

The Afrotropical species of the genus *Rhaphium* Meigen (Diptera: Dolichopodidae)

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Grichanov, I. Ya. 1995. The Afrotropical species of the genus *Rhaphium* Meigen (Diptera: Dolichopodidae). *Int. J. Dipterol. Res.*, 6(1): 19—31.

10 species of the genus *Rhaphium* are described from Kenya, Uganda and South Africa. Catalogue and a key to Afrotropical species of *Rhaphium* are given.

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Key words: Diptera, Dolichopodidae, *Rhaphium*, Africa.

Introduction

Dolichopodid Afrotropical fauna of the genus *Rhaphium* Mg. remains little studied. Loew (1858, 1860) described a female of *Xiphandrium* (= *Rhaphium*) *briste* Lw. from South Africa, which is probably to be designated as species incertae sedis on the basis of the character "third antennal segment short, rounded". Loew's collection in the Berlin University does not have the type of the species (Negrobov et al., 1982). Later, the species *Rh. currani* Parent (= *Rh. triste* Curran, nec Loew), *Rh. sexsetosum* and *Rh. røeruensensis* (Vanschuytbroeck, 1951) were described, but we have not examined them. Recently, three new species were described from Zaire (Negrobov et al., 1982). Many new species and records of the genus *Rhaphium* Mg. from Tropical and South Africa were found in the rich collection of the Natural History Museum in London. All of the newly described and examined afrotropical species of the genus have the following features.

One pair of ocellar and external vertical bristles. Postocular bristles black in the upper part and white in the lateral and lower parts of the head. Eyes with short white hairs. Antennae black, inserted in the upper part of the head; scape bare, pedicel with small bristles. Arista inserted in apex of first flagellomere. Propleura with some white hairs. Scutellum with two

long bristles. All segments of abdomen dark, with dark hairs and bristles. Wings slightly darkened, veins yellowish brown.

Holotypes and paratypes are deposited in the Natural History Museum (London).

List of known species of *Rhaphium* from Afrotropical Region

Rhaphium Meigen, 1803

Rhaphium Meigen, 1803: 272.

Type species *Rh. macrocerum* Mg., 1824, by designation of Curtis, 1835: 568.

bukzeevae sp. n. — Uganda

bulyginskayae sp. n. — Kenya

currani Parent, 1939: 282 (*Xiphandrium*) — South Africa, Zimbabwe, Zaire (?), Nigeria (?)

= *triste* Curran, 1926, not Loew (misidentification)

grootaerti Negrobov, Grichanov, Bakari, 1982: 192

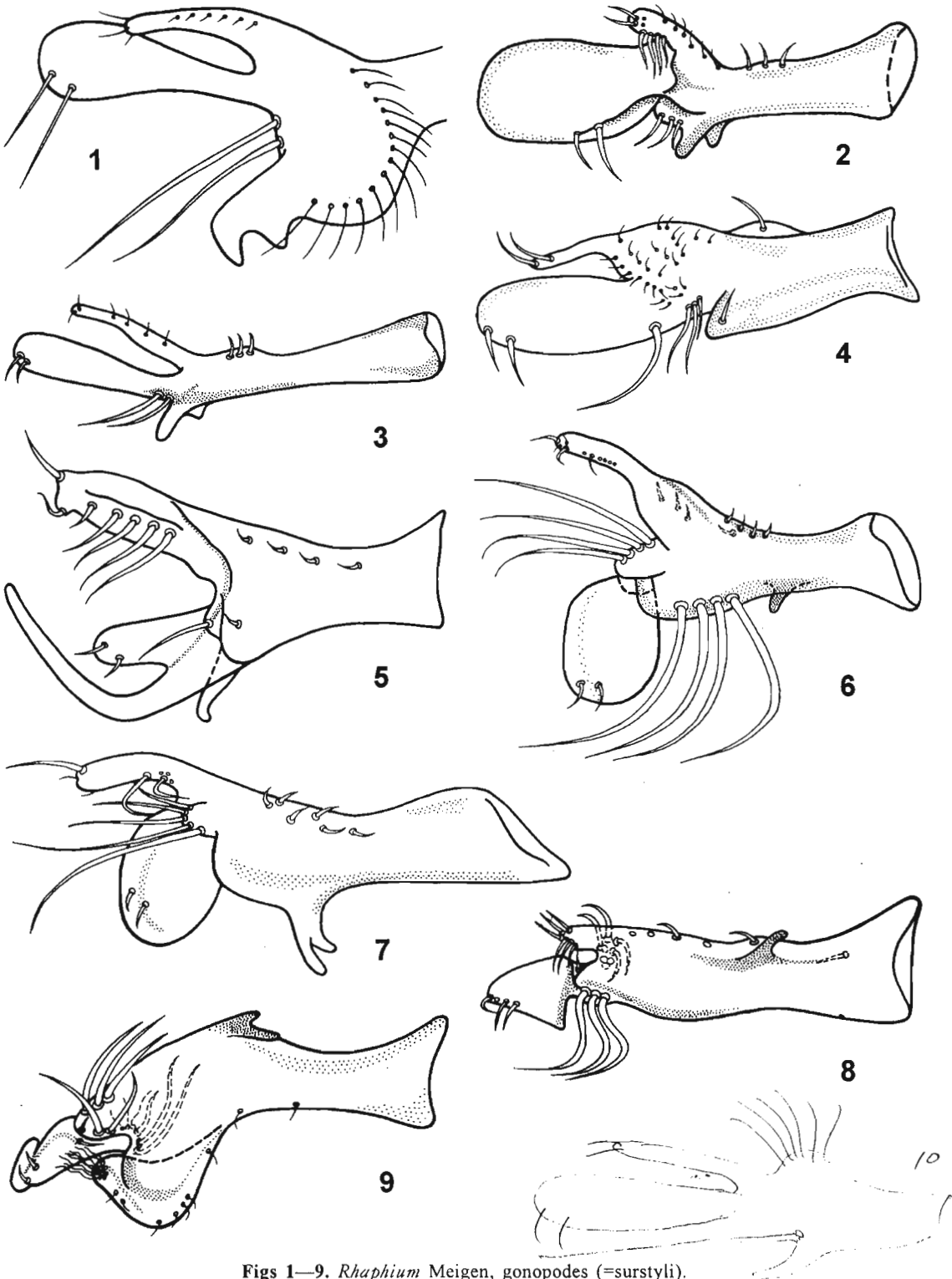
— Zaire, Uganda (!)

doroninae sp. n. — Uganda

macrocerum Meigen, 1824: 29 — St. Helena, North Africa, Europe, Central Asia

mcveighi sp. n. — Uganda, Kenya

reaveyi sp. n. — Kenya



Figs 1—9. *Rhaphium* Meigen, gonopodes (=surstyli).

1, *Rhaphium zairensis* Negrobov, Grichanov & Bakari; 2, *Rh. zakonnikovae* sp. n.; 3, *Rh. bulyginskayae* sp. n.; 4, *Rh. shamsheci* sp. n.; 5, *Rh. grootaerti* Negr. et al.; 6, *Rh. vanschuytbroeckii* Negr. et al.; 7, *Rh. pitkini* sp. n.; 8, *Rh. ocsyannikovae* sp. n.; 9, *Rh. doroninae* sp. n. 1—4, 7—9, lateral view; 5—6, ventro-lateral view.

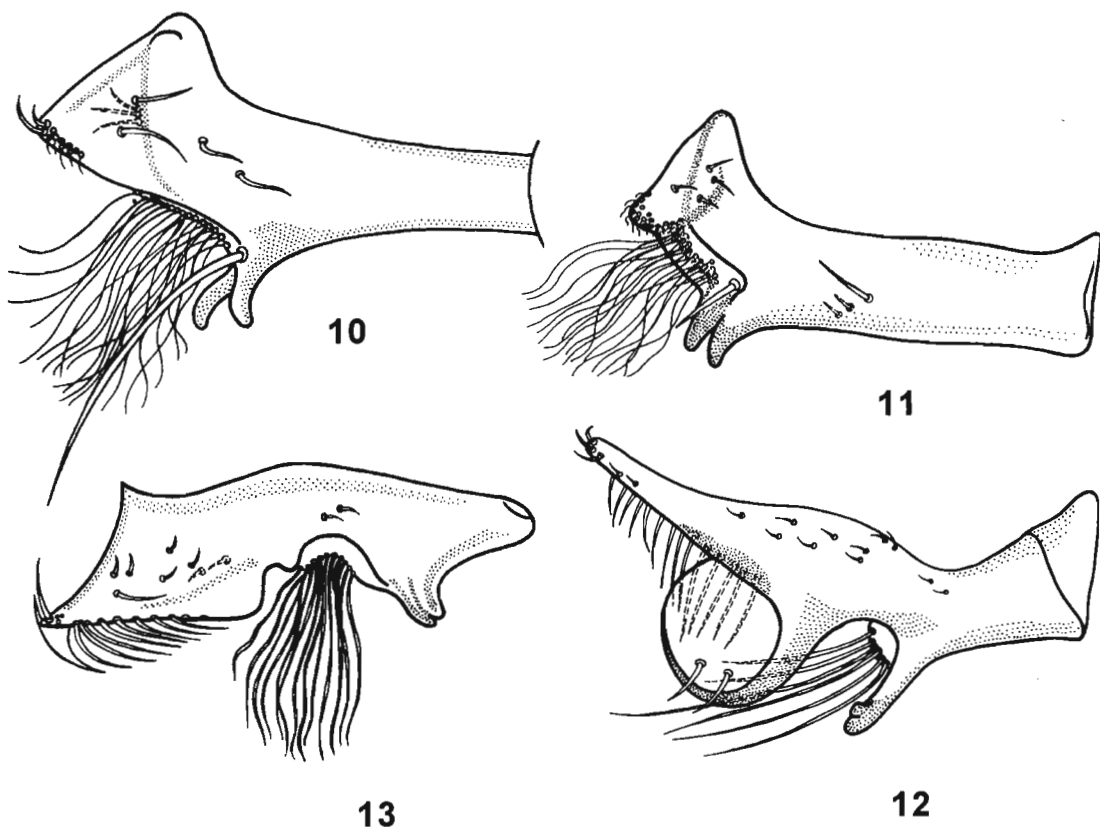
- ovsyannikovae* sp. n. — Uganda
picketti sp. n. — Uganda, Kenya
pitkini sp. n. — South Africa
rweruensis Vanschuytbroeck, 1951: 108 (*Xiphandrium*) — Zaire = *vanschuytbroeckii* Ngr.
sexsetosum Vanschuytbroeck, 1951: 110 (*Xiphandrium*) — Zaire = *grootaerti* Ngr.
shamshevi sp. n. — Uganda
triste Loew, 1858: 341; 1860: 352 (*Xiphandrium*) — South Africa
vanschuytbroeckii Negrobov, Grichanov, Bakari, 1982: 190 — Zaire, Uganda (!), Kenya (!)
zairensis Negrobov, Grichanov, Bakari, 1982: 192 — Zaire, Uganda (!), Kenya (!)
zakonnikovae sp. n. — Uganda

Key to Afrotropical species of *Rhaphium* Mg.

1. Basal segments of abdomen yellow 2
 — Abdomen completely dark 3
2. Fore tibiae with row of 4—5 strong anterior bristles, halteres brown
 *Rh. sexsetosum* Vansch.
 — Fore tibiae without such row of bristles, halteres yellow *Rh. rweruensis* Vansch.
3. Fore and middle femora black except apex, hind femora brown *Rh. triste* Lw.*
 — Femora yellow or brownish yellow 4
4. Males 5
 — Females 19
5. Fore tibiae with 2 strong thorn-like dorsal bristles in basal third 6
 — Fore tibiae with simple dorsal setae 10
6. Cerci bifurcated *Rh. currani* Par.
 — Cerci simple, filiform 7
7. First flagellomere 3 times as long as high at base, and as long as arista
 *Rh. zairensis* Negr. et al.
 — First flagellomere 7—9 times as long as high at base, and 3 and more times longer than arista 8
8. Face 2—2.5 times as high as wide under antennae; first flagellomere 13 times longer than arista; fore femora without long ciliae
 *Rh. zakonnikovae* sp. n.
 — Face 3.5—4 times as high as wide under antennae 9
9. Fore femora with a row of 9—10 posteroventral ciliae of the same length; arista one-third the length of first flagellomere
 *Rh. bulyginskayae* sp. n.
 — Fore femora with posterior and ventral irregular

- rows of hairs of different length; arista one-fifth the length of first flagellomere 9a
 *Rh. shamshevi* sp. n.
10. Fore tibiae with a row of 5—10 short antero-dorsal bristles 11
 — Fore tibiae at most with 2 antero- and 2 postero-dorsal bristles 15
11. Cerci bifurcated
 *Rh. grootaerti* Negr. et al.
 — Cerci simple, filiform 12
12. Fore tibiae with 2 rows of thin ventral hairs, which are longer than diameter of tibia
 *Rh. vanschuytbroeckii* Negr. et al.
 — Fore tibiae with ventral setulae, which are shorter than diameter of tibia 13
13. 3 pairs of strong dorsocentral bristles; fore femora without ciliae in basal half
 *Rh. pitkini* sp. n.
 — 4 pairs of strong dorsocentral bristles; fore femora with thin posteroventral ciliae in basal half 14
14. Arista one-third the length of first flagellomere; fore tibiae with a row of feeble dorsal setulae *Rh. ovsyannikovae* sp. n.
 — Arista one-sixth the length of first flagellomere; fore tibiae with a row of strong dorsal setae *Rh. doroninae* sp. n.
15. Fore tibiae and basitarsi with 1—2 rows of long strong ventral bristles 16
 — Fore legs without rows of long bristles 17
16. First segment of fore tarsi nearly as long as second segment *Rh. reaveyi* sp. n.
 — First segment of fore tarsi twice as long as the next segment *Rh. picketti* sp. n.
17. Gonopodes with a bundle of long yellow bristles, reaching the middle of third tergite, 5 pairs of strong dorsocentral bristles
 *Rh. macrocerum* Mg.
 — Gonopodes without such bundle, 4 pairs of strong dorsocentral bristles 18
18. No small setulae between strong dorsocentral bristles; fore tibiae with 2 posterodorsal setae only *Rh. bukzevae* sp. n.
 — One pair of reduced setae between second and third pairs of strong dorsocentral bristles; fore tibiae with 2 antero- and 2 posterodorsal setae *Rh. mcveighi* sp. n.
19. Fore tibiae with 2 strong thorn-like dorsal bristles in basal third 20
 — Fore tibiae with simple dorsal setae 22
20. Arista black *Rh. zakonnikovae* sp. n.
 — Arista whitish 21
21. Face pollinose, but under antennae with metallic brilliant triangle touched clypeus with apex *Rh. zairensis* Negr. et al.

* described from a female



Figs 10—13. *Rhaphium* Meigen, gonopodes (=surstyli).

10, *Rh. reaveyi* sp. n.; 11, *Rh. picketi* sp. n.; 12, *Rh. bukzevae* sp. n.; 13, *Rh. mcveighi* sp. n. 10—11, 13, ventral view; 12, lateral view.

- Face completely mat . . . *Rh. shamshevi* sp. n.
- 22. Fore tibiae with a row of 5—7 short dorsal bristles
 *Rh. grootaerti* Negr. et al., *Rh. vanschuytbroeckii* Negr. et al., *Rh. pitkini* sp. n.
- Fore tibiae at most with 2 antero- and 2 posterodorsal bristles 23
- 23. 5 pairs of strong dorsocentral bristles
 *Rh. macrocerum* Mg.
- 4 pairs of strong and 1—2 pairs of reduced dorsocentral bristles 24
- 24. No small setulae between strong dorsocentral bristles; fore tibiae with 2 posterodorsal setae only *Rh. bukzevae* sp. n.
- One pair of reduced setae between second and third pairs of strong dorsocentral bristles; fore tibiae with 2 antero- and 2 posterodorsal setae 25
- 25. First flagellomere twice as long as high at base *Rh. mcveighi* sp. n.
- First flagellomere thrice as long as high at base *Rh. reaveyi* sp. n.

Descriptions and new records

Rhaphium zairensis Negrobov, Grichanov & Bakari

(Fig. 1)

Material examined. 37 males, 7 females. **Kenya:** 15—20.XII.1970 (A. E. Stubbs), BM 1972—211 / Kakamega Forest, 5200 feet. 1 male, **Kenya:** 15—20.XII.1970 (A. E. Stubbs), BM 1972—211 / Kericho, 6500 feet. 1 male, **Kenya:** 15—20.XII.1970 (A. E. Stubbs), BM 1972—211 / Lake Nakuru, 5767 feet. 1 female, **Kenya:** Aberdare Range, 25.X.1934, B.M.E. Afr. Exp. B.M.1935—203 / Mt. Kinangop, 9000 ft (F. W. Edwards). 2 males, **Uganda:** Ruwenzori Range, XII.1934—I.1935, B.M.E. Afr. Exp. B.M. 1935—203 / Kilembe, 4500 ft (F. W. Edwards).

Distribution. Mountain areas of East Zaire, Uganda and West Kenya.

Diagnosis. Males of *Rh. zairensis* can be separated from other species with two strong thorn-like dor-

sal bristles in basal third of fore tibiae by linear measurements of first flagellomere, arista and face, by morphology of cerci and gonopodes and by some other features. Females are distinguished from *Rh. zakonnikovae* by whitish arista, from *Rh. shamshevi* by partly brilliant clypeus, but probably only slightly differs from unknown females of *Rh. currani* and *Rh. bulyginskayae*.

***Rhaphium zakonnikovae* sp. n.**

(Fig. 2)

Holotype. Male, **Uganda:** Kigezi Dist., XI.1934, B.M.E. Afr.Exp. B.M. 1935—203 / Mt. Mgahinga, 10—11000 ft (F. W. Edwards).

Paratype. Female with same data as holotype.

Description. Frons metallic black, with violet reflection, slightly greyish pollinose. Face densely silvery-white pollinose, with narrowing edges, 2.5 times as high as wide under antennae and 1.5 times as wide as height of first flagellomere. Occiput black, grey pollinose. Palpi and proboscis short, brown, covered with small brown hairs. Antennae 1.5 times as long as height of head. First flagellomere oblong, narrow, stripe-formed, densely pubescent, ratio of its length to height at base, 6.5 : 0.7. Arista with short hairs, simple, 1/13-th the length of first flagellomere.

Mesonotum metallic black, pleura greyish-white pollinose. Three pairs of strong dorsocentral bristles, with reduced hairs in front of them, and a pair of reduced setae between second and third pairs of strong bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs and coxae yellow, middle and posterior coxae with brownish spot at base, hind femora at apex, hind tibia and tarsi and apical segments of other tarsi brownish. Fore coxae from the front with yellow hairs and bristles of various length. Middle coxae from the front with yellow hairs and with a strong dark bristle, with thin brown apical horn, from the outside almost bare. Hind coxae with one long black external bristle, with several yellow hairs. Fore, middle and hind femora with a few preapical bristles or hairs. Fore tibiae with two strong thorn-like dorsal bristles in basal third. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 4.9 : 3.9 : 1.8 : 1.2 : 1.0 : 1.0. Middle tibiae with two anterodorsal, two short postero-dorsal, one short posteroventral and three or four apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 7.9 : 5.1 : 2.1 : 1.5 : 1.1 : 0.8. Hind tibiae with two anterodorsal, two postero-dorsal and three or four apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), 11.3 : 3.4 : 2.3 : 2.0 : 1.4 : 1.1.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 3.8 : 1.2. Ratio of apical to basal part of m_{1+2} , 7.7 : 6.1. Ratio of posterior trans-

versal vein to apical part of m_{3+4} , 2.2 : 5.5. Squamae yellow, with yellow bristles. Halteres yellow.

Abdomen dark-brown, slightly grey pollinose. All segments of abdomen with dark and light hairs and bristles. Hypopygium dark brown, with short bristles. Cerci and gonopodes brown. Cerci long, narrow, filiform, with long external hairs. Ventral appendices short, oval, with dark setae. Gonopodes narrow, with long distal leaf-like lobe.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face black, completely greyish-white pollinose, with parallel edges, twice as high as wide under antennae and nearly twice as wide as height of first flagellomere; palpi shorter than width of face; antennae slightly longer than height of head; first flagellomere twice as long as height at base. Length ratio of first flagellomere to arista, 1.5 : 3.8. Arista black.

Length: body 2.7—3.0 mm; body with antennae 3.5—4.0 mm; wing-length 3.9 mm; wing-width 1.4 mm.

Distribution. Mountain area of Uganda.

Etymology. The species named after the Russian entomologist Mrs Ksenia Zakonnikova.

Diagnosis. Males of *Rh. zakonnikovae* can be separated from other species with two strong thorn-like dorsal bristles in basal third of fore tibiae by the following combination of attributes: first flagellomere 9 times as long as high at base, 13 times longer than arista, face 2.5 times as high as wide under antennae, fore femora without long ciliae, cerci simple, gonopodes with long leaf-like distal lobe. Females are distinguished from known species by black arista, but probably do not differ much from unknown females of other species.

***Rhaphium bulyginskayae* sp. n.**

(Fig. 3)

Holotype. Male, **Kenya:** Aberdare Range, X.1934, B.M.E. Afr.Exp. B.M. 1935—203 / Katamayo, 8000 ft (F. W. Edwards).

Description. Frons metallic black, with violet reflection, face densely greyish-white pollinose. Face with narrowing edges, four times as high as wide under antennae and nearly as wide as height of first flagellomere. Occiput black, slightly grey pollinose. Palpi and proboscis short, brown, covered with small brown hairs. Antennae 1.5 times as long as height of head. First flagellomere oblong, narrow, stripe-formed, densely pubescent, ratio of its length to height at base, 4.2 : 0.6. Arista with short hairs, simple, one-third the length of first flagellomere.

Mesonotum metallic black, pleura greyish-white pollinose. Three pairs of strong dorsocentral bristles, with hairs in front of them, and a pair of reduced setae between second and third pairs of strong bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs and fore coxae yellow, middle and posterior coxae brownish, hind femora at apex and apical segments of tarsi slightly darkened. Fore coxae from the front with yellow hairs and with 2—3 setae of various length. Middle coxae from the front with yellow and black hairs and with a strong black bristle, with thin yellow apical horn, from the outside almost bare. Hind coxae with one long black external bristle and with several hairs. Fore femora all along with a row of 9—10 posteroventral dark ciliae of the same length, as long as diameter of femora. Fore, middle and hind femora with a few preapical bristles or hairs. Fore tibiae with two strong thorn-like dorsal bristles in basal third. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 4.4 : 3.3 : 1.7 : 1.3 : 0.9 : 0.8. Middle tibiae with two anterodorsal, two posterodorsal, one short posteroventral and three or four apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 6.8 : 3.6 : 1.7 : 1.5 : 1.0 : 0.8. Hind tibiae with one distinct anterodorsal, four or five apical bristles and a row of short curved anteroventral ciliae in apical fourth. Length ratio of hind tibia to tarsus (segments from first to fifth), 9.0 : 3.1 : 2.2 : 1.7 : 1.3 : 1.0.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to between r_{4+5} and m_{1+2} , 3.3 : 1.3. Ratio of apical to basal part of m_{1+2} , 10.8 : 8.5. Ratio of posterior transverse vein to apical part of m_{3+4} , 1.7 : 3.8. Squamae yellow, with yellow and brown bristles. Halteres yellow.

Abdomen brown, brilliant. Hypopygium dark brown, with short bristles. Cerci and gonopodes brown. Cerci long, narrow, stripe-shaped, with long external hairs. Ventral appendices short, narrow, with long bristles. Gonopodes narrow, bifurcated, with long narrow lobes; dorsal lobes wider, rounded at apex; ventral lobes almost straight, pointed at apex.

Female. Unknown.

Length: body 2.7 mm; body with antennae 3.6 mm; wing-length 3.4 mm; wing-width 1.1 mm.

Distribution. Mountain areas of West Kenya.

Etymology. The species named after the Russian entomologist Mrs Maria Bulyginskaya.

Diagnosis. Males of *Rh. bulyginskayae* can be separated from other species with two strong thorn-like dorsal bristles in basal third of fore tibiae by the following combination of attributes: first flagellomere 7 times as long as high at base, thrice longer than arista, face 4 times as high as wide under antennae, fore femora with a row of posteroventral ciliae of the same length, hind tibiae only with one distinct anterodorsal bristle and with a row of short curved anteroventral ciliae in apical fourth, cerci simple, gonopodes narrow, bifurcated.

***Rhaphium shamshevi* sp. n.**
(Fig. 4)

Holotype. Male, Uganda: Ruwenzori Range, XII.

1934—I.1935, B.M.E. Afr.Exp. B.M. 1935—203/ Namwamba Valley, 6500 ft (F. W. Edwards).

Paratypes. 1 male and 3 females with same data as holotype; 1 male, Uganda: Ruwenzori Range, XII.1934—I.1935, B.M.E. Afr.Exp. B.M. 1935—203/ Klembe, 4500 ft (F. W. Edwards).

Description. Frons metallic black, with green-violet reflection. Face densely silvery-white pollinose, narrow, with narrowing edges, 3.5 times as high as wide under antennae and as wide as height of first flagellomere. Occiput black. Palpi and proboscis short, brown, covered with small brown hairs. Antennae 1.5 times as long as height of head. First flagellomere oblong, narrow, stripe-formed, densely pubescent, ratio of its length to height at base, 4.8 : 0.6. Arista with short hairs, simple, one-fifth the length of first flagellomere.

Mesonotum metallic black, pleura greyish pollinose. Three pairs of strong dorsocentral bristles, with hairs in front of them, and a pair of reduced setae between second and third pairs of strong bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs and coxae yellow, hind femora at apex, and apical segments of tarsi slightly darkened. Fore coxae from the front with yellow hairs and with 3—4 dark setae of various length. Middle coxae from the front with dark hairs, with two brown bristles, and with brown apical horn, from the outside bare. Hind coxae with one long black external bristle. Fore femora all along with ventral and posterior irregular rows of hairs of different length. Fore, middle and hind femora with a few thin preapical setae or hairs. Fore tibiae with two strong thorn-like dorsal bristles in basal third. Fore tarsi with a row of fine dorsal hairs, as long as diameter of respective segment. Length ratio of fore tibia to tarsus (segments from first to fifth), 4.4 : 2.5 : 1.5 : 0.9 : 0.7 : 0.7. Middle tibiae with two anterodorsal, one or two posterodorsal, and two or three apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 6.1 : 3.3 : 1.5 : 1.3 : 0.9 : 0.7. Hind tibiae with two anterodorsal, two posterodorsal and three or four apical bristles; all setae short. Length ratio of hind tibia to tarsus (segments from first to fifth), 9.5 : 2.3 : 2.2 : 1.7 : 1.1 : 0.9.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 2.5 : 1.2. Ratio of apical to basal part of m_{1+2} , 8.9 : 7.6. Ratio of posterior transverse vein to apical part of m_{3+4} , 1.2 : 3.1. Squamae brown, with dark ciliae. Halteres yellow.

Abdomen dark-brown, brilliant. Hypopygium dark brown, with short bristles. Cerci and gonopodes brown. Cerci long, narrow, filiform, with long curved external hairs. Ventral appendices short, narrow, with long bristles. Gonopodes long and narrow, with thin dorsal dens and wide oval ventral lobe.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face black, completely greyish-white pollinose, with parallel edges, twice as high as wide under antennae and 1.5 times as wide as height of first flagellomere; palpi shorter as

long as width of face, pointed at apex; first flagellomere twice as long as height at base. Length ratio of first flagellomere to arista varies from 1.3 : 3.5 to 1.3 : 4.3. Arista whitish. Middle and hind coxae dirty yellow. Fore legs without long hairs.

Length: body 2.2–2.6 mm; body with antennae 2.9–3.5 mm; wing-length 2.5–3.3 mm; wing-width 0.8–1.0 mm.

Distribution. Mountain areas of Uganda.

Etymology. The species named after the Russian dipterologist Dr. Igor Shamshev.

Diagnosis. Males of *Rh. shamshevi* can be separated from other species with two strong thorn-like dorsal bristles in basal third of fore tibiae by the following combination of attributes: first flagellomere 8 times as long as high at base, 5 times longer than arista, face 3.5 times as high as wide under antennae, fore femora with posterior and ventral irregular rows of hairs of different length, fore tarsi with a row of fine dorsal hairs, cerci simple, gonopodes with thin dorsal dens and wide oval ventral lobe. Females are distinguished from known species by whitish arista and completely mat face, but probably do not differ much from unknown females of other species.

Rhaphium grootaerti

Negrobov, Grichanov & Bakari, 1982

(Fig. 5)

Material examined. 2 males, **Uganda**: Ruwenzori Range, XII.1934–I.1935, B.M.E. Afr. Exp. B.M. 1935–203/Mobuku Valley, 6000–7300 ft (F. W. Edwards).

Distribution. Mountain areas of East Zaire and Uganda (Ruwenzori Range).

Diagnosis. Males of *Rh. grootaerti* can be easily separated from other species with a row of 5–10 anterodorsal bristles at fore tibiae and three pairs of strong dorsocentral bristles by bifurcated cerci. Gonopodes have three distal lobes of various shape. Females have no distinct differences from females of *Rh. vanschuytbroeckii* and *Rh. pitkini*.

Rhaphium vanschuytbroeckii

Negrobov, Grichanov & Bakari, 1982

(Fig. 6)

Material examined. 5 males, 2 females, **Uganda**: Ruwenzori Range, XII.1934–I.1935, B.M.E. Afr. Exp. B.M. 1935–203 / Namwamba Valley, 6500 ft (F. W. Edwards). 1 male, **Uganda**: Ruwenzori Range, XII.1934–I.1935, B.M.E. Afr. Exp. B.M. 1935–203 / Mobuku Valley, 7300 ft (F. W. Edwards). 3 males, 2 female, **Kenya**: Aberdare

Range, X.1934, B.M.E. Afr. Exp. B.M. 1935–203 / Mt. Kinangop, 8000 ft (F. W. Edwards) / Cedar forest. 2 males, 1 female, **Kenya**: Aberdare Range, X.1934, B.M.E. Afr. Exp. B.M. 1935–203 / Mt. Kinangop, 9000 ft (F. W. Edwards). 1 female, **Kenya**: Aberdare Range, 25.X.1934, B.M.E. Afr. Exp. B.M. 1935–203 / Mt. Kinangop, 9000 ft (F. W. Edwards). 1 female, **Kenya**: Aberdare Range, 1. XI.1934, B.M.E. Afr. Exp. B.M. 1935–203 / Mt. Kinangop, 9000 ft (F. W. Edwards). 1 male, **Kenya**: 17.XII.1970 (A. E. Stubbs), BM 1972–211 / Kericho, 6500 feet. 1 female, **Kenya**: 15.XII.1970 (A. E. Stubbs), BM 1972–211 / 14–16 km S of Nakuru.

Distribution. Mountain areas of East Zaire, Uganda and West Kenya.

Diagnosis. Males of *Rh. vanschuytbroeckii* are placed in the group of species with a row of 5–10 anterodorsal bristles at fore tibiae and three pairs of strong dorsocentral bristles, and can be distinguished from other species by long ventral hairs at fore tibiae, simple cerci, two lobes and two bundles of long bristles in apical half of gonopodes. Females have no distinct differences from *Rh. grootaerti* and *Rh. pitkini*.

Rhaphium pitkini sp. n.

(Fig. 7)

Holotype. Male, **S. Africa** (5), Kloof Nek, Cape Town, 1–2.I.1972. Southern African Exp. B.M. 1972–1.

Paratypes. Male and female with the same data as holotype.

Description. Frons metallic blue-black, face densely silvery-white pollinose, with narrowing edges, 2 times as high as wide under antennae and 2 times as wide as height of first flagellomere. Occiput mat-black. Palpi and proboscis short, black, with black hairs. Antennae nearly twice as long as height of head. First flagellomere oblong, narrow, stripe-formed, densely pubescent, ratio of its length to height at base, 5.5 : 0.6. Arista with short hairs, simple, one-fifth the length of first flagellomere.

Mesonotum metallic black, pleura greyish-white pollinose. Three pairs of strong dorsocentral bristles, with reduced bristle in front of them, and a pair of reduced setae between second and third pairs of strong bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs and coxae yellow, middle coxae with brown spot at base, apical segments of tarsi darkened. Fore coxae from the front with yellow hairs and four or five dark bristles of various length. Middle coxae from the front with yellow and black hairs and with two strong black bristles, with thin brown apical horn, from the outside almost bare. Hind coxae with one long black external

bristle. Fore, middle and hind femora with one or two small preapical bristles, without long ciliae. Fore tibiae with row of 6—9 short dorsal bristles. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 4.4 : 2.5 : 1.7 : 1.1 : 0.7 : 0.7. Middle tibiae with two anterodorsal, two posterodorsal, and two or three apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 5.8 : 3.1 : 1.7 : 1.2 : 0.8 : 0.7. Hind tibiae with two anterodorsal, two posterodorsal and two or three apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), 7.9 : 2.0 : 2.3 : 1.5 : 1.0 : 0.7.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 2.2 : 0.9. Ratio of apical to basal part of m_{1+2} , 7.6 : 5.6. Ratio of posterior transverse vein to apical part of m_{3+4} — 1 : 3. Squamae yellow, with dirty-yellow bristles. Halteres yellow.

Abdomen bronze-black. Hypopygium black, with short hairs. Cerci and gonopodes brown. Cerci long, narrow, stripe-shaped, with long external hairs. Ventral appendices short, narrow, with long black apical bristles. Gonopodes with strong dorsal lobe and round leaf-like ventral lobe.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face black, grey pollinose, wide, with parallel edges; palpi large, with dark bristles; antennae as long as height of head; ratio of length to height of first flagellomere to length of arista — 1.2 : 0.7 : 3.7. Arista whitish.

Length: body 2.1 mm; body with antennae 3.1 mm; wing-length 2.4 mm; wing-width 0.7 mm.

Distribution. South Africa.

Etymology. The species named after the English dipterologist Dr. Brian Pitkin.

Diagnosis. Males of *Rh. pitkini* appear closely related to *Rh. vanschuytbroeckii* and can be separated from the last one by lacking of long ventral hairs at fore tibiae and by presence of only one group of relatively long apical bristles between two lobes of gonopodes. It can be distinguished from other species of the genus by black abdomen, yellow legs and halteres, 6—9 anterodorsal bristles at fore tibiae and three pairs of strong dorsocentral bristles. Females have no distinct differences from *Rh. vanschuytbroeckii* and *Rh. grootaerti*.

Raphium ovsyannikovae sp. n.

(Fig. 8)

Holotype. Male, Uganda: Ruwenzori Range, XII. 1934—I. 1935, B.M.E. Afr. Exp. B.M. 1935—203 / Namwamba Valley, 10200 ft (F. W. Edwards).

Paratype. 1 male without abdomen and hind legs, Uganda: Ruwenzori Range, XII. 1934—I. 1935, B.M.E. Afr. Exp. B.M. 1935—203 / Namwamba Valley, 11000 ft (E. G. Gibbins).

Description. Frons black, grey pollinose. Face densely silvery-white pollinose, with narrowing edges, 2 times as high as wide under antennae and as wide as height of first flagellomere. Occiput bronze-black, grey pollinose. Palpi short, brown, covered with short brown bristles. Proboscis short, black, with black hairs. Antennae 1.5 times as long as height of head. First flagellomere oblong, narrow, stripe-formed, pubescent, its length 6 times as long as height at base. Arista with short dense hairs, simple, one-third the length of first flagellomere; basal article of arista one-fourth the length of apical article.

Mesonotum metallic bronze-black, slightly pollinose, pleura greyish-white pollinose. Four pairs of strong dorsocentral bristles, with reduced bristles and hairs in front of them, acrosticals only in fore part of mesonotum, in two rows.

Legs and coxae dirty-yellow, middle and posterior coxae with brown spot at base, femora from above and apical segments of tarsi slightly darkened. Fore coxae from the front with dark hairs and with four or five dark bristles of various length. Middle coxae from the front with dark hairs and with a strong and some thin black bristles, with brown apical horn, from the outside almost bare. Hind coxae with one long black external bristle, with several hairs. Fore femora in basal half with some ventral brown hairs, as long as diameter of femora. Fore femora with a few preapical hairs, middle femora with 1 anterior, 1 posterior preapical bristles and some posterior preapical setae, hind femora with 1 anterior preapical bristle and a few posterior preapical hairs. Fore tibiae with a row of 10—12 short dorsal bristles, and with a row of ventral setulae, which are less than diameter of tibia, without apical bristles. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 5.8 : 3.7 : 1.8 : 1.1 : 0.8 : 0.7. Middle tibiae with two anterodorsal, two posterodorsal, one posteroventral and two or three apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 7.7 : 4.6 : 2.4 : 1.7 : 1.0 : 0.9. Hind tibiae with one thin anterodorsal, two posterodorsal, four or five ventral and two or three apical bristles. First and second segments of hind tarsi with numerous thin anterior setulae, as long as diameter of respective segment. Length ratio of hind tibia to tarsus (segments from first to fifth), 11.0 : 3.3 : 3.0 : 2.1 : 1.5 : 1.1.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} — 4.0 : 1.3. Ratio of apical to basal part of m_{1+2} , 14.5 : 8.5. Ratio of posterior transverse vein to apical part of m_{3+4} , 1.9 : 5.7. Squamae yellow, with dirty-yellow bristles. Halteres yellow.

Abdomen metallic dark-brown. Hypopygium black, with short bristles. Cerci and gonopodes brown. Cerci long, narrow, stripe-shaped, with long dense external hairs. Ventral appendices short, oval, with long apical bristles. Gonopodes narrow, with two small distal lobes.

Female. Unknown.

Length: body 2.9 mm; body with antennae 3.9 mm; wing-length 3.9 mm, wing-width 1.3 mm.

Distribution. Mountain area of Uganda (Ruwenzori Range).

Etymology. The species named after the Russian entomologist Mrs Helena Ovsyannikova.

Diagnosis. *Rh. ovsyannikovae* together with *Rh. doroninae* forms the group of species with a row of 5—10 anterodorsal bristles at fore tibiae, with posteroventral ciliae at fore femora, and with 4 pairs of strong dorsocentral bristles, and can be separated from each other by linear measurements of antennae, chaetotaxy of legs and morphology of gonopodes. Males of *Rh. ovsyannikovae* have arista one-third the length of first flagellomere, 10—12 feeble dorsal setae at fore tibiae, 4—5 ventral bristles at hind tibiae, numerous anterior setulae at hind tarsi, and gonopodes with two small separate distal lobes.

Rhaphium doroninae sp. n.

(Fig. 9)

Holotype. Male, **Uganda:** Ruwenzori Range, XII. 1934—I. 1935, B.M.E. Afr. Exp. B.M. 1935—203 / Namwamba Valley, 10200 ft (F. W. Edwards).

Description. Frons bronze-black, grey pollinose. Face densely silvery-white pollinose, with narrowing edges, 3 times as high as wide under antennae and as wide as height of first flagellomere. Occiput bronze-green, grey pollinose. Palpi short, black, covered with small brown hairs and bristles. Proboscis short, brown, with dark hairs. Antennae twice as long as height of head. First flagellomere oblong, narrow, stripe-formed, pubescent, ratio of its length to height at base, 6.5 : 0.8. Arista with short hairs, simple, one-sixth the length of first flagellomere; basal article of arista one-fourth the length of apical article.

Mesonotum metallic bronze-black, pleura greyish-white pollinose. Four pairs of strong dorsocentral bristles, with reduced bristles and hairs in front of them, acrosticals only in fore part of mesonotum, in two rows.

Legs and coxae yellow, middle and posterior coxae with brown spot at base, hind tibiae at apex and apical segments of tarsi darkened. Fore coxae from the front with dense yellow hairs and with three or four dark bristles of various length. Middle coxae from the front with yellow hairs and with two strong dark bristles, with brown apical horn, from the outside almost bare. Hind coxae with one long black external bristle, with several yellow hairs. Fore femora in basal half with a row of ventral brown hairs, of the length smaller than diameter of femora, few preapical hairs, middle and hind femora with 1 preapical bristle. Fore tibiae with a row of 6—8 strong dorsal bristles, and with a row of ventral setulae, which are shorter than diameter of tibia. Fore protarsus beneath with a row of short setulae, which are shorter than diameter of segment. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 6.5 : 3.5 : 1.3 : 1.0 : 0.7 : 0.8.

Middle tibiae with two anterodorsal, two posterodorsal, three or four apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 8.6 : 4.9 : 2.4 : 1.7 : 1.1 : 0.9. Hind tibiae with two anterodorsal, two posterodorsal and four or five apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), 12.2 : 3.6 : 3.2 : 2.2 : 1.5 : 1.2.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 3.5 : 1.3. Ratio of apical to basal part of m_{1+2} , 13.5 : 9.5. Ratio of posterior transversal vein to apical part of m_{3+4} , 1.8 : 5.2. Squamae yellow, with yellow bristles. Halteres yellow.

Abdomen metallic brown. Hypopygium dark-brown, with short setae. Cerci and gonopodes yellow-brown. Cerci long, narrow, stripe-shaped, with long external hairs. Ventral appendices short, narrow, oval, with long bristles. Gonopodes spoon-like with three merged distal lobes.

Female. Unknown.

Length: body 3.3 mm; body with antennae 4.6 mm; wing-length 3.8 mm, wing-width 1.2 mm.

Distribution. Mountain area of Uganda (Ruwenzori Range).

Etymology. The species named after the Russian entomologist Mrs Galina Doronina.

Diagnosis. *Rh. doroninae* together with *Rh. ovsyannikovae* forms the group of species with a row of 5—10 anterodorsal bristles at fore tibiae, with posteroventral ciliae at fore femora, and with 4 pairs of strong dorsocentral bristles, and can be separated from the last one by the following attributes: arista one-sixth the length of first flagellomere, 6—8 strong dorsal bristles at fore tibiae, lack of ventral bristles at hind tibiae, gonopodes with three merged distal lobes.

Rhaphium reaveyi sp. n.

(Fig. 10)

Holotype. Male, **Kenya:** Mt. Kenya, N. side, 11000—12000 ft / Heather, stream, 20—22.XII.1980 (P. S. Cranston), B.M. 1981—79.

Paratypes. 2 males with same data as holotypes; 3 males, **Kenya:** Aberdare Range, X. 1934, B.M.E. Afr. Exp. B.M. 1935—203 / Nieri Track, 10500 ft (F. W. Edwards); 3 males, **Kenya:** Aberdare Range, X. 1934, B.M. E. Afr. Exp. B.M. 1935—203 / Mt. Kinangop, 10000 ft (F. W. Edwards). 2 males, 1 female, **Kenya:** Aberdare Range, X. 1934, B.M.E. Afr. Exp. B.M. 1935—203 / Mt. Kinangop, 12000 ft (F. W. Edwards) / on *Senecio brassicaeformis*; 13 males, 3 females, **E. Africa:** Mt. Kenya, Naro Moru, 11000 ft, 29.VIII.1949 (J.A. Riley) / O.U.E. Exp. Mt. Kenya, B.M. 1949—562.

Description. Frons metallic black, grey pollinose. Face black, densely silvery-grey pollinose, with slightly nar-

rowing edges, 2.5 times as high as wide under antennae and 1.5 times as wide as height of first flagellomere. Occiput bronze-green, grey pollinose. Palpi short, black, covered with small black hairs. Proboscis short, black, with black hairs. Antennae twice as long as height of head. First flagellomere oblong, narrow, stripe-formed, densely pubescent. Ratio of its length to height at base, $8.0 : 0.6$. Arista with very short hairs, simple, one-fifth the length of first flagellomere.

Mesonotum metallic dark-green, pleura grey pollinose. Four pairs of strong dorsocentral bristles, with reduced bristles and hairs in front of them, one pair of reduced chetae between second and third pairs of strong dorsocentral bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs dark-yellow, fore coxae at base, middle and posterior coxae brown, femora from above, hind tibiae at apex and apical segments of tarsi brownish. Fore coxae from the front with dense yellow hairs and with three or four black apical bristles of various length. Middle coxae from the front with light and black hairs, with two strong black bristles, and with brownish apical bristles, from the outside almost bare. Hind coxae with one long black external bristle, with several hairs. Fore femora in apical half with postero-ventral hairs, of the length smaller than diameter of femora. Middle and hind femora with 1 strong and a few fine preapical bristles. Fore tibiae with two anterodorsal, two posterodorsal and two apical bristles, with a row of ventral bristles in apical half, which are longer than diameter of tibia. Fore protarsus slightly thickened at apex, beneath with two rows of bristles, twice as long as diameter of segment. Length ratio of fore tibia to tarsus (segments from first to fifth), $6.0 : 4.0 : 3.5 : 2.1 : 1.2 : 1.0$. Middle tibiae with two anterodorsal, two posterodorsal, one anteroventral and three apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), $8.7 : 5.2 : 2.6 : 1.9 : 1.2 : 1.0$. Hind tibiae with two anterodorsal, two posterodorsal and three or four apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), $12.5 : 3.7 : 3.6 : 2.5 : 1.6 : 1.2$.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{1+2} and m_{1+2} , $4.9 : 1.5$. Ratio of apical to basal part of m_{1+2} , $8.2 : 5.5$. Ratio of posterior transversal vein to apical part of m_{1+2} , $1.4 : 3.2$. Squamae yellow, with dark-yellow bristles. Halteres yellow.

Abdomen metallic dark-green, slightly grey pollinose. Hypopygium bronze-black, with short setae. Cerci and gonopodes black. Cerci simple, long, narrow, filiform, with long external hairs. Ventral appendices as long as gonopodes, narrow, stripe-shaped, with black short external bristles. Gonopodes broad, diamond-shaped from the lateral view, with a bundle of apicoventral hairs.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face with parallel edges, twice as high as wide under antennae and twice as wide as height of first flagellomere; an-

tennae equal to height of head; palpi with black bristles, nearly as long as width of face; ratio of length to height of first flagellomere to length of arista, $2.3 : 0.8 : 4.1$.

Length: body 2.7—4.1 mm; body with antennae 3.8—4.6 mm; wing-length 3.4—4.4 mm, wing-width 1.5—1.6 mm.

Distribution. Mountain areas of East Kenya.

Etymology. The species named after the English entomologist Dr. D. Reavey.

Diagnosis. *Rh. reaveyi* seems very close to *Rh. picketti* even on the basis of male genitalia characters. Its males can be separated from the last one by shortened first segment of fore tarsi, by presence of long strong bristle near the base of double-headed ventral appendix at gonopodes, and by some other subtle features. Both species are distinguished from other species of the genus by the following combination of attributes: fore tibiae with 1—2 antero-dorsal, 2 posterodorsal and a row of long strong ventral bristles, fore basitarsi with two rows of long ventral bristles, four pairs of strong dorsocentral bristles with one pair of reduced chetae between second and third pairs, arista one-fifth the length of first flagellomere, ventral appendices of cerci as long as gonopodes, which are broad, diamond-shaped from the lateral view. Females of *Rh. reaveyi* are probably the same as unknown females of *Rh. picketti*, separating from *Rh. mcveighi* by lengthened first flagellomere.

Rhaphium picketti sp. n.

(Fig. 11)

Holotype. Male, Kenya: Mt. Elgon, II.1935, B.M.E. Afr. Exp. B.M.1935—203 / Heath Zone, 10500—11500 ft. (F. W. Edwards).

Paratypes. 3 males, Uganda: Mt. Elgon, 8.VIII. 1934 (J. Ford), B.M. 1935—459 / On *Lobelia aberdarica*, Balambuli, 9500 ft.

Description. Frons bronze-black, grey pollinose. Face black, densely silvery-grey pollinose, with slightly narrowing edges, 2.5 times as high as wide under antennae and 1.5 times as wide as height of first flagellomere. Occiput bronze-green, grey pollinose. Palpi short, brown. Proboscis short, brown, with short black hairs. Antennae twice as long as height of head. First flagellomere oblong, narrow, stripe-formed, densely pubescent, ratio of its length to height at base, $5.0 : 0.4$. Arista with very short hairs, simple, one-fifth the length of first flagellomere.

Mesonotum metallic dark-green, pleura greyish-white pollinose. Four pairs of strong dorsocentral bristles, with reduced bristles and hairs in front of them, one pair of reduced chetae between second and third pairs of strong dorsocentral bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs and coxae yellow, all coxae dark-brown at base, hind tibiae at apex and apical segments of tarsi slightly darkened. Fore coxae from the front with yellow hairs and with one to three dark bristles of various length. Middle coxae from the front with dark hairs, with two strong black bristles, and with brown apical horn, from the outside almost bare. Hind coxae with one long black external bristle, with several hairs. Fore femora all along ventral and posterior side, middle and hind femora near apex with dark hairs of the length smaller than diameter of respective femora. Middle and hind femora with 1 preapical bristle. Fore tibiae with one anterodorsal, two posterodorsal, two or three apical bristles, with a row of ventral bristles in apical third, as long as diameter of tibia. Fore protarsus slightly thickened at apex, beneath with two rows of bristles, which are longer than diameter of segment. Length ratio of fore tibia to tarsus (segments from first to fifth), 5.3 : 3.4 : 1.7 : 1.3 : 0.9 : 0.9. Middle tibiae with two anterodorsal, two posterodorsal, one anteroventral and three or four apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 7.9 : 4.5 : 2.0 : 1.5 : 0.9 : 1.0. Hind tibiae with two anterodorsal, two posterodorsal and four or five apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), 10.5 : 3.1 : 3.0 : 1.9 : 1.2 : 1.0.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 3.6 : 1.4. Ratio of apical to basal part of m_{1+2} , 6.5 : 5.0. Ratio of posterior transversal vein to apical part of m_{3+4} , 1.1 : 3.0. Squamae yellow, with yellow hairs. Halteres yellow.

Abdomen metallic dark-green, grey pollinose. Hypopygium dark-brown, with short strong setae. Cerci and gonopodes brown. Cerci simple, long, narrow, stripe-shaped, with black bristles. Ventral appendices as long as gonopodes, narrow, oval, with short external bristles. Gonopodes widened at apex, diamond-shaped from the lateral view, with a bundle of apicoventral hairs.

Female. Unknown.

Length: body 2.8—3.2 mm; body with antennae 4.3—4.7 mm; wing-length 3.4—4.3 mm, wing-width 1.3 mm.

Distribution. Environments of Mount Elgon in Kenya and Uganda.

Etymology. The species named after the English entomologist Dr. John Pickett.

Diagnosis. *Rh. picketti* is closely related to *Rh. reaveyi* and can be separated from the last one by long first segment of fore tarsi, by lack of long strong bristle near the base of double-headed ventral appendix at gonopodes and by some other subtle characters. See remark under *Rh. reaveyi*.

Rhaphium bukzevae sp. n.

(Fig. 12)

Holotype. Male, Uganda: Ruwenzori Range, XII.

1934—I.1935, B.M.E. Afr.Exp. B.M. 1935—203 / Namwamba Valley, 13000—14000 ft (F. W. Edwards).

Paratypes. 8 males and 3 females with same data as holotype; 1 female, Uganda: Ruwenzori Range, XII.1934—I.1935, B.M.E. Afr.Exp. B.M. 1935—203 / Namwamba Valley, 11500 ft (F. W. Edwards); 5 males and 1 female, Uganda: Ruwenzori Range, XII. 1934—I.1935, B.M.E. Afr.Exp. B.M. 1935—203 / Namwamba Valley, 12000—13000 ft (D. R. Buxton); 1 male and 2 females, Uganda: Ruwenzori, Giant Heath, Tanganyika, 6.I.1962 (A. D. Harrison) / Univ. Coll. Rhodesia & Nyasaland Exped. B.M. 1971—559; 1 female, Uganda: Ruwenzori, Kamusongi Valley, Rock Snelter, 12000 ft., 30.XII.1961 (A. D. Harrison) / Univ. Coll. Rhodesia & Nyasaland Exped. B.M. 1971—559; 1 female, Uganda: Ruwenzori Range, Lake Bujuku, 13050 ft., 22—28.VII.1952 (D. S. Fletcher) / Ruwenzori Exped. B.M. 1952—566; 2 females, Uganda: Ruwenzori Range, Lamia Valley, 11900 ft., 30—31. VII.1952 (D. S. Fletcher) / Ruwenzori Exped. B.M. 1952—566; 1 female, Uganda: Ruwenzori Range, Bigo, 11400 ft., 20—22.VII.1952 (D. S. Fletcher) / Ruwenzori Exped. B.M. 1952—566.

Description. Frons bronze-black, grey pollinose. Face black, densely silvery-grey pollinose, with narrowing edges, 2 times as high as wide under antennae and 1.5 times as wide as height of first flagellomere. Occiput bronze-black, grey pollinose. Palpi short, brown, covered with small brown hairs. Proboscis short, black, with short black setulae. Antennae nearly twice as long as height of head. First flagellomere oblong, narrow, densely pubescent, ratio of its length to height at base, 4.8 : 0.8. Arista with short hairs, simple, three-fourths the length of first flagellomere; basal article of arista one-sixth the length of apical article.

Mesonotum metallic bronze-black, pleura greyish-white pollinose. Four pairs of strong dorsocentral bristles, with reduced bristles and hairs in front of them, without reduced chetae between second and third pairs of strong dorsocentral bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs dark-yellow, fore coxae at base, middle and posterior coxae brown, femora from above, hind tibiae and all segments of tarsi brownish. Fore coxae from the front with yellow hairs and black bristles of various length. Middle coxae from the front with yellow and black hairs, with two strong black bristles, and with some apical setae, from the outside almost bare. Hind coxae with one long black external bristle, with several hairs. Fore femora with a few posterior preapical hairs, middle and hind femora with one strong and a few fine preapical bristles. Fore tibiae with two posterodorsal, and two or three apical bristles. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 7.0 : 3.9 : 2.4 : 1.6 : 1.1 : 1.1. Middle tibiae with two anterodorsal, two posterodorsal, one anteroventral and three or four apical bristles. Length ratio of middle tibia to tarsus (segments from

first to fifth), 9.8 : 5.6 : 2.6 : 1.8 : 1.2 : 1.2. Hind tibiae with two anterodorsal, two or three strong and several small posterodorsal, and four or five apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), 13.0 : 4.3 : 3.8 : 2.5 : 1.5 : 1.5.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 4.6 : 1.8. Ratio of apical to basal part of m_{1+2} , 8.1 : 6.5. Ratio of posterior transverse vein to apical part of m_{3+4} , 1.4 : 3.3. Squamae yellow, with dirty-yellow bristles. Halteres yellow.

Abdomen metallic dark-bronze-green, grey pollinose. Hypopygium bronze-black, with short bristles. Cerci and gonopodes dark-brown. Cerci simple, long, narrow, filiform, with long external bristles. Ventral appendices short, narrow, oval, with short external bristles. Gonopodes with long narrow dorsal lobe, densely haired from ventral side, with round ventral lobe, with thin double-headed appendix and a bundle of bristles near its base in the middle of ventral side of gonopode.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face with parallel edges, 1.5 times as high as wide under antennae and thrice as wide as height of first flagellomere; antennae equal to height of head; palpi with black bristles, nearly as long as width of face; ratio of length to height of first flagellomere to length of arista, 1.5 : 0.7 : 4.1.

Length: body 3.2—3.7 mm; body with antennae 4.2—4.7 mm; wing-length 4.5—4.7 mm, wing-width 1.5—1.7 mm.

Distribution. Mountain area of Uganda (Ruwenzori Range).

Etymology. The species named after the Russian entomologist Mrs Olga Bukzeeva.

Diagnosis. *Rh. bukzeevae* is placed within the group of species with simple antero- and posterodorsal setae at fore tibiae. Both sexes can be distinguished from other species by the following complex of attributes: abdomen completely dark-bronze, legs dark-yellow, femora from above and hind tibiae brownish, fore legs without rows of long bristles, fore tibiae with two posterodorsal setae only, four strong dorsocentral bristles without reduced setae between them. Males of *Rh. bukzeevae* can be also separated from males of other species of the group by such characters of gonopodes as long narrow dorsal lobe and round ventral lobe.

Rhaphium mcveighi sp. n.

(Fig. 13)

Holotype. Male, **Uganda**: Mt. Elgon, 8.VIII.1934 (J. Ford), B.M. 1935—459 / On *Lobelia aberdarica*, Balambuli, 9500 ft.

Paratypes. 2 males and 2 females, **Kenya**: Mt. Elgon, II.1935, B.M. E. Afr. Exp. B. M. 1935—203 / Alpine

Zone, 12000 ft. (F.W. Edwards) / On *Lobelia elgonensis*.

Description. Frons bronze-black, grey pollinose. Face densely silvery-grey pollinose, with narrowing edges. Occiput bronze-green, grey pollinose. Palpi and proboscis short, brown, with dark hairs. Antennae nearly 1.5 times as long as height of head. First flagellomere oblong, narrow, densely pubescent, ratio of its length to height at base, 4.0 : 0.6. Arista with short hairs, simple, from one-third to two-thirds the length of first flagellomere; basal article of arista one-sixth the length of apical article.

Mesonotum metallic blue-green, pleura greyish-white pollinose. Four pairs of strong dorsocentral bristles, with reduced bristles and hairs in front of them, and one pair of reduced chetae between second and third pairs of strong dorsocentral bristles, acrosticals only in fore part of mesonotum, in two rows.

Legs yellow, coxae with brown spot at base, hind tibiae at apex and apical segments of tarsi darkened, sometimes hind femora from above slightly darkened. Fore coxae from the front with yellow hairs and three or four dark bristles of various length. Middle coxae from the front with yellow hairs, with two strong black bristles, and with yellow apical horn, from the outside almost bare. Hind coxae with one long black external bristle, with several hairs. Fore femora with short posterior preapical hairs, middle and hind femora with one or two preapical bristles. Fore tibiae with two anterodorsal, two posterodorsal, and two or three apical bristles. Fore tarsi simple. Length ratio of fore tibia to tarsus (segments from first to fifth), 6.5 : 3.9 : 2.6 : 2.0 : 1.1 : 1.0. Middle tibiae with two anterodorsal, two posterodorsal, and three or four apical bristles. Length ratio of middle tibia to tarsus (segments from first to fifth), 9.2 : 5.4 : 3.0 : 2.1 : 1.2 : 1.2. Hind tibiae with two anterodorsal, two posterodorsal, and three or four apical bristles. Length ratio of hind tibia to tarsus (segments from first to fifth), 12.5 : 3.5 : 4.0 : 2.2 : 1.5 : 1.2.

Wings. Ratio of parts of costa between r_{2+3} and r_{4+5} to those between r_{4+5} and m_{1+2} , 4.5 : 1.5. Ratio of apical to basal part of m_{1+2} , 8.1 : 6.0. Ratio of posterior transverse vein to apical part of m_{3+4} , 1.1 : 3.4. Squamae yellow, with yellow bristles. Halteres yellow.

Abdomen metallic dark-blue-green, grey pollinose. Hypopygium dark-brown, with short dark bristles. Cerci and gonopodes brown. Cerci simple, long, narrow, filiform, with long external bristles. Ventral appendices short, narrow, with short external bristles. Gonopodes broad and long, sclerotised, pointed at apex, with a bundle of hairs in the middle of ventral side.

Female. Similar to male except lacking male secondary sexual characters, otherwise as follows: face with parallel edges, 2.3 times as high as wide under antennae and twice as wide as height of first flagellomere; antennae slightly longer than height of head; palpi with black setae, as long as width of face; ratio of length to height of first flagellomere to length of arista, 1.7 : 0.8 : 4.2.

Length: body 2.8—3.2 mm; body with antennae 3.8—34.2 mm; wing-length 3.7—34.2 mm, wing-width 1.3—31.4 mm.

Distribution. Environments of Mount Elgon in Kenya and Uganda.

Etymology. The species named after the English entomologist Dr. Lawrence McVeigh.

Diagnosis. Males of *Rh. mcveighi* can be separated from other species with two anterodorsal and two posterodorsal bristles at fore tibiae by the following combination of attributes: abdomen completely dark-bronze, legs yellow, fore legs without rows of long bristles, four strong dorsocentral bristles with reduced setae between second and third pairs, gonopodes broad and long, sclerotised, without lobes. Females of *Rh. mcveighi* are distinguished from females of *Rh. reaveyi* by shortened first flagellomere.

Acknowledgements

I am sincerely grateful to Dr. Brian Pitkin for his kindness in giving me the opportunity to study the collection of the Natural History Museum (London). I appreciate the help I have received from Mrs Galina Grichanova in doing the illustrations.

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Received 16.I.1995