Four new species of the genus *Udzungwomyia* Grichanov, 2018 from Lesotho and South Africa (Diptera: Dolichopodidae)

Четыре новых вида рода *Udzungwomyia* Grichanov, 2018 из Лесото и Южной Африки (Diptera: Dolichopodidae)

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ABSTRACT: A new material for the Afrotropical genus *Udzungwomyia* Grichanov, 2018 has been recently found and identified. *Udzungwomyia spinitarsa* Grichanov, *sp.n.*, *U. brevitarsa* Grichanov, *sp.n.*, *U. maseru* Grichanov, *sp.n.*, and *U. lundeans* Grichanov, *sp.n.* from Lesotho and South Africa are described and illustrated. New species differ from other representatives of the genus in morphology of male genitalia and male secondary sexual characters on wing and hind leg. An identification key to six Afrotropical species is compiled.

МЕТОДЫ И МАТЕРИАЛЫ

The holotypes and paratypes of the new species will be housed in the NMSA. The types of the new species have been studied and photographed with a ZEISS Discovery V-12 stereo microscope and an AxioCam MRc5 camera. Genitalia preparations have been photographed with a ZEISS Axiosstar stereo microscope and an AxioCam ICC3 camera. 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 antennomeres, podomeres and wing vein sections 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 in the intact specimens, with the morphologically ventral surface of the genitalia facing upwards, dorsal surface downwards.

**Taxonomy**

Genus *Udzungwomyia* Grichanov, 2018

**DIAGNOSIS.** This generic diagnosis is based on males and females (if known) of six included species, and lists features considered to be of generic importance. Body generally brown-black, weakly pollinose; body length 2–3 mm; pleura and abdomen laterally often silvery white pollinose; face in middle distinctly or strongly narrowed; antenna about as long as head height, black; postpedicel about as large as pedicel, semigloublar, with indistinct apex; stylus usually preapical; mesonotum with 1 long and 1 short notopleural, 1 supra-alar setae; facial suture distinct at least at eye borders; posterior third of mesonotum distinctly flattened; 4 or 5 pairs of strong dorsocenrtals; acrostichal setae absent; lateral scutellars present, short, hair-like; mid and hind legs with short, but distinct black major setae; apex of male hind tibia and base of hind basitarsus thickened, often with modified setae; distal section of vein M1+2 weakly curved, R4+5 and M1+2, slightly converging on distal half, subparallel at wing apex; anal vein well developed; epandrial foramen positioned basally or laterally, shifted towards base; male sternum 4 and/or 5 enlarged, forming hood; male segment 6 bare, segment 7 reduced, devoid of setae; segment 8 well-developed, secoste; male genitalia small, partly concealed; hypantrum midventral, bifurcated, with two long or short lateral arms; phallosome; cercus suture and cercus short. Female terga 9–10 divided mediadially into 2 hemitergites, each bearing one thick spine and several long simple setae.

**KEY TO SPECIES OF *Udzungwomyia* (MALES)**

1. Hind tibia with 2 long thick apicals, with longest seta half as long as basitarsus .............................................................. 2

   – Hind tibia with short simple, rarely thickened, apicals .................... 3

2. Hind tibia with 2 thick golden apicals; hind tarsus 1.5 times longer than hind tibia; body length about 3 mm (Tanzania) .............................................................. *U. morogoro* Grichanov

   – Hind tibia with 2 thick black apicals; hind tarsus about as long as hind tibia; body length 2 mm (South Africa: Limpopo) .............................................................. *U. simoni* Grichanov

3. Hind tibia 2 times longer than hind tarsus; epandrial foramen basih; body length 2.5 mm (South Africa: KwaZulu-Natal) .............................................................. *U. brevitsara* sp. n.

   – Hind tibia 1.25 times longer than hind tarsus; epandrial foramen left basolateral ......................................................... 4

4. Hind basitarsus with basoventral process bearing 2 long thick setae running along basitarsus; body length 2.5 mm (South Africa: KwaZulu-Natal) .............................................................. *U. spinitarsa* sp. n.

   – Hind basitarsus with only basoventral process, without modified setae .......................................................... 5

5. Palpus black; eyes almost contiguous in middle of face; posterior wing margin straight; body length 2 mm (Lesotho) .............................................................. *U. masero* sp. n.

   – Palpus silvery white; face in middle as wide as height of postpedicel; posterior wing margin forming distinct bulge immediately before M1; body length 2.7 mm (South Africa: Eastern Cape) .............................................................. *U. lundeans* sp. n.

**Udzungwomyia spinitarsa** sp. n.

**Figs 1–6.**

**MATERIAL.** Holotype ♀, Republic of South Africa, [KwaZulu-Natal Province, Drakensberg Mountains (2929Ad), Giant’s Castle Reserve, 5800 ft, 18.X.1971, B.R. Stuckenber & M.E. Irwin (NMSA; male terminalia dissected and stored in glycerin in microvial pinned with the specimen). Paratypes.

**ETYMOLOGY.** The specific epithet (Lat. *spina*; Gr. *tarsis*) refers to the ‘spined tarsus’ of the male hind leg.
DISTRIBUTION. South Africa (KwaZulu-Natal).

DIAGNOSIS. The new species differs from all other species of the genus in morphology of the male hind basitarsus, which is excavated ventrally in basal half, thickened in distal half, with few short white setae at apex, with small triangular basoventral process bearing small spine and 2 long thick setae reaching distal 3/4 of basitarsus. The other species have more or less simple hind basitarsus, without long thick basoventral setae.

*Udzungwomyia brevitarsa* sp.n.

Figs 7–14.

MATERIAL. Holotype ♂, Republic of South Africa, [KwaZulu-]Natal Province, Drakensberg Mountains (2929Ad), Giant’s Castle Reserve, 5800 ft, 1.XI.1972, M.E. Irwin (NMSA).

Paratypes. 1 ♂, 1 ♀, same data as for holotype (NMSA; male terminalia dissected and stored in glycerin in microvial pinned with the specimen); 1 ♂, [KwaZulu-]Natal Province, Drakensberg Mountains (2929Ad), Giant’s Castle Reserve, 5800 ft, 18.X.1971, B.R. Stuckenberg & M.E. Irwin (NMSA).

DESCRIPTION. Male (Fig. 7). Length (mm): body 2.5, wing 2.6/0.9, antenna 0.9. Head (Fig. 8). Frons black, grey pollinose; face black, whitish pollinose, narrow; eyes contiguous in middle of face; clypeus silvery white pollinose, convex, slightly wider than high (11/8); facial suture distinctly separating clypeus; antenna (Fig. 9) black; postpedicel small, rounded, slightly higher than long (9/6), with long hairs; arista-like stylus apical, simple, with short hairs apically; length ratio of scape to postpedicel to arista-like stylus (stylomeres 1 and 2), 0.06/0.06/0.06/0.04/0.51; proboscis black; palpus enlarged, silvery white pollinose, with white setae; lower postocular setae white; about 5 upper postoculurs short, black. Thorax black, with mostly black setae; mesonotum grey-brownish pollinose; pleura whitish pollinose; propodeum with 3 white setae in lower part; 4 pairs of strong dorsocentral setae slightly decreasing in length.
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anteriorly; acrostichals absent; scutellum with 2 long strong setae and 2 minute lateral hairs, dorsally bare. Legs black, with mainly black setae; coxae with white hairs and setae; hind coxa with one outer seta; fore leg simple, devoid of strong setae; mid femur with single anterior preapical seta; mid tibia with pair of anterodorsal and posterodorsal setae at base and 3 short apical setae; mid tarsus simple; hind femur with single short anterior preapical seta; hind tibia (Fig. 10) distinctly thickened and flattened at apex, with 1 anterodorsal seta at base, anterior row of semi-erect setulae in basal half, dorsal row of 5 setae below middle, 2 anterior preapical black setae; 5 short brownish ventral apical setae; hind basitarsus (Fig. 11) thickened in basal half, with small triangular basovesontal tooth; tibia and tarsomere (from first to fifth) length (mm): fore leg: 0.71/0.29/0.11/0.07/0.08/0.09, mid leg: 0.88/0.45/0.15/0.09/0.07/0.07, hind leg: 1.13/0.20/0.12/0.08/0.09/0.09. *Wing* (Fig. 12) greyish, hyaline; basal portion of costa almost straight, bearing simple setae; R₁₋₃ and M₁₋₃, gradually diverging to wing apex; R₁₋₃ and M₁₋₃, almost parallel in apical part; ratio of part of costa between R₂+₃ and R₄+₅ to this between R₂+₃ and M₁₋₃, to dm-m to distal part of M₄ (in mm), 0.21/0.15/0.20/0.25; basal section of M₄, shorter than distal section (13/20); lower calypter brown, with white cilia; halter brownish. *Abdomen* black, grey pollinose, with black hairs and short black marginal setae; terga 2–4 laterally whitish pollinose; sterna 2–4 well developed; sternum 4 largest, subquadrate, slightly thickened at apex, with few short dorsal setae at base; phallus simple, short and thin distally; epandrial lobe broad at base, thin and pointed at apex, with few short setae at base and at apex; surstylus short, with unequal in length and shape arms, both with short setae and hook-like appendix; cercus small, rounded-triangular, with finger-like apex, covered with short white hairs, bearing several long curved setae; cerci separated, not fused.

**Female.** Length (mm): body 2.6, wing 2.7. Similar to male except lacking male secondary sexual characters. Legs simple; hind tibia 1.7 times longer than hind tarsus, with pair of strong anterodorsal and weak posterodorsal setae at base and 3 short apical setae; dorsal setae weak; hind basitarsus distinctly longer than next segment (18/12); abdomen with 5 visible segments; oviscap concealed.

**ETYMOLOGY.** The specific epithet (Lat. brevis; Gr. tarsoς) refers to the ‘short tarsus’ of the male hind leg.

**DISTRIBUTION.** South Africa (KwaZulu-Natal).

**DIAGNOSIS.** The new species differs from all other species of the genus in the shortened hind tarsus, with the hind tibia two times longer than hind tarsus. The other species have normal hind tarsus, only slightly shorter than or as long as hind tibia.

*Udzungwomyia maseru* sp. n.

Figs 15–22.

**MATERIAL.** Holotype ♂, Lesotho, Roma Mission, Maseru District, Basutoland, 4–13.L.1963, B. & P. Stuckenber / Upper Cave, sandstone level, 6000 ft. (NMSA). Paratype: 1♀, same data as for holotype (NMSA); male terminalia dissected and stored in glycerin in microvial pinned with the specimen).

**DESCRIPTION.** Male (Fig. 15). Length (mm): body 2.0, wing 2.2/0.7, antenna 0.7. *Head* (Fig. 16). Frons black, grey pollinose; face black, whitish pollinose, narrow, narrowly in middle; eyes nearly contiguous in middle of face; clypeus silvery white pollinose, convex, slightly wider than high (4/3); facial suture distinctly separating clypeus; antenna (Fig. 17) black; pedipodic small, rounded, slightly higher than long (8/6), with long hairs; aristula-like stylus apical, simple, with short hairs apically; length ratio of scape to pedicel to pedicel to aristula-like stylus (stylomeres 1 and 2), 0.04/0.05/0.06/0.03/0.51; proboscis black; palpus small, black, with 1 black seta and white hairs; lower postocular setae white; about 5 upper postoculums short, black. *Thorax* black, with mostly black setae; mesonotum grey-brownish pollinose; pleura whitish pollinose; propodeum with 3 white setae in lower part; pairs of strong dorsocentral setae slightly decreasing in length anteriorly; acrostichals absent; scutellum with 2 long strong setae and 2 minute lateral hairs, dorsally bare. Legs black, with mainly black setae; coxae with white hairs and setae; hind coxa with one outer seta; fore leg simple, devoid of strong setae; mid femur with single anterior preapical seta; mid tibia with pair of anterodorsal and posterodorsal setae at base and 3 short apical setae; mid tarsus simple; hind femur with single short anterior preapical seta; hind tibia slightly thickened at apex, with 1 anterodorsal seta at base, dorsal row of 6–7 setae in middle third, 2 short anterior apical black setae; comb of short brownish ventral apical setae; hind basitarsus (Fig. 18) thickened in basal half, with small triangular basovesontal tooth; tibia and tarsomere (from first to fifth) length (mm): fore leg: 0.58/0.27/0.14/0.08/0.06/0.06, mid leg: 0.76/0.43/0.19/0.09/0.07/0.08, hind leg: 0.91/0.21/0.26/0.14/0.07/0.08. *Wing* (Fig. 19) greyish, hyaline; basal portion of costa almost straight, bearing simple setae; R₁₋₃, and M₁₋₃, gradually diverging to wing apex; R₁₋₃ and M₁₋₃, almost parallel in apical part; ratio of part of costa between R₁₋₃ and M₁₋₃ to this between R₁₋₃ and M₁₋₃, to dm-m to distal part of M₄ (in mm), 0.19/0.15/0.14/0.25; basal section of M₄, shorter than distal section (13/20); basal section of M₄ slightly thickened in middle; lower calypter brown, with brown cilia; halter brownish. *Abdomen* black, grey pollinose, with black hairs and short black marginal setae; terga 2–4 laterally whitish pollinose; sterna 2–4 well developed; sternum 4 largest, subquadrate, gracilis; sternum 5–6 reduced, membranous; terga 5 narrow; tergum 6 small, located between tergum 5 and sternum 4, hemispherical, with distal emargination and ventral lobes covered with hairs; tergum 7 semicircular, very narrow, symmetrically lying along posterior margin of tergum 5, bare; segment 8 large, rounded, covered with short white setae; hypopygium (Fig. 14) partly concealed, black; cercus black; epandrium shining, globular, basally asymmetrical, as long as high (lateral aspect), with symmetrical appendages; foramen positioned left laterally; hypandrium mediventral, trilobate, with short medial lobe and 2 long thin lateral lobes, each lobe with dorsal tooth; phallus simple, short and thin distally; epandrial lobe broad at base, thin and pointed at apex, with few short setae at base and at apex; surstylus short, with unequal in length and shape arms, both with short setae and hook-like appendix; cercus small, rounded-triangular, with finger-like apex, covered with short white hairs, bearing several long curved setae; cerci separated, not fused.

**Female.** Unknown.

**ETYMOLOGY.** The species is named after the Maseru District of Lesotho, where the type material was collected.

**DISTRIBUTION.** Lesotho.
Figs 7–14. *Udzungwomyia brevitarsa*, sp.n., male: 7 — habitus; 8 — head; 9 — antenna; 10 — hind tibia and tarsus, anterior view; 11 — hind tarsus, ventral view; 12 — wing; 13 — setae on sternum 4 and ventral lobe of tergum 6, lateral view; 14 — details of hypopygial appendages, lateral view.

Рис. 7–14. *Udzungwomyia brevitarsa*, sp.n., самец: 7 — внешний вид; 8 — голова; 9 — усики; 10 — задняя голень и лапка, вид спереди; 11 — задняя лапка, вид снизу; 12 — крыло; 13 — щетинки 4-го стернита и вентральная лопасть 6-го тергита, вид сбоку; 14 — детали придатков гипопигия, вид сбоку.
DIAGNOSIS. The new species is similar in habitus to *U. lundeans* sp.n., strongly differing in black palpus, almost contiguous eyes in middle of face, straight posterior wing margin and shape of male hind basitarsus. *U. lundeans* sp.n. male have silvery white palpus, distinctly separated eyes, distinct bulge immediately before wing vein M\(_1\) and shape of male hind basitarsus.

Figs 15–22. *Udzungwomyia maseru*, sp.n., male: 15 — habitus; 16 — head; 17 — antenna; 18 — hind tarsus, anterior view; 19 — wing; 20 — hypopygium, right lateral view; 21 — hypopygium, ventral view; 22 — hypopygium, dorsal view.

Рис. 15–22. *Udzungwomyia maseru*, sp.n., самец: 15 — внешний вид; 16 — голова; 17 — усики; 18 — задняя лапка, вид спереди; 19 — крыло; 20 — гипопигий, вид справа сбоку; 21 — гипопигий, вид снизу; 22 — гипопигий, вид сверху.

Udzungwomyia lundeanus sp. n.
Figs 23–29.

MATERIAL. Holotype ♂, Republic of South Africa, Lundean’s [=Lundin’s] Nek, Barkly East District, Eastern Cape Province, 1925–2100 m, 18.1.1963, B. & P. Stuckenberg (NMSA; male terminalia dissected and stored in glycerin in microvil pinned with the specimen).

DESCRIPTION. Male (Fig. 23). Length (mm): body 2.7, wing 2.7/1.0, antenna 0.9. Head (Fig. 24). Vertex and frons black, whitish grey pollinose, with black major setae; face black, white pollinose; face in middle narrowing, as wide as postpedi- cell height; facial suture distinct; antenna (Fig. 25) about as long as head height, black; postpedicel slightly larger than pedicel, globular, with indistinct apex, as long as high, white pubescent; arista-like stylus preapical, filiform, slightly hairy; length ratio of scape to pedicel to postpedicel to stylus, 0.04/0.05/0.09/0.77; proboscis small, light haired; palpus enlarged, silvery white pollinose, with white setae; lower postocular setae white; about 5 upper postoculars short, black. Thorax mat, black, with black setae; mesonotum grey pollinose; pleura whitish grey pollinose; posterior third of mesonotum distinctly flattened; anterior third of mesonotum haired; propleuron with 1 wide propleural seta and few short hairs; 4 pairs of strong dorsocentral setae; acrostichals absent; 1 pair of scutellars. Legs long and slender, bicolorate; setae and setulae black except as noted; coxae black except orange apex, whitish pollinose; fore and mid coxae with short simple white anterior cilia; hind coxa with 1 strong white lateral seta at middle; trochanters brown; femora black except yellow distal apices; tibiae dirty yellow; tarsi with 2–3 basal segments dirty yellow and 2–3 distal segments black; claws on all legs small and black, pulvilli white; fore leg devoid of strong setae, but fore tibia with 2 very short anterior dorso-dorsals and 2–3 short apical setae; mid femur simple, with anterior preapical seta; mid tibia with 1 anterodorsal and 4 apical setae; tarsomeres 1–3 with short simple white anterior cilia; hind coxa with 1 strong white lateral seta at middle; trochanters brown; femora black except yellow distal apices; tibiae dirty yellow; tarsi with 2–3 basal segments dirty yellow and 2–3 distal segments black; claws on all legs small and black, pulvilli white; fore leg devoid of strong setae, but fore tibia with 2 very short anterior dorso-dorsals and 2–3 short apical setae; mid femur simple, with anterior preapical seta; mid tibia with 1 anterodorsal and 4 apical setae; tarsomeres 1–3 with short apical setae; hind tibia with indistinct apex, as long as high, white pubescent; arista-like stylus preapical, filiform, slightly hairy; length ratio of scape to pedicel to postpedicel to stylus, 0.04/0.05/0.09/0.77; proboscis small, light haired; palpus enlarged, silvery white pollinose, with white setae; lower postocular setae white; about 5 upper postoculars short, black. Thorax mat, black, with black setae; mesonotum grey pollinose; pleura whitish grey pollinose; posterior third of mesonotum distinctly flattened; anterior third of mesonotum haired; propleuron with 1 wide propleural seta and few short hairs; 4 pairs of strong dorsocentral setae; acrostichals absent; 1 pair of scutellars. Legs long and slender, bicolorate; setae and setulae black except as noted; coxae black except orange apex, whitish pollinose; fore and mid coxae with short simple white anterior cilia; hind coxa with 1 strong white lateral seta at middle; trochanters brown; femora black except yellow distal apices; tibiae dirty yellow; tarsi with 2–3 basal segments dirty yellow and 2–3 distal segments black; claws on all legs small and black, pulvilli white; fore leg devoid of strong setae, but fore tibia with 2 very short anterior dorso-dorsals and 2–3 short apical setae; mid femur simple, with anterior preapical seta; mid tibia with 1 anterodorsal and 4 apical setae; tarsomeres 1–3 with short apical setae; hind tibia with indistinct apex, as long as high, white pubescent; arista-like stylus preapical, filiform, slightly hairy; length ratio of scape to pedicel to postpedicel to stylus, 0.04/0.05/0.09/0.77; proboscis small, light haired; palpus enlarged, silvery white pollinose, with white setae; lower postocular setae white; about 5 upper postoculars short, black. Thorax mat, black, with black setae; mesonotum grey pollinose; pleura whitish grey pollinose; posterior third of mesonotum distinctly flattened; anterior third of mesonotum haired; propleuron with 1 wide propleural seta and few short hairs; 4 pairs of strong dorsocentral setae; acrostichals absent; 1 pair of scutellars. Legs long and slender, bicolorate; setae and setulae black except as noted; coxae black except orange apex, whitish pollinose; fore and mid coxae with short simple white anterior cilia; hind coxa with 1 strong white lateral seta at middle; trochanters brown; femora black except yellow distal apices; tibiae dirty yellow; tarsi with 2–3 basal segments dirty yellow and 2–3 distal segments black; claws on all legs small and black, pulvilli white; fore leg devoid of strong setae, but fore tibia with 2 very short anterior dorso-dorsals and 2–3 short apical setae; mid femur simple, with anterior preapical seta; mid tibia with 1 anterodorsal and 4 apical setae; tarsomeres 1–3 with short apical setae; hind tibia with indistinct apex, as long as high, white pubescent; arista-like stylus preapical, filiform, slightly hairy; length ratio of scape to pedicel to postpedicel to stylus, 0.04/0.05/0.09/0.77; proboscis small, light haired; palpus enlarged, silvery white pollinose, with white setae; lower postocular setae white; about 5 upper postoculars short, black. Thorax mat, black, with black setae; mesonotum grey pollinose; pleura whitish grey pollinose; posterior third of mesonotum distinctly flattened; anterior third of mesonotum haired; propleuron with 1 wide propleural seta and few short hairs; 4 pairs of strong dorsocentral setae; acrostichals absent; 1 pair of scutellars. Legs long and slender, bicolorate; setae and setulae black except as noted; coxae black except orange apex, whitish pollinose; fore and mid coxae with short simple white anterior cilia; hind coxa with 1 strong white lateral seta at middle; trochanters brown; femora black except yellow distal apices; tibiae dirty yellow; tarsi with 2–3 basal segments dirty yellow and 2–3 distal segments black; claws on all legs small and black, pulvilli white; fore leg devoid of strong setae, but fore tibia with 2 very short anterior dorso-dorsals and 2–3 short apical setae; mid femur simple, with anterior preapical seta; mid tibia with 1 anterodorsal and 4 apical setae; tarsomeres 1–3 with short apical setae; hind tibia with indistinct apex, as long as high, white pubescent; arista-like stylus preapical, filiform, slightly hairy; length ratio of scape to pedicel to postpedicel to stylus, 0.04/0.05/0.09/0.77; proboscis small, light haired; palpus enlarged, silvery white pollinose, with white setae; lower postocular setae white; about 5 upper postoculars short, black. Thorax mat, black, with black setae; mesonotum grey pollinose; pleura whitish grey pollinose; posterior third of mesonotum distinctly flattened; anterior third of mesonotum haired; propleuron with 1 wide propleural seta and few short hairs; 4 pairs of strong dorsocentral setae; acrostichals absent; 1 pair of scutellars. Legs long and slender, bicolorate; setae and setulae black except as noted; coxa...