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**A NEW GENUS AND SPECIES OF SUBFAMILY MEDETERINAE
(DIPTERA: DOLICHOPODIDAE) FROM TANZANIA**

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Summary. *Udzungwomyia morogoro* Grichanov, **gen. et sp. n.** is described from Tanzania. Despite presence of distinct anterior preapical seta on mid and hind femora, the new genus is placed in the subfamily Medeterinae. It is considered close to the genus *Neomedetera* Zhu, Yang et Grootaert, 2007 but differs from the latter in acrostichal setae absent, lateral scutellars present, distal section of wing vein M subparallel to R_{4+5} , male segments 6 and 7 of abdomen bare, male segment 8 setose. *Neomedetera* is characterized by acrostichal setae biseriate, by lateral scutellars absent, by distal section of wing vein M distinctly converging with R_{4+5} , by male segments 6 and 7 setose, by male segment 8 bare. *Udzungwomyia gen. n.* belongs to a peculiar group of mainly medeterine genera with symmetrical male postabdomen or nearly so, with epandrial foramen positioned basally. A key to six genera related to *Udzungwomyia gen. n.* is provided.

Key words: Diptera, Dolichopodidae, taxonomy, new genus, new species, key, Tanzania, Afrotropical Region.

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Резюме. Из Танзании описан *Udzungwomyia morogoro* Grichanov, **gen. et sp. n.** Несмотря на наличие передних предвершинных щетинок на средних и задних бедрах, новый род помещается в подсемейство Medeterinae и считается близким к роду *Neomedetera* Zhu, Yang et Grootaert, 2007, отличаясь от последнего отсутствием акростихальных щетинок, наличием боковых щитковых щетинок, почти параллельными жилками крыла M и R_{4+5} , отсутствием щетинок на 6-м и 7-м сегментах и их присутствием на 8-м сегменте брюшка самца. Род *Neomedetera* характеризуется такими признаками, как наличие двух рядов акростихальных щетинок, отсутствие боковых щитковых щетинок, явственно сходящиеся жилки крыла M и R_{4+5} , наличие щетинок на 6-м и 7-м сегментах и их отсутствие на 8-м сегменте брюшка самца. *Udzungwomyia gen. n.* относится к специфической группе родов подсемейства Medeterinae, самцы которых имеют симметричные или почти симметричные генитальные сегменты брюшка и базально расположенное отверстие в эпандрии. Составлена определительная таблица шести родов мировой фауны, близких к *Udzungwomyia gen. n.*

INTRODUCTION

Describing his new genus *Babindella*, D. Bickel (1987a) considered that the symmetrical male postabdomen along with the fused segments 7 and 8 in *Babindella* is a unique character in the family Dolichopodidae. He created an independent subfamily Babindellinae, noting that the symmetry of highly reduced hypopygium in the genus *Cryptopygiella* Robinson, 1975 (Medeterinae) is quite distinct from that of *Babindella*. Later *Neomedetera* Zhu, Yang et Grootaert (Zhu *et al.*, 2007), *Pharcoura* Bickel (Bickel, 2007), *Hurleyella* Runyon et Robinson (Runyon & Robinson, 2010) and *Nikitella* Grichanov (Grichanov, 2011a) were described with symmetrical male postabdomen or nearly so, with epandrial foramen positioned basally (all in the subfamily Medeterinae), thus obliterating the difference between the two subfamilies. A new peculiar species of Medeterinae collected recently in Tanzania resembles superficially species of those medeterine genera having secondary symmetry of male postabdomen, but strongly differing from other genera with that character. Re-examination of an accessible material and published descriptions of above listed genera has allowed compiling a generic key to all those remarkable genera.

MATERIAL AND METHODS

Material was field collected in 75% ethanol, and male and female terminalia were studied after ca 12 hours in a 10% solution of KOH at room temperature with subsequent washing in tap water, and transfer to glycerin glycerol. After study and documentation, male terminalia were transferred to glycerin in a plastic microvial pinned with the source specimen. A couple of male and female specimens were dried from ethanol, pinned and labelled. Photographs were made using a Zeiss Discovery V-12 stereomicroscope and an AxioCam MRc5 camera. The material has been deposited in the Natural History Museum of Denmark, Zoological Museum, University of Copenhagen (ZMUC), part of the paratypes – at the Zoological Institute of the Russian Academy of Sciences, St Petersburg (ZIN). Morphological terminology follows Cumming & Wood (2009). The relative lengths of the podomeres should be regarded as representative ratios and not measurements. 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. Figure showing the male genitalia in lateral view are oriented as they appear on the intact specimen, with the morphologically ventral surface of the genitalia facing up, dorsal surface down, anterior end facing right and posterior end facing left.

TAXONOMY

Genus *Udzungwomyia* Grichanov, gen. n.

Type species: *Udzungwomyia morogoro* Grichanov, sp. n.; here designated.

DIAGNOSIS. This generic diagnosis is based on males and females of one included species, and lists features considered to be of generic importance.

Small species. Male. Body generally brown-black, weakly pollinose; face narrow, narrowing in middle about as wide as postpedicel height; facial suture distinct; antenna about as long as head height, black; postpedicel as large as pedicel, semiglobular, with indistinct apex; stylus preapical; posterior third of mesonotum distinctly flattened; mesonotum with 1 long and 1 short notopleural, 1 humeral, 1 sutural, 1 supra-alar and 1 postalar bristles; 4 pairs of strong dorsocentral bristles in regular rows; acrostichal setae absent; lateral scutellars

present, hairlike; mid and hind femora with distinct anterior preapical seta; legs with short, but distinct black major bristles; hind basitarsus much shorter than next segment; distal section of wing vein M weakly curved, R₄₊₅ and M₁₊₂ slightly converging on distal half, subparallel at wing apex; crossvein *dm-cu* positioned at wing midlength, shorter than maximum distance between R₄₊₅ and M₁₊₂ veins; postabdomen nearly symmetrical, with epandrial foramen positioned basally; male segments 6 and 7 bare, segment 7 reduced, devoid of setae; segment 8 well developed, setose; genitalia mostly exposed; hypandrium midventral, bifurcated from base, with two long and thin arms; phallus simple; surstylus strongly developed and distinctly divided, with ventral arm fused to epandrium, and dorsal arm free. Female terga 9+10 divided medially into 2 hemitergites, each bearing one thick spine and several long simple setae.

ETYMOLOGY. The genus is named after the Udzungwa Mountain National Park in the Morogoro Region of Tanzania, where the type series was collected. Gender is feminine.

NOTES. Despite presence of distinct anterior preapical seta on mid and hind femora, the new genus is placed in the subfamily Medeterinae and is considered close to the genus *Neomedetera*, differing from the latter in acrostichal setae absent, lateral scutellars present, distal section of wing vein M subparallel to R₄₊₅, male segments 6 and 7 of abdomen bare, male segment 8 setose. *Neomedetera* is characteristic in acrostichal setae biseriate, lateral scutellars absent, distal section of wing vein M distinctly converging with R₄₊₅, male segments 6 and 7 setose, segment 8 bare. New genus belongs to a peculiar group of mainly medeterine genera with symmetrical male postabdomen or nearly so, with epandrial foramen positioned basally. A key to World genera related to *Udzungwomyia* gen. n. is provided below. Genera are included, having male postabdomen symmetrical or nearly so, with epandrial foramen positioned basally.

Key to World genera related to *Udzungwomyia* gen. n.

1. Mid and hind femora with distinct anterior preapical seta 2
 - Mid and hind femora bare of major anterior preapical seta 3
2. Acrostichal setae absent; lateral scutellars present, hairlike; distal section of wing vein M weakly curved, subparallel to R₄₊₅; male segments 6 and 7 bare, segment 7 reduced; segment 8 well developed, setose *Udzungwomyia* gen. n.
 - Acrostichal setae present, biseriate; lateral scutellars absent; distal section of wing vein M arched anteriorly, distinctly converging with R₄₊₅; male segments 6 and 7 subequal in length, setose; segment 8 reduced, bare *Neomedetera* Zhu, Yang et Grootaert
3. Acrostichal setae absent 4
 - Acrostichal setae present, usually biseriate 6
4. Lateral scutellar setae present as short hairs; wing length greater than 2.0 mm; hypopygium large, subrectangular, with lateral longitudinal striations, nearly symmetrical, with left basal foramen and well developed segment 7 *Pharcoura* Bickel
 - Lateral scutellar setae absent; wing length usually less than 1.5 mm; hypopygium various 5
5. R₂₊₃ ending in costa just beyond wing midlength; only one long notopleural seta present *Hurleyella* Runyon et Robinson
 - R₂₊₃ ending in costa near wing two-thirds length; two notopleural setae present *Babindella* Bickel
6. R₄₊₅ and M₁₊₂ straight and parallel beyond *dm-cu*; hypopygium almost completely enclosed at abdominal apex, and with highly reduced appendages, with basoventral foramen *Cryptopygiella* Robinson
 - R₄₊₅ and M₁₊₂ weakly curving and convergent beyond *dm-cu*, subparallel at apex; hypopygium not enclosed by abdomen, and with well developed appendages, with strictly basal foramen *Nikitella* Grichanov

***Udzungomyia morogoro* Grichanov, sp. n.**

Figs 1–10

TYPE MATERIAL. Holotype – ♂, **Tanzania**: Morogoro Reg., Udzungwa Mt. N. P., Mito Mitatu, 7°50'14.3"S, 36°50'46.8"E, 1207 m, Malaise trap #1, 11.XI 2013, T.Pape & N. Scharff leg. [ZMUC; dried and mounted on pin]. Paratypes (mostly in alcohol): **Tanzania**: Morogoro Reg., Udzungwa Mt. N. P., Mito Mitatu, 7°50'14.3"S, 36°50'46.8"E, 1207 m, Malaise trap #1, 11.XI 2013, 1♂, 4♀, T.Pape & N. Scharff leg. [ZIN; 1♀ dried and mounted on pin; 1♂, 1♀ in glycerol within microvials, mounted on pins]; Morogoro Reg., Udzungwa Mt. N. P., Mito Mitatu, 7°50'15.1"S, 36°50'49.9"E, 1198 m, Malaise trap #2, 23.XII 2013, 2♀, T.Pape & N. Scharff leg. [ZIN]; Morogoro Reg., Udzungwa Mt. N. P., Mito Mitatu, 7°50'14.3"S, 36°50'46.8"E, 1207 m, Malaise trap #1, 7.X 2013, 3♀, T.Pape & N. Scharff leg. [ZIN]; Morogoro Reg., Udzungwa Mt. N. P., Mito Mitatu, 7°50'14.3"S, 36°50'46.8"E, 1207 m, Malaise trap #1, 2 and 18 II 2013, 25 and 30 IX 2013, 6♂, 9♀, T.Pape & N. Scharff leg. [ZMUC]; Morogoro Reg., Udzungwa Mt. N. P., Mito Mitatu, 7°50'15.1"S, 36°50'49.9"E, 1198 m, Malaise trap #2, 16, 23 and 30 IX 2013, 7 and 14 X 2013, 7♂, 4♀, T.Pape & N. Scharff leg. [ZMUC].

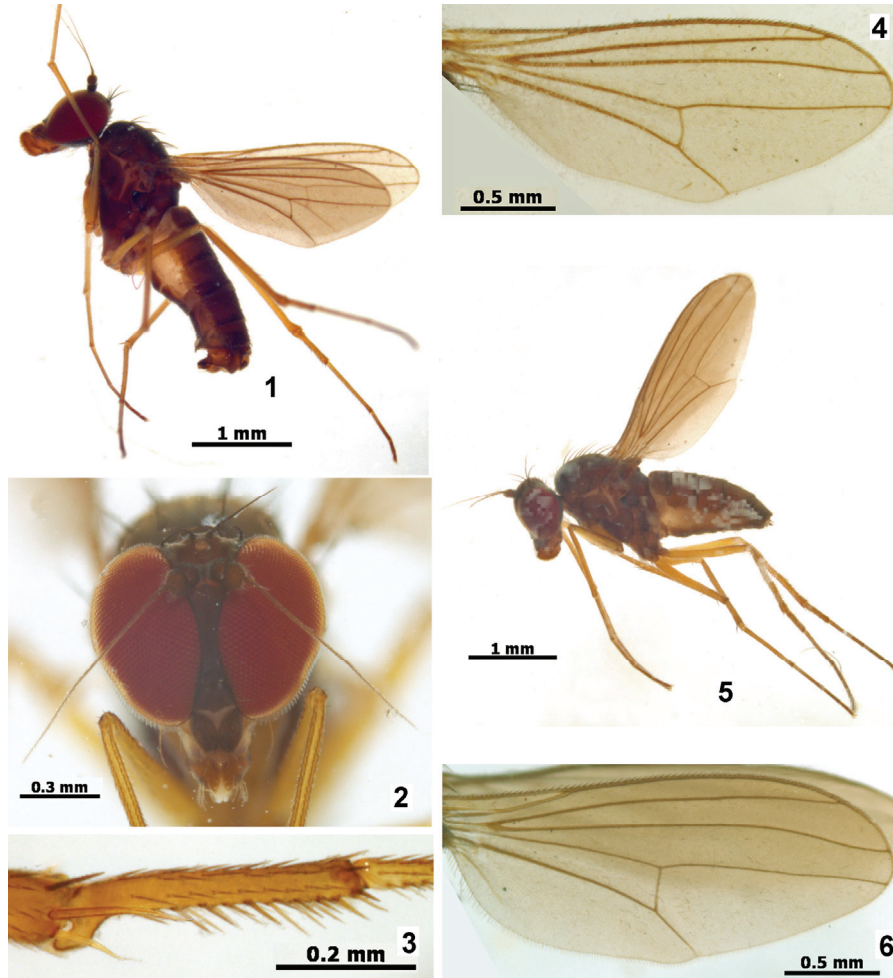
DESCRIPTION. Male. *Head* (Fig. 2): vertex and frons black, weakly pollinose, with black major bristles; face black, greyish brown pollinose; vertex not excavated; upper occiput concave; vertical bristle black, strong and long, positioned on anterior slope of head; short postvertical seta as a linear continuation of postocular setal row; one pair of strong ocellar bristles with adjacent pair of hairs; single row of fine white simple postoculars decreasing in size upward; eyes with short hairs between facets below, with microscopic hairs above; face under antenna and clypeus about 2 times as wide as postpedicel height, narrowing at middle; face 10 times as high as face width in middle; facial suture distinct; antenna about as long as head height, black; scape and pedicel small, simple; pedicel with ring of apical setulae of approximately equal length; postpedicel as large as pedicel, semiglobular, with indistinct apex, as long as high, white pubescent; stylus preapical, filiform, shortly haired, with its 1st segment being very short. Length ratio (in mm) of scape to pedicel to postpedicel to stylus (1st and 2nd segments), 0.06/0.08/0.08/0.04/0.85. Palpus black, small, oval, dark haired, with black apical seta; proboscis thick, projected, light haired.

Thorax mat, brown-black, weakly pollinose, with black setae; posterior third of mesonotum distinctly flattened; anterior third of mesonotum haired, 2 pairs of scutellars with lateral setae being very short; 1 white propleural seta just above fore coxa.

Legs long and slender, mainly orange yellow; setae and setulae black except as noted; mid and hind coxae black except orange apex; fore and mid coxae with short simple anterior cilia; hind coxa with 1 strong lateral bristle at middle; claws on all legs small and black, pulvilli white; fore leg devoid of bristles, but fore tibia with 2–3 short apical setae; mid femur simple, with short fine anterior preapical seta; mid tibia with 1 anterior and 3–4 apical setae; tarsomeres 1–4 with short apicals; hind femur simple, with anterior preapical seta, as long as diameter of femur; hind tibia swollen at apex, with 4–5 short dorsals behind middle, 1 black dorsoapical and 2 long thick golden apicals of unequal length; hind basitarsus (Fig. 3) with basiventral process and row of short ventrals, nearly as long as diameter of tarsomere; tarsomeres 1–4 with short apicals; leg length ratio (from femur to tarsomere 5, in mm): fore leg: 0.89/0.90/0.65/0.53/0.36/0.18/0.14, mid leg: 1.02/1.27/0.92/0.54/0.33/0.17/0.09, hind leg: 1.18/1.42/0.40/0.72/0.43/0.21/0.10.

Wing (Fig. 4) hyaline, with brown veins; R2+3 and R4+5 gradually diverging to wing apex; R4+5 and M1+2 slightly converging on distal half, subparallel at wing apex. M1+2 upturned beyond *dm-cu*, then straight, joining costa beyond wing apex; ratio of part of costa

between R2+3 and R4+5 to this between R4+5 and M1+2 to *dm-cu* to distal part of CuA1 (in mm), 0.35/0.19/0.20/0.38. Crossvein *dm-cu* almost straight, forming right angles with CuA1 and with M1+2 longitudinal veins, slightly shorter than maximum distance between R4+5 and M1+2 veins. Anal vein fold-like; narrow anal lobe present; alula absent; posterior wing margin between A and CuA1 straight, then forming distinct bulge immediately before CuA1. Lower calypter light brownish, with light setae. Halter brownish yellow.

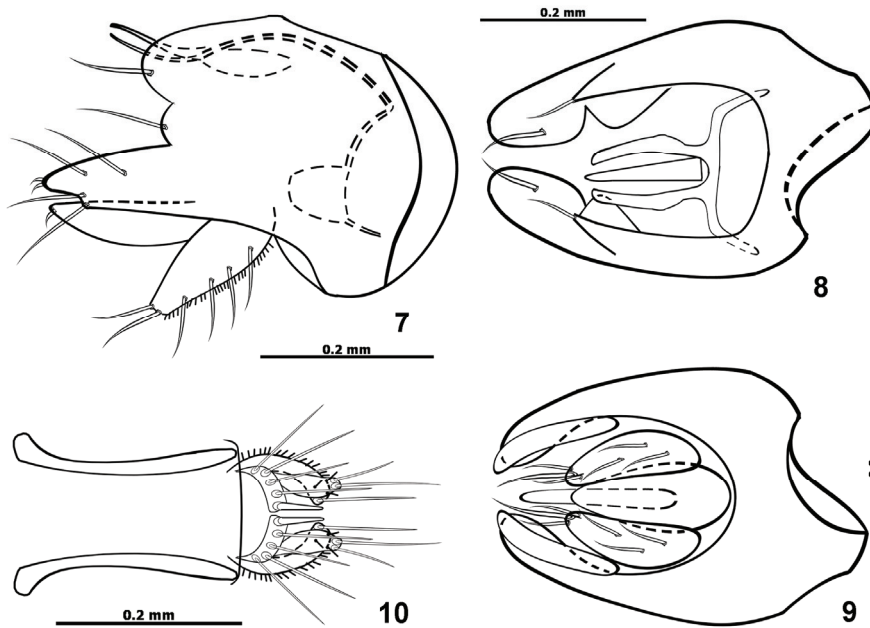


Figs. 1–6. *Udzungwomyia morogoro*, sp. n. 1 – male habitus; 2 – male head, anterior view; 3 – male hind basitarsus; 4 – male wing; 5 – female habitus; 6 – female wing.

Abdomen conoid (dorsal aspect), mat, brown-black, laterally grey pollinose, with black hairs and setae along tergal margins; tergum 1 with longish marginal setae; terga 1–6 and sterna 2–6 well developed; sternum 5 forming hood posteriorly; sternum 6 bare, covered with microtrichia posteriorly; tergum 7 semicircular, very narrow, symmetrically lying along

posterior margin of tergum 6, bare, ending laterally with minute plates (sternum 7) covered with microtrichia; segment 8 large, rounded, with short ventral process, covering basal side of epandrium, covered with sparse setae. Hypopygium (Figs 7–9) including cerci entirely black, with light cilia; epandrium globular, basally asymmetrical, as long as high (lateral aspect), with symmetrical appendages, covered with small hairs on basal half; foramen large, positioned basally between basal asymmetrical epandrial projections; hypandrium midventral, bifurcated from base, with two long and thin arms; phallus simple, long and thin distally; epandrial lobe broad, fused with ventral side of epandrium, with strong preapical seta; surstylus projected, bilobate, with subequal in length dorsal and ventral arms, covered with setae as figured; ventral arm fused to epandrium; cercus small, ovate, with blunt apex, covered with small hairs, bearing several simple setae dorsally and apically; cerci not fused.

MEASUREMENTS (in mm). Body length without antennae 3.31; antenna length 1.06; wing length 2.65; wing width 0.97.



Figs. 7–10. *Udzungwomyia morogoro*, sp. n. 7 – hypopygium, left lateral view; 8 – hypopygium, ventral view; 9 – hypopygium, dorsal view; 10 – female oviscapt, dorsal view.

Female. Similar to male except lacking MSSC. Face wider, nearly 7 times as high as wide in middle; legs simple, with short setae; abdomen with 5 visible segments; oviscapt (Fig. 10) divided into 2 narrow acanthophorites, each bearing 1 thick seta and 4 long simple setae; cercus fingerlike, projected, with 2 apical long seta and several setulae; anal plate (not figured) weakly sclerotized, semicircular, adjacent to lateral processes covered with hairs.

MEASUREMENTS (in mm). Body length without antennae 2.94; wing length 2.75; wing width 0.96.

ETYMOLOGY. The species is named after the Morogoro Region of Tanzania, where the type series was collected.

DISCUSSION

The use of general keys to dolichopodid genera (Bickel, 2009; Grichanov & Brooks, 2017) leads *Udzungwomyia* gen. n. to a peloroepodine genus *Micromorphus* Mik, 1878. New genus well differs from this and other genera of the subfamily Peloroepodinae in many characters, first of all in distinct facial suture; postpedicel as large as pedicel, semiglobular, with indistinct apex; stylus preapical; legs with rather short major bristles; hind basitarsus much shorter than next segment; postabdomen nearly symmetrical, with epandrial foramen positioned basally; genitalia mostly exposed.

The following character states place *Udzungwomyia* gen. n. in the Medeterinae (Yang *et al.*, 2006): occiput weakly convex backward; upper occiput distinctly concave; eyes with tiny hairs; male eyes separated on face; male face narrow at middle; vertex not excavated; vertical seta nearly at level of oculus; postocular bristles one-rowed; antennal stylus apical or subapical; mesonotum with flat mid-posterior slope; propleuron not haired, only with separate bristles on mid-lower portion; strong dorsocentrals decreasing in size anteriorly; hairs on legs uniformly short; hind coxa with 1 outer bristle at middle; anal cell absent; anal vein weak; male abdominal segment 6 large triangular, with hairs and bristles (but mostly concealed, glabrous in *Udzungwomyia*); male genitalia mostly exposed; surstylus strongly developed and distinctly divided; apical subepandrial processes absent and postgonite indistinct; cercus usually thickened basally.

The following character states are common to *Udzungwomyia* gen. n. and *Neomedetera*, distinguishing them from other Medeterinae: male face narrow, narrowing in middle; mid and hind femora with anterior preapical bristles; female terga 9+10 divided medially into 2 hemitergites, each bearing only one thick spine.

Mesonotal setation is not significantly reduced in both sexes in comparison with the *Medetera* generic concept (Bickel, 1985, 1987b). However, *Udzungwomyia* gen. n. has totally lost acrostichal setae, thus being close to *Pharcoura*, *Hurleyella* and *Babindella*. Wing anal vein is fold-like in *Udzungwomyia* gen. n., but distinct in *Medetera*. Vein M is upturned beyond *dm-cu*, then straight, joining costa beyond wing apex in *Udzungwomyia* gen. n., and R₄₊₅ and M₁₊₂ only slightly converge on distal half, subparallel at wing apex, in contrast to species of all other medeterine genera. In addition, male segment 6 is bare in *Udzungwomyia* gen. n., being setose in other genera. Segment 7 is reduced, devoid of setae in *Babindella* and *Udzungwomyia* gen. n. *Nikitella* male also has remarkably reduced segment 7, but being covered with short setae, and differing in reduced segment 8 and large rugose epandrium.

It is worth noting that *Cryptopygiella* males have totally lost abdominal segments 7 and 8. The *Babindella* flies are tiny yellowish, lacking acrostichals, with M and R₄₊₅ veins nearly straight and subparallel at apex; lateral scutellar setae absent, segments 7 and 8 fused, but segment 8 well developed (Bickel, 1987a). *Pharcoura*, *Neomedetera* and *Hurleyella* have been described with nearly symmetrical male postabdomen, with foramen positioned baso-ventrally, but having well developed segments 7 and/or 8; they also have many other striking characters, strongly differing from *Udzungwomyia* gen. n., *Babindella* and *Nikitella*. See further discussion in Runyon & Robinson (2010).

The genus *Udzungwomyia* gen. n., as well as other genera with nearly symmetrical male postabdomen, has obviously nothing to do with extant and extinct genera of medeterine tribes Systemini and Thrypticini (Grichanov, 2011b; Grichanov *et al.*, 2014). Moreover, I think that some of those genera are paraphyletic to Medeterini or even to Medeterinae.

Regarding the position of *Babindella*, the features of male and female genitalia are also found in other medeterine genera with epandrial foramen positioned basally, and are therefore not characteristic for that genus. What is more important is that they do not represent apomorphies that should support the erection of a new subfamily. Hence there seems no true

basis for the subfamily Babindellinae, that might not only prove paraphyletic at best but also add to the current complexity in Medeterinae. In addition, brown or even reddish-yellow body lacking metallic shine is not unique in the subfamily and can be found in species of e.g. *Grootaertia* Grichanov, 1999 and *Saccopheronta* Becker, 1914 (= *aberrans* group of *Medetera*). In order to provide true evidence for the integration of Babindellinae and Medeterinae or further split-up of the latter subfamily in separate lineages, molecular data are of paramount importance.

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