



Research article

urn:lsid:zoobank.org:pub:42D47E8C-6212-4741-9076-F878753E073B

Two new species of *Afroarabiella* Yakovlev, 2008 (Lepidoptera, Cossidae) from Sudan and Ethiopia

Roman V. YAKOVLEV^{1,*} & Thomas J. WITT²

¹Altai State University, South Siberian Botanical Garden, Lenina pr. 61, RF-656049, Barnaul, Russia.

¹Tomsk State University, Laboratory of Biodiversity and Ecology,
Lenina pr. 36, 634050 Tomsk, Russia.

²Museum Witt, Tengstrasse 33, D-80796, Munich, Germany.

* Corresponding author: yakovlev_asu@mail.ru

² Email: thomas@witt-thomas.com

¹urn:lsid:zoobank.org:author:18B1DBFC-045D-4FDB-A872-F32854180441

²urn:lsid:zoobank.org:author:C13CF2AA-AA3B-4B13-B1DF-DE8DCCD54C57

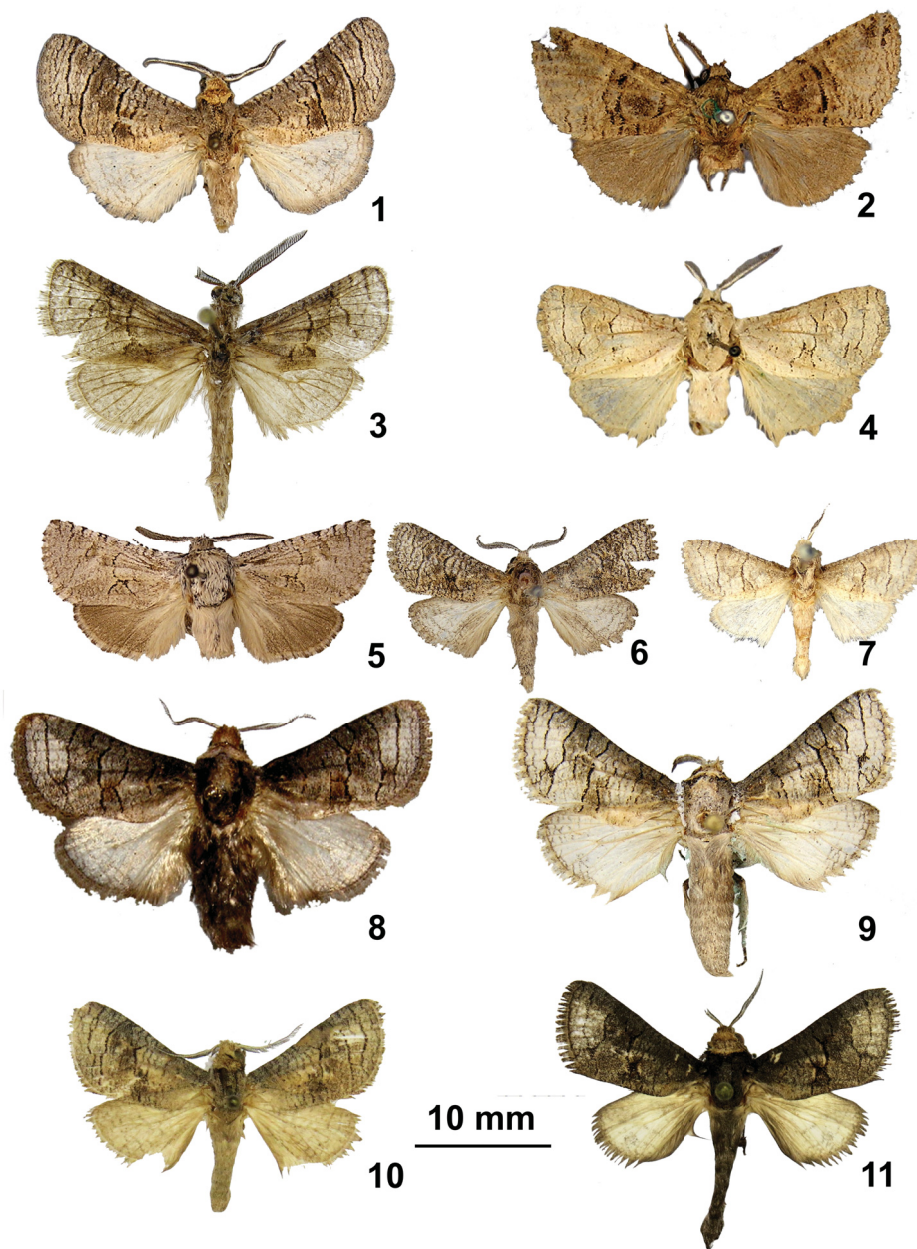
Abstract. The paper describes two new species of *Afroarabiella* (Cossidae): *A. sulaki* sp. nov. from Sudan and *A. strohlei* sp. nov. from Ethiopia. For all the species of the genus *Afroarabiella* images and distribution maps are given.

Keywords. Cossidae, Carpenter moths, *Afroarabiella*, new species, Lepidoptera.

Yakovlev R.V. & Witt T.J. 2016. Two new species of *Afroarabiella* Yakovlev, 2008 (Lepidoptera, Cossidae) from Sudan and Ethiopia. *European Journal of Taxonomy* 240: 1–8. <http://dx.doi.org/10.5852/ejt.2016.240>

Introduction

The genus *Afroarabiella* Yakovlev, 2008 (Lepidoptera: Cossidae) was established for *Cossus tahamae* Wiltshire, 1949 (Yakovlev 2008). A supplement to the description of this genus was given by Mey (2015). In addition, the subgenus *Meyoarabiella* Yakovlev, 2008 (type species – *M. meyi* Yakovlev, 2008, widespread in the Republic of South Africa, Northern Cape has received the status of genus. Mey (2015) also presented all the known discoveries of the genus *Afroarabiella* from South Africa and Namibia. Currently, the genus includes nine species: *A. buchanani* (Rothschild, 1921) (Figs 1, 16) (Niger), *A. fanti* (Hampson, 1910) (Figs 2, 16) (Ghana), *A. namaquensis* Yakovlev, 2014 (Figs 3, 16) (South Africa), *A. ochracea* (Gaede, 1930) (Figs 4, 16) (Congo, Tanzania), *A. polioptera* (Clench, 1959) (Figs 5, 16) (Namibia, South Africa), *A. politzari* Yakovlev, 2008 (Figs 6, 16) (Kenya), *A. tahamae* (Wiltshire, 1949) (Figs 7, 16) (Saudi Arabia, Yemen), *A. tanzaniae* Yakovlev, 2011 (Figs 8, 16) (Tanzania), *A. ukambani* Yakovlev, 2008 (Figs 9, 16) (Kenya, Southern Somalia). Thus, the genus is widespread from Saudi Arabia across Africa to South Africa (Yakovlev & Dubatolov 2013; Yakovlev 2014, 2015; Mey 2015). Representatives of the genus are rare in collections, possibly due to their small size and also because they can easily be mixed up with specimens of Noctuoidea or “Microlepidoptera” and stored in museums as non-sorted materials.



Figs 1–11. *Afroarabiella* species (adult, holotypes). 1. *Afroarabiella buchanani* (Rothschild, 1921), Mts. Baguezan, Asben [Niger Republic, Sahel, Air Mountains, Baguezan Mt.] (Natural History Museum, London). 2. *A. fanti* (Hampson, 1910), Gold Coast, Ashanti, Obuassi [Ghana, Ashanti Prov., Obuassi] (Natural History Museum, London). 3. *A. namaquensis* Yakovlev, 2014, Republic of South Africa, Northern Cape, 100 km W Upington, Augrabies N.[ational] P.[ark], Orange river, 28.34'60" S, 20.15'57" E (Zoological Institute, Saint-Petersburg). 4. *A. ochracea* (Gaede, 1930), Chaîne Luitpold [Congo] (Natural History Museum, London). 5. *A. polioptera* (Clench, 1959), Brandberg [Namibia] (Zoological collection of the Bavarian State, Munich). 6. *A. politzari* Yakovlev, 2008, Kenya, Kaputir (Zoological collection of the Bavarian State, Munich). 7. *A. tahamae* (Wiltshire, 1949), Buraiman, coastal plain (Ar.: Tahama), near Jedda, Saudi Arabia (Natural History Museum, London). 8. *A. tanzaniae* Yakovlev, 2011, Tanzania, Lake Sereri (Museum of Natural History, Budapest). 9. *A. ukambani* Yakovlev, 2008, Kenya, Kibwezi (Zoological collection of the Bavarian State, Munich). 10. *A. sulaki* sp. nov. 11. *A. strohlei* sp. nov.

YAKOVLEV R.V. & WITT T.J., Two new species of *Afroarabiella* (Lepidoptera)

During studies of Lepidoptera performed by our colleagues Harald Sulak (Munich) and Manfred Ströhle (Weiden) two new species of the genus *Afroarabiella* were found. Their descriptions are given below.

Material and methods

All specimens were collected using light traps. Preparation of genitalia is necessary for the identification of Cossidae. Dissections were performed with standard methods. Male genitalia were mounted in euparal on slides following Lafontaine (2004). Genitalia slides were examined with the use of a Zeiss Stemi 2000 C microscope, and images were taken with the Olympus XC 50 camera.

Results

Class Hexapoda Blainville, 1816
Order Lepidoptera Linnaeus, 1758
Superfamily Cossoidea Leach, [1815]
Family Cossidae Leach, [1815]
Subfamily Cossinae Leach, [1815]
Genus *Afroarabiella* Yakovlev, 2008

Afroarabiella sulaki sp. nov.

urn:lsid:zoobank.org:act:B4ACF01C-2639-4A5E-A9B8-7B296CCFEBAB

Figs 10, 12, 14, 16.

Diagnosis

By external characters *Afroarabiella sulaki* sp. nov. can be confused with *A. tahamae*, but differs from it by the following features: the grey costal margin of the fore wing, the longer transtilla process, the long needle-like cornutus and the phallus smoothly curved in its basal third.

Etymology

The new species is named after the German lepidopterist Harald Sulak (Munich).

Material examined

Holotype

SUDAN: ♂, env. SE Bahr al Azraq, Wad Madini, 540 m, 14°25.069 N, 33°37.553 E, 28 Mar. 2010, leg. Harald Sulak (Museum Witt, Munich; GenPr Heterocera MWM 25.289).

Paratype

SUDAN: 1 ♂, Province of Nahr on the Nile, 390 m, 16°25.189 N, 33°14.575 E, 20 Mar. 2010, leg. Harald Sulak (Museum Witt, Munich).

Description

Male

EXTERNAL CHARACTERS. Length of fore wing 11 mm, wingspan 22 mm. Front and patagia ochre-brown. Antennae bipectinate. Thorax grey. Abdomen pale yellow. Fore wing wide with rounded apex; pattern of thin undulated transverse lines; costal margin of wing grey, pale yellow portion in discal area; dim pale brown fields with blurry outline in post-discal area; hind margin of wing, submarginal and marginal areas greyish-brown; marginal band thin (0.5 mm), pale yellow with even edges; fringe pale brown, unicolorous. Hind wing pale yellow with poorly expressed pattern of rare grey strokes; fringe pale yellow.

MALE GENITALIA. Uncus long, edges almost parallel, apex rounded; gnathos arms rather thick, of middle length; gnathos poorly sclerotized, covered with small spines; valve with wide base, gradually tapering caudally, with wide rounded poorly sclerotized apex; area of expressed sclerotization on costal margin of valve from base to middle; transtilla process hook-likely bent, thin, with wide base and tapered apex; juxta large, saddle-like, with two lateral processes; lateral process of juxta large, elongated, edges parallel, apex rounded; saccus of middle size, semicircular; phallus slightly shorter than valve, with thick base and strong caudal tapering (apex tapered), slightly curved in basal third; vesica aperture in dorsal-apical position, in length about $\frac{1}{3}$ of phallus; vesica with long needle-like cornutus, located along phallus axis.

Female

Unknown.

Remarks

The paratype is a little smaller. Length of fore wing 10 mm.

Distribution

Sudan (Provinces Al Jazirah and Nahr an Nil).

Flight period

March.



Figs 12–13. *Afroarabiella* species (male genitalia). 12. *A. sulaki* sp. nov., male genitalia. 13. *A. strohlei* sp. nov., male genitalia.

Afroarabiella strohlei sp. nov.

urn:lsid:zoobank.org:act:55F15338-7A34-4FB8-9EB2-B67541E8D33C

Figs 11, 13, 15–16

Diagnosis

Afroarabiella strohlei sp. nov. is distinctive compared to other *Afroarabiella* species by virtue of its very dark wings and the male genitalia structure: the strongly tapered phallus in its basal third and the sickle-shaped cornutus slightly tapered at apex.



Figs 14–15. *Afroarabiella* species (type localities). **14.** *A. sulaki* sp. nov., type locality (photo by H. Sulak). **15.** *A. strohlei* sp. nov., type locality (photo by M. Ströhle).

Etymology

The new species is named after the well-known German lepidopterist Manfred Ströhle (Weiden).

Material examined

Holotype

ETHIOPIA: ♂, Turmi, Mango Lodge, 04°58.32 N, 036°30.54 E, 920 m, 21–24 Jan. 2015, leg. Ströhle (collection of M. Ströhle, Weiden; Coss-MSW/2015/31).

Paratype

ETHIOPIA: 1 ♂, same data as holotype (collection of M. Ströhle, Weiden).

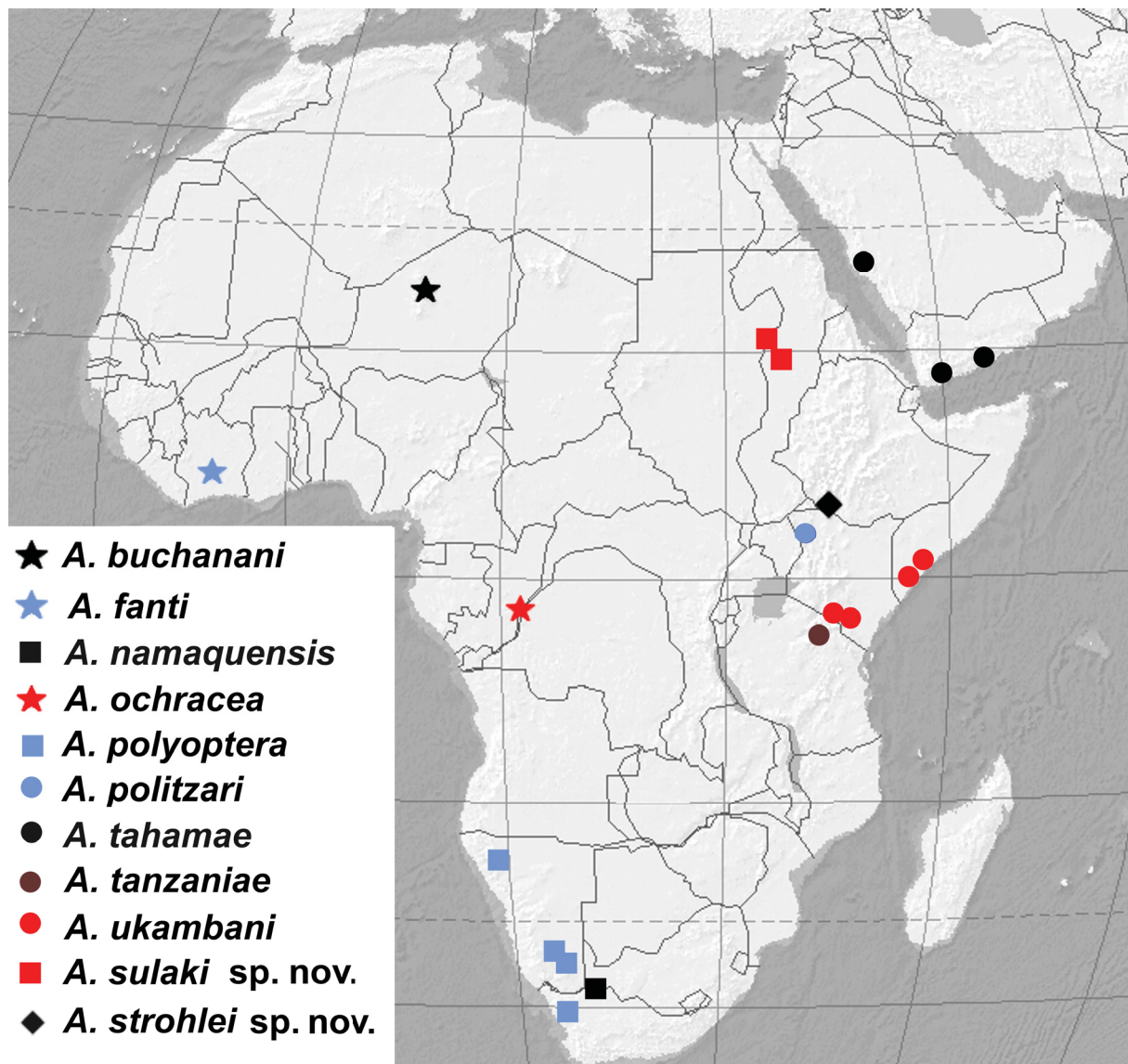


Fig. 16. Map of the distribution of *Afroarabiella* species.

Description

Male

EXTERNAL CHARACTERS. Length of fore wing 12 mm, wingspan 24 mm. Front and patagia ginger brown. Antennae bipectinate. Thorax brown. Abdomen pale grey. Fore wing wide, apex rounded, color dark grey with pattern of poorly noticeable dark undulate lines and thin X-shaped band in post-discal area; pale grey portion in submarginal area; marginal band very thin (about $\frac{1}{3}$ mm), pale grey; fringe grey, unicolorous. Hind wing pale yellow with hardly expressed pattern of rare grey strokes; fringe grey.

MALE GENITALIA. Uncus long, gradually narrowing from base to apex, apex rounded; gnathos arms rather thick, of middle length; gnathos poorly sclerotized; valve slightly tapered caudally, costal and abdominal edges almost parallel, apex wide, rounded, poorly sclerotized; costal margin of valve slightly curved in basal third; transtilla process hook-likely bent, thin, with wide base and tapered apex; juxta large, saddle-like, with two lateral processes; lateral process of juxta large, elongated, slightly widening caudally, apex rounded; saccus of middle size, semicircle; phallus slightly shorter than valve, of even thickness except for narrowing in basal third; apex of phallus rounded; phallus strongly curved in basal third; vesica aperture in dorsal-apical position, in length about $\frac{1}{4}$ of phallus; vesica with thick sickle-shaped cornutus; apex of cornutus slightly tapered, cornutus located along phallus axis.

Female

Unknown.

Remarks

Paratype the same size as the holotype.

Distribution

Ethiopia (Debub Omo Zone in the Ethiopian Southern Nations, Nationalities and Peoples' Region (SNNPR)).

Flight period

January.

Discussion

The genus *Afroarabiella* Yakovlev, 2008 comprises 11 species. *Afroarabiella* is one of the Cossidae genera widely spread in Africa (each of them has one representative in Arabia). Ten species of the genus *Afroarabiella* are found in different parts of Africa (1 species in West Africa, 6 species in East Africa, 2 species in South Africa, 1 species in Sahel) and one (*A. tahamae*) in South and Central Arabia.

Acknowledgements

The authors sincerely thank our colleagues – Harald Sulak (Munich) and Manfred Ströhle (Weiden) who collected the new species in Africa. The authors express their thanks to Anna Ustjuzhanina (Tomsk) for the help with the translation of the paper. The English text was corrected by Prof. Boris Kondratieff (Fort Collins). We are indebted to the BMNH Council of Trustees for being so kind and give us permission to publish images of type specimens stored in the Natural History Museum, London.

References

Lafontaine J.D. 2004. Noctuoidea, Noctuidae (part), Noctuinae (part - Agrotini). In: Hodges R.W. (ed.) *The Moths of America North of Mexico*, fasc. 27.1. The Wedge Entomological Research Foundation, Washington.

Mey W. 2015. Revision of the genus *Arctiocossus* Felder, 1874 and allied genera (Lepidoptera: Cossidae: Cossinae). *Annals of the Ditsong National Museum of Natural History* 5: 28–55.

Yakovlev R.V. 2008. *Afroarabiella* gen. nov. – a new genus of Cossidae (Lepidoptera) from the African and Arabian Peninsula. *Atalanta* 39: 389–395.

Yakovlev R.V. 2014. A new species of *Afroarabiella* Yakovlev, 2008 (Lepidoptera, Cossidae) from the Republic of South Africa, including a world catalogue of the genus. *Zootaxa* 3793 (2): 297–300. <http://dx.doi.org/10.11646/zootaxa.3793.2.11>

Yakovlev R.V. 2015. Patterns of Geographical Distribution of Carpenter Moths (Lepidoptera: Cossidae) in the Old World. *Contemporary Problems of Ecology* 8 (1): 36–50. <http://dx.doi.org/10.1134/S1995425515010151>

Yakovlev R.V. & Dubatolov V.V. 2013. Distribution of Carpenter-Moths (Lepidoptera, Cossidae) in the Palaearctic Deserts. *Entomological Review* 93 (8): 991–1004. <http://dx.doi.org/10.1134/S0013873813080071>

Manuscript received: 24 February 2016

Manuscript accepted: 31 May 2016

Published on: 3 November 2016

Topic editor: Gavin Broad

Desk editors: Jeroen Venderickx and Kristiaan Hoedemakers

Printed versions of all papers are also deposited in the libraries of the institutes that are members of the *EJT* consortium: Muséum national d'Histoire naturelle, Paris, France; Botanic Garden Meise, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Natural History Museum, London, United Kingdom; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [European Journal of Taxonomy](#)

Jahr/Year: 2016

Band/Volume: [0240](#)

Autor(en)/Author(s): Yakovlev Roman V., Witt Thomas J.

Artikel/Article: [Two new species of Afroarabiella Yakovlev, 2008 \(Lepidoptera, Cossidae\) from Sudan and Ethiopia 1-8](#)