BioOne COMPLETE

A New Species of the Genus Suillia Robineau-Desvoidy, 1830 from Cameroon and Kenya (Diptera: Heleomyzidae)

Author: Woźnica, Andrzej J.

Source: African Invertebrates, 53(1) : 375-379

Published By: KwaZulu-Natal Museum

URL: https://doi.org/10.5733/afin.053.0121

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

African Invertebrates Vol. 53 (1) Pages 375–379 Pietermaritzburg June, 2012

A new species of the genus *Suillia* Robineau-Desvoidy, 1830 from Cameroon and Kenya (Diptera: Heleomyzidae)

Andrzej J. Woźnica

Institute of Biology, Wrocław University of Environmental and Life Sciences, ul. Kożuchowska 5b, 51–631, Wrocław, Poland; andrzej.woznica@up.wroc.pl

ABSTRACT

A new species of the genus *Suillia* Robineau-Desvoidy, 1830 (subfamily Suilliinae), namely *Suillia stuckenbergi* sp. n., is described from Cameroon and Kenya in the Afrotropical Region. This finding constitutes the first record of the genus *Suillia* in Cameroon, and the westernmost record for the genus in the Afrotropical Region. Modified key couplets are provided for Cogan's key to the Ethiopian species of *Suillia* in order to facilitate recognition of the new species. The systematic position of the newly described species is briefly discussed.

KEY WORDS: Diptera, Heleomyzidae, Suilliinae, Afrotropical, Cameroon, Kenya, identification key, new species.

INTRODUCTION

The genus *Suillia* Robineau-Desvoidy, 1830 is the largest genus of the family Heleomyzidae, with *ca* 130 described species, and is also the most widely distributed genus in the Afrotropical Region. Cogan (1980) listed 18 species in the *Afrotropical Catalogue*. *Suillia picta* (Wiedemann, 1830) was the first species of the genus described from the Afrotropical Region. This is a common species known from Mozambique, South Africa and Zimbabwe and its close relative, *S. ingens* (Lamb, 1917) is known from a further five African countries, *viz.* the Democratic Republic of the Congo, Kenya, Rwanda, Tanzania and Uganda (Cogan 1971). Only one species, *S. variegata* (Loew, 1862), is also widely distributed outside the Afrotropics and is common along the Mediterranean and elsewhere in Europe. The occurrence of *S. similis* (Meigen, 1830) in Kenya, as recorded by Cogan (1971), is still unconfirmed, and this species should be removed from the Afrotropical list, as it represents a Palaearctic element. Cogan highlighted this case himself when he noted that the Kenyan record was based on only a single damaged specimen, which unfortunately could not be traced in the collections of Muséum national d'Histoire naturelle, Paris, France, during a visit in 2008. Within *S. aspinosa* (Lamb, 1917), Cogan recognised three subspecies, but these have subsequently been found to differ from one another, not only in chaetotaxy and body colouration, but also in the structure of the male terminalia and should, therefore, be regarded as valid species, as indicated in the key by Cogan (1971). One species, *S. keiseri* Cogan, 1971, known only from Madagascar, bears one to two large anepisternal setae, which are also present in one Neotropical species (*S. iniens* Giglio-Tos, 1893) and this character state should be regarded as a homoplasy shared by two distant species.

During a preliminary systematic study undetermined material of *Suillia* was examined for the first time from Cameroon and Kenya. This material is significant, as it was collected in high mountain areas between 1400 and 3000 metres above sea level, confirming Cogan's (1971, 1977) assumption that Afrotropical representatives of the genus *Suillia* may be chiefly restricted to afforested mountain areas, where the climate is more moderate and larvae are able to develop in basidiomycete fungi.

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

This paper is dedicated to the memory of the outstanding entomologist Brian Roy Stuckenberg (1930–2009), who collected many of the heleomyzid flies studied by Cogan in 1971.

MATERIAL AND METHODS

The terminology of male terminalia follows Sinclair (2000), with modifications from Zatwarnicki (1996). Abbreviations of ratios and measurements follow Woźnica (2003, 2006). Images were captured with a Leica JVCKYF75 digital camera attached to a Leica M205C stereomicroscope. Details of male terminalia were prepared using the light microscope and computer graphic techniques. Terminalia of paratypes were extracted and cleared in 10% potassium hydroxide (KOH) at ambient temperature, rinsed in water and preserved in glycerine in a micro vial pinned beneath the source specimen.

Bilaterally symmetrical structures in species descriptions are cited in the singular.

The following institutional codens are used for museum collections cited in the text: MNHN – Muséum national d'Histoire naturelle, Paris, France; TAU – Department of Zoology, Tel Aviv University, Tel Aviv, Israel.

TAXONOMY

Genus *Suillia* Robineau-Desvoidy, 1830

Revised key couplets for Cogan's (1971) key to Afrotropical *Suillia*

In Cogan's key, *S. stuckenbergi* sp. n. runs to couplet 18 ("*Suillia* species A"). Couplets 18–20 below replace those of Cogan (1971) to enable identification of the new species.

18 Wing with distinct infuscation over point of insertion of R_{2+3} in costa, together with apices of R_{4+5} and M. Dorsal surface of scutellum entirely setulose, setulae not confined to margins of disc 19
– Wing with costal margin broadly infuscate, lacking distinct infuscation over apex of R_{2+3}. Dorsal surface of scutellum glabrous, with a few sparse setulae confined to margins of disc 20

19 Mesonotum and scutellum buff brown. Abdomen predominantly dark, but with lateral margins of all tergites pale .....*Suillia* sp. "A"
– Mesonotum and scutellum pale orange. Abdomen predominantly yellow, but with dark brown margins of tergites 2–5 .....**stuckenbergi** sp. n.

20 Wing with infuscation over posterior cross-vein extending into r_{4+5}, but not fusing with broad costal infuscation. Abdomen predominantly black.....**ovata** Collart
– Wing with infuscation over posterior cross-vein not extending into r_{4+5}. Abdomen broadly yellow laterally ..... **balteata** Lamb

Suillia stuckenbergi sp. n.

Figs 1–8

Etymology: Named in honour of the late Brian Roy Stuckenberg, in recognition of his significant contributions to the study of Afrotropical Diptera.

Diagnosis: Body generally pale, yellowish orange, with whitish and blackish patches on darkened wing membrane (Fig. 1). First flagellomere elliptical, orange and slightly

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

darkened in dorsal half. Arista long plumose. One large black vibrissa and an additional seta present (*ca* 0.5× as long as the dorsal, sometimes longer). Cheek brownish yellow. Dorsally mesonotum yellowish orange, with 1+4 dorsocentrals, not arising from macula. Scutellum with broad bare area dorsally, except some setulae in lateral third. Thoracic pleura pale orange, with narrow but distinct dark brown fascia, anepisternum and anepimeron glabrous. Wing with *r–m* and *dm–cu* crossveins broadly brown maculate. Apex of each longitudinal vein with distinct brown infuscation. R_1 with large, brown egg-shaped macula in apical part. Three iridescent whitish patches over crossvein areas. Abdomen yellowish, with dark blackish brown margins from segment 2.

Description:

Male & *Female*.

Body length (minus antennae) 5.8–6.5 mm (♂) and 5.6–6.7 mm (♀).

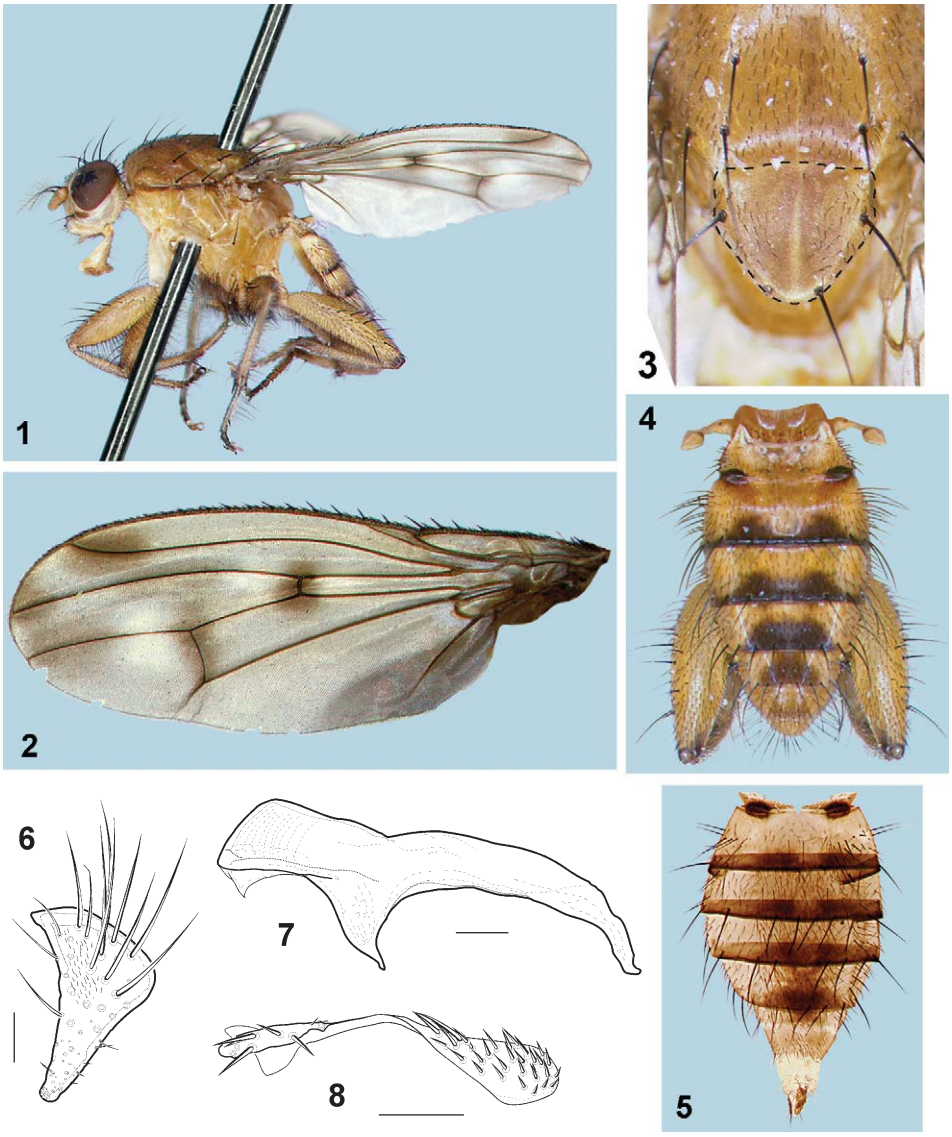
Head: Head ratio: 1.16:1.25; orbital plate parallel to eye margin and shiny yellow; frons yellowish brown; ocellar triangle blackish brown; posterior part of head pale orange, except for silver pollinose whitish area around supracervical black setulae; face yellowish without spots, slightly protuberant in middle; cheek brownish yellow; area posterior to vibrissae dark brown maculate, remaining part yellowish. Cheek : eye ratio: 0.18:0.21; 1 strong black vibrissa with additional seta (*ca* 0.5× as long as dorsal, sometimes longer); palpus yellowish with slightly darkened apex, proboscis yellowish, apically more brownish; antenna yellowish brown; first flagellomere egg-shaped, yellowish brown, more darkened dorsally; arista brown, long plumose, with rays much longer than diameter of basal segment; first flagellomere ratio: 1.86:2.09; flagellomere : cheek ratio: 0.93:1.00.

Thorax: Prosternum whitish yellow, with 2 or 3 pairs of pale brown setulae; mesonotum entirely yellowish orange, with 1+4 dorsocentral setae, not arising from dark spots; proepisternum with sparse brown setulae scattered across surface; pleural part of thorax yellowish orange, with thin lateral dark brown fascia running from anterior part of postpronotum to wing base; postpronotum, notopleural area, anepisternum and meron pale orange; katepisternum with 1 strong black seta and some smaller setulae; anepisternum and anepimeron glabrous; meron bearing a few brown setulae at posterodorsal corner; scutellum and postscutellum yellowish orange; scutellum slightly elongate and pointed apically, with >20 small blackish setulae at lateral margin (Fig. 2); ventral surface of scutellum glabrous.

Legs: All, including coxa, yellowish orange; fore femur enlarged in male, with 8 strong black setae anterodorsally and setula-like, long rusty-brown setae posteroventrally; mid femur with two rows of dorsal setae (5 in dorsal row and 2 or 3 in ventral row); hind femur with *ca* 11–13 blackish setae arranged in two rows in male and 7–9 black dorsal setae in female; one medium-sized curved black seta at the apicoventral part of mid femur in both sexes; male tibia with long, thick setosity; mid tibia with one medium-sized black seta in the apicoventral part and 3 black setae of variable length in the apical anterior part; tarsomere 1 of male fore and mid leg with long setosity ventrally; tarsomeres 2, 3 and 4 of fore leg in male much shorter than in female; tarsomere 4 shortest; tarsomeres 3 and 4 wider than long in male, their combined length shorter than tarsomere 5; combined length of tarsomeres 3 and 4 slightly longer than 5 in female; all tarsomeres brownish in both sexes.

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

Wing (Fig. 3): Length: 6.6–6.8 mm (♂), 5.6–5.8 mm (♀); width: 2.2–2.5 mm (both sexes). Black costal spines well developed, longer than height s*c*; membrane regularly pale brown infuscate, with 3 iridescent whitish patches over crossvein areas; veins distinctly brown; apex of each longitudinal vein with distinct brown infuscate area; R_1 with large brown egg-shaped macula in apical section; *r–m* and *dm–cu* crossveins dark brown, with adjacent extensive infuscation; median vein ratio: 1.410:1.690 (♂), 1.441:1.529 (♀); haltere yellow with pale brown setulose knob.



Figs 1–8. *Suillia stuckenbergi* sp. n.: (1–4) paratype ♂ (Kenya): (1) habitus, lateral view; (2) right wing; (3) scutellum, dorsal view; (4) abdomen, dorsal view; (5) prepared abdomen, dorsal view, paratype ♀ (Cameroon); (6–8) paratype ♂ (Cameroon): (6) left dististylus, dorsolateral view; (7) phallapodeme, lateral view; (8) gonites complex, lateral view. Scale bars: Figs 1–5 not to scale, Figs 6–8 = 0.1 mm.

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

Abdomen (Figs 4, 5): All tergites short and setulose, with distinct black marginal setae, except T1+2 in both sexes; tergite 1 with blackish ovoid macula at lateral margins in both sexes; tergites in both sexes with blackish to brownish-black maculae at their margins, sometimes slightly concave in middle; tergite 6 yellowish brown in male; terminalia entirely yellowish; sternites yellowish in both sexes, clothed in thick brown setulae in male.

Male terminalia: Epandrium, dististylus and cercus yellowish; dististylus (Fig. 6) laterally compressed and triangular, with narrow apical part, dorsal surface clothed in long setulae; ejaculatory apodeme well developed with blunt apex; phallapodeme as in Fig. 7; pregonite with sparse setulae; postgonite densely setulose (Fig. 8).

Female terminalia: Segment 7 longer than 6, ventrally-directed downward; sternite 7 trapezoidal; sternite 8 brownish-yellow, subdivided; hypoproct shiny orange, with 2 small fine setulae; cercus dark brown, long setulose; 3 brown sclerotised spherical spermathecae present.

Comparison: *Suillia stuckenbergi* sp. n. is most similar to the Afrotropical *S. ovata* (Collart, 1946), *S. balteata* (Lamb, 1917) and to Cogan's undescribed "species A", in that it shares the additional seta-like vibrissae. It differs from these species, however, in wing patterning and structure of the male terminalia.

Holotype: ♂ CAMEROON: 20 km S Bamenda [5°46'N 10°08'E], 1800 m, 22.xi.1987, Fini Kaplan (TAU).

Paratypes: CAMEROON: 1♀ same data as holotype (TAU); 1♂ 1♀ "Cameroon: Museum Paris, Cameroun, Reg. De D(s)chang, (1400 M. D'Alt), Plateaux volcaniques, D. Cromier 1924/ Juin a Sept. Saison humide"; 1♂ 1♀ "Cameroon: Museum Paris, Cameroun, N. –O. Plateau de D(s)chang, 1500 m saison sèche, XI I, D. Cromier 1924" (all MNHN). KENYA: 1♂ Cherangani Hills [1°15'N 35°27'E], Laboot [1°01'N 34°37'E], 3000 m, 2.xi.1983, A. Freidberg (TAU).

Distribution: Cameroon and Kenya. Probably associated with moderately high elevation montane forests.

ACKNOWLEDGEMENTS

I am grateful to C. Daugeron (MNHN) and A. Freidberg (TAU) for the loan of material used in this study and to M. Wanat (University of Wrocław, Poland) for providing access to equipment. I also thank Th. Pape and an anonymous referee for their comments on the manuscript.

REFERENCES

COGAN, B.H. 1971. The Heleomyzidae of the Ethiopian Region (Diptera). *Annals of the Natal Museum* **20**: 627–696.

———1977. New African species of *Trixoscelis* Rondani (Diptera: Trixoscelididae), with a short discussion of related genera. *Stuttgarter Beiträge zur Naturkunde, Ser. A* **297**: 1–15.

———1980. Family Heleomyzidae. *In*: Crosskey, R.W., ed., *Catalogue of the Diptera of the Afrotropical Region*. London. British Museum (Natural History), pp. 611–613.

SINCLAIR, B.J. 2000. Morphology and terminology of Diptera male genitalia. *In*: Papp, L. & Darvas, B., eds, *Contributions to a Manual of Palaearctic Diptera (with special reference to flies of economic importance). Vol. 1 General and Applied Dipterology*. Budapest: Science Herald, pp. 53–74.

WOŹNICA, A.J. 2003. Two new synonyms of the Old World representatives of the genus *Suillia* Robineau-Desvoidy, 1830 (Diptera: Heleomyzidae: Suilliinae). *Polskie Pismo Entomologiczne* **72**: 349–357.

———2006. Three new species of the genus *Suillia* Robineau-Desvoidy, 1830 from Neotropical Region (Diptera: Heleomyzidae). *Annales Zoologici* **56**: 657–665.

ZATWARNICKI, T. 1996. A new reconstruction of the origin of Eremoneuran hypopygium and its implications for classification (Insecta: Diptera). *Genus* **7**: 103–175.

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

Downloaded From: https://bioone.org/journals/African-Invertebrates on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use