

Afrotropical species of the genus *Micromorphus* Mik, 1878 (Diptera, Dolichopodidae)

Афротропические виды рода *Micromorphus* Mik, 1878 (Diptera, Dolichopodidae)

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Ключевые слова: Dolichopodidae, *Micromorphus*, Тропическая Африка, новый вид, определитель.

Abstract. Five species of the genus *Micromorphus* Mik, 1878 from the Afrotropical Region are reviewed. The genus is differentiated from other Peloroidea by the following combination of characters: acrostichal setae absent; arista-like stylus dorsal; scutellum with only one pair of setae; hind femur with true subapical bristle; male hind basitarsus without basal spur curved upward; crossvein Dm-Cu rather short, at least four times shorter than the apical part of CuA₁; hypopygium sessile. Two new species, *M. ugandensis* sp.n. from Uganda and *M. ethiopiensis* sp.n. from Ethiopia, are described. A key to the species of *Micromorphus* is provided, together with new records for *M. spatulipes* Parent, 1937 from Kenya and South Africa.

Резюме. Дан обзор афротропических видов рода *Micromorphus* Mik, 1878, включающего 5 видов, в том числе два новых для науки. Представители рода отличаются от других видов подсемейства Peloroidea следующими признаками: акростиальные щетинки отсутствуют; ариста дорсальная; щиток среднеспинки только с одной парой щетинок; заднее бедро с одной предвершинной щетинкой; 1-й членик задних лапок без базального шипа; поперечная жилка крыла dm-cu короткая, по крайней мере, в 4 раза короче вершинной части кубитальной жилки CuA₁; гипопигий сидячий. Описаны и иллюстрированы *M. ugandensis* sp.n. из Уганды и *M. ethiopiensis* sp.n. из Эфиопии. Приведены новые указания для *M. spatulipes* Parent, 1937 из Кении и Южной Африки. Дан определитель афротропических видов рода *Micromorphus*.

Introduction

The genus *Micromorphus* Mik, 1878 is one of the stem genera of the subfamily Peloroidea. There were 28 world species of the genus [Grichanov, 2011], of which *M. albipes* (Zetterstedt, 1843) was reported from almost all zoogeographical regions of the Earth (except for the Afrotropics). Nevertheless, the minute size and weak morphological differences of the related species [Negrobov, 2000] suggest that the old records of that species must be confirmed.

Parent [1937a, b] was the first who described *Micromorphus* species from the Afrotropical Region. Not much more has subsequently been published on the genus. Grichanov [1998] recombined *M. perminutus* Parent with *Acropsilus* Mik, 1878, and described a new species *M. maraisi* from Namibia Grichanov [2000]. Later, Grichanov and Mostovski [2009] transferred *Sympycnus aristalis* Curran, 1926 to the *Micromorphus*.

In this paper the genus *Micromorphus* of Afrotropical Region is reviewed. Two new species *M. ugandensis* sp.n. from Uganda and *M. ethiopiensis* sp.n. from Ethiopia are described. A key to Afrotropical species is provided for the first time.

Material and methods

Morphological terminology mainly follows Cumming and Wood [2009]. 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 relative lengths of the tarsomeres should be regarded as representative ratios and not measurements. Male genitalia were macerated in 10% KOH. Figure showing the male genitalia in lateral view are oriented as they appear on the intact specimen (rotated 180° and lateroflexed to the right), with the morphologically ventral surface of the genitalia facing up, dorsal surface down, anterior end facing right and posterior end facing left. Holotypes of the new species and other material cited are housed at the Natural History Museum, London, United Kingdom [BMNH]; Natal Museum, Pietermaritzburg, Kwa-Zulu Natal, South Africa [NMSA]; National Museum of Natural History, Paris, France [MNHN]; Department of Zoology, Tel Aviv University, Israel [TAU]; Namibian National Insect Collection, National Museum of Namibia, Windhoek [NMNW].

Systematics

Micromorphus Mik, 1878

Micromorphus Mik, 1878: 6. Type species: *Hydrophorus albipes* Zetterstedt, 1845 (original designation).

Diagnosis. Minute species; acrostichal setae absent; arista-like stylus dorsal; scutellum with only one pair of setae; hind femur with true subapical bristle; male hind basitarsus without basal spur curved upward; crossvein dm-cu rather short, at least 4 times shorter than apical part of Cu₁; hypopygium sessile.

Micromorphus aristalis (Curran, 1926)

Micromorphus aristalis (Curran, 1926): Grichanov, Mostovski, 2009: 41; Grichanov, 2011: 82 (Figs 207, 208); Grichanov et al., 2011: 91;

Sympycnus aristalis Curran, 1926: 39; Curran, 1929: 9.
Type locality: South Africa: Eastern Cape: East London.

Material. South Africa: holotype, ♀ — East London, 33°00' S, 27°53' E, 26.9.1924, H.K. Munro [NMSA].

Distribution. South Africa: Eastern Cape: East London.

Micromorphus maraisi Grichanov, 2000

Micromorphus maraisi Grichanov, 2000: 87; Grichanov et al., 2006: 224.

Type locality: Namibia: Huab River, Krone.

Material. Namibia: holotype, ♂, paratypes, 2♀♀ — Huab River, Krone 721, 23–26.X.1998, Kirk-Spriggs, Marais (MT) [NMNW]; paratype, 1♀ — Ugab River, 2 km W Brandberg Wes, 22–24.X.1998, Kirk-Spriggs, Marais [NMNW].

Distribution. Namibia (Khorixas and Windhoek Districts, Skeleton Coast Park).

Micromorphus spatulipes Parent, 1937

Fig. 1.

Micromorphus spatulipes Parent, 1937a: 128.

Type locality: S Rhodesia: Salisbury [=Harare].

Material. Zimbabwe: type, ♂ — «Salisbury, S. Rhodesia, Dept. Agric. Dec. 1935 / No 4303 / *Micromorphus spatulipes* Par. Cotype / Paratype (red label)» [MNHN]. Kenya: 1♂ — «Nakuru, Hell's Gate National Park, 00°57' S, 36°19' E, 1900 m, 26.XI.1992, Ngorowa Gorge / stream, Whittington A.E., Londt J.G.H.» [NMSA]. Republic of South Africa: 1♂ — «Natal, Bisley Valley, Pietermaritzburg, 19.XII.1978, R. Earle, ex. Cape robin bird's nest, R.M. Miller. Adult emerged 4.I.1979 [NMSA].

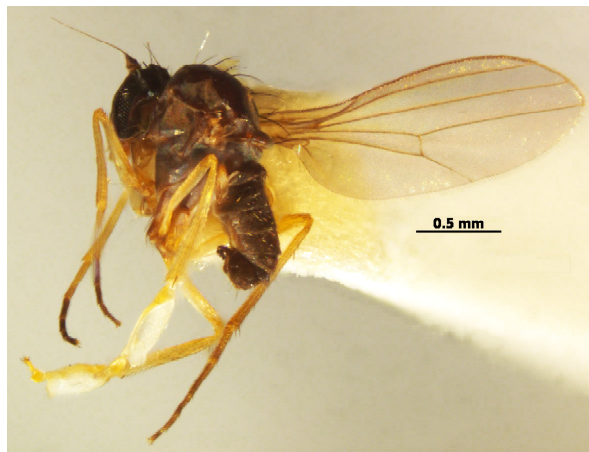


Fig. 1. *Micromorphus spatulipes*: habitus.

Рис. 1. *Micromorphus spatulipes*: внешний вид.

Distribution. Kenya, RSA, Zimbabwe. New records for Kenya and RSA.

Micromorphus ugandensis

Grichanov, sp.n.

Figs 2–3.

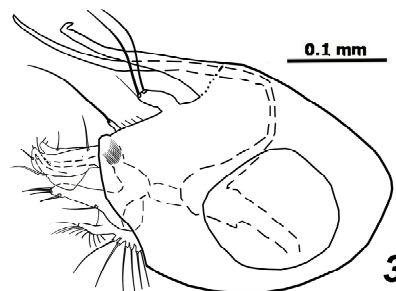
Material. Uganda: holotype (in glycerol), ♂ — «Ruwendzori Range, XII.1934–I.1935, B.M. E. Afr. Exp. B.M. 1935-203 / Namwamba Valley, 10100 ft., T.H.E. Jackson» [BMNH].

Description. ♂. Length (mm): body 1.7, wing 1.9/0.65, hypopygium 0.35.

Head. Frons black, grey pollinose; 1 strong but short postvertical seta positioned far from postocular setal row; postocular setae entirely black; 1–2 upper and 1–2 lower setae slightly longer than others; eyes distinctly separated anteriorly; face (somewhat shrunken) black, grey pollinose, under antennae at least 2 times wider than at clypeus; antenna with dark-brown scape and pedicel (postpedicel broken); scape small, vase-like; pedicel larger, globular, with ring of short setulae; palpus and proboscis dark-brown; palpus irregularly rounded, with strong dark seta.

Thorax entirely brown-black, pollinose; 5 pairs of strong dorsocentral setae (mostly broken); 5th seta shifted towards lateral margin; no acrostichal setae; proepisternum with 1 strong dark seta and 3 short hairs above fore coxa; scutellum with 2 strong bristles, without lateral hairs.

Legs including coxae yellow; 1–2 apical segments of all tarsi brownish; fore coxa with long dark setae in distal half; mid coxa with several short pale cilia anteriorly and 1 fine seta externally; hind coxa with dark outer seta at middle; mid and hind trochanters having 1 fine dorsal seta; fore leg without remarkable setae; fore tibia simple, with several very short apical setae; fore tarsus simple, with ordinary setulae; mid femur simple, bearing 1 strong anterior subapical bristle and 1 fine posteroventral cilia; mid tibia simple, with 1 strong anterodorsal seta at basal third and 3 apical setae; no ventral setae; mid tarsus simple; hind femur with 1 strong anterior subapical seta and somewhat elongate dorsal setulae at base; hind tibia simple, with 1 strong anterior



Figs 2–3. *Micromorphus ugandensis* sp.n.: 2 — wing, 3 — hypopygium.

Рис. 2–3. *Micromorphus ugandensis* sp.n.: 2 — крыло, 3 — гипопигий.

bristle at basal third, 2 short posterodorsal, 2–3 short ventral, 3–4 simple short apical setae; hind basitarsus with short basoventral seta; tibia and tarsomere (from first to fifth) length ratio: fore leg: 59/31/19/18/11/-, mid leg: 84/43/26/16/11/9, hind leg: 94/31/31/22/14/12.

Wing (Fig. 2) greyish, veins brown; costal setulae and hairs at base slightly longer than those at wing apex; costal setulae reaching R_{2+3} ; costa simple; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_{1+2} , 24/18; R_{2+3} , R_{4+5} and M_{1+2} weakly but distinctly convex anteriorly; R_{2+3} and R_{4+5} slightly diverging towards wing apex; R_{4+5} and M_{1+2} almost parallel in distal half; ratio of apical to basal part of M_{1+2} , 103/55; ratio of dm-cu to apical part of CuA_1 , 11/41; crossvein dm-cu somewhat weaker than adjacent longitudinal veins, slightly convex, forming right angles with M_{1+2} and CuA_1 ; lower calypter dirty yellow, with dark cilia; halter grey.

Abdomen black, with black hairs and marginal setae, cylindrical; 5–6th sternum small; 6th tergum well developed, bare; 7th segment concealed in dry specimen, but well visible after maceration; 8th segment brown-black, large, covering about half of left lateral surface of epandrium, covered with short setae; epandrium (Fig. 3) black, globular, slightly longer than high, as wide as high, approximately as long as 5–6th terga combined; hypandrium basoventral, narrow, hooked at apex; phallus simple and narrow; appendages brown, symmetric; midventral epandrial lobe digitiform, narrow, with 2 very long and 1 short setae at apex; 1 very long pedunculate bristle between distoventral and midventral epandrial lobes; surstylus projected, with 1 dorsal and 3 strong apical setae; cercus small, with narrow ventral process bearing brush of long cilia; basodorsal cercal plate reduced, bearing strong pedunculate bristles.

Female unknown.

Diagnosis. The new species is the only Afrotropical species with simple legs and entirely brown-black thorax. *M. aristalis* and *M. maraisi* have orange-yellow or pale brown pleura and adjacent parts of mesonotum. *M. spatulipes* and *M. ethiopiensis* sp.n. males both have remarkably ornamented fore and mid tarsi, long ventral setae at base of fore femur. *M. ugandensis* distinctly differs from the known Palearctic species in hypopygial morphology (see Figs in Negrobov [2000] and Grichanov, Viklund [2007]): hypandrium is hooked at apex; epandrium has very long pedunculate bristle between distoventral and midventral epandrial lobes; surstylus well developed, projected; basodorsal cercal plate is reduced, bearing strong pedunculate bristles.

Etymology. The species is named for the country of origin.

Micromorphus ethiopiensis

Grichanov, **sp.n.**

Figs 4–9.

Material. Ethiopia: holotype, ♂, Kefa, Jimma, 30 km S, River, 2200 m, 11.II.2000, A. Freidberg, I. Yarom [TAU].

Etymology. The species is named for the country of origin.

Description. ♂ (Fig. 4). Length (mm): body 1.9, wing 2.1/0.7, hypopygium 0.4.

Head (Fig. 5). Frons black, grey pollinose; 1 strong but short postvertical seta positioned far from postocular setal row; postocular setae entirely black; 1–2 upper and 1–2 lower setae slightly longer than others; eyes distinctly separated anteriorly; face black, grey pollinose, under antennae about 2 times wider than at clypeus; antenna with orange-brown scape and pedicel; scape small, vase-like; pedicel

larger, globular, with ring of short setulae; postpedicel subtriangular, as long as high, long haired; arista-like stylus mid-dorsal, 3 times as long as main segments of antenna combined, microscopically pubescent, with thick 1st and filiform 2nd segment of arista; ratio of scape to pedicel to postpedicel to stylus, 5/6/8/58; palpus and proboscis black; palpus ovate, with strong dark seta.

Thorax entirely bluish-black, pollinose; 5 pairs of strong dorsocentral setae; 5th seta slightly shifted towards lateral margin; no acrostichal setae; proepisternum with 1 strong dark seta and 2 short hairs above fore coxa; scutellum with 2 strong bristles, without lateral hairs.

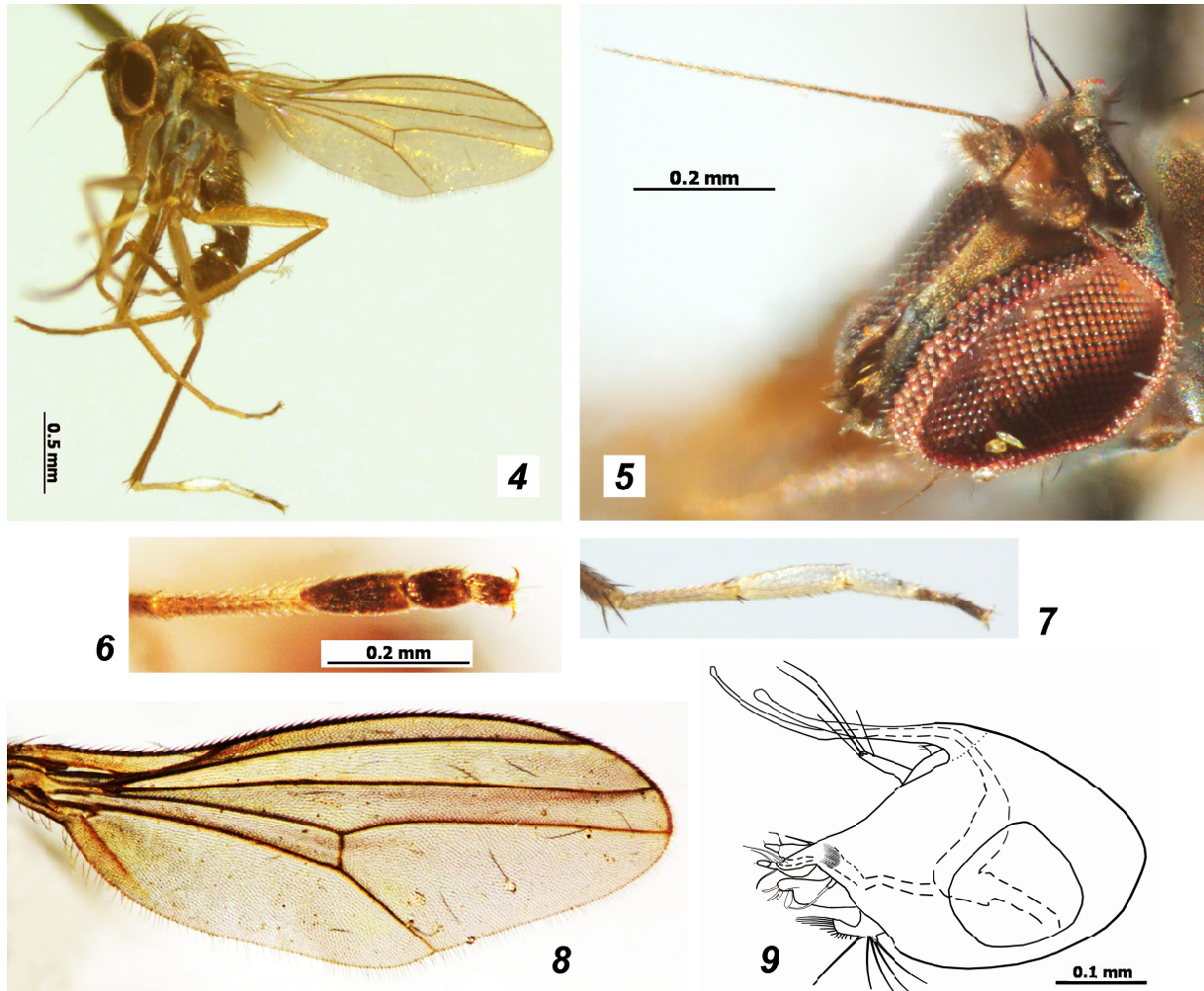
Legs mainly greyish-yellow; coxae brownish; 3 apical segments of fore and hind tarsi black; 2nd and 3rd segments of mid tarsus whitish-yellow; 2 apical segments of mid tarsus black; fore and mid coxae with long dark setae in distal half; hind coxa with 1 long and 1 short dark outer setae at middle; mid and hind trochanters having 1 fine dorsal seta; fore femur with 2–3 long brown ventral setae at base; fore tibia simple; fore tarsomeres 3–4 slightly widened and flattened (Fig. 6); mid femur simple, bearing 1 strong anterior subapical bristle; mid tibia simple, with 1 strong anterodorsal bristle and 1 posterodorsal seta at basal third, with 3 apical setae; no ventral setae; mid tarsomeres 2–3 distinctly widened and flattened (Fig. 7); hind femur with 1 strong anterior subapical seta and somewhat elongate dorsal setulae at base; hind tibia simple, with 1 strong anterior bristle at basal third, 2 short posterodorsal, 2–3 short ventral, 3–4 simple short apical setae; hind basitarsus with short basoventral seta; tibia and tarsomere (from first to fifth) length ratio: fore leg: 68/35/23/13/9/9, mid leg: 98/33/28/17/11/10, hind leg: 102/33/31/20/11/9.

Wing (Fig. 8) greyish, veins brown; costal setulae and hairs at base slightly longer than those at wing apex; costal setulae reaching R_{2+3} ; costa simple; ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_{1+2} , 24/14; R_{2+3} , R_{4+5} and M_{1+2} weakly convex anteriorly; R_{2+3} and R_{4+5} slightly diverging towards wing apex; R_{4+5} and M_{1+2} almost parallel in distal half; ratio of apical to basal part of M_{1+2} , 94/69; ratio of dm-cu to apical part of CuA_1 , 10/36; crossvein dm-cu somewhat weaker than adjacent longitudinal veins, slightly convex, forming right angles with M_{1+2} and CuA_1 ; posterior wing margin convex right before CuA_1 ; lower calypter dirty yellow, with dark cilia; halter brownish.

Abdomen black, with black hairs and marginal setae, cylindrical; 5–6th sternum small; 6th tergum well developed, bare; 7th segment concealed in dry specimen, but well visible after maceration; 8th segment black, large, covering nearly half of left lateral surface of epandrium, covered with long fine setae; epandrium (Fig. 9) black, globular, not longer than high, as wide as high, approximately as long as 5th tergite; hypandrium basoventral, simple and narrow, slightly swollen at extreme apex; phallus simple and narrow; appendages brown, symmetric; midventral epandrial lobe digitiform, narrow, with 2 very long and 2 short setae at apex; one short pedunculate epandrial seta just before distoventral epandrial lobe; surstylus projected, with 4 unequal flattened apical setae and 1 pedunculate seta at base; cercus small, with ventral process bearing brush of long cilia; basodorsal cercal plate reduced, bearing about 4 strong bristles.

Female unknown.

Diagnosis. The new species is related to *M. spatulipes*, both having remarkably ornamented fore and mid tarsi, differing from the latter in the following characters: fore tarsomeres 3–4 are slightly thickened, black, tarsomere 2 is



Figs 4–9. *Micromorphus ethiopiensis* sp.n.: 4 — habitus, 5 — head, 6 — fore tarsus, 7 — mid tarsus, 8 — wing, 9 — hypopygium.

Рис. 4–9. *Micromorphus ethiopiensis* sp.n.: 4 — внешний вид, 5 — голова, 6 — передняя лапка, 7 — средняя лапка, 8 — крыло, 9 — гипопигий.

yellow; mid tarsomeres 2–3 are slightly widened, whitish-yellow, tarsomere 1 is normal, tarsomere 4 is black. *M. spatulipes* has fore tarsomeres 2–4 slightly thickened, black; mid tarsomeres 1–4 are strongly widened, whitish-yellow.

— Fore leg with tarsomeres 3–4 slightly thickened, black, tarsomere 2 yellow; mid leg with tarsomeres 2–3 slightly widened, whitish-yellow, tarsomere 1 normal, tarsomere 4 black; 1.75 mm *M. ethiopiensis*

KEY TO AFROTROPICAL SPECIES OF *MICROMORPHUS*

1. Pleura orange-yellow or pale brown; arista-like stylus with whitish 2nd segment 2
- Pleura black or brown-black; arista-like stylus entirely dark 3
2. Halter dark brown; postpedicel longer than high at base, tapering; 2 mm (female only) *M. aristalis*
- Halter yellow; postpedicel as long as high at base, trapezoid; 1.6 mm *M. maraisi*
3. Fore and mid tarsi unmodified, yellow except dark 5th segment; 1.7 mm *M. ugandensis* sp.n.
- Fore leg with at least tarsomeres 3–4 slightly thickened, black; mid leg with at least tarsomeres 2–3 widened, whitish-yellow 4
4. Fore leg with tarsomeres 2–4 slightly thickened, black; mid leg with tarsomeres 1–4 strongly widened, whitish-yellow; 1.75 mm *M. spatulipes*

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