

Revisional study on African *Apophyllia* (Coleoptera: Chrysomelidae: Galerucinae). Part 4.

Jan BEZDĚK

Mendel University of Agriculture and Forestry, Department of Zoology, Zemědělská 1,
CZ-613 00 Brno, Czech Republic; e-mail: bezdek@mendelu.cz

Abstract. This study of African *Apophyllia* Thomson, 1858 revises the species related to *A. nobilitata* Gerstaecker, 1871 and *A. vernallis* (Allard, 1889). *Apophyllia cervenkai* sp. nov. (from Ethiopia, Oman and Yemen), *A. neavei* sp. nov. (from Malawi and South Africa), *A. oborili* sp. nov. (from Malawi), *A. snizeki* sp. nov. (from Kenya), *A. mila* sp. nov. (from Tanzania) and *A. kaffa* sp. nov. (from Ethiopia) are described. The lectotype is designated for *Apophyllia mauritanica* Pic, 1944. The following new synonym is proposed: *A. vernallis* (Allard, 1889) = *A. mauritanica* Pic, 1944, syn. nov. Male genitalia of all species are illustrated.

Key words. Taxonomy, new species, lectotype designation, synonymy, Coleoptera, Chrysomelidae, Galerucinae, *Apophyllia*, Afrotropical Region.

Introduction

The genus *Apophyllia* Thomson, 1858, is distributed in the Afrotropical, Oriental and eastern Palaearctic regions. In my previous papers I have revised the Asian (BEZDĚK 2003a,b,c,d, 2004a) as well as some African species (BEZDĚK 2004b, 2005a,b).

This revisional study of African *Apophyllia* deals with species closely related to *A. nobilitata* Gerstaecker, 1871 and *A. vernallis* (Allard, 1889). All species presented in this study are externally very similar and represent a group of closely related taxa. However, the examination of aedeagi resulted in a clear separation of eight species, six of which are new to science and described below. The lectotype is designated for *Apophyllia mauritanica* Pic, 1944 and this species is synonymized with *A. vernallis*.

Materials and methods

All morphological measurements were made with an ocular grid of the MBS-10 binocular microscope at 16x magnification for the body length and 32x magnification for the remaining measurements.

The material is housed in the following collections:

BMNH	Natural History Museum, London, United Kingdom (Sharon Shute);
CIUC	Centro Interdipartimentale dell'Università, Museo di Storia Naturale e del Territorio, Calci, Italy (Marco Dellacasa);
JBCB	Jan Bezděk collection, Brno, Czech Republic;
MCSN	Museo Civico di Storia Naturale „Giacomo Doria“, Genova, Italy (Roberto Poggi);
MNHN	Muséum National d'Historie Naturelle, Paris, France (Nicole Berti);
MRAC	Musée Royal de l'Afrique Centrale, Tervuren, Belgium (Mark de Meyer);
NHMB	Naturhistorisches Museum, Basel, Switzerland (Eva Sprecher-Uebersax, Michel Brancucci);
NMPC	Národní muzeum, Praha, Czech Republic (Jiří Hájek);
RBCN	Ron Beenen collection, Nieuwegein, Netherlands;
SANC	South African National Collection of Insects, Pretoria, South Africa (Elizabeth Grobbelaar);
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany (Wolfgang Schawaller);
TMSA	Transvaal Museum, Gauteng, Pretoria, South Africa (Ruth Muller);
USNM	National Museum of Natural History, Washington D.C., USA (Alexander Konstantinov);
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (Johannes Frisch).

Exact label data are cited for all type specimens; a double slash (//) divides the data on different labels and a single slash (/) divides the data on different rows. Type localities are cited in the original spelling. Other comments and remarks are placed in square brackets: [p] – preceding data are printed, [h] – preceding data are handwritten and [w] – white label. The lectotype and paralectotypes are designated in order to preserve the stability of nomenclature in this group according to Article 74.7.3 of the Code (ICZN 1999).

Taxonomy

The studied species are characterized by a yellow vertex with a large black central spot and with an enlarged hind tarsomere 1 in male. Males of some species (*A. nobilitata* and *A. snizeki* sp. nov.) are easily distinguished by the bifurcate metasternum but, in general, all species are externally very similar. Females of some species can be distinguished by the shape of the posterior margin of the last ventrite.

Apophyllia nobilitata Gerstaecker, 1871

(Figs 1-5)

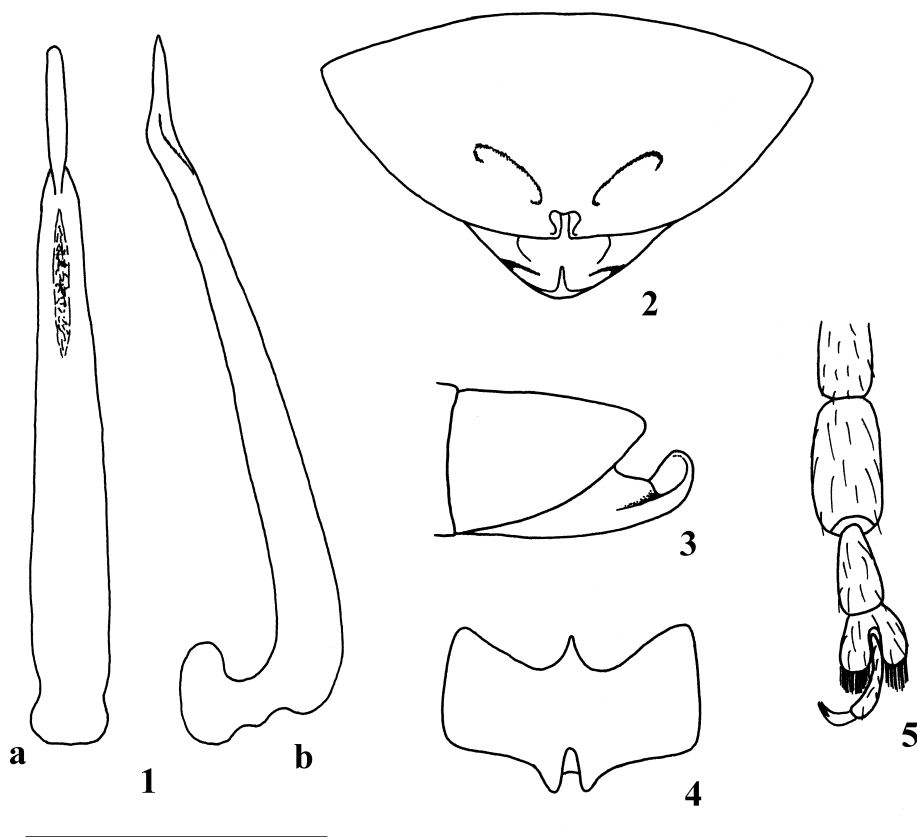
Apophyllia nobilitata Gerstaecker, 1871: 83;

Apophyllia nobilitata: GERSTAECKER (1873); GEMMINGER & HAROLD (1876); FAIRMAIRE (1887); ALLARD (1889); WEISE (1909); LABOISSIÈRE (1922a,b, 1924); WEISE (1924); LABOISSIÈRE (1929); WILCOX (1971); ALFIERI (1976).

Type locality. Endara [placed in south-east Kenya].

Type material. *Apophyllia nobilitata*: HOLOTYPE: ♀, '56565 [w, p] // Endara. v.d.Dec [= von der Decken] [blue label, h] // nobilitata / Gerst. ♀ [blue label, h]' (ZMHB). The holotype is provided with one additional, printed red label: 'HOLOTYPUS, / *Apophyllia* / *nobilitata* Gerstaecker, 1871 / det. J. Bezděk 2003'.

Additional material examined (141 spec.). **KENYA**: Oloitokitok, 30.xii.1965, 2 ♂♂ 9 ♀♀, without collector data (MCSN). **TANZANIA**: Mkata, 1.vi.1909, 1 ♂, Schoenheit leg. (ZMHB);



Figs 1-5. *Apophyllia nobilitata* Gerstaecker, 1871. 1 – aedeagus (a – dorsal view; b – lateral view); 2 – last ventrite of female; 3 – last ventrite and pygidium of female, lateral view; 4 – male metasternum; 5 – male metatarsus. Scale: 1 mm (Figs 1-3 and 5); 2 mm (Fig. 4).

Narobi near Tanga, iii.1915, 4 ♂♂ 3 ♀♀, Methner leg. (ZMHB); Tanga, ii.1915, 1 ♀, Methner leg. (ZMHB); Kwakiyembe, v.1916, 2 ♀♀, Methner leg. (ZMHB); Dar-es-Salaam, 1 ♂, S. Conradt leg. (ZMHB); Mombo, 12.iii.2002, 4 ♂♂ 7 ♀♀, M. Snížek leg. (JBCB); Pande env., SSW of Pangani, 10.iii.2002, 8 ♂♂ 14 ♀♀, M. Snížek leg. (JBCB); Makata plain (Morogoro), 9.iii.2002, 23 ♂♂ 39 ♀♀, M. Snížek leg. (JBCB); Handeni, Makinda env., 14.iii.2002, 1 ♂ 22 ♀♀, M. Snížek leg. (JBCB). All specimens J. Bezděk det.

Differential diagnosis. *Apophyllia nobilitata* is closely related to *A. mila* sp. nov. Both species have a similar structure of the aedeagus and the apex of the last ventrite in female (Figs. 1-3, 9-11). The male metasternum in *A. mila* sp. nov. lacks teeth while it is bifurcate in *A. nobilitata* (Figs. 4, 12). Moreover, tarsomere 1 of the hind tarsus is narrower in *A. mila* sp. nov. than in *A. nobilitata* (Figs. 5, 13).

Distribution. Kenya and Tanzania. ALFIERI (1976) listed it also from Egypt but this record is doubtful and probably refers to another species of *Apophyllia*.

Comments. GERSTAECKER (1871) did not mention the number of available specimens in the original description of *A. nobilitata*. Two years later he improved the description and stated that it was based on one specimen (GERSTAECKER 1873). I had the possibility to study the female holotype, which unfortunately has a slightly damaged apex of the abdomen. However, the rest of the preapical bulge on the last ventrite is visible, so that it is possible to attribute it to a species with a distinctly bifurcate male metasternum in agreement with LABOISSIÈRE (1922a).

Apophylia vernallis (Allard, 1889)

(Figs. 6-8)

Malaxia vernallis Allard, 1889: 82 (separatum p. 17);

Apophylia vernalis: LABOISSIÈRE (1922b), WEISE (1924), WILCOX (1971) (incorrect subsequent spelling);

Apophylia mauritanica Pic, 1944: 1, syn. nov.

Apophylia mauritanica: WILCOX (1971).

Type locality. Sénégal.

Type material. *Malaxia vernallis*: HOLOTYPE: ♂, ‘Senegal [blue label, h] // Ex-Musæo / E. ALLARD / 1899 [w, p]’ (MNHN). The holotype is provided with one additional, printed red label: ‘HOLOTYPUS, / *Malaxia / vernallis* Allard, 1889, / des. J. Bezděk 2004’.

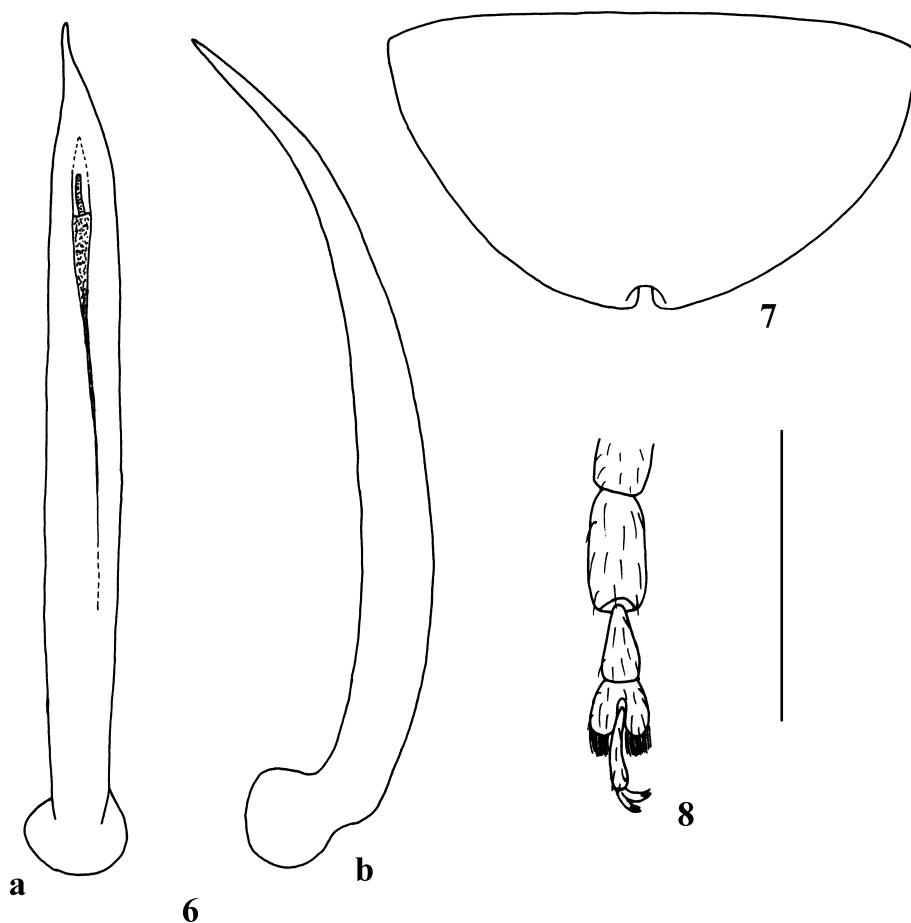
Apophylia mauritanica: LECTOTYPE (designated here): ♂, ‘Boghe / Mauritanie [w, h] // type [w, h]’ (MNHN). PARALECTOTYPE: ♀, ‘Boghe / Mauritanie / (ex Fauvel) [w, h] // [unreadable, w, h] // cf nobilitata [partly unreadable, w, h] // mauritanica / n sp [w, h] // type [w, h] // TYPE [red label, p] // AfriGa / specimen ID: [p] / 199 [h] / specimen data / documented [p] / 20. IX [h] 2004 [grey label, p]’ (MNHN). The specimens are provided with additional, printed red labels: ‘LECTOTYPUS [or PARALECTOTYPUS], / *Apophylia / mauritanica* Pic, 1944, / des. J. Bezděk 2004’.

Additional material examined (220 spec.). **CHAD**: Kanem distr., N’Gouri, ix.1958, 70 ♂♂ 115 ♀♀, P. Renaud leg. (MRAC). **MAURITANIA**: Boghé, 1 ♂ 1 ♀, without additional data (NHMB – Frey coll.). **NIGERIA**: Kano distr., vi.1953, 6 ♂♂ 10 ♀♀, W. E. S. Merrett leg. (BMNH); Kano, Azare, 1925, 13 ♂♂ 4 ♀♀, L. Lloyd leg. (BMNH). **SUDAN**: Fasoda, 1 ♂, without additional data (NMPC); Adjuba, 1 ♂, without date, O. Neumann leg. (ZMHB); Melut, 10 ♂♂ 10 ♀♀, without date, L. Burgeon leg. (MRAC); Redjaf, 29.-30.v.1927, 1 ♂ 1 ♀, Patrizi leg. (MCSN).

Differential diagnosis. Together with *A. cervenkai* sp. nov. and *A. kaffa* sp. nov., *A. vernallis* forms a group of very similar species which can only be distinguished in male sex, using the structure of the aedeagus. The apex of aedeagus of *A. vernallis* is produced and slightly asymmetrical to the left (Fig. 6), while it is symmetrical in *A. kaffa* sp. nov. (Fig. 17) and asymmetrical to the right in *A. cervenkai* sp. nov. (Fig. 14).

Distribution. Chad, Mauritania, Nigeria, Senegal and Sudan.

Comments. ALLARD (1889) described *Malaxia vernallis* based on one male. As mentioned in the original description, this specimen has a completely yellow head and pronotum. I have examined the holotype which is a relatively small specimen; it is extremely pale, being faded by the sunlight, and thus the black pattern on the head and pronotum is nearly invisible. I have dissected it and the aedeagus showed its identity with *A. mauritanica* Pic, 1944.



Figs. 6-8. *Apophylia vernallis* (Allard, 1889). 6 – aedeagus (a – dorsal view; b – lateral view); 7 – last ventrite of female; 8 – male metatarsus. Scale: 1 mm.

***Apophylia mila* sp. nov.**

(Figs. 9-13)

Type locality. Tanzania, Arusha.

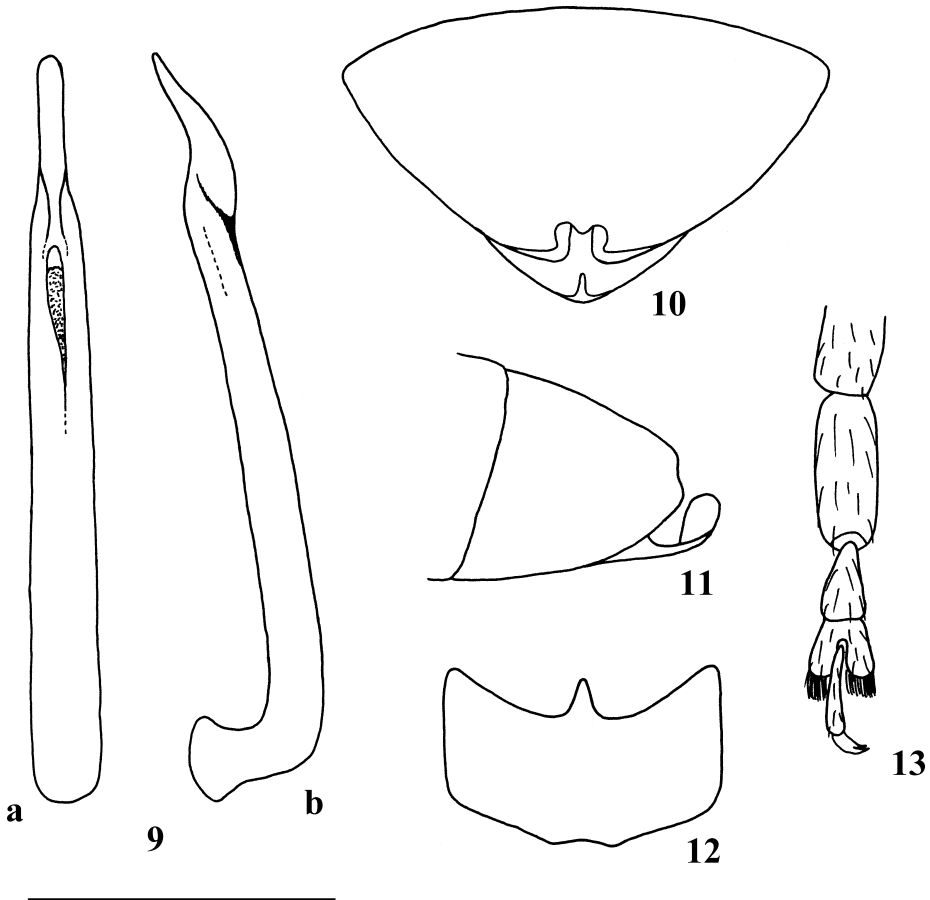
Type material. HOLOTYPE: ♂, 'Arusha, KEN. / 11.1961 / P. P. de Moor [w, p] // collection / TRANSVAAL / MUSEUM [grey label, p]' (TMSA). PARATYPES: 4 ♂♂ 1 ♀, same label data as holotype (TMSA). The specimens are provided with additional, printed red labels: 'HOLO-TYPUS [or PARATYPUS], / *Apophylia / mila* sp. nov., / det. J. Bezděk 2005'.

Description. Body length: males 5.70-6.15 mm (holotype 5.70 mm); female 7.00 mm.

Male: Body flattened, parallel, densely pubescent and dull. Head yellow, vertex with large black spot touching inner margin of eyes, postgenae black posteriorly, apices of mandibles

darkened, last palpomere darkened. Antennae yellow, all segments with slightly darkened apices. Pronotum yellow with three black spots (one median and two lateral). Scutellum black, elytra metallic green. Prosternum yellow with darkened anterior margin. Mesosternum yellow with large median black spot, mesoepisternum black, mesoepimera yellow. Metasternum black, metaepisterna yellow. Abdomen dark brown to black, last ventrite yellow with black lateral margins. Legs yellow, femora with darkened bases ventrally, last two tarsomeres of all legs infuscate.

Labrum transverse, laterally covered with several pale setae, anterior margin slightly sinuate. Anterior part of head semiopaque, sparsely covered with pale setae. Frontal tubercles small, subtriangular, semiopaque. Vertex dull, coarsely and densely punctate and covered



Figs. 9-13. *Apophyllia mila* sp. nov. 9 – aedeagus (a – dorsal view; b – lateral view); 10 – last ventrite of female; 11 – last ventrite and pygidium of female (lateral view); 12 – male metasternum; 13 – male metatarsus. Scale: 1 mm (Figs. 9-11 and 13); 2 mm (Fig. 12).

with short pale hairs. Antennae filiform, 0.75 times as long as body, length ratio of antennomeres 1 to 11 equal to 19-9-18-24-21-21-21-18-16-15-18.

Pronotum transverse, 1.85 times as broad as long, widest at anterior third, narrowed anteriorly and posteriorly, dull, densely covered with coarse punctures and pale hairs. Surface with two lateral depressions. Anterior margin widely and shallowly concave, posterior margin almost straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles widely rounded with distinct small teeth, posterior angles obtusely angulate and only indicated; all angles bearing one long pale seta.

Scutellum subtriangular with rounded apex, semiopaque and densely covered with small punctures and short pale hairs. Elytra parallel and dull. Humeral calli well developed. Elytral surface covered with small and very dense, confluent punctures and short pale hairs. Epipleura distinct but narrow, disappearing before apex. Macropterous.

Ventral surface lustrous, finely punctate and covered with pale hairs. Last visible ventrite with deep subtrapezoidal incision.

Hind tarsomere 1 ca 1.25 times as long as two following tarsomeres combined. Middle and hind tarsomeres 1 robust (Fig. 13). Claws bifid.

Shape of aedeagus as in Fig. 9.

Female: First two ventrites brown, remaining ones gradually paler. Last ventrite with small heart-shaped incision, apex of pygidium with flat vertical process (Figs 10-11). Middle and hind tarsomeres 1 thin. Claws appendiculate.

Differential diagnosis. Owing to the structure of aedeagus (Figs. 1, 9), *A. mila* sp. nov. appears to be closely related to *A. nobilitata*. Both species differ in the shape of male metasternum; the two distinct, posteriorly placed teeth in *A. nobilitata* (Fig. 4) are absent in *A. mila* sp. nov. (Fig. 12). Moreover, middle tarsomere 1 is slightly wider in *A. nobilitata* than in *A. mila* sp. nov. (Figs. 5, 13).

Etymology. Dedicated to Miluška 'Mila' Tichá (Hulín, Czech Republic), my dear longlife friend. Noun in apposition.

Bionomy. Unknown.

Distribution. Tanzania.

Apophyllia cervenkai sp. nov.

(Figs. 14-16)

Type locality. Oman, Taqah.

Type material. HOLOTYPE: ♂, 'OMAN mer. 1999 / Taqah, ca. 20-30m / 31.7. – 11.8., at light / R. Červenka lgt. [w, p]' (NMPC). PARATYPES: 1 ♂, 'OMAN mer. 1999 / rd. Taqah - Mirbat, / 12 km; 50 – 200m / R. Červenka lgt. 3.8. [w, p]' (JBCB); 1 ♀, 'OMAN mer. 1999 / Rakhzut env. / 20 – 50m; 1.-8.8. / R. Červenka lgt. [w, p]' (JBCB); 6 ♀♀, 'OMAN mer., 2003, / Taqah env., 18.-21.9. / ca 270-350 m, / R. Červenka leg. [w, p]' (JBCB, 2 paratypes in NMPC); 10 ♀♀, 'OMAN mer., / Darbaat, / 18.-21.9. 2003, / R. Červenka leg. [w, p]' (JBCB); 1 ♀, 'OMAN, / Tawi Attair vill., / viii.1999, 800 m, / S. Jákl leg. [w, p]' (JBCB); 7 ♂♂ 1 ♀, 'OMAN mer. 9.8.1999 / Tawi Attair env., / ca. 885m; at light / R. Červenka lgt. [w, p]' (JBCB); 1 ♂, 'Al Mughsayl dint. / 16°53'01N / 53°46'47E – 30 m / 09.09.2002 [w, p] // Oman / Dhofar Region

/ Leg. DELLACASA M. / light Hg [w, p] // Museo di Storia / Naturale e del / Territorio / Università di Pisa / Calci (Pisa) – Italia [green label, p]' (CIUC); 1 ♀, 'Wadi Darbat / base cascata / 11.09.2002 [w, p] // Oman / Dhofar Region / Leg. DELLACASA M. / light Hg [w, p] // Museo di Storia / Naturale e del / Territorio / Università di Pisa / Calci (Pisa) – Italia [green label, p]' (CIUC); 1 ♀, 'OMAN 2000 Dhofar / Rd. 31 N of Qeiroon / 17.17'.58N-54°05'.21E / 29 – VIII 2500 Ft. / leg. F. Strumia [w, p] // Museo di Storia / Naturale e del / Territorio / Università di Pisa / Calci (Pisa) – Italia [green label, p]' (CIUC); 2 ♂♂ 1 ♀, 'Dhofar (OMAN) / Qeiroon Heiritti / 5 km doppio paese / 31.VIII.2000-850 m / Leg. DELLACASA M. [w, p] // Museo di Storia / Naturale e del / Territorio / Università di Pisa / Calci (Pisa) – Italia [green label, p]' (CIUC); 3 ♂♂ 2 ♀♀, 'Millin / gen [= Millingen leg., w, h] // Arabia / Yemen [w, h] // Frey Coll. / 1905.100. [w, p]' (BMNH); 1 ♀, '44189 [yellow label, h] // Millin / gen [= Millingen leg., w, h] // Arabia / Yemen [w, h] // Frey Coll. / 1905.100. [w, p]' (BMNH); 1 ♀, '44190 [yellow label, h] // Millin / gen [= Millingen leg., w, h] // Arabia / Yemen [w, h] // Frey Coll. / 1905.100. [w, p]' (BMNH); 2 ♂♂, 11 ♀♀, 'Shoa Prov.: Awash / Nat. Park, 1000 m / 14/15.VIII.1971 [w, p] // Coll. Mus. Tervuren / Ethiopie / R. O. S. Clarke [w, p]' (MRAC); 1 ♂ 11 ♀♀, 'Coll. Mus. Tervuren / Ethiopie: Shoa Prov. / Awash Park VII/VIII.71 / G. de Rouge-mont [w, p]' (MRAC). The specimens are provided with additional, printed red label: 'HO-LOTYPUS [or PARATYPUS], / *Apophyllia / cervenkai* sp. nov., / det. J. Bezděk 2005'.

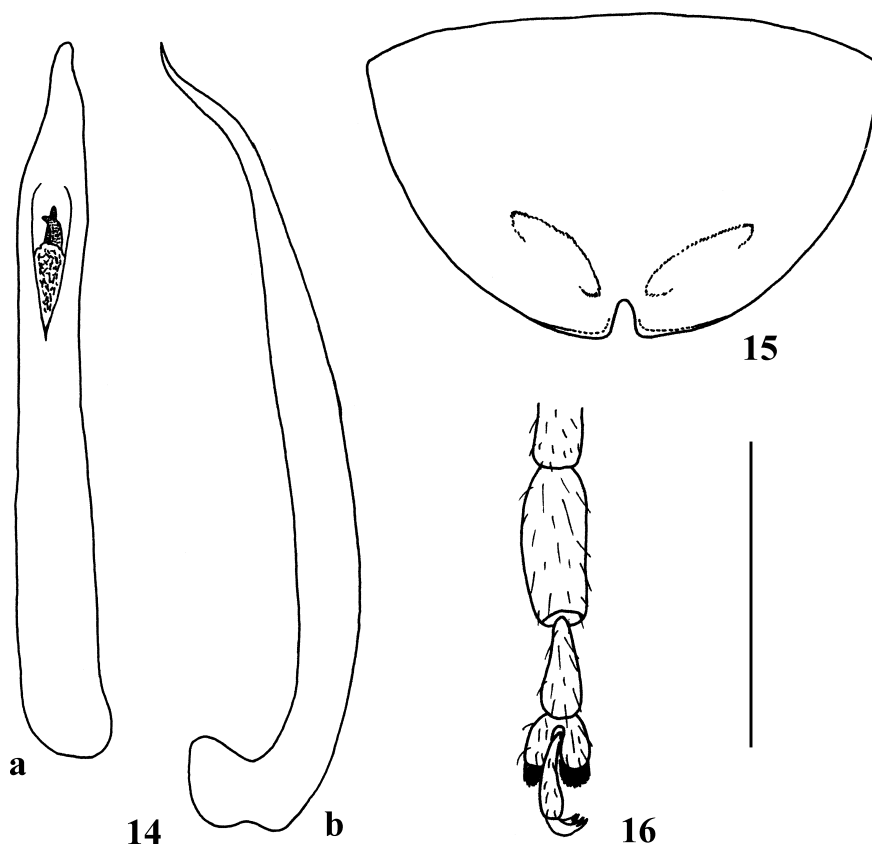
Description. Body length: males 5.75-6.40 mm (holotype 6.10 mm); females 6.10-7.35 mm.

Male: Body flattened, parallel, densely pubescent and dull. Head yellow, vertex with large black spot not touching inner margin of eyes, postgenae black posteriorly, apices of mandibles darkened. Frontal tubercles yellow. Antennae yellow, in some specimens with infuscate apices of last five segments. Pronotum yellow with three black spots (one median and two lateral). Scutellum black, elytra metallic green. Prosternum yellow with darkened anterior margin. Mesosternum yellow with large black median spot, mesoepisternum black, mesoepimeron yellow. Metasternum black with paler posterior margin, metaepisterna yellow. Abdomen brown to black, last ventrite with yellow posterior margin. Legs yellow, last two tarsomeres of all tarsi sometimes infuscate.

Labrum transverse, laterally covered with several pale setae, anterior margin sinuate. Anterior part of head lustrous, sparsely covered with pale setae. Frontal tubercles small, subtriangular and lustrous. Vertex dull, coarsely and densely punctate and covered with short pale hairs. Antennae filiform, 0.80 times as long as body, length ratio of antennomeres 1 to 11 equal to 21-9-19-23-21-21-20-17-17-15-16.

Pronotum transverse, 1.80 times as broad as long, widest at anterior third, semiopaque and densely covered with coarse punctures and pale hairs. Surface with two large lateral depressions. Anterior margin widely and shallowly concave, lateral margins rounded, posterior margin straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles rounded with sharp small teeth, posterior angles obtusely angulate and only indicated; all angles bearing one long pale seta.

Scutellum subtriangular with rounded apex, semiopaque and densely covered with small punctures and short pale hairs. Elytra parallel and dull. Humeral calli well developed. Elytral surface covered with small and very dense, confluent punctures and short pale hairs. Epipleura distinct but narrow, disappearing before apex. Macropterous.



Figs. 14-16. *Apophylia cervenkai* sp. nov. 14 – aedeagus (a – dorsal view; b – lateral view); 15 – last ventrite of female; 16 – male metatarsus. Scale: 1 mm.

Ventral surface lustrous, finely punctate and covered with pale hairs. Last visible ventrite with deep subtrapezoidal incision.

Hind tarsomere 1 1.15 times longer than the following two tarsomeres combined. Middle and hind tarsomeres 1 robust (Fig. 16). Claws bifid.

Shape of aedeagus as in Fig. 14.

Female: Abdomen yellow to brown. Last ventrite with small sharp incision (Fig. 15). Middle and hind tarsomeres 1 slender. Claws appendiculate.

Differential diagnosis. *Apophylia cervenkai* sp. nov. is very similar to *A. kaffa* sp. nov. and *A. vernallis*. The apex of the aedeagus in *A. cervenkai* sp. nov. is slightly asymmetrical to the right (Fig. 14), while it is thin and symmetrical in *A. kaffa* sp. nov. (Fig. 17) or asymmetrical to the left in *A. vernallis* (Fig. 6).

Etymology. This species is dedicated to my friend Radek Červenka (Prague, Czech Republic), a specialist in Aphodiidae, who collected a part of the type series.

Bionomy. Unknown. The part of the type series collected by R. Červenka was found at light.

Distribution. Ethiopia, Oman and Yemen.

Apophyllia kaffa sp. nov.

(Figs. 17-19)

Type locality. Ethiopia, Kaffa province, Mui game reserve.

Type material. HOLOTYPE: ♂, 'Kaffa Prov.: Mui game / reserve 700 m / 10.IV.1972 [w, p] // Coll. Mus. Tervuren / Ethiopie / R. O. S. Clarke [w, p]' (MRAC). PARATYPES: 8 ♂♂ 8 ♀♀, same label data as holotype (MRAC). The specimens are provided with additional, printed red labels: 'HOLOTYPUS [or PARATYPUS], / *Apophyllia / kaffa* sp. nov., / det. J. Bezděk 2005'.

Description. Body length: males 5.25-6.10 mm (holotype 5.60 mm); females 6.00-6.85 mm.

Male: Body flattened, parallel, densely pubescent and dull. Head yellow, vertex with one large black spot not touching inner margin of eyes, postgenae black posteriorly, apices of mandibles darkened. Antennae yellow, in some specimens with infuscate apices of last five segments. Pronotum yellow with three black spots (one median and two lateral). Scutellum black, elytra metallic green. Prosternum yellow with darkened anterior margin. Mesosternum yellow with large black median spot, mesoepisternum black, mesoepimera yellow. Metasternum black with paler posterior margin, metaepisternum yellow. Abdomen dark brown to black, last ventrite with yellow posterior margin. Legs yellow, last two tarsomeres infuscate.

Labrum transverse, laterally covered with several pale setae, anterior margin slightly sinuate. Anterior part of head semiopaque, sparsely covered with pale setae. Frontal tubercles small, subtriangular, covered with microsculpture, semiopaque. Vertex dull, with large feeble groove behind frontal tubercles, coarsely and densely punctate and covered with short pale hairs. Antennae filiform, 0.75 times as long as body, length ratio of antennomeres 1 to 11 equal to 17-8-15-23-19-17-16-16-14-13-16.

Pronotum transverse, 1.95 times as broad as long, widest at anterior third, narrowed posteriorly, semiopaque, densely covered with coarse punctures and pale hairs. Surface with two large lateral depressions. Anterior margin widely shallowly concave, posterior margin straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles widely rounded, with distinct small teeth, posterior angles obtusely angulate, all angles bearing one long pale seta.

Scutellum subtriangular with rounded apex, densely covered with small punctures and short pale hairs, semiopaque. Elytra parallel and dull. Humeral calli well developed. Elytral surface very densely covered with small confluent punctures and short pale hairs. Epipleura distinct but narrow, disappearing before the apex. Macropterous.

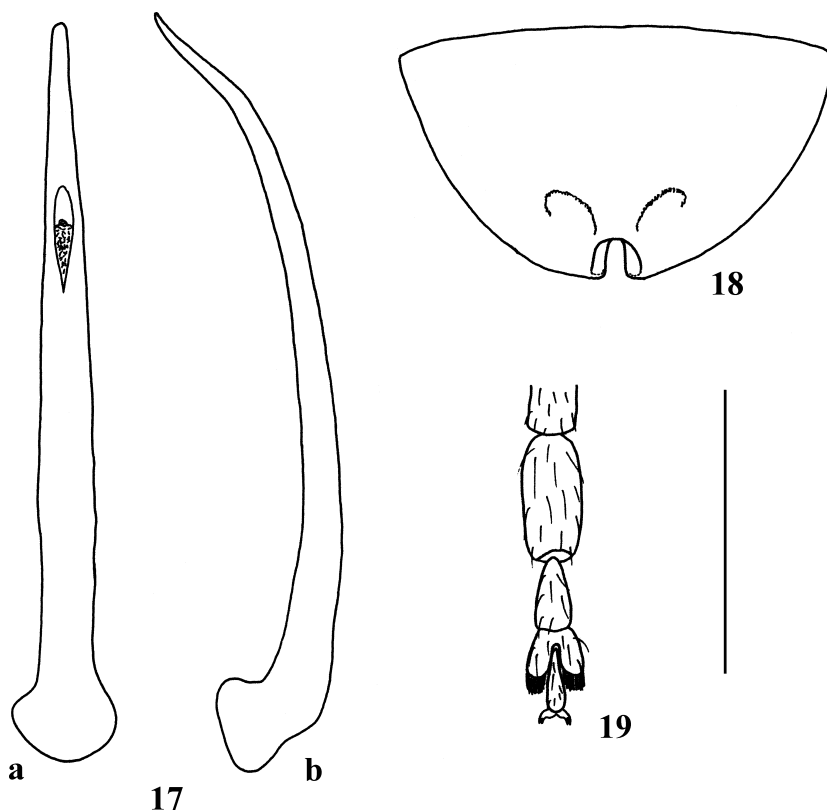
Ventral surface lustrous, finely punctate and covered with pale hairs. Last visible ventrite with deep subtrapezoidal incision.

Hind tarsomere 1 1.15 times as long as following two tarsomeres combined. Middle and hind tarsomeres 1 robust (Fig. 19). Claws bifid.

Shape of aedeagus as in Fig. 17.

Female: Abdomen yellow. Last ventrite with small semicircular incision (Fig. 18). Middle and hind tarsomeres 1 slender. Claws appendiculate.

Differential diagnosis. *Apophyllia kaffa* sp. nov. is very similar to *A. cervenkai* sp. nov. and *A. vernallis*. All three species can be clearly separated only by the shapes of the aedeagi. The



Figs. 17-19. *Apophylia kaffa* sp. nov.: 17: aedeagus (a – dorsal view; b – lateral view); 18: last ventrite of female; 19: male metatarsus. Scale: 1 mm.

aedeagus of *A. kaffa* sp. nov. is very thin and symmetrical (Fig. 17), while the aedeagi of *A. cervenkai* sp. nov. and *A. vernallis* are more robust and asymmetrical (Figs. 6, 14).

Etymology. Named after the Kaffa province (Ethiopia) where the type series was collected. Noun in apposition.

Bionomy. Unknown.

Distribution. Ethiopia (Kaffa province).

Apophylia neavei sp. nov.

(Figs. 20-22)

Type locality. Malawi, SW of Lake Chilwa.

Type material. HOLOTYPE: ♂, 'Nyassaland / S. W. of / Lake Chilwa. / 9 Jan. 1914. / S. A. Neave. [w, p] // 1914-416. [w, p]' (BMNH). PARATYPES: 2 ♂♂ 1 ♀, same label data as holotype (BMNH); 1 ♂, 'SOUTH AFRICA, Tvl. / Kruger National Park / mopaneveld near / Crooke's

Corner / 22.23S 31.14E 200m / 02.ii.1994 R. Oberprieler [w, p] // NATIONAL COLL. / OF INSECTS / Pretoria, S. Afr. [w, p]' (SANC); 1 ♂ 4 ♀♀, 'SOUTH AFRICA: KZN / Makatini Flats / 27°15'S 32°13'E / iii.1998 PE Reavell [w, p] // NATIONAL COLL. / OF INSECTS / Pretoria, S. Afr. [w, p]' (SANC); 1 ♂, 'S. Afr: Kruger Nat. Pk. / Pafuri research ca. / 22.25 S – 32.12 E [w, p] // 18.11.1994; E-Y: 3054 / kerosene light / Endrödy & Bellamy [w, p]' (TMSA). The specimens are provided with additional, printed red labels: 'HOLOTYPUS [or PARATYPUS], / *Apophyllia* / *neavei* sp. nov., / det. J. Bezděk 2005'.

Description. Body length: males 5.65-7.05 mm (holotype 6.70 mm); females 6.25-7.30 mm.

Male: Body flattened, parallel, densely pubescent, dull. Head yellow, vertex with large black spot touching inner margin of eyes and covering also posterior half of frontal tubercles, apices of mandibles darkened. Antennae yellow. Pronotum yellow with three black spots (one median and two lateral). Scutellum black, elytra metallic green. Prosternum yellow with darkened anterior margin. Mesosternum yellow with black median spot, mesoepisterna black, mesoepimera yellow. Metasternum black with paler posterior margin, metaepisterna yellow. Abdomen dark brown to black, posterior margin of ventrite 4 yellowish in middle, last ventrite with yellow posterior margin. Legs yellow, outer sides of tibiae occasionally darkened, last two tarsomeres of all tarsi infuscate.

Labrum transverse, laterally covered with several pale setae, anterior margin shallowly but distinctly incised. Anterior part of head semiopaque, sparsely covered with long pale setae. Frontal tubercles small, subtriangular, semiopaque. Vertex dull, with large feeble groove behind frontal tubercles, coarsely and densely punctate and covered with short pale hairs. Antennae filiform, 0.70 times as long as body, length ratio of antennomeres 1 to 11 equal to 22-11-19-26-21-21-19-17-15-14-19.

Pronotum transverse, 1.80 times as broad as long, widest at anterior third, narrowed posteriorly, semiopaque, densely covered with coarse punctures and pale hairs. Surface with two large lateral depressions. Anterior margin widely and shallowly concave, lateral margins rounded, posterior margin straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly so. Anterior angles widely rounded with distinct small teeth, posterior angles obtusely angulate and only indicated; all angles bearing one long pale seta.

Scutellum subtriangular with rounded apex, semiopaque, densely covered with small punctures and short pale hairs. Elytra parallel and dull. Humeral calli well developed. Elytral surface covered with small and very dense, confluent punctures and short pale hairs. Epipleura distinct but narrow, disappearing before apex. Macropterous.

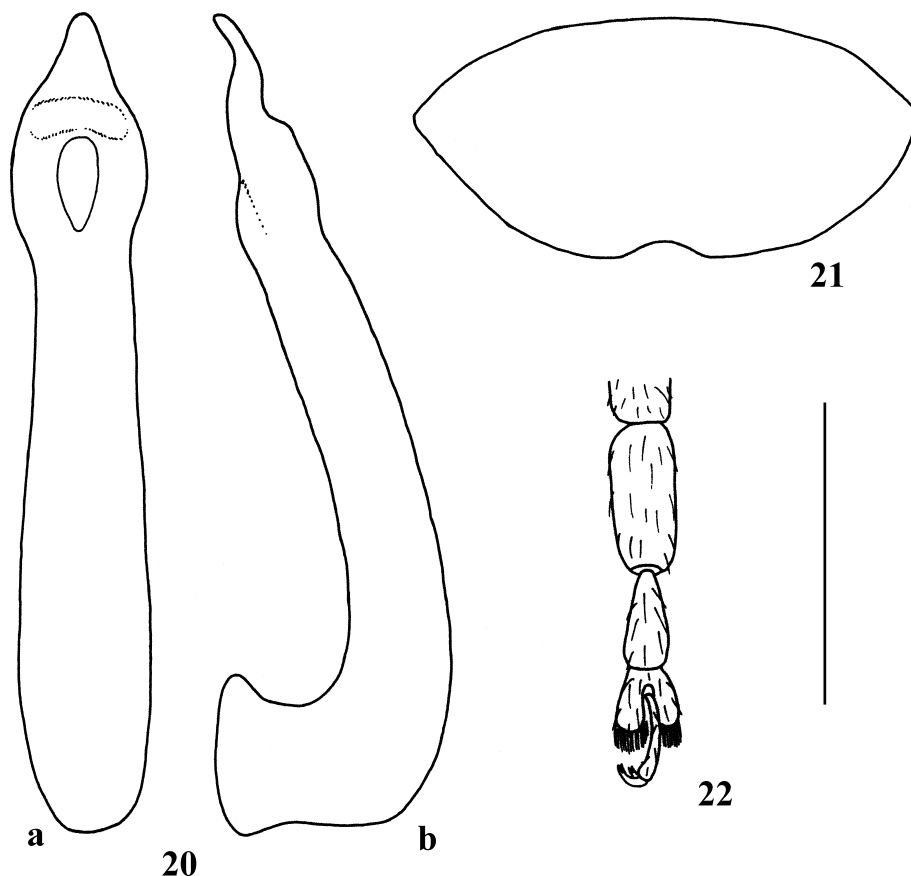
Ventral surface lustrous, finely punctate and covered with pale hairs. Last visible ventrite with deep subtrapezoidal incision.

Hind tarsomere 1 as long as following two tarsomeres combined. Middle and hind tarsomeres 1 robust (Fig. 22). Claws bifid.

Shape of aedeagus as in Fig. 20.

Female: Abdomen yellow. Last ventrite with shallow semicircular incision (Fig. 21). Tarsomeres 1 of middle and hind legs slender. Claws appendiculate.

Differential diagnosis. *Apophyllia neavei* sp. nov. is characterized by the shape of the aedeagus, which is relatively robust with a widened apical part (Fig. 20) and can be compared only



Figs. 20-22. *Apophyllia neavei* sp. nov. 20 – aedeagus (a – dorsal view; b – lateral view); 21 – last ventrite of female; 22 – male metatarsus. Scale: 1 mm.

with *A. oborili* sp. nov.; the latter however has a narrower apex (Fig. 23). The last visible female ventrite of *A. neavei* sp. nov. is widely but shallowly incised (Fig. 21).

Etymology. Dedicated to Sheffield Airey Neave, collector of a part of the type series.

Bionomy. Unknown.

Distribution. Malawi and South Africa.

***Apophyllia oborili* sp. nov.**

(Figs. 23-24)

Type locality. Malawi, Kahingina Forest Reserve, 70 km N of Kasungu.

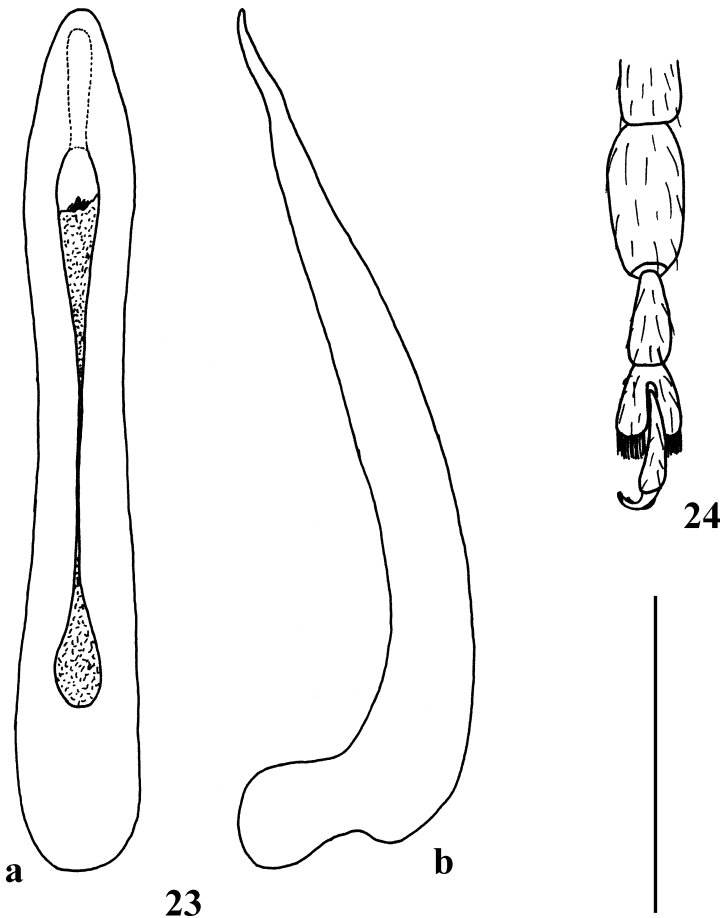
Type material. HOLOTYPE: ♂, 'MALAWI centr., Kahingina / Forest Reserve, 70 km N / of Kasungu, 29.-30.xii.2001, / M. Obořil leg. [w, p]' (NMPC). The holotype is provided with

one additional, printed red label: 'HOLOTYPUS, / *Apophylia* / *oborili* sp. nov., / det. J. Bezděk 2005'.

Description. Body length of holotype 6.60 mm.

Male: Body flattened, parallel, densely pubescent, dull. Head yellow, vertex with large black spot not touching inner margin of eyes, mandibles with darkened apices. Pronotum yellow with three black spots (one median and two lateral). Scutellum black, elytra metallic green. Underside yellow. Legs yellow, outer margin of tibiae darkened, last two tarsomeres infusate. Antennae yellow, all segments with slightly darkened apex.

Labrum transverse, laterally covered with several pale setae, anterior margin sinuate. Anterior part of head semiopaque, sparsely covered with long pale setae. Space between anten-



Figs. 23-24. *Apophylia oborili* sp. nov. 23 – aedeagus (a – dorsal view; b – lateral view); 24 – male metatarsus. Scale: 1 mm.

nae with small groove. Frontal tubercles small, subtriangular, transverse, semiopaque. Vertex dull, coarsely and densely punctate, covered with short pale hairs. Antennae filiform, 0.85 times as long as body, length ratio of antennomeres 1 to 11 equal to 22-10-20-28-24-23-22-20-18-18-20.

Pronotum transverse, 1.75 times as broad as long, widest at anterior third, narrowed anterior and posteriorly, dull, densely covered with coarse punctures and pale hairs. Surface with feebly impressed median line and two large deep lateral depressions. Anterior margin concave, posterior margin almost straight. Anterior and posterior margins thinly bordered, lateral margins indistinctly bordered. Anterior angles widely rounded with distinct tooth, posterior angles obtusely angulate; all angles bearing one long pale seta.

Scutellum subtriangular with widely rounded apex, semiopaque with small dense punctures and short pale hairs. Elytra parallel and dull. Humeral calli well developed. Elytral surface covered with small and very dense, confluent punctures and short pale hairs. Epipleura distinct but narrow, disappearing before apex. Macropterous.

Ventral surface semiopaque to lustrous, finely punctate and covered with pale hairs. Last visible ventrite with deep subtrapezoidal incision.

Tarsomere I of hind legs robust, as long as two following tarsomeres combined (Fig. 24). Claws bifid.

Shape of aedeagus as in Fig. 23.

Female unknown.

Differential diagnosis. Owing to the robust aedeagus, *A. oborili* sp. nov. is similar to *A. neavei* sp. nov. However, the aedeagus of *A. oborili* sp. nov. is more slender in lateral view and not as wide in the apical part (Figs 20, 23).

Etymology. Dedicated to its collector Martin Obořil (Brno, Czech Republic), a specialist in Buprestidae.

Bionomy. Unknown.

Distribution. Malawi.

Apophyllia snizeki sp. nov.

(Figs. 25-28)

Type locality. Kenya, Lamu province, east of Garsen.

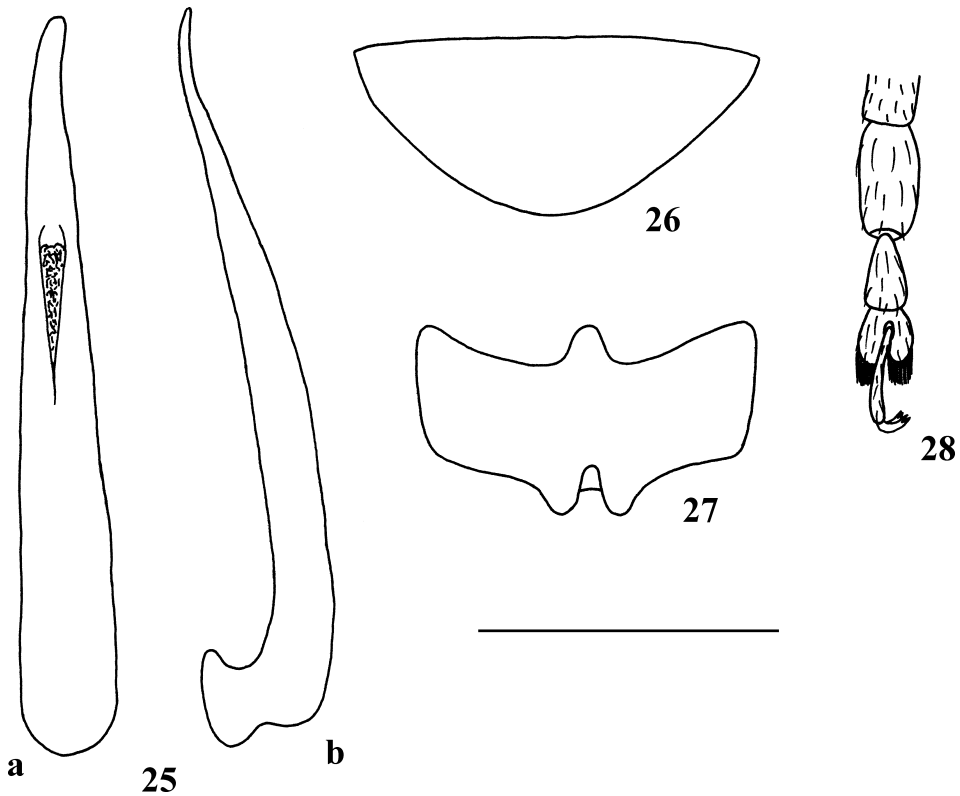
Type material. HOLOTYPE: ♂, 'KENYA S. E. / Lamu prov., 11.IV. / E of Garsen 2004 / M. Snížek lgt. [w, p]' (NMPC). PARATYPES: 4 ♂♂, same label data as holotype (JBCB, 1 paratype in NMPC); 1 ♂, 'Kenya SE / Voi / 10.12. 1999 / Lgt. M. Snizek [w, p]' (JBCB); 2 ♂♂, 'KENYA – S. / Voi / 13-17 xii 1997 / M. Snizek leg. [w, p]' (RBCN); 2 ♀♀, 'KENYA – S. / Voi / 13-17 xii 1997 / M. Snizek leg. [w, p] // auf Insektenbörse Prag / erhalten 3.X.1998 / coll. U. Arnold [w, p]' (RBCN); 1 ♂, 'KENYA–S / Voi 23 xi 1997 / M. Snizek leg. [w, p] // auf Insektenbörse Prag / erhalten 3.X.1998 / coll. U. Arnold [w, p]' (RBCN); 1 ♂, 'EMALI RANGE / Sultan Hamud / 4900-5900ft. 3-40 [w, p] // Imp. Inst. Ent. / Coll. No. 10606 [w, p] // Kenya Natl. / Mus. exchange [w, p]' (USNM); 1 ♂ 1 ♀, 'KENYA; Rift Valley Matthews / Range, ca 35 km N / Wamba, 1300-1400 m [w, p] // 1°10'707'' N, 37°18'962'' E / 07.-12.XII.2002, leg.: C. / Häuser, D. Bartsch & A. Zahm [w, p]' (SMNS). The specimens are

provided with additional, printed red labels: 'HOLOTYPUS [or PARATYPUS], / *Apophylia* / *snizeki* sp. nov., / det. J. Bezděk 2005'.

Description. Body length: males 5.50-6.45 mm (holotype 6.25 mm); females 6.45-6.60 mm.

Male: Body flattened, parallel, densely pubescent, dull. Head yellow, vertex with large black spot sometimes touching inner margin of eyes, postgenae black posteriorly, mandibles dark brown with black apices. Frontal tubercles usually yellow, in some specimens dark brown to black. Antennae yellow, apices of last five segments darkened. Pronotum yellow with three black spots (one median and two lateral). Scutellum black, elytra metallic green. Prosternum darkened, mesosternum yellow with large black median spot, mesoepisterna black, mesoepimera yellow. Metasternum black with paler posterior edge, metaepisterna yellow. Abdomen dark brown to black, last ventrite in some specimens yellow or with yellow posterior margin. Legs yellow, last two tarsomeres of all tarsi infusate.

Labrum transverse, laterally covered with several pale setae, anterior margin shallowly but distinctly sinuate. Anterior part of head semiopaque, sparsely covered with long pale setae.



Figs. 25-28. *Apophylia snizeki* sp. nov. 25 – aedeagus (a – dorsal view; b – lateral view); 26 – last ventrite of female; 27 – male metasternum; 28 – male metatarsus. Scale: 1 mm (Figs. 25-26, 28); 2 mm (Fig. 27).

Frontal tubercles small, subtriangular, covered with microsculpture, semiopaque. Vertex dull, with large feeble groove behind frontal tubercles, coarsely and densely punctate and covered with short pale hairs. Antennae filiform, 0.75-0.85 times as long as body, length ratio of antennomeres 1 to 11 equal to 18-8-16-22-20-19-19-18-17-15-19.

Pronotum transverse, 1.95-2.00 times as broad as long, widest at anterior third, narrowed posteriorly, semiopaque, densely covered with coarse punctures and pale hairs. Surface with two large lateral depressions. Anterior margin widely and shallowly concave, posterior margin nearly straight, lateral margins slightly rounded. Anterior and posterior margins thinly bordered, lateral margins indistinctly so. Anterior angles widely rounded, posterior angles obtusely angulate and only indicated, all angles with distinct small tooth bearing one long pale seta.

Scutellum subtriangular with rounded apex, densely covered with small punctures and short pale hairs, semiopaque. Elytra parallel and dull. Humeral calli well developed. Elytral surface covered with small and very dense, confluent punctures and short pale hairs. Epipleura distinct but narrow, disappearing before apex. Macropterous. Metasternum bifurcate posteriorly (Fig. 27).

Ventral surface lustrous, finely punctate and covered with pale hairs. Last visible ventrite with deep subtrapezoidal incision.

Hind tarsomere 1 1.15 times longer than following two tarsomeres combined. Tarsomeres 1 of middle and hind tarsi robust (Fig. 28). Claws bifid.

Shape of aedeagus as in Fig. 25.

Female: Abdomen yellow. Metasternum without large teeth. Last ventrite entire (Fig. 26). Tarsomeres 1 of middle and hind tarsi slender. Claws appendiculate.

Differential diagnosis. Owing to the bifurcate male metasternum (Fig. 27), *A. snizeki* sp. nov. is similar to *A. nobilitata*. Males of both species differ in the structure of the aedeagus (Figs. 1, 25). Females of *A. snizeki* sp. nov. have the last ventrite entire (Fig. 26), while it is incised in females of *A. nobilitata* (Fig. 26).

Etymology. Dedicated to the collector of a part of the type series, Miroslav Snížek (České Budějovice, Czech Republic).

Bionomy. Unknown.

Distribution. Kenya.

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