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New data on the Eumolpinae from Malawi with description of five new species

(Coleoptera, Chrysomelidae)

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A brief critical knowledge update on the Eumolpinae of Malawi is provided. Five new species of Eumolpinae Euryopini (*Colasposoma* (C.) *langeri* sp. nov., *C. (C.) suturale* sp. nov., *C. (C.) collare* sp. nov., *Pathius daccordii* sp. nov., *Lefevrea fabianae* sp. nov.) are described from Malawi and compared with related taxa. *Colasposoma* (C.) *tinantae* Burgeon, 1941 is reported for the first time for Malawi and its aedeagus is illustrated.

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Introduction

The Eumolpinae fauna of Malawi is still poorly known. Referring to the list published in Zoia (www.chrysomelidae.it/afr_Eum – accessed November 2018), the species so far known for Malawi sum up to 21 taxa. However, the presence of 15 among them needs confirmation, as these were generically reported for “Nyassa” (Lake Malawi) or “Nyassaland”, on the border among three different countries. Moreover, this is the only known geographic indication for eight of these taxa. Twelve of the above-mentioned taxa are more or less widespread in other countries of Sub-Saharan Africa, too, with *Heteraspis vicina* (Harold, 1877) reaching Yemen and Saudi Arabia.

The six species so far recorded from Malawi so far are:

Semmionia woodi Bryant, 1941 [recorded only from the type locality: Chiromol];

Platycorynus dejeani Bertoloni, 1849 [widely distributed in Africa from Ethiopia to South Africa, recorded for Malawi by Kuntzen (1913)];

Pachnephorus (P.) *crocodilinus* Zoia, 2007 [Sub-Saharan Africa between 18°N and 30°S (Zoia 2007)];

P. (P.) grobbelaarae Zoia, 2007 [Southern Africa between 15°S and 32°S (Zoia 2007)];

P. (P.) torridus Baly, 1878 [Sub-Saharan Africa between 18°N and 30°S (Zoia 2007)];

Mecistes thompsoni Zoia, 2009 [Malawi, Zimbabwe, Botswana and South Africa (Zoia 2009)].

I recently received from Michael Langer (Niederwies, Germany) a few specimens for study, which includes some recently collected Eumolpinae Euryopini from Malawi. Most of these belong to new taxa, their description is the object of the present contribution. A further species is here reported for the first time for Malawi. All these taxa belong to the tribe Euryopini.

With the present study, the number of Eumolpinae species known from Malawi rises to 12, a very low number in view of the presumable faunal richness of the country.

Material and methods

As for other published contributions dealing with the same subject, the reported length of the specimens includes the head closely inserted into the prothorax. The ratio of frons width to eye width, in order to describe the dimensions of eyes in relation to that of the entire head, is evaluated in frontal view along a horizontal line at a level of the minimum width of the frons and the

corresponding widest point of the eye. The dissected aedeagi are glued on a card pinned together with the specimen; the dissected female genitalia are preserved in a plastic micro-vial, pinned together with the specimen.

Holotypes of the new taxa here described are deposited in the collections of the Zoologische Staatssammlung in Munich (Germany).

The following acronyms are used:

MDcoll Mauro Daccordi collection (Verona, Italy)

MLcoll Michael Langer collection (Niederwiesau, Germany)

SZcoll Stefano Zoia collection (Milano, Italy)

ZSM Zoologische Staatssammlung in Munich (Germany)

Colasposoma (Colasposoma) langeri sp. nov.

Figs 1–4, 18–25

Type specimens. Holotype ♂ (ZSM): Malawi/Nyika N. P. (2222 m) Zambian Rest House, S10°34.4' / E033°42.3' 30.XII.2009 leg. L. Friedman [printed white label]; Holotypus *Colasposoma (Colasposoma) langeri* n. sp. S. Zoia det. 2018 [printed red label]. – Paratypes (23 ♂♂, 21 ♀♀): Malawi/Nyika N. P. (2222 m) Zambian Rest House, S10°34.4' / E033°42.3' 30.XII.2009 leg. L. Friedman (1 ♂, 1 ♀ ZSM; 1 ♂, 1 ♀ MDcoll; 14 ♂♂, 12 ♀♀ MLcoll; 7 ♂♂, 7 ♀♀ SZcoll).

Diagnosis. A brachypterous *Colasposoma* Laporte, 1833 of small size and metallic green coloration, characteristic in the transversal distal impression of pronotum in males, short convex elytra, presence of tubercles and a carina on each elytron of ♀♀.

Description

Habitus as in Figures 1–2; body length of the ♂ holotype 3.2 mm, of the ♂♂ paratypes 2.8–3.7 mm, of the ♀♀ paratypes 2.9–3.7 mm.

Body dark brown to black, the abdomen with a light greenish metallic hue; hypomera in large part metallic green; dorsum and head distal metallic green, scutellum and adjacent edge of elytral base usually with golden reflections; in a few females the whole dorsum with golden reflections or totally metallic reddish-brown; labrum, mandibles and palpi reddish-brown; antennae brown, the 1st segment at least partially metallic, segments 7th–11th darker.

Frons (Fig. 3) large, slightly convex; surface with dense punctation, the punctures relatively small in diameter and impressed, with a very short pubescence; eyes small, strongly convex, the space between the inner border of the eyes in frontal view is nearly 7 times the width of an eye; ocular sulci absent; clypeus not distinct from the frons and with a somewhat stronger and confluent punctation, its

distal border concave. Penultimate article of maxillary palp nearly as long as wide, the ultimate conical, nearly two times longer than wide and two times longer than the penultimate. Antennae (Fig. 23) slender, nearly reaching the distal third of elytra. Antennomeres slender, 7th–11th slightly widened. Length of the antennomeres of the left antenna of the ♂ holotype, in mm: 0.25–0.21–0.19–0.23–0.24–0.19–0.23–0.22–0.22–0.22–0.29; length/width ratio: 2.2–3.0–3.1–3.8–3.6–3.0–2.7–2.6–2.7–1.4–3.1.

Pronotum strongly convex, nearly 1.5–1.6 times wider than long (1.22 × 1.85 mm in the holotype), the maximum width slightly before mid-length in males, near the basal third in females; the base finely bordered throughout, nearly so wide or a little wider than the distal edge; distal edge not bordered; sides of pronotum, as seen from above, nearly regularly bent throughout in ♂♂, distally straightened in females, bordered; surface with moderately strong and irregularly arranged punctation, the distance between two adjacent punctures smaller than the diameter of a puncture; the surface between the punctures smooth; pronotum glabrous on discus, with a fine pubescence at sides; in lateral view, the pronotum in ♂♂ is more strongly convex than in ♀♀ and with a more evident impression along the distal border. Pronotal corners extended into a low small tooth bearing a seta.

Scutellum semicircular, nearly two times wider than long, smooth, with a few punctures or totally impunctate.

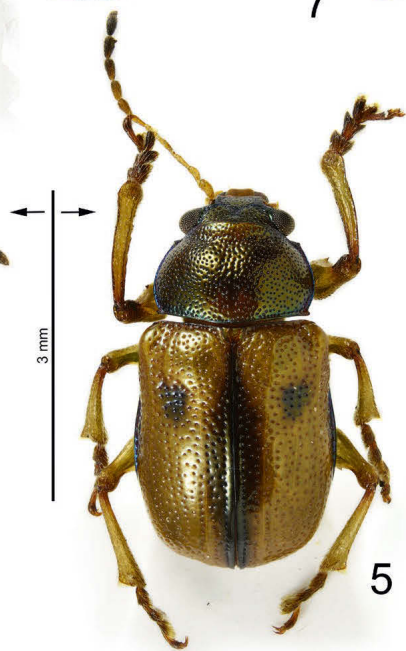
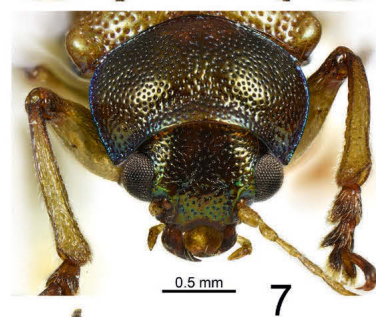
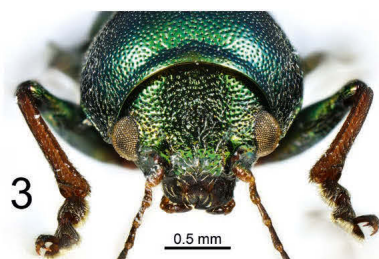
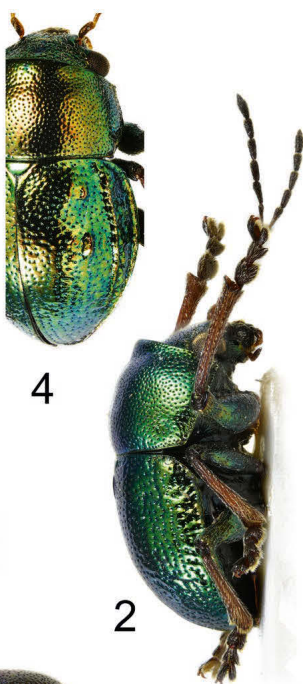
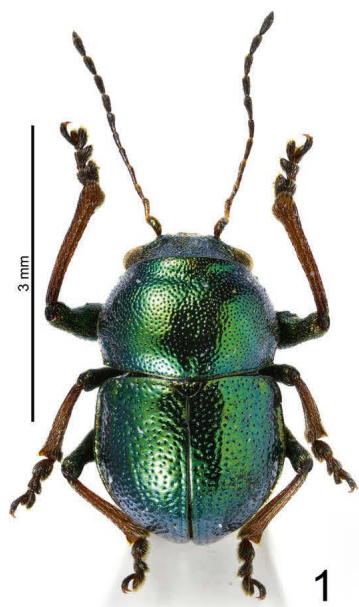
Surface of hypomera smooth, slightly plicate, with a few light punctures, the distal margin straight, not produced frontward, not separated from the edge of prosternum which is regularly concave. Prosternum nearly 1.4 times longer than wide between the procoxae, surface strongly convex in middle, finely punctured and with a long hyaline pubescence. Ventral side of body with sparse and thin setae present on the meso- and metasternum and on the abdominal sternites.

Mesoventrite nearly 1.3 times longer than wide between the mesocoxae, finely punctured and pubescent; mesocoxae closer to each other than the procoxae; mesoepimera smooth, with a very fine microreticulation. Metaventrite in its middle 1/2 shorter than the space between the procoxae, punctured, finely rugose; metacoxae a little more spaced

Figs 1–4. *Colasposoma (C.) langeri* sp. nov. 1–3. ♂ holotype; 1. dorsal view; 2. lateral view; 3. head. 4. ♀ paratype, elytral sculpture.

Figs 5–7. *Colasposoma (C.) suturale* sp. nov., ♂ holotype; 5. dorsal view; 6. lateral view; 7. head.

Figs 8–10. *Colasposoma (C.) collare* sp. nov., ♂ holotype; 8. dorsal view; 9. lateral view; 10. head.



than mesocoxae; metathoracic episterna tapering to rear, nearly 3 times longer than wide, with a fine microreticulation.

Elytra strongly convex, 1.1 times longer than wide (in the holotype: elytral length in dorsal view 1.87 mm, distance from the base of scutellum to elytral apex 2.2 mm; width at base 1.75 mm, maximum width 2 mm); elytral sides a little widening from the humeri to about one third of their length, then regularly bent till the apices; apices in a slightly acute angle, somewhat more acute in ♀♀. In ♂♂ the elytral punctation is stronger than on pronotum and less close, it is partially arranged in irregular striae and equally impressed on the whole surface. In ♀♀ the elytral punctation is somewhat finer and more confusedly arranged except for a few nearly regular striae near the suture on the apical slope and near the elytral sides. Elytral surface smooth, shining, regularly convex in ♂♂; in ♀♀ (Fig. 4) the elytral surface shows two double small tubercles along a longitudinal line in its basal third, a carina starting from the humerus and reaching the base of the apical slope and a series of small tubercles present at the external side of the carina and going from mid length of the elytron till half apical slope. Elytral borders wide and visible in dorsal view at the same time from the humeri to the level of the 2nd sternite, gradually tapering to rear. Epipleura moderately wide at the base, gradually tapering to rear, glabrous, smooth, impunctate.

Brachypterous, metathoracic wings hardly reaching the elytral apex.

Legs relatively long; femora moderately swollen, more so the profemora, unarmed or each with a very small acute tooth; protibiae longer than meso- and metatibiae, particularly in ♂♂, nearly straight, mesotibiae slightly bent inwards, meso- and metatibiae not emarginate near the apex. Pro- and mesotarsi widened in male (Fig. 22). Claws bifid, the inner tooth thin, short, starting from nearly mid length of the claw.

Aedeagus as in Figures 18–19; tegmen (Fig. 20) wide, sclerotized, distally with short lateral arms hardly embracing the sides of the median lobe; ventral sclerite of sternite IX as in Figure 21.

Spermatheca as in Figure 24 with spermathecal gland twice as long as the spermathecal length; vagina without evident sclerotizations; styli short, moderately thin, sclerotized, spiculum gastrale thin and moderately long (Fig. 25).

Derivatio nominis. I am pleased to name the new species after Michael Langer who provided me with the specimens object of the present study.

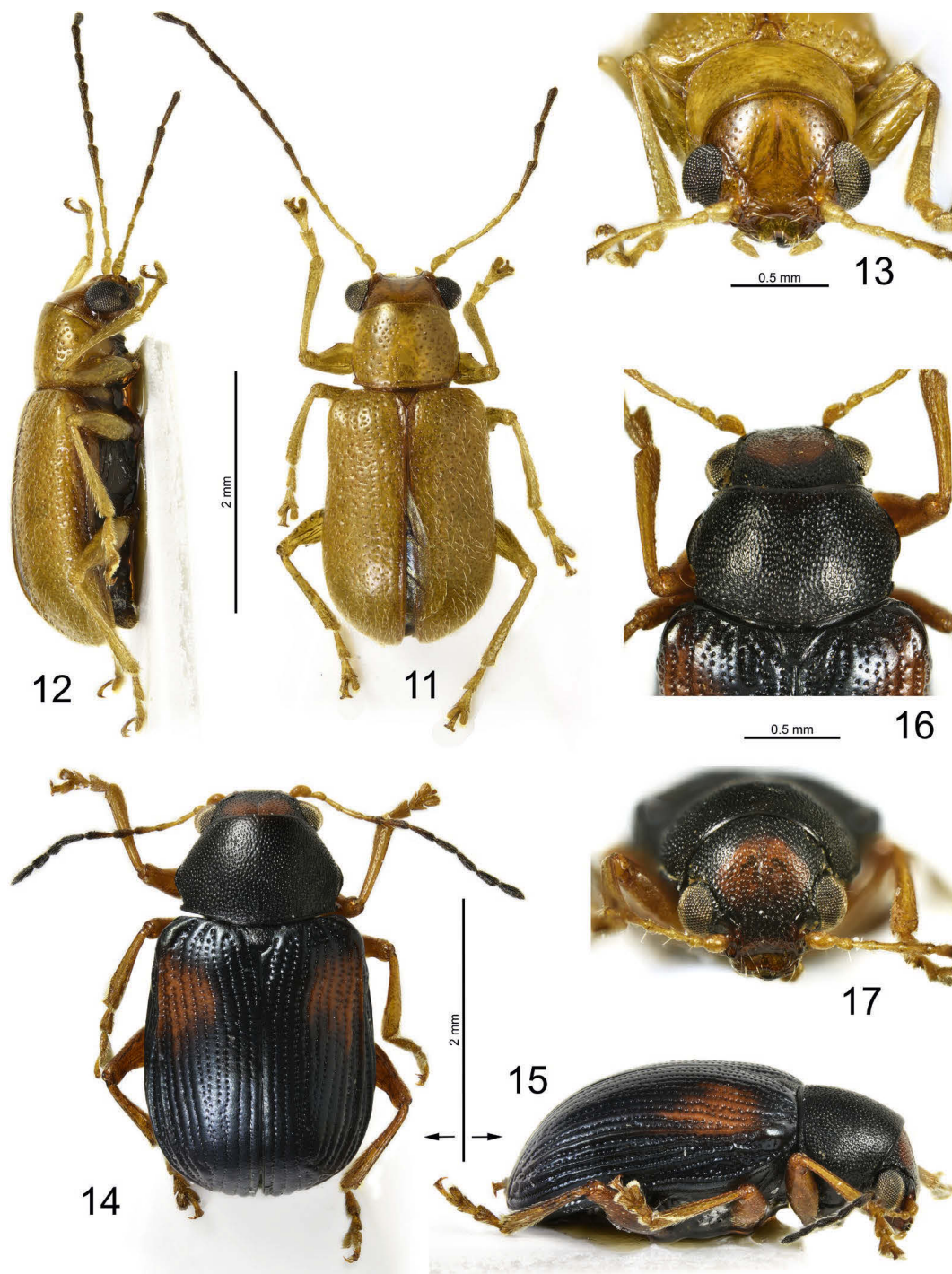
Comparative notes. Main distinctive characteristics of *C. (C.) langeri* sp. nov. are the small body size, the distally transversely impressed pronotum, the short elytra with sides regularly bent throughout, starting from their base, and the peculiar sculpture of the elytra in females. *C. (C.) langeri* sp. nov. is presumably close to *C. (C.) wittei* Burgeon, 1941a (Katanga; holotypus examined at the Musée royal de l'Afrique centrale, Tervuren) in its habitus, in the reduced metathoracic wings and the presence of a longitudinal carina on each elytron of females. *C. (C.) wittei* clearly differs in a duller coloration of dorsum, particularly of elytra, with a finer punctation, a wider and less convex pronotum, not transversally impressed distally and with distal edge finely bordered throughout, proportionally shorter elytra, a less elevated carina on the elytra of female from the humeri to rear and the absence of additional tubercles, apex of aedeagus more sinuate in lateral view (the holotype has the aedeagus partially exposed).

Other small metallic species of *Colasposoma*, differ more in their general habitus, with evident humeral calli, and fully developed metathoracic wings. In *C. (C.) pusillum* Jacoby, 1904 (Natal; syntypes examined at the Natural History Museum, London) and *C. (C.) parvulum* Lefèvre, 1890 (Transvaal; holotype examined at the Musée National d'Histoire Naturelle, Paris) the pronotum is nearly 2 times wider than long, the elytral sides are nearly parallel in their basal third, body is metallic green; moreover in *C. pusillum* the elytral surface in ♀♀ is slightly transversally corrugated at sides, without any carina or tubercle, and antennae are brown with only the apices of last antennomeres somewhat darkened; in *C. (C.) parvulum* the legs are yellow ochre with knees and apices of tarsomeres metallic.

Colasposoma (Colasposoma) tinantae
Burgeon, 1941a
Figs 26–29

Examined material. Malawi/Viphya Mts. (1617 m) 12 km SW Chikangawa S11°57.7' / E033°44.6' 25.XII.2009 leg. L. Friedman (6 ♂♂, 3 ♀♀).

Note. The species is new for the fauna of Malawi and this is the first citation after the original description. *Colasposoma (C.) tinantae* (holotype and allotype examined at the Musée royal de l'Afrique centrale, Tervuren) was described from Kundelungu (holotype) and Lukafu (Parc National de Kundelungu) and from Nieuwdorp (allotype) (South-Eastern Democratic Republic of Congo). Males here examined are uniformly metallic green on dorsum, the three females are uniformly dark metallic bronze,



Figs 11-13. *Pathius daccordii* sp. nov., ♂ holotype; 11. dorsal view; 12. lateral view; 13. head.

Figs 14-17. *Lefevrea fabianae* sp. nov. 14-15. ♀ holotype; 14. dorsal view; 15. lateral view. 16-17. ♂ paratype; 16. pronotum and head; 17. head.

with a metallic green hue mostly on elytral sides. Aedeagus (not described by Burgeon (1941a)) as in Figures 26–27; tegmen (Fig. 28) thin, moderately sclerotized, distally with lateral arms hardly embracing the sides of the median lobe; ventral sclerite of sternite IX as in Figure 29.

Burgeon (1941a) compared *C. (C.) tinantae* with *C. (C.) varendorffi* Weise, 1914 (Namibia: Windhoek). I do not know in nature *C. (C.) varendorffi*; based on the description, the two taxa seem to be very close and hardly distinguishable.

Weise (1914) compared *C. (C.) varendorffi*, with *C. (C.) pusillum* and *C. (C.) parvulum*, two species of relatively small size and with elytral sides subparallel in their basal third. The same characteristics are present in *C. (C.) tinantae*. *C. (C.) pusillum* (δ) differs in the pronotum more globose and more widened in its middle, lacking distal transversal impression (in *C. (C.) tinantae* this impression is evident although light), elytra proportionally shorter, body metallic green (blackish with metallic hue in *C. (C.) tinantae*), femora metallic green, tibiae darker and at least partially metallic (legs entirely ochre brown in *C. (C.) tinantae*), longer and bent inward. *C. (C.) parvulum* (δ) differs in the proportionally smaller pronotum with a less dense punctation, more corrugated surface in the sub-basal impressions of elytra, metallic green body, legs with knees and apices of tarsomeri metallic.

A second species mentioned by Burgeon (1941a), *C. (C.) tibiale* Baly, 1878 (Lake Nyassa), greatly differs in its habitus, pubescent pronotum, more oblong elytra and elytral sculpture.

Colasposoma (Colasposoma) suturale sp. nov.

Figs 5–7, 30–35

Type specimens. Holotype δ (ZSM): Malawi/Nyika N. P. (2189 m) Zovo-Chipolo Forest, S10°34.5' / E033°42.4' 28.–31.XII.2009 leg. L. Friedman [printed white label]; Holotypus *Colasposoma (Colasposoma) suturale* n. sp. S. Zoia det. 2018 [printed red label]. – Paratypes (5 $\delta\delta$): Malawi/Nyika N. P. (2189 m) Zovo-Chipolo Forest, S10°34.5' / E033°42.4' 28.–31.XII.2009 leg. L. Friedman (1 δ ZSM; 2 $\delta\delta$ MLcoll; 2 $\delta\delta$ SZcoll).

Diagnosis. A *Colasposoma* of small size characteristic in the oblong, nearly parallel sided yellow ochre elytra, each elytron with a brown stripe along the suture, a rounded spot in the sub-basal impression and a brown stripe with a metallic green hue along the lateral margin.

Description

Habitus as in Figures 5–6; body length of the δ holotype 3.7 mm, of the $\delta\delta$ paratypes 3.3–3.9 mm; female unknown.

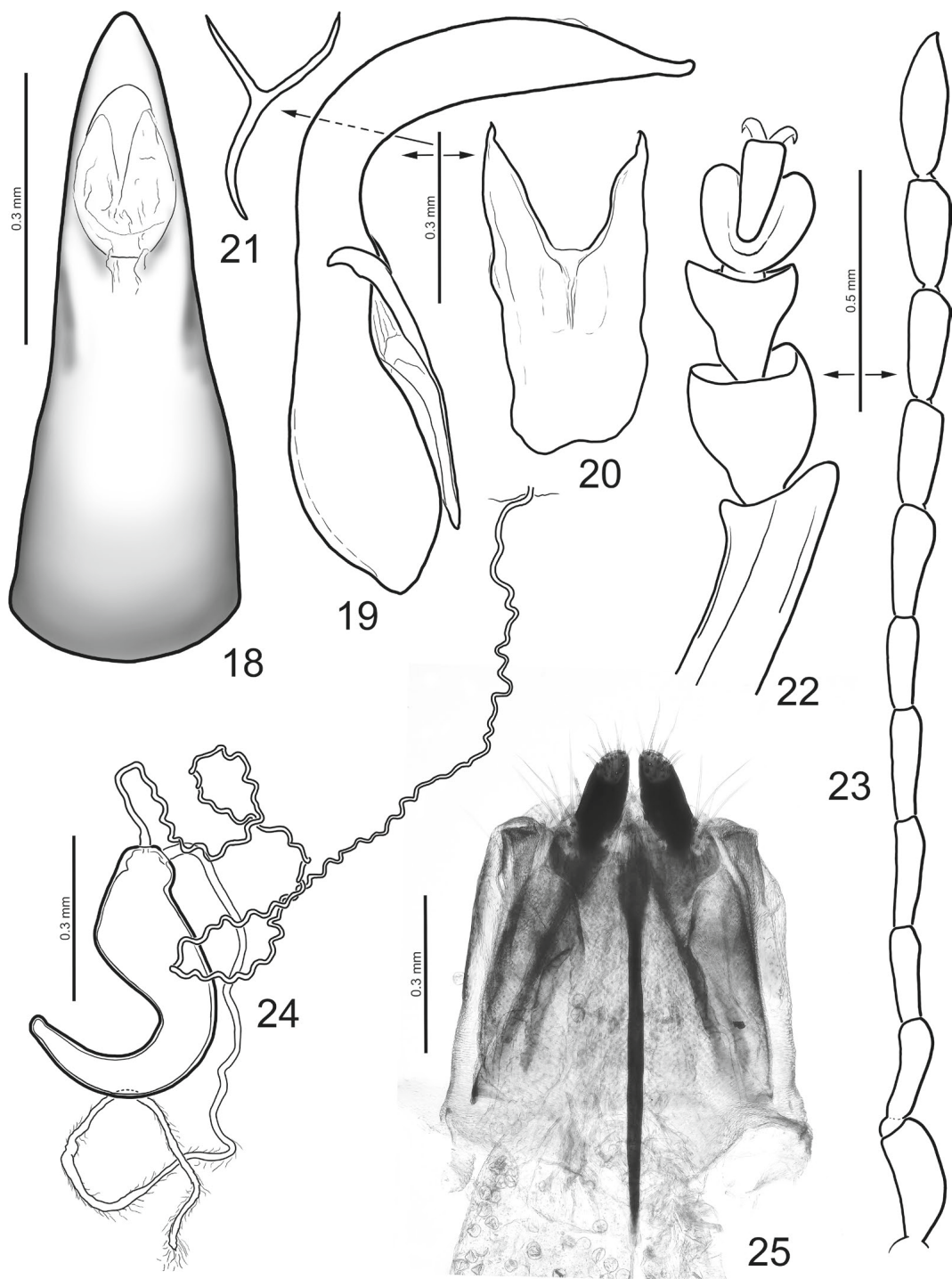
Body reddish brown along the ventral median line, mesosternum, metasternum and abdomen more or less widely metallic green at sides; hypomera reddish-brown; head and pronotum reddish-brown, the latter with metallic greenish or bluish hue at sides; elytra yellow ochre, each elytron with a dark brown stripe along the suture, a dot of the same colour in the elytral sub-basal impression, a dark brown stripe with evident metallic green reflections along the side which does not reach the elytral apex; labrum and palpi yellow ochre, mandibles brown; antennae yellow ochre, segments 7th–11th dark brown.

Frons (Fig. 7) large, slightly convex; surface with moderately strong punctation, the distance between two adjacent punctures narrower than the diameter of a puncture, at sides above the eyes the punctures are partially convergent and with a very short, hardly visible pubescence; eyes moderately large, strongly convex, the space between the inner border of the eyes in frontal view is nearly 3.7 times the width of an eye; ocular sulci absent, a seta is inserted near the proximal border of the eye; clypeus hardly distinct from the frons by an inverted V-shaped low sulcus; punctation of clypeus a little stronger than on frons, distal border concave. Penultimate article of maxillary palp nearly as long as wide, the ultimate conical, nearly 2 times longer than wide and 2 times longer than the penultimate. Antennae (Fig. 34) slender, exceeding the elytral mid-length. Antennomeres slender, 7th–11th slightly widened. Length of the antennomeres of the left antenna of the δ holotype (right antenna missing), in mm: 0.21–0.17–0.17–0.25–0.19–0.17–0.22–0.22–0.23–0.23–0.27; length/width ratio: 1.9–2.3–2.8–3.6–3.2–2.7–2.5–2.2–2.3–2.1–2.7.

Pronotum strongly convex, strongly impressed along the distal edge, nearly 1.6 times wider than long (0.95 × 1.55 mm in the holotype), the maximum width at the basal third; the base finely bordered throughout, nearly so wide as the distal edge; distal edge not bordered; sides of pronotum, as seen from above, slightly bent distally, more strongly bent proximally, border moderately wide; surface with moderately strong and irregularly arranged punctation, the distance between two adjacent punctures smaller than the diameter of a puncture; the surface between the punctures smooth; surface glabrous. Corners of pronotum with a small tooth bearing a seta.

Scutellum semi-oval, slightly wider than long, surface smooth with a very fine microreticulation.

Surface of hypomera smooth, slightly plicate,



Figs 18–25. 18. *Colasposoma (C.) langeri* sp. nov. 18–23. ♂ holotype; 18. aedeagus, dorsal view; 19. aedeagus, lateral view; 20. tegmen; 21. ventral sclerite of sternite IX; 22. left protarsus; 23. left antenna. 24–25. ♀ paratype; 24. spermatheca; 25. genital segment.

proximally with a few punctures, the distal margin slightly concave, not produced frontward, not separated from the edge of prosternum which is regularly concave. Prosternum nearly as long as wide between the procoxae, surface nearly flat in middle, finely rugose and with a long hyaline pubescence. Ventral side of body with sparse and thin setae present on the meso- and metasternum and on the abdominal sternites.

Mesoventrite nearly 1.7 times longer than wide between the mesocoxae, with irregular punctation and pubescent; mesocoxae $\frac{1}{3}$ closer to each other than the procoxae; mesoepimera smooth, with a very fine microreticulation. Metaventrite wide, its length in the middle nearly 1.6 times the distance between the metacoxae, smooth, impunctate; metacoxae nearly so spaced as mesocoxae; metathoracic episterna tapering to rear, nearly 3 times longer than wide, with a fine microreticulation and sparse not well defined punctation, glabrous.

Elytra moderately convex on the discus with a moderate impression in the middle of the basal third, nearly vertical at sides in their basal half below the humeri, 1.2 times longer than wide (in the holotype: elytral length in dorsal view 2.45 mm, distance from the base of scutellum to elytral apex 2.65 mm; width at humeri 1.82 mm, maximum width 1.95 mm); humeri prominent, rounded; elytral sides a little widening from the humeri to about two thirds of their length, then regularly bent till the apices; apices in a slightly obtuse angle. Elytral punctation somewhat larger and more spaced than on pronotum, it is partially arranged in irregular striae and impressed on the whole elytral surface. Elytral surface smooth, glabrous. Elytral lateral borders wide and visible in dorsal view at the same time up to the level of the 2nd sternite, gradually tapering to rear. Epipleura moderately wide at the base, gradually tapering to rear, glabrous, smooth, impunctate.

Metathoracic wings fully developed.

Legs relatively long; femora moderately swollen, more so the profemora, armed each with a small acute tooth; protibiae longer than meso- and metatibiae, pro- and mesotibiae slightly bent inwards, metatibiae straight, meso- and metatibiae not emarginate near the apex. Pro- and mesotarsi moderately widened (δ) (Fig. 35). Claws bifid, the inner tooth thin, short, starting from the basal third of the claw.

Aedeagus as in Figures 30–31; tegmen (Fig. 32) thin, moderately sclerotized, distally with lateral arms hardly embracing the sides of the median lobe; ventral sclerite of sternite IX as in Figure 33.

Derivatio nominis. The name *suturale* refers to the dark brown stripe along the elytral suture.

Comparative notes. *C. (C.) suturale* sp. nov. shows a peculiar combination of characters: small size, oblong elytra with sub-parallel sides up to nearly mid-length, elytral coloration. At first sight it somewhat recalls in its habitus *C. (C.) hajeki* Zoia, 2012 (Socotra Island; holotype in Natural History Museum, Praha), yet the latter is bigger in size, pronotum has no transversal impression next to the distal border, hypomera are punctured, scutellum is metallic green and elytra have poorly marked sub-basal impressions and no darker spots at all.

C. (C.) monticola Weise, 1910 (Kilimandjaro; syntype examined at the Museum für Naturkunde, Berlin) differs in the bigger size, narrower and less transverse pronotum, brown elytra without darker spots and with the punctures marked by a metallic greenish colour.

Colasposoma (Colasposoma) collar sp. nov.

Figs 8–10, 36–43

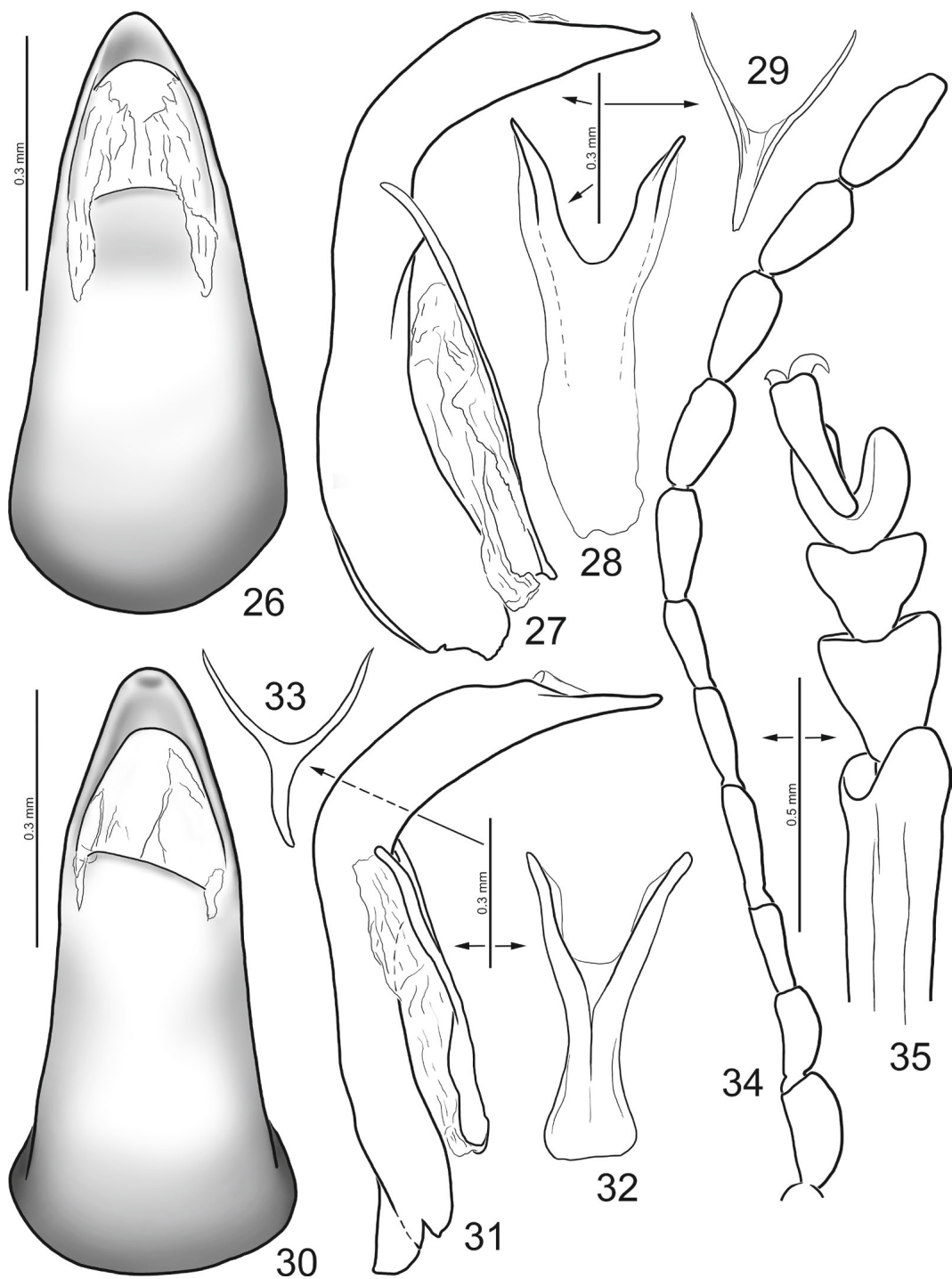
Type specimens. Holotype δ (ZSM): Malawi/Nyika N. P. (2189 m) Zovo-Chipolo Forest S10°34.5' / E033°42.4' 28.–31.XII.2009 leg. L. Friedman [printed white label]; Holotypus *Colasposoma (Colasposoma) collar* n. sp. S. Zoia det. 2018 [printed red label]. – Paratypes (1 δ , 1 φ): Malawi/Nyika N. P. (2189 m) Zovo-Chipolo Forest S10°34.5' / E033°42.4' 28.–31.XII.2009 leg. L. Friedman (1 δ MLcoll; 1 φ SZcoll).

Diagnosis. A *Colasposoma* of medium size characteristic in the elytra oblong, with sides nearly parallel in their basal half, yellow ocher with metallic green spots including on each elytron a narrow stripe along the suture, a spot in the sub-basal impression, a wide spot at the outer side of apical slope and on part of the lateral margin.

Description

Habitus as in Figures 8–9; body length of the δ holotype 4.6 mm, of the δ paratype 5.0 mm, of the φ paratype 4.6 mm.

Body ocher brown, in the two $\delta\delta$ the abdomen is widely dark brown at sides; hypomera in large part metallic green; head and pronotum metallic green, in the two paratypes with clypeus and discus of the prothorax ocher brown due to their being slightly immature; labrum and mandibles reddish-brown, palpi yellow ocher; antennae yellow ocher, segments 7th–11th partially dark brown; elytra ocher brown with some metallic hue, each elytron with the suture, a nearly semicircular spot in the sub-basal impression, an oblong wide spot at side of the apical slope and the lateral border in large part of its length metallic green (the last two spots joined in a single spot in the δ holotype).



Figs 26–29. *Colasposoma* (*C.*) *tinantae* Burgeon (Malawi, Viphya Mts.); 26. aedeagus, dorsal view; 27. aedeagus, lateral view; 28. tegmen; 29. ventral sclerite of sternite IX.

Figs 30–35. *Colasposoma* (*C.*) *suturale* sp. nov., ♂ holotype; 30. aedeagus, dorsal view; 31. aedeagus, lateral view; 32. tegmen; 33. ventral sclerite of sternite IX; 34. left antenna; 35. left protarsus.

Frons (Fig. 10) large, nearly flat in its middle, convex at sides, with a light longitudinal sulcus along the median line; surface with moderately fine punctation, the distance between two adjacent punctures in the middle of the frons is nearly 2 times the diameter of a puncture, at sides and above the eyes the punctures are oblong and transversally convergent, with a fine pubescence; eyes moderately large, strongly convex, protuberant, the space between the inner border of the eyes in frontal view is nearly 3.2 times the width of an eye; ocular sulci absent, a seta is inserted above the proximal border of the eye; clypeus distinct from the frons by a reverse V-shaped light impression; punctation of clypeus strong proximally, finer distally, distal border concave. Penultimate article of maxillary palp nearly as long as wide, the ultimate conical, nearly 2 times longer than wide and two times longer than the penultimate. Antennae (Fig. 41) slender, reaching nearly the elytral mid-length in ♂, the elytral basal third in ♀. Antennomeres slender, 7th–11th slightly widened. Length of the antennomeres of the left antenna of the ♂ holotype (right antenna partially missing), in mm: 0.29–0.20–0.26–0.32–0.31–0.24–0.31–0.28–0.28–0.28–0.34; length/width ratio: 2.1–2.3–3.3–4.6–3.9–3.0–2.8–2.5–2.7–2.4–2.9.

Pronotum convex, in ♂ with an evident transversal impression along the distal edge which is lighter in ♀, nearly 1.7 times wider than long (1.30 × 2.20 mm in the holotype), the maximum width at about mid length in ♂♂, at the basal third in ♀; the base finely bordered throughout, a little wider than the distal edge; distal edge not bordered; lateral edges, as seen from above, regularly bent, border moderately wide and regular; surface with impressed, irregularly arranged punctation, the distance between two adjacent punctures on average nearly so wide as the diameter of a puncture; the surface between the punctures smooth; surface glabrous, on the pronotal sides with a hardly visible short pubescence. Corners of base of pronotum protruded in a small tooth, the distal corners not protruded, each with a seta.

Scutellum semi-oval, nearly 1.2 times longer than wide, surface smooth with a few punctures.

Surface of hypomera smooth, impunctate, shiny, the distal margin slightly concave, not produced frontward, not separated from the edge of prosternum which is regularly concave. Prosternum in its mid-line 1.2 times longer than wide between the procoxae, surface feebly concave, finely rugose and with a long hyaline pubescence. Ventral side of body with sparse and thin setae present on the whole surface.

Mesoventrite nearly 1.7 times longer than wide between the mesocoxae, surface nearly flat in middle, finely rugose and with a long hyaline pubescence;

mesocoxae $\frac{1}{3}$ closer to each other than the procoxae; mesoepimera smooth, with a fine microreticulation. Metaventrite wide, in its middle nearly 1.6 times longer than the space between the metacoxae, smooth, not punctured; metacoxae nearly so spaced as mesocoxae; metathoracic episterna tapering to rear, nearly 3.5 times longer than wide, finely and sparsely punctate and rugose, glabrous.

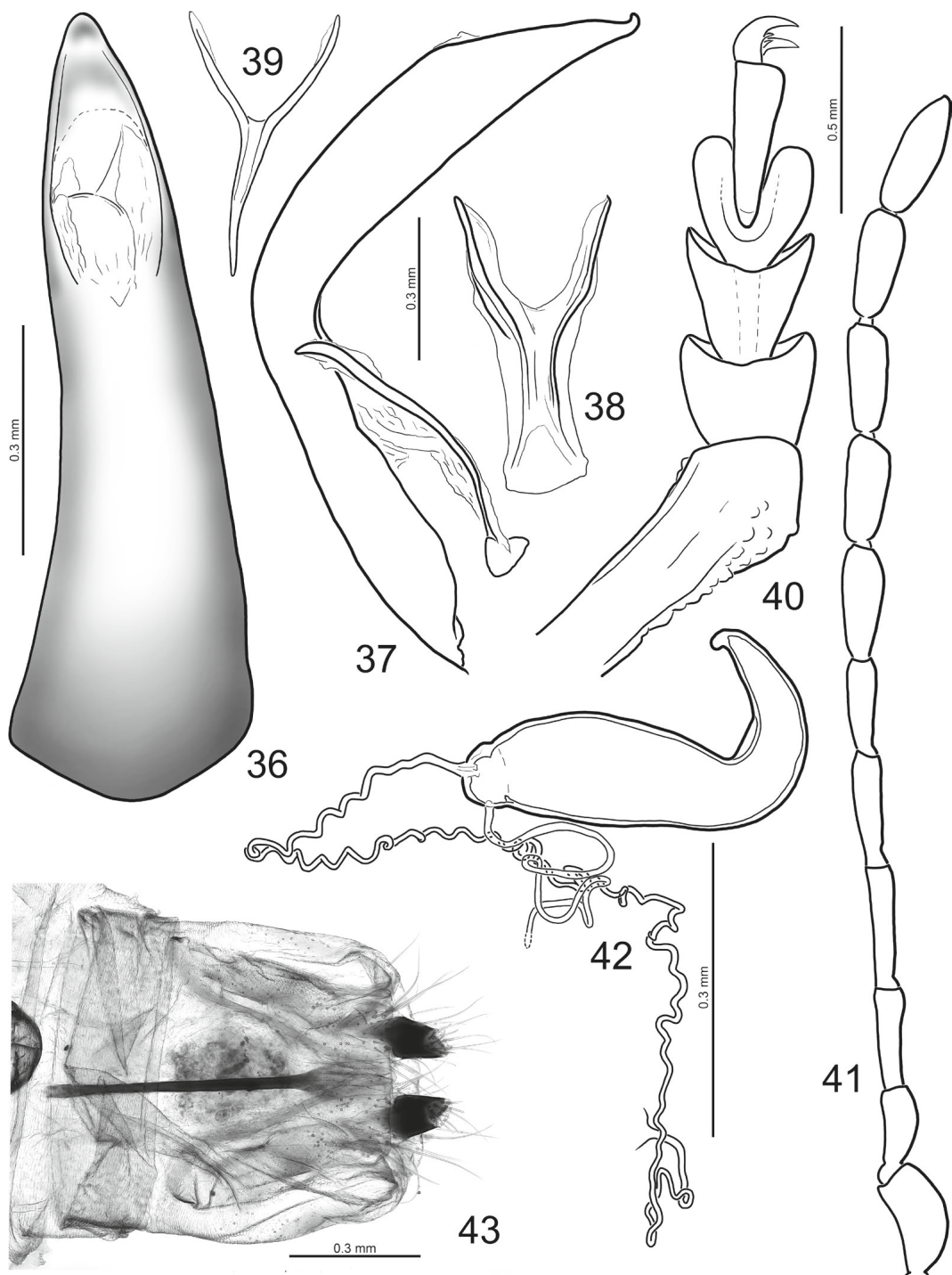
Elytra moderately convex on the discus with an evident sub-basal impression, nearly vertical at sides below the humeri, 1.3 times longer than wide (in the holotype: elytral length in dorsal view 3.16 mm, distance from the base of scutellum to elytral apex 3.56 mm; width at humeri 2.39 mm, maximum width 2.48 mm); humeri slightly prominent, rounded, smooth, covering the elytral border in dorsal view; elytral sides a little widening from the humeri to about half elytral length, then regularly bent till the apices; apices in a nearly right angle; in ♀ an acute longitudinal carina is present from the humerus to the basal third of elytral length, followed by a slightly lower carina, in a position slightly closer to the elytral side, which reaches the elytral apical slope. Elytral punctation somewhat larger than on pronotum, the distance between two adjacent punctures on average nearly as wide as the diameter of a puncture; punctation confusedly arranged on the base of the elytra and in their sub-basal impressions, arranged in nearly regular striae elsewhere. Elytral surface smooth, glabrous. Elytral borders relatively wide and visible in dorsal view at the same time from behind the humeri up to the level of the distal margin of the 2nd sternite, gradually tapering to rear. Epipleura moderately wide at base, gradually tapering to rear, glabrous, smooth, impunctate.

Metathoracic wings fully developed.

Legs relatively long; femora moderately swollen, more so the profemora in ♂♂, each femur with a small acute median tooth which is smaller on the metafemora; protibiae longer than meso- and metatibiae, longer and moderately bent inwards in ♂♂, nearly straight in ♀; mesotibiae slightly bent inwards, metatibiae straight, meso- and metatibiae not emarginate near the apex. Pro- and mesotarsi widened in ♂♂ (Fig. 40). Claws bifid, with the inner tooth short, hardly reaching half-length of the outer tooth, starting at the basal fourth of the claw.

Aedeagus as in Figures 36–37; tegmen (Fig. 38) thin, moderately sclerotized, distally with lateral arms hardly embracing the sides of the median lobe; ventral sclerite of sternite IX as in Figure 39.

Spermatheca as in Figure 42; vagina without evident sclerotizations; styli short, moderately thin, sclerotized, spiculum gastrale thin and moderately long (Fig. 43).



Figs 36–43. *Colasposoma (C.) collare* sp. nov. 36–41. ♂ holotype; 36. aedeagus, dorsal view; 37. aedeagus, lateral view; 38. tegmen; 39. ventral sclerite of sternite IX; 40. left protarsus; 41. left antenna. 42–43. ♀ paratype; 42. spermatheca; 43. genital segment.

Derivatio nominis. From the Latin “*collare*”, highlighting the different coloration of pronotum with respect to the elytra.

Comparative notes. *Colasposoma* (C.) *collare* sp. nov. shows a peculiar coloration of elytra, combined with the metallic green pronotum. C. (C.) *suturale* sp. nov. here described has a similar pattern of spots on elytra, nevertheless in this species the spots are of different colour, with less metallic characteristics, the spot along the suture is wider on elytral mid-length, the spots in the sub-basal impressions are rounded, the spots on the apical slope are missing; moreover it has a smaller body size, less wide and less convex pronotum, protibiae proportionally shorter and less bent inwards, different aedeagial characteristics.

In the shape of pronotum C. (C.) *collare* sp. nov. recalls C. (C.) *flavipes* Harold, 1877 (Natal; syntypes examined at the Museum für Naturkunde, Berlin) and C. (C.) *fulvipes* Lefèvre, 1877 (Cap de Bonne-Espérance and Natal; syntypes examined at the Musée National d'Histoire Naturelle, Paris) although these two taxa have the body and dorsum entirely metallic green and they are both bigger in size (6 mm).

***Pathius daccordii* sp. nov.**

Figs 11–13, 44–51

Type specimens. Holotype ♂ (ZSM): Malawi/Viphya Mts. (1512 m) 20 km S Mzimba S12°00.0' / E033°39.8' 25.XII.2009 leg. L. Friedman [printed white label]; Holotypus *Pathius daccordii* n. sp. S. Zoia det. 2018 [printed red label]. – Paratypes (4 ♂♂, 4 ♀♀): Malawi/Viphya Mts. (1512 m) 20 km S Mzimba S12°00.0' / E033°39.8' 25.XII.2009 leg. L. Friedman (1 ♂ ZSM; 1 ♀ MDcoll; 2 ♂♂, 1 ♀ MLcoll; 2 ♂♂, 1 ♀ SZcoll).

Diagnosis. A *Pathius* Aslam, 1968 with uniformly coloured dorsum, sub-cylindrical prothorax, punctation of elytra in large part confuse, elytra with moderately long, thin and raised pubescence.

Description

Habitus as in Figures 11–12; body length of the ♂ holotype 3.1 mm, of the ♂♂ paratypes 3.0–3.4 mm, of the ♀♀ paratypes 3.2–3.7 mm.

Body from ochre brown to almost black (in the holotype and other specimens); hypomera ochre brown; head and dorsum ochre brown; labrum and palpi yellow ochre, mandibles ochre brown with the apices dark brown; antennae yellow ochre at base, segments 6th–11th dark brown; legs entirely yellow ochre.

Frons (Fig. 13) large, slightly concave in its middle in ♂, nearly flat in ♀, convex at apex and sides, with a light longitudinal sulcus along the

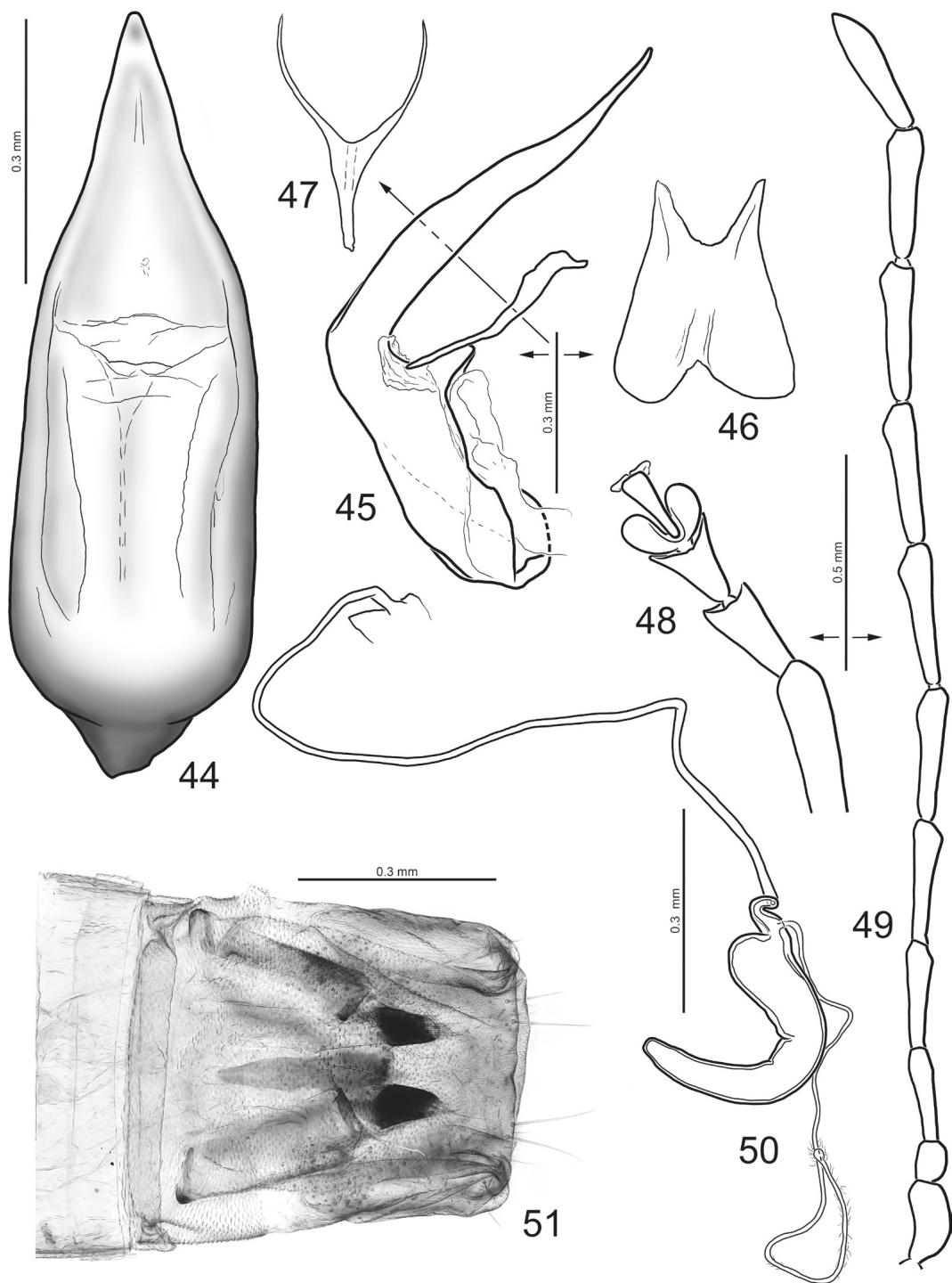
median line; surface with a fine sparse punctation, the distance between two adjacent punctures is nearly two/three times the diameter of a puncture, punctation is stronger near the distal border of the frons, glabrous, with a fine, but obvious microreticulation; eyes large, strongly convex, protuberant, the space between the inner border of the eyes in frontal view is nearly 2.5 times the width of an eye in ♂♂, 3.5 times in ♀♀; ocular sulci moderately impressed, thin, short (their length nearly equal to the length of the 1st antennomere), a seta is inserted above the proximal border of the eye; clypeus not distinct from the frons, with a moderately strong punctation, the punctures in large part confluent, slightly pubescent, distal border regularly concave. Inner border of the antennal toruli raised in an oblong rounded carina. Penultimate article of maxillary palp nearly 1.6 times longer than wide, the ultimate conical, nearly 2.2 times longer than wide and 1.6 times longer than the penultimate. Antennae (Fig. 49) slender, reaching the apical slope of the elytra in ♂, a little shorter in ♀. Antennomeres slender, 5th–11th moderately widened at the apex. Length of the antennomeres of the left antenna of the ♂ holotype (right antenna is missing antennomeres 9th–11th), in mm: 0.19–0.09–0.22–0.25–0.28–0.31–0.33–0.33–0.32–0.30–0.32; length/width ratio: 2.1–1.3–3.8–4.0–4.1–4.5–4.2–4.5–4.0–3.6–4.2.

Pronotum sub-cylindrical, nearly 1.2 times wider than long in ♂♂ (1.30 × 2.20 mm in the holotype), 1.3 times wider than long in ♀♀, the maximum width at about mid length; the base finely bordered throughout, a little wider than the distal edge; distal edge bordered only at sides; sides of pronotum with a narrow regular border, not visible from above in its distal third; surface of pronotum with impressed, irregularly arranged punctation, the distance between two adjacent punctures on the discus irregular, from 1 to 3 times the diameter of a puncture; the surface between the punctures with a fine evident microreticulation, glabrous. Corners of base of pronotum protruded in a small tooth, the distal corners slightly protruded, each with a seta.

Scutellum in a bell-shape, a little wider at base than long, surface with a fine microreticulation.

Surface of hypomera smooth, with a very fine microreticulation, the distal margin slightly concave, not separated from the edge of prosternum which is regularly concave. Prosternum narrow, in its midline 4.4 times longer than wide between the procoxae, surface longitudinally convex, lightly punctate and with a few long hyaline setae. Ventral side of body with scarce and thin setae present mostly on the abdominal sternites.

Mesoventrite nearly 3.8 times longer than wide between the mesocoxae, proximally in an anchor-shape, surface with a very light punctation and a



Figs 44–51. *Pathius daccordii* sp. nov. 44–49. ♂ holotype; 44. aedeagus, dorsal view; 45. aedeagus, lateral view; 46. tegmen; 47. ventral sclerite of sternite IX; 48. left protarsus; 49. left antenna. 50–51. ♀ paratype; 50. spermatheca; 51. genital segment.

hyaline pubescence; mesocoxae nearly so close to each other as the procoxae; mesoepimera smooth, with a fine microreticulation. Metaventre wide, in its middle nearly 2.8 times longer than the space between the metacoxae, smooth, not visibly punctured; metacoxae a little more spaced than mesocoxae; metathoracic episterna tapering to rear, nearly 3 times longer than wide, with a fine microreticulation, glabrous.

Elytra oblong, nearly vertical at sides, 1.5 times longer than wide (in the holotype: elytral length in dorsal view 2.15 mm, distance from the base of scutellum to elytral apex 2.25 mm; width at humeri 1.32 mm, maximum width 1.42 mm); humeri slightly prominent, rounded, smooth, covering the elytral border in dorsal view; elytral sides a little widening from the humeri to the apical slope, then regularly bent till the apices; apices in a nearly right angle. Elytral punctation denser than on pronotum, the distance between two adjacent punctures on average narrower than the diameter of a puncture; punctation confusedly arranged with traces of irregular striae. Elytral surface smooth, with a fine, moderately long and diffuse hyaline pubescence. Elytral borders narrow, except for a short space behind the humeri where they are wider and visible in dorsal view at the same time. Epipleura relatively wide from their base to nearly mid-length, gradually tapering to rear, nearly vertical in a large part of their length, glabrous, smooth, impunctate.

Metathoracic wings fully developed.

Legs long, slender; femora moderately swollen, each with a small acute median tooth; pro- and metatibiae straight, longer than the mesotibiae; mesotibiae slightly bent inwards; meso- and metatibiae not emarginate near the apex, the outer edge of mesotibiae slightly sinuate before the apex. Protarsi slightly widened in ♂♂ (Fig. 48). Claws appendiculate, with the wider basal part reaching nearly half-length of the claw.

Aedeagus as in Figures 44–45; tegmen (Fig. 46) very thin, poorly sclerotized, distally with very short lateral arms; ventral sclerite of sternite IX as in Figure 47.

Spermatheca as in Figure 50; vagina without evident sclerotizations; styli short, moderately thin, sclerotized, spiculum gastrale short, poorly sclerotized (Fig. 51).

Derivatio nominis. The species is named after my friend Mauro Daccordi, acknowledged as Chrysomelinae specialist, who, many years ago, initiated me to the study of the Chrysomelidae.

Comparative notes. *Pathius daccordii* sp. nov. closely resembles *P. pallidus* (Weise, 1912) (Kamerun: Musake; syntype examined at the Museum für Naturkunde, Berlin), and even more *P. tanganykanus* (Burgeon, 1941b) (Rep. Pop. Congo: Baudoinville, Moba and Kigoma; holotype examined at the Musée royal de l'Afrique centrale, Tervuren), which has the same slightly concave frons and oblong antennal joints. *P. pallidus* differs from *P. daccordii* sp. nov. in the convex frons, glabrous elytra with punctures nearly regularly arranged in longitudinal striae except behind the humeral calli, antennal joints stouter, the 3rd nearly 1.5 times longer than the 2nd, male pro- and mesotarsi wider. In *P. tanganykanus* the elytra are more convex dorsally, glabrous, with punctures more regularly arranged in longitudinal striae, the 7th interstria convex, slightly raised.

Lefevrea fabianae sp. nov.

Figures 14–17, 52–59

Type specimens. Holotype ♀ (ZSM): Malawi/Nyika N. P. (2222 m) Zambian Rest House S10°34.4' / E033°42.3' 30.XII.2009 leg. L. Friedman [printed white label]; Holotypus *Pathius daccordii* n. sp. S. Zoia det. 2018 [printed red label]. – Paratypes (1 ♂, 1 ♀): Malawi/Nyika N. P. (2222 m) Zambian Rest House S10°34.4' / E033°42.3' 30.XII.2009 leg. L. Friedman (1 ♀ MLcoll; 1 ♂ SZcoll).

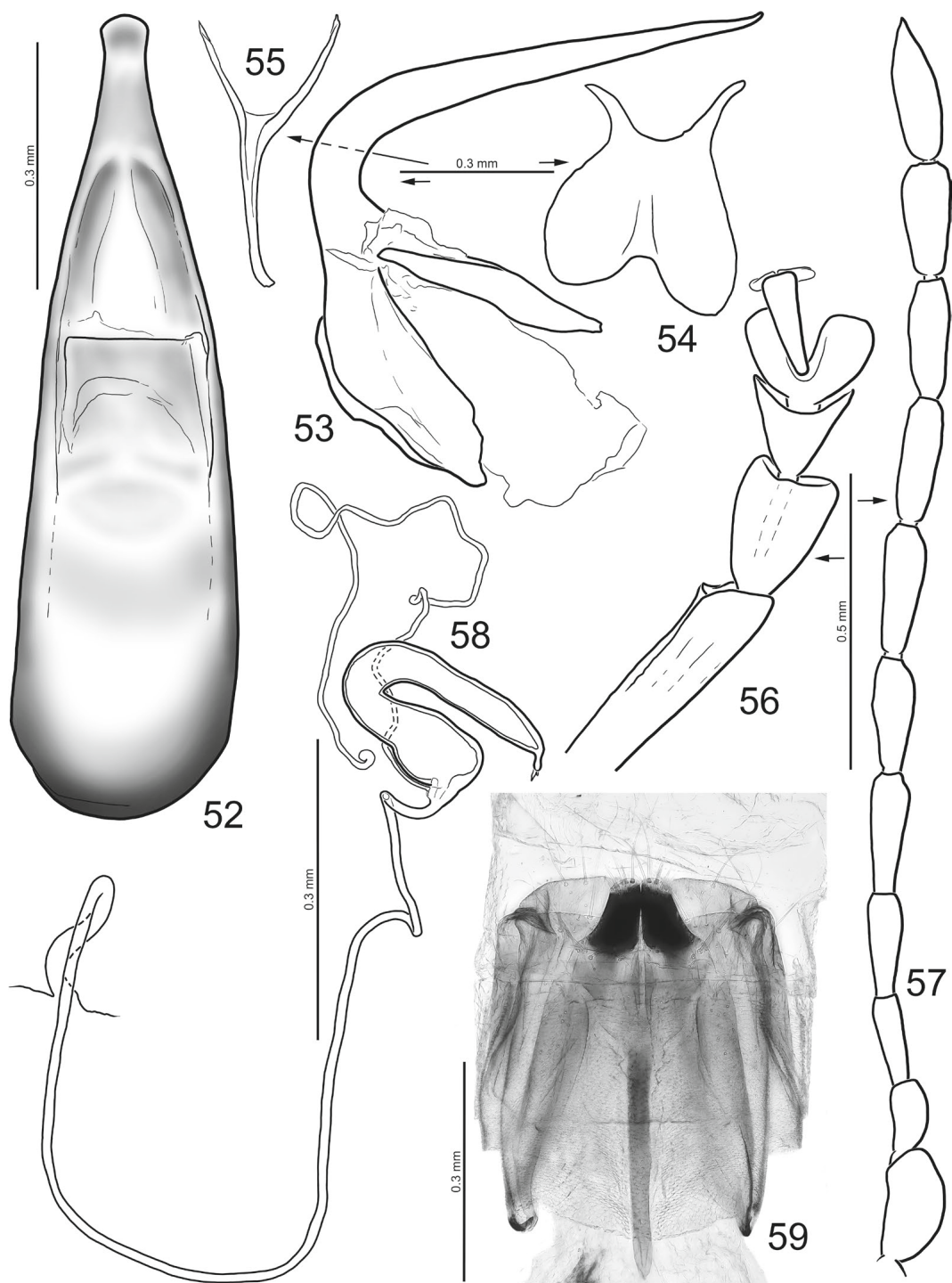
Diagnosis. A *Lefevrea* Jacoby, 1897, dark coloured, with only a few metallic hues on dorsum, and ochre brown legs, sides of pronotum strongly widened at about mid-length, punctation of pronotum ocellate, elytron with a longitudinal low carina from behind the humerus to the elytral slope.

Description

Habitus as in Figures 14–15; body length of the ♀ holotype 3.1 mm, of the ♂ paratype 2.8 mm, of the ♀ paratype 2.7 mm.

Body black, including hypomera; head black, the frons with a large reddish spot in its middle, clypeus black with distal part reddish; labrum and palpi yellow ochre, mandibles ochre brown with darker apices; antennae with segments 1st–5th or 1st–6th yellow ochre, from the 6th or 7th to 11th dark brown to black; pronotum black, elytra black with a light metallic hue, the ♀ holotype and ♂ paratype with a large reddish spot (with not well defined margins) on the sub-basal impression of the elytron, the ♀ paratype with entirely black elytra; legs entirely ochre brown.

Frons (Fig. 17) large, regularly convex, with a clean longitudinal sulcus along the median line; surface with a sparse punctation, punctures moder-



Figs 52–59. *Lefevrea fabianae* sp. nov. 52–57. ♂ paratype; 52. aedeagus, dorsal view; 53. aedeagus, lateral view; 54. tegmen; 55. ventral sclerite of sternite IX; 56. left protarsus; 57. left antenna. 58–59. ♀ holotype; 58. spermatheca; 59. genital segment.

ately deep, their bottom flat, nearly uniform on the whole surface, the distance between two adjacent punctures nearly as large as the diameter of a puncture, glabrous, with a fine obvious microreticulation; eyes large, strongly convex, protuberant, the space between the inner border of the eyes in frontal view is nearly 2.5 times the width of an eye in ♂, 2.7 times in ♀; ocular sulci deep, slightly wider above the proximal border of the eye where they bear a seta, closely following the proximal borders of the eyes and the inner limits of the antennal toruli, up to the clypeus; clypeus barely distinct from the frons by the presence of a denser punctation of the exoskeleton, distally with a finer punctation and a few setae, distal border regularly concave. Penultimate article of maxillary palp nearly as long as wide, the ultimate conical, nearly 2 times longer than wide and 2 times longer than the penultimate. Antennae (Fig. 57) moderately slender, reaching the basal third of the elytra. Antennomeres oblong, 7th–11th a little wider. Length of the antennomeres of the left antenna of the ♀ holotype, in mm: 0.19–0.12–0.15–0.18–0.21–0.20–0.22–0.21–0.20–0.19–0.24; length/width ratio: 1.9–2.0–3.1–3.3–3.3–2.9–3.1–3.2–2.9–2.3–3.3.

Pronotum (Fig. 16) transverse, nearly 1.6 times wider than long (0.85 × 1.32 mm in the holotype), the maximum width slightly before mid-length; the base finely bordered throughout, a little wider than the distal edge; distal edge shortly bordered only at sides; sides of pronotum strongly widened in the middle, describing a large rounded angle, with a narrow regular border, partly visible from above; surface of pronotum with moderately impressed, irregularly arranged punctation, the punctures flat at their bottom, ocellate, closer to each other and a little wider than on head, the distance between two adjacent punctures shorter than the diameter of a puncture; the surface between the punctures with a fine evident microreticulation, glabrous. Corners of pronotum protruded in a small tooth, each with a seta.

Scutellum in a bell-shape, 1.4 times wider at base than long, surface with a fine microreticulation and very light punctation.

Surface of hypomera with a fine microreticulation, sub-rugose, the distal margin concave, not separated from the edge of prosternum which is a little bent downwards. Prosternum narrow, in its mid-line 2.1 times longer than wide between the procoxae, surface nearly flat, punctate-rugose and with sparse moderately long hyaline setae. Ventral side of body with sparse and thin setae present on the whole surface.

Mesoventrite nearly as long as wide between the mesocoxae, surface lightly punctate-rugose and with a hyaline pubescence; mesocoxae a little more spaced to each other than the procoxae; mesoepimera smooth, with a fine microreticulation. Metaventricle wide, in its middle nearly as long as the space between the metacoxae, smooth, with a light punctation; metacoxae a little more spaced than mesocoxae; metathoracic episterna tapering to rear, nearly 3.3 times longer than wide, with a fine evident microreticulation, glabrous.

Elytra oblong, nearly vertical at sides, 1.2 times longer than wide (in the holotype: elytral length in dorsal view 2.17 mm, distance from the base of scutellum to elytral apex 2.50 mm; width at humeri 1.62 mm, maximum width 1.80 mm), glabrous; humeri moderately prominent, rounded, smooth, covering the elytral border in dorsal view; elytral sides a little widening from the humeri to the apical slope, then regularly bent till the apices; apices in a nearly right angle. Elytral punctation moderately impressed on the whole surface, arranged in 14 nearly regular striae (the 11th partly doubled) of punctures very close to each other; elytral interstriae nearly flat on the discus and on the median part of the apical slope, more or less convex elsewhere, the 10th interstria elevated in a carina going from the humerus to almost the elytral apex, this carina is more elevated in ♀; interstriae 11th–13th convex in ♂, more so in ♀, particularly the 11th; interstriae smooth, with a fine microreticulation. Elytral borders moderately wide behind the humeri and visible in dorsal view at the same time up to nearly elytral mid-length. Epipleura relatively narrow at base, gradually tapering to rear, glabrous, impunctate.

Metathoracic wings fully developed.

Legs moderately long; femora slightly swollen, unarmed; pro- and metatibiae straight, longer than the mesotibiae; mesotibiae slightly bent inwards (♀) or nearly straight (♂); meso- and metatibiae not emarginate apically, the outer edge of mesotibiae slightly sinuate before the apex. Pro- and mesotarsi with the 1st article widened in ♂ (Fig. 56). Claws appendiculate, wide open, the wider basal part reaching nearly half-length of the claw.

Aedeagus as in Figures 52–53; tegmen (Fig. 54) very thin, poorly sclerotized, distally with short lateral arms; ventral sclerite of sternite IX as in Figure 55.

Spermatheca as in Figure 58; vagina without evident sclerotizations; styli short, sclerotized, spiculum gastrale relatively long, poorly sclerotized (Fig. 59).

Derivatio nominis. I dedicate the new taxon to my wife Fabiana, who always encourages my entomological studies and always takes part with interest in field researches.

Comparative notes. *Lefevrea* is a large genus never examined as a whole, at present ranging 70 described taxa, being most of them poorly known. In comparison with the other known species of the genus, *L. fabianae* sp. nov. is well characterized by the shape of pronotum, with a dense ocellate punctation, and the presence on elytra of a longitudinal carina from behind the humeri to the apical slope. A similar shape of pronotum is present in *L. carpenteri* Bryant, 1932 (Uganda: Gulu; type examined at the Natural History Museum, London) which differs in the reddish-ocher coloration, with darker elytral suture and sides, punctation of pronotum non ocellate, absence of raised interstriae on the elytra. In *L. unifasciata* Pic, 1939 (Angola: Elende; holotype examined at the Musée National d'Histoire Naturelle, Paris) pronotum is even more widened in middle, with more regularly bent sides, except at base where they are more strongly restricted, punctation of pronotum fine, elytra reddish-brown with base and a transversal wide stripe behind mid-length dark brown. A more similar punctation of pronotum is in *L. rotundata* Burgeon, 1940 (Haut-Uele: Aru; holotype and paratypes examined at the Musée royal de l'Afrique centrale, Tervuren), however the punctures are more superficial and less dense; under other aspects *L. rotundata* strongly differs in the bigger size, different shape of body with more convex and bent sided elytra, uniformly dark metallic coloration, flat elytral interstriae. *L. costulata* Weise, 1910 (Kilimandjaro), with elytral interstriae 9th and 11th forming two carinae, is unknown to me in nature; yet, based on the original description, this species greatly differs from *L. fabianae* sp. nov. in coloration, glossy dorsum, finer punctation of pronotum that vanishes towards the lateral edges, elytra with 12 striae of punctures.

Acknowledgements

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