

## GEA, FLORA ET FAUNA

# Revision of the Afrotropical *Epitoxus* Lewis (Coleoptera: Histeridae)

Tomàs Yélamos\*

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## Abstract

The Afrotropical *Epitoxus* have now 27 species. Two new synonyms are proposed: *Epitoxus subruber* Lewis, 1914 **syn. n.** of *E. brevisculus* (Fähræus, 1851) and *E. nitidus* (Lewis, 1885) **syn. n.** of *E. circuliifrons* (Marseul, 1853). *Asolenus pholeobius* Jeannel & Paulian, 1945 is now transferred to genus *Epitoxus*. The lectotypes and paralectotypes of *E. subruber*, *E. haeres* and *Asolenus pholeobius* are designated. Here 12 species are redescribed, and their geographical distribution is updated. The keys to all Afrotropical species are provided.

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

## Resum

### Revisió dels *Epitoxus* Lewis afrotròpicals (Coleoptera: Histeridae)

Els *Epitoxus* afrotròpicals comprenen ara vint-i-set espècies. Es proposen aquestes dues noves sinònims: *Epitoxus subruber* Lewis, 1914 **syn. n.** d'*E. brevisculus* (Fähræus, 1851) i *E. nitidus* (Lewis, 1885) **syn. n.** d'*E. circuliifrons* (Marseul, 1853). *Asolenus pholeobius* Jeannel & Paulian, 1945 ara és transferit al gènere *Epitoxus*. Són designats els lecto-

tipus i paralectotipus d'*E. subruber*, *E. haeres* i *Asolenus pholeobius*. Són redescrites dotze espècies i es posa al dia la seva distribució geogràfica. També s'inclouen les claus de determinació de totes les espècies afrotròpicals.

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

## Resumen

### Revisión de los *Epitoxus* Lewis afrotrópicos (Coleoptera: Histeridae)

Los *Epitoxus* afrotrópicos comprenden ahora 27 especies. Se proponen las dos nuevas sinónimas siguientes: *Epitoxus subruber* Lewis, 1914 **syn. n.** de *E. brevisculus* (Fähræus, 1851) y *E. nitidus* (Lewis, 1885) **syn. n.** de *E. circuliifrons* (Marseul, 1853). *Asolenus pholeobius* Jeannel & Paulian, 1945 ahora es transferido al género *Epitoxus*. Son designados los lectotipos y paralectotipos de *E. subruber*, *E. haeres* y *Asolenus pholeobius*. Son redescritas 12 especies y se actualiza su distribución geográfica. También se incluyen las claves de determinación de todas las especies afrotrópicas.

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

## Introduction

In the preceding work (Yélamos, 1996) fifteen new species were described. The remaining twelve valid species are now redescribed following the same viewpoint that the new described species. The old descriptions are normally very incomplete, and without morphological data of the genitalia.

This genus show the same external morphology as other genera (*Asolenus* Lewis, 1906, *Coelocraera* Marseul, 1857, *Phelister* Marseul, 1853, *Epitoxasia* Cooman, 1932, *Notodoma* Lacordaire, 1854 ...) but the genitalia is distinct. Up to now only *Monoplius pinguis* Lewis, 1879 has shown the same genitalic pattern, but with very different external morphology. Genus *Monoplius* (only living in South Africa) contain species with characteristic external morphology (e.g.: body rugose, legs with a claw ...), but with two very diverse patterns of genitalic morphology.

The cladistic study is not included here because it is needed to complete another work on Asian *Epitoxus*. It seems that all the Asian species together with several African species share many plesiomorphic characters, more related to the possible chosen outgroup *Monoplius pinguis*.

The type series were studied, with the exception of *E. descarpentriensi* Thérond, 1965, not found in the Museums. Several species were described on female holotypes: *E. ascinus* Lewis, 1914, *E. zambicus* Mazur, 1972, *E. circuliifrons* (Marseul, 1853), *E. felix* Lewis, 1907, *E. revoili* Desbordes, 1917 and *E. dentatus* sp. n. Moreover the lectotype and the paralectotype of *E. subruber* Lewis, 1914 are also females. This in itself has posed major practical difficulties.

## Materials, methods and terminology

Specimens examined in this 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, Paris, 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 Sławomir 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, Fontenay-sous-Bois, France), ZFMAK (Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany), ZI (Zoologiska Institutionen, Lunds Universitet, Lund, Sweden) and ZM (Zoologisk Museum, København, Denmark).

The maximum length of body is measured excluding head, propygidium and pygidium.

\*Museu de Zoologia. Apartat de correus 593. E-08080 Barcelona

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 /.../), excepting for the other material examined of *E. brevisculus* and *E. circulifrons*, due to the high number of specimens studied. For both species it is only recorded the locality with the original spelling.

The terminology used for the genitalic parts, as well as the abbreviations could be observed in Yélamos (1996).

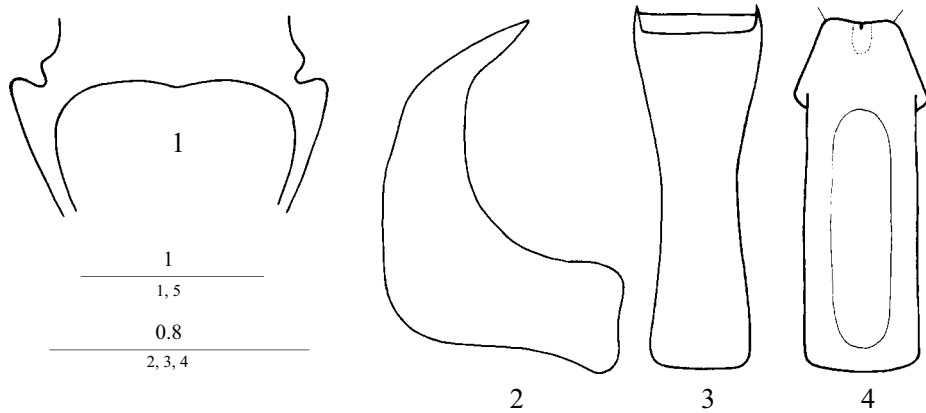
### Key to species of African *Epitoxus*

- 1 Lateral metasternal stria variably interrupted ..... 2
  - Lateral metasternal stria complete ..... 16
- 2 Apex of protibiae truncate, with 10-12 similar teeth; basal piece of aedeagus longer than parameres and more expanded; length 3.5 - 4.0 mm ..... 3
  - Apex of protibiae gradually narrowed, not truncate, with less teeth; basal piece of aedeagus of similar length and width to parameres, occasionally shorter ..... 5
- 3 Sides of propygidium with dense foveae (spaces equal or less than diameter of punctures), very large, similar or larger than on pronotal sides; lateral mesosternal stria strongly arcuate, not directed in front; aedeagus slightly widened at apex ..... *E. descarpentriesi*
  - Sides of propygidium with foveae less dense (spaces from 1-2 times diameter of punctures), smaller than on pronotal sides; lateral mesosternal stria arcuate, sometimes directed in front; apex of aedeagus very abruptly widened ..... 4
- 4 Lateral mesosternal stria regularly arcuate, not directed in front; apex of aedeagus

- markedly widened (width higher than twice its length) ..... *E. depressus*
  - Lateral mesosternal stria slightly directed in front; apex of aedeagus less widened ..... *E. corycaeus*
- 5 Fourth dorsal stria usually complete, always joined in arch to the sutural stria; lateral mesosternal stria variably directed in front; apex of aedeagus widened; anterior angles of pronotum regularly rounded; ninth male tergite with emargination and teeth in apical position ..... 6
  - Fourth dorsal stria variably reduced, not joined in an arch to the sutural stria (some specimens of *E. walteri* have the fourth and the sutural striae joined in an arch); lateral mesosternal stria arcuate, not directed in front; apex of aedeagus not widened; anterior angles of pronotum oblique; ninth male tergite with emargination and teeth in ventral position ..... 12
- 6 Sides of propygidium with large punctures, very sparse, smaller than on pronotal sides; apex of aedeagus gradually narrowed toward the end ... *E. parallelistrius*
  - Sides of propygidium with large punctures, denser, size similar than on pronotal sides; apex of aedeagus not gradually narrowed toward the end ..... 7
- 7 Lateral mesosternal stria straight or arcuate, not clearly directed in front; aedeagus long and narrow, regularly recurved .... 8
  - Lateral mesosternal stria clearly directed in front; aedeagus of diverse morphology ..... 9
- 8 Disc of pronotum with deep and large punctures; propygidium with large and very dense foveae; prosternal keel strongly and densely punctured; lateral metasternal striae reaching metacoxae; basal piece of aedeagus narrowed; ninth male tergite with apical teeth rounded; base of

- spiculum gastrale elongate ..... length of parameres ..... 13
  - Disc of pronotum with punctures smaller and finer, sparse; propygidium covered with small and sparse punctures; prosternal keel smooth or finely punctulate; lateral metasternal striae not reaching metacoxae; basal piece of aedeagus not narrowed on base; ninth male tergite with apical teeth very acute; base of spiculum gastrale oval ..... *E. kanaari*
- 9 Disc of pronotum smooth; basal piece of aedeagus only slightly shorter than parameres; frontal stria with parallel lateral portions ..... *E. ascinus*
  - Disc of pronotum doubly punctured; basal piece of aedeagus quite shorter than parameres; frontal stria semicircular, without parallel portions ..... 10
- 10 Distance among large punctures of propygidium less than diameter of punctures, regularly distributed; basal piece of aedeagus very short; parameres strongly recurved; spiculum gastrale Y-shaped ..... *E. longipennis*
  - Distance among large punctures of propygidium equal or higher than a diameter, irregularly distributed; length of basal piece of aedeagus higher than half length of parameres; parameres slightly recurved; spiculum gastrale T-shaped .... 11
- 11 Lateral metasternal stria interrupted on a wide trait, reaching metacoxae; stria of meso-metasternal suture straight; elytra sometimes red ..... *E. brevisculus*
  - Lateral metasternal stria interrupted on a very short trait, almost complete, not reaching metacoxae; stria of meso-metasternal suture regularly arcuate; elytra always black ..... *E. aurorae*
- 12 Frontal stria complete; basal piece of aedeagus slightly longer than half the
  - Frontal stria variably interrupted; basal piece of aedeagus as long as parameres, or slightly shorter ..... 14
- 13 Elytra finely and densely punctured; protibiae with 14-15 teeth; male ninth tergite with ventral projections of lateral expansions produced; apex of aedeagus not narrowed ..... *E. zambicus*
  - Elytra finely punctured, but not densely; protibiae with 11-12 teeth; male ninth tergite with ventral projections of lateral expansions not produced; apex of aedeagus slightly narrowed ..... *E. latus*
- 14 Disc of pronotum doubly punctured; propygidium regularly punctured; frontal stria surpassing antennal base; elytra black ..... *E. walteri*
  - Disc of pronotum without large punctures; propygidium irregularly punctured; frontal stria only reaching antennal base; elytra red or reddish black ..... 15
- 15 Prosternal keel long (length greater than twice width at middle); anterior angles of pronotum not directed downward; body convex; fourth dorsal stria normally not joined in arch to the sutural stria, but constituted by a basal arch; elytra red; disc of propygidium with regularly distributed large punctures, and dense small punctures ..... *E. irregularis*
  - Prosternal keel short and wide (length about twice width at middle); anterior angles of pronotum clearly directed downward; body depressed; fourth dorsal stria complete, without a basal arch, not joined to the sutural stria; elytra black, with reddish glints; disc of propygidium with irregularly distributed large punctures, mixed with sparse small punctures ..... *E. revouili*
- 16 Protibiae with four or six large teeth on

- outer margin; body elongate oval ..... 17
- Protibiae with more than six teeth on outer margin, smaller; body short oval ..... 18
- 17 Frontal stria complete and deep; fourth dorsal stria complete; fifth dorsal stria with a basal arch; prosternal lobe with lateral striae almost complete; inner prosternal striae not parallel; meso-metasternal suture without close crenulate stria; protibiae with 6 teeth ..... *E. pholeobius*
- Frontal stria incomplete; fourth dorsal stria incomplete; fifth dorsal stria without a basal arch; prosternal lobe with lateral apical striae; inner prosternal striae parallel; meso-metasternal suture with a close crenulate stria; protibiae with 4 teeth ..... *E. dentatus*
- 18 Protibiae rather expanded, with apex regularly narrowed, with 7 - 9 large teeth on outer margin, as well as 3 - 4 teeth of decreasing size on apex; basal piece of aedeagus not recurved; median part of aedeagus of similar width to rest; spiculum gastrale either T-shaped or Y-shaped ..... 19
- Protibiae slightly expanded, apex truncate, with 5 - 6 smaller teeth on outer margin and other 5 - 8 apical teeth very close among them, of similar size; basal piece of aedeagus recurved; median part of aedeagus more expanded than rest; spiculum gastrale Y-shaped ..... 21
- 19 Anterior half of pronotum with punctures very large and dense; body oval regular; basal piece of aedeagus fairly longer than parameres; length 2.5 mm ..... *E. tanzanicus*
- Anterior half of pronotum with sparse large punctures; body wide oval; basal piece of aedeagus of equal in length or shorter than parameres; length 2.3 - 3.7 mm ..... 20
- 20 Propygidium with large foveae and small very dense punctures; spiculum gastrale T-shaped; apex of aedeagus subparallel; basal piece of aedeagus slightly shorter than parameres; length 2.9 - 3.7 mm ..... *E. circulifrons*
- Propygidium with sparse small punctures and large punctures smaller; spiculum gastrale Y-shaped; apex of aedeagus not parallel; length of basal piece of aedeagus similar or higher than parameres; length 2.3 - 2.5 mm ..... *E. therondi*
- 21 Distance among large punctures of propygidium greater than their diameter, with dense small punctures; apex of aedeagus with sides not parallel, normally with acute projections on basal angles of apex ..... 22
- Propygidium densely punctured, with irregular large punctures, separated by a distance equal to less than their diameter, with sparse small punctures; apex of aedeagus with sides parallel or subparallel, without acute projections on basal angles of apex ..... 24
- 22 Anterior half of pronotum covered with large, deep foveae, like the sides; anterior angles of pronotum rather directed downward, with marginal striae strongly sinuous over the antennal foveae; propygidium with small dense punctures; median part of spiculum gastrale wide ..... *E. felix*
- Anterior half of pronotum covered with dense small punctures, as well as several larger punctures; anterior angles of pronotum normal, with marginal striae not sinuous over the antennal foveae; propygidium with sparse small punctures; median part of spiculum gastrale very narrow ..... 23
- 23 Disc of propygidium coarsely and densely punctured; lateral mesosternal striae strongly directed in front; parameres strongly narrowed; apex of parameres as in figure ..... *E. uhligi*
- Disc of propygidium with puncturation smaller and less dense; lateral mesosternal striae slightly directed in front; parameres wider; apex of parameres as in figure 22 ..... *E. haeres*
- 24 Anterior angles of pronotum suddenly directed downward, with marginal striae strongly sinuous over the antennal foveae; median part of parameres weakly expanded; apex of parameres not parallel ..... *E. ruwenzoricus*
- Anterior angles of pronotum not suddenly directed downward, with marginal striae only slightly sinuous over the antennal foveae; median part of parameres strongly expanded; apex of parameres parallel (figs. 26, 29) ..... 25
- 25 Elytral epipleurae with one stria; apex of aedeagus of similar length and width (fig. 26); body length 2.5 - 2.7 mm ..... *E. hilarulus*
- Elytral epipleurae with two striae; apex of aedeagus clearly wider than long (figs. 29); body length 3.0 - 3.6 mm ..... 26
- 26 First abdominal sternite with post-metacoxal striae arcuate, not directed outward; prosternal keel less wide and longer, longer than its double width; meso-metasternal suture somewhat arcuate; frontal stria complete or weakly interrupted; basal piece of aedeagus at least twice length of parameres ..... *E. villiersi*
- First abdominal sternite with post-metacoxal striae straight or oblique, directed outward; prosternal keel very wide and short, being its length like its double width; meso-metasternal suture regularly arcuate; frontal stria very reduced; basal piece of aedeagus less than twice as long as parameres ..... *E. ugandensis*
- Epitoxus pholeobius*** (Jeannel & Paulian, 1945) **comb. n.** (fig. 1-4)  
*Asolenus pholeobius* Jeannel & Paulian, 1945: 130.
- Redescription**  
 Colour black; antennae and legs reddish; body elongate oval, slightly convex.  
 Head rounded and densely punctured, mandibles strong; labrum and epistoma quite long, densely punctured and slightly convex; frons wide and short, with deep and dense puncturation; frontal stria complete, deep, composed to two arches; antennae with scape rather enlarged, recurved and punctured, shorter than rest of antenna.  
 Pronotum convex, narrowed in front, doubly punctured, with large, dense punctures on sides, and small very dense punctures on disc; marginal stria complete, on the edges; antescutellar impression shallow, composed by two shallow arches with dense punctures. Elytra weakly expanded and slightly convex, finely and densely punctured; dorsal striae strong, wide and crenulate; first four striae complete; fifth stria shorter than half length, with a short basal arch; sutural stria somewhat surpassing middle; humeral stria shallow, short and oblique; outer subhumeral stria strong, not reaching middle; marginal stria deep, crenulate, in ventral position, very sinuous and directed outward; epipleurae very narrow, with a deep stria, obsolete on apical third.  
 Propygidium long and slightly convex, with very dense puncturation, and large foveae. Pygidium rather convex, with smaller and sparser puncturation.  
 Prosternal lobe long, wide and prominent, densely punctured; lateral striae almost complete; prosternal keel very long and narrow, with well impressed striae, not parallel, diverging basally, surface between them flat and finely punctured. Mesosternum quite long, with disc convex and finely punctured; lateral stria strong, crenulate and directed



FIGURES 1-4. *Epitoxus pholeobius*: 1, frontal stria of head; 2, ninth tergite of male (LV); 3, spiculum gastrale; 4, parameres (VV). Scale in mm.

*Epitoxus pholeobius*: 1, estria frontal del cap; 2, novè terguet del mascle (LV); 3, spiculum gastrale; 4, paràmeres (VV). Escala en mm.

toward prosternum on middle. Meso-metasternal suture faint, without a close additional stria; lateral metasternal stria complete, deep, wide and straight, not reaching metacoxae; postcoxal stria short and arcuate; longitudinal suture very shallow; metasternal disc convex, finely and sparsely punctured; sides with irregular and dense foveae.

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

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

Male eighth abdominal segment with usual morphology (see description of genus). Ninth tergite rather sclerotized; apical teeth in ventral position, and emargination very large (without membranous window), almost reaching base. Spiculum gastrale slightly sclerotized, short and wide, slightly expanded apically. Aedeagus

with basal piece slightly longer than parameres; basal piece narrowed and recurved basally; parameres parallel, apex subtrapezoidal, with two obtuse teeth.

Maximum length: 3.3 - 3.8 mm

Maximum width: 2.5 - 3.1 mm

#### Diagnosis

*E. dentatus* and *E. pholeobius* are closely but readily distinguished species. Both species constitute a distinct morphological and ecological group within genus *Epitoxus*. The inclusion of *E. pholeobius* in this genus was fortuitously discovered checking the drawings of the genitalia included in the description of *Asolenus pholeobius* Jeannel & Paulian, 1945. These drawings allow no doubt (Jeannel & Paulian, 1945: 132). The remaining morphological characteristics also support this view. In the original description, the authors wrote «La position systématique de cette espèce est incertaine...» and «il ne nous est pas possible d'établir un genre nouveau pour l'*A. pholeobius* comme il faudra le faire, sans doute».

It is closely related to *E. dentatus*, mainly distinguished by the following characteristics: body less parallel; frontal stria complete and well impressed; antescutellar pronotal impression deeper; fourth dorsal stria complete; fifth dorsal stria with a short basal arch; foveae of propygidium larger; prosternal lobe with lateral stria almost complete; inner prosternal striae not parallel; lateral stria of mesosternum less directed toward prosternum; meso-metasternal suture without a close crenulate stria; protibiae with six teeth, slightly smaller.

#### Type material

The holotype was not designated. The lectotype and paralectotypes are designated. Lectotype ♂, labelled /KENYA Elgon Saw Mill M' ELGON, VER' EST (CAMP II) 2.470 m/, /MUSÉUM DE PARIS Mission de l'Omo C. ARAMBOURG P.-A. CHAPPUIS & R. JEANNEL 1932-33/, /nid n° 3/, /TYPE/, /*Asolenus pholeobius* n. R. Paulian det./ (MNHN).

Paralectotypes, 39 exx., with same labels that the lectotype, excepting the number of the nest («nid n°») (MNHN).

#### Comments

It is only known from the type locality Mt. Elgon (NW Kenya) collected in nests of mole-rats (*Tachyoryctes* sp.) at altitude 2,100 - 2,470 m in December.

The larvae were described in the original description, no further study has been made of them.

#### *Epitoxus circulifrons* (Marseul, 1853) (fig. 5-7)

*Phelister circulifrons* Marseul, 1853: 473.

*Coelocraera nitida* Lewis, 1885: 467 (syn. n.).

*Phelister nitidus* (Lewis, 1885): Lewis, 1889: 282.

*Epitoxus circulifrons* (Marseul, 1853): Lewis, 1900: 278.

*Epitoxus nitidus* (Lewis, 1885): Lewis, 1900: 278.

#### Redescription

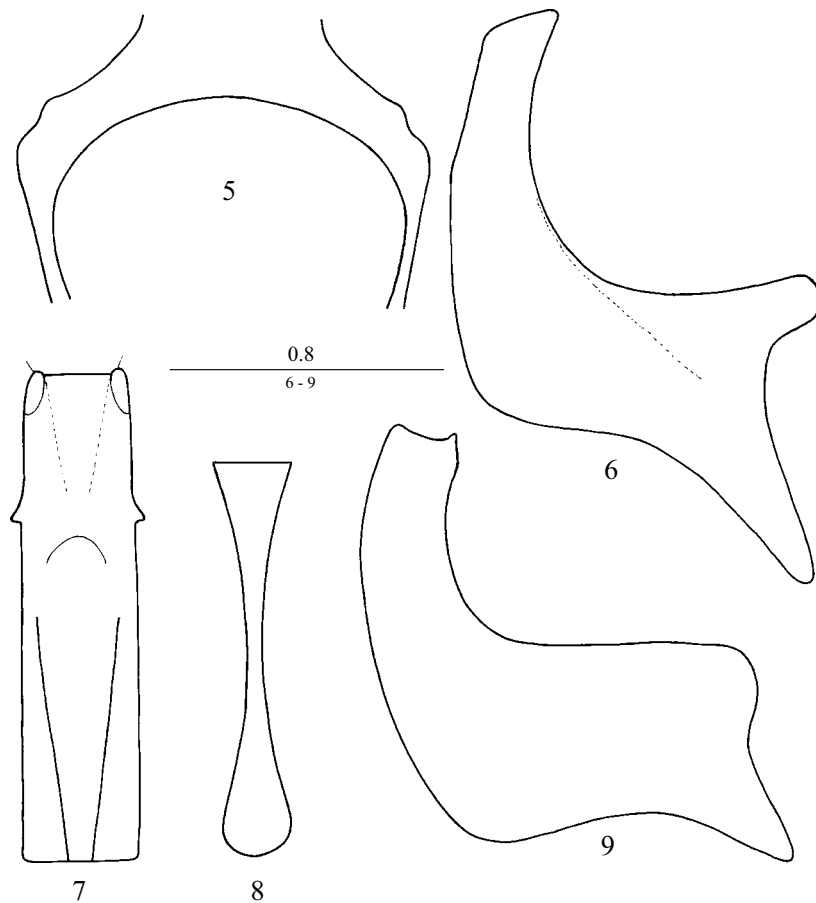
Colour black, antennae and legs reddish; body wide oval, slightly convex.

Head rounded and densely punctured, mandibles strong; labrum long, convex, punctured and not bisinuate; epistoma short, convex and densely punctured; frons flat, with deep dense punctures; frontal stria deep, regularly rounded; antennal scape recurved, rather enlarged, punctured, similar in length to the rest of antenna.

Pronotum very wide, slightly convex, doubly punctured, with large dense foveae only on sides, and small dense punctures on all the surface; marginal stria complete, in ventral position on basal 2/3; antescutellar impression large, formed by two deep arches composed of elongate impressions. Elytra very expanded, slightly convex, finely punctulate; dorsal striae strong and crenulate; three first dorsal striae complete, regularly arcuate; fourth variably reduced, not joined in arch to the sutural stria, incomplete; fifth dorsal stria apical; humeral stria well impressed, long and oblique; outer sub-humeral stria very strong, almost reaching middle; marginal stria strong, crenulate, slightly situated ventrally; epipleurae wide, with a well impressed complete stria.

Propygidium long and convex, covered with dense double punctures. Pygidium convex, densely punctured; punctures smaller than on propygidium.

Prosternal lobe long and very prominent, with large dense punctures; lateral stria short; prosternal keel very wide, with inner striae strong and crenulate, divergent on base and sinuous on rest; surface between both inner striae convex and finely punctured. Mesosternum slightly convex, finely punctured; lateral stria directed toward prosternum on middle. Meso-metasternal suture shallow, with a strong and crenulate stria, continued by the lateral metasternal



FIGURES 5-9. *Epitoxus circuliifrons*: 5, frontal stria of head; 6, ninth tergite of male (LV); 7, parameres (VV). *Epitoxus zambicus*: 8, ninth tergite of male (LV); 9, spiculum gastrale. Scale in mm.

*Epitoxus circuliifrons*: 5, estria frontal del cap; 6, novè terguít del mascle (LV); 7, paràmers (VV). *Epitoxus zambicus*: 8, novè terguít del mascle (LV); 9, spiculum gastrale. Escala en mm.

stria, wide, crenulate and complete, reaching metacoxae; postcoxal stria distinct, arcuate and incomplete; metasternum with longitudinal suture faint; disc convex, finely and densely punctured, with large punctures opposite metacoxae; mesepimeron and sides of metasternum with large dense foveae.

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

Legs long and expanded; protibiae with deep tarsal grooves; protibiae with 7-8 large teeth on outer margins, and other 4 apical teeth of decreasing size; meso- and metati-

biae spinose; male protarsi without foliate setae.

Male eighth abdominal segment with the common morphology. Ninth tergite and spiculum gastrale quite sclerotized; ninth tergite with projections of lateral expansions very produced; emargination and apical teeth in ventral position. Spiculum gastrale long, T-shaped. Aedeagus with basal piece and parameres of similar width; basal piece not recurved, slightly shorter than parameres; parameres parallel and recurved, with apex slightly narrowed, with two subapical teeth.

Maximum length: 2.5 - 3.4 mm

Maximum width: 2.4 - 3.3 mm

#### Diagnosis

The main differences from related species can be observed in the key to species.

There are no significant differences between *E. circuliifrons* and *E. nitidus*, therefore they are synonymized.

#### Type material

Holotype ♀, labelled /Phelister circuliifrons Marseul, T. Tadi 93/, /Phelister circuliifrons M./, /MUSÉUM PARIS, Coll. DE MARSEUL 1890/, /TYPE/ (MNHN).

The original description of *Coelocraera nitida* Lewis does not mention the number of specimens of the type series, but it says that this species was found in Abyssinia and Zanzibar. Only one specimen from Abyssinia was located, being designated as lectotype. Lectotype, labelled /Coelocraera Nitida Lewis, Type/, /Abyss., Raffray/, /G. Lewis Coll., B.M. 1926-369/, /Type/(NHML).

#### Other material examined (both sexes)

IZBSA: 2 specimens from: Kindia (Guinea). 2 specimens from Kasongo (Zaire).

MNHN: 4 specimens from: Congo Belge centr., Maniéma: Kindu. 1 specimen from: Fort-Sibut, Oubanchi-Chari. 24 specimens from: Ghana, Ashanti region, Abofour, Opro

river. 1 specimen from: Zagnanado, Dahomey. 3 specimens from: Ogoué, Lambarene. 1 specimen from: Deutsch Afr. 1 specimen from: Théés, Sénégal. 6 specimens from: Sibiti, Congo Brazzaville. 13 specimens from: Congo Brazzaville, Kindamba, Méya, Bangou forest. 6 specimens from: Congo Brazzaville, W from Loudima. 12 specimens from: Kawanda; Kuilu; Sebekotane, Sénégal; Mayidi; Congo Belge, Ngowa; Lamaboké, R.C.A.; Sierra Leone, Freetown; Thinsenda; Nieuwdorp; NW Rhodesia, Mwingwa; NW Rhodesia, Kashitu.

MRAC: 2 specimens from: Eala. 2 specimens from: Niembo à Tengo. 3 specimens from: Baudouinville. 2 specimens from: Kasai: Gaudajika. 2 specimens from: Terr. de Kasongo, riv. Lumami. 2 specimens from: Tshuaoa: Etata. 13 specimens from: Sankuru: Kondue; Albertville; Kivu: Terr. Fizi, Itombwe Nord; Lulua: Kapanga; Kinyati: Gobe; Congo da Lemba; Tanganyika Terr.: Mziha, 70km S Handeni; Congo Belge, Yangambi; Kasongo; Aka, Congo Belge; Léopoldville; Côte d'Ivoire: Bonakakro, N Divo; Lualaba: Zilo.

IRSN: 3 specimens from: Congo Belge, Eala; Congo Belge, Kaswabilenga; Congo Belge, Ngowa.

ZFMAK: 2 specimens from: Dahomey.

TM: 3 specimens from: Sibiti, Congo Brazz. 13 specimens from: S Afr. E Transvaal, Barberton. 3 specimens from: S Afr., Natal Zulu, Mtubatuba forest. 11 specimens from: S Afr. Zululand, Lake Bhangazi. 2 specimens from: Botswana, Kasane, Chobe Riv.

NR: 2 specimens from: Camerun.

ZI: 1 specimen from: Kenya.

MCSN: 2 specimens from: Uganda, Busu Busoga.

MHN: 13 specimens from: Sibiti, Congo Brazz. 1 specimen from: Congo Belge, Bambesa, Oriente Prov., Bas-Uelé Distr. 3 specimens from: Gabon, Crique Tsini.

NHML: 2 specimens from: Nyasaland, Manje. 4 specimens from: Copperbelt, Chati, Zambia. 1 specimen from: Salisbury.

ZM: 1 specimen from: Tanzania, Uluguru Mts., Kimboza Forest.

MNHU: 11 specimens from: Deutsch Afr., Dar Es Salam; D. Ost-Afrika, Pangani am Maere; Ed. Luja, Kondue, Congo Belge; Dahomey; Zanzibar; Gabon; Ukami, D.O. Afrika; Kuilu; Sankuru, Kassai, Congo.

SAM: 3 specimens from: Mfongosi, Zululand.

SMN: 2 specimens from: Sibiti, Congo Brazzaville.

NHMM: 1 specimen from: Nyasaland, Mitole Forest. 1 specimen from: Blantyre, Michiru Mountain Park.

ND: 2 specimens from: Petit Loko, Lobaye.

PK: 5 specimens from: Kindamba, Méya, Congo Brazz.; Rep. Centralafricaine, Petit Loko, Lobaye; Rep. Centr. Afr., Bangui; Dahomey; Kisantu, Zaire.

PV: 3 specimens from: Nelspruit, Transvaal. 2 specimens from: Barberton, Transvaal. 3 specimens from: Lake Bhangazi, Zululand. 1 specimen from: Cameroun, Etong-Ebe.

TY: 2 specimens from: Plateau Bateke, region Menkao, 60km NE Kinshasa, Zaire. 1 specimen from: Kisantu, Zaire. 1 specimen from: Rep. Centralafricaine, Petit Loko, Lobaye. 1 specimen from: Uganda, Kazi.

YG: 1 specimen from: Victoria Falls, Rhodesia. 2 specimens from: Terr. de Kasongo, riv. Lumami.

#### Comments

It is very common in all Tropical Africa, being known from Senegal, Guinea, Sierra Leone, Ivory Coast, Ghana, Benin, Cameroon, Central African Republic, Gabon, Congo, Zaire, Ethiopia, Kenya, Uganda, Tanzania, Malawi, Zambia, Zimbabwe, Botswana and South Africa. It lives in rotting fruits and dung in any time.

*Epitoxus zambicus* Mazur, 1972 (fig. 8-9)  
*Epitoxus zambicus* Mazur, 1972: 373.

#### Redescription

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

Head punctured, mandibles rounded; labrum long, slightly convex and finely punctured, not bisinuate; epistoma wide and long, flat, with deep and dense puncturation; frons wide and flat, punctured like epistoma; frontal stria semicircular, distinct and complete; antennal scape rather enlarged and recurved, clearly shorter than rest of antenna.

Pronotum convex, with anterior angles oblique; marginal stria complete, ventral on basal 2/3; surface covered with dense double puncturation, with large foveae on sides, smaller toward disc; antescutellar impression irregular, not biarcuate, instead of it, there are several elongate impressions. Elytra convex, quite expanded; dorsal striae strong and crenulate, first four striae complete; sutural stria reduced on base, and fifth stria slightly surpassing middle; humeral stria distinct and oblique; outer subhumeral stria apical, strong and crenulate; marginal stria complete and crenulate, in ventral position; epipleurae with a distinct complete stria; surface finely and densely punctured.

Propygidium long, wide and convex, doubly punctured, with scattered dense foveae, as well as small punctures. Pygidium doubly punctured, being the large punctures smaller.

Prosternal lobe narrow and prominent, with puncturation deep and sparse; lateral stria distinct and short; prosternal keel long and wide, with two inner striae crenulate, divergent on base, sinuous on rest; surface between both inner striae convex, with dense and fine puncturation. Mesosternum long and slightly convex, densely punctured; lateral stria crenulate, straight, not directed in

front. Meso- metasternal suture faint, with a fine and crenulate stria, continued by the lateral metasternal stria, arcuate, crenulate, reaching metacoxae, but interrupted on a trait of variable length, where there are several punctures; postcoxal stria impressed and arcuate, reaching middle; longitudinal suture very faint; metasternal disc convex, with puncturation very fine and dense; mesepimeron and sides of metasternum, irregularly and densely foveate.

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

Legs long; tibiae very expanded; protibiae with deep tarsal grooves, having 9-10 large long teeth on outer margin, and other 4 apical teeth of decreasing size; meso- and metatibiae spinose; male protarsi with foliate setae on ventral side.

Male eighth abdominal segment with the usual morphology. Ninth tergite very sclerotized; emargination and apical teeth in ventral position. Spiculum gastrale narrow and long, T-shaped. Aedeagus recurved, with basal piece longer than half the length of parameres; basal piece and parameres parallel, of similar width; parameres with two subapical teeth, apex not narrowed.

Maximum length: 2.6 - 2.8 mm

Maximum width: 2.5 - 2.7 mm

#### Diagnosis

The main differences from *E. latus* can be observed in the key to species.

#### Type material

Holotype ♀, labelled /N Rhodesia, Fort Jameson, I-1945, W. Eichler leg/, /*Epitoxus zambicus* Maz., 1970 det. S. Mazur/, /*Epitoxus* sp. ?/, /Mus. Zool. Polonicum, Warszawa, 30/47/, /HOLOTYPE/ (SM).

#### Other material examined

MNHN: 1 ♂ labelled /N RHODESIA, Congo-Zambezi, Watershed, 1928, Dr. H. S.

Evans/. 1 ♂ labelled /BELGIAN CONGO, 18m SW of Elizabethville, 9.iii.1928, Dr. H.S. Evans/. 3 ♂ and 1 ♀ labelled /COLL. MUS. CONGO, Elisabethville, 27.XII.1948, N. Leleup/, /Récolté dans champignon/.

MRAC: 1 ♂ labelled /MUSÉE DU CONGO, Thinsenda, XII. 1911, Miss. Agric./.

NHML: 1 ♀ labelled /N.W. RHODESIA, Mwendwa, 27°40'E, 13°S, iii.1914, H.C. Dollman/, /H.C. Dollman, Coll. 1919-79/.

ND: 1 ♂ labelled /KENYA, Mtembur, 16-VI-1979, rotting mushrooms/.

PK: 1 ♀ labelled /Museum Leiden, S.E. ZAIRE, Lumbumbashi, I.III.1975, W. Beun (A. Allaer)/. 1 ♀ labelled /ZAIRE, Kayembe, W-Katanga, XII-1956/.

TY: 1 ♂ labelled /ZAIRE, Kayembe, W-Katanga, XII-1956/.

#### Comments

They were found in rotting fungi in December, January, March and June in Kenya, Zaire and Zambia.

*Epitoxus revoli* Desbordes, 1917 (figs. 10-11)

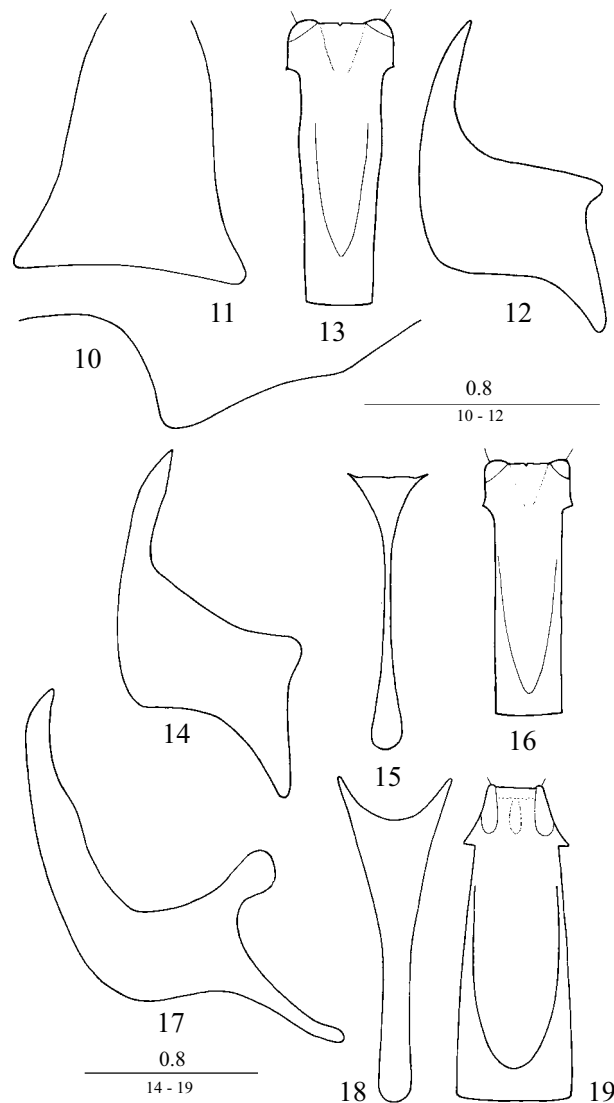
*Epitoxus revoli* Desbordes, 1917: 189.

#### Redescription

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

Head finely punctured, mandibles robust; labrum short, slightly bisinuate; frons wide and finely punctured, with frontal stria reaching antennal base, interrupted at middle; antennal scape long, very recurved and slightly enlarged; antennal club with sensorial foveae interrupted on sides.

Pronotum weakly convex, finely punctured on disc, with some large punctures, sparser on sides; anterior angles very produced downward; marginal stria complete, on the edges on basal 2/3, then in dorsal position; antescutellar impression shallow,



FIGURES 10-19. *Epitoxus revoili*: 10, left anterior angle of pronotum; 11, prosternal keel. *Epitoxus ascinus*: 12, ninth tergite of male (LV); 13, parameres (VV). *Epitoxus brevisculus*: 14, ninth tergite of male (LV); 15, spiculum gastrale; 16, parameres (VV). *Epitoxus felix*: 17, ninth tergite of male (LV); 18, spiculum gastrale; 19, parameres (VV). Scale in mm.

*Epitoxus revoili*: 10, angle anterior esquerre del pronot; 11, carena prosternal. *Epitoxus ascinus*: 12, novè tergit del mascle (LV); 13, paràmers (VV). *Epitoxus brevisculus*: 14, novè tergit del mascle (LV); 15, spiculum gastrale; 16, paràmers (VV). *Epitoxus felix*: 17, novè tergit del mascle (LV); 18, spiculum gastrale; 19, paràmers (VV). Escala en mm.

biarcuate. Elytra weakly convex, covered with shallow punctures; first four dorsal striae well impressed, complete; fourth stria not joined to the sutural; fifth stria on apical third, and sutural stria reaching middle; marginal stria complete, with punctures; humeral stria shallow and short; outer subhumeral stria on apical third; epipleurae very narrow, without striae.

Propygidium and pygidium convex, doubly punctured, with large, sparse punctures, irregularly distributed, smaller on pygidium; small punctures shallow, regular and rather dense.

Prosternal lobe somewhat prominent, very wide, finely and densely punctured, with a distinct apical arch of stria; prosternal keel wide, short and convex, not emarginate on base, very finely punctulate; inner prosternal striae regularly separated towards base. Mesosternum short, not produced toward prosternum, with lateral stria complete, not directed toward prosternum. Meso-metasternal suture shallow, with a fine and crenulate stria; metasternum convex, smooth, with distinct longitudinal suture; lateral metasternal stria incomplete, reaching metacoxae; metasternal sides foveate.

First abdominal sternite convex and smooth; arcuate post-metacoxal striae.

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

Male genitalia unknown.

Maximum length: 3.3 mm

Maximum width: 3.4 mm

#### Diagnosis

Distinctive morphological characteristics can be observed in the key to species.

#### Type material

Holotype ♀, labelled /*Epitoxus Revoili* H. Desbordes descr. 1917/, /MUSÉUM PARIS,

SOMALI OUARSANGUELI REVOIL 1881/, /TYPE unique/ (MNHN)

#### Comments

It is only known from the type locality in Somalia, without further data.

*Epitoxus ascinus* Lewis, 1914 (fig. 12-13)  
*Epitoxus ascinus* Lewis, 1914: 241.

#### Redescription

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

Head with mandibles long, rounded and smooth; labrum long, slightly convex, not bisinuate; epistoma long, slightly convex, smooth or with scarce punctures; frons flat, with sparse fine punctures; frontal stria well impressed, with parallel lateral traces, finer in front or interrupted as short traces; antennae very long, with scape of similar length to rest of antenna; scape greater enlarged and recurved.

Pronotum convex, with marginal stria complete, ventral on basal 2/3; sides foveate, smaller toward disc, smooth or with scanty fine punctules; antescutellar impression deep, formed by two irregular arches. Elytra very convex, expanded and smooth; dorsal stria deep and punctate; first four dorsal and sutural striae complete; fourth and sutural striae joined in arch; fifth dorsal stria reaching middle; humeral stria shallow and oblique; outer subhumeral stria strong and apical; marginal stria strong, in ventral position; epipleurae very narrow, with very fine stria, obsolete apically.

Propygidium long, quite convex, with large and dense foveae, like pronotum, mixed with small sparse punctures. Pygidium with a wide impression on each side, next to base, finely and sparsely punctured.

Prosternal lobe short, narrow and promi-

ment, densely punctured; lateral stria short; prosternal keel long and wide, with striae crenulate, divergent at base and regularly converging apically; surface between both striae convex and finely punctured. Mesosternum short, wide, convex and smooth, with lateral stria crenulate, regularly arcuate and directed toward prosternum on middle. Meso-metasternal suture obsolete, with a wide, crenulate, straight, stria, continued by the lateral metasternal stria, strong, very oblique, punctate, not reaching metacoxae, interrupted as a short trace where there are several large foveae; longitudinal suture shallow; disc convex and smooth, with several large punctures opposite metacoxae; postcoxal stria very short; mesepimeron and metasternal sides with large, dense foveae.

First abdominal sternite with disc convex and smooth, with two arcuate post- metacoxal striae.

Legs of typical length, with tibiae expanded; protibiae with deep tarsal grooves; protibiae with 8 teeth on outer margin, and other 3-4 smaller teeth on apex; meso- and metatibiae spinose.

Male eighth abdominal segment with the usual morphology. Ninth tergite weakly sclerotized, with basal projections very prominent and ventral projections slightly prominent. Spiculum gastrale weakly sclerotized, long and narrow, T-shaped. Aedeagus short, with basal piece slightly shorter than the parameres, parallel; width of parameres and basal piece similar; apex of parameres expanded, with two fine setae.

Maximum length: 2.2 - 2.6 mm

Maximum width: 1.9 - 2.5 mm

#### Diagnosis

This species may be easily distinguished from the other related species (*E. longipennis*, *E. brevisculus* and *E. aurorae*) mainly by its pronotal disc smooth, frontal

stria with lateral parts parallel and basal piece of aedeagus slightly shorter than parameres.

#### Type material

Holotype ♀, labelled /Congo da Lemba, 1913/, /*Epitoxus ascius* Lewis Type/, /G. Lewis Coll. B.M. 1926-369/, /Type/ (NHML).

#### Other material examined

MNH: 1 ♀ labelled /Soil-Zoological Exp., Congo-Brazzaville, Brazzaville, Mbékala forest/, /13.I.1964 no 668, sifted, fallen fruits, leg. Endrödy-Younga/. 1 ♂ labelled /Soil-Zoological Exp., Congo-Brazzaville, Loudima SAGRO, Park/, /19.12.1963 No 427, light trap, leg. Endrödy-Younga/. 1 ♂ labelled /MUSÉUM PARIS, MISSION A. DESCARPENTRIES ET A. VILLIERS, 1963-1964/, /BRAZZAVILLE CONGO, 196/. 1 ♀ labelled /ANGOLA, Quirombo, V.1934, K. Jordan, B.M. 1934-435/.

MRAC: 1 ♀ labelled /MUSÉE DU CONGO, Congo da Lemba, X-XII-1911, R. Mayné/, /R. DET. 78/. 1 ♀ labelled /MUSÉE DU CONGO, Congo da Lemba, II-1913, R. Mayné/, /R. DET. B 255/. 1 ♂ labelled /MUSÉE DU CONGO, Lulua: Kapanga, XII-1932, F.G. Overlaet/.

TY: 2 ♂ and 2 ♀ labelled /PLATEAU BATEKE, REGION MENKAO, 60KmNE KINSHASA, Ph. WALTER LEG./, /ZAIRE/, /*Epitoxus ascius* Lewis, 1914/.

#### Comments

They were collected in fallen fruits and also attracted to light traps, during several months from Zaire, Congo and Angola.

#### *Epitoxus brevisculus* (Fähræus, 1851) (fig. 14-16)

*Saprinus brevisculus* Fähræus, 1851: 545.

*Phelister brevisculus* (Fähræus, 1851): Marseul, 1861: 161.

*Epitoxus brevisculus* (Fähræus, 1851): Lewis, 1900: 278.

*Epitoxus subruber* Lewis, 1914: 241 (syn. n.).

#### Redescription

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

Head with mandibles large, rounded, scarcely punctured; labrum long, convex, finely punctured and slightly bisinuate; epistoma long and wide, slightly convex, with dense and well impressed punctures; frons weakly convex, densely punctured; frontal stria strong, semicircular, sometimes interrupted as a short medial trace; antennae long, scape enlarged and recurved, of similar length to the rest of antenna.

Pronotum convex, with marginal stria complete, in dorsal position on basal 2/3; all surface is covered with dense double puncturation, with large foveae, denser on sides, mixed with small and dense punctures; antescutellar impression shallow, narrow and very irregular, formed by elongate impressions. Elytra with dorsal striae well impressed and crenulate; four first and sutural striae complete; fourth dorsal stria joined to the sutural stria; fifth stria reaching middle; humeral stria shallow, long and oblique; outer subhumeral stria strong, apical; marginal stria strong, crenulate, ventral; epipleurae with a complete stria; surface smoother, finely and densely punctulate.

Propygidium long, narrow and convex, with regular dense double punctures (this character varying over the geographical range). Pygidium convex, without impressions, punctured like the propygidium.

Prosternal lobe wide and prominent, finely punctured, with lateral stria fine and short; prosternal keel short and wide, with inner striae fine, crenulate, divergent on base and approaching apically; surface between both striae slightly convex, finely punctured. Mesosternum short and wide, convex, finely punctured, with lateral stria crenulate,

medially not arcuate, clearly directed toward prosternum. Meso-metasternal suture faint, with a straight, crenulate stria, continued by the lateral metasternal stria, strong and oblique, reaching metacoxae, interrupted there; postcoxal stria well impressed, arcuate and short; metasternal disc convex, with distinct longitudinal suture, finely and densely punctured, with larger punctures opposite metacoxae and near to first abdominal sternite; mesepimeron and metasternal sides with irregular foveae.

First abdominal sternite convex, finely and densely punctured, with two oblique post-metacoxal striae.

Legs of typical length, and tibiae expanded; protibiae with tarsal grooves deep; outer margin with 8-9 teeth, as well as 3 small apical teeth of decreasing size; meso- and metatibiae spinose.

Male eighth abdominal segment typical. Ninth tergite variably sclerotized, with basal projection moderately prominent, ventral projection short and wide. Spiculum gastrale weakly sclerotized, long, narrow and T-shaped. Aedeagus parallel, with basal piece slightly longer than half length of parameres; parameres of similar width to basal piece; apex widened and slightly recurved.

Maximum length: 2.1 - 3.0 mm

Maximum width: 1.9 - 2.8 mm

#### Diagnosis

The main diagnostic characters are in the species key.

*E. subruber* was described on the basis of some specimens with elytra «obscurely reddish». Really there are some specimens with elytra variably reddish (black after boiling). There are no other differences in relation to *E. brevisculus*.

#### Type material

Holotype ♂, labelled /Caffraria/, /J. Wahlb./, /480, 60/, /*Epitoxus* Lew./, /*brevisculus*



Fahrs./, /Naturhistoriska Riksmuseet Stockholm, Loan n° 209/93/, /Typus/ (NR).

There are two specimens labelled «Type», being syntypes of *Epitoxus subrubus* Lewis, 1914 (NHML). The lectotype and a paralectotype are designated. Lectotype, labelled /Abyssinia, 76-36/, /Epitoxus subrubus Lewis, Type/, /Type/, /G.Lewis Coll., B.M. 1926-369/. Paralectotype labelled like the lectotype.

Other material examined (both sexes)

IZBSA: 4 specimens from: Victoria-Nyanza and N Rhodesia (Congo Zambezi). MNHN: 22 specimens from: Salisbury; Niembo-Kalembembe; Fort-Sibut, Oubanchi-Chari; Haut-Uelé: Moto; Lefinie (Mpo): Congo Brazzaville; Thinsenda; Nieuwdorp; M'Bao (Senegal); Watershed, N. Rhodesia; Haut-Uelé: Mauda; Sourondo b. Deressia, Distr. Lai. Tschadgeb.; Côte d'Ivoire; Kapanga; Mufungwa, Sampwe; Brazzaville.

MRAC: 43 specimens from: Thinsenda; Niémbo à Kalembembe; Haut-Uelé: Abimua; Tanganyika-Moero: Nyiunzu; Haut-Uelé: Watsa; Haut-Uelé: Moto; Kapanga; Lulua: Muteba; Erytrée; Flandria; Victoria Nyanza Ukerewe; Zaire: Shaba; Lulua: Kapanga; Lulua: Kikumba; Riv. Byangolo; Côte d'Ivoire: Ferkessédougou; Ethiopie: Addis Abeba.

NHML: 4 specimens from: Abyssinia, Wolamo Prov., Soddu; Harrar, Abyssinia; Abyssinia; Liberia: Mt. Nimba.

NHMZ: 1 specimen from: Salisbury.

NR: 1 specimen from: Camerun.

MTMA: 7 specimens from: Loudima Sagra, Congo Brazz.; Nanga Eboko, Camerun; Ghana: Ashanti, Bobiri Forest; Mbéokala forest, Brazzaville; Abyssinia; Bouenza Cataract, Congo Brazz.; Ghana: Ashanti, Mampong scarpe.

SAM: 10 specimens from: Mashunaland, Salisbury; Natal.

TM: 8 specimens from: E Transvaal, Barberton; E Transvaal, Berlin Forest;

Mbéokala forest, Brazzaville; Nelshoogte, Transvaal.

SMN: 1 specimen from: Kenya, Mtembur.

NHMM: 3 specimens from: Malawi: N Region, Bula, N. Vipga; Mt. Mulange, Malawi, Likabula Valley.

PK: 23 specimens from: Kenya, Mtembur; Liberia: Mt. Nimba; Kenya: Nano Manu.

ND: 14 specimens from: Kenya: Mtembur; Zaire: Kavembe, W Katanga.

PV: 1 specimen from: Mt. Nimba, Liberia.

TY: 15 specimens from: Nieuwdorp; Mufungwa Sampwe; Aka: Congo Belge; Kenya, Mtembur; Liberia: Mt. Nimba; Region Kikwit, Zaire; Plateau Bateke, region Menkao, 60 km NE Kinshasa.

Comments

It is frequent in rotting fruits and dung at any time. Widely distributed in Tropical Africa: Senegal, Liberia, Ivory Coast, Ghana, Cameroon, Central African Republic, Chad, Congo, Zaire, Ethiopia, Kenya, Tanzania, Malawi, Zambia, Zimbabwe and South Africa (Natal and Transvaal).

*Epitoxus felix* Lewis, 1907 (fig. 17-19)

*Epitoxus felix* Lewis, 1907: 347.

Redescription

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

Head rounded and punctured, mandibles robust; labrum long, convex, punctured and not bisinuate; epistoma wide, convex, densely and finely punctured; frons wide and short, flat, finely and densely punctured; frontal stria distinct, regularly rounded, only rarely interrupted as a short medial trace; antennae long, with scape enlarged and recurved, slightly shorter than rest of antenna.

Pronotum wide and convex, with marginal stria complete, ventral on basal 2/3;

surface doubly punctured, with large foveae on sides, smaller on rest, without large punctures on basal half of disc; antescutellar impression elongate, formed by elongate impressions. Elytra with striae deep and crenulate, the first three complete; fourth stria variably reduced; fifth stria only formed by short apical remnants; sutural stria reaching middle; humeral stria distinct and oblique; outer subhumeral stria wide and apical; marginal stria well impressed and crenulate, in ventral position; epipleurae rather wide, with a complete, crenulate and sinuous stria.

Propygidium long and convex, doubly punctured, formed by rather dense foveae, mixed with fine dense punctures. Pygidium convex, with deep dense punctures.

Prosternal lobe wide and produced, with large and dense puncturation; lateral stria distinct and long, incomplete; prosternal keel with inner striae strong and crenulate; divergent on base and approaching apically, with surface between them somewhat convex and densely punctured. Mesosternum long, slightly convex, with fine puncturation; lateral stria well impressed, crenulate and directed toward prosternum medially. Meso-metasternal suture faint, with a strong crenulate stria, continued by the lateral metasternal stria, complete, wide and very crenulate, almost reaching metacoxae; postcoxal stria strong, arcuate and reduced on middle; longitudinal suture obsolete; disc convex, nearly smooth, only with some punctures opposite to metacoxae; mesepimeron and metasternal sides with large, irregular and dense foveae.

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

Legs with tibiae rather expanded; protibiae with 7 teeth on outer margin, not long, and other 7 teeth on apex; tarsal grooves

deep; meso- and metatibiae spinose; male protarsi with large not foliate setae.

Male eighth abdominal segment as usual in the genus. Ninth tergite strongly sclerotized, with two long basal projections. Spiculum gastrale strongly sclerotized, long and Y-shaped. Aedeagus with basal piece very recurved, somewhat wider than parameres, and length lower than twice of parameres; parameres gradually narrowed apically; apex trapezoidal, with two subapical teeth.

Maximum length: 2.6 - 3.0 mm

Maximum width: 2.4 - 2.8 mm

Diagnosis

It differs from *E. uhligi* and *E. haeres* by the puncturation the pronotum and propygidium, anterior angles of pronotum, marginal stria of pronotum and spiculum gastrale.

Type material

Holotype ♀, labelled /Epitoxus felix Lewis, Type/, /Usambara, E Africa/, /Type/, /G. Lewis Coll., B.M. 1926-369/ (NHML).

Other material examined

MNHN: 1 ♂ and 1 ♀ labelled /AVR 1957 N°Kongsamba, CAMEROUN, J. Cantaloube/. 1 ♂ labelled /JUIL 1957 N°Kongsamba, CAMEROUN, J. Cantaloube/. 1 ♀ labelled /Sourondo b. Deressia, Distr. Lai, Tschadgeb. AEF., lf. H. Franz/. 1 ♂ labelled /Ilubabor Prov.: 15 km alt. 1600 m, NW of CHORA, VI.73/, /COLL. MUS. TERVUREN, Ethiopie, G. de Rougemont/.

MRAC: 1 ♂ labelled like the preceding specimen. 1 ♀ labelled /COLL. MUS. CONGO, Tanganyika Terr.: Korogwe, 450m, 24-IV-1957/. 1 ♀ /MUSÉE DU CONGO, Haut-Uelé: Moto, XI-1922, L. Burgeon/. 1 ♂ labelled /Congo Belge: P.N.A. 3-XII-1957, P. Vanschuytbroeck VS 245a/, /Secteur Nord, Mutsora 1.285m/. 1 ♀ labelled /Congo Belge: P.N.U., Kaswabilenga (r. dr.

Lufira)(700 m) 10-13-X-1947, Mis. G.F. de Witte 822a/. 1 ♂ labelled /I.R.S.A.C.- MUS. CONGO, Kivu: Beni 1300 m, 20-X-1949, N. Leleup/. 1 ♀ labelled /MUSÉE DU CONGO, Equateur: Flandria, 4-IX-1931, 148, R.P. Hulstaert/.

NHML: 1 ♀ labelled /Nyasaland, Vy. of S Rukuru R., 20-27 June, 1910. 3,000 ft, S.A. Neave/. 1 ♂ and 2 ♀ labelled /Kawanda ex Rotting Banana, 1.viii.56, P.E.S. Whalley/.

MNHU: 1 ♀ labelled /Usambara, Derema 350 m, 30.8.-15.9.91, Conradt S./ 1 ♀ labelled /D.O. Afrika, F. Fischer S./ 1 ♀ labelled /Deutsch-Ost Afr., Amani, Dr. Eichelbaum/. 1 ♂ labelled /Zanzibar, Raffray/..

TY: 1 ♂ labelled /Ilubabor Prov.: 15km alt. 1600 m, NW of CHORA, VI.73/, /COLL. MUS. TERVUREN, Ethiopie, G. de Rougemont/. 3 ♂ and 1 ♀ labelled /AVR 1957 N'Kongsamba, CAMEROUN, J. Cantaloube/.

YG: 10 specimens with the same label that the preceding. 2 specimens labelled /JUN 1957, N'Kongsamba, CAMEROUN, J. Cantaloube/. Several specimens from the same locality and collector, by different months: July (4 exx.), May (2 exx.), August (2 exx.), November 1956 (1 ex.).

#### Comments

They have been observed throughout the year in rotting fruits in Cameroon, Zaire, Ethiopia, Tanzania and Malawi.

#### *Epitoxus haeres* Lewis, 1905 (fig. 20-22)

*Epitoxus haeres* Lewis, 1905: 403.

#### Redescription

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

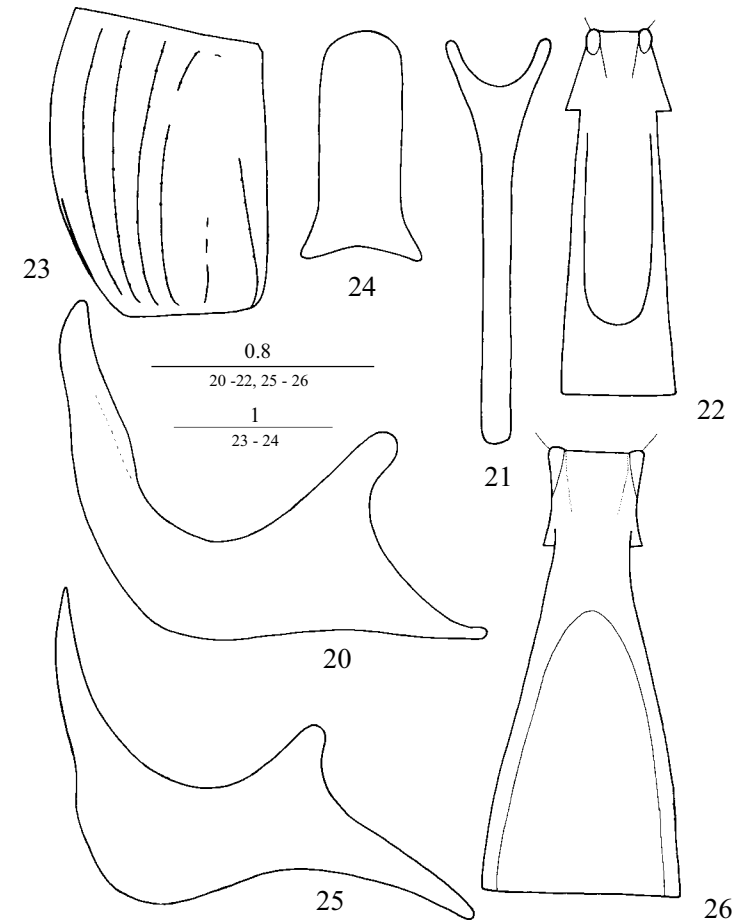
Head finely punctured, mandibles rounded; labrum long, convex, finely punctured; epistoma short, very wide, convex and finely

punctured; frons very wide and short, flat, with deep and dense puncturation; frontal stria strong and semicircular; antennae long, with scape long, enlarged, strongly recurved, somewhat shorter than rest of antenna.

Pronotum weakly convex, doubly punctured, with large foveae on sides; marginal stria complete, on the edges; antescutellar impression deep, formed by two arches with elongate impressions. Elytra regularly expanded, convex, finely punctured; dorsal striae crenulate, with three first striae complete; fourth stria variably reduced; fifth stria greatly reduced, apical; sutural stria very wide, reaching middle; humeral stria shallow, long and oblique; outer subhumeral stria very wide and crenulate, not reaching middle; marginal stria sinuous, crenulate, in ventral position; epipleurae wide, with complete stria, crenulate, parallel to marginal stria.

Propygidium long and convex, covered with smaller punctures than on pronotal sides, with scarce small punctures. Pygidium convex, with two deep basal impressions, finely and densely punctured.

Prosternal lobe prominent, with deep, dense puncturation; lateral stria long, incomplete; prosternal keel narrow, with sides coarsely and densely punctured; inner prosternal striae well impressed, crenulate, divergent at base, otherwise sinuous, with intervals convex and densely punctured. Mesosternum long, convex, finely punctured; lateral stria strong, crenulate and directed toward prosternum at middle. Meso- metasternal suture very fine, with a crenulate stria, continued by the lateral metasternal stria, wide, complete, punctate, almost reaching metacoxae; postcoxal stria strong, arcuate and medially interrupted; longitudinal metasternal suture faint; metasternal disc convex, finely punctured, with several large punctures opposite metaco-



FIGURES 20-26. *Epitoxus haeres*: 20, ninth tergite of male (LV); 21, spiculum gastrale; 22, parameres (VV). *Epitoxus hilarulus*: 23, left elytron; 24, carena prosternal; 25, ninth tergite of male (LV); 26, parameres (VV). Scale in mm.

*Epitoxus haeres*: 20, novè terguite del mascle (LV); 21, spiculum gastrale; 22, paràmers (VV). *Epitoxus hilarulus*: 23, èlître esquerre; 24, carena prosternal; 25, novè terguite del mascle (LV); 26, paràmers (VV). Escala en mm.

xae; mesepimeron and metasternal sides with large, irregular and dense foveae.

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

Legs long, with tibiae expanded; protibiae with deep tarsal grooves, with 6-7 teeth

on outer margin and 7 small teeth on apex; meso- and metatibiae spinose; male protarsi with wide setae on ventral side.

Male eighth abdominal segment typical. Ninth tergite quite sclerotized, long and narrow, with long basal projections. Spi-

culum gastrale narrow and long, Y-shaped. Aedeagus strongly recurved; basal piece parallel, somewhat wider than parameres; parameres slightly longer than half the length of basal piece; parameres slightly expanded apically; apex trapezoidal, with two subapical teeth.

Maximum length: 2.4 - 2.8 mm

Maximum width: 2.3 - 2.6 mm

#### Diagnosis

The main differences in relation to other closely related species have already been stated.

#### Type material

Three specimens from the type series have been studied (syntypes), providing a now designated lectotype and two paralectotypes. Lectotype ♂, labelled /GUINEA PORTOGHESE, Bolama, VI-XII-1899 L. Fea/, /TYPUS/, /*Epitoxus haeres* Lewis/, /*Epitoxus typus*!!/ (MCSN).

Paralectotypes, 2 exx., 1 ♀, with the same first two labels, moreover /SYNTYPUS *Epitoxus haeres* Lewis/ (MCSN). 1 ♂ labelled /*Epitoxus haeres* Lewis, Type/, /Type/, /GUINEA PORTOGHESE, Bolama, VI-XII.1899 L. Fea/, /G. Lewis Coll., B.M. 1926-369/ (NHML).

#### Other material examined

One ♀ labelled /Guinée env. Kindia forêt Tabouna 4.VII.982 S. Murzin/, /ZIN/ (IZBSA).

#### Comments

Known only from the type locality, Bolama (Guinea Bissau), and Kindia (Guinea), collected between June and December.

***Epitoxus hilarulus*** Lewis, 1897 (fig. 23-26)

*Phelister hilarulus* Lewis, 1897: 361.

*Epitoxus hilarulus* (Lewis, 1897): Lewis, 1900: 278.

#### Redescription

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

Head finely punctured, mandibles rounded; labrum convex and finely punctured; epistoma short, wide, convex and sparsely punctured; frons with stria complete, well-impressed and regularly semicircular; antennae long, with scape enlarged and recurved.

Pronotum slightly convex, with two deep arcuate basal impressions; surface doubly punctured; disc covered with small, very dense punctures; sides with large, very dense punctures; marginal stria complete, in dorsal position up to antennal foveae, then ventral. Elytra expanded, convex, finely punctured on base, larger towards margins and apex, where puncturation is dense; three first dorsal striae well impressed, crenulate and complete; fourth stria obsolete on base; fifth stria as a short apical trait; sutural stria wide, directed outward, reaching middle; sometimes there is a short portion of inner subhumeral stria; outer subhumeral stria as a short apical portion; marginal stria complete, crenulate and in ventral position; epipleural stria strong; epipleurae densely punctured.

Propygidium convex, with large, dense punctures, regularly distributed. Pygidium more finely punctured.

Prosternum with lobe prominent, coarsely and densely punctured; lateral stria short; keel densely punctured, with inner striae well impressed, sinuous and divergent on base. Mesosternum coarsely and densely punctured, like sides of metasternum and first abdominal sternite; lateral mesosternal stria crenulate, regularly arcuate, slightly directed toward prosternum on middle. Meso-metasternal suture shallow, with a very wide, crenulate stria, not arcuate; lateral metasternal stria strong, punctate, complete, almost

reaching metacoxae; metasternal and first abdominal discs finely punctured and convex; mesepimeron and metasternal sides coarsely and densely foveate.

First abdominal sternite with two arcuate post-metacoxal striae.

Legs fine and long; protibiae with 6-7 small teeth on outer margin, and 6-7 small apical teeth; tarsal grooves deep; meso- and metatibiae spinose; male protarsi without foliate setae.

Male eighth abdominal segment typical. Ninth tergite strongly sclerotized, long and narrow, with a long basal projection. Spiculum gastrale narrow and long, Y-shaped. Aedeagus regularly recurved, with basal piece rather expanded, like basal end of parameres, then strongly narrowed, with two subapical teeth; length and width of apex similar.

Maximum length: 2.4 - 2.8 mm

Maximum width: 2.2 - 2.6 mm

#### Diagnosis

It may be readily distinguished from *E. villiersi* and *E. ugandensis* by the apex of aedeagus, lower length of body and elytral epipleurae unistriate.

#### Type material

Holotype ♂, labelled /Type/, /*Phelister hilarulus* Lewis Type/, /Cameroon Kraatz 1897/, /G. Lewis Coll. B.M. 1926-369/ (NHML).

#### Other material examined

MNHN: 1 ♀ labelled /Mt. Fébé, T. 25-VI-66/, /Termitière/, /Muséum Paris, CAMEROUN B. de Miré/.

MHN: 1 ♂ labelled /Côte d'Ivoire, Parc du Banco, 14.III.77 I. Löbl/.

PK: 1 ♂ and 1 ♀ labelled /LIBERIA: Mt. Nimba, Grassfield, 16-25.ix.1979/, /lowland forest 500 m, fishtrap/.

TY: 1 ♂ with the same labels that the preceding.

#### Comments

They were found in March, June and October in Liberia, Ivory Coast and Cameroon. One specimen was found in a nest of termites, a circumstance unusual in the genus.

***Epitoxus villiersi*** Théron, 1965 (fig. 27-29)

*Epitoxus villiersi* Théron, 1965: 1332.

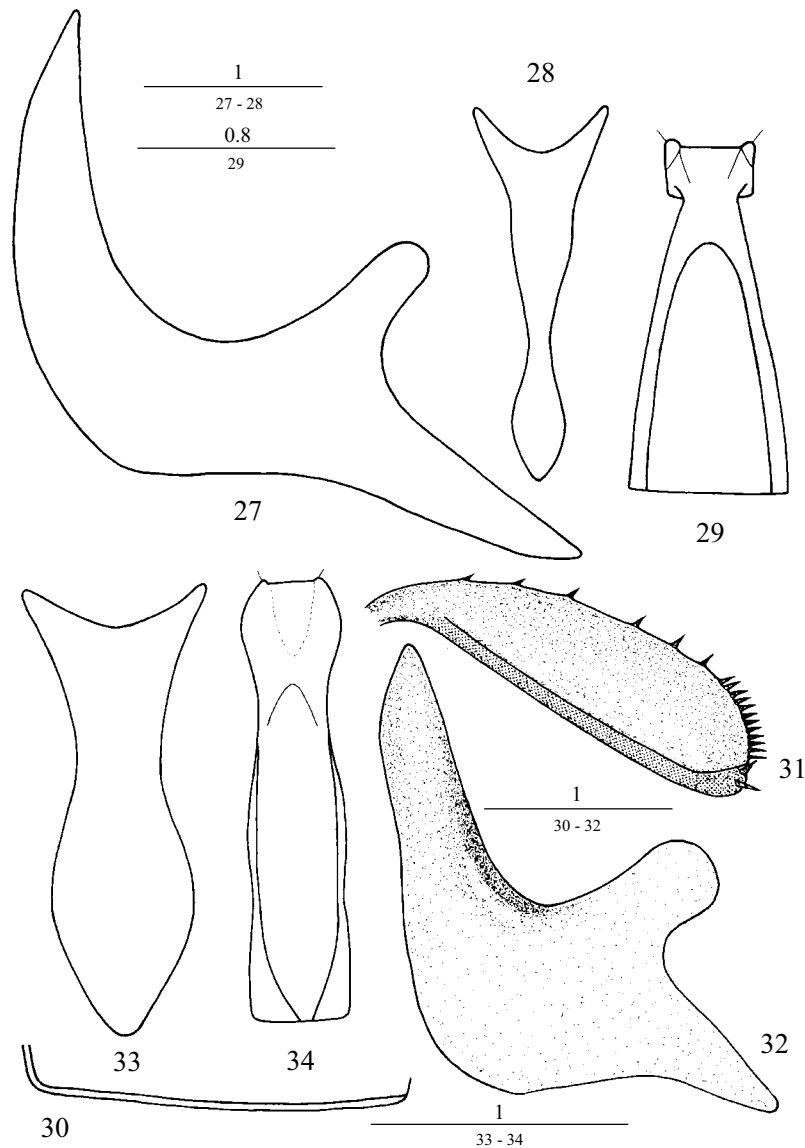
#### Redescription

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

Head rounded and finely punctured, mandibles strong; labrum short, convex, not bisinuate, finely punctured; epistoma very wide, short, flat and smooth; frons wide, short, flat and smooth; frontal stria well impressed, irregularly semicircular, sometimes with some interruptions; antennae very long, with scape strongly recurved and very enlarged, punctured, weakly shorter than rest of antenna.

Pronotum very wide and short, slightly convex, coarsely and densely punctured on sides, smooth elsewhere; marginal stria complete, on the edges; antescutellar impression formed by two deep arches. Elytra quite expanded and slightly convex, with very fine sparse puncturation; striae wide, crenulate, well impressed, first three complete; fourth stria variably reduced; fifth stria apical; sutural stria directed outward, reaching middle; humeral stria very fine and oblique; outer subhumeral stria distinct, almost reaching middle; marginal stria strong and crenulate, in ventral position; epipleurae rugose, with two strong striae, almost complete.

Propygidium short and convex, with large, very dense punctures, mixed with some small punctures. Pygidium convex, with two shallow basal impressions and very dense puncturation.



FIGURES 27-34. *Epitoxus villiersi*: 27, novè tergut del mascle (LV); 28, spiculum gastrale; 29, paràmers (VV). *Epitoxus descarpentriesi*: 30, marge esquerra del pronot; 31, tibia esquerra; 32, novè tergut (LV); 33, spiculum gastrale; 34, paràmers (VV). Escala en mm.

*Epitoxus villiersi*: 27, novè tergut del mascle (LV); 28, spiculum gastrale; 29, paràmers (VV). *Epitoxus descarpentriesi*: 30, marge esquerra del pronot; 31, tibia esquerra; 32, novè tergut (LV); 33, spiculum gastrale; 34, paràmers (VV). Escala en mm.

Prosternal lobe short, slightly produced, coarsely and densely punctured; lateral stria short, apical; prosternal keel wide, with inner striae deep and crenulate, slightly divergent at base and sinuous elsewhere, with surface between them flat and densely punctured. Mesosternal disc long, flat, very finely punctured; lateral stria strong and crenulate, regularly arcuate, weakly directed toward prosternum on middle. Meso-metasternal suture shallow, with a wide and crenulate stria, continued by the lateral metasternal stria, deep and complete, not reaching metacoxae; postcoxal stria distinct, interrupted on middle, arcuate; longitudinal suture distinct; metasternal disc flat, almost smooth, with large punctures opposite to metacoxae; mesepimeron and sides of metasternum with very large, irregular and dense foveae.

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

Legs long, with tibiae expanded; protibiae with deep tarsal grooves; outer margin of protibiae with 5-6 small teeth, and apex with other 6-7 small teeth; meso- and metatibiae spinose; male protarsi with foliate setae on ventral side.

Male eighth abdominal segment typical. Ninth tergite strongly sclerotized, with two basal projections. Spiculum gastrale strongly sclerotized, quite wide on base, Y-shaped. Aedeagus strongly recurved; basal piece wider than parameres, weakly narrowed at base; parameres shorter than half the length of basal piece, abruptly narrowed toward apex; apex clearly wider than its length.

Maximum length: 2.9 - 3.4 mm

Maximum width: 2.7 - 3.1 mm

#### Diagnosis

The distinctive characteristics are given in the key to species.

#### Type material

Holotype ♂, labelled /SIBITI CONGO XII-1963/, /TYPE/, /MUSÉUM PARIS MISSION A. DESCARPENTRIES ET A. VILLIERS 1963-1964/, /*Epitoxus villiersi* Théron/ (MNHN).

Paratypes, 3 exx., 2 ♂ and 1 ♀ with the same labels as the holotype (MNHN).

#### Other material examined

MNHN: 1 ♂ labelled /BELINGA, 50, 2.2.63, H.COIFFAIT/, /MISSION BIOLOGIQUE AU GABON, P.P. GRASSÉ DIRECTEUR/.

ZFMAK: 1 ♂ labelled /R.P. Kohl. Stanleyfalls. Congo Belge/.

MNHU: 1 ♂ labelled /Gabon/, /Coll. J. Schmidt/, /hilarulus Lew./, /Zool. Mus. Berlin/.

#### Comments

At present it is known from Gabon, Congo and Zaire, collected in December and February.

*Epitoxus descarpentriesi* Théron, 1965 (fig. 30-34)

*Epitoxus descarpentriesi* Théron, 1965: 1331.

#### Redescription

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

Head with mandibles slightly punctured; labrum short, convex, bisinuate; epistoma short, convex and finely punctured; frons flat, with well impressed punctures; frontal stria fine, irregular, sometimes variably interrupted; antennae long, with scape enlarged, strongly recurved, slightly longer than rest of antenna; antennal club elongate oval.

Pronotum weakly convex, marginal stria complete, situated on edges; sides with double puncturation, with large foveae and small dense punctures; disc finely punctured; antescutellar impression shallow, biarcuate.

Elytra weakly convex, regularly expanded; finely and sparsely punctured; three first dorsal striae complete, strong, with abundant large punctures, arcuate; fourth dorsal stria fine, normally interrupted on middle; fifth dorsal stria as a short apical portion; sutural stria formed by two close traces, crenulate, directed outward, medially joined, without a basal portion; these striae seem to be a broad single stria; humeral stria oblique, well impressed; outer subhumeral stria not reaching middle; marginal stria complete, well impressed, ventral; epipleurae rugose, with complete stria.

Propygidium long and convex, with dense, double puncturation, with large foveae on base and on sides. Pygidium large, convex, densely punctured, with a shallow impression on sides near base.

Prosternal lobe wide, with lateral stria arcuate; puncturation large and dense; prosternal keel wide, inner striae slightly divergent basally, weakly sinuate elsewhere, intersurface finely punctured. Mesosternum very short, flat, finely punctured; outer lateral stria very wide, arcuate, medially not directed toward prosternum. Meso- metasternal suture faint, with a close, wide stria, arcuate and slightly curved backward on middle, continued by the lateral metasternal stria, oblique, strong, shortly interrupted near metacoxae, with the outer portion arcuate; metasternal disc finely punctulate, with distinct longitudinal suture; sides of metasternum and mesepimeron irregularly fossulate.

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

Legs long, slightly expanded; protibiae with a shallow tarsal groove; six small teeth on outer margin of protibiae, and another 12 regular teeth on apex; meso- and metatibiae spinose.

Male eighth abdominal segment typical. Ninth abdominal tergite strongly sclero-

tized, with basal projections very prominent. Spiculum gastrale strongly sclerotized, Y-shaped. Aedeagus with basal piece longer and wider than parameres; parameres gradually narrowed apically, with apex wider, bearing two apical setae.

Maximum length: 3.9 - 4.4 mm

Maximum width: 3.4 - 3.8 mm

#### Diagnosis

It is readily distinguished from the two most closely related species (*E. depressus*, *E. corycaeus*) because the apex of the aedeagus is less widened.

#### Type material

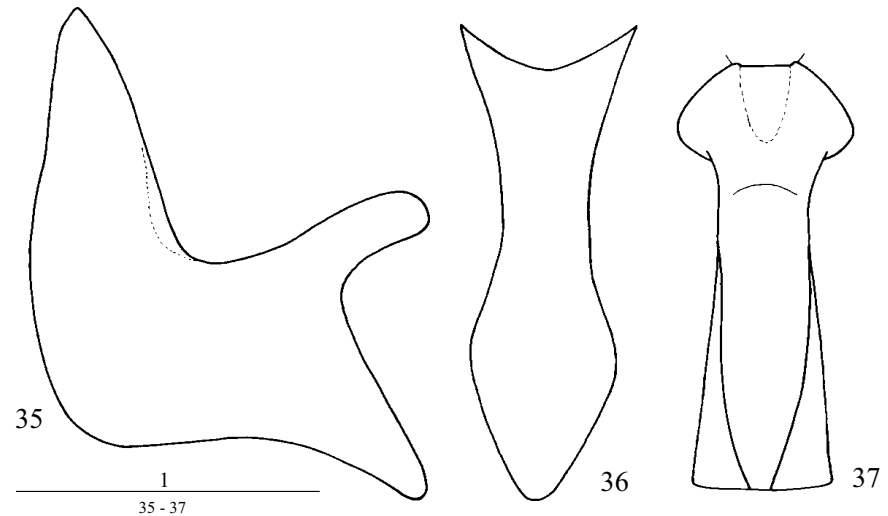
The specimen used by Thérond to describe this species, was not found in the museums. The original description says «RÉPUBLIQUE DU CONGO: Sibiti, XII-1963, un seul exemplaire (*Descarpentries et Villiers*)».

#### Other material examined

MNHN: 3 ♂ and 1 ♀ labelled /Maniema: Kindu, Congo Belge, L. Burgeon 1917, /*Epitoxus corycaeus* Lew., H. Desbordes 17/. 1 ♂ labelled /MUSÉE DU CONGO, Haut-Uelé: Watsa, 1922, L. Burgeon/. 1 ♀ labelled /COLL. MUS. CONGO, Bikoro (Lac Tumba), 1953, M. Mamet/, /*Epitoxus corycaeus* Lew., J. Thérond det./. 1 ♀ labelled /Lolodorf, Cameroun, Coll. J. Clermont/, /*Epitoxus corycaeus* Lew., J. Thérond det./. 1 ♂ labelled /Massif Ruwenzori, Mutsora, 1600 m, ruiss. Katunda/, /Congo Belge: P.N.A., 10-II-1953, P. Vanschuytbroeck & J. Kekenbosch 2432/, /*Epitoxus corycaeus* Lew./.

MHMM: 1 ♂ labelled /Zaire, Kivu, Irangi 800 m, 25.5.1983., leg. H. Mühle/.

MRAC: 1 ♂ and 2 ♀ labelled /Congo Belge: P.N.A., 13-II-1953, P. Vanschuytbroeck & J. Kekenbosch 2495-96/, /Massif Ruwenzori, Mutsora, 1600 m, ruiss. Katunda/, /*Epitoxus corycaeus* Lew., det. J.



FIGURES 35-37. *Epitoxus corycaeus*: 35, ninth tergite of male (LV); 36, spiculum gastrale; 37, parameres (VV). Scale in mm.

*Epitoxus corycaeus*: 35, novè terguet del mascle (LV); 36, spiculum gastrale; 37, paràmèrs (VV). Escala en mm.

Thérond/. 1 ♂ labelled /MUSÉE DU CONGO, Lulua: Kapanga, II-1933, G.F. Overlaet/. 2 ♂ labelled /MUSÉE DU CONGO, Haut-Uelé: Watsa, 1922, L. Burgeon/, /*Epitoxus corycaeus* Lew., H. Desbordes det. 1924/, /R. DET., W, 1006/. 1 ♂ labelled /MUSÉE DU CONGO, Bambili, Dr. Rodhain/, /*Epitoxus corycaeus* Lew., H. Desbordes det./, /R. DET., A, 501/. 1 ♀ labelled /Congo-Belge: P.N.A., Mutsora, 1939, Hackars/, /COLL. MUS. CONGO, (ex coll. I.P.N.C.B.)/, /*Epitoxus corycaeus* Lew., J. Thérond det., 1950/. 1 ♀ labelled /MUSÉE DU CONGO, Equateur: de Batende à Yolombo X-1927, R.P. Hulstaert/. 1 ♀ labelled /MUSÉE DU CONGO, K. 209 de Kindu, 28.XI.1911, L. Burgeon/, /*Epitoxus corycaeus* Lew., H. Desbordes det. 19/, /R. DET., A, 501/. 1 ♀ labelled /MUSÉE DU CONGO, Kiniati: Gobe, fin XII-1915, R. Mayné/, /*Epitoxus corycaeus* Lew., H. Desbordes det. 19/.

NHML: 1 ♀ labelled /Uganda Prot., Southern Toro, Mbarara, Ft. Portal Rd./, /3,800-4,200 ft., 22-24 Oct. 1911, S.A. Neave/, /*Epitoxus corycaeus* Lew./, /1912-193/.

TY: 1 ♂ labelled /MUSÉE DU CONGO, Equateur: Boende, 1928, 1928, R.P. Hulstaert/, /*Epitoxus corycaeus* Lew., H. Desbordes det. 1929/, /R. DET., 1818/. 1 ♂ labelled /Congo Belge: P.N.A., 13-II-1953, P. Vanschuytbroeck & J. Kekenbosch 2495-96/, /Massif Ruwenzori, Mutsora, 1.600 m, ruiss. Katunda/, /*Epitoxus corycaeus* Lew., det. J. Thérond/. 1 ♂ labelled /MUSÉE DU CONGO, Lulua: Kapanga, II-1933, G.F. Overlaet/. YG: 1 ♀ labelled /COLL. MUS. CONGO, Lulua: Kafakumba, VI-1933, F.G. Overlaet/, /*Epitoxus corycaeus* Lew., J. Thérond det. 1961/.

#### Comments

This species is known from Cameroon, Central African Republic, Congo, Zaire and

Uganda, in mountainous areas throughout the year.

*Epitoxus corycaeus* Lewis, 1900 (fig. 35-37)  
*Epitoxus corycaeus* Lewis, 1900: 279.

#### Redescription

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

Head with mandibles rounded and finely punctured; labrum short, convex and slightly bisinuate; epistoma short, convex, finely punctured; frons flat or slightly convex, finely punctured; frontal stria shallow, irregular, sometimes with short interruptions; antennae long, with scape as long as rest of antenna, recurved and enlarged; antennal club elongate-oval.

Pronotum weakly convex, marginal stria complete, situated on edges; sides with dense double puncturation, with large foveae; disc finely and densely punctured; antescutellar impression biarcuate, faint. Elytra weakly convex, regularly expanded; surface covered with fine dense punctures; first three dorsal striae complete, wide, punctate; third stria incurved at base; fourth stria variably reduced; fifth stria as a short apical trait; sutural stria reaching or surpassing middle, directed outward, geminate, like a wide stria; humeral stria oblique, distinct; outer subhumeral stria apical and wide, with some remnants of inner subhumeral stria; marginal stria complete; epipleurae rugose, with complete stria.

Propygidium long and convex, regularly covered with double puncturation, very dense and well impressed. Pygidium convex, with an impression on each side near base; sides and base with larger punctures, otherwise fine.

Prosternal lobe wide, densely punctured, with lateral stria arcuate, incomplete;

prosternal keel wide, finely punctured, with inner striae divergent basally otherwise sinuous. Mesosternum short, finely punctured; lateral stria wide, regularly arcuate, slightly directed toward prosternum. Mesometasternal suture shallow, with a close wide stria, arcuate and medially slightly directed backwards, conjoining the lateral metasternal stria, straight, oblique and wide, with a short interruption opposite the metacoxae, and an outer arcuate portion; metasternal disc finely punctulate, with a distinct longitudinal suture; mesepimeron and metasternal sides with large dense foveae.

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

Legs long; protibiae expanded, with 6 small teeth on the outer margin, and another 12 small regular teeth on apex; meso- and metatibiae spinose and setose; male protarsi with foliate setae on ventral side.

Male eight abdominal segment typical. Ninth abdominal tergite strongly sclerotized, with prominent basal projections. Spiculum gastrale Y-shaped, wide and sclerotized. Aedeagus with basal piece longer and wider than parameres, slightly recurved; parameres apically narrowed, abruptly widened at apex, bearing two apical setae.

Maximum length: 3.8 - 4.2 mm

Maximum width: 3.2 - 3.4 mm

#### Diagnosis

Together with *E. descarpentriensi* and *E. depressus* forms a well characterised group by the morphology of the genitalia, as well as several external characters. The differences between these three species are based mainly on the apex of the aedeagus.

#### Type material

Holotype ♂, labelled /Kuilu, Fr. Congo,

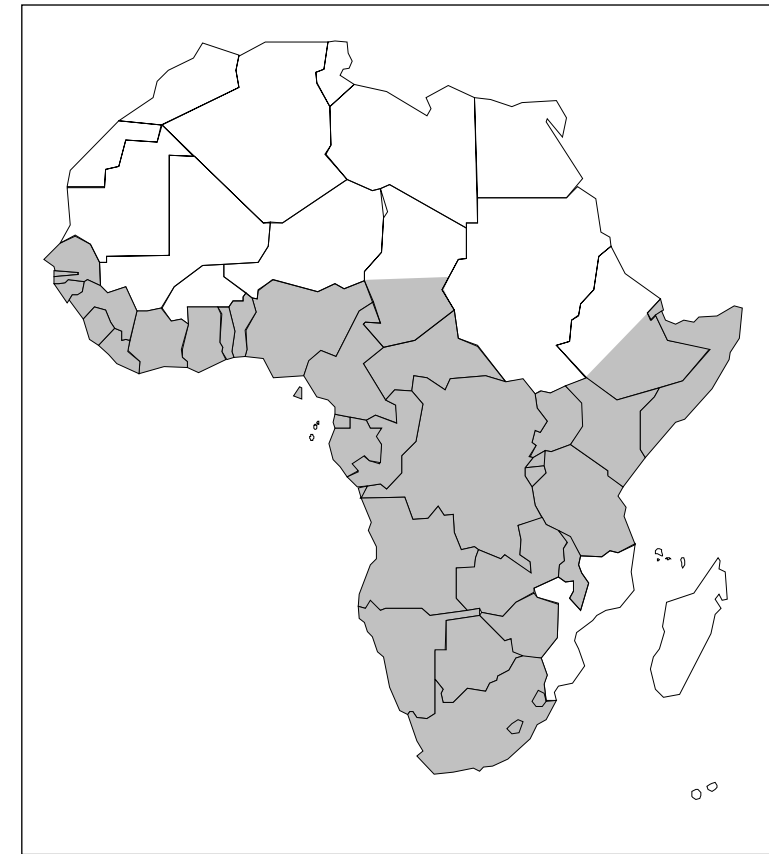


FIGURA 38. Distribucional area of the genus *Epitoxus* in Africa.

Àrea de distribució del gènere *Epitoxus* a Àfrica.

Mocquers, 1892/, /*Epitoxus corycaeus* Type. Lewis/, /Type/, /G. Lewis Coll., B.M. 1926-369/ (NHML)

#### Other material examined

MNHN: 1 ♀ labelled /AOU 1957, N'Kongsamba, CAMEROUN, J. Cantaloube/. 1 ♀ /BELINGA, 25.1.63, H.COIFFAIT/, /MISSION BIOLOGIQUE AU GABON, P.P.

GRASSÉ DIRECTEUR/. 1 ♂ labelled /Mt. Cameroun, Buea 8/12/70/, Muséum Paris, CAMEROUN, B. De Miré/. 1 ♂ labelled /La Maboké par M'Baiki, R.C.A., 10. VII.1965, leg. P.S. TEOCCHI/. 1 ♀ labelled /23.II.1963, No 224, sifted fallen, oilpalm fruits, leg. Endrödy-Younga/, /Soil Zoological Exp., Congo-Brazzaville, Sibiti IRHO, oilplant plantation. 4 specimens labelled

	S	G	G	S	L	I	G	T	B	C	C	E	G	C	Z	C	E	S	K	U	T	M	Z	Z	A	B	N	R
	E	B	U	L	I	C	H	O	E	H	A	Q	A	O	A	A	T	O	E	G	A	A	A	I	N	O	A	S
	N	I	I	E	B	O	A	G	N	A	M	G	B	N	I	R	H	M	N	A	N	L	M	M	G	T	M	A
<i>pholeo</i>																												
<i>dentat</i>																												
<i>circul</i>	•																											
<i>zamb</i>																												
<i>latus</i>																												
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<i>revoili</i>																												
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<i>kanaari</i>																												
<i>longip</i>																												
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<i>therondi</i>																												
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<i>hilarulus</i>																												
<i>ruvenz</i>																												
<i>ugand</i>																												
<i>villiersi</i>																												
<i>depres</i>																												
<i>descar</i>																												
<i>coryca</i>																												

TABLE 1. Geographical distribution of the species (SEN: Senegal; GBI: Guinea Bissau; GUI: Guinea; SLE: Sierra Leone; LIB: Liberia; ICO: Ivory Coast; GHA: Ghana; TOG: Togo; BEN: Benin; CHA: Chad; CAM: Cameroon; EQG: Equatorial Guinea; GAB: Gabon; CON: Congo; CAR: Central African Republic; ZAI: Zaire; ETH: Ethiopia; SOM: Somalia; KEN: Kenya; UGA: Uganda; TAN: Tanzania; MAL: Malawi; ZAM: Zambia; ZIM: Zimbabwe; ANG: Angola; NAM: Namibia; BOT: Botswana; RSA: Republic of South Africa).

Distribució geogràfica de les espècies (SEN: Senegal; GBI: Guinea Bissau; GUI: Guinea; SLE: Sierra Leone; LIB: Libèria; ICO: Costa d'Ivori; GHA: Ghana; TOG: Togo; BEN: Benin; CHA: Txad; CAM: Camerun; EQG: Guinea Equatorial; GAB: Gabon; CON: Congo; CAR: República Centreafricana; ZAI: Zaire; ETH: Etiòpia; SOM: Somàlia; KEN: Kenya; UGA: Uganda; TAN: Tanzània; MAL: Malawi; ZAM: Zàmbia; ZIM: Zimbabwe; ANG: Angola; NAM: Namíbia; BOT: Botswana; RSA: República de Sud-àfrica).

/MUSÉUM PARIS/, Congo Belge Centr., Maniéma: Kindu, E. Burgeon 1917/, /Epitoxus corycaeus Lew., H. Desbordes det. 1917/. 1 specimen labelled /MUSÉE DU CONGO/, /Haut-Uelé: Watsa- 1922, L. Burgeon/, /MUSÉUM PARIS, Coll. DESBORDES/, /Corycaeus Lew., H. Desbordes det. 24. 1 specimen labelled /MUSÉUM PARIS, Congo Belge centr., Maniéma: Kindu, E. Burgeon 1917/, /Epitoxus corycaeus Lew., H.Desbordes det. 17/.

MCSN: 1 ♂ labelled /MTE. CAMERUN, Buea, 800-1200 m.s.m., VI-VII.1902, L. Fea/, /Museo Civ. Genova/, /Epitoxus corycaeus Lewis/. 1 ♂ labelled /S. FERNANDO POO, Musola, 500-800 m.s.m., I-III.1902, L.Fea/, /Museo Civ. Genova/, /Epitoxus corycaeus Lewis/.

NHML: 2 ♂ labelled /S. FERNANDO POO, Basilé, 400-600 m.s.m., VIII-IX.1901, L.Fea, ex. Mus Genoa, 1906-278/, /Epitoxus corycaeus Lew./.

TY: 1 ♂ labelled /AVR. 1957, N’Kongsamba, CAMEROUN, J.Cantaloube/, /Epitoxus corycaeus Lew., J.Thérond det. 1950/.

YG: 1 ♀ with the same labels that the preceding. 1 ♂ labelled /MAI 1957, N’Kongsamba, CAMEROUN, J.Cantaloube/. 1 ♂ labelled /Décembre 1956, N’Kongsamba, CAMEROUN, J.Cantaloube/.

Comments

It is known from Bioko Island (Equatorial Guinea), Cameroon, Gabon, Congo and Zaire, living in fallen fruits during all the year.

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