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A review of the Afrotropical *Rhaphium* Meigen, 1803 (Diptera: Dolichopodidae), with the description of three new species

Igor Ya. GRICHANOV

All-Russian Institute of Plant Protection, Podbelskogo 3, St Petersburg, Pushkin, 196608, Russia.
E-mail: grichanov@mail.ru

Abstract. Type material of previously described Afrotropical species is examined and listed. New material of Afrotropical *Rhaphium* has been recently found in collections of some museums, and includes six species. *Rhaphium amharaense* sp. nov., *R. gobaense* sp. nov. and *R. vikhrevi* sp. nov. from Ethiopia are described and illustrated and associated with the Palaearctic *Rhaphium ensicorne* species group with a long antennal postpedicel, with usually short apical arista-like stylus in males. Males of *R. amharaense* are remarkable in the postpedicel about 20 × as long as the arista-like stylus and the cercus slightly shorter than epandrium. *Rhaphium gobaense* and *R. vikhrevi* differ from other Afrotropical species in the deeply bifurcated male surstylus, with long thin lobes. They differ from each other in the arista-like stylus and postpedicel length ratio and cercal lobes length ratio. A revised key to Afrotropical species of *Rhaphium* is provided. Now 18 long-legged fly species of the genus are known in the Afrotropical region.

Keywords. Rhaphiinae, Tropical Africa, Ethiopia, new species, new record, identification key.

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Introduction

The genus *Rhaphium* Meigen, 1803 is a member of the dolichopodid subfamily Rhaphiinae Bigot, 1852 with approximately 210 species worldwide except for Australasian and Neotropical regions, being most speciose in the Holarctic, where about 190 species are known (Grichanov 2025a). Ulrich (2005) listed annelids (Enchytraeidae Vejdovský, 1879), Aphididae Latreille, 1802, Chironomidae Newman, 1834 and Simuliidae Newman, 1834 as prey of several predatory species of *Rhaphium*. In England, most species of the genus were found in wetland sites including the margins of flowing water (Crossley 2020). Grootaert *et al.* (2019) discovered the first three species of *Rhaphium* from mangroves in Hong Kong in high abundance. A single known South Asian species was collected in the mountainous region of Sri Lanka at an elevation of 1700–1900 m a.s.l. (Naglis & Grootaert 2011). The Afrotropical species were reviewed and keyed by Grichanov (1995). Subsequently, the author of this paper examined types of all species of *Rhaphium* described from the Afrotropics, placed some species names in synonymy to other species (Grichanov 2001; Grichanov & Mostovski 2009) and transferred *Rhaphium triste* Loew, 1858 to *Diaphorus* Meigen, 1824 (Grichanov 2006). Together with the West Palaearctic *Rhaphium*

appendiculatum Zetterstedt, 1849, a species possibly introduced to the St Helena Island, 15 long-legged fly species of the genus were known in the Afrotropical region (Grichanov 2018).

The aim of this paper is to describe three new species of the genus *Rhaphium* from Ethiopia, to give new records for known Afrotropical species of the genus and to provide a revised key to Afrotropical species of *Rhaphium*.

Material and methods

Specimens were studied and photographed with a ZEISS Discovery V-12 stereo microscope and an AxioCam MRc5 camera. Preparations of the male genitalia were photographed with a ZEISS Axiostar stereo microscope and an AxioCam ICc3 camera and are stored in glycerol in a microvial attached to the insect pin. The measurement accuracy of these microscopes is 0.01 mm. Morphological terminology and abbreviations follow Cumming & Wood (2017) and Grichanov & Brooks (2017). The lengths of the podomeres are given in millimetres. Body length is measured from the base of the antenna to the tip of abdominal segment 6. Wing length is measured from the base to the wing apex. The figures showing the hypopygium in lateral view are oriented as it appears on the intact specimen, with the morphologically ventral surface of the genitalia facing upwards, dorsal surface downwards, anterior end facing right and posterior end facing left. Only holotypes of examined species are listed below. See Negrobov *et al.* (1982) and Grichanov (1995, 2001) for the complete list of examined types (including numerous misidentifications).

Institutional abbreviations

The types of the new species and other material are mounted on pins and housed at the following repositories:

BMNH = Natural History Museum, London, UK [NHMUK, former British Museum of Natural History]
BMSA = National Museum, Bloemfontein, South Africa
CNCI = Canadian National Collection of Insects, Ottawa, Canada
MNHN = National Museum of Natural History, Paris, France
MZLU = Zoological Museum, Lund University, Sweden
NMSA = KwaZulu-Natal Museum, Pietermaritzburg, South Africa
RBINS = Royal Belgian Institute of Natural Sciences, Brussels, Belgium
RMCA = Royal Museum for Central Africa, Tervuren, Belgium
SMNHTAU = Steinhardt Museum of Natural History, School of Zoology, Tel Aviv University, Israel
ZMUM = Zoological Museum of Moscow State University, Moscow, Russia

Further abbreviations

KZN = KwaZulu-Natal
P.N.A. = Parc National de Albert [Virunga National Park]
P.N.U. = Parc National d'Upemba [Upemba National Park]
RSA = Republic of South Africa

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Diptera Linnaeus, 1758
Superfamily Empidoidea Latreille, 1804
Family Dolichopodidae Latreille, 1809
Subfamily Rhaphiinae Bigot, 1852

Genus ***Rhaphium*** Meigen, 1803

Type species

Rhaphium macrocerum Meigen, 1803, by designation of Curtis, 1835.

Diagnosis

Rhaphium as a whole may be recognised by the following features (modified after Yang *et al.* 2011): body small to large (1.5–7 mm); vertex flat; ocellar seta nearly as long as vertical seta; face distinctly narrower than frons; clypeus not distinctly separated from face; antenna black, postpedicel elongate, usually 2–10 × as long as wide at base, rarely shorter or longer; arista apical; propleuron without distinct bristle, but with dense white hairs; hind coxa with or without an exterior bristle near middle; mid and hind femora both with preapical bristle(s); wing vein M_{1+2} straight and not bifurcated, R_{4+5} apically parallel with M_{1+2} or slightly convergent; vein dm-m shorter than distal part of M_4; abdominal segments 1–3 usually with long pale hairs, segment 6 visible and hairy; male terminalia small, connected tightly with pregenital segment, hidden in apex of abdomen, cap-like, cercus usually long and narrowed towards tip, with hairs and bristles.

Remarks

The Afrotropical fauna now includes 18 species closely related to the Palaearctic species of the former genus (or subgenus) *Xiphandrium* Loew, 1857, with the type species *Rhaphium ensicorne* Meigen, 1824. The Afrotropical species are easily recognised by the possession of a long antennal postpedicel, with usually short apical arista-like stylus in males (Fig. 1A). The male cercus is usually bi-lobed, with one short outer and one long inner lobe (except for *Rhaphium appendiculatum* with simple cercus). Females of close species are poorly distinguishable (Grichanov 1995). The adult body size of Afrotropical species is small (2.1–4.1 mm).

A key to the male afrotropical species of *Rhaphium* Meigen, 1803

1. Fore tibia with 2 strong spine-like dorsal bristles in basal third (*Rhaphium currani* subgroup) 2
– Fore tibia with simple dorsal setae 6

2. Postpedicel 3 × as long as high at base, and as long as arista-like stylus; body length 2.2–2.4 mm ..... ***R. zairense*** Negrobov *et al.*, 1982
– Postpedicel 7–9 × as long as high at base, and at least 3 × as long as arista-like stylus 3

3. Face 2–2.5 × as high as wide under antennae; postpedicel 13 × as long as arista-like stylus; fore femur without long cilia; body length 2.2–2.4 mm .....***R. zakonnikovae*** Grichanov, 1995
– Face 3.5–4 × as high as wide under antennae; arista-like stylus longer 4

4. Arista-like stylus 1/5 as long as postpedicel; fore femur with posterior and ventral irregular rows of hairs of different length; body length 2.2–2.6 mm ..... ***R. shamshevi*** Grichanov, 1995
– Arista-like stylus ⅓ as long as postpedicel; fore femur with one ventral row of cilia of equal length 5

5. Fore femur with posteroventral row of 9–10 dark cilia of equal length; surstylus with 2 short dorsal setae at base of wide lobe, half as long as distal wide lobe (Grichanov 1995: fig. 3); body length 2.7 mm ..... ***R. bulyginskayae*** Grichanov, 1995
– Fore femur with ventral row of minute light hairs; surstylus with 1 long dorsal seta at base of wide lobe, reaching apex of this lobe (Grichanov & Brooks 2017: fig. 156); body length 3 mm ..... ***R. currani*** (Parent, 1939)

6. Fore tibia with dorsal or anterodorsal row of 5–15 short bristles (*Rhaphium pectinigerum* subgroup) 7
– Fore tibia with 2 antero- and 2 posterodorsal bristles 14

7. Cercus tri-lobed; body length 2.2–2.4 mm ..... ***R. sexsetosum*** (Vanschuytbroeck, 1951)
– Cercus bi-lobed, with one short and one long lobe; body length various, 2.1–3 mm 8

8. Surstylus deeply bifurcated, with long thin lobes 9
– Surstylus entire or with short lobes 10

9. Arista-like stylus 1/6 as long as postpedicel; cercus with outer lobe ⅔ as long as inner lobe; body length 2.7 mm ..... ***R. gobaense*** sp. nov.
– Arista-like stylus 2/5 as long as postpedicel; cercus with outer lobe less than half as long as inner lobe; body length 3 mm ..... ***R. vikhrevi*** sp. nov.

10. Cercus slightly longer than surstylus and about as long as epandrium; body length 2.4 mm ..... ***R. amharaense*** sp. nov.
– Cercus much longer than surstylus 11

11. Fore tibia with 2 rows of thin ventral hairs, longer than diameter of tibia; body length 2.2–2.4 mm ..... ***R. pectinigerum*** (Parent, 1938)
– Fore tibia with ventral setulae, shorter than diameter of tibia 12

12. Three pairs of strong dorsocentral bristles with reduced seta between second and third dorsocentrals; fore femur without cilia in basal half; body length 2.1 mm ..... ***R. pitkini*** Grichanov, 1995
– Four pairs of strong dorsocentral bristles; fore femur with thin posteroventral cilia in basal half . 13

13. Arista-like stylus ⅓ as long as postpedicel; fore tibia with row of feeble dorsal setulae; body length 2.1 mm ..... ***R. ovsyannikovae*** Grichanov, 1995
– Arista-like stylus 1/6 as long as postpedicel; fore tibia with row of strong dorsal setae; body length 3.3 mm ..... ***R. doroninae*** Grichanov, 1995

14. Fore tibia and basitarsus with 1–2 rows of long strong ventral setae (*Rhaphium reaveyi* subgroup, in part) 15
– Fore leg without rows of long setae 16

15. Fore basitarsus nearly as long as tarsomere 2; body length 2.7–4.1 mm ..... ***R. reaveyi*** Grichanov, 1995
– Fore basitarsus twice as long as tarsomere 2; body length 2.8–3.2 mm ..... ***R. picketti*** Grichanov, 1995

16. Surstylus with bundle of long yellow bristles reaching middle of third tergite; 5 pairs of strong dorsocentral bristles; body length 2.4–3.1 mm (*Rhaphium caliginosum* group) ..... ***R. appendiculatum*** Zetterstedt, 1849
– Surstylus without such bundle; 4 pairs of strong dorsocentral bristles (*Rhaphium reaveyi* subgroup, in part) 17

17. No small setulae between strong dorsocentral bristles; fore tibiae with 2 posterodorsal setae only; body length 3.2–3.7 mm ..... ***R. bukzeevae*** Grichanov, 1995
– One pair of reduced setae between second and third pairs of strong dorsocentral bristles; fore tibia with 2 antero- and 2 posterodorsal setae; body length 2.8–3.2 mm .... ***R. mcveighi*** Grichanov, 1995

Rhaphium appendiculatum Zetterstedt, 1849

Rhaphium appendiculatum Zetterstedt, 1849: 3058. Type locality: Sweden: Scania ad Esperod (male lectotype and four paralectotypes in MZLU; examined).
Xiphandrium macrocerum Parent, 1925: 42 (nec Meigen, 1824, nec Zetterstedt, 1843).

Xiphandrium macrocerum – Collin 1940: 266. — Vanschuytbroeck 1976: 53.

Material examined

ST HELENA • 1 ♂; Sandy Bay, Blarney Bridge; 300 ft a.s.l.; 9 Dec. 1967; RMCA.

Distribution

St Helena (introduced); West and Central Palaearctic.

Rhaphium bukzeevae Grichanov, 1995
Figs 1A, 6

Rhaphium bukzeevae Grichanov, 1995: 29. Type locality: Uganda, Ruwenzori Range, Namwamba Valley.

Type material

Holotype
UGANDA • ♂; Ruwenzori Range, Namwamba Valley; 13 000–14 000 ft a.s.l.; Dec. 1934–Jan. 1935; F.W. Edwards leg.; "B.M. E. Afr. Exped. B.M. 1935–203"; BMNH.

Distribution

Uganda.

Rhaphium bulyginskayae Grichanov, 1995
Figs 1B, 6

Rhaphium bulyginskayae Grichanov, 1995: 23. Type locality: Kenya, Aberdare Range, Katamayo.

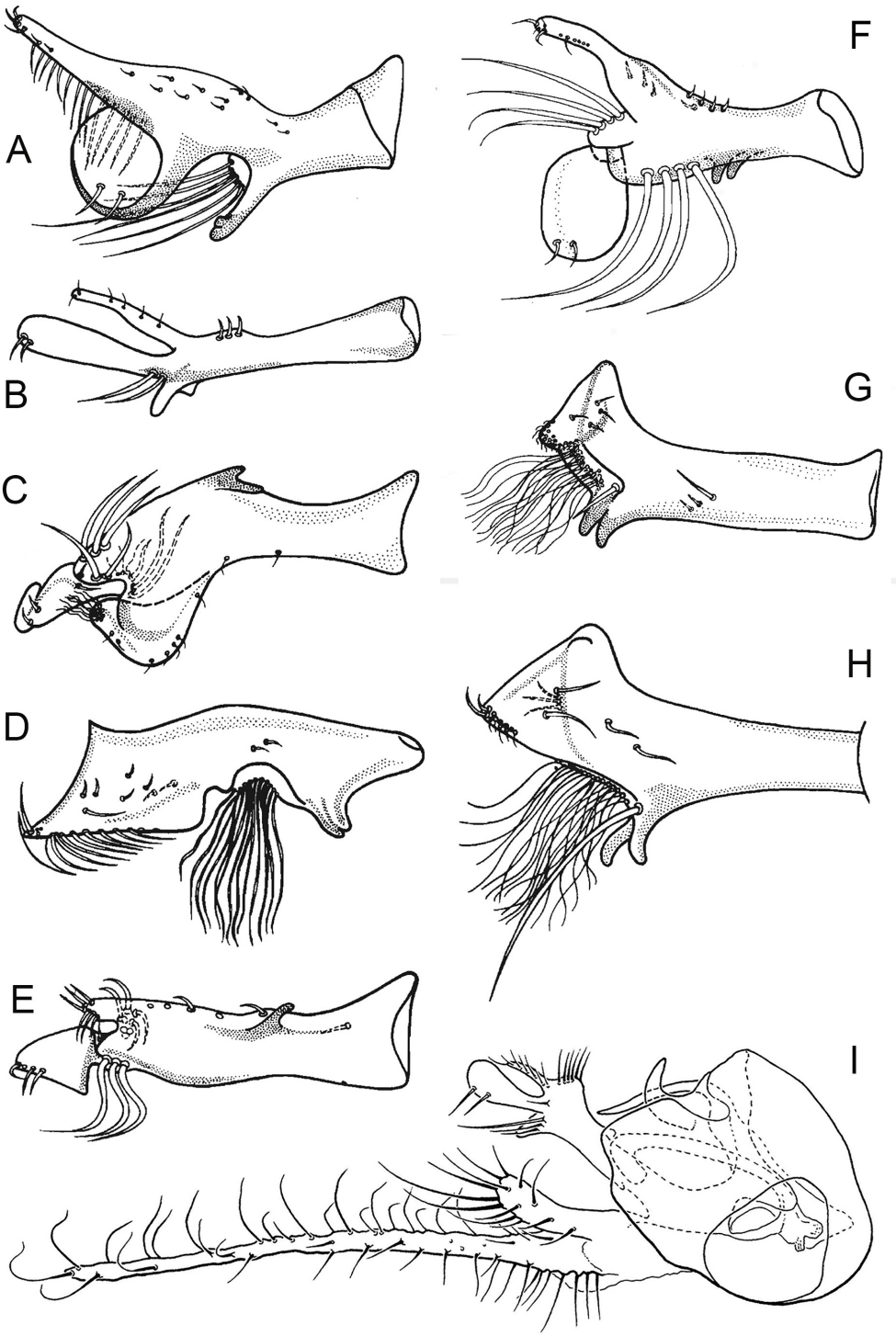

Fig. 1. *Rhaphium* spp., ♂♂. **A–C, E, I**. Lateral view. **D, F–H**. Ventral view. **A**. *R. bukzeevae* Grichanov, 1995 (BMNH), surstylus. **B**. *R. bulyginskayae* Grichanov, 1995 (BMNH), surstylus. **C**. *R. doroninae* Grichanov, 1995 (BMNH), surstylus. **D**. *R. mcveighi* Grichanov, 1995 (BMNH), surstylus. **E**. *R. ovsyannikovae* Grichanov, 1995 (BMNH), surstylus. **F**. *R. pectinigerum* (Parent, 1938) (BMNH). **G**. *R. picketti* Grichanov, 1995 (BMNH), surstylus. **H**. *R. reaveyi* Grichanov, 1995 (BMNH), surstylus. **I**. *R. currani* (Parent, 1939) (CNCI), hypopygium. A–H: after Grichanov (1995); I: after Grichanov & Brooks (2017). Scale bars unavailable.

Type material

Holotype

KENYA • ♂; Aberdare Range, Katamayo; 8000 ft a.s.l.; Oct. 1934; F.W. Edwards leg.; "B.M. E. Afr. Exped. B.M. 1935–203"; BMNH.

Other material examined

KENYA • 1 ♂; Kiambu County; 0.932° S, 36.616° E; 2600 m a.s.l.; 18 Dec. 2013; N. Vikhrev leg.; ZMUM.

Distribution

Kenya.

Rhaphium currani (Parent, 1939)
Figs 1I, 6

Xiphandrium currani Parent, 1939: 282 (nom. nov. for *Rhaphium triste* Curran, 1926, nec *Xiphandrium triste* Loew, 1858). Type locality: South Africa, Mpumalanga: Barberton.
Rhaphium triste Curran, 1926: 32 (nec Loew, 1858) (misidentification).

Type material

Holotype

SOUTH AFRICA – **Eastern Cape** • ♂; Dohne; [32º32′ S, 27º27′ E]; 12 Apr. 1925; H.K. Munro leg; NMSA.

Other material examined

SOUTH AFRICA – **Eastern Cape** • 1 ♂, 3 ♀♀; Hogsback, Tyume Forest; 32º36′174″ S, 26º56′303″ E; 1166 m a.s.l.; 10 Apr. 2010; A.H. Kirk-Spriggs and V. de Swart leg.; sweeping indigenous afromontane forest; BMSA • 1 ♂; Hogsback, Redwood trail; 32º35′337″ S, 26º56′135″ E; 1169 m a.s.l.; 26 Mar. 2011; A.H. Kirk-Spriggs leg.; sweeping forest paths and glades; BMSA • 1 ♀; Tsitsikamma N.P., Bloukrans Pass, Platbos; 33°56′558″ S, 23°37′566″ E; 22–25 Jan. 2009; A.H. Kirk-Spriggs and S. Otto leg.; sweeping forest path, indigenous forest; BMSA.

Distribution

Eswatini, Lesotho, Mozambique, South Africa, Zambia, Zimbabwe.

Rhaphium doroninae Grichanov, 1995
Figs 1C, 6

Rhaphium doroninae Grichanov, 1995: 27. Type locality: Uganda, Ruwenzori Range, Namwamba Valley.

Type material

Holotype

UGANDA • ♂; Ruwenzori Range, Namwamba Valley; 10 200 ft a.s.l.; Dec. 1934–Jan. 1935; F.W. Edwards leg.; "B.M. E. Afr. Exped. B.M. 1935–203"; BMNH.

Distribution

Uganda.

Rhaphium mcveighi Grichanov, 1995
Figs 1D, 6

Rhaphium mcveighi Grichanov, 1995: 30. Type locality: Uganda, Mt Elgon, Bulambuli District.

Type material

Holotype
UGANDA • ♂; Mt Elgon, Balambuli; 9500 ft a.s.l.; 8 Aug. 1934; J. Ford leg.; "B.M. 1935-459; On *Lobelia aberdaric*a"; BMNH.

Distribution

Kenya, Uganda.

Rhaphium ovsyannikovae Grichanov, 1995
Figs 1E, 6

Rhaphium ovsyannikovae Grichanov, 1995: 26. Type locality: Uganda, Ruwenzori Range, Namwamba Valley.

Type material

Holotype
UGANDA • ♂; Ruwenzori Range; Namwamba Valley; 10 200 ft a.s.l.; Dec. 1934–Jan. 1935; F.W. Edwards leg.; "B.M. E. Afr. Exped. B.M. 1935–203"; BMNH.

Distribution

Uganda.

Rhaphium pectinigerum (Parent, 1938)
Figs 1F, 6

Sympycnus pectiniger Parent, 1938: 408. Type locality: Kenya, Elgon Saw mill, Mt Elgon, Vers Est.
Xiphandrium rweruense Vanschuytbroeck, 1951: 108. Type locality: Congo-belge, Parc National de Albert, vers Rweru, Volcan Mikeni.
Syntormon spiculus Vanschuytbroeck, 1952: 43. Type locality: Congo-belge, Parc National de l'Upemba, Lusinga.
Rhaphium vanschuytbroecki Negrobov, Grichanov & Bakary, 1982: 190. Type locality: Zaire, Parc National de Albert, Massif Ruwenzori, Kalonge, riv. Nyamwamba-Ihongero.

Type material

Holotypes
KENYA • ♀; Elgon Saw mill, Mt Elgon, Vers Est, Camp III; 2470 m; a.s.l. Dec.; C. Arambourg, P.-A. Chappuis and R. Jeannel leg.; "Mus. Paris, Miss. de l'Omo; 1932-33 // Type [red label), *Sympycnus pectiniger* n. sp., Type, O. Parent"; MNHN.

DR CONGO • ♂; P.N.A., vers Rweru, Volc. Mikeno; 2400 m a.s.l.; 26–27 Jul. 1934; G.F. de Witte leg.; "(Bambous), 501, Coll. Mus. Congo (ex coll. IPNCB) // Type [red label], P. Vanschuytbroeck det., 1950, *Xiphandrium rweruense* n. sp."; RMCA • ♀; P.N.U., Lusinga; 7 Apr. 1947; Miss. G.F. de Witte leg.; "180a, Type [red label], P. Vanschuytbroeck det., *Syntormon spiculus* n.sp."; RMCA • ♂; P.N.A.,

Massif Ruwenzori, Kalonge; 2480 m a.s.l.; 25–29 Aug. 1952; P. Vanschuytbroeck and L. Kekenbosch leg.; "840-43, étage bambous; riv. Nyamwamba-Ihongero // Holotypus, *Rhaphium vanschuytbroecki* Negrobov, Grichanov & Bakary [red label]"; RBINS.

Other material examined

KENYA • 2 ♂♂; Laikipia County, Thomson's Falls; 0.05° N, 36.38° E; 2350 m a.s.l.; 29–30 Dec. 2013; N. Vikhrev leg.; ZMUM • 1 ♂; Kiambu County, 0.932° S, 36.616° E; 2600 m a.s.l.; 18 Dec. 2013; N. Vikhrev leg.; ZMUM.

Distribution

DR Congo, Kenya, Uganda.

Rhaphium picketti Grichanov, 1995
Figs 1G, 6

Rhaphium picketti Grichanov, 1995: 28. Type locality: Kenya, Mt Elgon.

Type material

Holotype
KENYA • ♂; Mt Elgon; 10500–11500 ft a.s.l.; Feb. 1935; F.W. Edwards leg.; "B.M. E. Afr. Exped. B.M. 1935–203; Heath Zone"; BMNH.

Distribution

Kenya.

Rhaphium pitkini Grichanov, 1995
Figs 2A–C, 6

Rhaphium pitkini Grichanov, 1995: 25. Type locality: South Africa, Cape Town, Kloof Nek.

Type material

Holotype
SOUTH AFRICA • ♂; Kloof Nek, Cape Town; 1–2 Jan. 1972; "Southern African Exped. B.M. 1972-1"; BMNH.

Other material examined

KENYA • 2 ♂♂; Laikipia County, Thomson's Falls; 0.05° S, 36.38° E; 2350 m a.s.l.; 29–30 Dec. 2013; N. Vikhrev leg.; ZMUM.

SOUTH AFRICA – **Free State** • 1 ♂; Harrismith Dist., Mooihoekkop; 28°10′50.0″ S, 29°10′51.1″ E; ca 1800 m a.s.l.; 14–16 Sep. 2009; A.H. Kirk-Spriggs leg.; Malaise traps, *Leucosedea*-dominated scrub; BMSA, (D)08837.

Distribution

South Africa. First record from Kenya.

Rhaphium reaveyi Grichanov, 1995
Figs 1H, 6

Rhaphium reaveyi Grichanov, 1995: 27. Type locality: Kenya, Mt Kenya, N side.

Type material

Holotype
KENYA • ♂; Mt Kenya, N side; 11 000–12 000 ft; a.s.l. 20–22 Dec. 1980; P.S. Cranston leg.; Heather, stream; BMNH, B.M.1981-79.

Distribution

Kenya.

Rhaphium sexsetosum (Vanschuytbroeck, 1951)
Figs 2D–E, 6

Xiphandrium sexsetosum Vanschuytbroeck, 1951: 110. Type locality: Congo-belge, Parc National de Albert, vers mont Kamatembe.
Rhaphium grootaerti Negrobov, Grichanov & Bakary, 1982: 192. Type locality: Zaire, Massif Ruwenzori, Kyandolire.

Type material

Holotypes
DR CONGO • ♂; "P.N.A., vers Mt. Kamatembe"; ca 2300 m a.s.l.; 7–23 Jan. 1935; G.F. de Witte leg.; "1054, Coll. Mus. Congo (ex coll. IPNCB) // Type [red label], *Xiphandrium sexsetosum* n. sp."; RMCA • ♂; "Congo Belge, P.N.A., Massif Ruwenzori, Kyandolire"; 1700 m a.s.l.; 7–15 Oct. 1952; P. Vanschuytbroeck and L. Kekenbosch leg.; "Camp de Gardes, 840-43 // Holotypus, *Rhaphium grootaerti* Negrobov, Grichanov & Bakary [red label]"; RBINS.

Distribution

Burundi, DR Congo, Uganda.

Rhaphium shamshevi Grichanov, 1995
Figs 2F, 6

Rhaphium shamshevi Grichanov, 1995: 24. Type locality: Uganda, Ruwenzori Range, Namwamba Valley.

Type material

Holotype
UGANDA • ♂; Ruwenzori Range, Namwamba Valley; 6500 ft a.s.l.; Dec. 1934–Jan. 1935; F.W. Edwards leg.; "B.M. E. Afr. Exped.; B.M. 1935–203"; BMNH.

Distribution

Uganda.

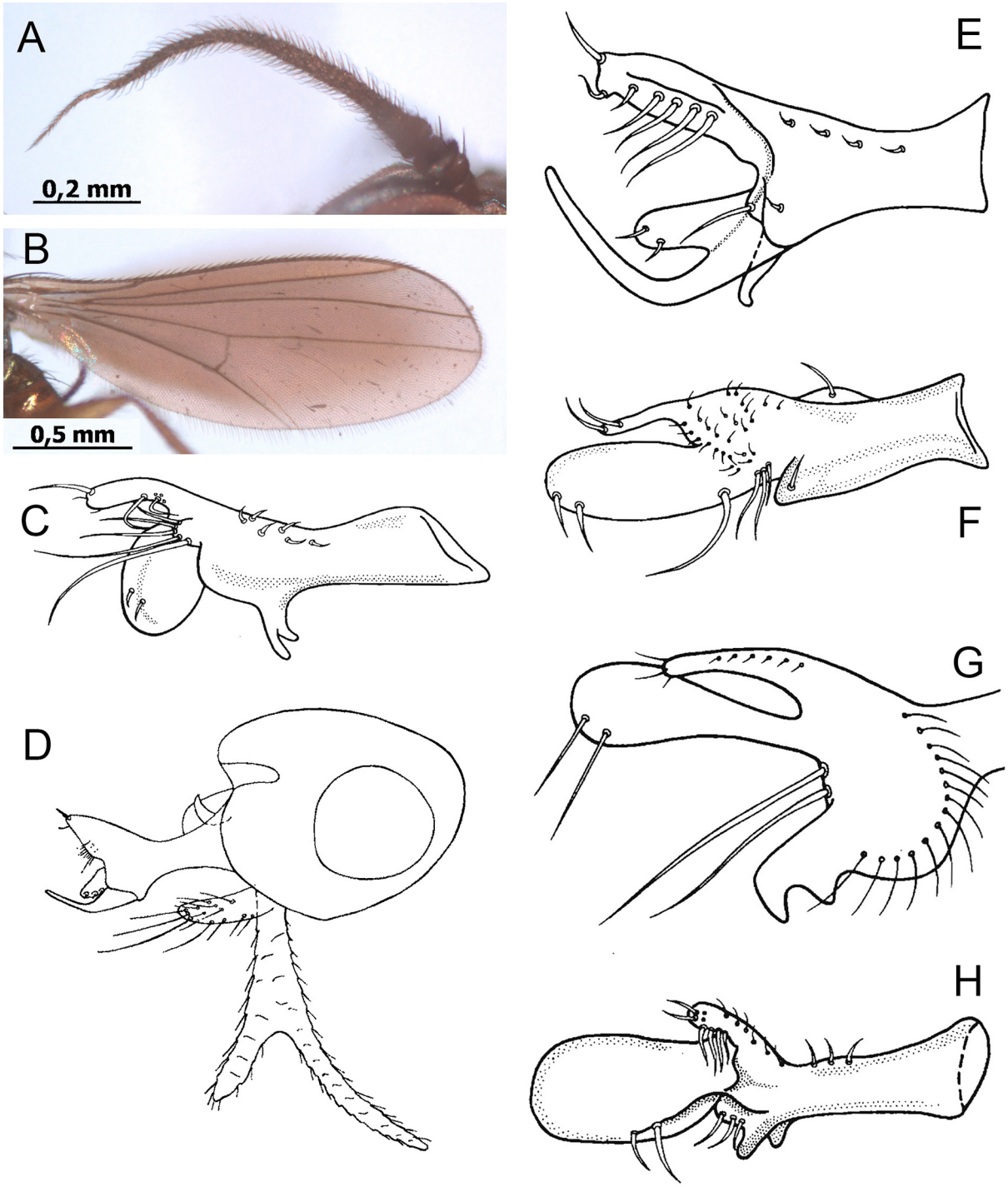

Fig. 2. *Rhaphium* spp., ♂♂. **A, C–D, F, G–H**. Lateral view. **E**. Ventral view. **A–B**. *R. pitkini* Grichanov, 1995 (ZMUM). **C**. *R. pitkini* Grichanov, 1995 (BMNH).**A**. Antenna. **B**. Wing. **C**. Surstylus. **D–E**. *R. sexsetosum* (Vanschuytbroeck, 1951) (RBINS). **D**. Hypopygium. **E**. Surstylus. **F**. *R. shamshevi* Grichanov, 1995 (BMNH), surstylus. **G**. *R. zairense* Negrobov, Grichanov & Bakary, 1982 (RBINS), surstylus. **H**. *R. zakonnikovae* Grichanov, 1995 (BMNH), surstylus. C, E–H: after Grichanov (1995); D: after Negrobov *et al.* (1982). Scale bars unavailable.

Rhaphium zairense Negrobov, Grichanov & Bakary, 1982
Figs 2G, 6

Rhaphium zairense Negrobov, Grichanov & Bakary, 1982: 192. Type locality: Zaire, Parc National de Albert, Mont Hoyo.

Type material

Holotype

DR CONGO • ♂; "Congo Belge, P.N.A., Mont Hoyo"; 1280 m a.s.l.; 7–15 Jul. 1955; P. Vanschuytbroeck leg.; "13274–309; sur plantes basses // Holotypus, *Rhaphium zairense* Negrobov, Grichanov & Bakary [red label]"; RBINS.

Other material examined

KENYA • 1 ♂; Rift Valley Prov., Mpala Ranch, Brungi; 0º21.752′ S, 36º51.723′ E; 1731 m a.s.l.; 18 Apr. 2011; A.H. Kirk-Spriggs and Copeland leg.; swept from wet area with grasses; BMSA.

Distribution.

DR Congo, Kenya, Uganda.

Rhaphium zakonnikovae Grichanov, 1995
Figs 2H, 6

Rhaphium zakonnikovae Grichanov, 1995: 23. Type locality: Uganda, Kigezi Dist., Mt Mgahinga.

Type material

Holotype

UGANDA • ♂; Kigezi Dist., Mt Mgahinga; 10 000–11 000 ft a.s.l.; Nov. 1934; F.W. Edwards leg.; "B.M. E. Afr. Exped., B.M. 1935–203"; BMNH.

Distribution

Uganda.

Rhaphium amharaense sp. nov.
urn:lsid:zoobank.org:act:05610A34-0C00-417B-96DA-A3FCB473381C
Figs 3, 6

Diagnosis

Males of *R. amharaense* sp. nov. differ from those of other species of the *Rhaphium pectinigerum* subgroup by the following combination of characters: postpedicel about 20 × as long as arista-like stylus; fore tibia with ventral setulae, shorter than diameter of tibia; cercus bi-lobed, slightly shorter than epandrium, and surstylus entire. Other species of the *Rhaphium pectinigerum* subgroup have a much longer arista-like stylus and male cercus.

Etymology

The species is named after the Amhara Province of Ethiopia, where the types have been collected.

Type material

Holotype

ETHIOPIA – **Amhara** • ♂; Tana Lake env.; 3180 m a.s.l.; 11.74° N, 38.30° E; 5 Aug. 2012; N. Vikhrev leg.; ZMUM.

Paratypes

ETHIOPIA – **Amhara** • 8 ♂♂; same data as for holotype; ZMUM.

Description

Males (Fig. 3)

Measurements. Body length 2.4 mm, antenna length 1.1 mm, wing length 2.4 mm, wing width 0.8 mm.

Head. Frons metallic black, slightly grey pollinose; face densely silvery-white pollinose, wide, below antennae 2 × as wide as height of postpedicel; occiput black, grey pollinose; palpi and proboscis short, black, with black setae; antenna (Fig. 3B) black, 1.5 × as long as height of head; postpedicel long, narrow, band-like, densely pubescent, ratio of its length to height at base, 0.87/0.10; length ratios of scape to pedicel to postpedicel to stylus (in mm): 0.09/0.07/0.87/0.04; lower postocular setae white.

Thorax. Mesonotum metallic black, pleura grey pollinose; three pairs of strong dorsocentral bristles, with reduced hairs anteriorly, and pair of reduced setae between second and third pairs of strong bristles, 2–3 acrosticals between first dorsocentrals in one row.

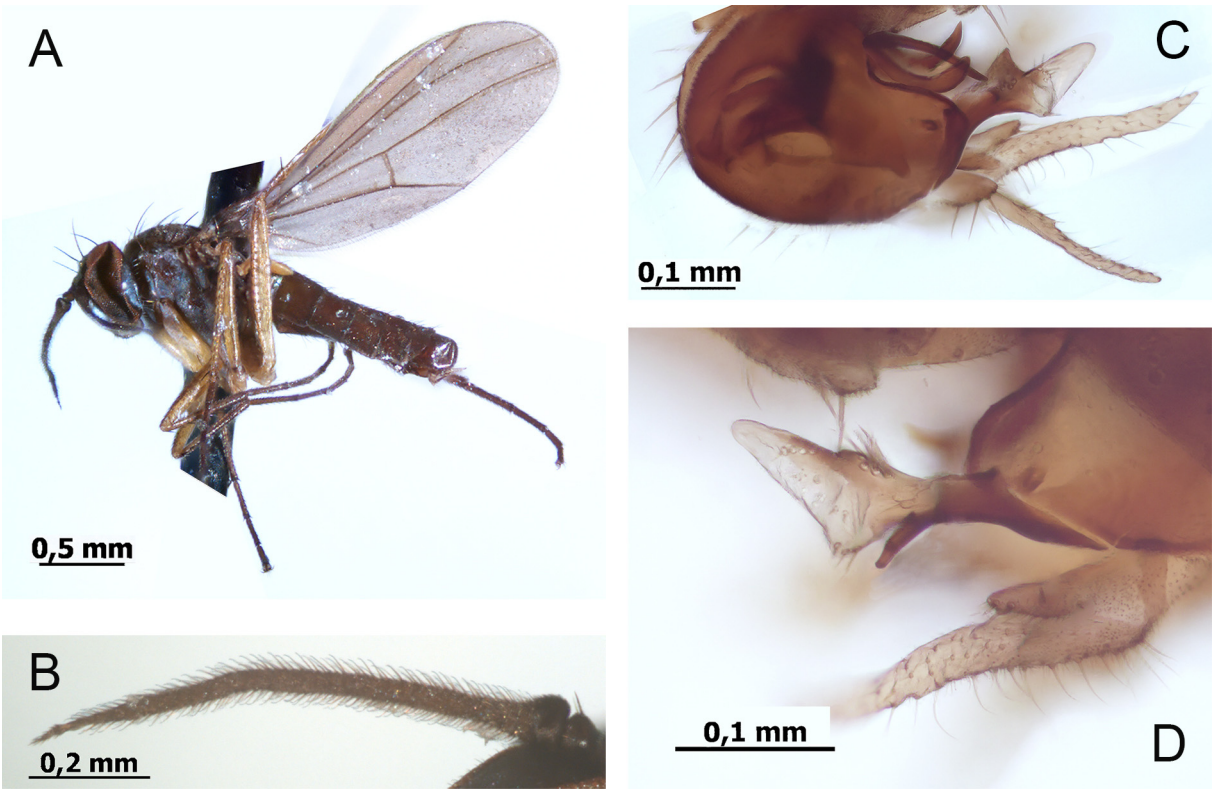

Fig. 3. *Rhaphium amharaense* sp. nov. **A–B**. Holotype, ♂ (ZMUM). **C–D**. Paratype, ♂ (ZMUM). **A**. Habitus. **B**. Antenna. **C**. Hypopygium after maceration, lateral view. **D**. Surstylus and base of cercus, ventral view.

Legs. Mostly yellow, mid and hind coxae blackish, tarsi brown from tip of basitarsus; fore coxa with yellow hairs and black apical bristles of different length; mid coxa anteriorly with black hairs and 2 strong black bristles, without apical spine; hind coxa with 1 long black outer bristle, with few short hairs; fore, mid and hind femora with few preapical setae or hairs; fore tibia with dorsal row of about 10 setae along its entire length, beginning from extreme base; fore tarsus simple, with simple setulae; mid tibia with 2 anterodorsal, 2 shorter posterodorsal, 1 short posteroventral and 4 apical bristles; hind tibia with 2 anterodorsal, 2 posterodorsal and 3 apical bristles. Length ratios of femur, tibia, tarsomeres 1–5 (in mm): fore leg: 0.62/0.66/0.33/0.28/0.21/0.16/0.14, mid leg: 0.78/0.86/0.39/0.25/0.16/0.1/0.1, hind leg: 0.99/1.09/0.31/0.31/0.22/0.12/0.11.

Wing. Greyish; lengths (mm) of costal sections between R_{2+3} and R_{4+5} and that between R_{4+5} and M_1, 0.49/0.18, respectively; length (mm) of dm-m to distal part of M_4, 0.22/0.44; lower calypter yellow, with brownish cilia; halter yellow.

Abdomen. Metallic black, with black hairs and setae; hypopygium (Fig. 3C) black, with black setae; hypandrium with 2 curved lobes; phallus simple; cercus and surstylus black; cercus slightly shorter than epandrium, narrow, with black hairs; basal lobe of cercus ¼ as long as inner lobe; surstylus (Fig. 3D) subtriangular, with relatively long mid-dorsal lobe.

Female

Unknown.

Rhaphium gobaense sp. nov.

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Figs 4, 6

Diagnosis

Males of *R. gobaense* sp. nov. and *R. vikhrevi* sp. nov. differ from those of other species of the *Rhaphium pectinigerum* subgroup by the surstylus deeply bifurcated, with long thin lobes. *Rhaphium gobaense* differs from *R. vikhrevi* in the arista-like stylus 1/6 as long as the postpedicel; the cercus has an outer lobe ⅔ as long as the inner lobe. Males of *R. vikhrevi* have an arista-like stylus 2/5 as long as the postpedicel; the cercus has an outer lobe less than half as long as the inner lobe.

Etymology

The species is named after the Goba Province of Ethiopia, where the types have been collected.

Type material

Holotype

ETHIOPIA – **Oromia** • ♂; Goba; Tana Lake env.; 3070 m a.s.l.; 6.933° N, 39.95° E; 7 Dec. 2023; N. Vikhrev leg.; ZMUM.

Paratypes

ETHIOPIA – **Oromia** • 2 ♂♂; same data as for holotype; ZMUM • 3 ♂♂; Bale, 12 km E of Adaba, river; 30 Jan. 2000; A. Freidberg and I. Yarom leg.; SMNHTAU.

Description

Males (Fig. 4)

Measurements. Body length 2.7 mm, antenna length 1.3 mm, wing length 3 mm, wing width 1 mm.

Head. Frons metallic black, grey pollinose; face densely silvery-white pollinose, wide, below antennae 2 × as wide as height of postpedicel; occiput black, grey pollinose; palpi and proboscis short, black, with black setae; antenna (Fig. 4B) black, 2 × as long as height of head; postpedicel long, narrow, band-like, densely pubescent, ratio of its length to height at base, 0.96/0.10; length ratios of scape to pedicel to postpedicel to stylus (in mm): 0.08/0.06/0.96/0.17; lower postocular setae white.

Thorax. Mesonotum metallic black, pleura grey pollinose; three pairs of strong dorsocentral bristles, with reduced hairs anteriorly, and pair of reduced setae between second and third pairs of strong bristles, 2–3 acrosticals between first dorsocentrals in one row.

Legs. Mostly yellow, mid and hind coxae mostly black, hind femur brown dorsally at apex; tarsi brown from tip of basitarsus; fore coxa with yellow hairs and black apical bristles of different length; mid coxa anteriorly with yellow and brownish hairs and 2 strong black bristles, with thin black apical spine; hind coxa with 1 long black outer bristle, with few short hairs; fore, mid and hind femora with few preapical setae or hairs; mid femur with strong preapical anterior bristle; fore tibia with dorsal row of about 15 short setae along its entire length, with 1 ventral seta; fore tarsus simple, with somewhat elongated dorsal setulae; mid tibia with 2 anterodorsal, 2 shorter posterodorsal, 1 short posteroventral and 4 apical bristles; hind tibia with 2 anterodorsal, 2 posterodorsal, few short ventral setae and 3 apical bristles. Length ratios of femur, tibia, tarsomeres 1–5 (in mm): fore leg: 0.76/0.76/0.51/0.31/0.22/0.13/0.13, mid leg: 0.95/1.07/0.55/0.31/0.25/0.15/0.11, hind leg: 1.12/1.42/0.4/0.4/0.28/0.19/0.11.

Wing. Greyish, almost hyaline. Lengths (mm) of costal sections between R_{2+3} and R_{4+5} and this between R_{4+5} and M_1, 0.55/0.16, respectively; length (mm) of dm-m to distal part of M_4, 0.24/0.65; lower calypter yellow, with yellow cilia; halter yellow.

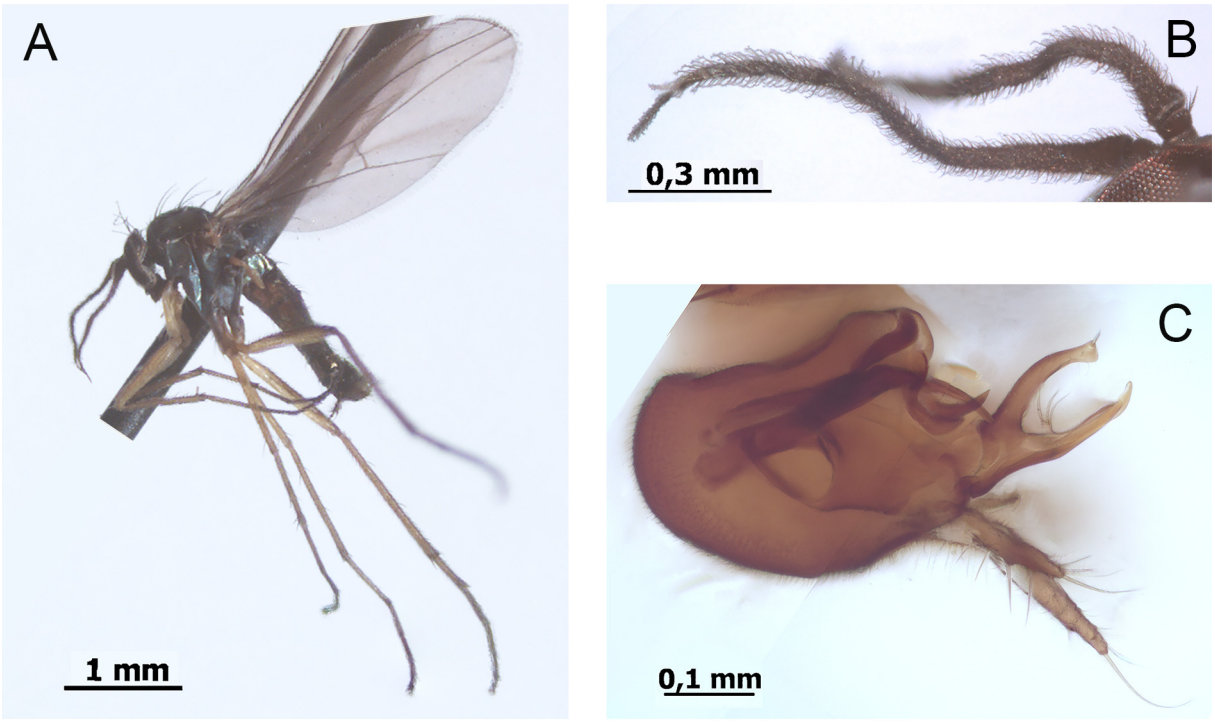

Fig. 4. *Rhaphium gobaense* sp. nov. **A–B**. Holotype, ♂ (ZMUM). **C**. Paratype ♂ (ZMUM). **A**. Habitus. **B**. Antenna. **C**. Hypopygium after maceration, lateral view.

Abdomen. Metallic black, with bluish reflection, with black hairs and setae; hypopygium (Fig. 4C) black, with black setae; hypandrium with 2 curved lobes; phallus simple; cercus and surstylus black; cercus ⅔ as long as epandrium, with 2 narrow lobes, with black hairs; outer lobe of cercus ⅔ as long as inner lobe; surstylus deeply bifurcated, with long thin lobes.

Female

Unknown.

Rhaphium vikhrevi sp. nov.

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Figs 5–6

Diagnosis

Males of *R. gobaense* sp. nov. and *R. vikhrevi* sp. nov. differ from those of other species of the *Rhaphium pectinigerum* subgroup by the surstylus deeply bifurcated, with long thin lobes. See diagnosis of *R. gobaense* above.

Etymology

The specific epithet is dedicated to the collector, the Russian dipterologist Dr Nikita Vikhrev (ZMUM).

Type material

Holotype

ETHIOPIA – **Oromia** • ♂; Goba, Tana Lake env.; 3070 m a.s.l.; 6.933° N, 39.95° E; 7 Dec. 2023; N. Vikhrev leg.; ZMUM.

Paratypes

ETHIOPIA – **Oromia** • 3 ♂♂, same data as for holotype; ZMUM.

Description

Males (Fig. 5)

Measurements. Body length 3 mm, antenna length 1.3 mm, wing length 3.3 mm, wing width 1 mm.

Head. Frons metallic black, with violet reflection, grey pollinose; face densely silvery-white pollinose, narrow, below antennae 1.3 × as wide as height of postpedicel; occiput black, grey pollinose; palpi and proboscis short, black, with black setae; antenna (Fig. 5B) black, 1.5 × as long as height of head; postpedicel long, narrow, band-like, densely pubescent, ratio of its length to height at base, 0.81/0.10; ratios of lengths (mm) of scape to pedicel to postpedicel to arista-like stylus, 0.08/0.05/0.81/0.35; lower postocular setae white.

Thorax. Mesonotum metallic black, pleura grey pollinose; three pairs of strong dorsocentral bristles, with reduced hairs anteriorly, and pair of reduced setae between second and third pairs of strong bristles, 3–4 pairs of acrosticals anteriorly in two rows.

Legs. Mostly yellow, mid coxa black in basal half; hind coxa with blackish spot at base; tarsi brown from tip of basitarsus; fore coxa with yellow hairs and black yellow bristles of different length; mid coxa anteriorly with yellow hairs and 2 strong black bristles, with thick brown-black apical spine; hind coxa with 1 long black outer bristle, with few short hairs; fore, mid and hind femora with few preapical setae or hairs; fore femur with 2 ventral rows of hairs, at most half as long as height of femur; mid femur with strong preapical anterior bristle; fore tibia with dorsal row of about 15 short setae along its entire length,

with ventral row of about 15 setae, about as long as diametre of tibia; fore tarsus simple, with somewhat elongated dorsal setulae; mid tibia with 2 anterodorsal, 2 shorter posterodorsal, 1 short posteroventral and 4 apical bristles; hind tibia with 2 anterodorsal, 2 posterodorsal, 1 dorsal, few short ventral setae and 3 apical bristles. Length ratios of femur, tibia, tarsomeres 1–5 (in mm): fore leg 0.83/0.84/0.52/0.34/0.24/0.15/0.12, mid leg: 1.03/1.2/0.69/0.34/0.26/0.16/0.12, hind leg 1.36/1.62/0.44/0.45/0.35/0.21/0.15.

Wing. Greyish, almost hyaline. Lengths (mm) of costal sections between R_{2+3} and R_{4+5} and that between R_{4+5} and M_1, 0.56/0.17, respectively; length (mm) of dm-m to distal part of M_4, 0.27/0.76; lower calypter yellow, with yellow cilia; halter yellow.

Abdomen. Metallic black, with bluish reflection, with black hairs and setae; hypopygium (Fig. 5C) black, with black setae; hypandrium with 2 curved lobes; phallus simple; cercus and surstylus black; cercus nearly 1.5 × as long as epandrium, with 2 narrow lobes, with black hairs; outer lobe of cercus $^2/_5$ as long as inner lobe; surstylus deeply bifurcated, with long thin lobes.

Female

Unknown.

Fig. 5. *Rhaphium vikhrevi* sp. nov. **A**. Holotype, ♂ (ZMUM). **B–C**. Paratype, ♂ (ZMUM). **A**. Habitus. **B**. Antenna. **C**. Hypopygium after maceration, lateral view.

Fig. 6. African countries and Congolese provinces with known species of *Rhaphium* (shaded with horizontal lines).

Discussion

Grichanov (2025b) distinguished three groups of Palaearctic species in the former genus *Xiphandrium.* Having a bilobate male cercus, all the Afrotropical species are closely related to the Palaearctic *Rhaphium ensicorne* species group and the *Rhaphium albifrons* species group. At present, these two groups are distinguished mainly by the black (in *R. ensicorne* group) or white (in *R. albifrons* group) colour of the lateral seta on the hind coxa (Grichanov 2025b). By contract, species of the *Rhaphium caliginosum* group (a predominately Palaearctic group, which includes *R. appendiculatum*, introduced to St Helena) all have a simple male cercus. The Afrotropical fauna now includes 17 closely related species, all bearing a black seta on the hind coxa, thus belonging to the *Rhaphium ensicorne* species group, and one species of the *Rhaphium caliginosum* group. The following subgroups of the *Rhaphium ensicorne* species group are preliminarily defined here (females of some species were not formally described because of the presence of two or more species collected together at one locality):

Rhaphium currani subgroup with males and females bearing two strong spine-like dorsal bristles in the basal third of the fore tibia: *R. bulyginskayae*, *R. currani*, *R. shamshevi*, *R. zairense* and *R. zakonnikovae.*

Rhaphium pectinigerum subgroup with males and females bearing a dorsal or anterodorsal row of 5–15 short bristles on the fore tibia: *R. amharaense* sp. nov., *R. doroninae*, *R. gobaense* sp. nov.,

R. ovsyannikovae, *R. pectinigerum*, *R. pitkini*, *R. sexsetosum* and *R. vikhrevi* sp. nov.

Rhaphium reaveyi subgroup with males and females bearing at most two anterodorsal and two posterodorsal bristles on the fore tibia: *R. bukzeevae*, *R. mcveighi*, *R. picketti* and *R. reaveyi*.

Sixteen Afrotropical species of the genus inhabit the East African Rift System that began developing in the Miocene, 22–25 million years ago (Ebinger 2005), and two species of the genus penetrated the Southern African plateau (Fig. 6). *Rhaphium currani* is known from six countries of southern Africa, and *R. pitkini* is found in both Kenya and South Africa. Two species have comparatively wide distribution areas in DR Congo, Kenya and Uganda (*R. pectinigerum* and *R. zairense*) and one species in Burundi, DR Congo and Uganda (*R. sexsetosum*). In all, ten species were collected in Uganda, six species in Kenya, three species in DR Congo, and three species are described from Ethiopia. The genus is yet unknown from West Africa or the western Indian Ocean Islands.

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References

Collin J.E. 1940. Critical notes on some recent synonymy affecting British species of Dolichopodidae (Dipt.). *Entomologist's Monthly Magazine* Ser. 4, 1 (76): 261–271.

Crossley R. 2020. Notes on the genus *Rhaphium* Meigen, 1803 (Diptera: Dolichopodidae) in Yorkshire. *The Naturalist* 145: 67–73.

Cumming J.M. & Wood D.M. 2017. 3. Adult morphology and terminology. *In*: Kirk-Spriggs A.H. & Sinclair B.J. (eds) *Manual of Afrotropical Diptera. Volume 1. Introductory Chapters and Keys to Diptera Families*: 89–134. Suricata 4, SANBI Graphics & Editing, Pretoria.

Curran C.H. 1926. Records of African Dolichopodidae with descriptions of new species. *Revue zoologique africaine* 14 (1): 1–39.

Ebinger C. 2005. Continental break-up: The East African perspective. *Astronomy and Geophysics* 46 (2): 2.16–2.21. https://doi.org/10.1111/j.1468-4004.2005.46216.x

Grichanov I.Ya. 1995. The Afrotropical species of the genus *Rhaphium* Meigen (Diptera: Dolichopodidae). *International Journal of Dipterological Research* 6 (1): 19–31.

Grichanov I.Ya. 2001. Afrotropical *Syntormon* Loew and new synonyms in the genus *Rhaphium* Loew (Diptera: Dolichopodidae). *International Journal of Dipterological Research* 12 (4): 181–194.

Grichanov I.Ya. 2006. A preliminary list of Dolichopodidae (Diptera) types in the collections of Swedish Museums. *International Journal of Dipterological Research* 17 (3): 177–204.

Grichanov I.Ya. 2018. *An Annotated Catalogue of Afrotropical Dolichopodoidae (Diptera)*. All-Russian Institute of Plant Protection, St Petersburg. https://doi.org/10.5281/zenodo.1187006

Grichanov I.Ya. 2025a. A check list of species of the family Dolichopodidae (Diptera) of the World arranged by alphabetic list of generic names [online database]. Available from http://grichanov.aiq.ru/Genera3.htm [accessed 10 Dec. 2025].

Grichanov I.Ya. 2025b. Palaearctic species of the *Rhaphium caliginosum* group (Diptera, Dolichopodidae). *Euroasian Entomological Journal* 24 (2): 67–72. https://doi.org/10.15298/euroasentj.24.02.02

Grichanov I.Ya. & Brooks S.E. 2017. 56. Dolichopodidae (long-legged dance flies). *In*: Kirk-Spriggs A.H. & Sinclair B.J. (eds) *Manual of Afrotropical Diptera*, *Volume 2. Nematocerous Diptera and Lower Brachycera*: 1265–1320. Suricata 5. SANBI Graphics & Editing, Pretoria.

Grichanov I.Ya. & Mostovski M.B. 2009. Long-legged flies (Diptera: Dolichopodidae) in the collection of the Natal Museum: A review of C.H. Curran's types, new synonyms, and new combinations. *Zootaxa* 2194: 37–53. https://doi.org/10.11646/zootaxa.2194.1.3

Grootaert P., Taylor C. & Guénard B. 2019. Three new species of *Rhaphium* Meigen, 1803 from mangroves in Hong Kong (Diptera: Dolichopodidae: Rhaphiinae). *European Journal of Taxonomy* 540: 1–21. https://doi.org/10.5852/ejt.2019.540

Naglis S. & Grootaert P. 2011. A remarkable new species of *Rhaphium* Meigen (Diptera, Dolichopodidae) from Sri Lanka. *Zootaxa* 2991: 44–48. https://doi.org/10.11646/zootaxa.2991.1.6

Negrobov O.P., Grichanov I.Y. & Bakari K. 1982. New species of the genus *Rhaphium* (Diptera, Dolichopodidae) from Zaire. *Entomologicheskoe obozrenie* 61 (1): 190–194. [In Russian.] [English translation: *Entomological Review* 61 (1): 184–188].

Parent O. 1925. Etude sur les Dolichopodidés de la collection Meigen conservées au Museum national d'Histoire naturelle de Paris. *Encyclopédie entomologique Ser. BII Diptera* 2: 41–58.

Parent O. 1938. Mission scientifique de l'Omo. Diptera 3. Dolichopodidae. *Mémoires du Muséum national d'Histoire naturelle* (N.S.) 8: 407–415.

Parent O. 1939. Diptères Dolichopodides de la region éthiopienne. *Revue de Zoologie et Botanie Africaine* 32: 256–282.

Ulrich H. 2005. Predation by adult Dolichopodidae (Diptera): a review of literature with an annotated prey-predator list. *Studia dipterologica* (2004) 11 (2): 369–403.

Vanschuytbroeck P. 1951. Dolichopodidae. *Exploration du Parc National de Albert. Mission G.F. De Witte* (*1933–1935*) 74: 1–153.

Vanschuytbroeck P. 1952. Dolichopodidae (Diptera, Brachycera, Orthorrhapha). *Exploration du Parc National de l'Upemba. Mission G.F. De Witte* 12: 1–70.

Vanschuytbroeck P. 1976. La Faune terrestre de l'Île de Sainte-Hélène (troisième partie). Fam. Dolichopodidae. *Annales Musee royal de l'Afrique centrale* Ser. 8 (215): 49–57.

Zetterstedt J.W. 1849. *Diptera Scandinaviæ Disposita et Descripta*. Officina Lundbergiana, Lundæ [= Lund] 8: 2935–3366. https://doi.org/10.5962/bhl.title.8143

Yang D., Zhang L., Wang M. & Zhu Y. 2011. Diptera Dolichopodidae, Rhaphiinae Bigot, 1852. *In*: *Fauna Sinica Insecta.* Vol. 53: 1241–1273. Science Press, Beijing.

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