

# First contribution to the knowledge of Afrotropical *Epitoxus* Lewis (Coleoptera: Histeridae)

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## Abstract

Up to now, thirteen species of *Epitoxus* were recognized. The following fifteen new species are described from the Afrotropical region: *E. depressus* sp. n., *E. parallelistrius* sp. n., *E. namibiensis* sp. n., *E. kanaari* sp. n., *E. longipennis* sp. n., *E. aurorae* sp. n., *E. latus* sp. n., *E. walteri* sp. n., *E. irregularis* sp. n., *E. dentatus* sp. n., *E. tanzanicus* sp. n., *E. therondi* sp. n., *E. uhligi* sp. n., *E. ruwenzoricus* sp. n. and *E. ugandensis* sp. n.

KEYWORDS: Insecta, Coleoptera, Histeridae, *Epitoxus*, taxonomy, Afrotropical region.

## Resum

### Revisió dels *Epitoxus* Lewis Afrotropicals (Coleoptera: Histeridae) (1).

Fins ara tan sols eren conegudes tretze espècies d'*Epitoxus* de la regió Afrotropical. Ara es descriuen les següents quinze noves espècies: *E. depressus* sp. n., *E. parallelistrius* sp. n., *E. namibiensis* sp. n., *E. kanaari* sp. n., *E. longipennis* sp. n., *E. auro-*

*rae* sp. n., *E. latus* sp. n., *E. walteri* sp. n., *E. irregularis* sp. n., *E. dentatus* sp. n., *E. tanzanicus* sp. n., *E. therondi* sp. n., *E. uhligi* sp. n., *E. ruwenzoricus* sp. n. i *E. ugandensis* sp. n.

MOTS CLAU: Insecta, Coleoptera, Histeridae, *Epitoxus*, taxonomia, regió Afrotropical.

## Resumen

### Revisión de los *Epitoxus* Lewis Afrotropicales (Coleoptera: Histeridae) (1).

Hasta ahora sólo se conocían trece especies de *Epitoxus* de la región Afrotropical. Ahora se describen las siguientes quince nuevas especies: *E. depressus* sp. n., *E. parallelistrius* sp. n., *E. namibiensis* sp. n., *E. kanaari* sp. n., *E. longipennis* sp. n., *E. aurorae* sp. n., *E. latus* sp. n., *E. walteri* sp. n., *E. irregularis* sp. n., *E. dentatus* sp. n., *E. tanzanicus* sp. n., *E. therondi* sp. n., *E. uhligi* sp. n., *E. ruwenzoricus* sp. n. y *E. ugandensis* sp. n.

PALABRAS CLAVE: Insecta, Coleoptera, Histeridae, *Epitoxus*, taxonomía, región Afrotropical.

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## Introduction

After studying several *Epitoxus* collected by Dr. Philippe Walter in Tropical Africa, several new species were identified using external morphology. I was surprised to observe that each supposed species exhibited genital polymorphism (9th abdominal tergite of male, spiculum gastrale and aedeagus). As a result of this, I decided to undertake a complete study of the genus. This work has established the wide variability of the pieces of the genitalia, as well as the limited external variability. In fact, few species are well characterized by its external morphology.

There are two general works on the genus (Desbordes, 1917, 1922), both important, but only using external morphology. The other works deal with descriptions of species, synonymical changes or new records: Boheman (1851), Lewis (1885, 1889, 1897, 1900, 1905, 1907, 1914), Marseul (1853, 1861), Mazur (1972) and Théron (1965). *Epitoxus* was considered an Afrotropical genus, but Vienna (1986) and Mazur (1989) described two Asian species. Several of the former thirteen species had been included in the genera *Saprinus*, *Phelister* and *Coelocraera*.

The re-descriptions of the other known species, new synonyms, designation of lectotypes and keys to species will be enclosed in a second contribution about the complete revision of this Genus.

## Materials, methods and terminology

Specimens examined in the complete study were borrowed from or deposited in the following collections: IRSN (Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium), IZBSA (Institute of Zoology

Byelorussian Science Academy), MCSN (Museo Civico di Storia Naturale «Giacomo Doria», Genova, Italy), MHN (Muséum d'Histoire Naturelle, Genève, Switzerland), MNHN (Muséum National d'Histoire Naturelle, Paris, France), MNHU (Museum für Naturkunde der Humboldt-Universität, Berlin, Germany), MRAC (Musée Royal de l'Afrique Centrale, Tervuren, Belgium), MTMA (Magyar Természettudományi Múzeum Allatára, Budapest, Hungary), ND (collection Nicolas Dégallier, Montpellier, France), NHML (Natural History Museum, London, United Kingdom), NHMM (Natural History Museum of Malawi, Blantyre, Malawi), NHMZ (Natural History Museum of Zimbabwe, Bulawayo, Zimbabwe), NR (Naturhistoriska Riksmuseet, Stockholm, Sweden), PK (collection Piet Kanaar, Oegstgeest, Holland), PV (collection Pierpaolo Vienna, Venezia-Lido, Italy), SAM (Suid-Afrikaanse Museum, Cape Town, South Africa), SM (collection Sła-womir Mazur, Warszawa, Poland), SMN (Staatliches Museum für Naturkunde, Stuttgart, Germany), TM (Transvaalse Museum, Pretoria, South Africa), TY (collection Tomàs Yélamos, Barcelona, Catalonia, Spain), YG (collection Yves Gomy, Granville, France), ZFMAK (Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany), ZI (Zoologiska Institutionen, Lunds Universitet, Lund, Sweden) and ZM (Zoologisk Museum, København, Danmark).

The maximum length of body is measured excluding head, propygidium and pygidium. The maximum width is measured between both elytral bases on the humeral areas.

The complete original data of labels are included for each species (delimited as /.../).

The terminology used for the genitalic parts and metasternum could be observed in figures 36, 52, 55 and 56.

## Abbreviations

AT:	apical teeth
BP:	basal projections
DV:	dorsal view
ES:	eighth sternite
ET:	eighth tergite
LMS:	lateral metasternal stria
LV:	lateral view
M:	mesepimeron
MES:	metepisternal stria
MS:	mesepimeral suture
MSC:	mesocoxa
MTC:	metacoxa
MW:	membranous window
O:	opercle
PCS:	postcoxal stria
VP:	ventral projection
VV:	ventral view

## Subfamily Histerinae Gyllenhal, 1808

### Tribe Exosternini Bickhardt, 1917

Genus *Epitoxus* Lewis, 1900

*Epitoxus* Lewis, 1900: 278.

Type species: *Phelister circelifrons* Marseul, 1853: 473. Originally designated.

#### Description

Colour black or red; body oval, variably convex, sometimes with double puncturation.

Head with mandibles strong; labrum short and convex; frons with stria complete or variably interrupted; antennae long, scape enlarged and recurved; antennal club oval, with sensorial foveae complete or interrupted.

Pronotum with marginal stria complete; normally with a biarcuate antescutellar impression, sometimes shallow or lacking. Elytra regularly expanded, normally with three complete dorsal striae; 4th stria sometimes joined to the sutural, and 5th stria apical or lacking; humeral stria shallow; outer

subhumeral stria apical; marginal stria complete; epipleurae with one or two striae.

Propygidium and pygidium similarly punctured like pronotum; pygidium sometimes with two basal impressions.

Prosternal lobe wide, with an arcuate lateral stria; prosternal keel with two distinct inner striae; outer prosternal striae sometimes indistinct. Mesosternum short, with lateral stria complete; meso-metasternal suture shallow, with a close crenulate stria. Lateral metasternal stria complete or interrupted near metacoxae; metasternal disc sometimes very depressed, with a longitudinal suture; postcoxal stria interrupted on middle.

First abdominal sternite with two post-metacoxal striae.

Legs expanded; protibiae with distinct tarsal grooves; protibiae with two sorts of teeth, on outer margin and on apex, in different numbers; male protarsi sometimes with foliate setae on ventral side.

Male genitalia characteristic. Eighth abdominal segment with morphology constant in the genus, strongly sclerotized, with tergite and sternite very developed, fitted together, «*d'une sorte de cuirasse subsphérique*» after Jeannel & Paulian (1945); tergite in basal position, joined with fine membranes to the sternite, apical; the ventral expansions of the tergite are narrowed, converging up to meet together; sternite shorter and more sclerotized, with dorsal expansions not joined, with a space closed by the 9th tergite, allowing extrusion of the aedeagus; near the middle of the 8th sternite, joining transversely all the sternite, there is a strongly sclerotized opercle (proctodeal membrane after Jeannel & Paulian, 1945), weakly joined to the sternite. Ninth tergite very developed and strongly sclerotized, protecting the aedeagus; dorsally in the middle there is a wide membranous window; apically there is

a wide emargination where pass out the aedeagus, with apical teeth on each side; ventrally well developed in the basal and medial parts. Spiculum gastrale (9th sternite) with the common morphology of the Histeridae; it shows wide variability in the genus, with apex either T-shaped or Y-shaped. Tenth abdominal tergite membranous, placed in the apex of the spiculum gastrale. Aedeagus with morphology of basal piece and parameres very variable; basal piece of diverse length and width, sometimes strongly recurved; parameres may be subparallel, with apex variably widened or rounded, sometimes with preapical teeth; gonopore in ventral position. Ninth tergite, spiculum gastrale and aedeagus show wide specific variability.

Larva of *Epitoxus pholeobius* described by Jeannel & Paulian (1945).

They have been mainly found in rotting fruits and fungi, as well as in dung, carrion, humus, under bark, even in termite nests and nests of mole-rats. They feed on larvae of insects, mainly Diptera. They occur from lowlands up to mountainous areas, mainly in gallery-forest and forest surroundings, usually in the rainy season. They live in the Afrotropical region (not yet recorded from Madagascar), and in the Oriental region.

### *Epitoxus dentatus* sp. n. (fig. 1-4)

#### Description

Colour black; antennae and legs reddish; body elongate oval, weakly convex.

Head rounded and finely punctured, mandibles strong; epistoma quite long, finely punctured, slightly convex and bisinuate; frons wide and short, with fine and dense puncturation; frontal stria only as two short lateral arches, reaching antennal base; sides of frons slightly expanded over base of an-

tennae; antennae quite long, with scape rather enlarged and recurved, shorter than rest of antenna.

Pronotum weakly convex, doubly punctured, with large punctures on sides, and small dense punctures on disc; marginal stria complete, on the edges; antescutellar impression shallow, formed by round punctures of different diameters. Elytra weakly expanded and slightly convex, finely and densely punctured; dorsal striae strong and crenulate; first three striae complete; fourth stria slightly reduced on middle; fifth stria not reaching middle, sutural stria just surpassing middle; humeral stria deep, short and oblique; outer subhumeral stria strong, not reaching middle; marginal stria deep, crenulate, in ventral position, very sinuous and directed outward; epipleurae narrow, with a deep stria, obsolete on apical third.

Propygidium long and slightly convex, with very dense double puncturation, formed by scattered foveae, and smaller very dense punctures. Pygidium similarly punctured, rather convex.

Prosternal lobe long, wide and very prominent, covered with deep, dense punctures; lateral stria apical; prosternal keel very long and very narrow, with fine inner striae, crenulate, parallel excepting on base, being there slightly divergent; surface between them weakly convex and finely punctured. Mesosternum long, with disc convex and densely punctured; lateral stria strong, crenulate and strongly directed toward prosternum at middle. Meso-metasternal suture faint, with a crenulate stria continued by the lateral metasternal stria, complete, deep and straight, not reaching metacoxae; postcoxal stria short and arcuate; longitudinal suture shallow; metasternal disc convex, covered with fine and dense puncturation; mesepimeron and sides with very large, irregular and dense foveae.

First abdominal sternite like metasternum, with two arcuate post-metacoxal striae.

Legs long, with tibiae quite expanded; protibiae with very deep tarsal grooves and four very large teeth on outer margin, as well as other 3-4 small teeth on apex; meso- and metatibiae with scarce but large spines.

Male genitalia unknown.

Maximum length: 3.7 mm

Maximum width: 3.2 mm

#### Diagnosis

This species is well characterized by having four large teeth on the outer margin of protibiae, the body elongate oval and the shallow antescutellar impression.

#### Type material

Holotype ♀, /ETHIOPIA: Nr Addis Ababa, 10.VII.46, K.M. Guichard, B.M. 1945-39/, /From excreta in burrows of mole-rat (*Tachyoryctes* sp.)/, /*Epitoxus revoili* Desb./ (MNHN).

#### Comments

It is only known from Ethiopia living in borrows of a mole-rats (*Tachyoryctes* sp.) in July.

#### Etymology

Named from its particularly large protibia teeth.

#### *Epitoxus latus* sp. n. (fig. 5-6)

##### Description

Colour black, antennae and legs reddish; body wide oval and convex.

Head rounded and densely punctured, mandibles large; labrum short, convex, not bisinuate; epistoma short, slightly convex and finely punctured; frons flat, wide, with deep puncturation; antennae long, with scape recurved and enlarged, slightly shorter than rest of antenna.

Pronotum wide and convex; anterior angles oblique, with marginal stria complete, ventral on basal 2/3; surface covered with double puncturation, with very large foveae on sides; antescutellar impression deep, formed by two large arches. Elytra very expanded, weakly convex; first four dorsal striae complete, deep and crenulate; sutural stria interrupted on base; fifth dorsal stria reaching middle; humeral stria shallow and oblique; outer subhumeral stria very deep and apical; marginal stria well impressed and crenulate; epipleurae with well impressed and crenulate stria; surface finely and verydensely punctured.

Propygidium short and slightly convex, doubly punctured, with large scattered foveae. Pygidium long and convex, with dense double puncturation, being the large punctures smaller than those on propygidium.

Prosternal lobe prominent, densely punctured; lateral stria fine and short; prosternal keel long and wide, with inner striae fine and crenulate, divergent at base, otherwise sinuous; interstriae convex, densely punctured. Mesosternum long and wide, slightly convex, with puncturation deep and dense; lateral stria complete, straight and crenulate, not directed toward prosternum. Meso-metasternal suture very faint, with a fine crenulate stria, continued by the lateral metasternal stria, arcuate, reaching metacoxae and interrupted on a wide portion; postcoxal stria very short, not arcuate; metasternum with longitudinal suture well impressed; metasternal disc convex, finely and densely punctured; mesepimeron and metasternal sides with large and irregular foveae.

First abdominal sternite like metasternum, with two arcuate post-metacoxal striae.

Legs long, with tibiae quite expanded; protibiae with deep tarsal grooves; outer margin of protibiae with 7 large teeth, and

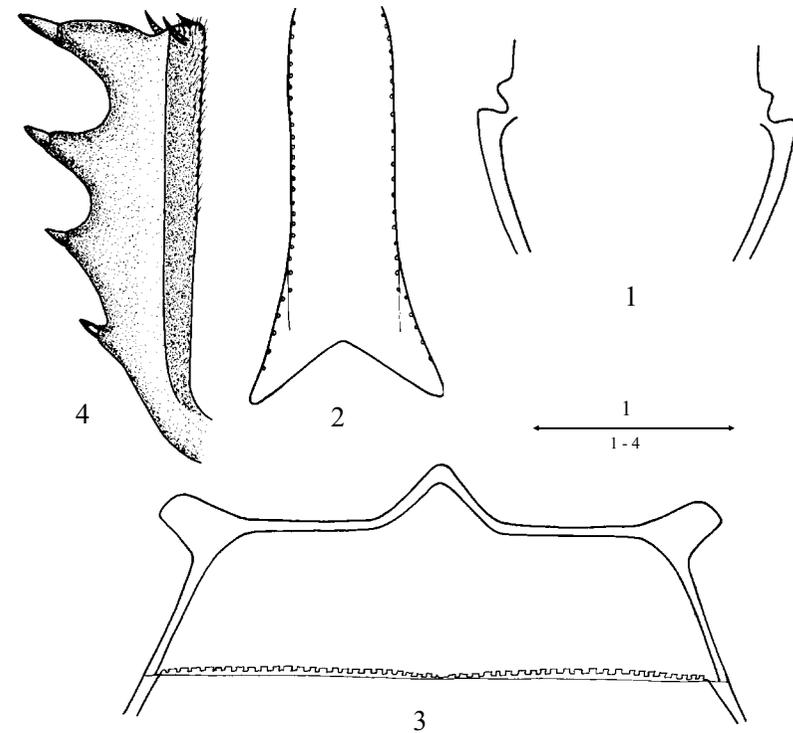


FIG. 1-4. *Epitoxus dentatus*: 1, frontal stria of head; 2, carena prosternal; 3, mesosternal disc; 4, left protibia. Scales in mm.

*Epitoxus dentatus*: 1, estria frontal del cap; 2, carena prosternal; 3, disc mesosternal; 4, protibia izquierda. Escalas en mm.

an additional 3-4 teeth on apex; male protarsi with foliate setae on ventral side; meso- and metatibiae spinose.

Male eighth abdominal segment like other species. Ninth tergite moderately sclerotized; apical emargination and teeth in ventral position. Spiculum gastrale weakly sclerotized, narrow, long, T-shaped. Aedeagus parallel, with basal piece longer than half length of parameres, with two apical teeth; apex slightly narrowed.

Maximum length: 2.6 - 3.0 mm

Maximum width: 2.5 - 2.9 mm

#### Diagnosis

The separation of this species is largely due to the different morphology of the genitalia in relation to *E. zambicus*.

#### Type material

Holotype ♂, /Coll. Mus. Tervuren, Ethiopie: 40 km N de Addis Abeba, VIII.71, G. de Rougemont/ (MRAC).

Paratypes, 6 exx., 1 ♀ labelled /N RHODESIA, Congo- Zambesi, Watershed, 1928, Dr. H.S. Evans/, /Pres. by Imp. Inst. Ent., B.M. 1935-224/ (MNHN). 1 ♂ and 3 ♀ labelled /N W Rhodesia, Mwingwa, 27°40' E.

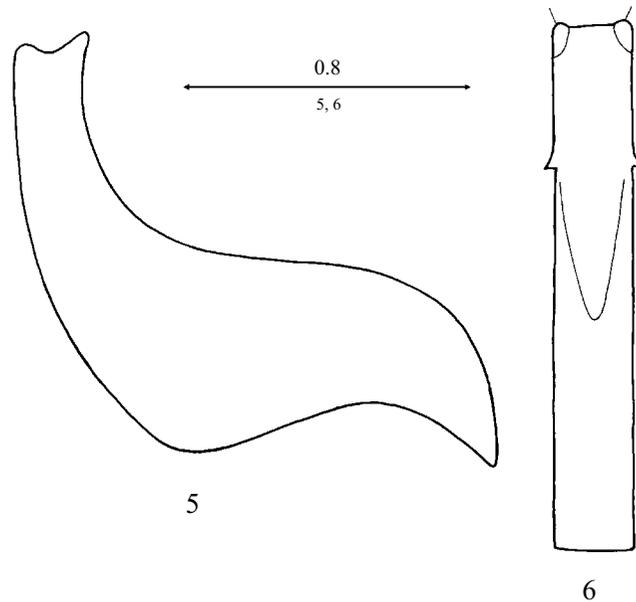


FIG. 5-6. *Epitoxus latus*: 5, ninth tergite of male (LV); 6, parameres (VV). Scale in mm.

*Epitoxus latus*: 5, novè terguít del mascle (LV); 6, paràmers (VV). Escala en mm.

13°S, iii.1914, H.C. Dollman/, /H.C. Dollman, Coll. 1919-79/ (3 exx. in NHML and 1 ex. in MNHN). 1 ♂ labelled /Otzitambi 10.4.67/, /Namibia/, /H25824/, /*Epitoxus nitidus* Lew., det. P. Kanaar 1979/ (PK).

Comments

At present has a disjunct distribution, known from Ethiopia, Zambia and Namibia, collected in March, April and August.

Etymology

Specific name derived of the very wide body shape.

*Epitoxus irregularis* sp. (figs. 7-10)

Description

Elytra in main part red, with a black

central area; legs and antennae reddish, rest of the body black; body wide oval, convex.

Head rounded and punctured, mandibles strong; labrum short, convex and slightly punctured; length of epistoma about twice the length of labrum, finely and sparsely punctured, convex; frons flat, densely and irregularly punctured; frontal striadeeply impressed, broadly interrupted at middle, ending near base of antennae; antennal scape long, recurved and very enlarged, with some short setae; antennal club large, yellowish-brown, tomentose, with three sensorial foveae; eyes prominent.

Pronotum convex, with complete marginal stria; disc finely and densely punctured, sides doubly punctured, only with

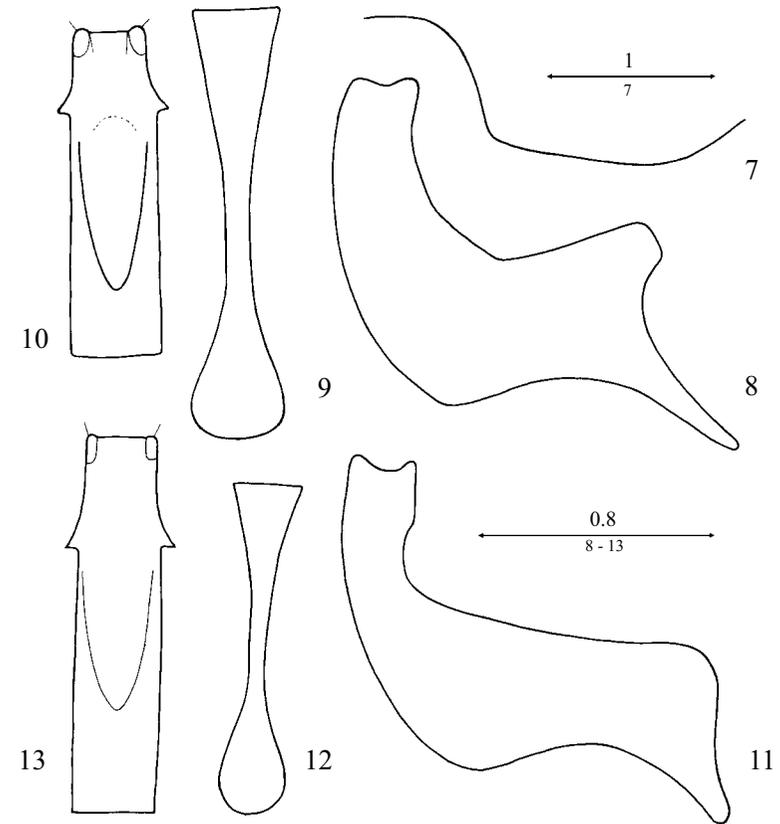


FIG. 7-13. *Epitoxus irregularis*: 7, left anterior angle of pronotum; 8, ninth tergite of male (LV); 9, spiculum gastrale; 10, parameres (VV). *Epitoxus walteri*: 11, ninth tergite of male (LV); 12, spiculum gastrale; 13, parameres (VV). Scales in mm.

*Epitoxus irregularis*: 7, angle anterior esquerra del pronot; 8, novè terguít del mascle (LV); 9, spiculum gastrale; 10, paràmers (VV). *Epitoxus walteri*: 11, novè terguít del mascle (LV); 12, spiculum gastrale; 13, paràmers (VV). Escales en mm.

sparse larger punctures; disc finely and densely punctured; antescutellar impression formed by two irregular arches with elongate foveae. Elytra convex, strongly dilated at the middle; surface covered with fine and dense punctures; three first dorsal striae shallow, complete, punctured, directed outward at middle; the fourth dorsal stria

complete, or variably interrupted, reduced to an apical portion and a basal arch; sutural stria fine and crenulate, on apical 2/3; fifth dorsal stria only formed by several punctures apically; humeral stria very fine, long and oblique; outer subhumeral stria well impressed, apical, reaching apical third; marginal stria complete, strong, wide and punc-

tured, in ventral position; epipleurae very narrow, with a shallow incomplete stria.

Propygidium very long and convex, with double, sparse, very irregular puncturation; large punctures on sides, smaller near pygidium. Pygidium large, convex, with a shallow impression on each side; with some large punctures, mixed with small, irregular sparse punctures.

Prosternal lobe slightly prominent, only with a trace of transverse stria, without longitudinal portions, densely punctured; prosternal keel convex, finely punctured; inner prosternal striae sinuous, strong, not joined apically and not reaching base of lobe; carinal margins rugose; base slightly sinuate. Mesosternum somewhat convex, finely punctured, with a small median projection directed toward prosternum; lateral and sutural striae straight and crenulate. Metasternum convex, finely punctured, with complete longitudinal suture and a lateral stria, arcuate, extended from meso-metasternal suture to metacoxa, broadly interrupted; postcoxal stria long and curved; mesepimeron and metasternal sides with large, dense foveae.

First abdominal sternite long, convex, finely punctured, with two arcuate post-metacoxal striae.

Tibiae expanded, flat; protibiae with 9 teeth on outer margins, an other 3-4 teeth on apexes; shallow tarsal grooves; meso- and metatibiae spinose; male protarsi with foliate setae on ventral side.

Male eighth abdominal sternite strongly sclerotized, with the distal end membranous, as is usual in the genus. Ninth tergite strongly sclerotized, basal projections very long. Spiculum gastrale narrow and long, T-shaped. Aedeagus strongly recurved, depressed, with subparallel basal piece, longer and slightly wider than parameres; parameres subparallel, with an apical arcuate lateral

projection; apex of parameres slightly narrower than basal end.

Maximum length: 2.6 - 3.0 mm

Maximum width: 2.5 - 2.9 mm

#### Diagnosis

The differences in relation to *E. walteri* are included in its description. This species is well distinguished from related species by having the elytra red. In addition to the colour of elytra, it differs from *E. revoili* by many other external characteristics.

#### Type material

Holotype ♂, labelled /SENEGAL, Bambey, viii.1939, J. Risbec/, /Pres. by Comm. Inst. Ent. B.M. 1981-315/, /? Epitoxus sp., nr. circulifrons Mars., D.J. Atkinson det. 1948// Epitoxus (nr.) subruber Lew., det. P. Kanaar 1992/, /HOLOTYPUS, Epitoxus irregularis, T.Yélamos Des. 1992/ (NHML).

Paratypes, 52 exx., 1 ♂ labelled as the holotype (NHML). 1 ♀ labelled /SENEGAL, M'Bao, 21.III.1939 - Bouret/, /Epitoxus subruber Lew. J. Théron det./, /Type smaller more distinctly punctate, sub-humeral stria complete, det. P. Kanaar 1979/, /PARATYPUS, Epitoxus irregularis, T. Yélamos Des. 1992/ (PK). 18 ♂ and 20 ♀ labelled /M'Bao, Sénégal, sur champignons, 21-VIII-1939, Bouret/, 30 specimens in MNHN, 4 specimens in MRAC and 4 specimens in TY. 4 ♀ labelled /Sénégal, Sankalgam, 14.7.61, H. Durand/ (MNHN). 2 ♂ and 4 ♀ labelled /Sénégal, St. Louis, V. Planchat, 1899/ (MNHN). 1 ♂ with the same label in TY and another ♀ in MRAC. 1 ♂ labelled /Coll. MUS. TERVUREN, Nord Côte d'Ivoire: Ferkes-Sédougou, 10/20.V.1964, J. Decelle/ (MRAC).

#### Comments

It is very common in Senegal, and also occurs in Ivory Coast. It lives in rotting fungi, having been found in March, May, July and August.

#### Etymology

One of the most outstanding characters of this species is the irregularity of the fourth, fifth and sutural elytral striae. Named from these morphological characteristics.

#### *Epitoxus walteri* sp. n. (figs. 11-13)

#### Description

Colour brownish-black, shining, legs reddish, funicle and antennal club reddish-brown; body wide oval, convex.

Head rounded and finely punctate, mandibles strong; labrum short, convex, finely punctate; epistoma convex, about twice the length of labrum, distinctly and densely punctate; frons flat, densely and irregularly punctate, the punctures of different size; frontal stria deeply impressed, semicircular but interrupted in the medial part; antennal scape strongly recurved and enlarged, with short setae, its distal end brown-reddish; antennal club large, yellowish-brown, having three sensorial foveae; eyes prominent.

Pronotum convex, with marginal stria deeply impressed, complete, ventral on basal 2/3; surface with double puncturation, consisting of small, dense, well impressed punctures, and large foveae, densely distributed, larger on sides; antescutellar impression formed by two irregular arches and elongate foveae. Elytra slightly convex, strongly expanded at middle; surface regularly covered with dense puncturation; four first dorsal striae complete, deeply impressed and punctate, apically curved, the fourth dorsal stria arched on base and sometimes joined to the complete or incomplete sutural stria, sometimes incomplete; fifth stria apical, somewhat surpassing middle; surface between second and third striae wider; humeral stria oblique, short and very fine; outer subhumeral stria apical, well

impressed, not reaching middle of elytra; inner stria lacking; marginal stria deeply impressed, wide, punctate and complete; epipleurae narrow, with a fine short stria.

Propygidium long, convex, doubly punctured, irregularly distributed, with small, well impressed and dense punctures, mixed with coarse, dense foveae (interval between foveae nearly a diameter). Pygidium large, very convex, with coarse, dense punctures, mixed with small sparse punctures, without impressions.

Prosternal lobe with a stria formed by a medial transverse segment and two lateral longitudinal segments, not reaching base, with coarse and dense punctures; prosternal keel slightly convex on apical half, with well impressed dense punctures; innerprosternal striae sinuate, punctate, not joined apically, not reaching base of lobe; carinal margins rugose; base sinuate. Mesosternum slightly convex, similarly punctured as prosternum; lateral stria regularly arcuate, without medial protrusion towards the prosternum, crenulate and complete. Meso-metasternal suture with a crenulate stria, extended at either side by an oblique well impressed and punctate stria; metasternal disc convex, fine and densely punctured, with a very short and faint longitudinal suture on middle; mesepimeron and sides of metasternum coarsely and densely foveate; lateral metasternal stria deep, crenulate and arcuate, reaching metacoxae, interrupted on a long trace; postcoxal stria deep, arcuate and incomplete.

First abdominal sternite long, punctured as metasternum, with two arcuate post-metacoxal striae.

Tibiae expanded and flat; protibiae with 9 teeth on outer margin, as well as other 4 smaller teeth on apex; tarsal grooves narrow; meso- and metatibiae spinose; male protarsi with foliate setae on ventral side.

Eighth abdominal sternite of males typical for the genus. Ninth tergite strongly sclerotized, with a long basal projection. Spiculum gastrale slightly sclerotized, narrow and long, T-shaped. Aedeagus recurved over its entire length, depressed; basal piece parallel, somewhat shorter than parameres; parameres depressed, parallel, with an acute lateral projection at either side on distal third; apex bearing two setae.

Maximum length: 2.4 - 2.8 mm

Maximum width: 2.3 - 2.6 mm

#### Diagnosis

It may be distinguished from *E. zambicus* and *E. latus* by having the frontal stria interrupted, and basal piece of aedeagus and parameres of equal length. It also differs from *E. irregularis* and *E. revoili* by having disc of pronotum doubly punctured, propygidium regularly punctured and frontal stria surpassing antennal base.

#### Type material

Holotype ♂, labelled /PLATEAU BATEKE, REGION MENKAO, 60KmNE, KINSHASA, ZAIRE, Ph. WALTER LEG./, /HOLOTYPUS, EPITOXUS WALTERI, T.YÉLAMOS DES. 1992/ (TY).

Paratypes, 5 exx., 1 ♂ and 1 ♀ with same label data as the holotype (TY). 1 ♂ /Museum Leiden, S.E. Zaire: Lumbumbashi, 1.III.1973, W. Beun (A. Allaer) (PK). 1 ♀ /Kamanyab, S.W.A. (SAM). 1 ♀ /TULI Distr., Bechuanaland, X.1954, L. Muelenaere (TM).

#### Comments

They were found in March and October in Zaire, Zimbabwe and Namibia.

#### Etymology

Named in honour of Dr. Philippe Walter, collector of several specimens of this species.

#### *Epitoxus aurorae* sp. n. (figs. 14-17)

##### Description

Colour black; antennae, legs and sometimes other areas reddish; body wide oval, regular, convex.

Head with mandibles strong, rounded, densely punctured; labrum long, slightly convex, densely punctured; epistoma wide and convex, with large and dense puncturation; frons flat or weakly depressed, with deep and dense punctures; frontal stria arcuate, strong at sides, medially variably interrupted; antennae long, with scape very enlarged and very recurved, shorter than rest of antenna.

Pronotum convex, with marginal stria complete, ventral on basal 2/3; surface covered with deep, double, dense punctures, larger and denser on sides, where foveae are larger than on propygidium; antescutellar impression deep, formed by deep foveae of variable shape. Elytra convex and expanded, with dorsal striae strong and crenulate; first four dorsal and sutural striae complete, joined in arch the fourth and the sutural striae; fifth dorsal striae reaching middle; humeral stria shallow, oblique; outer subhumeral stria strong and apical; marginal stria complete, crenulate and well impressed; epipleurae with evanescent stria on apical part; surface covered with fine and dense puncturation.

Propygidium long and convex, doubly punctured, formed by large, dense foveae, mixed with small, dense punctures. Pygidium with two shallow impressions on sides, with smaller, less dense puncturation than on propygidium.

Prosternal lobe wide, produced, densely punctured, with a short lateral stria; prosternal keel wide and long, with inner striae sinuous medially, shallow and crenulate; surface between both striae convex and punctured. Mesosternum convex and finely punctured; lateral stria distinct,

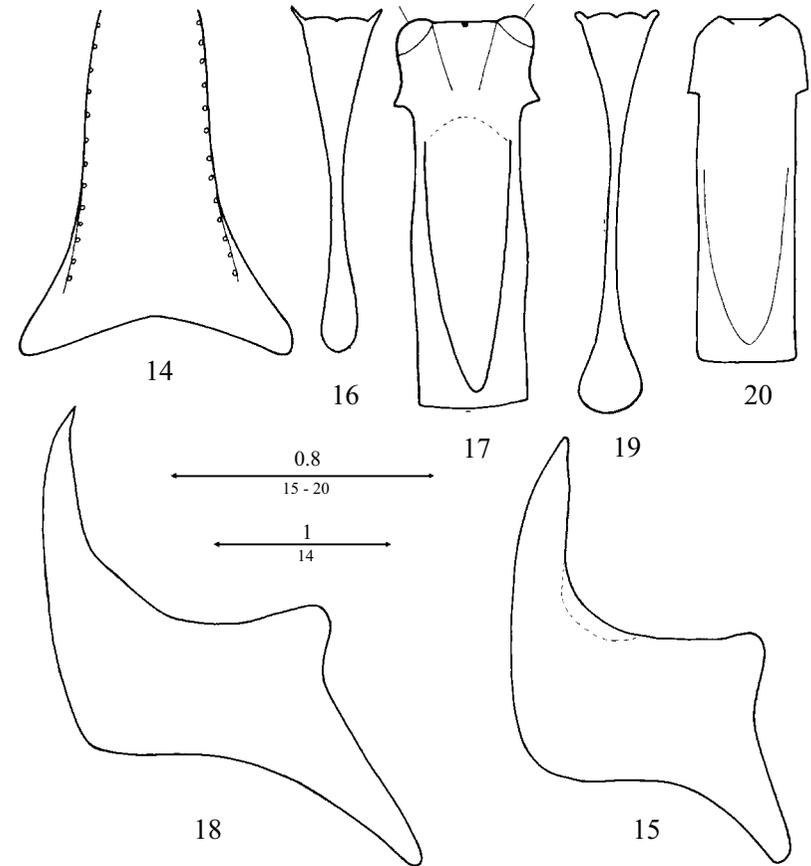


FIG. 14-20. *Epitoxus aurorae*: 14, prosternal keel; 15, ninth tergite of male (LV); 16, spiculum gastrale; 17, parameres (VV). *Epitoxus parallelistrius*: 18, ninth tergite of male (LV); 19, spiculum gastrale; 20, parameres (VV). Scales in mm.

*Epitoxus aurorae*: 14, carena prosternal; 15, novè terguit del mascle (LV); 16, spiculum gastrale; 17, paràmers (VV). *Epitoxus parallelistrius*: 18, novè terguit del mascle (LV); 19, spiculum gastrale; 20, paràmers (VV). Escalles en mm

crenulate, strongly directed toward prosternum. Meso-metasternal suture shallow, with a straight, deep and crenulate stria, continued by the lateral metasternal stria, well impressed, very oblique, not reaching metacoxae and interrupted on a short por-

tion; postcoxal stria fine and very short; metasternum with median suture faint; metasternal disc convex, finely and densely punctured, with large punctures opposite to metacoxae; mesepimeron and metasternal sides with large, dense foveae.

First abdominal sternite convex, with deep, dense puncturation; arcuate post-metacoxal striae.

Legs long, with tibiae rather expanded; protibiae with deep tarsal grooves; outer margin of protibiae with 7 large, long teeth, as well as 3-4 teeth, decreasing in size on apex; meso- and metatibiae spinose.

Male eighth abdominal segment typical of the genus. Ninth tergite moderately sclerotized, with long basal projections, and weakly produced ventral projections. Spiculum gastrale very narrow and short, T-shaped. Aedeagus with basal piece slightly longer than half the length of parameres, but of similar width; parameres parallel, with apex expanded.

Maximum length: 2.4 - 2.7 mm

Maximum width: 2.1 - 2.4 mm

#### Diagnosis

This species is related to *E. brevisculus* but differs chiefly by the morphology of the sensorial foveae on antennal club, puncturation of propygidium and pygidium, stria of meso-metasternal suture, lateral metasternal stria and length of basal piece of aedeagus.

#### Type material

Holotype ♂, labelled /Coll. Mus. Tervuren, Ethiopie: 40 km N de Addis Abeba, VIII.71, G. de Rougemont/, /R. Det. 7887 P./ (MRAC).

Paratypes, 19 exx., 5 ♂ and 6 ♀ labelled as the holotype (8 exx. in MRAC and 3 exx. in TY). 1 ♀ labelled /Coll. Mus. Tervuren, Ethiopie, R.O.S. Clarke/, /6 km N de Jimma, forest, 10.X.1971/, /R. Det. 7887 P./ (MRAC). 3 ♂ and 3 ♀ labelled /Coll. Mus. Tervuren, Ethiopie: 40 km N de Addis Abeba, VIII.71, G. de Rougemont/ (5 exx. in MNHN and 1 ex. in TY). 1 ♀ labelled /ABYSSINIE, Hora Daka/ (MNHN).

#### Comments

It is only known from Ethiopia, collected in August and October.

#### Etymology

Specific epithet derived from Aurora, after the author's mother, in hearty homage.

#### *Epitoxus parallelistrius* sp. n. (figs. 18-20)

#### Description

Colour black, antennae and legs reddish; body wide oval, regular and convex.

Head finely punctured, mandibles rounded; labrum long, convex and not bisinuate; epistoma long, weakly convex, finely punctured; frons flat, finely punctured; frontal stria strong, with lateral traits parallel; length of antennal scape like rest of antenna; scape recurved and very enlarged.

Pronotum weakly convex, with marginal stria complete, ventrally on basal 2/3; sides with very large punctures, smaller and sparser on disc, without other small punctures; antescutellar impression very deep, long and wide, formed by elongate and irregular impressions. Elytra convex, expanded, smooth; dorsal striae deep and crenulate; four dorsal striae complete; fourth joined in arch to the sutural stria, complete; fifth stria reaching middle; humeral stria long and fine; outer subhumeral stria wide and apical; marginal stria strong, punctate, in ventral position; epipleurae narrow, with shallow stria.

Propygidium long and convex, with punctures smaller than on pronotal sides, sparse, smaller and less dense on disc, which has several small, scanty punctures. Pygidium sparsely punctured, with an impression on each side near base.

Prosternal lobe short and prominent, with lateral stria very short and arcuate, densely punctured; prosternal keel wide, convex and

smooth on middle, with inner striae fine, divergent on base and sinuous on rest. Mesosternum short, convex and smooth, with lateral stria distinct, crenulate and medially clearly directed in front. Meso-metasternal suture shallow, with a well impressed crenulate stria, continued by the lateral metasternal stria, oblique, punctate, reaching metacoxae and interrupted on a short trait, with an outer arcuate portion; postcoxal stria strong, medially interrupted; median suture shallow; metasternal disc convex, finely punctured, with several deep punctures opposite metacoxae; mesepimeron and metasternal sides with large, irregular foveae.

First abdominal sternite like metasternum, with two arcuate post-metacoxal striae.

Legs slender; protibiae with 8-9 teeth on outer margin and other 3-4 small teeth on apex; protibiae with tarsal groove deep; meso- and metatibiae spinose.

Male eighth abdominal segment typical. Ninth tergite slightly sclerotized, with basal projections very long, and ventral projections not prominent; spiculum gastrale weakly sclerotized, long and narrow, T-shaped. Aedeagus with basal piece longer than half length of parameres; parameres parallel, width like basal piece; parameres with apex expanded, bearing two setae.

Maximum length: 2.1 - 2.8 mm

Maximum width: 2.0 - 2.5 mm

#### Diagnosis

Apparently related to *E. namibiensis* and *E. kanaari*. This species may be distinguished from them by the puncturation of propygidium and mainly by the morphology of the apex of aedeagus.

#### Type material

Holotype ♂, /COLL. MUS. CONGO, Mayumbe: Seke-Banza 12-IV-1924, A. Collart/, /*Epitoxus nitidus* Lewis, H. Desbordes det. 1926/, /R. DET. C, 3948/ (MRAC).

Paratypes, 18 exx., 1 ♀ labelled /Guinée env. Kindia forêt Tabouna 6.VII.984 S. Murzin/, /ZIN/ (IZBSA). 1 specimen labelled /MUSÉE DU CONGO Flandria-1931 R.P. Hulstaert/, /J. Théron det., 1950 *Epitoxus brevisculus* Fahrs./, /ZIN/. 1 specimen labelled /MUSÉE DU CONGO Kapanga -X-1933 F.G. Overlaet/, /ZIN/. 1 ♂ labelled /Joko, Kamerun/, /*Epitoxus brevisculus* Fahrs./ (MNHN). 1 ♀ labelled /FORT-SIBUT, OUBANCHI-CHARI/, /Genre et espèce nouv., H. Desbordes det. 1919/ (MNHN). 1 ♀ labelled /FARADJE: SESENGE, 24.III.30, A. COLLART/, /J. Théron det. 1950, *Epitoxus brevisculus* Fahrs./ (MNHN). 1 ♂ and 1 ♀ labelled /COLL. MUS. CONGO, Lulua: Kapanga, III-1933, F.G. Overlaet/ (MNHN and YG). 2 ♂ and 1 ♀ labelled /MUSÉE DU CONGO, Kapanga, X-1933, F.G. Overlaet/ (2 exx. in TY and 1 ex. in MRAC). 1 ♂ and 1 ♀ labelled /MUSÉE DU CONGO, Equateur: Ilzongo, IX-1931, 149, R.P. Hulstaert/ (MRAC). 1 ♀ labelled /MUSÉE DU CONGO, Haut-Uelé: Moto, X-XI-1923, L. Burgeon/ (MRAC). 1 ♂ labelled /COLL. MUS. CONGO, Rutshuru, 20-III-36, 15, L. Lippens/ (MRAC). 1 ♂ labelled /COLL. MUS. CONGO, Tshlobo / N'Goy (Mayumbe) I-1925, A. Collart/ (MRAC). 1 ♀ /MUS. ROY. AFR. CENTR., Tshuapa: Terr. Bikoro, Mabali, IX-1959, B. 110, N. Leleup/ (MRAC). 1 ♂ labelled /Soil-Zoological Exp., Congo-Brazzaville, Kindamba, Méya, Lonolo river/, /12.11.1963, No 180, singled on riverside, leg. Endrödy-Younga/, /ascinus Lew., det. Théron/ (MTMA). 1 ♂ labelled /BELINGA, 5.III.1963, H. Coiffait/, /Mission Biologique au Gabon, P.P. Grassé Directeur/ (TY).

#### Comments

They were collected during several months in Guinea, Cameroon, Gabon, Central African Republic, Zaire and Congo.

## Etymology

Specific name due to the parallel lateral traces of the frontal stria.

*Epitoxus namibiensis* sp. n. (figs. 21-24)

## Description

Colour shiny black, antennae and legs reddish; body wide oval, convex.

Head with mandibles rounded and punctured; labrum long, bisinuate and punctured; epistoma short, convex, with large punctures; frons slightly convex, coarsely and densely punctured; frontal stria strong, sometimes medially interrupted; length of antennal scape equal to rest of antenna, recurved and very enlarged; antennal club large and oval.

Pronotum convex, with marginal stria complete, ventral on basal 2/3; surface regularly covered with very large, deep punctures, larger on sides, mixed with sparse small punctures; antescutellar impression formed by two irregular arches. Elytra weakly convex, slightly expanded, finely punctulate; first four dorsal striae complete, strong, punctate, sometimes fourth joins the sutural stria, complete; fifth stria slightly surpassing middle; humeral stria fine and oblique; outer subhumeral stria strong and short; marginal stria strong and wide, punctured, in ventral position; epipleurae very narrow, with shallow stria.

Pygidium very long and convex; surface covered with large foveae, regularly and densely distributed, mixed with scattered small punctures. Pygidium convex, with dense double punctures.

Prosternal lobe short, weakly prominent, densely punctured and with a short lateral stria; prosternal keel short and wide; inner prosternal striae strongly divergent basally, converging toward apex, with abundant punctures; surface between both striae densely punctured. Mesosternum short,

finely and sparsely punctured; lateral stria crenulate, medially not directed toward prosternum. Meso-metasternal suture faint, with a straight and crenulate stria, continued by the lateral metasternal stria, recurved, crenulate, reaching metacoxae, interrupted on the outer portion and with large dense foveae; postcoxal stria shallow and short; median suture distinct; metasternal disc smooth, with abundant foveae opposite to metacoxae; mesepimeron and metasternal sides with large dense foveae.

First abdominal sternite punctured near metasternum; disc smooth, sides foveate; two arcuate post-metacoxal striae.

Legs short, slightly expanded; protibiae with 7 large teeth on outer margin, and 3-4 smaller teeth decreasing in size on apex; protibiae with tarsal grooves deep; meso- and metatibiae spinose; male protarsi without foliate setae.

Male eighth abdominal segment like other species. Ninth tergite strongly sclerotized, with basal projections slightly prominent. Spiculum gastrale very sclerotized, long and T-shaped. Aedeagus long; basal piece narrower than parameres and equal to half their length; parameres parallel, except apex; apex slightly expanded, with two setae.

Maximum length: 2.4 - 2.6 mm

Maximum width: 2.2 - 2.3 mm

## Diagnosis

Species related to *E. kanaari* (see description).

## Type material

Holotype ♂, labelled /S.W. Afr. Kaokoveld, Ohopoho, 24km NW, 17.53 S - 13.50 E/, /7.2.1975; E-Y: 626, groundtraps, 6 days, leg. Endrödy-Younga/, /*Epitoxus brevisculus* (Fahr.), J. Théron det./ (TM).

Paratypes, 2 exx., 1 ♂ labelled /Otjitambi, 15.3.79, Namibia, Ph. Walter leg./ (TY). 1 ♀ labelled /S.W. Afr. Kaokoveld, Ehombe

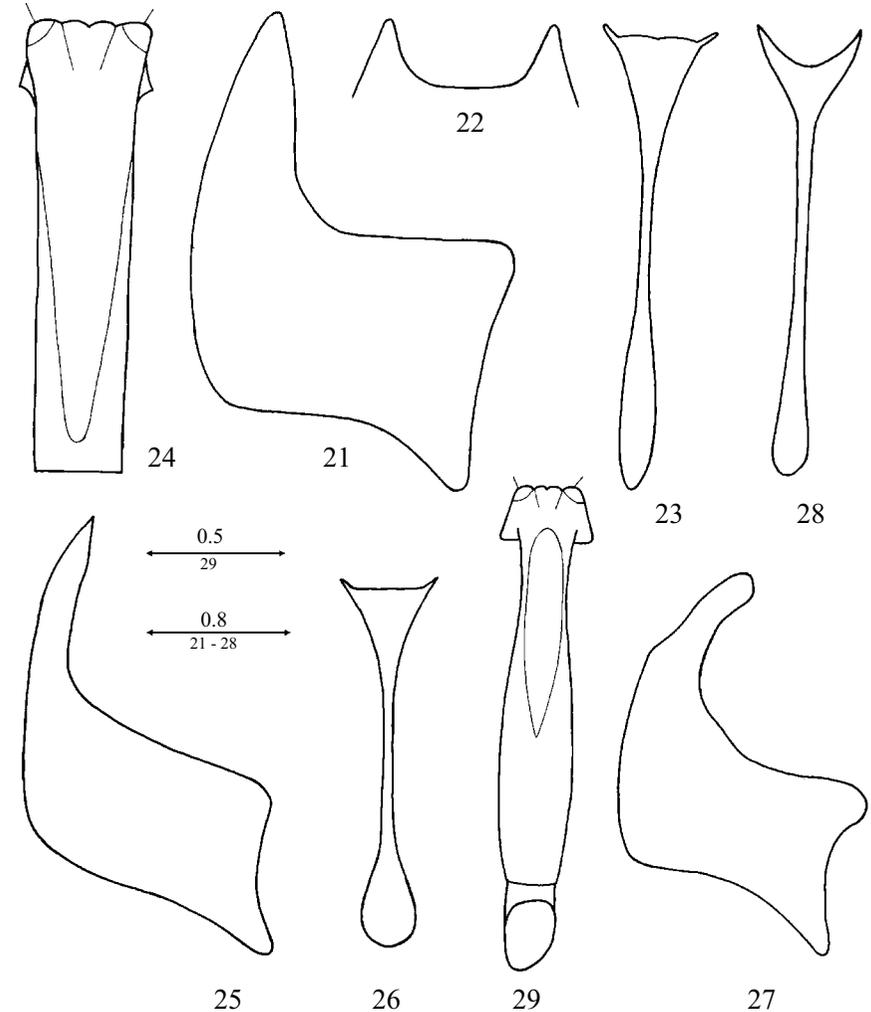


FIG. 21-29. *Epitoxus namibiensis*: 21, ninth tergite of male (LV); 22, apex of ninth tergite (DV); 23, spiculum gastrale; 24, parameres (VV). *Epitoxus kanaari*: 25, ninth tergite of male (LV); 26, spiculum gastrale. *Epitoxus longipennis*: 27, ninth tergite of male (LV); 28, spiculum gastrale; 29, aedeagus (VV). Scales in mm.

*Epitoxus namibiensis*: 21, novè tergut del mascle (LV); 22, àpex del novè tergut (DV); 23, spiculum gastrale; 24, paràmers (VV). *Epitoxus kanaari*: 25, novè tergut del mascle (LV); 26, spiculum gastrale. *Epitoxus longipennis*: 27, novè tergut del mascle (LV); 28, spiculum gastrale; 29, eideagus (VV). Escalles en mm.

Settlement, 17.33 S - 13.52 E/, /8.2.1975, E-Y: 636, groundtraps, 4 days, leg. Endrödy-Younga/, /*Epitoxus brevisculus* (Fahr.), J. Théron det./ (MNHN).

#### Comments

It lives in the Kaoko Veld region (NW Namibia), collected in February and March.

#### Etymology

Specific name derived of Namibia.

#### *Epitoxus kanaari* sp. n. (figs. 25-26)

##### Description

Colour black, with several parts reddish, mainly antennae, elytra, propygidium, pygidium and legs; body wide oval, convex.

Head punctured, mandibles rounded; labrum convex, not bisinuate; epistoma short, convex, finely punctured; frons slightly convex, with several large punctures; frontal stria shallow, sometimes slightly interrupted at middle; antennae normal, with scape slightly shorter than rest of antenna, antennal scape recurved and rather enlarged.

Pronotum convex; sides doubly punctured, with large foveae, smaller on disc; marginal stria complete, ventral on basal 2/3; antescutellar impression elongate, formed by irregular elongate depressions. Elytra convex, weakly expanded, finely punctulate; dorsal striae wide, deep and punctate; first four dorsal striae usually complete; fourth dorsal stria joined in arch to the sutural, complete; fifth dorsal stria reaching middle; humeral stria deep and oblique; outer subhumeral stria very deep, not reaching middle; marginal stria complete, well impressed, in ventral position; epipleurae narrow, unistriate, punctured.

Propygidium long and convex, with dense double punctures, composed in part of large foveae, denser on sides and sparse on disc. Pygidium similarly punctured.

Prosternal lobe short, sparsely punctured, with a short lateral stria; prosternal keel wide, with inner striae rather divergent on base, converging apically, almost smooth between them. Mesosternum short, with sparse punctures; lateral stria straight, not directed in front, crenulate. Meso-metasternal suture shallow, with a deep crenulate stria, then continued by the lateral metasternal stria, very wide and slightly recurved, interrupted, not reaching metacoxae, with an outer remnant fine and rather short, punctate; postcoxal stria fine and short; longitudinal suture shallow; disc convex and smooth, with deep dense punctures near first abdominal sternite; mesepimeron and metasternal sides densely foveate.

First abdominal sternite punctured like metasternum; two arcuate post-metacoxal striae.

Legs short, with tibiae slightly expanded; protibiae with 7 teeth on outer margin and 3-4 small teeth on apex; meso- and metatibiae spinose.

Male eighth abdominal segment like the other species. Ninth abdominal tergite sclerotized, with projections weakly produced. Spiculum gastrale slightly sclerotized, T-shaped. Length of basal piece of aedeagus similar or slightly higher than half length of parameres, width similar; parameres recurved, subparallel, with apex widened, bearing two setae.

Maximum length: 2.1 - 2.5 mm

Maximum width: 2.0 - 2.3 mm

#### Diagnosis

It differs from *E. namibiensis* mainly by the morphology of the genitalia.

#### Type material

Holotype ♂, /KENYA, Mtembur, 16-VI-1979, rotting mushrooms/, /*Epitoxus ascinus* Lew.?, det. P. Kanaar 1989/ (PK).

Paratypes, 2 exx., 1 ♂ labelled /M. 900m,

Mt. Mulange, Malawi, XII.1982, Coll. C. Dudley/, /Likabula Valley, Brachys. woodland/, /Mushrooms/ (MHMM). 1 ♀ labelled /Natal, Malvern, Barker/, /*brevisculus* Fahraeus/ (SAM).

#### Comments

It has been found in rotting fungi in Kenya and Malawi (*Brachystegia* woodlands), also in Natal (South Africa). They were collected in June and December.

#### Etymology

The specific name is dedicated to my good friend and colleague Piet Kanaar, a specialist in Histeridae, in recognition of his valuable help.

#### *Epitoxus longipennis* sp. n. (figs. 27-29)

##### Description

Colour reddish brown, with antennae and legs lighter; body a regular wide oval, convex.

Head with mandibles strong, rounded and finely punctured; labrum short, slightly bisinuate and convex; epistoma short and wide, slightly convex and covered with fine dense punctures; frons with deep dense puncturation; frontal stria arcuate on sides, shallow toward middle and widely interrupted; antennae long, with scape shorter than rest of antenna, recurved and weakly enlarged.

Pronotum convex, with marginal stria complete, ventral on basal 2/3; surface covered with dense double puncturation, with larger punctures on sides; antescutellar impression distinct, formed by two arches composed by elongate impressions. Elytra convex, slightly expanded, with some fine punctures; dorsal striae very deep and crenulate; four first dorsal and sutural striae complete, joined in arch the sutural and the fourth striae; fifth stria surpassing middle; humeral stria faint,

oblique; outer subhumeral stria deep, crenulate, reaching middle; marginal stria deep and crenulate, ventral; epipleurae very narrow, with fine stria, only distinct on basal half.

Propygidium convex, long, narrow and very narrowed apically, regularly covered with large, dense foveae (like pronotal sides), with some fine scattered punctures. Pygidium narrow and long, without lateral impressions, with deep irregular puncturation.

Prosternal lobe densely punctured; lateral stria very short and fine, apical; prosternal keel long and wide, with inner striae fine, crenulate, divergent on base, approaching regularly toward apex; surface between both striae deep and dense. Mesosternum short and narrow; disc convex, with well impressed puncturation; lateral stria crenulate, not arcuate, clearly directed toward prosternum on middle. Meso-metasternal suture obsolete, with a stria straight and crenulate, then continued by the lateral metasternal stria, fine, oblique, with some punctures, not reaching metacoxae, widely interrupted, with outer portion short; postcoxal stria strong and short; metasternal disc rather convex, with longitudinal suture very faint, covered with dense fine puncturation, with large punctures opposite to metacoxae and first abdominal sternite; sides of metasternum and mesepimeron covered with large and irregular foveae.

First abdominal sternite convex, punctured as metasternal disc; two arcuate post-metacoxal striae.

Legs long, not expanded; protibiae with deep tarsal groove; protibiae with 7 large and long teeth on outer margin, as well as 3 smaller teeth on apex; meso- and metatibiae spinose.

Male eighth abdominal segment like the other species. Ninth tergite weakly sclerotized, with basal projections rather prominent and ventral projections weakly produced.

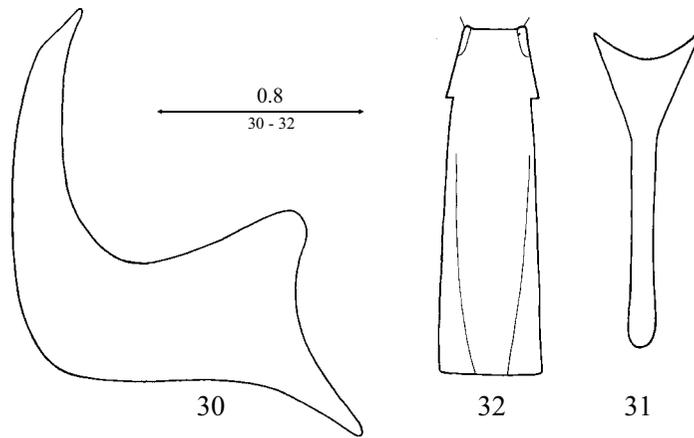


FIG. 30-32. *Epitoxus therondi*: 30, ninth tergite of male (LV); 31, spiculum gastrale; 32, parameres (VV). Scale in mm.

*Epitoxus therondi*: 30, novè terguít del mascle (LV); 31, spiculum gastrale; 32, paràmers (VV). Escala en mm.

Spiculum gastrale very long and very narrow, Y-shaped. Aedeagus very long, with basal piece very short; parameres slightly recurved and medially expanded; apex abruptly widened.

Maximum length: 1.9 mm

Maximum width: 1.6 mm

#### Diagnosis

This species is distinguished from related species mainly by the different morphology of the genitalia

#### Type material

Holotype ♂, labelled /MUSÉE DU CONGO, Mufungwa Sampwe, 1/16-XII-1911, Dr. Bequaert/, /R. DET. 73/ (MRAC).

#### Comments

Only known from Sampwe (south Zaire), collected in December.

#### Etymology

Specific epithet relates to the unusual length of the aedeagus, being longer than

that of any other species of *Epitoxus* on present knowledge.

#### *Epitoxus therondi* sp. n. (figs. 30-32)

##### Description

Colour black, with antennae and legs reddish; body wide oval, slightly convex.

Head rounded and punctured, mandibles strong; labrum long, convex, finely punctured, not bisinuate; epistoma wide and short, slightly convex and finely punctured; frons short and wide, flat, finely punctured; frontal stria arcuate at sides, with a short straight portion in front; antennae long, with scape recurved and enlarged, somewhat shorter than rest of antenna.

Pronotum convex, with double punctures, large foveae on sides, smaller on rest, on disc only with fine and dense punctures; marginal stria complete, ventral on basal 2/3; antescutellar impression deep, formed by two

regular arches. Elytra regularly expanded, slightly convex, finely punctured; dorsal striae well impressed and crenulate; three first dorsal striae complete; fourth dorsal stria variably interrupted; fifth stria very reduced, apical; sutural stria reaching middle; humeral stria distinct, long and oblique; outer subhumeral stria long and oblique; outer subhumeral stria well impressed, not reaching middle; marginal stria strong, crenulate, in ventral position; epipleurae normal, with distinct, complete crenulate stria.

Propygidium wide, short and convex, regularly punctured, formed by dense foveae and small sparse punctures. Pygidium convex, with two basal impressions and smaller punctures than propygidium.

Prosternal lobe long and produced, coarsely and densely punctured; lateral stria distinct and complete; prosternal keel narrow and long, with inner striae well impressed, crenulate, divergent on base and gradually approaching toward apex; surface between both striae slightly convex and finely punctulate. Mesosternal disc slightly convex, finely punctured; lateral stria crenulate, medially clearly directed toward prosternum. Meso-metasternal suture shallow, with a distinct crenulate stria, continued by the lateral metasternal stria, strong, complete and crenulate, almost reaching metacoxae; postcoxal stria arcuate, with abundant punctures, shortened medially; longitudinal median suture very fine; disc convex, finely punctured, with large punctures opposite to metacoxae; mesepimeron and metasternal sides with large, irregular and dense foveae.

First abdominal sternite like metasternum, with two well impressed arcuate striae.

Legs long, tibiae expanded; protibiae with deep tarsal grooves; protibiae with 9-10 long teeth on outer margin, and other 4 teeth of decreasing size on apex; meso- and

metatibiae spinose; male protarsi with wide setae, not foliate.

Male eighth abdominal segment like other species. Ninth tergite rather sclerotized; basal and ventral projections weakly produced. Spiculum gastrale very narrow and long, Y-shaped. Aedeagus with basal piece slightly longer than parameres, somewhat wider, recurved; parameres regularly narrowed apically; apex triangular, with two subapical teeth.

Maximum length: 2.4 - 2.5 mm

Maximum width: 2.2 - 2.3 mm

#### Diagnosis

The description of this species is based on the differences from *E. circulifrons*: puncturation of propygidium, length of body and morphology of genitalia

#### Type material

Holotype ♂, labelled /I.R.S.A.C. MUS. CONGO, Albertville: Moyenne Kimbi 950m I-1951, N.Leleup, Makungu (Gal. for.), /Récolté dans l'humus/, /*Epitoxus circulifrons* Mars., J. Thérond det. 1951/ (MRAC).

Paratypes, 5 exx., 1 ♂ labelled like the holotype (MNHN). 1 ♂ labelled /I.R.S.A.C.-MUS. CONGO, Kivu: Mboko, Terr. de Fizi, 800m, I-1958, N.Leleup/, /Récolté dans l'humus/, /*Epitoxus circulifrons* Mars. J. Thérond det. 1951/ (MRAC). 1 ♀ labelled /COLL. MUS. CONGO, Mayidi, 1943, Rév. P. Van Eyen/, /*Epitoxus circulifrons* Mars./ (MNHN). 1 ♂ labelled /Soil-Zoological Exp., Congo-Brazzaville, Brazzaville, ORSTOM park/, /19.12.1963, No 479, soil trap, leg. Belogh & Zicsi/, /*Epitoxus circulifrons* Mars./ (MNHN). 1 ♂ labelled /COLL. MUS. CONGO, Thysville, I-1953, J. Sion/, /*Epitoxus circulifrons* Mars., J. Thérond det. 1951/ (TY).

#### Comments

It lives in humus in mountainous areas of Zaire and Congo. They were collected in December and January.

## Etymology

I am pleased to dedicate this species to the French specialist in Histeridae, Jean Thérond.

*Epitoxus uhligi* sp. n. (figs. 33-35)

## Description

Colour black, antennae and legs reddish; body wide oval, convex.

Head rounded and finely punctured, mandibles strong; labrum long, convex, finely punctured, not bisinuate; epistoma short, wide, slightly convex and finely punctured; frons wide and short, flat and finely punctured; frontal stria strong and semicircular; antennae long, with scape rather enlarged and recurved, slightly shorter than rest of antenna.

Pronotum convex, doubly punctured, with larger punctures on sides, scanty or lacking on disc, where the small punctures are dense; marginal stria complete, ventral on basal 2/3; antescutellar impression deep, formed by two arches. Elytra rather expanded and slightly convex, with well impressed crenulate striae, the first three complete; fourth stria variably interrupted, complete in several specimens; fifth stria apical; sutural stria incomplete, usually clearly surpassing middle; humeral stria distinct, long and oblique; outer subhumeral stria wide, apical; marginal stria strong, crenulate, in ventral position; epipleurae rather wide, with fine stria; surface finely and densely punctured.

Propygidium wide, long and convex, regularly punctured, rather dense, formed by punctures of variable diameter, not clearly double. Pygidium convex, with two basal impressions, finely and very densely punctured.

Prosternal lobe produced, with large rugose puncturation; lateral stria fine and short; prosternal keel long, with inner striae

very impressed, not crenulate, divergent at base, sinuous, converging apically, with surface between them slightly convex and finely punctured. Mesosternum long, convex and finely punctured; lateral stria clearly directed toward prosternum. Meso-metasternal suture very faint, with a crenulate stria continued by the lateral metasternal stria; lateral metasternal stria complete, very wide, almost reaching metacoxae; postcoxal stria wide, arcuate and interrupted on middle; longitudinal suture distinct; metasternal disc convex, finely and densely punctured, with large punctures opposite to metacoxae; mesepimeron and metasternal sides with coarse, irregular, dense foveae.

First abdominal sternite convex, covered with larger, denser punctures than on metasternal disc; two arcuate post-metacoxal striae.

Legs long, with tibiae slightly expanded; protibiae with 7-8 small teeth on outer margin, and other 5-6 small teeth on apex; tarsal grooves deep; meso- and metatibiae spinose; male protarsi with wide setae, not foliate.

Male eighth abdominal segment typical. Ninth tergite strongly sclerotized, with two basal projections. Spiculum gastrale rather sclerotized, expanded on base and on apex, Y-shaped. Aedeagus with basal piece rather recurved, parallel, wider than parameres; parameres not recurved, slightly longer than half of parameres, gradually narrowed apically; apex trapezoidal, with two subapical teeth.

Maximum length: 2.4 - 2.8 mm

Maximum width: 2.3 - 2.7 mm

## Diagnosis

It may be distinguished from *E. haeres* mainly by the morphology of the parameres, as well as the puncturation of the propygidium and the shape of the lateral mesosternal stria.

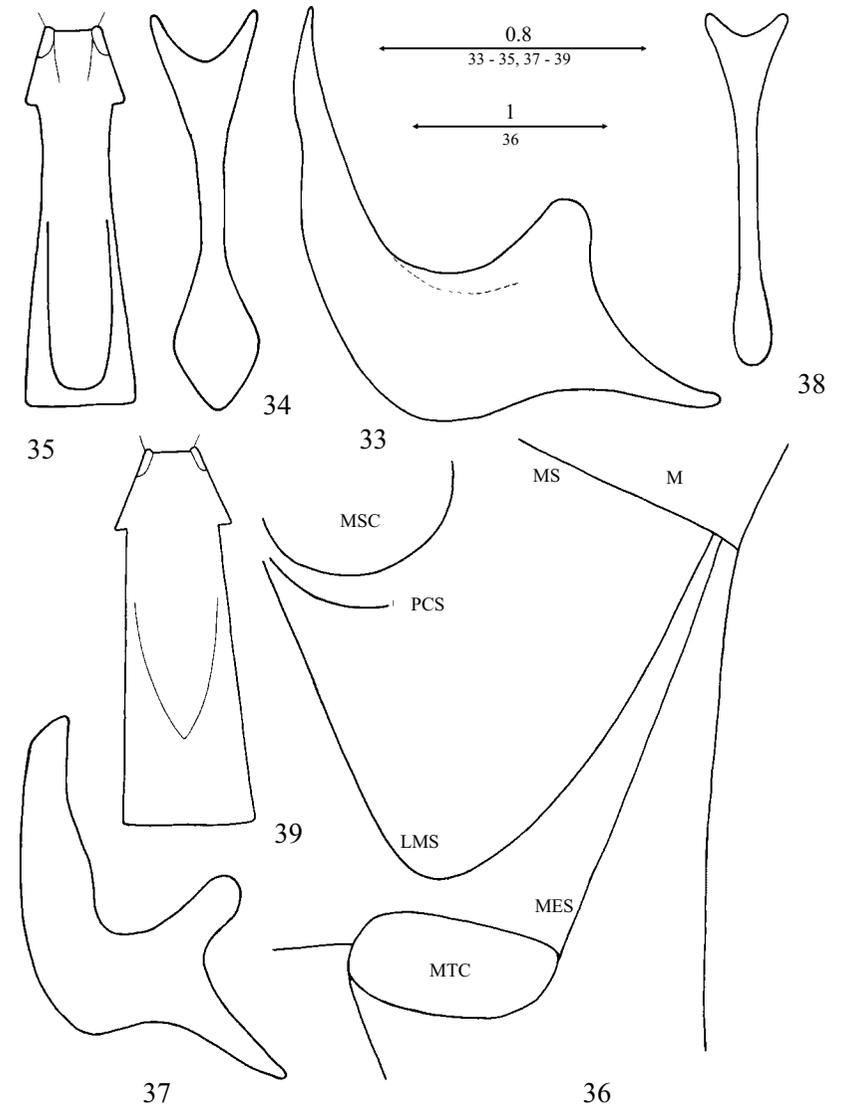


FIG. 33-39. *Epitoxus uhligi*: 33, ninth tergite of male (LV); 34, spiculum gastrale; 35, parameres (VV). *Epitoxus tanzanicus*: 36, left metasternal region; 37, ninth tergite of male (LV); 38, spiculum gastrale; 39, parameres (VV). Scales in mm.

*Epitoxus uhligi*: 33, novè terguít del mascle (LV); 34, spiculum gastrale; 35, paràmeters (VV). *Epitoxus tanzanicus*: 36, zona metasternal esquerra; 37, novè terguít del mascle (LV); 38, spiculum gastrale; 39, paràmeters (VV). Escalles en mm.

## Type material

Holotype ♂, labelled /Togo, Bismarckburg, 3-6.III.93, L.Conradt S./, /Phelister circuli-frons ?/, /Zool. Mus. Berlin/ (MNHU).

Paratypes, 9 exx., 2 specimens with the same first and third labels that the holotype and the following additional label: /Epitoxus haeres Lew., H. Bickhardt det. 1919/, ♀ in MNHU and ♂ in TY. 3 ♂ labelled /Guinée env. Kindia forêt Tabouna 23.VI.984 S.Murzin/, /ZIN/ (IZBSA). 2 ♂ labelled /Guinée env. Kindia Mt. Gangan 24.VI.984 S.Murzin/, /ZIN/, in IZBSA and TY. 1 ♂ labelled /COLL. MUS. TERVUREN, Côte d'Ivoire: Bingerville, VIII.1962, J. Decelle/, /J. Théron det. 1966, Epitoxus nov. sp./ (MRAC). 1 labelled /GHANA: Western region, Pretsea, 30m, N 4 55 - W 1 52, Dr. S. ENDRÖDY-YOUNGA/, /Nr. 129, sifting, 8.II.1966/, /Epitoxus nitidus Lew., J. Théron det., 1971/ (MTMA).

## Comments

They were found in February, March and August in Guinea, Ivory Coast, Ghana and Togo.

## Etymology

This species is dedicated to Dr. Manfred Uhlig from the Zoological Museum in Berlin in recognition of his valuable collaboration.

*Epitoxus tanzanicus* sp. n. (figs. 36-39)

## Description

Colour black, shiny, with antennae and legs reddish; body wide oval, weakly convex.

Head short, rounded and densely punctured, mandibles large; labrum long, bisinuate, convex and finely punctured; epistoma short, slightly convex and densely punctured; frons very wide, flat and covered with fine and dense puncturation; frontal stria arcuate on sides, with a short median portion straight; anten-

nae quite long, with scape enlarged very recurved, somewhat shorter than rest of antenna.

Pronotum convex, doubly punctured throughout, with very large foveae on sides, smaller on disc, sparse on base; marginal stria complete, ventral on basal 2/3; antescutellar impression narrow and long, shallow, only composed by aligned elongate impressions. Elytra weakly convex, with very fine and sparse puncturation; three first dorsal striae deep, crenulate and clearly directed inward on base; fourth dorsal stria incomplete, formed by several remnants; fifth dorsal stria composed only of several apical punctures; sutural stria strong, wide, crenulate and directed outward, reaching middle; humeral stria very fine, oblique; outer subhumeral stria apical, deep and crenulate; marginal stria strong, crenulate, slightly situated on ventral position; epipleurae wide, with deep crenulate stria.

Propygidium convex, with regular double puncturation, with large foveae, denser on sides, as well as small dense punctures. Pygidium convex, with two basal impressions, puncturation like the propygidium.

Prosternal lobe long and prominent, with puncturation large and dense; lateral stria fine, almost complete; prosternal keel long and narrow, with inner striae deep, crenulate, divergent on base and approaching apically; surface between both striae convex and finely punctured. Mesosternum long, convex, finely and sparsely punctured; lateral stria deep and crenulate, arcuate, not directed toward prosternum. Meso-metasternal suture very faint, with a crenulate stria, then continued by the lateral metasternal stria, deep, wide, punctate, complete, reaching metacoxae; postcoxal stria deep, short and arcuate; metasternum with longitudinal median suture shallow; disc convex, finely punctulate, with several large punctures near metacoxae;

mesepimeron and metasternal sides with large, irregular and dense foveae (fig. 36).

First abdominal sternite like metasternum, with two irregular and shallow post-metacoxal striae.

Legs long, weakly expanded and densely punctured; protibiae with deep tarsal grooves; with 9-10 short teeth on outer margin, as well as 4-5 teeth of decreasing size on apex; meso- and metatibiae spinose.

Male eighth abdominal segment typical. Ninth tergite weakly sclerotized; emargination and apical teeth in ventral position. Spiculum gastrale weakly sclerotized, very long and narrow, Y-shaped. Aedeagus with basal piece parallel, wider than parameres; length of basal piece slightly less than double the length of the parameres, recurved only at base; parameres slightly recurved, regularly narrowed apically; apex trapezoidal, with two teeth.

Maximum length: 2.4 mm

Maximum width: 2.2 mm

## Diagnosis

It is related to *E. circuli-frons* and *E. therondi*, but it differs mainly by the length of the basal piece of the aedeagus.

## Type material

Holotype ♂, labelled /Tanzanie: Mts. Uluguru, Kiroka, for. héliophile, alt. 725m sous écorces, 27-31/V/71/, /Coll. Mus. Tervuren, Mission Mts. Uluguru, L. Berger, N. Leleup, J. Debecker V/VIII/71/, /Epitoxus circuli-frons (Mars.) J. Théron det. 1973/ (MRAC).

## Comments

Only known from Uluguru Mts., Tanzania. It was found under bark at altitude 725 m in May.

## Etymology

Named from the country where this species is known, Tanzania.

*Epitoxus ruwenzoricus* sp. n. (figs. 40-46)

## Description

Colour black, antennae and legs reddish; body wide oval, slightly convex.

Head rounded and finely punctured, mandibles strong; labrum convex and punctured, not bisinuate; epistoma wide and short, convex, finely punctured; frons wide, short and flat, finely punctured; frontal stria arcuate on sides, irregular, sometimes with short interruptions; antennae long, scape short, strongly enlarged, quite shorter than rest of antenna.

Pronotum slightly convex, with anterior angles directed downward; marginal stria complete, ventral on basal 2/3; surface doubly punctured, with large punctures on sides, not reaching disc, where there are only small and dense punctures; antescutellar impression very deep, formed by two arches formed by elongate impressions. Elytra regularly expanded, slightly convex, with striae very wide and crenulate; first three complete; fourth stria variably reduced; fifth stria not reaching middle; sutural stria slightly surpassing middle; humeral stria shallow and oblique; outer subhumeral stria apical, well impressed; marginal stria deep and crenulate; epipleurae wide, with complete crenulate stria, other median stria fine and very short; surface finely and densely punctured, mainly on sides.

Propygidium short and slightly convex, regularly covered with large, very dense punctures, without small punctures. Pygidium convex, with two basal impressions; puncturation like propygidium, but smaller.

Prosternal lobe short, weakly prominent, coarsely and densely punctured; lateral stria distinct, apical; prosternal keel short and wide, with inner striae strong and crenulate, divergent on base and sinuous on rest; surface between both striae slightly convex, coarsely and densely punctured.

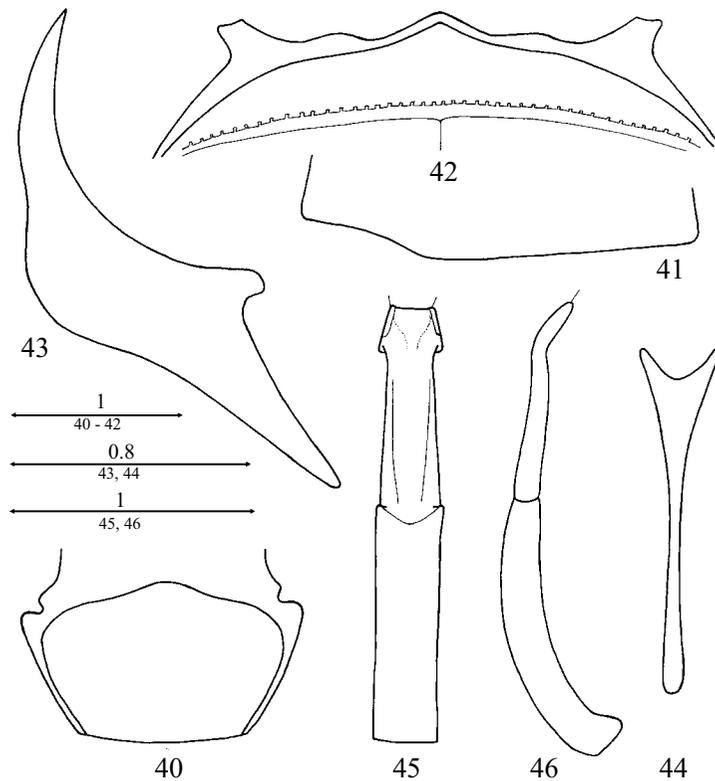


FIG. 40-46. *Epitoxus ruwenzoricus*: 40, frontal stria of head; 41, left margin of pronotum; 42, mesosternal disc; 43, ninth tergite of male (LV); 44, spiculum gastrale; 45, aedeagus (VV); 46, edeagus (LV). Scales in mm.

*Epitoxus ruwenzoricus*: 40, estria frontal del cap; 41, marge esquerre del pronot; 42, disc mesosternal; 43, novè tergut del mascle (LV); 44, spiculum gastrale; 45, eedeagus (VV); 46, edeagus (LV). Escalles en mm.

Mesosternum short, with disc convex and finely punctured, with lateral stria strong, crenulate, arcuate and clearly directed toward prosternum. Meso-metasternal suture shallow, with a well-defined stria, crenulate and regularly arcuate, continued as the lateral metasternal stria, very wide, strong, complete, punctate, almost reaching metacoxae; postcoxal stria distinct, arcuate, reaching middle; longitudinal suture shallow; metasternal disc flat, finely punctured and with

large punctures opposite to metacoxae; mesepimeron and metasternal sides with large, irregular and dense foveae.

First abdominal sternite like metasternum, with two arcuate post-metacoxal striae.

Legs long and slightly expanded; protibiae with deep tarsal grooves; outer margin with 6 small teeth and another 6-7 small teeth on apex; meso- and metatibiae spinose; protarsi setose on ventral sides.

Male eighth abdominal segment typical. Ninth tergite strongly sclerotized, long and narrow, with a long basal projection. Spiculum gastrale long and very narrow, Y-shaped. Aedeagus regularly recurved, with basal piece parallel, slightly wider than parameres; basal piece and parameres of equal length; parameres slightly narrowed apically, with apex expanded, bearing two fine setae.

Maximum length: 2.4 - 2.6 mm

Maximum width: 2.2 - 2.4 mm

#### Diagnosis

This species is described by the morphology of the parameres, as well as other external characteristics. It seems to be most closely related to *E. hilarulus*, *E. villiersi* and *E. ugandensis*.

#### Type material

Holotype ♂, labelled /Massif Ruwenzori, Mont Ngulingo, près Nyamgaleke, 2.500m, P.N.A./, /Congo Belge: P.N.A., 3-VI-1954, P. Vanschuytbroeck & H. Synave 9013-17/, /*Epitoxus circulifrons* Mars. J. Théron det. 1979/ (MRAC).

Paratypes, 21 exx., 4 ♂ and 4 ♀ with same labels that the holotype (5 exx. in MRAC, 2 exx. in MNHN and 1 ex. in TY). 6 ♂ and 4 ♀ with the same first and third labels, moreover /Congo Belge: P.N.A., 17-18-VIII-1953, P. Vanschuytbroeck & V. Hendrickx 5151-66/ (4 exx. in MRAC, 2 exx. in MNHN and 4 exx. in TY). 1 ♀ labelled /Mont Hoyo, grotte Yolohafiri, 1030m/, /Congo Belge: P.N.A., 25-VII-9-VII-1955, P. Vanschuytbroeck 13.715-19/ (MRAC). 1 ♂ labelled /Mont Hoyo, grotte Saga-Saga 1.160m/, /Congo Belge: P.N.A., 12-VII-6-VIII-1955, P. Vanschuytbroeck, 13.709-13/ (MRAC). 1 ♀ labelled /Massif Ruwenzori, riv. Kakalari, affl. Bombi, 1.725m/, /Congo Belge: P.N.A., 16-IV-1954, P. Vanschuytbroeck & H. Synave 8753-58/ (MRAC).

#### Comments

It lives at high altitudes in the Ruwenzori Mts. (Zaire), and has been collected from May to July.

#### Etymology

Named from the geographical area where it lives, the Ruwenzori Mts.

#### *Epitoxus ugandensis* sp. n. (figs. 47-49)

#### Description

Colour black, antennae and legs reddish; body wide oval, slightly convex.

Head rounded and long, densely punctured, mandibles strong; labrum short, convex, finely and densely punctured, not bisinuate; epistoma short, very wide, flat and finely punctured; frons very short and wide, slightly convex, finely punctured; frontal stria interrupted, formed by two short arches; antennae rather long, with scape strongly recurved and enlarged, slightly shorter than the rest of the antenna.

Pronotum wide, weakly convex, with marginal stria complete, on the edges; surface doubly punctured, with large punctures on sides, smaller toward disc, where there are only fine dense punctures; antescutellar impression formed by two deep regular arches. Elytra quite expanded, with puncturation very fine and sparse; dorsal striae deep and crenulate; first three dorsal striae complete; fourth stria quite reduced; fifth stria apical; sutural stria directed outward, reaching middle; humeral stria fine and oblique; outer subhumeral stria strong, reaching middle or sometimes being surpassed; marginal stria deep and crenulate, in ventral position; epipleurae wide, rugose, with two well impressed striae, complete and crenulate.

Propygidium short, slightly convex, covered with regular, fine dense punctures,

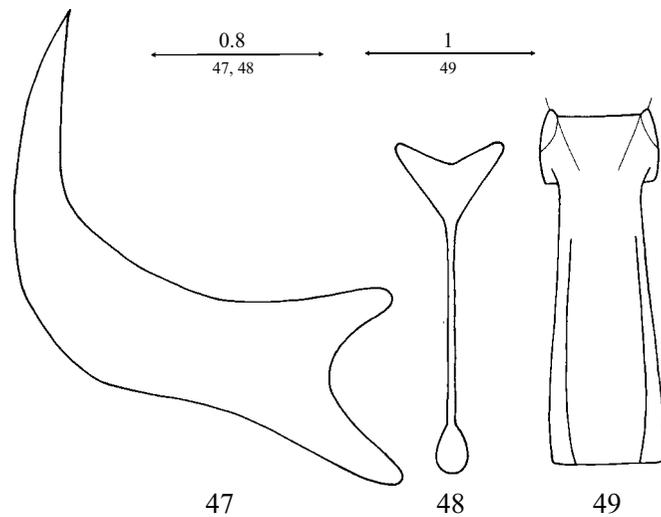


FIG. 47-49. *Epitoxus ugandensis*: 47, ninth tergite of male (LV); 48, spiculum gastrale; 49, parameres (VV). Scales in mm.

*Epitoxus ugandensis*: 47, novè tergut del mascle (LV); 48, spiculum gastrale; 49, paràmers (VV). Escalles en mm.

formed by large foveae, as well as other smaller and sparser punctures. Pygidium convex, with puncturation somewhat smaller and very dense.

Prosternal lobe wide, coarsely and densely punctured, with lateral stria very short, apical; prosternal keel with sides rugose; inner striae strong, crenulate, slightly divergent at base, otherwise weakly sinuous, widely spaced, flat, with deep, dense puncturation. Mesosternum with disc short, flat, almost smooth; lateral stria arcuate, crenulate and directed toward prosternum on middle. Meso-metasternal suture shallow, with a strong, arcuate, crenulate stria, very deep, complete, punctate and very close to metacoxae; postcoxal stria strong, arcuate, interrupted on middle; longitudi-

nal suture distinct; metasternal disc weakly convex, smooth, with large punctures opposite metacoxae; mesepimeron and metasternal sides with large, irregular, dense foveae.

First abdominal sternite like metasternal disc, with two oblique post-metacoxal striae.

Legs long; tibiae expanded; protibiae with shallow tarsal grooves, with 6-7 small teeth on outer margin, and another 9-11 apical teeth; meso- and metatibiae spinose.

Male eighth abdominal segment typical. Ninth tergite long and narrow, with long basal projections. Spiculum gastrale long, very narrow, Y-shaped. Aedeagus regularly recurved, with basal piece slightly wider and longer than parameres; parameres narrowed apically, with apex wider than long.

Maximum length: 3.1 mm

Maximum width: 2.8 mm

#### Diagnosis

It may be distinguished from *E. villiersi* mainly by having the length of the basal piece of the aedeagus clearly less than twice the length of the parameres. There are some other external differences: frontal stria, prosternal keel, meso-metasternal suture and post-metacoxal striae.

#### Type material

Holotype ♂, labelled /Uganda, Ankole Dist., Kalinzu Forest Feb. 6.-16.1973, H. Gonget leg./ (ZM).

#### Comments

It is only known from the type locality in Uganda, having been found in February in a forest.

#### Etymology

Specific name derived from the country of origin, Uganda.

#### *Epitoxus depressus* sp. n. (figs. 50-56)

##### Description

Colour black, shining, legs and antennae reddish; body wide oval, quite depressed.

Head with mandibles smooth; labrum short and convex, smooth, slightly bisinuate; epistoma short, smooth, slightly convex; frons finely punctured, flat or slightly convex; frontal stria very irregular, interrupted laterally, straight and complete in front; antennae long, scape enlarged and strongly recurved, of similar length to the rest of the antenna; pedicel more enlarged and longer than first joint of funicle; antennal club elongate-oval, with a few long setae.

Pronotum weakly convex; marginal stria complete, on edges; sides with large foveae, chiefly near anterior angles; disc only with fine, sparse punctures, mainly on anterior

half; antescutellar area with two shallow arcuate impressions. Elytra weakly convex, regularly expanded; finely and sparsely punctulate; three first dorsal striae complete, strong, with abundant large punctures, arcuate; fourth dorsal stria fine, only composed by basal and apical portions; fifth dorsal stria only as a short apical trait; sutural stria extended on apical half, geminate, with a short basal trait; humeral stria well impressed, long, oblique; outer subhumeral stria as a short apical trace; marginal stria complete; epipleurae very narrow, rugose, unistriate.

Propygidium long, slightly convex; with dense double puncturation, densely foveate on sides, sparser on disc, where small punctures are denser. Pygidium convex, with large punctures on sides and small punctures on middle; with a well impressed impression on sides, close to base.

Prosternal lobe wide, densely punctured; lateral stria arcuate, interrupted; prosternal keel with two inner striae divergent at base, weakly sinuous medially, joined apically, finely punctured between them; outer prosternal striae indistinct. Mesosternum very short, slightly convex, finely punctured; lateral stria complete, strong, with scarce punctures, regularly arcuate, not directed in front on middle. Meso-metasternal suture shallow, with a wide strongly arcuate stria; lateral metasternal stria oblique, straight, shortly interrupted near metacoxae, with an arcuate outer portion reaching epimeron; metasternal disc slightly convex, smooth, with a fine longitudinal suture; postcoxal stria strong, interrupted on middle; metepisternal stria strong, reaching metacoxae; mesepimeron and metasternal sides with large, irregular and dense foveae.

First abdominal sternite like metasternum; sides coarsely and densely punctured; two arcuate post-metacoxal striae.

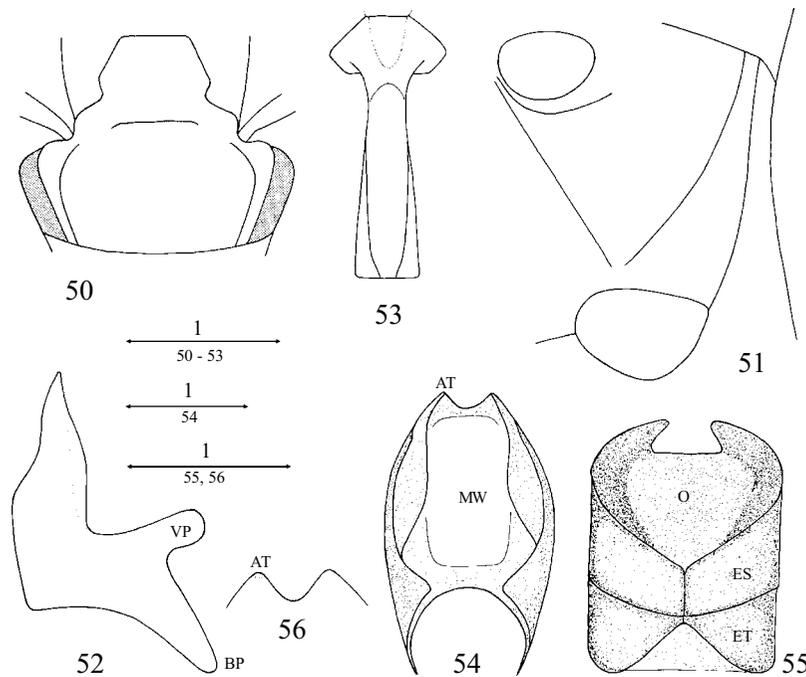


FIG. 50-56. *Epitoxus depressus*: 50, head; 51, left metasternal area; 52, ninth tergite of male (LV); 53, parameres (VV); 54, vuitè segment abdominal del mascle (VV); 55, novè terguit del mascle (VV); 56, àpex del novè terguit (DV). Scales in mm.

*Epitoxus depressus*: 50, cap; 51, àrea metasternal esquerra; 52, novè terguit del mascle (LV); 53, paràmers (VV); 54, vuitè segment abdominal del mascle (VV); 55, novè terguit del mascle (VV); 56, àpex del novè terguit (DV). Escalles en mm.

### Diagnosis

Externally these three species (*E. depressus*, *E. descarpentriensi*, *E. corycaeus*) are very difficult to distinguish; this species is distinct by the very wide apex of aedeagus. The numerous specimens of *E. corycaeus* and *E. descarpentriensi* studied, have exhibited a constant morphology of the apex of the aedeagus.

### Type material

Holotype ♂, labelled /Congo Français, Mt. Sessé, par Loango, Collection F. Cordier/, / F. Cordier, dedit 1915/, /corycaeus Lew., H. Desbordes det. 15/, /MUSÉUM PARIS, 1933, Coll. DESBORDES/ (MNHN).

Paratypes, 2 exx., 1 ♀ labelled /AVR. 1957, N'Kongsamba, CAMEROUN, J. Cantaloube/, /*Epitoxus corycaeus* Lew./, /MUSÉUM PARIS, COLL. J. THÉRON/ (MNHN). 1 ♀ labelled /Camerun/, /Sjöstedt/, /*Epitoxus corycaeus* Lewis, comp. type/, /corycaeus Lew./, /Naturhistoriska Riksmuseet Stockholm, Loan no. 213/93/ (NR).

### Comments

It is known only from Cameroon, collected in April.

### Etymology

Specific name after the very depressed body form.

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