

Two new Tanzanian species of the tribe Scaritini (Coleoptera: Carabidae: Scaritinae)

Petr BULIRSCH

Milánská 461, CZ-109 00 Praha 111, Czech Republic
e-mail: p.bulirsch@seznam.cz

Taxonomy, new species, Coleoptera, Carabidae, Scaritini, *Typhloscaris*, *Mamboicus*, Africa, Tanzania

Abstract. *Mamboicus nguruensis* sp. nov. and *Typhloscaris grebennikovi* sp. nov. both from Tanzania are described as new. The new taxa are illustrated, including their aedeagi, and compared with the related taxa.

INTRODUCTION

To date the species and the genera of the tribe Scaritini Bonelli, 1810, including those from the Afrotropical region, are poorly studied. Last revisions were done by Bänninger (1937, 1938, 1939). Later some authors as Basilewsky (1954, 1960, 1973a,b, 1976) and van Etten (1984) described few new species and/or moved the status of some genera or subgenera. This can be applied to the genera *Mamboicus* Bates, 1886, *Typhloscaris* Kuntzen, 1914 and *Oroscares* Bänninger, 1937. Whereas the genus *Mamboicus* is mostly considered as a separate genus and less frequently as a subgenus of the genus *Scarites* Fabricius, 1775, the genus *Oroscares* was subrecently and questionably synonymized with the genus *Typhloscaris* by Basilewsky (1973a,b).

It is highly desirable to use diverse, modern methods to solve all these generic or subgeneric taxonomic issues but this is not the target of the present article. On the other hand I consider the descriptions of the following two new species as helpful and needful for next studies of the tribe.

MATERIAL AND METHODS

The study of dry-mounted specimens, including measurements and examination of their microsculpture, was done at a magnification up to 56 \times . All the specimens were measured. The body length (including closed mandibles) is given with accuracy 0.1 mm, other measurements, ratios and means are rounded down to two decimal places. Label data of all specimens are quoted verbatim. Aedeagi were fixed with water soluble glue on a label and placed on the same pin below the beetle.

For comparison, all to date known taxa from both genera were studied: several diverse specimens from the Bänningers collection (now in ETHZ) including samples of the type material as well as some type specimens from BMNH, London, extensive material from the author's collection, and finally, diverse material from several other collections.

The following abbreviations are used to indicate the depository of specimens:

BMNH Natural History Museum, London, United Kingdom;

ETHZ Eidgenössische Technische Hochschule, Zürich, Switzerland;

PBPC collection of Petr Bulirsch, Praha, Czech Republic.

Other abbreviations:

HT: holotype, PT: Paratype, DSP: dorsal setiferous punctures, SP: setiferous punctures.

RESULTS

Genus *Mamboicus* Bates, 1886

It consists of 12 to date known taxa (10 species and 2 subspecies) strictly occurring in the Afrotropical region. All of them were revised and keyed by Bänninger (1939).

Mamboicus nguruensis sp. nov.

(Figs 1-2)

Type material. Holotype (♂): Tanzania; 1759 m / Maskati, Nguru Mountains / S 6°03'29.3''; E 37°29'08.4'' / i-iii.2011; General collection / leg. Smith, R. & Takano, H. // BMNH{E} / 2011-8, (BMNH).

Description. Habitus as in Fig. 1. Upper surface entirely black. Total length 26.5 mm; width 7.0 mm, width of head 6.4 mm; pronotum 1.77 times as broad as long, elytra 1.95 times as long as broad.

Head. Mandibles rather long, moderately broad; outline in middle moderately concave, inner keel distinct, moderately elevated basally, rather sharp almost to apex; surface between outline and keel gently bisinuate, rather slightly concave, shiny, without wrinkles, in posterior fourth slightly convergent basally; inner margin of inner tooth of left mandible prolonged apically, with two small, narrowly rounded teeth and fine, long excision between them and with another blunt tooth just before apex, divided by narrow, much deeper excision; right mandible with complementary structure of inner margin, both mandibles with rather indistinct, obtuse wrinkles. Eyes rather small, strongly vaulted; genae regularly rounded basally, as long as eyes, from dorsal view indistinctly broader than eyes, overlapped its posterior part, divided from vertex by deep and sharp facial furrow. Frontal furrows rather fine and narrow, rather irregularly convergent posteriorly, irregularly doubled, diminishing at about level of posterior margin of eyes, anteriorly connected by fine transverse furrow, not deeper anterolaterally, running to anterior part of supraantennal plates. Latter strongly, regularly broadened in posterior half, in middle broadly rounded, then gently convexly narrowed to anterior clypeal margin with distinct, narrowly rounded sublateral tooth on each side of moderately concave, very slightly bisinuate anterior clypeal margin. Surface rather dull, with distinct reticulation, with dense, fine, irregular wrinkles between facial and frontal furrows, gently deeper anterolaterally; neck with very broad, laterally moderately deep, medially superficial transverse channel and with fine punctures, especially along eyes margin and on neck. Antennae very long, antennomeres 5-7 almost twice, 8-10 about 1.5-1.7

times as long as broad, antennomere 2 gently shorter than 3, both about twice longer than broad. One pair of clypeal and one of facial SP.

Pronotum. Distinctly flattened in lateral view, outline moderately broadened below anterior angles, then rather slightly, regularly convex, moderately narrowed posteriorly; anterior angles rounded very slightly prolonged anteriorly, posterior angles with distinct, rather sharp tooth; lateral parts of base directly narrowed and connected with moderately protruding median part in rounded, moderately obtuse angle. Anterior transverse furrow very broad and superficial, almost diminishing, median line; moderately impressed. One anterior and one posterior lateral setae in rather broad lateral channel, slightly broadened and deepened in basal parts and indistinctly anteriorly. Surface dull, with distinct reticulation and dense longitudinal wrinkles below median part of anterior margin. Basal foveae almost indistinct, without different structure of surface.

Elytra. Whole surface distinctly flattened in lateral view, regularly dull, with regular and distinct reticulation, with very fine and sparse wrinkles and micropunctures. Disk slightly and broadly concave in anterior fourth in lateral view; outline long ovate, slightly broadening to midlength, narrowly rounded in apical half; base rather slightly concave medially, then with



1



2

Fig. 1. *Mamboicus nguruensis* sp. nov. Habitus (HT). Actual length 26.5 mm.

Fig. 2: *Mamboicus nguruensis* sp. nov. Aedeagus (HT) in left lateral view. Actual length 4.1 mm.

long, moderately convex humeral ridge with large, rather sharp humeral tooth; maximum width distinctly before midlength. Striae impunctate, striae 1-4 very fine and narrow, 5 very slightly deeper basally, 6 broader and slightly deeper basally, 7 visible laterally, broad, very superficial; intervals 1-5 flat, interval 6 very slightly vaulted basally, 5-6 slightly vaulted apically, interval 7 strongly, narrowly elevated, basally curved inwards below humeral tooth; semicarinate along stria 6 in anterior two thirds, then gradually finer posteriorly, flattened on apex, forming outline in very short interval below humeri; interval 8 almost flat, moderately broad, with distinct and rather sparse tubercles almost on whole surface; lateral channel very narrow below humeri, gradually broadening and deepening apically. Base and humeral area with rather broad row of small and few larger tubercles on irregular, moderately distinct elevation; stria 8 indistinct. Third interval with two DSP in apical fourth.

Lower surface. Mentum laterally broadly vaulted, slightly, rather narrowly beaded, laterally without distinct wrinkles, medially surface with rests of sublongitudinal wrinkles and tubercles, with moderately distinct reticulation; anterolateral angles gently sharp, very narrowly rounded; median part rather slightly deepened, with broad, rather blunt median ridge; its anterior margin rather slightly elevated, directly narrowed to slightly bent down anterior tooth; broad paragenes moderately excised in inner anterior third, inner tooth small and rather sharp; inner posterior margin shortly, indistinctly prolonged posterolaterally by elevation; surface of paragenes shiny, with fine micropunctures and fine reticulation and with very distinct and long keel, running subparallel with lateral margin from inner tooth posteriorly below posterior margin of paragenes, more elevated posteriorly. Prosternal process without laterobasal setae; metasterna without setae, almost twice shorter than hind coxae; metepisterna short and broad, its anterior margin almost twice narrower than episterna. Sternite 2 medially with strongly reduced group of fine punctures, without visible setae (abraded?), all sterna, especially basal ones, with fine and dense punctures mixed with wrinkles and with indistinct reticulation; sterna basally without transverse furrows. Proepisterna smooth, rather shiny, with moderately fine reticulation; epipleura moderately shiny, with very few indistinct, transverse ridges, very broad to anterior margin of sternite 1, posteriorly rather slightly narrowed, with irregular, very fine reticulation and without transverse ridges. Hind trochanters with one seta.

Legs. Anterior tibiae with 3-4 gradually decreasing lateral teeth below terminal tooth, first one very long and narrow. Connection between terminal tooth and anterior margin of first lateral tooth very distinctly above lower margin of protibiae. In HT both hind legs missing.

Aedeagus. Shape of median lobe laterally and parameres as in Fig. 2. In lateral view rather short and broad, with strongly narrowed, sinuate apex; apical part in dorsal (or ventral) view moderately long and slightly convexly narrowed before short, moderately broadly rounded apex. Length of median lobe 4.1 mm.

Differential diagnosis. *M. nguruensis* sp. nov. very strongly differs from all to date known species of the genus by the combination of the following characters: the body being laterally very flat, having regular, very rough reticulation; the head having very long antennae (especially the antennomeres 5-10 being about 1.5-2.0 times as long as broad, whereas in the remaining species the antennomeres are at most very slightly longer than broad); the

pronotum having sharp posterior lateral angles and the elytra having unusual surface as described above.

According to the key in Bänninger (1939) and study of all known taxa, only *M. semigranulatus* Bänninger, 1929 and his subspecies *M. s. singularis* Bänninger, 1929, have the interval 7 forming the outline of the elytra below the humeri and concurrently sharp pronotal posterior lateral angles as well as distinct stria 7 on the elytra. The new species can be easily distinguished from both latter taxa especially by the antennae being much longer, the body being laterally strongly flattened and the elytra having fine striae and flat intervals 1-5.

Name derivation. In accordance with the origin of the type specimen.

Genus *Typhloscaris* Kuntzen, 1914

It consists of 24 to date known taxa (21 species and 3 subspecies): 21 of them are known from the continental Africa and remaining three from Madagascar. From the 21 continental taxa 17 were keyed in Bänninger (1939): three of them in the genus *Typhloscaris* and remaining 14 in *Oroscares* Bänninger, 1937. Later were described another four taxa by Basilewsky (1954, 1960, 1976) and van Etten (1984). Basilewsky (1973a,b) considered the latter genus to be a junior synonym of the genus *Typhloscaris*.

***Typhloscaris grebennikovi* sp. nov.** (Figs 3-4)

Type material. Holotype (♀): Tanzania, 2039 m / Igoma, Chome NR / South Pare Mountains / S 4°17'42'' E 37°56'17'' / 5-7.xii.2011, Dung Pitfall / leg. Smith R. & Takano H. // BMNH{E} / 2011-88 // BMNH{E} / 1192686, (BMNH). Paratype: (1 ♂): Tanzania, South Pare / Mts., Chome For. / S 4.27145° E 37.92347° / 2072 m, 4.i.2013, sifting 40 / V. Grebennikov leg., (PBPC).

Description. Habitus as in Fig. 3. Upper surface entirely black, tarsi, outer antennomeres and partially mouthparts fuliginous. Total length 20.3 mm in HT, 21.1 mm in PT; width 6.0 mm in HT, 6.3 mm in PT; width of head 5.2 mm in HT, 5.6 mm in PT. Pronotum in HT 1.56, in PT 1.62 times as broad as long, elytra in HT 1.63, in PT 1.65 times as long as broad.

Head. Mandibles short, outline indistinctly concave in midlength, inner keel in male blunt, in female rather sharp, slightly weakened anteriorly, surface between outline and inner keel in male slightly, in female very slightly broadened in third quarter, then slightly to very slightly narrowing basally, surface between them in male almost smooth, not concave, without distinct wrinkles, in female slightly concave, with indistinct, very fine wrinkles; inner margin of inner tooth of left mandible prolonged apically, with two very small and very blunt lateral teeth with indistinct excision between them; inner structure of right mandible complementary; surface of both mandibles with rather rough, oblique wrinkles. Eyes moderately small and rather strongly vaulted; genae slightly shorter than eyes, regularly and narrowly rounded apically, very slightly broader than eyes, not prolonged anteriorly below eyes, divided from vertex by rather deep and moderately broad facial furrows. Frontal

furrows rather irregularly multiplied, broadly and rather deeply impressed, diminishing slightly below level of posterior margin of eyes; anteriorly connected with in middle in male medially fine, in female very fine, in both specimens laterally slightly deeper furrow, irregularly running to anterior part of supraantennal plates. Latter regularly, rather strongly rounded; anterior clypeal margin with rather distinct, narrowly rounded sublateral tooth on each side of moderately concave anterior clypeal margin. Surface shiny, without reticulation, with few irregular wrinkles below sublateral clypeal teeth and along facial furrows, and with fine, irregular wrinkles and few fine micropunctures along posterior margin of eyes. Antennae relatively short, antennomeres 5-10 in male very slightly longer than broad, in female very slightly transverse, antennomeres 2 just longer than 3. One pair of clypeal and one pair of fine facial SP.

Pronotum. Rather slightly vaulted in lateral view, outline moderately broadened below anterior angles, then rather slightly, regularly convex, rather slightly narrowed posteriorly; anterior angles rounded, very gently prolonged anteriorly, divided medially from anterior margin by fine, rounded excision, posterior angles with small, moderately sharp tooth; lateral parts of base slightly sinuate, narrowed and connected with slightly protruded median part in rounded, moderately obtuse angle. Lateral margin in lateral view with 5-6 small, irregularly dotted notches. Anterior transverse furrow rather broad and moderately deep laterally, very superficial medially, median line moderately impressed. One anterior and one posterior lateral setae in rather broad lateral channel, distinctly broadened and deepened in basal parts and below anterior angles. Surface moderately shiny, with irregular, fine reticulation and with dense longitudinal wrinkles below median part of anterior margin and few another, irregular ones on disk. Basal foveae rather superficial, with dense microtubercles and more distinct reticulation.

Elytra. Whole surface moderately flattened, moderately shiny, with rather distinct reticulation, with fine and dense wrinkles and micropunctures, apex rather dull, with rather dense, fine tubercles. Disk not concave in anterior fourth from lateral view; outline long ovate, slightly broadening to midlength, narrowly rounded in apical half; base rather slightly concave medially, then with long moderately convex humeral ridge with large, rather blunt humeral tooth; maximum width at about midlength. Striae impunctate, striae 1-5 moderately impressed, indistinctly finer apically, 6 distinctly deeper and broader basally, 7 visible laterally, irregular and very superficial; intervals 1-6 slightly vaulted, interval 7 strongly elevated along stria 6, basally indistinctly curved inwards below humeral tooth; semicarinate in anterior half, gradually finer posteriorly, flattened on apex, not forming outline; interval 8 almost flat, moderately broad with distinct and rather sparse tubercles almost in whole surface; lateral channel rather narrow below humeri, gradually broadening and deepening apically. Base and humeral area with rather broad row of small and few larger tubercles on irregular, moderately distinct elevation; stria 8 indistinct. Third interval with three DSP in apical third.

Lower surface. Mentum laterally moderately vaulted, basally rather slightly beaded, laterally with indistinct wrinkles; surface with fine reticulation and sparse, fine tubercles; anterior angles rectangular, narrowly rounded; median part rather slightly deepened, with basally rather slightly elevated, anteriorly flattened median keel; its anterior margin rather



Fig. 3. *Typhloscaris grebennikovi* sp. nov. Habitus of male (PT). Actual length 21.1 mm.

Fig. 4: *Typhloscaris grebennikovi* sp. nov. Aedeagus (PT) in left lateral view. Actual length 3.7 mm.



slightly elevated, anterior tooth narrow, moderately bent down; surface with very unusual, very sharp and large submedian tubercle on each side of median ridge just below base of labial palpi; paragenes deeply excised in anterior third, inner tooth large and rather sharp; posterior margin indistinctly prolonged posterolaterally by very blunt ridge; surface of paragenes shiny, with very fine reticulation, not concave along lateral margin, slightly elevated posteromedially. Prosternal process without setae; metasterna almost twice shorter than hind coxae, with pair of median setae; metepisterna short rhomboid-shape, its anterior margin distinctly narrower than very broad episterna. Sternite 2 medially without group of setae, sternite with dense and rather deep irregular wrinkles mixed with micropunctures, with indistinct reticulation; episterna moderately shiny, with moderately distinct reticulation and indistinct, irregular wrinkles; epipleura very broad to anterior margin of sternite 1, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae without setae.

Legs. Anterior tibiae with (3)-4 gradually decreasing lateral teeth below terminal tooth, first one very long and rather broad. Connection between terminal tooth and anterior margin of first lateral tooth slightly above lower margin of protibiae.

Aedeagus. Shape of median lobe laterally and parameres as in Fig. 4. In lateral view moderately long and broad, lower outline slightly curved, apex regularly narrowed; apical part in dorsal view moderately long and regularly narrowed to narrowly rounded apex with rough, sublongitudinal rugae. Length of median lobe 3.7 mm.

Differential diagnosis. *T. grebennikovi* sp. nov. belongs to the lineage having normally developed eyes (previously classified in the genus *Oroscaaris*). It can be considered as a member of a small group with the following combination of the characters: the pronotum having rather fine, medially almost diminishing anterior impression and sharp posterior lateral angles, and concurrently the prosternal process being without setae. This combination of the characters have only the following species: *T. montana* (Bänninger, 1932), *T. meruensis* (Etten, 1984), *T. leleupi* (Basilewsky, 1960) and *T. elgonensis* (Bänninger, 1935).

It can be distinguished from all species of this group by the elytra having the interval 7 formed by a narrow and very distinct keel along the stria 6 in anterior two thirds (in all remaining species is the interval 7 at most moderately vaulted just below humeri), and by the mentum having a very unusual, very sharp and strongly elevated submedian tubercle on each side of its median ridge (in the remaining species, there are no similar tubercles). It moreover differs from the most similar *T. meruensis* by the elytra having less distinctly separated basal row of tubercles (in *T. meruensis* the row is separated by a transverse prolongation of the stria 1) and three DSP (only two in *T. meruensis*), and by the head having less developed genae especially in males. Moreover *T. meruensis* has within the genus unique, strongly elevated posteromedial margin of the paragenes. What moreover separates the new species from *T. montana* are the narrower elytra having less rounded outline, three DSP (two in *T. montana*) and less vaulted inner intervals (rather strongly vaulted in *T. montana*), and the pronotum having the anterior angles divided medially from the anterior margin by a fine, rounded excision (in *T. montana* the anterior margin is not excised). It clearly differs from *T. e. elgonensis* also by the elytra having less rounded humeri, the striae moderately deep and the intervals vaulted (*T. e. elgonensis* has the humeri strongly rounded, the elytral striae very superficial to almost diminishing, and the intervals flat). Finally, it can be distinguished from *T. leleupi* by having upper surface of the pronotum and the elytra moderately shiny, with rather fine reticulation (in *T. leleupi* is surface rather dull, with rather rough reticulation); by the elytra having three DSP (four in *T. leleupi*), and by the pronotum having the anterior angles divided medially from anterior margin by a fine, rounded excision (in *T. leleupi* the anterior margin is not excised).

Name derivation. Named in honour of my friend Vasily Grebennikov, collector of a single male type specimen.

ACKNOWLEDGEMENTS. The collecting and study of the material from Tanzania was made possible thanks to the support of the African Natural History Research Trust (Hereford, UK) and Richard Smith. My hearty thanks are to Hitoshi Takano and John Smith, collectors of material; Beulah Garner, Max Barclay (BMNH, London, UK), Rod Eastwood (ETHZ, Zürich, Switzerland) and Vasily Grebennikov (Ottawa, Canada) for loan of type material for the comparison and/or for loan or donating of unidentified material used for the descriptions, and, finally to Martin Fikáček (NMPC, Praha) for the assistance in making the pictures.

REFERENCES

- BÄNNINGER M. 1937: Monographie der Subtribus Scaritina (Col. Carab.) I. *Deutsche Entomologische Zeitschrift* 1937(3-4): 81-160.
- BÄNNINGER M. 1938: Monographie der Subtribus Scaritina (Col. Carab.) II. *Deutsche Entomologische Zeitschrift* 1938 (1): 41-181.
- BÄNNINGER M. 1939: Monographie der Subtribus Scaritina (Col. Carab.) III. *Deutsche Entomologische Zeitschrift* 1939(1-4): 126-161.
- BASILEWSKY P. 1954: Coléoptères Carabidae recueillis par N. Leleup sur l'Elgon. *Revue de Zoologie et de Botanique Africaines* 50: 116-149.
- BASILEWSKY P. 1960: Coléoptères Carabidae de Mont Kabobo recueillis par N. Leleup. *Revue de Zoologie et de Botanique Africaines* 62: 66-90.
- BASILEWSKY P. 1973a: Contributions à l'étude des Scaritinae d'Afrique (Coleoptera, Carabidae) II. Tableau des genres afro-malgaches de la sous-tribu Scaritina. *Revue de Zoologie et de Botanique Africaines* 87: 174-180.
- BASILEWSKY P. 1973b: *Faune de Madagascar* 37. *Insectes Coléoptères. Carabidae, Scaritinae* I. Paris: Muséum d'Histoire Naturelle, 322 pp.
- BASILEWSKY P. 1976: Mission entomologique du Musée Royal de l'Afrique Centrale aux Monts Uluguru, Tanzanie (L. Berger, N. Leleup et J. Debecker, V-VIII.1971). 19. Coleoptera Carabidae. *Revue de Zoologie et de Botanique Africaines* 90: 671-722.
- ETTEN J. 1984: A new *Typhloscaris* Kuntzen, 1914, from Kenya (Coleoptera, Carabidae, Scaritini). *Entomologische Berichten* 44: 27-30.

Received: 5.12.2015
Accepted: 25.12.2015

