

New data on the genus *Tachydromia* Meigen from Uganda, with description of a new species (Diptera: Hybotidae)

Patrick GROOTAERT^{1,4}, Igor SHAMSHEV^{2,3} & Lise GOUDESEUNE¹

¹Entomology, Royal Belgian Institute of Natural Sciences, Vautierstraat 29, B-1000 Brussels, Belgium
(e-mail: Patrick.Grootaert@naturalsciences.be)

²Zoological Institute of Russian Academy of Sciences, Universitetskaja nab. 1, St.Petersburg, 199034, Russia

³All-Russian Institute of Plant Protection, shosse Podbel'skogo 3, 188620, St. Petersburg, Russia
(e-mail: shamshev@mail.ru)

⁴Corresponding author

Abstract

A new species of the genus *Tachydromia* Meigen is described from Uganda: *T. ugandaensis* sp. nov. Also, the female of *T. stuckenbergi* Shamshev et Grootaert, 2010 is described for the first time. An updated key to Afrotropical *Tachydromia* is provided.

Keywords: Diptera, Empidoidea, Hybotidae, *Tachydromia*, new species, Afrotropical, Uganda.

Introduction

The genus *Tachydromia* Meigen comprises quite small (1.0 to 3.5 mm), ant-like flies usually with banded or maculated wings and currently includes 118 species worldwide. The Afrotropical fauna of *Tachydromia* was recently revised (SHAMSHEV & GROOTAERT, 2010). In contrast to other biogeographic regions (especially Palaearctic and Nearctic), where this genus is quite common and diverse, only five species of *Tachydromia* have been found in the Afrotropical Region including the present new species.

In this paper we describe a new species of the genus from Uganda. Also, the female of *T. stuckenbergi* SHAMSHEV & GROOTAERT, 2010 is described for the first time. In the Afrotropics *Tachydromia* is not only rather poor in species, but the species are rare and not abundant. This is in contrast to the present study where we found two sympatric species and much more individuals were collected than ever before in Africa. This may be related to the fact that *Tachydromia* is a genus that probably is well adapted to temperate climate conditions being found at the sample station at 1,513 m in Kibale National Park.

Material and methods

This study is based on Malaise trap samples collected from March 2010 until end May 2011 in Kibale National Park (close to Kanyawara Biological station) at 1,513 m a.s.l. altitude (00°33'54,2''N 30°21'31,3''E) by Mr Swaibu Katusabe. Fig. 2 in KURINA (2012) shows the placement of the trap. The small Diptera in the samples were sorted out by Dr Olavi Kurina (Tartu, Estonia).

Terminology and descriptive format used in the descriptions follow SHAMSHEV & GROOTAERT (2010). To facilitate observations, the terminalia were macerated in cold 10% KOH and hot 85% lactic acid and immersed in glycerine. Drawings of morphological features were made with a *camera lucida* attached to a compound microscope. In descriptions, the right and left side of the male terminalia are based on the unrotated position viewed posteriorly, such that in the illustrations the right surstylus appears on the reader's left side and vice versa. Male terminalia are figured in their unrotated position. The holotype and paratypes are deposited in the collections of the Royal Belgian Institute of Natural Sciences, Brussels, Belgium (RBINS). Some paratypes are also deposited at the Institute of Agricultural and Environmental Sciences, Estonian University of Life Sciences [former Institute of Zoology and Botany], Tartu, Estonia (IZBE).



Fig. 1. *Tachydromia stuckenbergi* Shamshev & Grootaert, female. Scale bar 1 mm.

Taxonomy

Order Diptera Linnaeus, 1758
 Superfamily Empidoidea Latreille, 1804
 Family Hybotidae Macquart, 1823
 Subfamily Tachydromiinae Meigen, 1822

Genus *Tachydromia* Meigen, 1803

Tachydromia stuckenbergi Shamshev & Grootaert, 2010
 (Fig. 1)

SHAMSHEV & GROOTAERT, 2010: 213, figs 5-8, 12.

MATERIAL EXAMINED. UGANDA: Kibale National Park, 1♀, 16-23.V.2011; 1♀, 27.VI-04.VII.2011; 1♀, 12-19.XII.2011; 1♀, 13-20.III.2012.

Female (described for the first time). Wing 2.4–2.5 mm. Antenna with postpedicel small, elongate ovate, yellow; stylus terminal, brownish, very long, short pubescent (postpedicel and stylus were missing in the holotype). Palpus with very long black subapical seta nearly 2 times longer than palpus (missing in the holotype). Colour of legs as in the holotype but varying on some parts; tarsomere 5 of fore and mid legs usually darker than tarsomere 4, mid tibia sometimes paler on subapical part and brown space on hind tibia sometimes occupying almost half of its length; hind basitarsus almost entirely brownish (except yellow subapical part), hind tarsomeres 2–3 yellow, tarsomeres 4–5 brownish (hind tarsus was missing in the holotype). Mid tibia without row of several closely set spinules (1 longer) on subapical part anteriorly. Cercus brown, long, with scattered dark setulae.

Remarks. *T. stuckenbergi* was described from Uganda (SHAMSHEV & GROOTAERT, 2010). Here we give a description of the female of this species for the first time.



Fig. 2. *Tachydromia ugandaensis* sp. nov., paratype ♂. Scale bar 1 mm.

Tachydromia ugandaensis sp. nov.
(Figs 2-6)

DIAGNOSIS. Recognised by a combination of the following characters: prothoracic sclerites (except postpronotal lobe) greyish pollinose; palpus slender, brownish; wing cuneiform with anal lobe not prominent, rounded at apex, brownish at base and with two broad brownish bands connected along costa (on cell r_1). Male: fore femur with large oval dark brown spot on basal part ventrally, fore tibia spindle-shaped.

ETYMOLOGY. The name refers to its occurrence in Uganda.

TYPE MATERIAL. Holotype ♂: Uganda, Kibale National Park, 11-18.IV.2010 (Malaise trap).
Paratypes: 5♂, 6♀, 21-28.III.2010; 5♀, 28.III-04.IV.2010; 2♂, 3♀, 04-11.IV.2010; 5♂, 6♀, 11-18.IV.2010; 2♂, 3♀, 18-25.IV.2010; 1♂, 2♀, 25.IV-02.V.2010; 1♀, 02-09.V.2010; 1♀, 09-16.V.2010; 1♂, 23-30.V.2010; 1♂, 19-26.IX.2010; 2♀, 26.IX-02.X.2010; 2♂, 2♀, 02-10.X.2010; 1♂, 8♀, 10-17.X.2010; 2♂, 1♀, 17-24.X.2010; 1♀, 24-31.X.2010; 3♀, 31.X-07.XI.2010; 1♀, 14-21.XI.2010; 3♀, 31.X-07.XI.2010; 1♀, 21-28.XI.2010; 3♂, 4♀, 17.IV-01.V.2011; 1♂, 1♀, 01-08.V.2011; 3♀, 08-15.V.2011; 1♂, 1♀, 15-22.V.2011.



Figs 3-6. *Tachydromia ugandaensis* sp. nov., paratype ♂: 3. Right surstylus, dorsal view; 4. Right epandrial lamella, lateral view; 5. Epandrium and cerci, dorsal view; 6. Left surstylus, lateral view. Scale bars = 0.1 mm.

DESCRIPTION. Male. Wing 2.1 mm.

Head black in ground colour. Eyes with posterior margin slightly produced beyond ocellar tubercle; vertex broader than frons in front of ocellar tubercle. Occiput (viewed laterally) subshining; vertex subshining; 2 inclinate and proclinate, moderately long, pale yellow, wide-apart postvertical setae, several similar setae round neck and near mouth-opening and row of short postoculars. Ocellar tubercle subshining, with 2 very short setae. Frons subshining, parallel-sided, narrow. Antenna with brownish yellow scape and pedicel, postpedicel somewhat paler, stylus brownish; postpedicel subglobular; stylus subapical, very long. Palpus unmodified, slender, nearly as long as proboscis, brownish; with several short brownish setae (including subapical seta).

Thorax black in ground colour, largely shining, prothoracic sclerites (except postpronotal lobe) greyish pollinose. Postpronotal lobe large, elongate, lacking conspicuous setae. Mesonotum with 1 moderately long brownish yellow notopleural, 1 postalar and 4 scutellars (apical pair long, cruciate); some minute setulae present behind postpronotal lobe; acrostichals lacking; dorsocentrals uniserial, hair-like, minute, prescutellar pair somewhat longer; mesosternum and metasternum between posterior four coxae bare.

Legs with fore, hind coxae and all trochanters yellow, mid coxa yellowish brown; femora brownish except narrow yellow space near base (broader on hind femur), also, fore femur with darker large oval spot on basal part ventrally; fore tibia pale along entire dorsal face and partly pale yellow along ventral face, brown anteriorly and posteriorly, with two darker ventral spots on about apical half, mid and hind tibiae almost uniformly brownish (brownish yellow to yellow near base); tarsi largely yellow, tarsomere 4 brownish yellow, tarsomere 5 brownish. Coxae and trochanters with short, pale, scattered hair-like setae. Fore femur moderately thickened, with rows of minute anteroventral and posteroventral setae and 2 longer pale setae near base. Fore tibia spindle-shaped, with less numerous setulae along dorsal face. Mid femur slender, lacking basal excavation or tubercle, with several rather short strong yellowish ventral setae near base and rows of minute anteroventral and posteroventral setae. Mid tibia slender, without subapical projection or excavation, with some black ventral spinule-like setae toward apex. Hind leg unmodified, lacking prominent setae.

Wing normally developed but cuneiform with anal lobe not prominent, rounded at apex; with typical venation for the genus; brownish at base and with two broad brownish bands connected along costa (on cell r_1). One very short costal seta present; rather long cilia along posterior margin. Vein R_{2+3} very faint on basal part, very close and almost parallel to costa. Veins R_{4+5} and M_{1+2} divergent up to about apical 1/3 of wing but somewhat convergent toward wing margin. Cell r_1 very narrow, cells r_{2+3} and

r₄₊₅ of subequal width. Crossveins r–m and bm–cu broadly separated. Squama brownish coloured and fringed. Halter with pale knob and brownish stem.

Abdomen entirely brown, mostly with scattered short dark setae, segment 8 with numerous long posteromarginal setae; segments 1–7 unmodified. Terminalia (Figs 3–6) moderately large, elongate oval, blackish brown; right cercus very narrow on about basal third, otherwise rather elongate oval rounded apically, with several unmodified moderately long setae on apical part; left cercus elongate oval, broader but about 1.5 shorter than right cercus, with several unmodified long setae on apical part; right epandrial lamella as in Fig. 4, with 4 very long unmodified subapical setae, bearing tuft of long flattened setae ventrally; right surstylus differentiated from epandrium, bilobed, dorsal lobe short subtriangular, ventral lobe short finger-like with curious long broad flattened seta; left epandrial lamella with very long dorsal subapical seta; left surstylus undifferentiated from epandrium, of complicated structure, as in Fig. 6.

Female. Similar to male but fore femur without dark brown ventral spot, fore tibia only slightly thickened, uniformly yellowish, also, mid tibia usually paler than in male; cercus brownish, long, slender, with scattered minute setulae.

COMPARISON. In having wing with two bands connected along costa (on cell r1) the new species could be compared only with *T. petrabilis* Smith known from South Africa and Lesotho. Differences between these species are given in the key.

DISTRIBUTION AND SEASONAL OCCURRENCE. Uganda.

Phenology. Fig. 7 shows the periods of activity of *T. ugandaensis* sp. nov. As can be seen there are two peaks of activity in a year: in Spring (half March till end May) and in Autumn (end September till end November). The Spring peak is confirmed the second year of sampling.

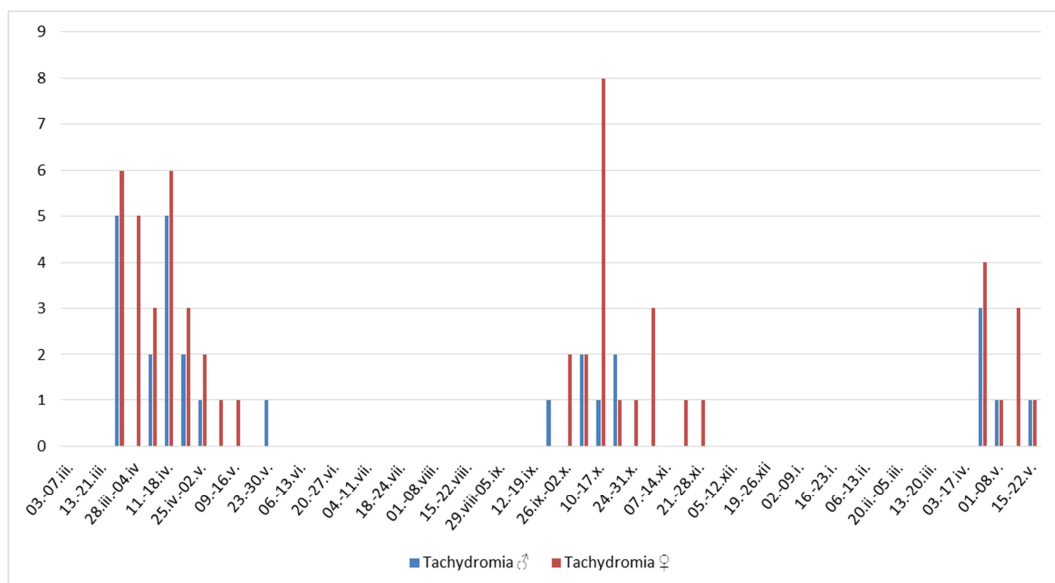


Fig. 7. *Tachydromia ugandaensis* sp. nov., phenology.

Updated key to the Afrotropical species of the genus *Tachydromia*

1. Eyes with upper hind corner extending beyond ocellar tubercle, vertex narrower than frons. Thorax largely densely tomentose. Wing almost uniformly brownish infuscate, narrowly pale basally (Uganda) *T. stuckenbergi* Shamshev & Grootaert
- Eyes with upper hind corner near ocellar tubercle, vertex broader than frons. Thorax almost entirely shining. Wing with two bands connected along costa (on cell r1) or separated throughout 2
2. Wing with two bands connected along costa (on cell r1) 3
- Wing with two bands separated throughout 4

3. Vein R_{2+3} strongly arched about middle toward costa. Male: fore femur uniformly brownish (South Africa, Lesotho) *T. petrabilis* Smith
- Vein R_{2+3} very close and almost parallel to costa. Male: fore femur with large oval dark brown spot on basal part ventrally *T. ugandaensis* sp. nov.
4. Fore and mid femora entirely yellow, hind femur yellowish on basal third. Male: mid femur with rows of unmodified anteroventral and posteroventral short setae (South Africa, Lesotho).....
- All femora entirely blackish brown. Male: mid femur with cluster of several short black ventral setae basally (Ethiopia) *T. freidbergi* Shamshev & Grootaert

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