreille, la division des Scarabées mélicophiles*. Paris: J. - B. Bailliére, 410 pp., 77 pls.
- GUÉRIN-MÉNEVILLE F. C. 1830-1831: *Voyage autour du monde, exécuté par ordre du Roi, sur la corvette de Sa Majesté, La Coquille, pendant les années 1822, 1823, 1824 et 1825, sous le ministère et conformément aux instructions de S. E. Le Marquis de Clermont-Tonnerre, ministre de la marine; et publié sous les auspices de son Excellence Mgr. Le C^{te} De Chabrol, Ministre de la Marine et des Colonies, par M.L.I. Duperrey*. Zoologie, par M. Lesson. Tome Second.- 2^e partie. Paris: Arthus Bertrand, 22 pls. [plates were published in the years 1830-1831 see Bousquet 2016: 234-235]
- KRAATZ G. 1886: Ueber *Lomaptera xanthopus* Boisd. Und Verwandte. *Deutsche Entomologische Zeitschrift* 30(2): 433-437.
- KRAATZ G. 1895: Neue exotische Cetoniden-Arten. *Deutsche Entomologische Zeitschrift* 34(2): 371-384.
- KRAJČÍK M. 1999: *Cetoniidae of the world, Catalogue - Part II. Zlatohlávkovití světa, Katalog - Část II*. Most: Krajččík (published privately by author), 72 pp. + 23 pp.
- LANSBERGE G. W. VAN 1880: Description de quelques Coléoptères de la Malaisie et de la papouasie. *Annales de la Société entomologique de Belgique* 23: 118-139.
- MOHNIKE O. 1871: Uebersicht der Cetoniden der Sunda-Inseln und Molukken nebst der Beischreibung von zweiundzwanzig neuen Arten. *Nicolaische Verlagsbuchhandlung*, Berlin: 96 pp., 3 pls.
- RIGOUT J. 1997: Supplement aux volumes 1 & 2 et l'étude du genre *Lomaptera*. Pp. 13-48. In: RIGOUT J. & ALLARD V. (eds.): *The Beetles of the World. 25. Schizorhinini 3. Vols. 1 & 2 Supplement & Lomaptera*. Canterbury: Hillside Books, 128 pp.
- SAKAI K. & NAGAI S. 1998: The Cetoniine beetles of the World. Pp. 1-6 + 7-150 unpag. [pls. 1- 144] + 151 + 421 + 3 unpag. In: FUJITA H. (ed.): *Mushi-Sha's iconographic series of insects 3*. Tokyo: Mushi Sha, 2 unpag. + 342 + 5 unpag. (in Japanese and English).
- SCHENKLING S. 1921: Scarabaeidae, Cetoniidae. Pars 72. In: SCHENKLING S. (ed.): *Coleopterorum Catalogus. Volumen XXI*. Berlin: W. Jung, 2 unpag. + 431 pp.
- SCHOCH G. 1898: Nachtrag VIII zu Schoch. Die Genera und Species meiner Cetoniden-Sammlung. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 10: 141-184.
- SCHURHOFF P. N. 1935: Beitrage zur kenntnis der Cetoniden. V. Revision der Gattung *Lomaptera*. *Stettiner Entomologische Zeitung* 96: 68-90.
- VALCK LUCASSEN F. T. 1961: *Monographie de genre Lomaptera*. De Nederlandse Entomologische Vereniging, 299 pp.
- WALLACE A. R. 1867: A Catalogue of the Cetoniidae of the Malayan Archipelago, with descriptions of the New Species. *Proceedings of the Entomological Society of London* 1867: 93-97.
- WALLACE A. R. 1868: A Catalogue of the Cetoniidae of the Malayan Archipelago, with descriptions of the New species. *Transactions of the Entomological Society (Serie 3)* 4: 19-601.

Received: 10.3.2021

Accepted: 30.4.2021

Printed: 5.10.2021

