Revision of the African horntail genus *Afrotremex* (Hymenoptera: Siricidae)

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Abstract

*Afrotremex* is one of ten extant genera of Siricidae, known as horntails or woodwasps. Species are restricted to the central forested regions of Africa. Their biology and economic significance are unknown. However, the host of one species, *A. xylophagus*, is known. Their larvae are wood-boring insects. The genus consists of six species: *Afrotremex hyalinatus* (Mocsáry), *A. violaceus* Pasteels, *A. comatus* Goulet, *A. opacus* Goulet, *A. pallipennis* Goulet, and *A. xylophagus* Goulet. The genus is characterized, its phylogenetic placement is discussed, and a key to species is provided. For each species (if pertinent), the following are included: synonymy, diagnosis, comparative diagnosis, description, type material, origin of specific epithet, taxonomic notes, and range.

**Key words:** Ethiopian, Siricidae, horntails, *Afrotremex*, species key, phylogeny

Introduction

*Afrotremex* is a small genus of Siricidae restricted to central Africa. In the study of the Siricidae of the Western Hemisphere (Schiff *et al.* 2012), the genus was briefly discussed and characterized and included in a key to extant world genera. During that study, several questions arose when studying images of two *Afrotremex* specimens at the National Museum of Natural History, Smithsonian Institution (USNM). I discovered that the two specimens were clearly two different species, although both resembled the description of *A. hyalinatus* (Mocsáry). Did these specimens represent two new species or was one of them *A. hyalinatus*? The other problem was the identity of *A. violaceus* Pasteels. Was *A. violaceus* separated from *A. hyalinatus* only on wing color pattern, and were *A. hyalinatus* and *A. violaceus* just two discrete color forms of *A. hyalinatus*? Having in hand 12 specimens for study and the diagnostic characteristics of *A. hyalinatus*, I could then proceed with this study and answer these questions. Despite the very few specimens, I felt it was important to publish this work to clarify the species of the genus and to and to show that *Afrotremex* is probably a species rich genus within the Siricidae.

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Material and methods

Materials. This study is based on 12 specimens. Holotypes, images of holotypes, and specimens studied are preserved in the following collections.

HNHM Hungarian Natural History Museum, Budapest, Hungary. C. Csősz.
MRAC Musée Royal de l’Afrique Centrale, Tervuren, Belgium. E. De Coninck.
ZMHB Museum für Naturkunde der Humboldt Universität, Berlin, Germany. F. Koch.

Methods. Images were prepared using two image capture systems: MZ16 Leica binocular microscope and an attached Leica DFC420. Some specimens were photographed using DSLR Canon Rebel T2i cameras with a 100 mm macro or a MPE-65 lens. Multiple images through a range of focal planes from top to bottom were taken of a structure and these combined using Combine ZM or ZP designed by Alan Hadley to produce a single, focused image. Specimens were illuminated with a 13 watt daylight fluorescent lamp or flash through a semi-transparent plastic surface and reflected with a matt aluminum surface or glossy photographic paper. The final combined image was improved using Adobe Photoshop 7 or CS6, and plates were designed using the same software. Corel Draw 9.0 was used to prepare separate neighbor-joining trees. The distribution map of the species was prepared with SimpleMapppr (Shorthouse 2010).

All figures in text are coded as follows: “M number” for figure under morphology (i.e., M4 refers to figure 4), “K number” for figure in key (i.e., K25 refers to figure 25 in key), and “T taxon number. number” for taxa under "Taxonomic treatment" (i.e., T2.4 refers to figure 4 of the second taxon, A. comatus). This is designed for easily locating of a figure and also for easier changes to plates when figures are added or removed.

Morphology. Structural terms were discussed in Schiff et al. (2012). Only the structural terms used there are employed.

Wings. The characteristic wing cells and veins of the fore and hind wings of Afrotremex are illustrated in Fig M1 and M2.

Female abdomen. The female abdomen has ten terga (singular: tergum) dorsally and seven sterna (singular: sternum) ventrally (Fig. M4). Terga 8–10 are conspicuously modified. Tergum 8 is greatly enlarged and extended posteriorly (Fig M4 and M6). Tergum 9 is the largest tergum and has a deeply impressed dorsomedian impression, the median basin (Fig. M6), also known as the precorneal basin. The lateral edges of the median basin are sharply outlined in anterior 0.8 (Fig. M6), its anterior edge is ridge-like, and its posterior edge is outlined by a furrow between terga 9 and 10. Lateral to median basin is a wide band of pit-like sculpticells without pits and setae (Fig. M6). In lateral view there is a longitudinal furrow sharply outlined from below lateral edge of tergum 8 to almost the posterior margin of tergum 9 (Fig. M4). Above the longitudinal furrow to the band of pit-like sculpticells (best seen in lateral view as in insert) is a long band of setae with clearly defined pits (Fig. M4a), or with indistinct pits and surface with widespread pit-like sculpticells and shiny tubercles (Fig. M4b). Tergum 10 is modified as a sharp horn-like projection, also known as the cornus (Fig M4 and M6); and at its apex is a short tube probably assisting the adult movement in their larval host tunnels while exiting out.

The abdomen posterior to sternum 7 has an ovipositor covered by two sheaths when not in use (Fig. M4).

- Each sheath consists of three parts: a small basal sclerite dorsally (valvifer 1), a long sclerite ventrally (valvifer 2), and an apical sclerite (valvula 3). In this work, the last two sclerites are referred to as basal section and apical section of the sheath (Fig. M4). The length of these two sections is compared to one another.

- The ovipositor consists of a fused pair of dorsal lances (valvula 2) and a pair of ventral lancets (valvula 1) (Fig. M5, apex). The part described in this work is the lancet, which is divided in numerous sections called annuli (singular: annulus). Lancet annuli are outlined by vertical to slanted ridges (Fig. M5, middle). Annuli are present at the base of the lancet (Fig. M5, base). The apex of the lancet consists of four annuli each with a large tooth (Fig. M5, apex). The last two anterior these four apical toothed annuli have no pit adjacent to the annulus ridge (Fig. M5, apex). Each annulus anterior to the above annuli has a clearly outlined pit (Fig. M5, middle). To photograph the lancet for the best range of tonalities the ventral edge of the lancet was oriented toward the light. Therefore contrary to standard practice, ovipositor images in lateral view are shown with the lancet at the top rather than at the bottom of the image.
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M1 A. comatus ♀

(veins Sc, Sc1 & Sc2 not visible)

M2 A. comatus ♀

-the space between meshes are named “sculpticells”

- deep pit-like sculpticells (surface very matt)
- net-like edges of pit are are named “meshes”,
- meshes clearly outlined (surface shiny)
- meshes faint surface shiny)
- shallow pit-like sculpticells (surface matt)
- microsculpture absent (surface shiny)

M3 A. pallerpennis ♀
M4 A. hyalinatus ♀

M5 A. comatus ♀

M4a A. hyalinatus ♀ M4b A. comatus ♀

M6 A. hyalinatus ♀
Some terms designate surface features, such as **ridges** or carinae, **furrows** or sulci, **pits** or punctures, and **microsculpture**. We used terms in bold. The meaning of ridges and furrows are clear but pits and microsculpture require more discussion.

- **Pits** are concave, usually shiny impressions. Often, the concave surface consists of meshes of microsculpture (Fig. T1.3, insert). Most pits are associated with a sensory cell. This sensory cell is a seta, a mechanoreceptor (Fig. M3e, seta). The word “pit” rather than the more common expression “puncture” is used because it refers to a concave impression. However, each seta is articulated to a puncture within the pit. The setigerous puncture is a hole through the cuticle to allow innervation of the seta. Pit sizes are compared to the maximum diameter of a lateral ocellus (e.g., for a small pit, the diameter may be 0.1 times lateral ocellus diameter whereas for a large pit it may be 0.5 times the lateral ocellus diameter), and the density is expressed as the number of typical pit diameters between pits (Fig. T1.1, T1.2 and T1.3). Pits in *Afrotremex* are usually simple concave and round impressions, but those on the pronotum, mesoscutum and mesoscutellum may be very large and scallop-like (see Fig K4a and K4b).

- Microsculpture may be absent (Fig. M3e) or present and consisting of small cell sized imprints on the cuticle within which there is no sensory cell. Typical microsculpture of insects is roughly hexagonal. The edge of an imprint is usually outlined by sharp furrows that form a net-like pattern called “meshes” (Fig. M3a, meshes). The surface area delimited by the furrows or meshes is called a “sculpticell” (Allen and Ball, 1980) (Fig. M3a). A sculpticell surface may be flat (Fig. M3d), concave (Fig. M3c) or pit-like (Fig. M3a, M3b and M3c). There are other shapes of sculpticells not yet recorded in *Afrotremex* such as convex, scale-like (i.e., surface is raised along the posterior or apical edge), or even seta-like. Each sculpticell is normally completely outlined by meshes. Sculpticells in *Afrotremex* are usually roughly hexagonal or isodiametric; though not recorded in *Afrotremex*, sculpticells can also be stretched laterally (e.g., transverse meshes may be 2 or more times as wide as long), or rarely longitudinally. Microsculpture is best observed at magnifications above 50 times under diffuse light. To reduce glare a translucent piece of plastic (e.g., tracing acetate) should be positioned between the light source and specimen, about 20 mm from the specimen. A 13–watt daylight fluorescent light source also gives good results.

**Biology.** Until the discovery of *A. xylophagus* nothing was known about the host preferences of *Afrotremex* species. The two specimens of *A. xylophagus* were from the wood of a tree. The handwritten label read as "éclos du bois [d'] Antricaryon Klaineanum". *Antrocarion klaineanum* Pierre, an Anacardiaceae, is a common widespread tree in central Africa. We still do not know how host specific are species of *Afrotremex*. *Afrotremex* is closely related to *Tremex* and *Eriotremex*. *T. columba* and *E. formosanus* are known the oviposit on a moderately wide variety of angiosperm trees (Schiff et al. 2012).

The great rarity of *Afrotremex* specimens in collections may be due to their microhabitat. Several years ago, I observed a large swarm of *Tremex columba* (Linnaeus) on the crown of a large dying sugar maple. Therefore, *T. columba* is a species inhabiting normally the crown of trees. It is unusual to find *T. columba* below three meters above ground. *Tremex columba* is easily observed only if the dying tree limbs are about 1.5 meters above ground or if the tree has fallen down and left undisturbed. Presumably adults of *Afrotremex* also inhabit the crowns of trees. Canopy sampling is difficult to do and requires special equipment, and I suspect that fallen trees would be harvested very rapidly near any African communities, so the opportunity to collect *Afrotremex* is rare.

**Key to species of *Afrotremex* based on females**

Because so few specimens were available for study, the reliability of character states is questionable. It was therefore necessary to design a key with several characters per couplet and expand the list of significant characters for species or a group of species under the “Comparative diagnosis” of each species. I tried to use characters that have proven reliable in Siricidae (Schiff et al. 2012). But possibly some character states will prove to be unreliable.

If a key is based on one character per couplet, even a specimen of a new species not treated within this paper could be keyed to a named species. However, with many characters (5–6) per couplet, it is more likely in one couplet that one or more matching character states would occur in both alternates of the couplet, or even one or more characters would fit none of the states mentioned in the alternates. Therefore, it is important to look at all characters of the couplet while keying out specimens of *Afrotremex*. To help with the recognition of new species, I
have prepared a rather detailed “Comparative diagnosis” which lists characters of significance to look for in various descriptions. If a problem with the distribution of matching character states occurs then the “Comparative diagnosis” of one or more species needs a careful reading. For example if the problem is in couplet 1, the "Comparative diagnosis" of all species needs careful reading, in couplet 2, study those of A. hyalinatus, A. pallipennis, A. violaceus and X. xylophagus, in couplet 3, study those of A. pallipennis and A. violaceus, in couplet 4, those of A. hyalinatus and A. xylophagus, and finally in couplet 5, those of A. comatus and A. opacus. Finally, I have generously illustrated each taxon for a better understanding of each statement and for some careful comparisons of structures of the specimen under study.

Though the key is based entirely on females, in choosing characters for each couplet I gave priority to the head (antenna excluded) and natal characters as they are likely to apply also to males, based on my experience with other Siricidae (Schiff et al. 2012) and the single male of Afrotremex studied. For characters certainly associated with females, each character statement starts with "in female". Remaining characters used are assumed to apply to both sexes. I kept the "Diagnosis" short. The user should not use the "Diagnosis" if the specimen identity is uncertain, but should read carefully the "Comparative diagnosis" as outlined above.

For important information on specimen cleanliness and preparation, recognition of sexes, lighting, key construction see ‘Use of Keys” in Schiff et al. (2102).

1  A) **In female**, flagellomere 2 in dorsal view with a sensory oval covering about 0.5 of flagellomere surface (Fig. K1).
   B) Mesoscutum with median longitudinal band (outlined by finer pits) with pits extending laterally posterior to submedian band (Fig. K3a).
   C) Mesoscutum with many (>10) often fused pits on anterolateral corner of lateral band (Fig. K4a).
   D) Mesoscutum with convex sculpticells on all or at least 0.7 of median surface of scutoscutellar furrow; surface with microsculpture with a clear metallic yellow green hue (Fig. K3a).
   E) **In female**, tergum 8 shiny (with no pitted sculpticells) at least along lateral margin in posterior 0.5 (Fig K5 and K6).
    F) **In female**, tergum 10 in dorsal view with pits extended medially to and not reaching posterior edge of median basin of tergum 9 or extended on 0.3 of edge medially (Fig K8 and K9).

2  – a) **In female**, flagellomere 2 in inner view with a sensory oval covering less than 0.2 of flagellomere surface (Fig. K2).
   b) Mesoscutum with median longitudinal band (outlined by finer pits) with pits not extending posterior to submedian band (Fig. K3b).
   c) Mesoscutum with few pits (<10) usually isolated on anterolateral corner of lateral band (Fig. K4b).
   d) Mesoscutum without convex sculpticells at most with flat sculpticells on about 0.25 of median surface of scutoscutellar furrow; surface with microsculpture without a clear metallic hue (Fig. K3b).
   e) **In female**, tergum 8 completely matt (microsculpture deeply impressed, sculpticells pit-like) (Fig. K7).
   f) **In female**, tergum 10 in dorsal view with pits extended on about 0.7 of posterior edge of median basin of tergum 9 medially (Fig. K10).

3  – a) Gena with pits very dense (usually polygonal in outline) and large (0.2–0.4 times as large as diameter of lateral ocellus) in ventral 0.7, and scattered and small pits (0.2–0.3 as large as diameter of lateral ocellus) in dorsal 0.3 (Fig. K11).
   b) Clypeus, frons and postocellar area with apex of setae clearly clubbed (club about 2 times as wide as setal shaft); and on frons setae 0.5–0.7 as long as diameter of lateral ocellus (Fig. K13).
   c) Mesoscutum with submedian band not sharply outlined laterally; in posterior 0.5 straight (Fig. K15).
   d) Mesoscutum with convex sculpticells on about 0.7 of median surface of scutoscutellar furrow (Fig. K17a).
   e) **In female**, tergum 10 in lateral view with teeth posterior to lateral tooth (Fig 18 and K19).
   f) **In female**, tergum 8 with deep pit-like sculpticells in basal 0.4–0.5 and medially reaching or not posterior edge, remaining surface shiny (without pitted sculpticells) (Fig K21 and K22).

4  – a) Gena with less dense pits (usually circular in outline) and quite large (0.2–0.3 times as large as diameter of lateral ocellus) near mandible in ventral 0.2, and scattered and fine pits (at most 0.15 times as large as lateral ocellus) on dorsal 0.5 (Fig. K12).
   b) Clypeus, frons and postocellar area with apex of setae slightly clubbed or truncate (club about 1.5 times as wide as setal shaft); and on frons setae 1.5–2.0 as long as diameter of lateral ocellus (Fig. K14).
   c) Mesoscutum with submedian band sharply outlined laterally; in posterior 0.5 clearly curved inward (Fig. K16).
   d) Mesoscutum with convex sculpticells on all or almost all of median surface of scutoscutellar furrow. (Fig. K17b).
   e) **In female**, tergum 10 in lateral view without teeth posterior to lateral tooth (Fig. 20).
   f) **In female**, tergum 8 with pit-like sculpticells on basal 0.2–0.4 (surface matt), and shiny on apical 0.6–0.8 with a medial shiny triangle extended near base (partly dividing the transverse band with pitted sculpticells) (Fig. K23).

3(2)  A) Mesoscutum on anterior 0.3 of median band without longitudinal row of large pits (Fig. K24a).
   B) **In female**, terga 4 and 5 with matt surface; tergum 6 shiny posteromedially on 0.25 of surface; tergum 7 shiny posteromed-
ally on 0.7 of surface (Fig. K25).

C) *In female*, tergum 8 shiny posteriorly on 0.6–0.7 of surface (Fig. K27).

D) *In female*, tergum 10 in dorsal view with pits spread about 0.5 times as wide as posterior edge of median basin of tergum 9 (Fig. K29); surface between pits smooth (Fig. K22).

E) *In female*, tergum 10 in lateral view anterior lateral tooth surface with few large pits (Fig. K30).

F) *In female*, fore and hind wings darkly tinted (Fig. K33).

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**Afrotremex violaceus** Pasteels

a) Mesoscutum on anterior 0.3 of median band with a longitudinal row of large pits (about 0.25 times as large as diameter of lateral ocellus) (Fig. K24b).

b) *In female*, tergum 4 shiny anteromedially on 0.25 of surface; tergum 5 shiny anteromedially on 0.5 of surface; tergum 6 shiny anteromedially on 0.8 of surface; tergum 7 shiny anteromedially on 0.9 of surface (Fig. K26).

c) *In female*, tergum 8 shiny posteriorly on about 0.85 of surface (Fig. K28).

d) *In female*, tergum 10 in dorsal view with pits spread about 0.75 times as wide as of posterior edge of median basin of tergum 9 (Fig. K30); surface between pits with meshes of microsculpture except centrally (Fig. K30, insert).

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**Afrotremex pallipes** n. sp

4(2) A) Gena with a row of pits with raised posterior edge extended from lower eye margin to occiput at about the eye middle height; pits fused and bottom striated (Fig. K35, insert).

B) Mesoscutum with lateral edge of submedian band parallel in anterior 0.5 (Fig. K37).

C) Mesoscutum with a band of small pits (similar to those of median band) along lateral margin of submedian band in posterior 0.5 (Fig. K39a).

D) Axilla with medium size pits centrally (Fig. K40a, white arrows); with small pits (similar in size to those of median band) along anterior edge (Fig. 40a, black arrows); and pitted surface of submedian band not connected to anteromedian corner of axilla (at most some transverse wrinkles) (Fig. K40a, red arrow).

E) *In female*, tergum 8 broadly shiny in posterior 0.6 except for median matt extension not reaching posterior edge (Fig. K41).

F) *In female, fore wing* clear in central area; darkly tinted in the following cells: C, R, 1Cu (except for small clear spot posteriovlacally), 1A (except for clear spot in apical 0.5 – not visible in figure), 1M (small anterobasal spot), 2Cu (small anterobasal spot), 1R1, 2R1 (small basal spot), 3R1 (anterior 0.5 lightly tinted); Rs+1Rs2 (only near 1R1); 2Rs2 (lightly tinted in apical 0.5 (Fig. K23); *hind wing* clearly; darkly tinted in the following cells: C (not visible in figure), R (dark spot in basal 0.4), 1Cu (dark spot in basal 0.4), most of anal lobe (except for clear central spot) (Fig. K34).

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**Afrotremex hyalinatus** (Mocsáry, 1891)

a) Gena with a row of pits with raised posterior edge extended from lower eye margin to occiput at about the eye middle height; each pit round, not fused, and bottom smooth (Fig. K36, insert).

b) Mesoscutum with lateral edge of submedian band convergent in anterior 0.5 (Fig. K38).

c) Mesoscutum with some small pits (similar to those of median band) along lateral margin of submedian band in posterior 0.5 (Fig. 39b).

d) Axilla with many large pits (Fig. 40b, white arrows); without small pits (similar in size to those of median band) along anterior edge (Fig. 40b, black arrows); and pitted surface of submedian band on posterior margin connected to anteromedian margin of axilla (Fig. K40a, red arrows).

e) *In female*, tergum 8 broadly shiny in posterior 0.5 along lateral margin, matt extension broad medi ally and reaching posterior edge (Fig. K42).

f) *In female, fore wing* with less extensive clear membrane in following cells: apical spot of 1Cu, apical 0.7 of 1M, almost all of 2Cu, most of Rs+1Rs2, basal 0.3 of 3M, basal 0.7 of 3Cu, 2M, 2A (not visible in figure), and apical 0.25 of 1A (not visible in figure); *hind wing* clear in apical 0.5 (Fig. K43).

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**Afrotremex xylophagus** n. sp

5(1) A) Pronotum medially with numerous long setae medially (best seen in lateral view) (Fig. K45).

B) *In female*, tergum 4 shiny in central 0.25; tergum 5 shiny in central 0.5; tergum 6 shiny in central 0.7; tergum 7 shiny in posterior 0.5 (Fig. K47).

C) *In female*, tergum 9 with median basin slightly longer (maximum width/ maximum length: 0.85–0.97) (Fig. K49); setae about twice as long as tubercle (Fig. K49, insert).

D) *In female*, fore wing not as darkly tinted in following cell: apical 0. 3 of 3M; hind wing clear at apex and darkly tinted on basal 0.5 of anal lobe (Fig. K51).

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**Afrotremex comatus** n. sp

a) Pronotum medially without or with very few and very small setae (best seen in lateral view) (Fig. K46).

b) *In female*, tergum 4–6 not shiny; tergum 7 shiny on a small submedian area (Fig. K48).

c) *In female*, tergum 9 with median basin slightly wider (maximum width/ maximum median length: 1.05–1.07) (Fig. K50); setae about as long as tubercle (Fig. K50, insert).

d) *In female*, fore wing not as darkly tinted in following cell: most 3M, and posterior margin of 3Cu; hind wing darkly tinted on most of anal lobe except for small more or less clear spot anteriorly and at apex in apical 0.3 of R1, 0.25 of 2RS, and posterior margin of 2M near its apex. (Fig. K52).

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**Afrotremex opacus** n. sp
A. Flagellomere #
   3  2  1
large sensory oval

K1 A. pallipennis ♀

K2 A. opacus ♀

B. median band with fine pits
   submedian band
   fine pits

K3a A. pallipennis ♀

D. scutoscutellar furrow with microsculpture

K3 A. hyalinatus ♀

K3b A. opicus ♀

b. coarse pits
d. scutoscutellar furrow without microsculpture

C. median band
   lateral band with many partly fused pits
   submedian band

K4a A. pallipennis ♀

K4 A. pallipennis ♀

K4b A. comatus ♀

lateral band with few isolated pits
K5 A. pallipennis ♀
K6 A. xylophagus ♀
K7 A. comatus ♀

K8 A. hyalinatus ♀
K9 A. xylophagus ♀
K10 A. comatus ♀

K11 A. hyalinatus ♀
K12 A. violaceus ♀
K14 A. comatus ♀
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K33 A. violaceus ♀

K34 A. pallipennis ♀

K35 A. hyalinatus ♀

K36 A. xylophagus ♀
K45 A. comatus ♀

K46 A. opacus ♀

K47 A. comatus ♀

K48 A. opacus ♀
Taxonomic treatment

1. Genus Afrotremex Pasteels, 1951
   Fig. T1.27 (habitus drawing by A. Baliani of the Afrotremex hyalinatus holotype, reproduced from Guiglia (1937)); T1.1–T1.25 (description)


Diagnosis. Adults of Afrotremex are distinguished from related genera (Teredon, Eriotremex and Tremex) by three clearly outlined longitudinal bands of sculpture on the mesonotum, and by the clubbed setae on the clypeus, frons and postocellar area. Females are easily recognized by the matt longitudinal band of deep pit-like sculpticells and the absence of pits on tergum 9 in dorsal view lateral to median basin, and by the large lateral tooth near the base of tergum 10 (cornus) in dorsal view (tooth also in Eriotremex formosanus Matsumura).

Description of female. COLOR. Body in female black with dark blue metallic reflections and in male (one specimen studied) body with black, brown, reddish brown and light reddish brown spots. In female, apical section of sheath reddish brown apically. Wings in female completely dark brown with purple metallic reflections, or dark brown with a clear central surface and in male (one specimen studied) mainly lightly tinted and a little darker anteriorly.

HEAD. Head capsule in frontal view with minimum distance between inner edges of eyes 1.2 times as long as maximum eye height (Fig. T1.1, in white), distance between inner edges of antennal sockets 6.0 times distance between outer edge of antennal socket and nearest inner edge of eye (Fig. T1.1, in red), distance between inner edges of lateral ocelli 1.5–2.0 times as long as distance between outer edge of lateral ocellus and nearest edge of
eye (Fig. T1.2, in white). Frons with pits usually not touching each other (Fig. T1.1). Clypeus, frons and postocellar area with clubbed setae, elsewhere setae sharp at apex (Fig. T1.3). Gena between lowest edge of eye and middle of eye with a row of pits with raised posterior margin extended from lowest margin of eye to posterior edge of gena (Fig. T1.3, T1.23 and T1.24). **Antenna in female** with 12–14 flagellomeres, flagellum flattened dorsoventrally (Fig. T1.5, lateral); and flagellomere 3 as wide as long and following flagellomeres to preapical one wider than long (Fig. T1.5, dorsal); flagellomere 1 0.5–0.65 times as long as flagellomere 2 (Fig. T1.4) and dorsally about 1.3 times as long as wide; and flagellomere 2 dorsally with a small or large sensory oval (Fig K1 and K2). **Antenna in male** (one specimen studied) with 10 flagellomeres, flagellum not flattened dorsoventrally (Fig. T1.21), and flagellomeres 3 to preapical one longer than wide (Fig. T1.21); flagellomere 1 0.9 times as long as flagellomere 2 (Fig. T1.21) and dorsally about 2.5 times as long as wide; and flagellomere 2 dorsally without a sensory oval (Fig. T1.21).

**THORAX. Pronotum** in dorsal view finely pitted with numerous prominent shiny teeth slanted posteriorly (Fig. T1.7); in lateral view setae absent (fig. K46) or small posterior to some prominent teeth, or with numerous long setae in median area (Fig. K47). **Mesoscutum** with median band quite wide at its narrowest (0.3–0.7 as wide as diameter of a lateral ocellus) and consisting of fine, dense pits; submedian band widest, with large scallop-like pits and numerous prominent shiny teeth slanted posteriorly; and lateral band usually very shiny or occasionally with meshes of microsculpture lightly impressed, and anterolateral corner with or without pits (Fig. T1.7). Mesoscutellum and axilla generally with sculptures similar to submedian band of mesoscutum (Fig. T1.7). Mesoscutum on submedian band and mesoscutellum in lateral view without setae or with very small setae (Fig K46 and K47). **Metatarsomere 1 in female** 1.1–1.2 times as long as combined length of metatarsomeres 2–5 (excluding claws) (Fig. T1.6) and in **male** as long as combined length of metatarsomeres 2–5 (Fig. T7.21). **Fore wing** without vein 2r–m, with vein 1cu–a aligned or almost aligned with vein M, with cell 2R1 0.55–0.98 times as long as cell 3R1 (Fig T1.8 red and blue arrows, T1.15 and T1.17), with vein 2r–rs joining stigma in apical 0.55–0.7 (Fig. T1.8, black and white arrows), with stigma parallel before junction with vein 2r–rs and beyond junction more steeply attenuated (Fig. T1.8), with vein 2A at or near posterior margin of wing only near vein a (Fig. T1.8), and with vein 3A sharply outlined and extending along wing margin (Fig. T1.8). **Hind wing** without anal cell 1A (Fig. T1.8), with hamuli present only apical to junction of veins R1 and C (Fig. T1.8, insert), with vein 1r–m straight and clearly shorter than vein M, and with vein M markedly curved (Fig. T1.8).

**ABDOMEN. Tergum 1** with deeply pitted sculpticells; terga 2–8 with pitted sculpticells ranging from none except at very base to present over almost entire tergum. In **female**, tergum 9 in dorsal view with deeply pitted sculpticells (including median basin), (Fig. M6); with median basin, about as long as wide (Fig. T1.13), its central surface flat with about 20 tubercles clearly raised on anterior or lateral edge, and with or without setae (Fig. M6). **In female**, tergum 9 dorsal view lateral to median basin with deep sculpticells and without pits and setae (Fig. M6), and in lateral view with longitudinal furrow about 0.9 times as long as length of tergum in lateral view (Fig. M4); its surface pitted Fig. T1.10. **In female**, tergum 10 0.60–0.75 times as long as median basin length (Fig. T1.9, red and blue arrows), large triangular tooth-like projection laterobasally (Fig. T1.9), and without cercus on lateroventral surface. **Sheath** with basal section 1.4–1.7 times as long as apical section (Fig. M4), about 0.9 times as long as fore wing length (Fig. T1.11); apical section with few teeth subdorsally in apical 0.25 (Fig. T1.12). **Ovipositor.** Lancet annuli starting at base, and each annulus with one pit, central annuli with medium to large size pit; the pit in basal annuli clearer smaller than or as large as those of apical annuli (Fig. M5).

**Taxonomic notes.** In Schiff et al. (2012), the justification for retaining *Afrotremex* as distinct from *Tremex* was left unresolved. Both genera share the loss of cerci in female, but *Afrotremex* has a shorter fore wing cell 2R1 relative to cell 3R1. Benson (1943), while maintaining *T. hyalinatus* as part of *Tremex*, suggested that it should be put in its own genus. Pasteels (1951) agreed and proposed *Afrotremex* to include *T. hyalinatus* and added a new species, *A. violaceus*, for the same reasons brought up by Benson. Because I have seen more specimens and species of *Afrotremex*, had access to a recent illustrated review of *Eriotremex* by Smith (2010), a revision of *Eriotremex* by Maa (1949) and *Tremex* by Maa (1949), a review of Chinese species of Siricidae by Xiao et al., (1992) with many illustrations, and a revision of the New World species of Siricidae with a key to extant world genera by Schiff et al. (2012), I have much better data to determine the generic status of *Afrotremex*.

The taxa of significance are *Teredon*, *Eriotremex*, *Afrotremex* and *Tremex*. Their relationships were discussed in Schiff et al. (2012). A summary of the shared and derived character states are: labial palp with 2 palpomeres; distance between inner edges of lateral ocelli 1.5–2.3 times greater than the distance between lateral ocellus and...
T1.1 A. *hyalinatus* ♀
- clubbed setae

T1.2 A. *pallipennis* ♀
- row of pits

T1.3 A. *hyalinatus* ♀
- flagellum 1 short & about 0.5 as long as 2, & 3 to 12 wider than long

T1.4 A. *opacus* ♀

T1.5 A. *hyalinatus* ♀
- pronotum with shiny teeth
- mesoscutum - lateral band - submedian band - median band
- axilla
- metatarsomere 1
- metatarsomer 2 - 5

T1.6 A. *hyalinatus* ♀

T1.7 A. *hyalinatus* ♀
T1.13 A. hyalinatus ♀

T1.15 A. comatus ♀

T1.17 A. hyalinatus ♀

T1.20 Tremex columbia ♀

T1.19 Tremex columbia ♀

T1.14 Tremex columbia ♀

T1.16 Tremex columbia ♀

T1.18 Tremex fuscicornis ♀

T1.22 Tremex columbia ♀

2R1/3R1=0.64

2R1/3R1=0.77

2R1/3R1=1.00

2R1/3R1=1.33

median basin

prominent tooth

deployed pitted sculpticells

small tooth or none

shallow pitted sculpticells

flagellomeres

T1.19 Tremex columbia ♀

T1.21 A. xylophagus ♂

dorsal

lateral

axilla

median furrow

central area with coarse pits

pits small in lateral third

pronotum

mesoscutum

mesoscutellum
nearest edge of eye; metatarsomere 1 in female markedly compressed laterally (about 3 times as high as maximum ventral width) and in dorsal view the lateral surfaces twisted; hind wing vein M much longer than vein 1r–m and markedly curved; tergum 9 in female with median basin sharply outlined laterally for most of its length. The next clade consists of Eriotremex, Afrotremex and Tremex. The shared and derived character states are: fore wing vein
2r–m absent (Fig. T1.8); fore wing vein 1cu–a aligned or almost aligned with vein M (Fig. T1.8); hind wing with hamuli on R1 apical to junction of veins R1 and C (Fig. T1.8, insert). Finally, the last clade consists of *Afrotremex* and *Tremex*. The shared derived character state are: tergum 10 in female without a cercus; tergum 9 in female in dorsal view lateral to median basin with clearly impressed meshes of microsculpture, and without pits and setae (Fig T1.13, insert and T1.14, insert).

**TABLE 1.** Range of ratio values derived from surveyed species within each genus. The lower half of the table refers to the total number of species surveyed, based on measurements from specimens, from specimens in photos or inked illustrations for each ratio. “basin” = median basin of tergum 9, “T10” = tergum 10 or cornus in dorsal view, “basal” = basal section and “apical” = apical section of sheath, 2R1 and 3R1 are fore wing cells behind stigma. The name in parenthesis refers to the following source of images, photos or illustrations: “Schiff” = (Schiff et al. 2012), “Smith” = (Smith 2010), “Maa” = (Maa 1949), “Xiao” = (Xiao et al. 1992), and “Goulet” is from unpublished images.

<table>
<thead>
<tr>
<th>Genus</th>
<th>Basin W/basin L</th>
<th>T10 L/basin L</th>
<th>Sheath basal L/apical L</th>
<th>Fore wing 2R1 L/3R1 L</th>
<th>Metatarsus 1/2+5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teredon</td>
<td>0.97</td>
<td>0.57</td>
<td>2.5</td>
<td>0.55–0.75</td>
<td>2.0</td>
</tr>
<tr>
<td>Eriotremex</td>
<td>0.9–1.23</td>
<td>0.52–0.81</td>
<td>1.55–2.75</td>
<td>0.49–0.65</td>
<td>1.4–1.6</td>
</tr>
<tr>
<td>Afrotremex</td>
<td>0.84–1.07</td>
<td>0.57–0.75</td>
<td>1.37–1.70</td>
<td>0.55–0.98</td>
<td>1.1–1.2</td>
</tr>
<tr>
<td>Tremex</td>
<td>1.1–2.28</td>
<td>0.75–1.5</td>
<td>1.13–1.63</td>
<td>0.95–1.43</td>
<td>1.2–1.6</td>
</tr>
</tbody>
</table>

Number of species per genus measured based on specimens or images

**Teredon**

- **# species**: 1
- **# specimens**: 1
- **# photos**: 1 (Schiff)
- **# illustrations**: 1

**Eriotremex**

- **# species**: 6
- **# specimens**: 10
- **# photos**: 7 (Smith, Schiff)
- **# illustrations**: 4 (Maa)

**Afrotremex**

- **# species**: 5
- **# specimens**: 10
- **# illustrations**: 1

**Tremex**

- **# species**: 12
- **# specimens**: 24
- **# photos**: 7 (Schiff, Goulet)
- **# illustrations**: 17 (Maa, Xiao)

In both sexes of *Afrotremex*, the fore wing length of marginal cell 2R1 relative to the length of the cell 3R1, in female the median length of tergum 10 (cornus) relative to the median length of the median basin, and the maximum width of the median basin relative to the median length of the basin are the same as those of *Eriotremex* and *Teredon* (Table 1). The length of metatarsomere 1 relative to the length of combined metatarsomeres 2–5 (without claws) for females of *Afrotremex* is the shortest among the three genera (Table 1). There is a marked difference for three characters between *Afrotremex* and *Tremex* (for Basin W/basin L see Fig T1.13 and T1.14, white and blue arrows; for T10 L/basin L see Figs T1.13 and T1.14, blue and red arrows; for fore wing 2R1 L/3R1 L see Fig T1.15–T1.18, red and blue arrows). *Afrotremex* shows the ancestral state of these characters because they are shared with *Teredon* and *Eriotremex* whereas *Tremex* shows the derived state of these characters. Relative to
Tremex, Afrotremex is characterized by the following seven shared and derived character states: in female the flagellomere 1 is 0.5–0.6 times as long as flagellomere 2 (Fig T1.4 and T1.5 versus T1.19); the gena in ventral 0.5 has a row of large pits (fused or not) extending from the lowest edge of eye to occiput (Fig T1.3, T1.22 and T1.23 versus T1.25); the setae of clypeus, frons and postocellar area are clubbed at apex (Fig T1.3 versus T1.25); the mesoscutum is clearly divided into three longitudinal bands (a clearly outlined and quite wide band of fine pits, a wide submedian band of large scallop-like pits, and a shiny lateral band with a few pits anterolaterally (Fig T1.7 versus T1.22)); in female the metatarsomere 1 is relatively shorter than combined metatarsomeres 2–5 (Fig T1.6 versus T.20); in female the tergum 9 in dorsal view lateral to median basin consists of deeply pitted sculpticells (Fig T1.13, insert, versus T1.14, insert), in lateral view the longitudinal furrow is very long and extends almost to posterior end (Fig. M4); and in female the tergum 10 has a large and prominent tooth basolaterally (Fig T1.9, T1.10 and T1.13 versus T1.14). Therefore, Afrotremex is retained as a distinct genus.

Zoogeographical evidence follows the same pattern as described above for the four preceding genera. The ranges of species of Teredon (Caribbean region), Eriotremex (Oriental region) and Afrotremex (Ethiopian region centered in the central Congolese forest) are centered in tropical regions, whereas those of Tremex (Palaearctic almost exclusively Palaearctic and Oriental, with one Nearctic species) are in temperate regions or in montane regions within the subtropics. Basically, their present centers of diversity are isolated between continents.

Diversity and distribution. Only two species of Afrotremex were known, A. hyalinatus from Gabon, and A. violaceus from the Congo basin (Smith 1978, Taeger & Blank 2011, Taeger et al. 2010). There are no keys, and the two species were segregated by Pasteels (1951) only on wing color pattern. I had access to twelve specimens from equatorial Africa between westernmost Uganda and Gabon (Fig. T1.26), but I distinguished six species and four of them as new. Because of numerous differences in structures, the genus is very likely much more speciose.

2. Afrotremex comatus n. sp.
Fig T2.1 (female habitus) ; M1– M2, M4b, M5 (morphology) ; K4b, K7, K10, K14, K45, K47, K49, K51 (keys); T1.8, T2.1–T2.7 (description).
Map T1.26, red circle


Paratype. 1 female. Democratic Republic of the Congo. Kivu: Route Kavumu à Kabunga, km 82 (Mingazi) v/vi.1951 (H. Bomans) (1 F, MRAC).

Diagnosis. Among species with few pits (<10) usually isolated on anterolateral corner of lateral band (A. opacus), adults of A. comatus are distinguished from those of A. opacus by the presence of numerous long setae on medial surface of the pronotum (best seen in lateral view).

Comparative diagnosis. Afrotremex comatus is most similar to A. opacus. It is unique in the following four features: size and number of setae on the median section of pronotum; and color pattern of some cells of the fore wing and on the anal lobe and apex of the hind wing.

Afrotremex comatus is distinguished from A. opacus by the unique attributes mentioned above and the following five features: size and number of setae on dorsal surface of the pronotum; extent of the tinted surface on the apex and the anal lobe of hind wing; extent of the shiny surface on terga 4–7; proportions of the median basin; and length of the pit and its ventral fold on annulus 10 of ovipositor.

Afrotremex comatus shares with A. opacus the following nine features: row of isolated pits in the lower 0.5 of gena; size of the sensory oval on the dorsal surface of flagellomere 2; relative width of the mesoscutal median band at its narrowest; presence of few pits anterolaterally on the lateral band of mesoscutum; absence of sculpticells on the scutoscutellar furrow; extent of pitted sculpticells on tergum 8; extent of pitted sculpticells in and between pits above the lateral longitudinal furrow on tergum 9; extent of pitted sculpticells around and partly within pits on the surface anterior to lateral tooth on tergum 10; and size and shape of the pit on annulus 2 of ovipositor.

Afrotremex comatus is distinguished from A. hyalinatus by the unique attributes mentioned above and the following 13 features: size of the sensory oval on the dorsal side of flagellomere 2; density and size of pits on gena; shape of the setae at their apex and their relative length on clypeus, frons and postocellar area; number and size of
setae on the dorsal surface of pronotum; width of the mesoscutal median band at its narrowest; extent of sculpticells on the anterior 0.3 of median and submedian bands; absence of extension of fine pits of the mesoscutal median band posterior submedian band; number of pits on anterolateral corner of the mesoscutal lateral band; distribution of sculpticells on the scutoscutellar furrow; color pattern on the fore and hind wings; number of shiny teeth and size of pits along the anterior margin of axilla; extent of shiny surface on terga 4–8; prominence of the median ridge in median basin of tergum 9; density and size of pits on sterna 2–6; and length and width of pit on annulus 2 of ovipositor.

Afrotremex comatus is distinguished from A. xylophagus by in all unique features mentioned above and the 14 following features: proportion of the pedicel; size of the sensory oval on the dorsal side of flagellomere 2; density and size of pits on gena; shape of setae at their apex and their relative length on clypeus, frons and postocellar area; width of the mesoscutal median band at its narrowest; number and size of setae on the dorsal surface of pronotum; absence of the lateral extension of the fine pits from the median band posterior to submedian band; number of pits on the anterolateral corner of the lateral band of mesoscutum; distribution of microsculpture on the scutoscutellar furrow; sculpture on axilla; color pattern on the fore and hind wings; extent of pitted sculpticells on tergum 6–8; distribution of pitted sculpticells in and around pits on the surface above the lateral longitudinal furrow on tergum 9; distribution of pits and pitted sculpticells on surface anterior to lateral tooth on tergum 10; and size and outline of the pit on annulus 2.

Afrotremex comatus shares with A. xylophagus the following feature: shape of pits with raised posterior edge in a row between the lower eye margin and occiput and sculpture at the bottom of each of these pits.

Afrotremex comatus is distinguished from A. violaceus and A. pallipennis, two similar species, by all unique features mentioned above and the twelve following features: size of the sensory oval on dorsal side of flagellomere 2; distribution and organization of pits in a row between the lower eye margin and the occiput and sculpture at the bottom of these pits; number of long setae on the median area of pronotum; sharpness of the lateral edge of the mesoscutal submedian band and its curvature in basal 0.5; lateral extension of fine pits from the mesoscutal median band posterior to submedian band; number of pits on the anterolateral corner of the mesoscutal lateral band; distribution of microsculpture on the scutoscutellar furrow; color pattern of the fore and hind wings; extent of the shiny surface on terga 5–8; width of the mesoscutal median band at its narrowest; distribution of pitted sculpticells in and around pits above the lateral longitudinal furrow on tergum 9; distribution of pits and pitted sculpticells on the surface anterior to the lateral tooth of tergum 10; extent of teeth along the lateral surface posterior to the laterobasal tooth on tergum 10; and size and outline of the pit on annulus 2 of the ovipositor.

**Description of female.** **COLOR.** Fore wing darkly tinted with a purple hue (may be difficult to see) in the following cells (cells codes in Fig. M1): C, R, 1Cu, 1A (except for clear spot in apical 0.1), 1M (spot in basal 0.5), 2Cu (small spot in basal corner), 1R1, Rs+1R2 (spot narrow along 1R1, and in apical 0.25 along cell 3R1, or more widely in cell), 2R1, 3R1, and 3M (spot in apical 0.3); apical 0.2 of wing lightly but clearly tinted, the remaining cells clear (Fig. K51). Hind wing darkly tinted with a purple hue (may be difficult to see) in the following cells (cells codes in Fig. M1): C, R (spot in basal 0.3), 1Cu1 (spot in basal 0.25), postero basal spot on 0.5 of anal lobe; the remaining cells clear (Fig. K51). **Protrochanter** and mesotrochanter ventrally in apical 0.3 black or somewhat paler.

**HEAD.** Gena with large pits forming a curved row between lowest eye edge to occiput, the pits isolated and bottom of each pit shiny (as in Fig. T1.24); the remaining surface with pits more dense near mandible and scattered above, pits in ventral half 0.2–0.4 times and in dorsal half 0.1–0.2 times as large as lateral ocellus (as in Fig. T1.24). **Setae** on clypeus, frons and postocellar area truncate or very slightly enlarged apically (about 1.5 times as wide as setal shaft) and on frons 1.5–2.0 times as long as diameter of lateral ocellus (Fig. T1.24). **Pedicel** about 0.9 times as long as wide (as in Fig. T1.4). **Flagellomere** 2 with sensory oval covering less than 0.2 of dorsal surface (as in Fig. T1.4).

**THORAX.** Pronotum with vertical lateral surface very densely pitted on all or almost all of surface (Fig. T2.2); dorsal surface sculpture around large shiny teeth with very few short ridges and mainly with deep and dense pits, pits with irregularly defined edges (worm-like) of various heights and about 0.1 as large as diameter of lateral ocellus (Fig. T2.3, insert); in lateral view, dorsal surface with numerous long setae (Fig. K45). Mesoscutum with median band generally finely sculptured, widest anteriorly, at its narrowest the band about 0.2 times as wide as diameter of lateral ocellus; surface with pitted sculpticells in anterior 0.1, with pits posterior to microsculpture area, pits small (at most 0.15 times as large as diameter of lateral ocellus), with shiny bottom, and not extended laterally around posterior end of submedian band (Fig. T2.4). Submedian band in anterior 0.1–0.3 without pitted sculpticells.
within pits; not sharply outlined along lateral edge; lateral edge in anterior 0.5 convergent, and in posterior 0.5 convergent and straight. Lateral band shiny with few pits (<10) usually isolated on anterolateral corner (Fig. K4b). Scutoscutellar furrow without sculpticells or with narrow band (0.2 of surface) of sculpticells on central surface (as in Fig. K3b). Axilla with large scallop-like pits similar to those on submedian band but somewhat smaller, not connected with submedian band along edge anteromedially (at most some wrinkles), and without small pits (similar to those of median band) along anterior margin (Fig. T2.4).

ABDOMEN. Terga 1–3 or 1–4 with deeply pitted sculpticells (surface matt) except for very narrow shiny transverse band along anterior median margin of tergum 2 (maybe covered by tergum 1). Terga 5–7 with shiny (microsculpture meshes absent or very lightly impressed) areas. Tergum 5 shiny in central 0.15 submedially; tergum 6 shiny in central 0.2 submedially; tergum 7 shiny in posterior 0.5 submedially (shiny surface partly fused medially) (Fig. K47); and tergum 8 without shiny surface (Fig. K7). Tergum 9 with median basin bearing about 20 shiny teeth on each side on central portion; each tooth with or without a setae; seta when present posterior to tooth about as long as distance between shiny teeth; longitudinal median ridge outlined but not prominent, suggested posteriorly, or absent, and without a small shiny central spot; maximum length slightly longer than wide (maximum
width/maximum median length: 0.90) (Fig. K49). Tergum 9 in lateral view above longitudinal furrow (in section with setae) without pits instead with numerous crescent-like tubercles, each shiny tubercle anterior to a seta surrounded by pitted sculpticells (as in Fig. T2.5, insert). Tergum 10 in dorsal view widely pitted (Fig. K10); each pit with some pitted sculpticells (surface between pits with pitted sculpticells); pits extending widely to anterior edge (about 0.7–0.8 of median basin posterior edge) (Fig. T4.4); in lateral view surface anterior to lateral tooth with some microsculpture and with many large teeth (Fig. T2.6), and surface anterior to lateral tooth without distinct pits but with pitted sculpticells (Fig. T2.6). **Ovipositor** with annulus 2 very small (about 0.2 times as long as annulus 2), extended as a very narrow furrow to edge of annulus 1 (Fig. M5, base); annulus 10 with pit sharply outlined ventrally on about along 0.3–0.4 of annulus length; surface anterior to pit outlined by slightly convergent round folds forming a flat area not extended to anterior annulus; annulus without a long sharp ridge immediately ventral to pit (Fig. M5, middle).

**Taxonomic notes.** *Afrotremex comatus* has been confused in collections with *A. hyalinatus* probably because of the wing color pattern.

Origin of specific epithet. From Latin meaning “long hair”, referring to the many long setae on the median area of the pronotum.

3. **Afrotremex hyalinatus** (Mocsáry, 1891)

*Fig T3.1, T1.27 (female habitus); M4, M4a, M6, (morphology); K3, K8, K11, K13, K15, K18, K21, K35, K37, K39, K39a, K40, K40a, K41, K43 (keys); T1.1, T1.3, T1.5–T1.7, T1.12, T1.13, T1.17, T3.1–T3.8 (description). Map (T1.26), red square*


**Afrotremex hyalinatus**; Pasteels 1951: 196 (change of rank), Name accepted by Smith 1978: 90 (catalog), Taeger et al., 2010: 106, Taeger and Blank 2011.

**Diagnosis.** Among species with large and dense pits on gena (*A. xylophagus*), adults of *A. hyalinatus* are distinguished from those of *A. xylophagus* by a linear row of fused pits with striation at the bottom.

**Comparative diagnosis.** *Afrotremex hyalinatus* is a rather distinct species. It is unique in having the following four features: size of sculpticells on the dorsal surface of the pronotum between large shiny teeth; presence of sculpticells on the anterior 0.3 of the median and submedian bands; reduction in pits size and shiny teeth on axilla and distribution of pits of similar size to those of median band along anterior margin of axilla; and extent and position of the shiny surface on terga 4–8.  

*Afrotremex hyalinatus* is distinguished from *A. xylophagus* by the unique characters mentioned above and the following eight features: density of pits with raised posterior edge in a row along a line between lower eye margin and occiput, and sculpture at the bottom of these pits; convergence of the lateral edge of the submedian band of mesoscutum; microsculpture distribution in anterior 0.3 of the median and submedian bands of mesoscutum; pit size on anterior 0.5 of the median band of mesoscutum; pit size along anterior margin of axilla; extent and position of shiny surface on terga 6–8; and absence of a sharp ridge immediately ventral pit of annulus 10.

*Afrotremex hyalinatus* shares with *A. xylophagus* the following eleven features: size of the sensory oval surface on the dorsal surface of flagellomere 2; pit size and density on gena, vertex and postocellar area; level of expansion of the club at the apex of setae on clypeus, frons and postocellar area; degree of sharpness of the lateral edge of the submedian band of mesoscutum; curvature of the lateral edge in posterior 0.5 of the submedian band of mesoscutum; pits extension laterally around the posterior end of the submedian band and anteriorly along the lateral margin of submedian band in posterior 0.5; posterior extension of pitted sculpticells medially in posterior 0.5 of tergum 8; median carina prominence in the median basin of tergum 9; large teeth extension on dorsal and lateral surfaces of tergum 10; presence of teeth on surface posterior to lateral tooth of tergum 10; and shape of pit on annuli 2 and 10 of the ovipositor.

*Afrotremex hyalinatus* is distinguished from *A. pallipennis* and *A. violaceus*, two similar species, by all unique features mentioned above and the following seven features: sharpness of the outline of the lateral edge of the submedian band of mesoscutum; lack of convergence of the lateral edge of the submedian band in anterior 0.5, and
slight convergence of the lateral edge in posterior 0.5; width of median pits posterior to submedian band; size of teeth on axilla and the presence of pits of size similar to those of the median band of mesoscutum; fore wing color pattern; extent of the shiny surface on tergum 5–8; and presence of large teeth on the lateral surface of tergum 10.

Afrotremex hyalinatus shares with *A. violaceus* and *A. pallipennis* the following ten features: row of fused pits in ventral 0.5 of gena; size of the sensory oval surface on the dorsal surface of flagellomere 2; relative width of the mesoscutal median band at its narrowest; lateral extension of pits of median band around posterior end of the submedian band on mesoscutum; presence of many pits anterolaterally on the lateral band of mesoscutum; presence of widespread sculpticells in the scutoscutellar furrow; absence or near absence of microsculpture around pits just above the lateral longitudinal furrow on tergum 9; absence of pitted sculpticells (meshes very lightly impressed along anterior margin only) in and around pits on median dorsal surface of tergum 10; distribution of pits on tergum 10; and shape of pit on annulus 2.

Afrotremex hyalinatus is distinguished from *A. comatus* and *A. opacus*, two similar species, by all unique features mentioned above and the following nine features: density of pits in a row along a line between lower eye margin and occiput, and the sculpture at the bottom of these pits; size of sensory oval on dorsal surface of flagellomere 2; the width of the mesoscutal median band at its narrowest; absence of the lateral extension of fine pits of the median band posterior to submedian band; number of pits on the anterolateral corner of the lateral band of mesoscutum; presence of microsculpture on the scutoscutellar furrow; extent of shiny surface on tergum 8; pitted sculpticells in and around pits on surface just above lateral longitudinal furrow of tergum 9; distribution of pits and pitted sculpticells along anterior surface of tergum 10, laterally on surface anterior lateral tooth; and the size and outline of pit on annulus 2 of the ovipositor.

Afrotremex hyalinatus shares with *A. comatus* and *A. opacus* the following feature: most of the fore wing color pattern (except the apex of 1Cu and 1A).

**Description of female.** COLOR. **Fore wing** darkly tinted with a purple hue (may be difficult to see) in following cells (cells codes as in Fig. M1): C, R, 1Cu (except for small apical clear spot posteroapically), 1A (except for clear spot in apical 0.5), 1M (spot in basal 0.3), 2Cu (small anterobasal spot), 1R1, Rs+1Rs2 (spot narrow along cell 1R1 and 3R1), 2R1, 3R1; remaining apical 0.2 of wing lightly but clearly tinted, the remaining cells clear (Fig. K43). **Hind wing** darkly tinted with a purple hue (may be difficult to see) in following cells (cells codes as in Fig. M1): C, R (spot in basal 0.4), 1Cu1 (spot in basal 0.4), C, and most of anal lobe (except for small clear spot anteriorly), the remaining cells clear (Fig. K43). **Protrochanter** and mesotrochanter ventrally in apical 0.3 black or somewhat paler.

HEAD. **Gena** with large pits forming a curved row between lowest eye edge to occiput, the pits fused completely and bottom of each pit consisting of irregular fine ridges (Fig. K35, insert); remaining surface with pits dense (usually polygonal in outline) in ventral 0.7 and scattered above, and in ventral two thirds 0.2–0.4 times and in dorsal third 0.2–0.3 times as large as diameter of lateral ocellus (Fig. K11). **Setae** on clypeus, frons and postocellar area clearly clubbed at apex (about 2 times as wide as setal shaft), and on frons 0.5–0.7 as long as diameter of lateral ocellus (Fig K13 and T1.3, insert). **Pedicel** about 0.9 times as long as wide (as in Fig. T1.4).

**Flagellomere** 2 with sensory oval covering about 0.5 of dorsal surface (as in Fig. K1).

**THORAX. Pronotum** with vertical lateral surface very densely pitted in posterior 0.8 (Fig. T3.2); dorsal surface around large shiny teeth with few short ridges and mainly pits, the pits with irregularly defined edges (worm-like) and about 0.2 times as large as diameter of lateral ocellus (Fig. T3.3, insert); in lateral view, dorsal surface without long setae or with some very short setae (as in Fig. K46). **Mesoscutum** with median band generally finely sculptured, widest anteriorly, at its narrowest the band about 0.7 times as wide as diameter of lateral ocellus (Fig. K39); with pitted sculpticells in anterior 0.3, with pits gradually forming within microsculptured area, at first with pitted sculpticells at bottom of each pit then pit bottom becoming shiny in posterior 0.5 of band, and pits small (0.1–0.15 times as large as diameter of lateral ocellus) (Fig. T3.4, insert), pits extending laterally around posterior end of submedian band (as in Fig. K3a) and forward along lateral margin of submedian band in posterior 0.5 (Fig. K39a). Submedian band in anterior 0.1–0.3 with pitted sculpticells within pits (Fig. T3.4, insert); lateral edge not sharply outlined, in anterior 0.5 parallel (Fig. K37), and in posterior 0.5 slightly convergent and straight (Fig. K15). Lateral band shiny with many pits (>10) often fused on anterolateral corner (Fig. T3.4 and as in Fig. K4a). Scutoscutellar furrow with convex sculpticells (sculpticells area with metallic hue) over 0.7 central surface (Fig. T3.4 and as in Fig. 17a). **Axilla** with medium size pits without scallop-like pits as on submedian band, not connected along with small pits from submedian band along edge anteromedially, and with small pits (similar to those of median band) along anterior margin (Fig. K40a).
T3.1 *A. hyalinatus* ♀

T3.2 *A. hyalinatus* ♀

T3.3 *A. hyalinatus* ♀

T3.4 *A. hyalinatus* ♀

**microsculpture**

**submedian band**

**median band**
ABDOMEN. Terga 1–5 with deeply pitted scultpicells (surface matt). Terga 6–8 with shiny areas (microsculpture meshes absent or very lightly impressed). Tergum 6 shiny in posterior 0.2 medially; tergum 7 shiny in posterior 0.3 medially with a short anterior extension medially (Fig. T3.5); and tergum 8 matt in anterior 0.3 and medially in 0.7 otherwise shiny (Fig K5 and K21). Tergum 9 with median basin bearing about 20 tubercle (not shiny apically) on each side; each tubercle without a setae; longitudinal median ridge prominent, and without a small shiny central spot; maximum length slightly longer than wide (maximum width/ maximum median length: 0.79–0.84) (Fig M6 and T3.7). Tergum 9 in lateral view above longitudinal furrow in area with setae with pits in lower 0.75, pits deep clearly outlined by pitted scultpicells, and above this zone pits indistinctly outlined by pitted scultpicells (Fig. M4a). Tergum 10 in dorsal view widely pitted; each pit shiny at bottom (surface between pits shiny except along anterior margin); pits extending medially to but not reaching anterior edge (Fig M6 and K8); in
lateral view surface posterior to lateral tooth shiny and with many large teeth (Fig. T3.6), and surface anterior to lateral tooth with distinctly outlined pits of moderate size and each pit with pitted sculpticells at bottom (Fig. T3.6).

Ovipositor with annulus 2 wide, about 0.3 as long as annulus, and regularly tapered to edge of annulus 1 (Fig. T3.8, base); annulus 10 with large pit 0.3–0.4 as long as annulus; surface anterior to pit outlined by slightly convergent round fold forming a trough with shallow surface extending almost to anterior annulus; annulus without a long sharp ridge immediately ventral to pit (Fig. T3.8, middle).

Taxonomic notes. *Afrotremex hyalinatus* was the first species of *Afrotremex* to be discovered (originally described under *Tremex*). I did not see the holotype specimen that was with F. Koch (Berlin). He kindly compared the type with color photographs showing eight significant characters and their states based on specimens of five species at hand (flagellomere 2 sensory oval; row of pits on gena; size and density of pits on gena; setae shape and size on clypeus, frons and postocellar area; number of pits on lateral band of mesoscutum; fore and hind wing color pattern; sculpture on tergum 8; pit and sculpture above lateral longitudinal furrow of tergum 9). He matched perfectly the holotype from Gabon with the specimen from the Republic of the Congo. A study of the excellent habitus illustration of the *A. hyalinatus* holotype by A. Baliani (Guiglia 1937) (Fig. T1.26) shows six characters matching states of the specimen from the Republic of the Congo. Three of these characters were not compared with the type by F. Koch (parallel lateral edge of the mesoscutal submedian band in anterior 05; prominence of the median ridge in the median basin; and proportion of the length relative to the width of the median basin). All eleven characters match the specimen from the Republic of the Congo. Therefore, we consider the specimen from the Republic of Congo as *A. hyalinatus*.


4. *Afrotremex opacus* n. sp.

Fig. T4.1 (female habitus); K2, K46, K48, K50, K52 (keys); T1.4, T1.24, T4.2–T4.8 (description).

Map (T1.26), blue circle


**Diagnosis.** Among species with few pits (<10) usually isolated on anterolateral corner of lateral band (*A. comatus*), adults of *A. opacus* are distinguished from those of *A. comatus* by the absence or the presence of few very small setae on medial surface of the pronotum (best seen in lateral view).

Comparative diagnosis. *Afrotremex opacus* is most similar to *A. comatus*. It is unique in following two features: absence of long and numerous setae on pronotum; and tinted color pattern on the basal lobe and tip of the hind wing.

*Afrotremex opacus* shares with *A. comatus* the following nine features: row of isolated and shiny pits in lower 0.5 of gena; size of the sensory ventral surface on flagellomere 2; relative width of the median band of mesoscutum at its narrowest; number of pits on the anterolateral corner of the lateral band of mesoscutum; lack of or very restricted presence of sculpticells in the scutoscutellar furrow; extent of pitted sculpticells on tergum 8; extent of pitted sculpticells in and around pits above the lateral longitudinal furrow on tergum 9; extent of pitted sculpticells around and in pits on anterior 0.25 of dorsal surface of tergum 10 (including surface anterior to the lateral tooth); size and shape of the pit on annulus 2 of the ovipositor.

*Afrotremex opacus* is distinguished from *A. comatus* by all the unique attributes mentioned above and the following two features: extent of the tinted surface on anal lobe of hind wing; proportion of the median basin of tergum 9; and size of pit and its ventral fold on annulus 10 of the ovipositor.

*Afrotremex opacus* is distinguished from *A. hyalinatus* by all the unique attributes mentioned above and the following nine features: density and size of pits on gena; shape of the setae at their apex and their relative length on clypeus, frons and postocellar area; size of the microsculpture on the dorsal surface of pronotum between shiny teeth; distribution of sculpticells on anterior 0.3 of median and submedian bands; the number of shiny teeth
Afrotremex opacus is distinguished from *A. xylophagus* by all the unique attributes mentioned above and the following eleven features: proportion of the pedicel; size of sensory oval on dorsal side of flagellomere 2; density and size of pits on gena; shape of the setae at their apex and their relative length on clypeus, frons and postocular area; width of the median band of the mesoscutum at its narrowest; absence of the lateral extension of fine pits of the median band at posterior end of submedian band; number of pits on the anterolateral corner of the lateral band of mesoscutum; distribution of microsculpture on the scutoscutellar furrow; color of the fore and hind wings; extent of pitted sculpticells on terga 6–8; distribution of pitted sculpticells in and around pits on the surface just above the lateral longitudinal furrow of tergum 9; distribution of pits and pitted sculpticells along the anterior surface of tergum 10 (including surface anterior to the lateral tooth); and size and outline of the pit on annulus 2 of the ovipositor.

Afrotremex opacus shares with *A. xylophagus* the following feature: density of pits with raised posterior edge in a row between lower eye margin and occiput and the sculpture at the bottom of these pits.

Afrotremex opacus is distinguished from *A. violaceus* and *A. pallipennis* by all the unique attributes mentioned above and the eleven following features: distribution and organization of pits in a row along a line between lower eye margin and occiput, and microsculpture at the bottom of these pits; size of sensory oval on the dorsal side of flagellomere 2; width of the median band of mesoscutum at its narrowest; sharpness and lack of curvature of the lateral edge of the submedian band of mesoscutum in basal 0.5; lack of lateral extension of fine pits of the median band of the mesoscutum posterior the submedian band; number of pits on the anterolateral corner of the lateral band of mesoscutum; distribution of microsculpture on the scutoscutellar furrow; color pattern of the fore and hind wings; extent of the shiny surface on terga 5–8; distribution of pitted sculpticells in and around pits above the lateral longitudinal furrow on tergum 9; distribution of pits and pitted sculpticells along the anterior 0.25 of tergum 10 (including the surface anterior lateral tooth); extent of teeth along lateral margin of tergum 10 posterior laterobasal tooth; and the size and outline of pit on annulus 2 of the ovipositor.

**Description of female.** **COLOR.** Fore wing darkly tinted with a dark purple hue (may be difficult to see) in the following cells (cells codes as in Fig. M1): C, R, 1Cu, 1A (except for clear spot in apical 0.1), 1M (spot in basal 0.5), 2Cu (small spot in basal corner), 1R1, Rs+1R2 (spot narrow along 1R1, and in apical 025 along cell 3R1, or more widely in cell), 2R1, 3R1, 3M (spot in apical 0.7), and 3Cu (along margin); apical 0.2 of wing lightly but clearly tinted, the remaining cells clear (Fig. K52). Hind wing darkly tinted with a dark purple hue (may be difficult to see) in the following cells (cells codes as in Fig. M1): C, R (spot in basal 0.3), 1Cu1 (spot in basal 0.25), most of anal lobe (except for clear spot anteriorly), R1 (apical 0.3 along margin), 2Rs (apical 0.3 along margin), and margin at apex of 2M; the remaining cells clear (Fig. K52). **Protrochanter** and mesrotrochanter ventrally in apical 0.3 black or somewhat paler.

**HEAD.** Gena with large pits forming a curved broad furrow between lowest eye edge to occiput, the pits isolated and bottom of each pit shiny (Fig. T4.7) and as Fig. K4b). Scutoscutellar furrow centrally and pit size along the anterior margin of axilla; extent of the shiny surface on terga 6–8; prominence of the median ridge in the median basin of tergum 9; density and size of pits on sterna 2–6; and length and width of the pit on annulus 2 of the ovipositor.

**Afrotremex opacus** shares with *A. xylophagus* the following feature: density of pits with raised posterior edge in a row between lower eye margin and occiput and the sculpture at the bottom of these pits.
T4.4 A. opacus ♀

- lateral band: with few pits
- submedian band: lateral edge not sharp
- median band: narrow, & not extended laterally behind submedian band
- scutoscutellar furrow: smooth

T4.5 A. opacus ♀

- lateral edge convergent & straight

T4.6 A. opacus ♀

pitted sculpticells widespread & pits not as distinct

T4.7 A. opacus ♀

large teeth laterally

pitted sculptice widespread & pits indistinct

T4.8 A. opacus ♀

pits indistinct, surface with pitted sculpticells & shiny tubercles
without sculpticells (Fig. K3b and T4.7). **Axilla** with large, scallop-like pits similar to those on submedian band but somewhat smaller (Fig. T4.7), not connected with small pits from submedian band along edge anteromedially (Fig. K3b), and without small pits (similar to those of median band) along anterior margin (Fig. K3b, only small portion visible).

**ABDOMEN.** **Terga** 1–5 with deeply pitted sculpticells (surface matt) except for very narrow shiny transverse band along anterior median margin of tergum 2 (maybe covered by tergum 1). Terga 6–7 without or with shiny areas present than on less than 0.15 of submedian area along posterior margin (Fig. K10); and tergum 8 without shiny surface (Fig. T4.6). Median basin of tergum 9 with about 20 shiny tubercles on each side on central portion; each tooth with or without a setae; setae when present posterior to tooth about as long as size of tubercle; longitudinal median ridge outlined but not prominent, suggested posteriorly, or absent; without a small shiny central spot; maximum length slightly wider than long (maximum width/ maximum median length: 1.05–1.08) (Fig. K50). Tergum 9 in lateral view above longitudinal furrow (in section with setae) without pits instead with numerous crescent-like tubercles, each shiny tubercle anterior to a seta surrounded by pitted sculpticells (as in Fig. T4.8, insert). Tergum 10 in dorsal view widely pitted (Fig. T4.4); each pit with some pitted sculpticells (surface between pits with pitted sculpticells except for prominent teeth); pits extending widely to anterior edge (about 0.7–0.8 of median basin posterior edge) (as in Fig. K10); tergum in lateral view with some microsculpture and shallow pits, and with many large teeth (Fig. T4.5); surface anterior to lateral tooth without distinct pits but with pitted sculpticells (Fig. T4.5). **Ovipositor** with annulus 2 very small (about 0.2 times as long as annulus 2), extending as a very narrow furrow to edge of annulus 1 (as in Fig M5, base and T2.7, base); annulus 10 with pit sharply outlined ventrally on about along 0.4–0.5 of annulus length; surface anterior to pit outlined by convergent round folds forming a flat surface or very shallow trough extended to anterior annulus; annulus without a long sharp ridge immediately ventral to pit (as in Fig M5, middle and T2.7, middle).

**Taxonomic notes.** *Afrotremex opacus* has been confused with *A. hyalinatus* probably because of the wing color pattern. Guiglia (1937) noticed marked difference in sculpture on the head and the abdominal terga between the holotype of *A. hyalinatus* and the two specimens from Moto. She chose to retain these specimens under the name *A. hyalinatus*. Pasteels (1951) saw these two specimens and accepted Guiglia’s conclusion without additional comments.

**Origin of specific epithet.** From Latin meaning “dark” referring to the matt surface of abdominal terga 1–9.

5. **Afrotremex pallipennis** n. sp.

Fig. T5.1 (female habitus); M3a–M3e (morphology); K1, K3a, K4a, K5, K16, K17b, K24, K24b, K26, K28, K30, K32, K34 (keys); T1.2, T5.2–T5.7, T5.9 (description).

Map (T1.26), red triangle


**Diagnosis.** Among species with concave outlined lateral edge of submedian band in posterior 0.5 (*A. violaceus*), adults of *A. pallipennis* are distinguished from those of *A. violaceus* by a longitudinal row of large pits (about 0.25 times as large as diameter of lateral ocellus) along the middle line in anterior 0.3 of median band, and in female, by a large and clear area at the centre of the fore and hind wings.

**Comparative diagnosis.** *Afrotremex pallipennis* is most similar *A. violaceus*. It is unique in the following 2 features: extent of the clear pattern of the fore and hind wings; and position and wide extent of the shiny surfaces on terga 4–8.

*Afrotremex pallipennis* shares with *A. violaceus* the following ten features: a row of fused pits in lower 0.5 of gena; size of the sensory oval on the dorsal surface of flagellomere 11; relative size of the median band at its narrowest; presence of many pits anterolaterally on the lateral band of mesoscutum; width of the lateral extension of small pits of the median band of the mesoscutum posterior to submedian band; presence of widespread...
sculpticells in the scutoscutellar furrow; size of the shiny surface on tergum 8; absence of microsculpture around most pits on most of surface above the lateral longitudinal furrow of tergum 9; absence of pitted sculpticells between pits on the dorsal surface of tergum 10; distribution of teeth posterior to lateral tooth on lateral surface of tergum 10; and width and length of the pit on annulus 2.

Afrotremex pallipennis is distinguished from A. violaceus by all the unique attributes mentioned above and the four following features: extent of dense pits on the vertical lateral surface of pronotum; presence of large median row of large pits in the anterior 0.5 of the median band of mesoscutum; color pattern of the pro- and mesotrochanters in apical 0.3; extent of the clear pattern on the fore and hind wings; and position and extent of shiny surfaces on terga 4–8.

Afrotremex pallipennis is distinguished from A. hyalinatus by all the unique attributes mentioned above and the eleven following features: density and size of pits on gena; shape of setae at their apex and their relative length on clypeus, frons and postocellar area; size of sculpticells on the dorsal surface of pronotum between shiny teeth; sculpticells distribution on the anterior 0.3 of the median and submedian bands of mesoscutum; sharpness of the lateral edge of the submedian band, convergence of its edge in anterior and posterior 0.5, the curvature of its edge in posterior 0.5; size and number of shiny teeth centrally and size of pits along the anterior margin of axilla; position and extent of shiny surfaces on terga 5–8; extent of the shiny surface along the median area anteriorly on tergum 8; median ridge prominence in the median basin of tergum 9; density and size of pits on sterna 2–6; and length and width of pits on at least annulus 2 and 10 of the ovipositor.

Afrotremex pallipennis shares with A. hyalinatus the following nine features: size of the sensory oval surface on the dorsal surface of flagellomere 2; a row of fused pits in lower 0.5 of gena; size of the sensory oval on the dorsal surface of flagellomere 2; relative width of the median band at its narrowest; width and extent of the pitted surface of the median band of the mesoscutum posterior to submedian band; abundance of pits on anterolateral corner of the lateral band of mesoscutum; extent of sculpticells in the scutoscutellar furrow; absence of pitted sculpticells in pits on the median dorsal surface of tergum 10; distribution of pits on dorsal surface of tergum 10; and shape of the pit on annulus 2.

Afrotremex pallipennis is distinguished from A. xylophagus by all the unique attributes mentioned above and the six following features: organization of pits in a row along a line between the lower eye margin and the occiput, and of sculpture at the bottom of these pits; sharpness of the outline of the lateral edge of the submedian band of mesoscutum; curvature of the lateral edge of submedian band of mesoscutum in ventral 0.5; lateral extent of pitted surface of the median band of the mesoscutum posterior submedian band; extent and position of the shiny surface on terga 4–8; extent of shiny surface along the median area anteriorly on tergum 8; and median ridge prominence in the median basin of tergum 9.

Afrotremex pallipennis shares with A. xylophagus the following nine features: size of the sensory oval surface on the dorsal surface of flagellomere 2; relative width of the median band at its narrowest; lateral extension of the median band pits posterior to submedian band; presence of many pits on anterolateral corner of the lateral band of mesoscutum; presence of widespread sculpticells in the scutoscutellar furrow; absence of microsculpture laterally on tergum 8; absence of pitted sculpticells in and around pits on the median dorsal surface of tergum 10; distribution of pits anteriorly on tergum 10; and size of the pit on annulus 2 of the ovipositor.

Afrotremex pallipennis is distinguished from A. comatus and A. opacus by all the unique attributes mentioned above and the twelve following features: organization of pits in a row along a line between lower eye margin and occiput, and of sculpture at the bottom of these pits; size of sensory oval on the dorsal side of flagellomere 2; sharpness of the outline of the lateral edge of the submedian band of mesoscutum; curvature of the lateral edge of submedian band of mesoscutum in ventral 0.5; width of the median band of the mesoscutum at its narrowest; lateral extension of fine pits of the median band posterior to the submedian band of mesoscutum; number of pits on the anterolateral corner of the lateral band of the mesoscutum; extent of microsculpture on the scutoscutellar furrow; extent and position of the shiny surface on terga 5–8; pitted sculpticells in and around pits on most of surface of tergum 9 above the lateral longitudinal furrow; distribution of pits along the anterior surface of tergum 10; extent of pitted sculpticells on the dorsal surface of tergum 10; and length and width of the pit on annulus 2 of the ovipositor.

**Description of female.** COLOR. **Fore wing** darkly tinted with a dark purple hue (may be difficult to see) in the following cells (cells codes as in Fig. M1): C, R, 1Cu (except for a small clear spot posteroapically), 1A (except for clear spot in apical 0.5), 1M (small spot anterobasally), 2Cu (small spot anterobasally), 1R1, 2R1 (small basal
AFROTREMEX


ABDOMEN. Terga 1–3 with deeply pitted sculpticells (surface matt). Terga 4–8 with shiny areas (microsculpture meshes absent or very lightly impressed). Tergum 5 shiny in anterior 0.25 medially; tergum 5 shiny in anterior 0.5 medially; tergum 6 shiny in anterior 0.8 medially; tergum 7 shiny in anterior 0.9 medially (Fig. K26); and tergum 8 shiny in posterior 0.85 with a short anterior extension medially(Fig. K4a). Scutocutellar furrow with convex sculpticells (sculpticells clearly with metallic hue) over all of surface (Fig. K17b). Axilla with large scallop-like pits similar to those on submedian band but somewhat smaller, not connected with small pits from submedian band along edge anteromedially (at most with some wrinkles) (Fig. K3a), and without small pits (similar to those of median band) along anterior margin (Fig. K17b).
T5.4 A. pallipennis ♂

- pits small
- large and fused pits consisting of pits & neighboring pits

T5.5 A. pallipennis ♂

- shiny
- pits widespread

T5.6 A. pallipennis ♂

- light reddish brown trochanter

T5.7 A. pallipennis ♂

- base
- pits sharply outlined ventrally & roundly folded dorsally
- large & little tapered anteriorly

T5.8 A. violaceus ♂

- pits with microsculpture in dorsal 0.3 & smooth in ventral 0.7
- surface smooth between pits

T5.9 A. pallipennis ♂
**6. Afrotremex violaceus (Pasteels, 1951)**

Fig. T6.1 (female habitus); K12, K17, K20, K23, K24a, K25, K27, K29, K31, K33 (keys); T1.9, T1.10, T1.11, T1.23, T5.8, T6.2–T6.8 (description).

Map (T1.26), blue triangle


I studied two female paratypes from Mayidi and Bas Congo (Lemfu). Pasteels reported six females altogether from Mayidi (one holotype and three paratypes captured in 1942 and 1945) and Bas Congo (Lemfu) (two paratypes captured in xii. 1945).

**Diagnosis.** Among species with concave outlined lateral edge of submedian band in posterior 0.5 (A. pallipennis), adults of *A. violaceus* are distinguished from those of *A. pallipennis* by the absence of a longitudinal row of large pits (about 0.25 times as large as diameter of lateral ocellus) along the middle line in anterior 0.3 of median band, and in **female**, by the completely darkly tinted fore and hind wings.

**Comparative diagnosis.** *Afrotremex violaceus* is most similar to *A. pallipennis*. It is unique in the following three features: absence of a median row of pits on the anterior 0.3 of the median band of mesoscutum; darkly tinted fore and hind wings; and extent and position of the shiny surface on terga 4–8.

*Afrotremex violaceus* shares with *A. pallipennis* the following twelve features: a row of fused pits in lower 0.5 of gena; size of the sensory oval on the inner surface of flagellomere 2; relative size of the median band at its narrowest; number of pits on the anterolateral corner of the lateral band of mesoscutum; width of the lateral extension of small pits of the mesoscutal median band posterior to submedian band; presence of widespread sculpticells in the scutoscutellar furrow; size of the shiny surface on tegum 8; absence of microsculpture around pits on most of the surface above the lateral longitudinal furrow of tegum 9; absence of pitted sculpticells between pits on the dorsal surface of tegum 10; distribution of pits on tegum 10; distribution of teeth along lateral surface posterior to the lateral tooth of tegum 10; and width an length of the pit on annulus 2 of the ovipositor.

*Afrotremex violaceus* is distinguished from *A. pallipennis* by all the unique attributes mentioned above and the following five features: extent of the pit density on the vertical lateral surface of pronotum; absence of a median row of large pits in the anterior 0.3 of the median band of mesoscutum; color pattern of the pro- and mesotrochanters in apical 0.3; extent of the clear pattern of the fore and hind wings; and position and extent of shiny surfaces on terga 4–8.

*Afrotremex violaceus* is distinguished from *A. hyalinatus* by all the unique attributes mentioned above and the following twelve features: density and size of pits on gena; shape of the apex of setae and their relative length on clypeus, frons and postocellar area; size of sculpticells on the dorsal surface of the pronotum between shiny teeth; sculpticell distribution on the anterior 0.3 of the median and submedian bands of mesoscutum; sharpness of the lateral edge of the submedian band of mesoscutum, convergence of its edge in anterior and posterior 0.5, and curvature of its edge in posterior 0.5; width of the pitted surface of the median band of mesoscutum extended laterally posterior to submedian band; size and number of shiny teeth on axilla; absence of pits similar in size to those of the median band of mesoscutum on anterior edge of axilla; position and extent of shiny surfaces on tegra 5–8; extent of shiny surface along the median area anteriorly on tegum 8; median ridge prominence in the median basin of tegum 9; density and size of pits on sterna 2–6; and length and width of pits on annuli 2 and 10 of the ovipositor.

*Afrotremex violaceus* shares with *A. hyalinatus* the following nine features: a row of fused pits in lower 0.5 of gena; size of the sensory oval on the dorsal surface of flagellomere 2; relative width of the median band at its narrowest; number of pits anterolaterally on the lateral band of mesoscutum; extent of sculpticells in the scutoscutellar furrow; lateral extension of pits of the median band of mesoscutum posterior to submedian band; absence of microsculpture around most pits above the lateral longitudinal furrow on tegum 9; absence of pitted sculpticells in pits on the median dorsal surface of tegum 10; distribution of pits on dorsal surface of tegum 10; and length of pit on annulus 2 of the ovipositor.
T6.1 A. violaceus ♀

T6.2 A. violaceus ♀

T6.3 A. violaceus ♀ pits with microsculpture in dorsal 0.5 & smooth in ventral 0.5.

T6.4 A. violaceus ♀ surface smooth between pits
Afrotremex violaceus is distinguished from A. xylophagus by all the unique attributes mentioned above and the seven following features: organization of pits in a row along a line between the lower eye margin and the occiput, and sculpture at the bottom of these pits; sharpness of the outline of the lateral edge of the submedian band of mesoscutum, and curvature of its edge in posterior 0.5; width of the pitted surface of the median band of the mesoscutum extended laterally posterior to submedian band; extent and position of the shiny surface on terga 4–8; extent of shiny surface along the median area anteriorly on tergum 8; median ridge prominence in the median basin of tergum 9; and distribution of pits anteriorly on tergum 10.

Afrotremex violaceus shares with A. xylophagus the following eight features: size of the sensory oval surface on the dorsal surface of flagellomere 2; relative width of the median band at its narrowest; lateral extension of the
median band pits posterior to submedian band; number of pits anterolaterally on the lateral band of mesoscutum; presence of widespread sculpticells in the scutascutellar furrow; absence of microsculpture laterally on tergum 8; absence of pitted sculpticells in and around pits on median dorsal surface of tergum 10; and size of the pit on annulus 2 of the ovipositor.

Afrotremex violaceus is distinguished from A. comatus and A. opacus by all the unique attributes mentioned above and the following eleven features: organization of pits in a row along a line between the lower eye margin and the occiput and presence of microsculpture at the bottom of these pits; size of sensory oval on the dorsal side of flagellomere 2; sharpness of the outline of the lateral edge of the submedian band of mesoscutum, and curvature of the its edge in posterior 0.5; width of the median band of the mesoscutum at its narrowest; lateral extension of fine pits of the median band of mesoscutum extended laterally posterior to submedian band; number of pits on the anterolateral margin of the median band of mesoscutum; extent of microsculpture on the scutascutellar furrow; extent and position of the shiny surface on terga 5–8; pitted sculpticells in and around pits on most of the surface of tergum 9 above the lateral longitudinal furrow; distribution of pits along the anterior surface of tergum 10; extent of pitted sculpticells on the dorsal surface of tergum 10; and length and width of the pit on annulus 2 of the ovipositor.

Description of female. COLOR. Fore and hind wings darkly tinted with a purple hue (may be difficult to see) in all cells (Fig. K33). Protrochanter and mesotrochanter ventrally in apical 0.3 black or somewhat paler.

HEAD. Gena with large pits forming a curved row (row including some pits laterally) between lowest eye edge to occiput, the pits fused completely and bottom of each pit with irregular fine ridges (Fig. T1.23); the remaining surface with pits larger (0.2–0.3 times as large as lateral ocellus) and quite dense in ventral 0.5, and scattered in dorsal 0.5 and small (at most 0.15 times as large as lateral ocellus) and less dense (Fig T1.23, T6.5 and T6.6). Setae on clypeus, frons and postocellar area truncate or very slightly enlarged apically (about 1.5 times as wide as setal shaft or truncate), and on frons 1.5–2.0 times as long as diameter of lateral ocellus (Fig K14 and as in T1.24, insert). Pedicel about 0.9 times as long as wide (as in Fig. T1.4). Flagellomere 2 with sensory oval covering about 0.5 of dorsal surface (as in Fig. K1).

THORAX. Pronotum with vertical lateral surface very densely pitted in posterior 0.5 (Fig. T6.3); dorsal surface around shiny teeth with very short ridges changing into deep and dense pits, the pits with irregularly defined edges (worm-like) of various heights and about 0.1 as large as diameter of lateral ocellus (Fig. T6.2); in lateral view, dorsal surface without or with some very short setae (as in Fig. K46). Mesoscutum with median band generally finely sculptured, widest anteriorly, at its narrowest the band about 0.7 times as wide as diameter of lateral ocellus (Fig. K17); pits without microsculpture at bottom, very deep, their edges irregularly defined (worm-like), and 0.15–0.2 times as large as diameter of lateral ocellus, without large pits along middle line in anterior 0.3 (Fig. K24a), and with pits becoming smaller (at most 0.1 times as large as diameter of lateral ocellus) in posterior 0.5 and extended laterally posterior to submedian band (Fig. K17 and as Fig. 3a). Submedian band in anterior 0.1–0.3 without pitted sculpticells within pits; lateral edge sharply outlined and convergent in anterior 0.5, and convergent and clearly concave in posterior 0.5 (as in Fig. K16). Lateral band shiny with many pits (>10) fused on anterolateral corner (as in Fig. K4a). Scutascutellar furrow with convex sculpticells (sculpticells clearly with metallic hue) over all of central surface (as in Fig. K3a). Axilla with large scallop-like pits similar to those on submedian band but somewhat smaller, not connected with small pits from submedian band along edge anteromedially (some wrinkles present), and without small pits (similar to those of median band) along anterior margin (Fig. K17).

ABDOMEN. Terga 1–5 with deeply pitted sculpticells (surface matt). Terga 6–8 with shiny areas (microsculpture meshes absent or very lightly impressed). Tergum 6 shiny in posterior 0.5 medially; tergum 7 shiny in posterior 0.7 medially with a short anterior extension medially (Fig. K25); and tergum 8 shiny in posterior 0.7 with a short anterior extension medially (Fig K23 and K27). Tergum 9 with median basin bearing about 20 crescent-shape tubercles on each side on central portion, each tubercle with or without seta posteriorly, and the seta when present as small as size of shiny tubercle; longitudinal median ridge in median basin outlined but not prominent, suggested posteriorly, or absent; median basin without a small shiny central spot; median basin slightly longer than wide (maximum width/ maximum median length: 0.90–1.00) (Fig T1.9 and T6.7). Tergum 9 in lateral view above longitudinal furrow (only surface with setae at center) in ventral 0.5 with clearly outlined pits, pits smooth at bottom and surface smooth between pits, in dorsal 0.5 pits distinctly or indistinctly outlined with pitted sculpticells at bottom and surface smooth between most pits (as in Fig. T6.4). Tergum 10 in dorsal view narrowly pitted (about 0.75 times as wide as posterior width of median basin of tergum 9); each pit shiny at bottom (surface
between pits shiny); pits extended medially to but not reaching anterior posterior edge of median basin (Fig. K29); lateral surface posterior to lateral tooth shiny and without large teeth (Fig. K20); surface anterior to lateral tooth with distinctly outlined pits partly bordered by shiny ridges, each pit large and with pitted sculpticells at bottom (Fig. K31). **Ovipositor** annuli 2 and 10 each with one wide pit as long as annulus (as in Fig. T5.7, base and Fig. T6.8); each pit clearly folded dorsally and sharply ventrally, and hardly tapering anteriorly.

**Taxonomic notes.** Pasteels (1951) distinguished this species from *A. hyalinatus*, the only species known to him, only on the color pattern of the fore and hind wings.

7. **Afrotremex xylophagus** n. sp.

Fig. T7.1 (female habitus); K6, K9, K17a, K19, K22, K36, K38, K39b, K40b, K42, K44 (keys); T7.3–T7.9 (description).

Fig. T7.2, (male habitus); T1.21, T7.10–21 (description).

Map T1.26, blue square


Paratype. 1 male. Cameroon: N’kolbisson, 29-vi-65 (1 M, ZMHB).

**Diagnosis.** Among species with dense and large pits on gena and vertex (*A. hyalinatus*). Adults of *A. xylophagus* are distinguished from those of *A. hyalinatus* by the presence on the gena between the ventral edge of the eye and the occiput of a row of round pits with a raised posterior edge and a smooth bottom.

**Comparative diagnosis.** *Afrotremex xylophagus* is a rather distinct species. It is unique in the following four features: pedicel proportions; fore and hind wings color pattern; size and distribution of shiny surface on tergum 8; and presence of a sharp ridge immediately ventral to the pit on annulus 3–15.

*Afrotremex xylophagus* is distinguished from *A. hyalinatus* by all unique attributes mentioned above and the following six features: density of pits with raised posterior edge in a row along a line between lower eye margin and occiput, and the sculpture at the bottom of these pits; convergence of the lateral edge of the submedian band of mesoscutum in anterior 0.5; microsculpture distribution in anterior 0.3 of the median and submedian bands of mesoscutum; pit size on anterior 0.5 of the median band of mesoscutum; size of pits along the anterior margin of axilla; and size and distribution of shiny surface on terga 6–8.

*Afrotremex xylophagus* shares with *A. hyalinatus* the following eleven features: size of the sensory oval surface on the dorsal surface of flagellomere 2; pit size and density on gena, vertex and postocellar area; degree of expansion of the club at the apex of the setae on clypeus, frons and postocellar area; sharpness of the lateral edge of the submedian band of mesoscutum; curvature of the lateral edge in posterior 0.5 of the submedian band of mesoscutum; width of the pit surface of the median band extended laterally posterior to submedian band; posterior extension of pitted sculpticells medially in posterior 0.5 of tergum 8; median carina prominence in the median basin of tergum 9; large teeth extension on lateral surface of tergum 10 posterior to lateral tooth; pits distinctness on anterior surface of lateral tooth of tergum 10; and shape and length of pit on annuli 2 and 10 of the ovipositor.

*Afrotremex xylophagus* is distinguished from *A. pallipennis* and *A. violaceus*, two similar species, by all unique attributes mentioned above and the following six features: sharpness of the lateral edge of the submedian band of mesoscutum; curvature of the lateral edge in posterior in 0.5 of the submedian band of mesoscutum; width of the mesoscutellar median band of pits extended laterally posterior to submedian band; size of pits along the anterior margin of axilla; extent of the shiny surface on terga 5–8; and presence of large teeth on the lateral surface of tergum 10 posterior to lateral tooth.

*Afrotremex xylophagus* shares with *A. violaceus* and *A. pallipennis* the following nine features: size of the sensory oval surface on the inner surface of flagellomere 2; relative width of the median band at its narrowest; lateral extension of the pits of the mesoscutellar median band posterior to submedian band; number of pits anterolaterally on the lateral band of mesoscutum; presence and extent of widespread sculpticells in the scutocutellar furrow; absence of microsculpture laterally on tergum 8; absence of pitted sculpticells in and around pits on the dorsal surface of tergum 10; distribution of pitted surface near posterior edge of median basin on tergum 10; and size of the pit on annulus 2 of the ovipositor.
T7.3 A. xylophagus ♀

head slightly wider behind eyes than maximum distance between outer edges of eyes

T7.4 A. xylophagus ♀
Pits large

T7.5 A. xylophagus ♀

T7.6 A. xylophagus ♀
Pits with micro-sculpture, & in dorsal 0.7 indistinct with crescent-shape tubercules

T7.7 A. xylophagus ♀
Pits distinct in ventral 0.3 & surface smooth between pits
Afrotremex xylophagus differs from A. comatus and A. opacus, two similar species, by all unique attributes mentioned above and the following eleven features: size of the sensory oval on the dorsal surface of flagellomere 2; width of the median band of mesoscutum at its narrowest; absence of extension of fine pits of the mesoscutal median band posterior to submedian band; number of pits on the anterolateral corner of the lateral band of mesoscutum; absence or restricted presence of microsculpture on the scutoscutellar furrow; size of pits along anterior margin of axilla; extent of pitted sculpticells on tergum 8; pitted sculpticells in and around pits on central surface above lateral longitudinal furrow on tergum 9; distribution of pits and pitted sculpticells along anterior surface of tergum 10; presence of pits on the surface anterior to lateral tooth on tergum 10; and size and outline of pit on annulus 2 of the ovipositor.

Afrotremex xylophagus shares with A. comatus and A. opacus the following feature: density of pits with raised posterior edge in a row between the lower eye margin and the occiput, and sculpture at the bottom of these pits.

Description of female. COLOR. Fore wing darkly tinted with a dark purple hue (may be difficult to see) in the following cells (cells codes as in Fig. M1): C, R, 1Cu, 1A, 2A, 1M (in basal 0.5), 2Cu (in basal 0.5), 1R1, Rs+1Rs2 (broadly along apical, basal and anterior margins), 2R1, 3R1; 2Rs2, 3M, 3Cu (in apical 0.5), and 2M (in apical 0.25); remaining portion of cells (1M, 2Cu, Rs+1Rs2, 2M, and 3Cu) clear forming a small clear spot centrally (Fig. K44). Hind wing darkly tinted with a dark purple hue (may be difficult to see) in apical 0.3 and in the following cells in basal 0.5 (cells codes as in Fig. M1): C, R (in basal 0.25 and along apical margins), 1Cu1 (spot in basal 0.25), and most of anal lobe (with more or less clear spot anteriorly), R1, 1Rs (along apical, basal and anterior margins), 2Rs, 2M (in apical 0.5), 2Cu (extreme apex); remaining cells or part of cells (R. 1Cu, Anal lobe, 1M, 1Rs, 2M and 2Cu) clear (Fig. K44). Protrochanter and mesotrochanter ventrally in apical 0.3 reddish brown.
HEAD. Gena with large pits forming a curved row between lowest eye edge to occiput; pits 0.4–0.5 as long as diameter of lateral ocellus; each pit with raised posterior edge, isolated, and with shiny bottom (Fig. K36, insert); pits dense (usually polygonal in outline) in ventral 0.7, and less dense and round above; pits in ventral two thirds 0.3–0.5 times and in dorsal third 0.1–0.3 times as large as diameter of lateral ocellus (Fig K36, T7.3 and T7.4). Setae on clypeus, frons and postocellar area clearly clubbed at apex (about 2 times as wide as setal shaft), and on frons 0.5–0.7 as long as diameter of lateral ocellus (as in Fig K13 and T1.3, insert). Pedicel about 1.2 times as long as wide. Flagellomere 3 as long as wide and flagellomeres 4–11 clearly wider than long. Flagellomere 2 with sensory oval covering about 0.5 of dorsal surface (as in Fig. K1).

THORAX. Pronotum with vertical lateral surface densely pitted on all or almost all of surface (Fig. T7.6); dorsal surface sculpture around shiny teeth with ridges and with few deep pits, pits with irregularly defined edges (worm-like) of various heights and about 0.1 as large as diameter of lateral ocellus (Fig. T7.5, insert); in lateral view, dorsal surface without or with some very short setae (as in Fig. K46). Mesoscutum with median band generally with fine pits, widest anteriorly, at its narrowest the band about 0.7 times as wide as diameter of lateral ocellus; surface with pitted sculpticells only along anterior margin, with pits posterior to microsculpture area, pits small (at most 0.15 times as large as diameter of lateral ocellus), with shiny bottom, and quite narrowly extended laterally posterior to submedian band and very hardly extended anteriorly along lateral edge of submedian band (Fig K38, and K39b). Submedian band in anterior 0.1–0.3 without pitted sculpticells within pits; not sharply outlined along lateral edge (Fig. K38); lateral edge in anterior 0.5 slightly convergent, and in posterior 0.5 convergent and straight (Fig. K38). Lateral band shiny with many pits (>10) often partly fused on anterolateral corner (Fig. K38 and as in Fig. K4a). Scutoscutellar furrow with convex sculpticells (clearly with metallic hue) over 0.7 central surface (Fig. K17a). Axilla with large pits but without shiny teeth as those on submedian band, broadly connected with small pits from submedian band along edge anteromedially, and without small pits (similar to those of median band) along anterior margin (Fig. K40b).

ABDOMEN. Terga 1–7 with deeply pitted sculpticells (surface matt) at least at base. Tergum 8 generally matt but with shiny surface along lateral margin in posterior 0.5 (Fig. K6). Tergum 9 with median basin bearing about 20 shiny teeth on each side of median ridge; each tooth without a seta; median basin with longitudinal median ridge outlined and prominent, without a small shiny central spot, and slightly longer than wide (maximum width/maximum median length: 0.85–0.97) (Fig. T7.8). Tergum 9 in lateral view above longitudinal furrow in (central surface with setae) with pits in lower 0.5, pits not deep but outlined by pitted sculpticells, in dorsal 0.5 pits not outlined but with numerous crescent-like shiny tubercles anterior to a seta surrounded by pitted sculpticells (Fig. T7.7). Tergum 10 in dorsal view widely pitted; each pit shiny at bottom (surface between pits shiny except along anterior margin); pits extended to anterior edge only medially (contact about 0.3 times as wide as posterior edge of median basin) (Fig. K9); lateral surface posterior to lateral tooth shiny and with many large teeth (Fig. K19); surface anterior to lateral tooth with indistinctly outlined pits partly bordered by shiny ridges, each pit moderate in size and covered with pitted sculpticells (Fig. K19). Ovipositor with annulus 2 wide, extended and tapered to edge of annulus 1 (Fig. T7.9, base); annulus 10 with large pit as long as most of annulus, pit sharply outlined ventrally along 0.3–0.4 of annulus length (Fig. T7.9, middle); surface anterior to pit outlined by slightly convergent with round fold forming a trough-like, shallow surface extended to anterior annulus (Fig T7.9, base and T7.9, middle); annulus with a long sharp ridge immediately ventral to pit (Fig. T7.9, insert).

Description of male. COLOR. Head. Capsule mainly reddish brown with occiput except posterior to margin adjacent to gena, vertex, postocellar area, and frons posterior to a line anterior to ocelli and top of eyes black with blue metallic reflections (Fig T7.10–T7.12). Antenna black with purple reflections (Fig. T1.21). Thorax. Pronotum generally reddish brown with median triangle and diffused spot submedially black with blue metallic reflections (Fig. T7.14). Propleuron black. Mesonotum with most of mesoscutum and central spot on axilla black with blue metallic reflections, with submedian area of mesoscutum (anterior and posterior diffused spot), most of axilla, and all of mesoscutellum reddish brown (Fig. T7.14); mesepisternum with most of lateral surface reddish brown but black ventrally (Fig. T7.13). Metascutum with black with blue metallic reflections but metascutellum reddish brown (Fig. T7.14). Metapleuron reddish brown laterally but black ventrally (Fig. T7.13). Legs. Fore and middle legs with coxae black, with femur ventrally, apical 0.6–0.7 of tibia and tarsus reddish brown, and with basal 0.3–0.4 of tibia light reddish brown (Fig. T7.13). Hind leg with coxa, femur, apical 0.5 of tibia and tarsomeres 2–5 dark brown, with basal 0.3 of tibia, and on basal 0.3 and dorsal 0.7 of tarsomere 1 reddish brown (Fig. T7.21). Wings. Fore wing generally light brown tinted but clear in apical 0.8 of cells R and 1Cu, and a little darker in cells 1R1, 2
R1, and basal 0.3 of 3R1 (Fig. T7.20). Hind wing clear in basal 0.5 and light brown tinted in apical 0.5 and along margin of anal lobe (Fig. T7.2). **Abdomen.** Generally brown to dark brown; terga 2–8 with lateral triangular reddish brown spot becoming light reddish brown to white along lateral margin (Fig. T7.15, T7.17 and T7.19); sternum 8 with posterior margin before median excision and apical 0.7 of sternum 9 reddish brown (Fig. T7.16); sterna 4–8 along lateral margin in apical 0.5 light reddish brown (Fig. T7.18).

**HEAD.** Head narrower than in female: flagellomere 1 0.9 as long as flagellomere 2, flagellomere 2 1.6 times as long as wide, and flagellomeres 3–10 longer than wide. Setae on clypeus, frons and postocellar area clearly clubbed at apex, and on frons 0.2–0.3 as long as diameter of lateral ocellus (Fig. T1.3, insert).

**THORAX.** Hind leg short and thick and in outline quite typical of siricid males; metatibia 4.7 times as long as wide and 1.3 times as long as metatarsomere 1; metatarsomere 1 3.6 times as long as wide and as long as metatarsomeres 2–5 combined (excluding claws); metatarsomere 5 as long as combined metatarsomeres 2 and 3.

**ABDOMEN.** Abdomen narrow and segments about equally long medially (segment 8 slightly longer) and in outlined quite typical of siricid males. Tergum 9 visible and with obvious teeth anterior each long seta. Harpes with a tooth anterior to long setae. Surface of terga with numerous medium-sized setae. The microsculpture varies between each tergum: tergum 1 and 2 completely matt with deeply pitted sculpticells; tergum 3 mainly matt but shiny (sculpticells either scale-like or flat) in posterior 0.1; tergum 4 and 5 matt and shiny in posterior 0.3–0.4; terga 6 and 7 matt in basal 0.5 and shiny in apical 0.5; and tergum 8 matt in basal 0.2 and shiny in apical 0.8. Sternum densely pitted and surface between pits with isodiametric meshes with flat sculpticells; pits with pitted sculpticells. Posterior edge of sternum 8 deeply excised, excision about 2 times as wide as long; and sternum about 0.5 as long as length of sternum 9.

**Host.** The two specimens were reared from *Antrocaryon klaineanum* (Anacardiaceae) a tree from central Africa.

**Origin of specific epithet.** From Greek meaning “wood eater” referring the emergence of the specimens from the wood of *Antrocaryon klaineanum* (Anacardiaceae) as noted on the label.

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