

## **A revision of the genus *Typhloscaris* Kuntzen, 1914 (Coleoptera: Carabidae: Scaritini). Part 1: species of the genus in the original sense**

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**Taxonomy, new species, new records, key, Coleoptera, Carabidae, Scaritini, *Typhloscaris*, Tanzania, Kenya**

**Abstract.** The genus *Typhloscaris* s. l. Kuntzen, 1914 is split into three newly defined species groups. Eight new species of the genus *Typhloscaris* s. str. are described from Tanzania and Kenya: *T. garnerae* sp. nov., *T. giachinoi* sp. nov., *T. udzungwaensis* sp. nov., *T. szeli* sp. nov. and *T. minima* sp. nov. from Tanzania, *T. dostali* sp. nov. and *T. havai* sp. nov. from Kenya and *T. lushotoensis* sp. nov. from Tanzania and Kenya. Three to date known species of the genus in the original sense are redescribed, the new species are figured including its aedeagi, all species are keyed and split into two newly defined subgroups.

### INTRODUCTION

The Afrotropical genus *Typhloscaris* was established by Kuntzen (1914) for a single Tanzanian species. Later Bänninger (1929) described another two species and Bänninger (1939) keyed all three species known that time. The genus *Oroscares* Bänninger, 1937 was differentiated by the author from the preceding genus by the characters quoted below within the definition of the *T. mamboiana* group, its species are easily recognizable especially by the eyes well developed, not placed in a narrow slot. Later Basilewsky (1973a,b) synonymized the genus with the genus *Typhloscaris*. The genus *Oroscares* was studied and keyed by Bänninger (1937, 1938, 1939) and later some authors as Basilewsky (1954, 1960, 1971, 1973a,b, 1976a,b), van Etten (1984) and Bulirsch (2016) described few new species either within the genera *Oroscares* and *Typhloscaris*.

The target of the present article is a revision of the genus in the original sense with descriptions of eight new species.

### MATERIAL AND METHODS

The study of dry-mounted specimens, including measurements and examination of microsculpture, was done at a magnification up to 56×. All specimens were measured. Length of body (including closed mandibles) is given with accuracy 0.1 mm, ratios and means are down to two decimal places. Label data of all specimens are quoted verbatim

except standardized data. Aedeagi were fixed with water soluble glue on a small card and placed on the same pin below the beetle.

For comparison were studied all to date known taxa from both former quoted genera: several diverse specimens from the Bänninger's collection (now in ETHZ) including samples of the type material as well as some type specimens from BMNH, London, MNHB, Berlin, also 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:

- ADVA collection of Alexander Dostal, Vienna, Austria;  
BMNH The Natural History Museum, London, U.K.;  
ETHZ Eidgenössische Technische Hochschule, Zürich, Switzerland;  
HNHM Hungarian Natural History Museum (Magyar Természettudományi Múzeum), Budapest, Hungary;  
IRSN Institute Royal des Sciences Naturelles de Belgique, Brussels, Belgium;  
MBBS collection of Michael Balkenohl, Bonstetten, Switzerland;  
MRAC Royal Museum of Central Africa, Tervuren, Belgium;  
NHMB Naturhistorisches Museum Basel, Switzerland;  
PBPC collection of Petr Bulirsch, Praha, Czech Republic;  
PMGT collection of Pier Mauro Giachino, Torino, Italy;  
MNHB Museum für Naturkunde der Humboldt Universität zu Berlin, Bereich Zoologisches Museum, Berlin, Germany;  
ZMUC Zoologisk Museum København, Copenhagen, Denmark.

Other abbreviations:

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

## RESULTS

### *Genus Typhloscaris* Kuntzen, 1914

**Type species:** *T. macrodus* Kuntzen, 1914

The genus *Typhloscaris* s. l. - in the sense Basilewsky (1973a,b), including the species of the genus *Oroscaaris* Bänninger, 1937- occurs in Eastern Africa and Madagascar and its species can be divided into three groups, newly defined here:

- *T. macrodus* (*Typhloscaris* s. str.) group is characteristic by the eyes being placed in a narrow slot, postero-ventrally broadly overlaid by the genae; by the head having neither clypeal nor facial setae and by the elytra with DSP being in the interval 3 only and having rounded humeri without distinct humeral tooth. It includes three to date known species and another eight, described below, which occur in Kenya and Tanzania.
- *T. mamboiana* (species of the previous genus *Oroscaaris*) group is defined by the eyes being normally developed, postero-ventrally indistinctly overlaid by the genae; by the head

having clypeal and facial setae and by the elytra with DSP being in the interval 3 only and having the humeri with very distinct humeral tooth. It includes 18 to date known taxa (15 species and three subspecies) occurring in Eastern Africa.

- *T. insularis* (the Madagascan species) is a group similar to the previous one and it differs especially by the elytra being strongly vaulted in lateral view, having finer humeral tooth and DSP in the intervals 3 and almost always also in 5. In *T. insularis* (Bänninger, 1935) are only 0-2 DSP in interval 5, in remaining three species, there always numerous DSP in this interval. Its four species are endemic to Madagascar.

The type material of all three to date known species belonging to this genus in the original sense (*T. macrodus* group) have been studied, these species have been redescribed below and another eight newly recognized species have been described here. *T. macrodus* group is newly split into two subgroups defined below according to its external characters to simplify the identification of its species.

***Typhloscaris* s. str.**  
***T. macrodus* group**  
***T. macrodus* subgroup**

**Type species:** *T. macrodus* Kuntzen, 1914.

**Diagnosis.** The body is large (14.1-17.3 mm) and the left male mandible has mostly an unusual, long and large, strongly elevated tooth on the inner side. The prosternal process and the anterior margin of the mesothorax between the mesocoxae have at least 4-5 setae.

***Typhloscaris macrodus* Kuntzen, 1914**  
(Fig. 9)

*Typhloscaris macrodus* Kuntzen, 1914: 455.

*Thyphloscaris macrodus*: Bänninger 1939: 146, Usambara.

**Type material examined.** Holotype (♀): D.O. Afr.; Amani / 30.xi-5.xii.1906 / Vosseler G // Type // *macrodus* / Ktz. \*, (MNHB). Paratypes: (1 ex.): with same data as HT; (1 ex.): Ost-Afrika / Kärger V; (1 spec.): Usambara / Stat. Nguelo / Moritz S / Rolle V; (1 ex.): D.O.A. / Vosseler G.; (1 ♀): D.O.A., Amani / i.1907 / Vosseler G.; (1 ♀): O. Usambara / F. Fischer S.; (1 ♀): Usambara / Tanga / Reimer S; (1 ♂): Usambara / Derema, 850 m / xii.1891 / Conradt S.; (1 ♂): e. coll. Dr C. Schröder / Magamba Bge. / b. Masinde; 5.i.1906 / 700-1600 m; D.O. Afr.; (1 ex.): Nguelo / Usambara / H. Rolle / Berlin, S.W.11, all PT with additional labels: Paratype // *Typhl. macrodus* / Kuntz , the latter one also with det. Bänninger, v.1928 , (all in MNHB).

**Other material examined:** (1 ♂): Coll. I.R.Sc.N.B. / Tanzania, Tanga Region / Amani Nature Reserve / 12.xi.2013; Logging Area / 5°6.208'S 38°37.509'E; 994 m / Leg. L. Geeraert, (PBPC); (1 ♀): Coll. I.R.Sc.N.B. / Tanzania, Tanga Region / Amani Nature Reserve / 11.xi.2013; Primary Forest / 5°5.602'S 38°37.960'E; 933 m / Leg L. Geeraert / ref. 7\_AP2; (1 ♀): Coll. I.R.Sc.N.B. / Tanzania, Tanga Region / Amani Nature Reserve / 11.xi.2013; Primary Forest / 5°5.674'S 38°37.959'E; 936 m / Leg L. Geeraert / ref. 7\_AP3; (1 ♂): Coll. I.R.Sc.N.B. / Tanzania, Tanga Region / Amani Nature Reserve / 16.x.2013; Logging area / 5°6.208'S 38°37.509'E; 994 m / Leg L. Geeraert / ref. 4\_ML2; (1 ♀): Coll. I.R.Sc.N.B. / Tanzania, Tanga Region / Amani Nature Reserve / 16.x.2013; Logging area /

5°06.184'S 38°37.525'E; 964 m / Leg L. Geeraert / ref. 4\_ML1, (all in IRSN); (1 ♀): Tanga / Africa orient<sup>le</sup>, All<sup>de</sup> / Février / Alluaud / unbekannt / 9.xi.1925 // *Thyphloscaris / macrodus* Ktz / Bänninger det.; (1 ♀): Deutsch Ostafrika / Amani; viii-xi.1903 / Coll. Eichelbaum, 1911 // ♀ // *Thyphloscaris / macrodus* Ktz / Bänninger det.; (2 ♂♂): D. Ost. Afr. // ♂ // *Thyphloscaris / macrodus* Ktz / Bänninger det., (all in ETHZ); (2 exx.): Ost- Usambara / D.O. Afr. / xii.1915 / leg. Methner // *Thyphloscaris / macrodus* Ktz. / det. Bänninger, 1927 // *Typhloscaris / macrodus* Kuntz. / det. P. Basilewsky, 1972.; (1 ex.): D.O. Afr. / Tanga, Studt?, x.1902 / Methner S.G. // *Typhloscaris / macrodus* Kuntz. / det. P. Basilewsky, 1972, (all in MNHB); (1 ♂): Dar es Salam // Coll. Museum Congo / Coll. P. Basilewsky; (1 ♀): Afrique or. Allem. / Amani, prés Tonga / Turbil, 1906// Coll. Museum Congo / Coll. P. Basilewsky; (1 ♀): D. Ost. Afr. // Coll. Museum Congo / Coll. P. Basilewsky // *Thyphloscaris / macrodus* Ktz. / det. Bänninger // Comp. Typ. / Basilewsky; (1 ♂, 1 ex.) Usambara, Deréma / L. Conradt / 1891, (all in MRAC); (1 ♀): D. Ost. Afr. // *Thyphloscaris / macrodus / Kuntz.* / det. Bänninger, (all in NHMB).

**Redescription.** Measurements (n=30): total length 14.1-17.3 mm (mean 16.01 mm; HT 17.2 mm); width 3.7-4.7 mm (mean 4.29 mm; HT 4.2 mm); width of head 3.4-4.4 mm (mean 3.97 mm; HT 4.6 mm); pronotum 1.27-1.42 (mean 1.36; HT 1.38) times as broad as long; elytra 1.66-1.79 (mean 1.73; HT 1.77) times as long as broad.

Head. Mandibles in males rather long, outline in middle slightly concave, inner keel rather sharp, disappearing anteriorly at apical fifth; surface between outline and keel moderately concave, indistinctly, sub-longitudinally wrinkled; rather slightly broadened before base; inner margin of left mandible with two teeth, small and rather sharp apical one and unusual basal tooth: very long and narrowly rounded, strongly elevated medio-apically, surface with few oblique wrinkles, inner margin of right mandible with rather sharp tooth at midlength, complementary to excision between booth teeth on left mandible. Mandibles in females rather short, outline in middle very slightly concave, inner keel as in males; inner margin of both mandibles with two small and rather sharp complementary teeth. Eyes small, in narrow slot; genae long and laterally rather flattened, overlapped posterior-basal part of eyes, apically broadly rounded, slightly broader than eyes; facial furrows short, rather deep to posterior part of eyes then abruptly disappearing. Frontal furrows almost indistinct, hardly recognizable from 7-10 longitudinal, rather deep and long wrinkles between genae and frontal furrows; frontal furrows anteriorly connected by very fine transverse furrow, running antero-laterally to anterior part of supraantennal plates. Latter rather strongly, regularly broadened, anteriorly more or less slightly convexly narrowed to anterior clypeal margin with indistinct, broadly rounded sublateral tooth on each side of moderately concave, anterior clypeal

margin with more or less distinct 2-3 teeth. Surface with another rather distinct wrinkles below antero-lateral margin. Antennae rather short; antennomeres 5-10 slightly transverse; antennomere 2 about as



Fig. 9. *Typhloscaris macrodus*. Aedeagus (non-type male, Amani) in left lateral view. Actual length 2.80 mm.

long as 3. Surface moderately shiny, without reticulation, with fine micropunctures. Frontal and facial SP missing.

Pronotum. Moderately vaulted in lateral view, outline very indistinctly broadened just below anterior angles, then almost direct, indistinctly narrowed posteriorly; anterior angles very sharp, strongly prolonged anteriorly, posterior angles narrowly rounded, almost obtuse, base very indistinctly s-shaped, median part very slightly protruded, almost not differentiated. Anterior transverse impression rather broadly and deeply impressed in lateral sixth, abruptly finer, very superficial medially, median line moderately fine. None anterior, one posterior lateral SP in rather fine lateral channel, almost not broadened basally. Surface moderately shiny, with indistinct reticulation, very dense micropunctuation and with several very fine, irregular wrinkles. Basal foveae small, irregular, with few dense microtubercles.

Elytra. Surface rather shiny, without reticulation on disk and with rest of reticulation on very apex and partially on interval 8. Disk rather slightly vaulted in lateral view, without concavity below humeri; outline ovate, slightly, regularly broadened in basal half, regularly, rather narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately slopping humeral ridge without humeral tooth; elytra broadest below midlength. Striae 1-7 rather deep, impunctate, intervals 1-6 moderately vaulted, slightly more vaulted basally, interval 7 narrowed and elevated along stria 6, especially at extremities, interval 8 at midlength about three times narrower than 7, forming blunt, narrow keel along stria 7 in its whole length except very apex; lateral channel very broad and rather deep, slightly broadened apically, with dense tubercles; stria 8 indistinct. Base covered by broad row of fine tubercles mixed with some larger, setose ones, placed on base without distinct elevation. Third interval with three, exceptionally four (on one elytron) DSP: two in apical fifth and one in apical third.

Lower surface. Mentum laterally rather strongly vaulted; distinctly, basally very broadly, parallel beaded, laterally with rough sub-longitudinal wrinkles; surface with distinct reticulation; anterior angles gently sharp-angular, narrowly rounded; median part with fine irregular pits along median keel, with rather slightly elevated, rather sharp and narrow median keel; its anterior margin rather distinctly and narrowly elevated, directly narrowed to long, moderately bent down anterior tooth; paragenes rather slightly and broadly excised on anterior third, inner tooth obtuse; posterior margin more or less distinctly, narrowly prolonged postero-laterally by blunt ridge; surface of paragenes rather shiny, with fine reticulation, slightly elevated postero-medially. Prosternal process with about 4-5 basal setae; metasterna more than twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part slightly narrower than rather broad episterna. Sternite III (= second visible sternite, called sternite 2 in Bänninger's revisions, 1937-1939) medially with strongly reduced group of very fine setae, sternite almost without to with rather fine punctures and wrinkles, rather shiny, with fine reticulation; episterna moderately shiny, with rather fine reticulation and fine wrinkles and dense micropunctures; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae with 4-7 setae.

Legs. Anterior tibiae with 4-(5) gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth rather distinctly below level of lower margin of protibiae.

Aedeagus. As in Fig. 9. Median lobe short and moderately broad, in non-type males (from Kwamsambia and Amani) 0.36- 0.41 times as long as elytra; laterally upper outline regularly, moderately convex, lower outline almost regularly, slightly concave, broadly, regularly curved before moderately large basal bulb; ventrally median lobe moderately broad, subparallel, with apex very short, moderately broadly rounded, with broadly cut off tip. Parameres moderately long, with moderately long and sharp apex.

**Variability.** Two non-type males have the left mandible without distinctly elevated tooth and look similarly like the females but have distinctly longer mandibles.

**Distribution.** NE Tanzania, Tanga Region, E Usambara Mts.

*Typhloscaris garnerae* sp. nov.

(Fig. 1)

**Type material.** Holotype (♂): Tanzania, 2016 m / Mwanihana Peak / Udzungwa Mountains N.P. / S 7°49'20.1''; E 36°49'35.1'' / 7-14.viii.2010; General Coll. / leg. Smith, R. & Takano, H. // BMHN / 2012-92 / 1191573, (BMNH).

**Description.** Habitus as in Fig. 1. Surface black, legs fuliginous, meso- and metatibiae, tarsi, mouth-parts and antennae slightly lighter. Measurements (n=1): Total length 14.7 mm; width 4.0 mm; width of head 3.9 mm; pronotum 1.40 times as broad as long; elytra 1.84 times as long as broad.

Head. Mandibles narrow, very long, slightly curved apically, outline in middle slightly concave, inner keel moderately sharp, disappeared anteriorly at apical third; surface between outline and keel moderately concave, finely, longitudinally wrinkled; subparallel with outline, slightly broadened before base; inner margin of left mandible with two teeth, very small and rather blunt apical one and unusual basal tooth: large, narrowly rounded, strongly elevated medio-apically, surface with few fine oblique wrinkles; inner margin of right mandible with large, narrow, rather sharp tooth in midlength, complementary to excision between booth teeth on left mandible. Eyes in narrow slot; genae long and laterally rather flattened, overlapped postero-basal part of eyes, apically broadly rounded, slightly broader than eyes; facial furrows short, rather deep to posterior part of eyes then abruptly finer, genae divided from vertex by more reticulate, rather superficial and broad channel. Frontal furrows very short, very broad and deep, divergent posteriorly, diminish at above level of anterior margin of eyes; 4-5 longitudinal, rather deep and long wrinkles between genae and frontal furrows; vertex between lateral furrows with another several irregular and very fine sub-longitudinal furrows; frontal furrows anteriorly connected by very fine transverse furrow, running antero-laterally to anterior part of supraantennal plates. Latter rather slightly, regularly broadened, anteriorly with short and rather blunt excision, narrowed to anterior clypeal margin with small, narrowly rounded sublateral tooth on each side of moderately concave, anterior clypeal margin with two very indistinct median teeth. Surface with next short, rather deep wrinkles below antero-lateral margin. Antennae moderately long, antennomeres 5-7 distinctly, 8-10 rather slightly longer than broad; antennomere 2 slightly longer than 3. Right antennomeres 2-11 missing. Surface moderately shiny, with irregular,



Fig. 1. *Typhloscaris garnerae* sp. nov. Habitus (HT). Actual length 14.7 mm.

almost indistinct reticulation, with fine micropunctures, latter more distinct along deep latero-apical furrows. Frontal and facial SP missing.

**Pronotum.** Moderately vaulted in lateral view, outline very indistinctly broadened just below anterior angles, then directly, rather strongly narrowed posteriorly; anterior angles very sharp, strongly protruding anteriorly, posterior angles narrowly rounded, almost obtuse, base very indistinctly s-sinuate, median part very slightly protruded. Anterior transverse impression rather broadly and finely impressed in lateral sixth, abruptly finer, very broad and superficial medially, median line moderately fine. One anterior, none posterior lateral SP in rather fine lateral channel, slightly broader below anterior teeth, not basally. Surface moderately shiny, with indistinct reticulation, very dense and rather distinct micropunctuation and with several very short and fine longitudinal wrinkles below anterior margin. Basal foveae indistinct, just recognizable as small, more reticulate area above base.

**Elytra.** Surface moderately shiny, with fine reticulation on disk and rather distinct microsculpture on latero-apical half. Disk rather slightly vaulted in lateral view, with indistinct concavity below humeri; outline ovate,

very slightly, regularly broadened in basal half, regularly, rather narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately sloping humeral ridge without humeral tooth; elytra broadest below midlength. Striae 1-7 rather deep, impunctate, intervals 1-6 moderately vaulted, especially 6 slightly more vaulted basally, interval 7 narrowed basally, formed blunt keel below humeri, interval 8 at midlength about three times narrower than 7, forming blunt, narrow keel along stria 7 throughout is whole length except very apex; lateral channel very broad and deep, slightly broadened apically, with dense tubercles; stria 8 indistinct. Base covered by very broad row of tubercles mixed with some larger, setose ones, placed on base without distinct elevation. Third interval with five DSP: two in apical fifth, one in apical third and two above midlength.

**Lower surface.** Mentum laterally rather slightly vaulted, distinctly, basally rather broadly, parallel beaded, laterally with indistinct sub-longitudinal wrinkles; surface with distinct reticulation; anterior angles sharp-angular, very narrowly rounded; median part moderately deepened, with fine irregular pits along median keel, latter rather slightly elevated, rather sharp and narrow; its anterior margin rather distinctly and narrowly elevated, narrowed to strongly bent down anterior tooth; paragenes slightly and broadly excised on anterior third,

inner tooth obtuse; posterior margin distinctly prolonged postero-laterally by long and rather narrow ridge; surface of paragenes rather shiny, with fine reticulation, long concave along lateral margin, distinctly elevated postero-medially. Prosternal process with five basal setae; metasterna about twice shorter than hind coxae; metepisterna short rhomboid-shaped, its anterior part distinctly narrower than broad episterna. Sternite III medially with strongly reduced group of very fine setae, sternum with dense and rather deep punctures and few wrinkles, rather shiny, with fine reticulation; episterna moderately shiny, with rather fine reticulation and fine wrinkles and dense micropunctures, epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae with five setae, metacoxae with one seta.

Legs. Anterior tibiae with five gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth rather distinctly below level of lower margin of protibiae.

**Differential diagnosis.** *T. garnerae* sp. nov. has the body large; the head with the left male mandible having unusual large, strongly elevated tooth; the broad pronotum with only anterior lateral SP and the ovate elytra with rather indistinct reticulation, five DSP in its whole length and with the interval 8 being in the middle about three times narrower than 7.

It can be distinguished from *T. macrodus* by the head having the antennae with much longer outer antennomeres, deeper and broader frontal furrows, only 4-5 longitudinal furrows along eyes (7-10 in *T. macrodus*); by the pronotum being more narrowed posteriorly, having only anterior lateral SP (*T. macrodus* has only posterior SP); by the elytra being longer, with the outline less convex in the anterior half and having five DSP (only three in *T. macrodus*), and finally, by the ventral sternites with much denser and deeper punctures laterally.

**Distribution.** Tanzania, Iringa Region, Udzungwa Mts.

**Name derivation.** Named in honour of Beulah Garner (BMNH) for her significant help in my study of Afrotropical Scaritinae.

*Typhloscaris* s. str.  
*T. macrodus* group  
*T. gracilis* subgroup

**Type species:** *T. gracilis* Bänninger, 1929.

**Diagnosis.** The body is relatively smaller (8.5-13.2 mm) and the left male mandible does not have strongly elevated tooth on the inner side. The prosternal process and the anterior margin of the mesothorax between the mesocoxae have usually 0-2, the former very exceptionally four setae.

## *Typhloscaris gracilis* Bänninger, 1929

(Fig. 10)

*Typhloscaris gracilis* Bänninger, 1929: 85, 119.

*Typhloscaris gracilis*: Bänninger 1939: 146, Usambara.

**Type material examined.** Holotype (♂): [Muheza district, NE of E Usambara Mts.] Trockenwald bei / Mtotohovu; D.O.A. / x.1914; leg. Methner // aedeagus // Type // *Typhloscaris / gracilis / v.1928 / Type / det. Bänninger, v.1928, (MNHB)*. Paratype: (1 ♂, without fore body): [Muheza district, NE of E Usambara Mts.] Trockenwald b. / Mtotohovu; D.O.A. / iv.1916; leg. Methner // aedeagus // *Typhloscaris / gracilis / v.1928; Bänn / Cotype, (ETHZ)*.

**Other material examined:** (1 ex.): Tanganyika / Kange / 20.ix.1950 / R.C.H. Sweeney / B.M.1951-38, (BMNH).

**Redescription.** Measurements (n=2-3, one specimen without fore body): total length 11.2-11.5 mm (HT 11.2 mm); width 2.8-2.9 mm (HT 2.8 mm); width of head 2.5-2.6 mm (HT 2.6 mm); pronotum 1.14-1.20 (HT 1.20) times as broad as long; elytra 1.83-1.86 (HT 1.84) times as long as broad.

Head. Mandibles short and broad, outline very slightly convex, in middle very slightly excised, inner keel distinct, finer apically, slightly more elevated basally, subparallel with outline, surface between them rather narrow, distinctly, regularly deepened, shiny, without distinct wrinkles; inner margin of both mandibles with two small and very blunt complementary teeth, its surface with 2-3 fine and short, more or less longitudinal keels. Eyes small, in narrow slot; genae rather flattened, longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower and posterior parts of eyes; genae deeply, irregularly divided from vertex by rather deep and broad facial furrow. Frontal furrows irregular, very broadly and deeply impressed, slightly divergent posteriorly, abruptly strongly narrowed and weakened, almost diminishing at about level of posterior margin of eyes, gently to indistinctly prolonged almost to neck by very fine striae; anteriorly connected with transverse furrow, finer medially, more deeply, irregularly running to anterior part of supraantennal plates. Latter slightly rounded, anteriorly gently and broadly excised, narrowed to anterior clypeal margin with rather large, rounded sublateral tooth on each side of concave anterior clypeal margin with indistinct median teeth. Surface with 6-8 irregular, deep and rather short sub-longitudinal wrinkles between inner margin of eyes and facial furrows and with few finer, anteriorly prolonged longitudinal wrinkles on vertex between frontal furrows. Antennae rather short, antennomere 2 gently longer than 3; antennomeres 5-10 slightly transverse. Surface moderately shiny, with irregular, very



fine reticulation mixed with fine micropunctation. Neck without transverse channel. Frontal and facial SP missing.

Fig. 10. *Typhloscaris gracilis*. Aedeagus (PT) in left lateral view. Actual length 2.55 mm.

Pronotum. Rather strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then almost directly, slightly narrowed posteriorly; anterior angles sharp, strongly protruding anteriorly, posterior angles narrowly rounded, almost obtuse; base very indistinctly convexly narrowed to very slightly protruding, almost not differentiated median part. Anterior transverse impression rather broadly and deeply impressed in lateral sixth, abruptly disappearing medially, median line rather fine. One anterior and one posterior lateral SP in moderately broad lateral channel, broader below anterior angles, almost not broadened basally. Surface moderately shiny, with very fine, irregular rests of reticulation and with several very fine, irregular wrinkles. Basal foveae fine, just recognizable, with rather fine reticulation.

Elytra. Surface moderately shiny, with fine irregular reticulation especially along striae, gently deeper latero-apically. Disk rather strongly vaulted in lateral view, regularly convex below humeri; outline ovate, slightly, almost directly broadened in basal half, regularly, rather broadly rounded in posterior half; base rather narrow, very gently concave before indistinct, short and moderately slopping humeral ridge without humeral tooth; elytra broadest distinctly below midlength. Striae 1-7 moderately deep and broad, very slightly weakened latero-apically and distinctly broadened and deepened latero-basally, impunctate, intervals 1-7 moderately vaulted; apically slightly flattened, latero-basally more vaulted; interval 7 below humeri narrowed and more elevated, apically as broad and vaulted as preceding ones, interval 8 at midlength about three times narrower than 7, forming distinct, blunt keel in almost whole length; lateral channel rather broad and moderately deep, slightly broadened apically; stria 8 indistinct. Base covered by broad row of tubercles mixed with some larger setose ones, placed on base without distinct elevation. Third interval with three DSP (two in apical fifth and one in apical third).

Lower surface. Mentum laterally moderately vaulted, distinctly, broadly, parallel beaded, laterally with sub-longitudinal wrinkles especially anteriorly; surface with distinct, rather rough reticulation; anterior angles gently sharp-angular, rather narrowly rounded; median part irregularly rugose, indistinctly, irregularly depressed, with rather slightly elevated, rather sharp and narrow median keel, slightly broadened basally; its anterior margin rather distinctly and narrowly elevated, directly narrowed to strongly bent down anterior tooth; paragenes rather slightly and broadly excised in anterior third, inner tooth obtuse; posterior margin distinctly, narrowly prolonged postero-laterally by narrow, blunt, long ridge; surface of paragenes rather dull, with rough reticulation, very indistinctly elevated postero-medially, parameres with broad and rather deep depressions along lateral margin. Prosternal process with one pair of basal setae; metasterna about twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part slightly narrower than broad episterna. Sternite III medially with reduced group of setose punctures; all sterna with few sparse, fine punctures mixed with very fine wrinkles and with rather distinct reticulation. Epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae with two setae.

Aedeagus. As in Fig. 10. Moderately short and moderately broad, in HT 0.44, in PT 0.42 times as long as elytra; laterally upper outline slightly convex, lower outline slightly concave, in midlength very obtusely, very narrowly and strongly curved before rather small

basal bulb; ventrally aedeagus moderately broad, with apex rather long, moderately broadly rounded. Parameres moderately long, with moderately long and sharp apex.

Legs. Both anterior legs in HT missing, in PT missing complete fore-body, in non-type left anterior leg missing, right anterior tibiae with four gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth rather slightly below level of lower margin of protibiae.

**Distribution.** NE Tanzania, Tanga Region, Muheza district, NE of E Usambara Mts. (Mtotohovu). Not directly in Usambara Mts. as quoted in Bänninger (1939).

**Comment.** Among studied material from several museums or private collections there were next specimens formerly identified as *T. gracilis*. Revision of this material showed that these specimens belonged mostly to other species described below and except both type specimens only a single specimen from Kange really belongs to this species. It seems that this species occurs only a small region east of E Usambara Mts.

### *Typhloscaris microphthalma* Bänninger, 1929

*Typhloscaris microphthalmus* Bänninger, 1929: 85, 119.

*Typhloscaris microphthalmus*: Bänninger 1939: 146 (Brit. Ost-Africa).

**Type material examined.** Paratype (1 ex.): B.E. Africa / Kiboriani Mt. / 5000 ft / nr Usagara // coll. Boileau // Janson / iii.1908 // *Typhloscaris* / *microphthalmus*. / iv.1928; Bänn. / Type, (ETHZ).

**Other material examined.** (1 ♀, topotype): B.E. Afr. / Mt. Kiboriani Mt. / 5000 ft / Usagara // Comp. typ. / Basilewsky // Coll. Mus. Congo / Coll. P. Basilewsky // *Typhloscaris* / *microphthalmus*. Bänn. / P.Basilewsky det 19, (MRAC).

**Redescription.** Measurements (n=2): total length 12.0-12.3 mm; width 3.1-3.2 mm, width of head 2.8-3.0 mm; pronotum 1.27-1.28 times as broad as long; elytra 1.76-1.80 times as long as broad.

Head. Mandibles rather short, apex slightly curved inwards; outline rather slightly concave at midlength, inner keel, moderately sharp, slightly finer and narrowed apically, subparallel with outline, surface between outline and inner keel smooth, rather slightly concave, without wrinkles; inner margin of both mandibles rather strongly prolonged anteriorly, with 3-4 small, blunt, irregular, complementary teeth. Eyes in narrow slot; genae slightly longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower parts of eyes; genae divided from vertex by rather deep and broad facial furrow. Frontal furrows irregularly duplicated, short, very broadly and rather deeply impressed, slightly divergent posteriorly, diminish at about level of posterior margin of eyes; anteriorly connected with very fine transverse furrow, almost diminishing medially, deeply, irregularly running to anterior part of supraantennal plates. Latter very slightly rounded, anteriorly gently concavely narrowed to anterior clypeal margin with rather blunt, rounded sublateral tooth on each side of rather superficially concave anterior clypeal margin. Surface with 5-6 irregular, deep, rather rough and long sub-longitudinal wrinkles between genae and facial furrows and with few short, irregular

wrinkles below sublateral clypeal teeth. Antennae short, antennomere 2 indistinctly longer than 3; antennomeres 5-10 slightly transverse. Surface moderately shiny, with irregular, very fine reticulation, with fine micropunctuation. Neck without transverse channel. Frontal and facial SP missing.

Pronotum. Rather strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then almost directly, rather slightly narrowed posteriorly; anterior angles rather sharp, strongly protruding anteriorly, posterior angles very narrowly rounded, almost obtuse, base very indistinctly s-shaped, median part very slightly protruded, almost not differentiated. Anterior transverse impression rather broadly and deeply impressed in lateral sixth, abruptly disappearing medially, median line rather fine. Neither anterior nor posterior lateral SP in narrow and fine lateral channel, almost not broadened basally. Surface moderately shiny, with very fine, irregular reticulation and with several very fine, irregular wrinkles. Basal foveae extremely fine, just recognizable, with rather fine reticulation.

Elytra. Surface rather shiny, with irregular rests of very fine reticulation on disk and with slightly deeper reticulation on apex and interval 8. Disk rather strongly vaulted in lateral view, without concavity below humeri; outline ovate, slightly, regularly broadened in basal half, regularly, rather broadly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately sloping humeral ridge with indistinct, very small and blunt humeral tooth, not forming outline; elytra broadest below midlength. Striae 1-7 very fine and superficial, strongly weakened in posterior third, more or less diminishing latero-apically, impunctate, intervals 1-8 flat in whole length, interval 8 about as broad as 6 or 7; lateral channel rather broad and moderately deep, slightly broadened apically; stria 8 indistinct. Base covered by broad row of small tubercles mixed with some larger setose ones, placed on base without distinct elevation. Third interval with two DSP in apical fifth.

Legs. Anterior tibiae with (4)-5 gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth distinctly below level of lower margin of protibiae.

Lower surface. Mentum laterally rather slightly vaulted, distinctly, broadly, parallel beaded, laterally with sub-longitudinal wrinkles especially anteriorly; surface with distinct rough reticulation; anterior angles gently sharp-angular, narrowly rounded; median part irregularly rugose, indistinctly, irregularly depressed, with rather slightly elevated, rather sharp and narrow median keel, broadened basally; its anterior margin rather distinctly and narrowly elevated, directly narrowed to narrow, long, strongly bent down anterior tooth; paragenes rather slightly and broadly excised in anterior third, inner tooth very obtuse; posterior margin distinctly, narrowly prolonged postero-laterally by narrow, long ridge; surface of paragenes rather dull, with rough reticulation, very indistinctly elevated postero-medially. Prosternal process with one pair of basal setae; metasterna more than twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part narrower than broad episterna. Sternite III medially with small group of setose punctures; sterna, especial first ones, with rather rough and dense punctures, rather dull, with rather rough reticulation; episterna moderately shiny, with fine reticulation and few irregular wrinkles; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather distinct reticulation. Anterior margin of mesothorax between mesocoxae without setae.

**Distribution.** C Tanzania, Dodoma Region, Kiboriani Mts.

***Typhloscaris lushotoensis* sp. nov.**

(Figs. 2, 11)

**Type material.** Holotype (♂): Tanzania, [W] Usambara / Mts., Lushoto, 15.i.1996 / leg. Ing. M. Snizek, (ADVA). Paratypes: (1 ♀) with same data as HT, (ADVA); (1 ♂): Kenya bor., Lodwar / 20.xii.1995 / leg. M. Snizek, (PBPC); (1 ♀): W Usambara / ii.1912 // ♀ // vielleicht ♀ von / *Thyphloscaris / gracilis* m. / det. Bänninger, v. 1928, (MNHB); (1 ♂): Tanganyika / [West] Usambara Mts, 1500 m / Sakarani Forest // Coll. Mus. Congo / Co.. P. Basilewsky // *Typhloscaris / gracilis* Bänn. / P. Basilewsky det. 1968, (MRAC).

**Other material examined:** (1 ♀): Tanzania; W Usam- / bara Mts., Mkusu For. / S 4.76585° E 38.36022° / 1576 m, 14.i.2013, sift. / 47, V. Grebennikov leg., (PBPC).

**Description.** Habitus as in Fig. 2. Surface black, legs fuliginous, meso- and metatibiae, tarsi, mouth-parts and antennae slightly lighter. Measurements (n=5, without non type female): total length 11.7-13.1 mm (HT 12.5 mm); width 3.2-3.6 mm (HT 3.2 mm); width of head 2.7-3.3 mm (HT 2.9 mm); pronotum 1.34-1.38 (HT 1.35) times as broad as long; elytra 1.74-1.80 (HT 1.78) times as long as broad.

Head. Mandibles short and broad, outline very slightly convex, in middle very slightly excised, inner keel rather fine apically, more elevated basally, parallel with outline, surface between them rather narrow, distinctly, regularly deepened, shiny, without wrinkles; inner margin of both mandibles with (2)-3 very small and very blunt complementary teeth, its surface with 2-3 fine and short, more or less longitudinal keels. Eyes in narrow slot; genae rather flattened, longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower and posterior parts of eyes; genae deeply, irregularly divided from vertex by rather deep and broad facial furrow. Frontal furrows irregular, very broadly and deeply impressed, slightly divergent posteriorly, abruptly strongly narrowed and weakened, almost diminishing at about level of posterior margin of eyes, gently to indistinctly prolonged almost to neck by very fine striae; anteriorly connected with transverse furrow, finer medially, more deeply, irregularly running to anterior part of supraantennal plates. Latter slightly rounded, anteriorly gently convexly narrowed to anterior clypeal margin with rather sharp, slightly rounded sublateral tooth on each side of almost rectangular concave anterior clypeal margin with very blunt, indistinct median teeth. Surface with 5-7 irregular, deep and rather short sub-longitudinal wrinkles between inner margin of eyes and facial furrows and with few very indistinct longitudinal wrinkles on vertex between deep wrinkles and few next below sublateral clypeal teeth. Antennae rather short, antennomere 2 indistinctly longer than 3; antennomeres 5-10 very slightly to slightly transverse. Surface moderately shiny, with irregular, very fine reticulation mixed with fine micropunctation. Neck without transverse channel. Frontal and facial SP missing.

Pronotum. Strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then very slightly convex, not narrowed posteriorly; anterior angles sharp, strongly protruding anteriorly, posterior angles rather broadly rounded, from lateral view with almost indistinct, strongly rounded tooth; base almost directly narrowed to rather

slightly prolonged median part. Anterior transverse impression irregular, mostly rather finely impressed in lateral sixth, irregularly disappearing medially, median line rather deep and broad. One anterior and none posterior lateral SP in narrow and fine lateral channel, distinctly broadened just below anterior angles, not basally. Surface moderately shiny, with very fine, irregular reticulation and dense, very fine, irregular wrinkles and micropunctures. Basal foveae very fine, mostly just recognizable, with moderately fine reticulation and microtubercles.

Elytra. Surface moderately shiny, with fine irregular reticulation, rather distinctly deeper on apex and slightly deeper latero-apically. Disk rather slightly vaulted in lateral view, without concavity below humeri; outline ovate, rather distinctly convexly broadened in basal half, regularly, narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately sloping humeral ridge without humeral tooth; elytra broadest slightly below midlength. Striae 1-7 rather deep, distinctly weakened on apex, impunctate, intervals 1-6 moderately vaulted postero-basally, flattened medio-apically, interval 7 distinctly more vaulted below humeri, interval 8 at midlength almost three times narrower than 7, forming distinct, blunt keel in almost whole length; intervals 5-7 moderately vaulted apically; lateral channel rather broad and moderately deep, slightly broadened apically; stria 8 indistinct. Base with broad row of small tubercles mixed with some larger ones, placed on base without distinct elevation. Third interval with two DSP in apical fifth.

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

Lower surface. Mentum laterally rather slightly vaulted, irregularly, rather broadly beaded, laterally with sparse irregular tubercles and few wrinkles especially anteriorly; surface with rather distinct



Fig. 2. *Typhloscaris lushotoensis* sp. nov. Habitus (PT, male, Lodwar). Actual length 12.7 mm.



Fig. 11. *Typhloscaris lushotoensis* sp. nov. Aedeagus (HT) in left lateral view. Actual length 3.40 mm.

reticulation; anterior angles gently sharp-angular, narrowly rounded; median part irregularly rugose, depressed, with slightly elevated, blunt median keel; its anterior margin rather distinctly and narrowly elevated, directly narrowed to narrow, moderately bent down anterior tooth; paragenes very slightly and broadly excised in anterior third, inner tooth very obtuse; posterior margin rather irregularly, narrowly prolonged postero-laterally by blunt ridge; surface of paragenes moderately shiny, with rather distinct reticulation, slightly depressed along lateral margin, moderately elevated postero-medially. Prosternal process with one pair of basal setae; metasterna almost twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part narrower than broad episterna. Sternite III medially with very reduced group of setae, all sterna with few sparse micropunctures mixed with very fine wrinkles and with rather distinct reticulation. Proepisterna moderately shiny, with rather fine reticulation, dense micropunctures and few fine transverse lateral wrinkles; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae with one pair of setae.

Aedeagus. As in Fig. 11. Very long and narrow, in HT 0.61, in PT 0.62-0.66 times as long as elytra; laterally upper and lower outline subparallel, slightly, irregularly bisinuate; lower outline rather broadly and moderately strongly curved before rather large basal bulb; ventrally aedeagus narrow, with apex very long, narrowly rounded. Parameres long, with very long and sharp apex.

**Differential diagnosis.** The new species has the body moderately large (11.6-12.7 mm); the broad pronotum with rather broadly rounded posterior angles, with one anterior and none posterior lateral SP; the ovate elytra with rather indistinct reticulation, two DSP in apical fifth and with the interval 8 being in the middle about three times narrower than 7.

This combination of the characters distinctly differs the new species from both taxa redescribed above. The differences from all taxa including the newly described ones are figured in the key below.

**Name derivation.** In accordance with the origin of most type specimens.

**Distribution.** NE Tanzania, Tanga Region, W Usambara Mts.; ?NW Kenya, Turkana Co., Lodwar.

**Comments.** The holotype and three PT (one male and two females) were found in West Usambara Mts. whereas another male PT in NW Kenya, Lodwar, very far from the type locality. All known species of *Typhloscaris* s. str. are flightless and occur in relatively small areas so that the finding on the latter locality is a bit doubtful. Moreover three specimens of the type series were collected by the same collector (M. Snížek) during one expedition so that it is possible that the latter locality label could be incorrect.

V. Grebennikov found also in W Usambara Mts. in Mkusu forest one female which very probably belongs to the same species. It gently differs from the type series by the body being slightly smaller (10.6 mm) and especially by the elytra being longer (ratio 1.89), more strongly narrowed apically and much more roughly reticulate. This female is quoted above separately and it is not included in the type series.

*Typhloscaris dostali* sp. nov.

(Figs. 3, 12)

**Type material.** Holotype (♂): Kenya / Taita Hills / Wundanyi / 6-10.iv.1997 / Lgt. M. Snizek, (PBPC). Paratypes: (1 ♀) with the same data as HT, (MBBS); (5 ♀♀): Kenya S; Taita Hills / Wundanyi; 24.xi.1997 / leg. M. Snizek, (ADVA, PBPC).

**Description.** Habitus as in Fig. 3. Surface almost black, legs light fuliginous, meso- and metatibiae, tarsi, mouth-parts and antennae dark ferruginous. Measurements (n=7): total length 10.8-12.7 mm (HT 11.7 mm); width 2.6-3.2 mm (HT 3.0 mm); width of head 2.5-3.1 mm (HT 2.9 mm); pronotum 1.29-1.38 (HT 1.38) times as broad as long; elytra 1.71-1.84 (HT 1.71) times as long as broad.

Head. Mandibles in male moderately long, with rather long, very slightly curved apex, in females shorter, with slightly curved apex; outline very slightly convex, in middle slightly to very slightly excised, inner keel rather fine apically, gently more elevated basally, parallel to very slightly divergent with outline, surface between them rather narrow, distinctly, regularly deepened, shiny, without wrinkles; in male inner margin of left mandible with one rather large and sharp tooth in basal third and another two small and very blunt ones in apical third, right mandible with complementary structure; in females inner margin with less distinct teeth, its surface with fine and short, more or less longitudinal keels. Eyes in narrow slot; genae rather vaulted, slightly longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower and posterior parts of eyes; genae divided from vertex by rather deep and broad facial furrow. Frontal furrows irregular, very broadly and deeply impressed, in male rather strongly, in females slightly divergent posteriorly, abruptly strongly narrowed and weakened, almost diminishing at about level of posterior margin of eyes, gently to indistinctly prolonged almost to neck by very fine striae; anteriorly connected with transverse furrow, finer medially, irregularly running to anterior part of supraantennal plates. Latter slightly rounded, anteriorly, gently convexly narrowed to anterior clypeal margin with rather sharp, slightly rounded sublateral tooth on each side of almost rectangular concave anterior clypeal margin without median teeth. Surface between inner margin of eyes and facial furrows with 2-3 lateral, irregular, short and very fine wrinkles and medially with another 2(-3) deep and rather short to moderately long sub-longitudinal wrinkles and with some very fine and superficial longitudinal wrinkles on vertex between inner pair of deeper ones and with few short, irregular wrinkles below sublateral clypeal teeth. Antennae rather short, antennomere 2 indistinctly longer than 3; antennomeres 5-7 about as broad as long, 8-10 slightly transverse. Surface moderately shiny, with irregular, very fine reticulation mixed with fine micropunctation. Neck without transverse channel. Frontal and facial SP missing.

Pronotum. Strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then almost direct, in males slightly in females not to very slightly narrowed posteriorly; anterior angles rather sharp, rather strongly protruding anteriorly, posterior angles very narrowly rounded, almost obtuse, from lateral view with very fine, small and very blunt tooth; base almost directly narrowed to rather slightly prolonged median part. Anterior transverse impression irregular, mostly rather finely impressed in lateral sixth,



3

12



Fig. 3. *Typhloscaris dostali* sp. nov. Habitus (PT, female). Actual length 11.2 mm.

Fig. 12. *Typhloscaris dostali* sp. nov. Aedeagus (HT) in left lateral view. Actual length 2.20 mm.

irregularly disappearing medially, median line rather deep and broad. One anterior and one posterior lateral SP in narrow and fine lateral channel, distinctly broadened just below anterior angles, not basally. Surface moderately shiny, with very fine, irregular reticulation and dense, very fine, irregular wrinkles and micropunctures. Basal foveae very fine, mostly just recognizable, with moderately fine reticulation and microtubercles.

Elytra. Surface moderately shiny, with rather fine reticulation, distinctly deeper on apex and slightly deeper latero-apically. Disk rather slightly vaulted in lateral view, without concavity below humeri;

outline ovate, slightly, almost directly broadened in basal half, regularly, narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately sloping humeral ridge without humeral tooth; elytra broadest slightly below midlength. Striae 1-7 moderately deep, moderately to rather strongly weakened on apex, impunctate, intervals 1-6 moderately vaulted postero-basally, flattened medio-apically, interval 7 slightly more vaulted below humeri, interval 8 rather narrow, at midlength about twice narrower than 7, moderately to rather strongly vaulted in its whole length, not forming sharp keel, below humeri covered by microtubercles; intervals 6-7 slightly to moderately vaulted apically; lateral channel moderately broad and moderately deep, slightly broadened apically; stria 8 apically indistinct. Base with broad row of small tubercles mixed with some larger ones, placed on base without distinct elevation. Third interval with two DSP in apical fifth.

Legs. Anterior tibiae with (3)-4 gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth slightly below level of lower margin of protibiae.

Lower surface. Mentum laterally rather slightly vaulted, finely and irregularly, rather broadly beaded, laterally with sparse irregular tubercles and few wrinkles especially

anteriorly; surface with moderately distinct reticulation; anterior angles gently sharp-angular, narrowly rounded; median part irregularly rugose, depressed, with moderately elevated, sharp and narrow median keel; its anterior margin rather distinctly and narrowly elevated, directly narrowed to narrow, moderately bent down anterior tooth; paragenes very slightly and broadly excised in anterior third, inner tooth very obtuse to slightly rounded; posterior margin rather irregularly, narrowly prolonged postero-laterally by rather blunt ridge; surface of paragenes rather shiny, with moderately distinct reticulation, slightly depressed along lateral margin, moderately elevated postero-medially. Prosternal process with one pair of basal setae (in one PT one seta missing); metasterna almost twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part narrower than broad episterna. Sternite III medially with very reduced rest of setae, all sterna with few sparse micropunctures mixed with very fine wrinkles and with rather distinct reticulation. Proepisterna moderately shiny, with rather fine reticulation, dense micropunctures and few fine transverse lateral wrinkles; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae with 1-(2) pairs of setae.

**Aedeagus.** As in Fig. 12. Moderately long and very broad, in HT 0.45 times as long as elytra; laterally upper outline moderately convex, lower outline broadly and regularly curved before rather small basal bulb; ventrally lobe rather broad, with apex short, very broadly rounded. Parameres rather long, with rather long and sharp apex.

**Differential diagnosis.** The new species has the body moderately large (10.8-12.7 mm); the pronotum broad, with narrowly rounded posterior angles, one anterior and one posterior lateral SP; the ovate elytra with rather indistinct reticulation, with two DSP in the apical fifth and the interval 8 in the middle being about twice narrower than 7.

This combination of the characters distinctly differs the new species from all three taxa (re)described above. The next differences from all taxa including the newly described ones are figured in the key below.

**Name derivation.** Named in honour of my friend Alexander Dostal (Vienna, Austria), well know specialist in Carabidae, for his loan of several studied specimens.

**Distribution.** SE Kenya, Taita-Taveta Co., Taita Hills.

*Typhloscaris giachinoi* sp. nov.

(Fig. 4)

**Type material.** Holotype (♀): Tanzania, 1850 m / Mafinga (Mufindi) / 3-14.i.1993 / leg. D. Gianasso, (PMGT). Paratypes (3 ♀♀): with the same label as HT (PMGT, PBPC).

**Description.** Habitus as in Fig. 4. Surface black, legs and apical part of antennae dark fuliginous, tarsi, mouth-parts and basal antennomeres slightly lighter. Measurements (n=4): total length 10.5-12.4 mm (HT 12.4 mm); width 2.7-3.4 mm (HT 3.4 mm); width of head 2.3-3.0 mm (HT 3.0 mm); pronotum 1.13-1.19 (HT 1.19) times as broad as long; elytra 1.80-1.87 (HT 1.80) times as long as broad.



Fig. 4. *Typhloscaris giachinoi* sp. nov. Habitus (HT). Actual length 12.4 mm.

Head. Mandibles short and broad, outline very slightly convex, in middle not to indistinctly excised, inner keel rather fine, parallel with outline, surface between them broad, rather dull, roughly reticulated, with 1-2 often just recognizable longitudinal wrinkles; inner margin of inner teeth of both mandibles with 2-(3) very small and blunt complementary teeth, its surface with 2-3 distinct longitudinal keels. Eyes in narrow slot; genae slightly longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower parts or almost all surface of eyes; genae divided from vertex by rather deep and broad facial furrow. Frontal furrows irregularly impressed, short, moderately broadly and rather deeply impressed, parallel posteriorly, abruptly weakened, not diminishing at about level of posterior margin of eyes, gently prolonged to neck; anteriorly indistinctly connected with transverse furrow, latter almost diminishing medially, deeply, irregularly running to anterior part of supraantennal plates. Latter very slightly rounded, anteriorly gently concavely narrowed to anterior clypeal margin with rather blunt, rounded sublateral tooth on each side of rather gently concave anterior clypeal margin with 2-3 more or less distinct, blunt teeth. Surface with 5-6 irregular, deep and another two finer and more prolonged anteriorly sub-longitudinal wrinkles between genae and facial furrows and with few short, irregular wrinkles below sublateral clypeal teeth. Antennae short, antennomere 2 indistinctly longer than 3; antennomeres 5-10 distinctly transverse. Surface moderately shiny, with irregular, very fine reticulation, with fine micropunctuation. Neck without transverse channel. Frontal SP very rudimentary, without setae, facial SP missing.

Pronotum. Strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then directly, very slightly narrowed posteriorly; anterior angles sharp, strongly protruded anteriorly, posterior angles very narrowly rounded, almost obtuse, base almost directly narrowed to almost not differentiated median part. Anterior transverse impression rather finely and superficially impressed in lateral sixth, abruptly disappearing medially, median line rather fine. One anterior and one posterior lateral SP in narrow and fine lateral channel, distinctly broadened in anterior angles, not basally. Surface moderately shiny, with very fine, irregular reticulation and with few fine longitudinal wrinkles below antero-lateral margin and with several very fine, irregular wrinkles and micropunctures on disk. Basal foveae extremely fine, just recognizable, with rather fine reticulation and microtubercles.

Elytra. Surface rather shiny, with irregular rests of very fine reticulation on apex and interval 8. Disk moderately vaulted in lateral view, without concavity below humeri; outline ovate, slightly, regularly broadened in basal half, regularly, narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately slopping humeral ridge with indistinct, very small and blunt humeral tooth, not forming outline; elytra broadest below midlength. Striae 1-7 moderately deep, rather distinctly weakened in posterior third, impunctate, intervals 1-5 slightly vaulted basally, interval 6-7 moderately vaulted and narrowed below humeri, interval 8 at midlength almost twice narrower than 7, rather distinctly vaulted but not forming sharp keel, all intervals flattened apically; lateral channel rather broad and moderately deep, slightly broadened apically; stria 8 apically indistinct. Base covered by broad row of small tubercles mixed with some larger setose ones, placed on base without distinct elevation. Third interval with two DSP in apical fifth.

Lower surface. Mentum laterally rather slightly vaulted, distinctly, broadly, parallel beaded, laterally with sparse irregular tubercles and few wrinkles especially anteriorly; surface with moderately distinct reticulation; anterior angles gently sharp-angular, narrowly rounded; median part irregularly rugose depressed, with slightly elevated, rather sharp and narrow median keel; its anterior margin rather distinctly and narrowly elevated, directly narrowed to narrow, moderately bent down anterior tooth; paragenes very slightly and broadly excised in anterior third, inner tooth very obtuse; posterior margin rather distinctly, narrowly and very shortly prolonged postero-laterally by blunt ridge; surface of paragenes rather shiny, with moderately distinct reticulation, slightly depressed along lateral margin, moderately elevated postero-medially. Prosternal process with one pair of basal setae (in HT and one PT one seta missing); metasterna almost twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part narrower than broad episterna. Sternite III medially with considerably reduced rest of setae, all sterna with moderately distinct and dense punctures mixed with fine wrinkles and with fine reticulation. Proepisterna moderately shiny, with rather fine reticulation and few fine transverse lateral wrinkles; episterna shiny, with fine reticulation and fine wrinkles and few micropunctures; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae without setae.

Legs. Anterior tibiae with (4)-5 gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth below level of lower margin of protibiae.

**Differential diagnosis.** The new species has the body moderately large (10.5-12.4 mm); the narrow pronotum with the very narrowly rounded posterior angles, one anterior and one posterior lateral SP; the ovate elytra with the rather indistinct reticulation, two DSP in apical fifth and the interval 8 being in the middle about twice narrower than 7.

This combination of the characters distinctly differs the new species from all four taxa (re)described above. The next differences from all taxa including the newly described ones are figured in the key below.

**Name derivation.** Named in honour of my friend Pier Mauro Giachino (Torino), well know specialist in Carabidae, for his loan and donating of some studied specimens.

**Distribution.** C Tanzania, Iringa Province, Mafinga (Mufindi).

*Typhloscaris udzungwaensis* sp. nov.

(Figs. 5, 13)

**Type material.** Holotype (♂): Tanzania: Uzungwa Mts., Iringa Region / Uzungwa Scarp Forest Res., above Chita village, 1450 m / 4-9.xi.1984, Pitfall Traps, Montane Rain Forest / N. Scharff leg.; Zoologisk Museum København, (ZMUC). Paratype: (1 ♀): Tanzania: Uzungwa Mts., Iringa Region / Uzungwa Scarp Forest Res., above Chita village, 1400 m / 4-5.xi.1984, Pitfall Traps in Montane / Rain Forest, N. Scharff leg.; Zool. Museum København, (PBPC).

**Description.** Habitus as in Fig. 5. Surface black, legs and apical part of antennae dark fuliginous, meso- and metatibiae, tarsi, mouth-parts and basal antennomeres slightly lighter. Measurements (n=2): total length in HT 11.0 mm, in PT 9.8 mm; width in HT 2.8 mm, in PT 2.5 mm; width of head in HT 2.5 mm, in PT 2.2mm; pronotum in HT 1.23, in PT 1.19 times as broad as long; elytra in HT 1.80, in PT 1.88 times as long as broad.

Head. Mandibles in HT moderately long, in PT rather short, slightly curved, outline in middle slightly concave, inner keel rather sharp, disappearing anteriorly at about apical fifth; surface between outline and keel moderately concave, in HT not, in PT very indistinctly, sub-longitudinally wrinkled; subparallel, very slightly broadened before base; inner margin of both mandibles with 2-3 small, in HT rather sharp, complementary teeth, its surface with few oblique wrinkles. Eyes in narrow slot; genae long and laterally rather flattened, overlapped posterior-basal part of eyes, apically broadly rounded, slightly broader than eyes; genae divided from vertex by moderately deep and broad channel. Frontal furrows irregular, in HT very broad and deep, parallel posteriorly, in PT less deeper and broader; furrows diminishing at above level of posterior margin of eyes; 4-5 longitudinal, rather deep and moderately long and another inner 2-3 finer wrinkles (latter more prolonged anteriorly outside of frontal furrows) between genae and frontal furrows; vertex between furrows with another few irregular and very fine longitudinal furrows; frontal furrows anteriorly connected by very fine transverse furrow, running antero-laterally to anterior part of supraantennal plates. Latter rather slightly, regularly broadened, anteriorly with short and rather blunt excision, narrowed to anterior clypeal margin with small, narrowly rounded sublateral tooth on each side of moderately concave, anterior clypeal margin without median teeth. Surface with next, in HT short, in PT longer, rather deep wrinkles below antero-lateral margin. Antennae moderately long, antennomeres 4-6 very slightly longer than broad, 7-10 rather slightly transverse; antennomere 2 very slightly longer than 3. Surface moderately shiny, with irregular, almost indistinct reticulation, with dense and rather large micropunctures, latter distinctly larger on neck. Frontal and facial SP missing.

Pronotum. Moderately vaulted in lateral view, outline indistinctly broadened just below anterior angles, then direct, in HT slightly, in PT almost not narrowed posteriorly; anterior angles very sharp, strongly protruding anteriorly, posterior angles narrowly rounded, base almost direct, median part slightly protruding, almost not differentiated. Anterior transverse impression irregular, rather broadly and finely impressed in lateral sixth, in HT irregularly finer, in PT almost diminishing medially, median line moderately fine. One anterior and one

posterior lateral SP in rather fine lateral channel, broadened in anterior angles, narrowly interrupted above posterior lateral SP, not broadened basally. Surface moderately shiny, with indistinct reticulation, very dense and rather distinct micropunctuation and with some very short and fine longitudinal wrinkles below anterior margin (less distinct in PT). Basal foveae indistinct, just recognizable as small, rather indistinctly reticulated area above base.

Elytra. Surface moderately shiny, with irregular, very fine reticulation on disk and very slightly more distinct latero-apically. Disk rather slightly vaulted in lateral view, without distinct concavity below humeri; outline ovate, very slightly, regularly broadened in basal half, regularly, rather narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately slopping humeral ridge without humeral tooth; elytra broadest below midlength. Striae 1-7 rather deep, impunctate, deepened and broadened antero-laterally, slightly finer medio-apically; intervals 1-6 moderately vaulted, more vaulted latero-basally, interval 7 narrowed basally, formed very blunt keel below humeri, flattened apically, interval 8 very narrow, at midlength about three times narrower than 7, forming blunt keel along stria 7, narrowed basally and distinctly flattened on apex; lateral channel very broad and moderately deep, very slightly broadened apically, with very rough and dense tubercles; stria 8 indistinct. Base covered by very broad row of tubercles mixed with some larger setose ones, placed on base without distinct elevation. Third interval with 4-5 large DSP (two in apical fifth, one in apical third and 1-2 above midlength).

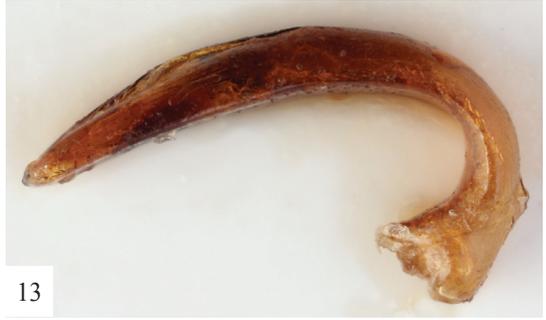
Lower surface. Mentum laterally rather slightly vaulted, distinctly and broadly parallel beaded, laterally with indistinct sub-longitudinal wrinkles; surface with distinct reticulation and sparse, rough tubercles; anterior angles sharp-angular, very narrowly rounded; median part very broadly and strongly deepened, with moderately elevated, sharp and narrow median keel; its anterior margin almost transverse, rather distinctly and narrowly elevated, anterior tooth narrow and long, moderately bent down; paragenes slightly and broadly excised in anterior third, inner tooth obtuse; posterior margin distinctly, prolonged postero-laterally by long and rather sharp ridge; surface of paragenes moderately shiny, with distinct reticulation, indistinctly concave along lateral margin, slightly elevated postero-medially. Prosternal process with one pair of basal setae; metasterna about twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part distinctly narrower than broad episterna. Sternite III medially with strongly reduced group of very fine setae, sternite with dense and rather deep punctures and few wrinkles, rather dull, with distinct reticulation; episterna moderately shiny, with rather distinct reticulation and distinct, irregular large punctures; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae without setae.

Legs. Anterior tibiae with four gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth rather distinctly below level of lower margin of protibiae.

Aedeagus. As in Fig. 13. Moderately long and very broad, in HT 0.45 times as long as elytra; laterally upper outline slightly convex, lower outline gently, regularly concave, regularly long convergent with upper outline apically, broadly and moderately strongly curved before small basal bulb; ventrally lobe broad, subparallel, with apex very



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Fig. 5. *Typhloscaris udzungwaensis* sp. nov. Habitus (HT). Actual length 11.0 mm.

Fig. 13. *Typhloscaris udzungwaensis* sp. nov. Aedeagus (HT) in left lateral view. Actual length 2.15 mm.

short, abruptly, very broadly rounded. Parameres moderately long, with moderately long and sharp apex.

**Differential diagnosis.** The new species has the body rather small (9.8-11.0 mm); the narrow pronotum with very narrowly rounded posterior angles, one anterior and one posterior lateral SP; the ovate elytra with rather indistinct reticulation,

4-5 DSP in its whole length and with the interval 8 being in the middle about three times narrower than 7.

This combination of the characters distinctly differs the new species from all five taxa (re)described above. The next differences from all taxa including the newly described ones are figured in the key below.

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

**Distribution.** Tanzania, Iringa Region, Udzungwa Mts.

***Typhloscaris szeli* sp. nov.**

(Figs. 6, 14)

**Type material.** Holotype (♂): Tanzania / Tanga Region // Kwamsambia / For. Res. [ca. 5°11'S, 38°38'E]; 13.ii.1987 // singling No. 114 / Mahunka & Zicsi, (HNHM).

**Description.** Habitus as in Fig. 6. Colour very dark fuliginous, legs, antennae and mouthparts dark ferruginous, anterior femora slightly darker. Measurements (n=1): total length 9.9 mm; width 2.6 mm; width of head 2.4 mm; pronotum 1.21 times as broad as long; elytra 1.77 times as long as broad.

Head. Mandibles short and broad, outline very slightly convex, in middle very slightly

excised, inner keel rather fine apically, more elevated basally, parallel with outline, surface between them rather narrow, distinctly, regularly deepened, shiny, without wrinkles; inner margin of both mandibles with (2)-3 very small and very blunt complementary teeth, its surface with 2-3 fine and short, more or less longitudinal keels. Eyes in narrow slot; genae rather flattened, longer than eyes, regularly and broadly rounded apically, irregularly divided from vertex by rather fine facial furrow. Frontal furrows irregular, broadly and moderately deeply impressed, subparallel posteriorly, abruptly narrowed and weakened, almost diminish at about level of posterior margin of eyes, gently prolonged almost to neck by fine striae; anteriorly connected with transverse furrow, finer medially, more deeply, irregularly running to anterior part of supraantennal plates. Latter slightly rounded, anteriorly gently convexly narrowed to anterior clypeal margin with small, slightly rounded sublateral tooth on each side of moderately concave anterior clypeal margin with very blunt, indistinct median teeth. Surface with 5-7 irregular, rather fine and rather short sub-longitudinal wrinkles between inner margin of eyes and facial furrows. Antennae rather short, antennomere 2 distinctly longer than 3; antennomeres 5-10 very slightly transverse. Surface moderately shiny, with irregular, very fine reticulation mixed with fine micropunctation. Neck without transverse channel. Frontal and facial SP missing.

Pronotum. Rather strongly vaulted in lateral view, outline distinctly broadened just below anterior angles, then very slightly convex, not narrowed posteriorly; anterior angles rather sharp, rather strongly protruded anteriorly, posterior angles rather narrowly rounded, from lateral view with almost indistinct, strongly rounded tooth; base almost directly narrowed to rather slightly prolonged median part. Anterior transverse impression irregular, very finely impressed in lateral sixth, irregularly disappeared medially, median line rather fine and moderately broad. Neither anterior nor posterior lateral SP; lateral channel distinctly broadened just below anterior angles, almost not basally. Surface moderately shiny, with fine, irregular reticulation and dense, very fine, irregular wrinkles and dense micropunctures. Basal foveae fine, with moderately fine reticulation and micro-wrinkles.

Elytra. Surface moderately shiny, with rather distinct reticulation. Disk rather slightly vaulted in lateral view, without concavity below humeri; outline ovate, rather distinctly convexly broadened in basal half, regularly, narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and rather slightly sloping humeral ridge with very small and blunt humeral tooth; elytra broadest slightly below midlength. Striae 1-7 deep, indistinctly weakened on apex, impunctate, intervals 1-6 moderately vaulted postero-basally, slightly flattened medio-apically, interval 7 slightly more vaulted below humeri, interval 8 at midlength about three times narrower than 7, forming rather sharp keel almost to apex; intervals 5-7 moderately vaulted apically; lateral channel broad and moderately deep, slightly broadened apically; stria 8 irregular, almost indistinct. Base with broad row of small tubercles mixed with some larger ones, placed on base without distinct elevation. Third interval with three DSP (two in apical fifth and one at about midlength).

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

Lower surface. Mentum laterally very slightly vaulted anteriorly, subparallel, very broadly beaded, laterally with few fine wrinkles; surface with very distinct reticulation; anterior angles



Fig. 6. *Typhloscaris szeli* sp. nov. Habitus (HT). Actual length 9.9 mm.

Fig. 14. *Typhloscaris szeli* sp. nov. Aedeagus (HT) in left lateral view. Actual length 2.25 mm.

gently sharp-angular, narrowly rounded; median part irregularly rugose, depressed, with moderately elevated, narrow median keel; its anterior margin strongly elevated posteriorly, directly narrowed to narrow, moderately bent down anterior tooth; paragenes rather slightly and broadly excised in anterior third, inner tooth rather obtuse; posterior margin rather narrowly prolonged postero-laterally and postero-medially by subparallel ridges; surface of paragenes rather dull, with rough reticulation, narrowly depressed along lateral margin, moderately elevated postero-medially. Prosternal process with one pair of basal setae; metasterna almost twice shorter than hind coxae; metepisterna short rhomboid-shape, its

anterior part narrower than broad episterna. Sternite III medially with very reduced group of punctures, all sterna with few sparse micropunctures mixed with very fine wrinkles and with rather distinct reticulation. Proepisterna moderately shiny, with rather fine reticulation, dense micropunctures and few fine transverse lateral wrinkles; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae with one pair of setae.

Aedeagus. As in Fig. 14. Median lobe rather long and narrow, 0.49 times as long as elytra; laterally upper outline slightly, irregularly bisinuate, lower outline rather regularly, slightly concave, laterally lobe distinctly broadened in apical third and strongly narrowed before basal bulb; ventrally aedeagus moderately broad, at about midlength slightly, broadly concave from both sides, with apex long, rather narrowly rounded. Parameres rather long, with long and sharp apex.

**Differential diagnosis.** The new species has the body small (9.9 mm); the narrow pronotum with very narrowly rounded posterior angles and none lateral SP; the ovate elytra with rather indistinct reticulation, three DSP (the anterior one is at about midlength, remaining two are before the apex) and the interval 8 being in the middle about three times narrower than 7.

This combination of the characters distinctly differs the new species from all six taxa (re) described above. The next differences among all taxa including newly described ones are figured in the key below.

**Name derivation.** Named in honour of Győző Szél (HNHM, Budapest) for his significant help in my study of Afrotropical Scaritinae.

**Distribution.** Tanzania, Tanga Region, E Usambara, Kwamsambia Forest reserve.

***Typhloscaris havai* sp. nov.**

(Figs. 7, 15)

**Type material.** Holotype (♂): Kenya / Taveta // Coll. Mus. Congo / Coll. P. Basilewsky, (MRAC).

**Description.** Habitus as in Fig. 7. Colour fuliginous, elytra and legs light fuliginous, mouthparts and antennae dark ferruginous. Measurements (n=1): total length 11.7 mm; width 3.1 mm; width of head 2.8 mm; pronotum 1.26 times as broad as long; elytra 1.73 times as long as broad.

Head. Mandibles moderately long, with rather long, slightly curved apex; outline very slightly convex, in middle very slightly excised, inner keel rather distinct apically, gently more elevated basally, subparallel with outline, surface between them rather narrow, distinctly, regularly deepened, rather dull, with distinct reticulation, without wrinkles; inner margin of left mandible with one moderately large and blunt tooth in basal third and another two small and very blunt in apical third, right mandible with complementary structure; its surface with 1-2 short and one longer longitudinal keels. Eyes in narrow slot; genae rather vaulted, slightly longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower and posterior parts of eyes; genae divided from vertex by irregular, moderately deep and narrow facial furrow. Frontal furrows irregular, very broadly and moderately deeply impressed, abruptly strongly narrowed and weakened, almost diminish at about level of posterior margin of eyes, indistinctly and shortly prolonged posteriorly by very fine striae; anteriorly connected with transverse furrow, finer medially, irregularly running to anterior part of supraantennal plates. Latter slightly rounded, anteriorly gently concave narrowed to anterior clypeal margin with rather sharp, slightly rounded sublateral tooth on each side of almost rectangular concave anterior clypeal margin without median teeth. Surface between inner margin of eyes and facial furrows with 6-8 lateral, irregular, short and rather fine wrinkles and medially with another 2(-3) deeper and anteriorly much longer longitudinal wrinkles along outer sides of facial furrows. Antennae rather short, antennomere 2 distinctly longer than 3; antennomeres 5-6 slightly, 7-10 distinctly transverse. Surface moderately shiny, with irregular, fine reticulation mixed with fine micropunctuation. Neck without transverse channel. Frontal and facial SP missing.

Pronotum. Strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then almost direct, slightly narrowed posteriorly; anterior angles sharp, rather strongly protruding anteriorly, posterior angles narrowly rounded, almost obtuse, from lateral view with indistinct, broadly rounded tooth; base slightly convexly narrowed to rather slightly prolonged median part. Anterior transverse impression almost indistinct,



Fig. 7. *Typhloscaris havai* sp. nov. Habitus (HT). Actual length 11.7 mm.

Fig. 15. *Typhloscaris havai* sp. nov. Aedeagus (HT) in left lateral view. Actual length 2.50 mm.

very shortly and rather broadly impressed near lateral margin, indistinct medially, median line rather fine and narrow. One anterior and none posterior lateral SP in narrow and fine lateral channel, very distinctly broadened just below anterior angles, not basally. Surface moderately shiny, with very fine, irregular reticulation and dense, very fine, irregular wrinkles and micropunctures. Basal foveae very fine, just recognizable, with more distinct reticulation.

Elytra. Surface rather shiny, with irregular rests of very fine reticulation on apex and interval 8. Disk

moderately strongly vaulted in lateral view, without concavity below humeri; outline ovate, slightly, regularly broadened in basal half, regularly, rather broadly rounded in posterior half; base rather narrow, gently concave before indistinct, short and slightly sloping humeral ridge without humeral tooth; elytra broadest below midlength. Striae 1-7 fine and rather superficial, weakened latero-apically, impunctate, intervals 1-4 slightly, 5-7 moderately vaulted; narrowed and distinctly vaulted below humeri; interval 8 slightly vaulted, almost twice narrower than 7; lateral channel rather broad and moderately deep, slightly broadened apically; stria 8 indistinct. Base covered by broad row of small tubercles mixed with some larger setose ones, placed on base without distinct elevation. Third interval with two DSP in apical fifth.

Legs. Anterior tibiae with (3)-4 gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth just below level of lower margin of protibiae.

Lower surface. Mentum laterally rather slightly vaulted, finely and irregularly, rather broadly beaded, laterally with sparse irregular tubercles and few wrinkles especially anteriorly; surface with moderately distinct reticulation; anterior angles sharp-angular, narrowly rounded; median part irregularly rugose, depressed, with moderately elevated,

sharp and narrow median keel; its anterior margin rather distinctly and narrowly elevated, directly narrowed to narrow, moderately bent down anterior tooth; paragenes very slightly and broadly excised in anterior third, inner tooth very obtuse to slightly rounded; posterior margin rather irregularly, narrowly prolonged postero-laterally by rather blunt ridge; surface of paragenes rather shiny, with moderately distinct reticulation, slightly depressed along lateral margin, moderately elevated postero-medially. Prosternal process with two pairs of basal setae; metasterna almost twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part narrower than broad episterna. Sternite III medially with very reduced group of punctures, all sterna with rather rough and dense micropunctures mixed with fine wrinkles and with rather distinct reticulation. Proepisterna moderately shiny, with rather fine reticulation, dense micropunctures and few fine transverse lateral wrinkles; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae without setae.

Aedeagus. As in Fig. 15. Rather long and moderately broad, 0.48 times as long as elytra; laterally upper outline slightly, convexly broadened apically to moderately long, strongly narrowed apex, moderately strongly curved before rather large basal bulb; ventrally lobe moderately broad, subparallel, with apex short, strongly narrowed to narrowly rounded tip. Parameres moderately long, with moderately long and sharp apex.

**Differential diagnosis.** The new species has the body moderately small (11.7 mm); the rather narrow pronotum with narrowly rounded posterior angles, one anterior and none posterior lateral SP; the ovate elytra with rather indistinct reticulation, two DSP in apical fifth and the interval 8 moderately vaulted, not carinate, in the middle being almost twice narrower than 7.

This combination of the characters distinctly differs the new species from all seven taxa (re)described above. The next differences from all taxa including the newly described ones are figured in the key below.

**Name derivation.** Named in honour of Jiří Háva (Prague), well known specialist in Dermestidae (Coleoptera).

**Distribution.** S Kenya, Taita-Taveta Co., Taveta.

*Typhloscaris minima* sp. nov.

(Figs. 8,16)

**Type material.** Holotype (♂): Tanzania / [W] Usambara // Neu Bethel [= Mnazi], 16.iii.1905, (MNHB).

**Description.** Habitus as in Fig. 8. Whole surface ferruginous. Measurements (n=1): total length 8.5 mm; width 2.2 mm; width of head 1.9 mm; pronotum 1.16 times as broad as long; elytra 1.92 times as long as broad.

Head. Mandibles short and broad, outline very slightly convex, in middle indistinctly excised, inner keel rather fine, parallel with outline, surface between them broad, moderately shiny, rather roughly reticulate, with 1-2 longitudinal wrinkles; inner margin of both

mandibles with 2-(3) very small and blunt complementary teeth, its surface with 2-3 distinct longitudinal keels. Eyes in narrow slot; genae slightly longer than eyes, regularly and broadly rounded apically, broader than eyes, prolonged anteriorly, distinctly overlapped lower parts eyes; genae divided from vertex by rather deep and moderately broad facial furrow. Frontal furrows very short, very broadly and rather deeply impressed, strongly broadened anteriorly, divergent posteriorly, abruptly weakened, not diminishing at about level of posterior margin of eyes, superficially and narrowly prolonged to neck; anteriorly indistinctly connected with transverse furrow, latter almost diminish medially, very broadly, irregularly running to anterior part of supraantennal plates. Latter very slightly rounded, anteriorly gently concavely narrowed to anterior clypeal margin with rather blunt, rounded sublateral tooth on each side of rather gently concave anterior clypeal margin without distinct median tooth. Surface with five short irregular, deep and another two finer and more prolonged anteriorly sub-longitudinal wrinkles between genae and facial furrows and with few short, fine, irregular wrinkles below sublateral clypeal teeth. Antennae short, antennomere 2 indistinctly longer than 3; antennomeres 5-10 distinctly transverse. Surface moderately shiny, with irregular, very fine reticulation, with fine micropunctuation. Neck without transverse channel. Frontal and facial SP missing.

**Pronotum.** Strongly vaulted in lateral view, outline indistinctly broadened just below anterior angles, then almost direct, very slightly narrowed posteriorly; anterior angles very sharp, rather strongly protruded anteriorly, posterior angles narrowly rounded, almost obtuse, from lateral view with blunt, broadly rounded tooth; base very slightly convexly

narrowed to rather slightly prolonged median part. Anterior transverse impression indistinctly and rather broadly impressed near lateral margin and indistinct medially, median line rather fine and narrow. One anterior and one posterior SP in narrow and fine lateral channel, rather slightly broadened just below anterior angles, not basally. Surface moderately shiny, with very few fine and irregular



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Fig. 8. *Typhloscaris minima* sp. nov. Habitus (HT). Actual length 8.5 mm.

Fig. 16. *Typhloscaris minima* sp. nov. Aedeagus (HT) in left lateral view. Actual length 1.75 mm.

longitudinal wrinkles below antero-lateral margin; with very fine, irregular reticulation and moderately dense, very fine, irregular wrinkles and micropunctures. Basal foveae very fine, just recognizable, with more distinct reticulation.

Elytra. Surface rather shiny, with irregular rests of very fine reticulation on apex and interval 8. Disk moderately vaulted in lateral view, without concavity below humeri; outline very long-ovate, slightly, regularly broadened in basal half, regularly, narrowly rounded in posterior half; base rather narrow, gently concave before indistinct, short and moderately sloping humeral ridge with indistinct, very small and blunt humeral tooth, not forming outline; elytra broadest below midlength. Striae 1-7 moderately deep, rather distinctly weakened in posterior third, impunctate, intervals 1-5 slightly vaulted basally, interval 6-7 moderately vaulted and narrowed below humeri, interval 8 at midlength more than twice narrower than 7, rather distinctly vaulted but not forming sharp keel, all intervals flattened apically; lateral channel rather broad and moderately deep, slightly broadened apically; stria 8 irregularly impressed, apically indistinct. Base covered by broad row of small tubercles mixed with some larger setose ones, placed on base without distinct elevation. Third interval with two DSP in apical fifth.

Legs. Anterior tibiae with (3)-4 gradually decreasing lateral teeth above final tooth. Connection between terminal tooth and anterior margin of first lateral tooth rather distinctly below level of lower margin of protibiae.

Lower surface. Mentum laterally rather slightly vaulted, distinctly, rather broadly beaded, laterally with sparse irregular tubercles and few wrinkles especially anteriorly; surface with moderately distinct reticulation; anterior angles sharp-angular, moderately narrowly rounded; median part irregularly rugose, depressed, with moderately elevated, basally sharp and narrow median keel; its anterior margin rather distinctly and narrowly elevated, convexly narrowed to narrow, moderately bent down anterior tooth; paragenes very slightly and broadly excised in anterior third, inner tooth indistinct, broadly rounded; posterior inner and lateral margin rather irregularly, narrowly prolonged postero-laterally by rather sharp, posteriorly convergent ridges; surface of paragenes moderately shiny, with rather distinct reticulation, rather slightly depressed along lateral margin, moderately elevated postero-medially. Prosternal process with one pair of basal setae; metasterna twice shorter than hind coxae; metepisterna short rhomboid-shape, its anterior part narrower than broad episterna. Sternite III medially with reduced group of punctures, all sterna with rather rough and dense micropunctures mixed with fine wrinkles and with rather distinct reticulation. Proepisterna moderately shiny, with rather fine reticulation, dense micropunctures and few fine transverse lateral wrinkles; epipleura rather broad to anterior margin of sternite II, posteriorly moderately narrowed, with rather fine reticulation. Anterior margin of mesothorax between mesocoxae without setae.

Aedeagus. As in Fig. 16. Rather short and broad, 0.43 times as long as elytra; laterally upper outline slightly, regularly vaulted, lower outline rather narrowly and strongly curved before rather large basal bulb; ventrally aedeagus broad, with apex rather long, distinctly narrowed to very narrowly rounded apex. Parameres moderately long, with rather long and sharp apex.

**Differential diagnosis.** The new species has the upper surface ferruginous, the body very small (8.5 mm); the narrow pronotum with rather narrowly rounded posterior angles, with one anterior and one posterior lateral SP; the very long ovate elytra with rather indistinct reticulation, two DSP before the apex and with the interval 8 being in the middle more than twice narrower than 7.

This combination of characters distinctly differs the new species from all eight taxa (re)described above. The next differences among all taxa including newly described ones are figured in the key below.

**Name derivation.** In accordance with the very small size of the type specimen.

**Distribution.** Tanzania, Tanga region, northern borders of W Usambara Mts., Mnazi (= New Bethel).

#### KEY TO SPECIES OF GENUS *TYPHLOSCARIS* S. STR.

- 1(4) Larger species, over 14 mm, left mandible of males mostly with large, strongly elevated inner tooth. Prosternal process and anterior margin of mesothorax between mesocoxae with (4)5-7 setae.
- 2(3) Pronotum with none anterior and one posterior SP. Length 14.1-17.3 mm. Antennomeres 5-10 about as long as broad. Elytra with more rounded outline, with 3-(4) DSP in posterior half. E Usambara, Tanga Region. .  
..... *T. macrodus* Kuntzen, 1914
- 3(2) Pronotum with one anterior and none posterior SP. Length 14.7 mm. Antennomeres 5-10 very distinctly longer than broad. Elytra with less rounded outline, with five DSP (two of them above midlength). Udzungwa Mts. .... *T. garnerae* sp. nov.
- 4(1) Smaller species, below 13.5mm, left mandible of males without strongly elevated inner tooth. Prosternal process and anterior margin of mesothorax between mesocoxae with 0-2, rarely 4 setae.
- 5(8) Pronotum with none lateral SP.
- 6(7) Elytral striae superficial, all intervals flat, interval 8 about as broad as 7. Length 12.0-12.3 mm. Kiboriani Mts. .... *T. microphthalma* Bänninger, 1929
- 7(16) Elytral striae moderately deep, all intervals at least slightly vaulted, interval 8 about three times narrower than 7. Length 9.9 mm. Tanga region, Kwamsambia ..... *T. szeli* sp. nov.
- 8(5) Pronotum with one anterior and 0-1 posterior SP. Elytral intervals at least slightly vaulted.
- 9(12) Pronotum without posterior SP.
- 10(11) Elytra with interval 8 almost three times narrower than 7, (sub)carinate anteriorly, striae rather deep. Aedeagus as in Fig. 8, very long, about 0.60 times as long as elytra, ventrally with long and narrowly rounded apex. Length 11.6-12.7 mm. Tanzania, W Usambara; ?N Kenya, Lodwar. ....  
..... *T. lushotoensis* sp. nov.
- 11(10) Elytra with interval 8 almost twice narrower than 7, rather slightly convex, not carinate, striae rather fine. Aedeagus as in Fig. 15, moderately long, about 0.48 times as long as elytra, ventrally with moderately long and narrowly rounded apex. Length 10.8-12.7 mm. S Kenya, Taveta. .... *T. hawaii* sp. nov.
- 12(9) Pronotum with posterior SP.
- 13(14) Pronotum broader, about / over 1.3 times as broad as long, with less parallel sides. Elytra with interval 8 about twice narrower than 7, strongly convex, not carinate; aedeagus as in Fig. 9, short, 0.44 times as long as elytra, ventrally with short and very broadly rounded apex. Length 10.8-12.7 mm. S Kenya, Taita Hills..  
..... *T. dostali* sp. nov.
- 14(13) Pronotum narrower, about 1.2 times as broad as long, with parallel sides.
- 15(18) Elytra with striae finer, intervals basally slightly to moderately vaulted; with two DSP near apex. Interval 8 in middle about twice narrower than 7, not carinate, flattened apically.

- 16(17) Upper surface black; length 10.5-12.4 mm, elytra shorter, with outline moderately convex. Iringa prov. ....  
 ..... *T. giachinoi* sp. nov.
- 17(16) Surface ferruginous; length 8.5 mm, elytra longer, with outline very slightly convex. W Usambara Mts. ....  
 ..... *T. minima* sp. nov.
- 18(15) Elytra with striae much deeper, intervals basally rather strongly vaulted; with 3-5 DSP. Interval 8 in middle  
 about three times narrower than 7, strongly vaulted, (sub)carinate.
- 19(20) Elytra with three moderate DSP (none above midlength). Aedeagus as in Fig. 10, very short, 0.42 times as  
 long as elytra, ventrally with moderately broadly rounded apex. Length 11.2-11.5 mm. Tanga Region. ....  
 ..... *T. gracilis* Bänninger, 1929
- 20(19) Elytra with 4-5 large DSP (1-2 of them above midlength). Aedeagus as in Fig. 13, short, 0.45 times as long  
 as elytra, ventrally with very broadly rounded apex. Length 9.8-11.0 mm. Udzungwa Mts. ....  
 ..... *T. udzungwaensis* sp. nov.

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