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Authors: Thompson, F. Christian, and Hauser, Martin

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In honor of Brian Stuckenberg: Two new *Spheginobaccha* species of flower flies (Diptera: Syrphidae) from the Afrotropics

F. Christian Thompson[1] and **Martin Hauser**[2]

[1]Department of Entomology, National Museum of Natural History,
Smithsonian Institution, Washington, D.C. 20560, USA;
thompsonf@si.edu
[2]Plant Pest Diagnostics Branch, California Department of Food & Agriculture,
3294 Meadowview Road, Sacramento, CA 95832-1448, USA;
Phycus@gmail.com

ABSTRACT

The Afrotropical species of genus *Spheginobaccha* are reviewed and a new identification key is provided. Two new species are described: *S. stuckenbergi* from Madagascar and *S. pamela* from South Africa.

KEYWORDS: Afrotropical Region, Madagascar, *Spheginobaccha*, taxonomy, new species.

INTRODUCTION

Little work that has been done on the Afrotropical flower fly fauna. Beyond a few isolated species descriptions, Loew (1860) was the first to provide a taxonomical treatise of a portion of the Afrotropical fauna. He was followed by Bezzi (1915) who reviewed the whole fauna based on material at the British Museum. Finally Curran (1938*a, b*; 1939*a, b*) augmented Bezzi's work based on the material at the American Museum of Natural History (New York). After Curran, there were two regional studies (Hull (1964) (South Africa), Keiser (1971) (Madagascar)). All this work was recently summarised by Dirickx (1998), and Whittington (2003) updated this summary, analysed the previous works and pointed out the genera which are in most need of revision. Since then several papers have appeared and added important information to biology, biogeography and new species descriptions (Barkemeyer 2002; Cheng & Thompson 2008; Dirickx 2001, 2010; Jordaens et al. 2015; Lyneborg & Barkemeyer 2005; Reemer & Ståhls 2013*a, b*; Reemer & Bot 2015; Smit & Gutierrez-Chacon 2008; Ssymank 2010, 2012; Steenis 2010; Thompson 2013*a, b*; Thompson & Skevington 2014 and Vujic *et al.* 2008).

MATERIAL AND METHODS

The characters and terminology used follow the glossary of Thompson (1999) and are largely consistent with those used in the Nearctic, Palaearctic and Central American Diptera manuals (McAlpine *et al.* 1981; Merz & Haenni 2000; Cumming & Wood 2009; and also specific chapters on Syrphidae in Vockeroth & Thompson 1987; Thompson & Rotheray 1998; Thompson *et al.* 2010). After publication, this article will be converted into species pages within the *Encyclopedia of Life* (see www.eol.org). The following acronyms for collections are used:

BMSA – National Museum, Bloemfontein, South Africa (Ashley H. Kirk-Spriggs);
CAS – California Academy of Sciences, San Francisco, California, USA (Norman Penny);
CSCA – California State Collection of Arthropods, Sacramento, California, USA (Martin Hauser);

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NMSA – KwaZulu-Natal Museum, Pietermaritzburg, South Africa (Burgert Muller);
USNM – National Museum of Natural History, [formerly, United States National Museum], Washington D.C., USA.

TAXONOMY

Genus *Spheginobaccha* de Meijere, 1908

Speginobaccha: De Meijere 1908: 327. Type-species: *Sphegina macropoda* Bigot 1883, by monotypy.

The genus *Spheginobaccha* is a rare group of flower flies restricted to the Afrotropical and Oriental faunal regions. Nothing is known of their biology. The genus was revised by Thompson (1974) and since then, only one paper has been published on the Afrotropical species (Dirickx 1995), in which two new species were described. Hull (1949) was the first to include the genus in the Microdontinae. Thompson (1969: 77) excluded the genus from the Microdontinae and later placed the genus in an intermediate position in the Milesinae (now Eristalinae) (Thompson 1972). Thompson (1974: 258) placed the genus in its own tribe and as a basal clade in the subfamily Eristalinae. However, recent DNA sequence data placed the group within the subfamily Microdontinae (Ståhls *et al.* 2003) and as sister to all other microdontines.

Spheginobaccha stuckenbergi sp. n.

Figs 1–3

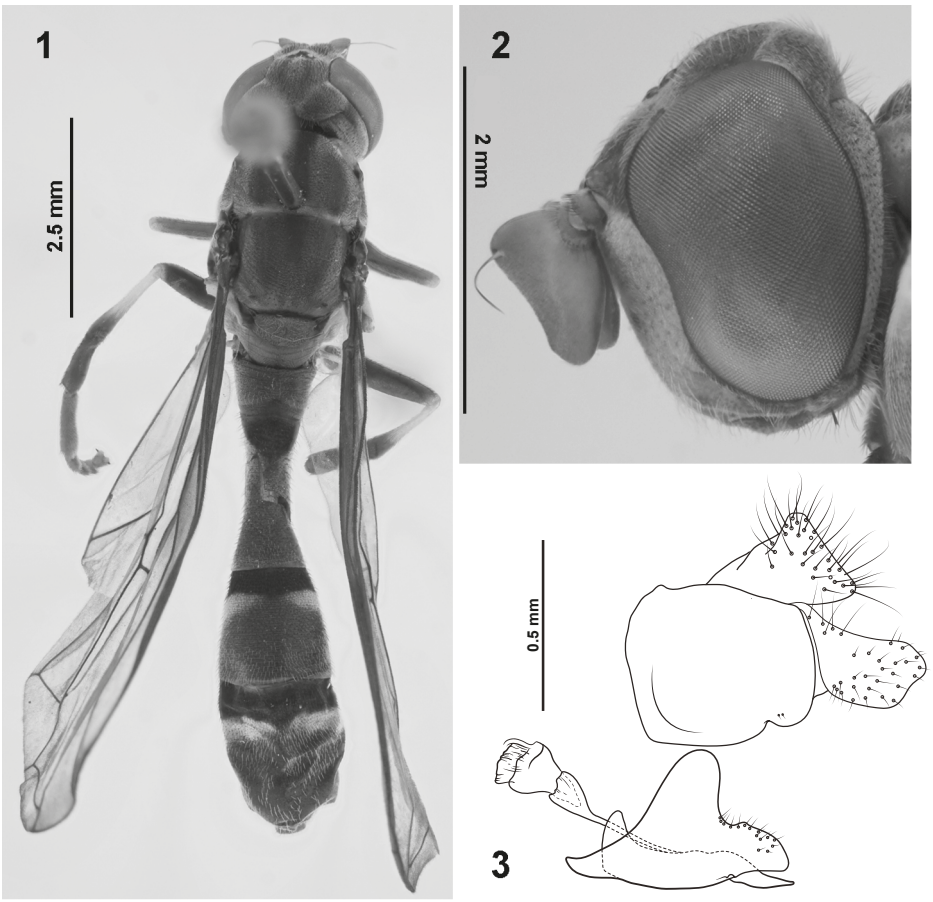
Etymology: Many species of *Spheginobaccha* have been named after distinguished dipterists associated with this genus or other flower flies. So, we here dedicate this species to Brian Roy Stuckenberg (1930.iv.07–2009.ii.08; see Kirk-Spriggs (2012)), who made the first modern revision of the genus *Paragus* Latreille, using male genitalic characters (Stuckenberg 1954*a*, *b*).

Description:

Male.

Length: Body (HT), 13 mm; wing (HT), 9 mm.
Head: Face yellow, sparsely white pollinose medially, denser laterally, white pilose; gena narrow, brownish yellow, white pilose; lunule reddish brown; frons reddish brown, shiny on medial ⅘, narrowly golden pollinose laterally and dorsally, yellowish-white pilose; vertex reddish brown, indistinctly rugose, with fine longitudinal grooves, sparsely greyish-white pollinose, yellow pilose; ocelli distinct, normal; ocellar triangle isosceles, about twice as broad as long; occiput blackish-brown, silvery pollinose, white pilose on ventral ⅔, on dorsal ⅓ reddish brown, sparsely pollinose, white pilose. Antenna orange, black pilose; basoflagellomere large, triangular, about ½ as long as broad; arista black except orange base, as long as basoflagellomere.
Thorax: Postpronotum yellow, shiny, white pilose; scutum reddish brown except broadly yellow laterally, sparsely greyish-white pollinose, yellow pilose except bare medially and sublaterally in the form of vittae; postalar callus yellow, yellow pilose; scutellum reddish brown, greyish-white pollinose, yellow pilose; pleuron yellow except black macula posterior to postpronotum, black vitta dorsad to mesocoxa and around metathoracic spiracle, sparsely pollinose except densely silvery white pollinose on katepisternum and posterior anepisternum, white pilose; calypter white; halter yellowish white. Legs:

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Figs 1–3. *Spheginobaccha stuckenbergi* sp. n. Holotype ♂ (Madagascar): (1) habitus, dorsal; (2) head, lateral view; (3) male genitalia, lateral view.

coxae brownish to black, sparsely pollinose, black pilose; trochanters yellowish brown, shiny, black pilose; femora reddish brown to black except basal ¼ and apex white, black pilose except pale on pale areas; protibia brownish black except basal ¼ white, black pilose except pale on pale areas; meso and metatibia brownish black except basal ⅓ white, black pilose except pale on pale areas; tarsi brownish orange, black pilose. Wing: hyaline except dark brown on stigma and area anterior to vein *Rs*; microtrichose except bare as follows: cell *r* on basal ¾ posterior to spurious vein, cell *bm* on basal ⅔, cell *cup* on basal ⅘, anal lobe on basal ½ and all of alula.

Abdomen: Petiolate; 1st segment short, slightly triangular, about ⅛ (0.12) as long as abdomen; 2nd segment cylindrical, about ⅓ (0.28) as long as abdomen; 3rd segment triangular, about twice as wide apically as basally, about ¼ (0.24) as long as abdomen; 4th segment cylindrical, about ⅓ (0.36) as long as abdomen; 1st tergum shiny bluish grey (steel-blue), grey pollinose, white pilose; 2nd tergum bluish grey, sparsely silvery pollinose except for denser basolateral triangular macula, white pilose; 3rd tergum

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brownish black and black pilose on basal ⅓, bluish grey on apical ⅔. with silvery pollinose macula on medial ⅓, sparsely pollinose apically, white pilose on apical ⅔; 4th tergum brownish black and black pilose on basal ⅕, bluish grey elsewhere except apical margin pale yellowish, with narrow slivery pollinose macula posterior to basal black area, elsewhere sparsely pollinose, white pilose; 1st and 2nd sterna light brownish yellow, sparsely pollinose, white pilose; 3rd and 4th sterna light brownish, black pilose except yellow pilose on apical margin of 4th; male genitalia yellowish brown, white pilose; cercus yellow.

Holotype ♂: MADAGASCAR. Mahajanga Province, Majunga Analamanitra Forest, 14 km northeast of Misingo, 16°08'S 45°42'E, 11–18.xii.2007, M. E. Irwin & R. Harin'Hala, Malaise trap, dense dry forest, 65 ft [19.8 m], MG-3811, CASLOT 034973 (deposited in CAS).

Paratypes: 3♂ data same as holotype (1♂USNM, 2♂CAS); 1 ♀ same as holotype, except 16–23.x.2007 (CAS); 1♂ Namoroka Village, Befatika Andranovary, 7km nortwest of Vilanandro Village, 16°28.4'S 45°23.48'E, 9–16.xii.2007, M. E. Irwin & R. Harin'Hala, Malaise trap, dense dry forest, 400 ft [122 m], MG-40B-12 (USNM); 2♂ Majunga Ambatofolaka, Namoroka, 53 km from Soalala, 3 km north of Vilanando Village, 16°28.04'S 45°23.48'E, 16–28.xii.2007, M. E. Irwin & R. Harin'Hala, Malaise trap, dense dry forest, 400 ft [122 m] (CAS); 1♂ Parc National, Tsingy de Bemaraha, 3.4 km Bekpaka, Tombeau Vazimba, 19°08'31"S 44°49'41"E, 50 m, 6–10.xi.2001, B. Fisher, lot BLF 4233 (deposited in CSCA).

Remarks: *Spheginobaccha stuckenbergi* is most similar to *guttula*, both occur in Madagascar, and both have similar antennae, but the new species differs clearly in abdominal pattern and wing microtrichia.

Spheginobaccha pamela sp. n.

Figs 4–6

Etymology: We here dedicate this species to Pamela [neé Usher] Stuckenberg, Brian's devoted wife who also published on horse flies (Tabanidae). Proper name in apposition.

Description:

Male.

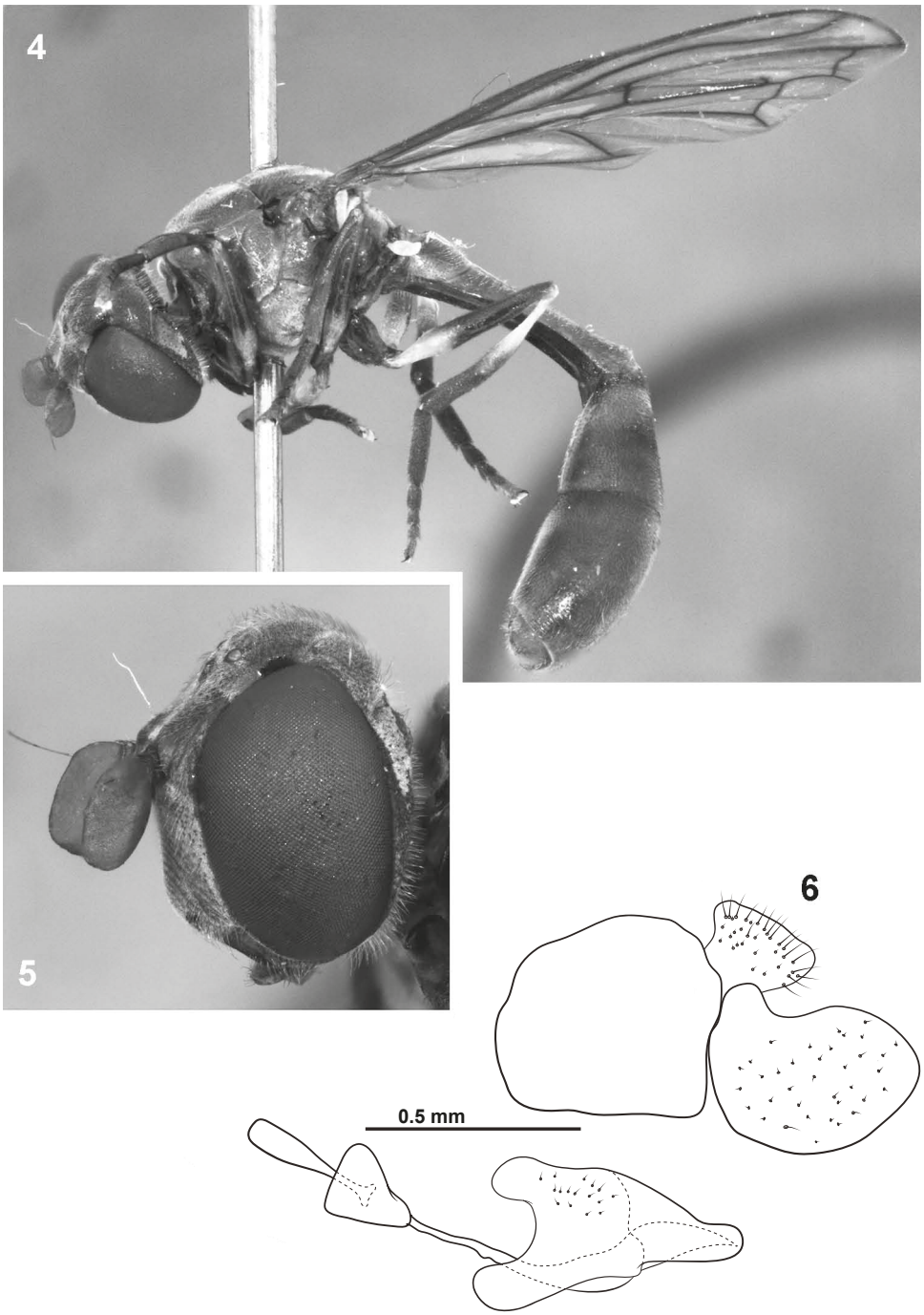
Length: Body (PT), 16.3 mm; wing (PT), 10.6 mm.

Head: Black except lunule more reddish brown, sparsely white pollinose, yellow pilose; broadly dichoptic; antenna reddish brown; scape and pedicel black pilose; basoflagellomere light brown; arista yellow.

Thorax: Pronotum yellow, yellow pilose; propleuron black anteriorly, yellow posteriorly, yellow pilose; scutum black except dull yellow marginally, sparsely grey pollinose with dark brown pollinose medial vitta, short yellow pilose; postalar callus yellow, yellow pilose; scutellum yellow, yellow pilose; pleuron mainly dull yellow, white pilose, dark on posterior antepisternum; calypter white; halter yellow. Legs: coxae and trochanters black, pale pilose; femora black except yellow on basal ¼, pale pilose on pale areas, black pilose on dark areas; pro and meso tibia black except apical ⅓ reddish brown, black pilose; metatibia yellow on basal ½, black apically, black pilose; pro and mesotarsi brownish black except apical tarsomere reddish, black pilose. Wing: Light brown anteriorly, extending posteriorly to vein *R* and R_{4+5} and along veins, elsewhere hyaline, microtrichose except bare cell *cup* (anal), except for along its margins.

Abdomen: Elongate, only very slightly petiolate, black; 1st tergum golden pilose; 2nd tergum mainly light brown pilose, except with apical margin broadly golden pilose and with a small apicomedial triangle patch of black pile; 3rd tergum dull black pollinose

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Figs 4–6. *Spheginobaccha pamela* sp. n. Paratype ♂ (Madagascar): (4) habitus, dorsal view; (5) habitus, lateral view; (6) genitalia, lateral view.

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except sparsely greyish white pollinose basolaterally, black pilose except white pilose basolateral and along lateral margin; 4th tergum golden pilose; genitalia white pilose.

Holotype ♂: SOUTH AFRICA: *KwaZulu-Natal*: Manguzi Forest Reserve, 26°59'32"S 32°43'25"E, 61 m, 13–17.xii.2010, Malaise trap in indigenous sand forest, A. K. Kirk-Spriggs, specimen code BMSA(D) 30059 (deposited in BMSA).

Paratypes: 1♂ same data as holotype with specimen code BMSA(D) 30058 (deposited in USNM); 1♂ *KwaZulu-Natal*: St. Lucia Estuary, 10.ii.1974 W.W. Middlekauf (deposited in CAS).

Remarks: As noted in the key to species below, *pamela* is most similar related to *guttula*, but differs in abdominal coloration, the male genitalia and the shape of the antenna.

Spheginobaccha ruginosa Dirickx, 1995

Spheginobaccha ruginosa: Dirickx 1995: 152.

This species was originally described from two females from Madagascar (Ivondro & Montagne d'Ambre). We examined 9 additional females.

Material examined: MADAGASCAR: 1♀ Fianarantosa Prov., ANGAP Hqt, Panomafana (Town), Malaise trap near stream, 21°14.91'S 47°27.13'E, 740 m, 28.xi–6.xii.2001, lot MG9D-05 (CSCA); 1♀ Vohinparara Ranomafana NP, Malaise trap in rain forest, 21°13.57'S 47°21.19'E, 1110 m, 5–15.vii.2002, M. E. Irwin & R. Harin'Hala, lot MG 9A34 (CSCA); 2♀[Same locality as previous], 14–21.i.2002, lot MG 9A12 (1♀ CSCA, 1♀ USNM); 1♀ Parc. National Ranomafana Belle Vue at Talatakely, 1020 m, 21°15.99'S, 47°25.21'E, 1020 m; malaise, secondary tropical forest, MA-02-09c-62; 28.v–6.vi.2003, R. Harin'Hala; CAS lot 018111 (CAS); 1♀ [same locality data as previous]MEI 98-MA-7, 21 December 1999, CASENT8018161 (1 ♀ CAS); 1♀ Radio tower at forest edge, 1130m 7–17.v.2003 21°15.05'S, 47°24.43'E, 7–17.v.2003; malaise, mixed tropical forest, MA-02-09B-60, R. Harin'Hala CASlot 018077 (1 ♀ CAS); 2♀ Antananarivo: 46 Km NE of Ankazobe: Ambohitantely, 18°11.88'S, 47°16.89'E, 700 m, malaise trap, in sclerophyll forest, MA-27-2, 14–29.xi.2004, M.Irwin, R. Harin'Hala CAS lot 025651 (1♀ CAS, 1♀USNM).

Spheginobaccha rotundiceps (Loew, 1858)

Ocyptamus rotundiceps: Loew 1858: 376;
Spheginobaccha rotundiceps: Thompson 1974: 276 (see also for complete synonymy).

This species was originally described from "Caffrerei," and known from only 3 specimens (Thompson 1974: 278). We examined 7 additional specimens collected from South Africa.

Material examined: SOUTH AFRICA: *KwaZulu-Natal*: Royal Natal National Park, Thendale, 28°42.378'S 28°56.083'E, *Leucosedea* dominated scrub, 1600 m, 15–17.ii.2010, A. H. Kirk-Spriggs (4 ♂ 1 ♀ BMSA, 1♂ USNM); 1♀ Tiger Falls area, 28°41.341'S 28°56.047'E, *Protea caffra* woodland, 1545 m, 17–18.ii.2010, A. H. Kirk-Spriggs (BMSA).

Key to Afrotropical *Spheginobaccha*

1 Alula microtrichose 6
– Alula bare 2

2 Basoflagellomere large, triangular, about ½ as long as broad. Abdomen dark, without yellow or tawny coloration, with basal ¼ of 3rd tergum black, followed by white pollinose macula, then grey; 4th tergum similar colored (Fig. 1) (Madagascar) ..... ***stuckenbergi*** sp. n.
– Basoflagellomere small, oval to elongate, about as long as or longer than broad ..3

3 Wing completely microtrichose except for bare alula (South Africa)..... ***rotundiceps*** (Loew, 1858)
– Wing extensively bare basally..... 4

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4 Face black pilose; basoflagellomere elongate, about twice as long as broad (South Africa) ..... ***dexioides*** Hull, 1944
– Face pale pilose, white to golden; basoflagellomere oval, about as long as broad .5
5 Frons rugose, with distinct transverse grooves; basal cells (*R* & *BM*) entirely microtrichose; cell *CuP* (anal) bare; face white pilose (Madagascar) .... ***ruginosa*** Dirickx, 1995
– Frons not rugose; basal cells partially bare; cell *CuP* microtrichose on posterior ⅓; face golden pilose (South Africa)..... ***dubia*** Thompson, 1974
6 Anterior ocellus sunken into a cleft and divided into two parts (Malawi)..... ..... ***perialla*** Thompson, 1974
– Anterior ocellus normal, neither divided nor sunken into a cleft.....7
7 Basal cells extensively bare; abdomen pale yellow on basal 3 terga except with dark brown maculae on ⅔ of 3rd and light brown on rest of abdomen (see Dirickx 1995: 155, fig. 9) (Madagascar) ..... ***guttula*** Dirickx, 1995
– Basal cells entirely microtrichose; abdomen with 1st tergum dark brown, 2nd tergum light brown, 3rd tergum pale brown on basal ⅓, dark brown apically (South Africa) ..... ***pamela*** sp. n.

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