



Meuffelsia, a New Genus of Long-Legged Flies from South Africa, with a Key to Afrotropical Peloropeodine and Allied Genera (Diptera: Dolichopodidae)

Authors: Grichanov, Igor Ya., and Mostovski, Mike B.

Source: African Invertebrates, 49(2) : 159-170

Published By: KwaZulu-Natal Museum

URL: <https://doi.org/10.5733/afin.049.0209>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

***Meuffelsia*, a new genus of long-legged flies from South Africa, with a key to Afrotropical peloroepodine and allied genera (Diptera: Dolichopodidae)**

Igor Ya. Grichanov^{1*} and Mike B. Mostovski²

¹All-Russian Institute of Plant Protection, 3 Podbelskogo Str., Pushkin, St Petersburg, 196608 Russia; Grichanov@mail.ru; ²Natal Museum, P. Bag 9070, Pietermaritzburg, 3200 South Africa; School of Biological & Conservation Sciences, University of KwaZulu-Natal, P. Bag X01, Scottsville, 3209 South Africa; Paleontological Institute, Russian Academy of Sciences, 123 Profsoyuznaya Str., Moscow, 117997 Russia; mmostovski@nmsa.org.za; *To whom correspondence should be addressed

ABSTRACT

The genus *Meuffelsia* Grichanov, gen. n. is described from South Africa to accommodate two new species, *M. erasmusorum* Grichanov, sp. n. and *M. manningi* Grichanov, sp. n. The new genus has been placed in the subfamily Peloroepodinae, and is considered close to the genera *Micromorphus* and *Peloroepodes*. Brief information on the habitat of *M. erasmusorum* is provided; in general, representatives of the new genus seem to prefer mesic riparian environments. A key to Afrotropical peloroepodine and allied genera of long-legged flies is compiled, and characters of the new genus are discussed.

KEY WORDS: Diptera, Dolichopodidae, Peloroepodinae, long-legged flies, South Africa, new genus, new species, identification key.

INTRODUCTION

The ‘World catalog of Dolichopodidae’ (Yang *et al.* 2006) lists 15 genera in the subfamily Peloroepodinae, which is still poorly defined (Grichanov 2000). Several unrevised genera of uncertain taxonomic position included in the subfamily blur its border with Sympycninae. There are two relatively well-defined and distinctive genera (*Peloroepodes* Wheeler, 1890 and *Micromorphus* Mik, 1878) that are distributed worldwide, including the Afrotropics. These genera differ from other members of the subfamily, first of all, in having sessile hypopygia.

A male and a female of a peculiar peloroepodine species have been collected using a Malaise trap at the Sanyati Nature Farm near Loewensburg, KwaZulu-Natal, South Africa. A study of published descriptions (Parent 1938; Robinson & Vockeroth 1981; Meuffels & Grootaert 1987, 1997a, b, 2004; Bickel 1992, 1999, 2004; Runyon & Hurley 2003; Negrobov 2003; Grootaert 2006, *etc.*) has been unsuccessful in seeking an appropriate genus for this species. Subsequent treatment of collections from the Natal Museum led to discovery of two more specimens of the same species, and of a series consisting of one male accompanied by three females that represent another close species. Both species belong to a new genus that shares features of *Micromorphus* and *Peloroepodes*, but their inclusion in either of the latter genera would diffuse the generic concepts of both taxa. This paper offers a description of a new genus along with a key to all Afrotropical peloroepodine and sympycnine genera, with three species groups of *Sympycnus* and two genera previously included into the subfamily Peloroepodinae.

MATERIAL AND METHODS

The left and right lateral views of the hypopygium, or male genital capsule, are illustrated for the new species. In describing the hypopygium, ‘dorsal’ and ‘ventral’

refer to the morphological position prior to rotation and flexion. Thus, in figures showing a lateral view of the hypopygium, the top of the page is morphologically ventral, while the bottom is dorsal. Morphological terminology follows Robinson and Vockeroth (1981), Stuckenberg (1999), and Grichanov (2007).

All studied material is housed in the collection of the Natal Museum, Pietermaritzburg, South Africa (NMSA).

TAXONOMY

Subfamily Peloropeodinae Robinson, 1970

Genus **Meuffelsia** Grichanov, gen. n.

Etymology: The genus is named for the famous Dutch researcher of the Dolichopodidae, Henk Meuffels. Gender feminine.

Type species: *Meuffelsia erasmusorum* Grichanov, sp. n.

Diagnosis:

The generic diagnosis is based on the two very close included species, and lists features considered to be of generic importance.

Length less than 2.0 mm; body dark, with dark setae; dorsal part of postcranium slightly concave; face without setae, relatively broad, slightly narrowed downward; pedicel globular; postpedicel small, subtriangular; stylus dorsoapical; labella with 6 pseudotracheae; posterior part of mesonotum distinctly flattened and slightly depressed; acrostichals biserial; 6 dorsocentrals; scutellum with 2 strong bristles and 2 minute adjacent lateral hairs; fore and mid coxae with anterior and apical cilia; hind coxa with



Fig. 1. *Meuffelsia erasmusorum* Grichanov, sp. n., general habitus of the holotype in alcohol before dissection.

1 seta at middle; legs simple, with simple setae; mid and hind femora with strong anterior subapical seta; hind tarsus simple; wing nearly as long as body, relatively broad; *m-cu* short; segment 7 small, with tergum broad and sternum reduced; segment 8 large; hypopygial foramen left lateral; hypopygium with rounded-ovate cercus; hypandrium long and thick, asymmetrical, fused at base to epandrium; ventral surface of epandrium bare; surstyli asymmetrical, with left dorsal arm shorter or longer than right one, both broad, bearing a few short setae, and ventral arms of surstyli subequal in length, thin, directed ventrad, bearing a few short setae at apex; oviscapt with tergum 9+10 split medially into two arcuate narrow hemitergites, each bearing 4 short black acanthophorites; female cercus short, widened distad; anal plate broad, wider than long.

Meuffelsia erasmorum Grichanov, sp. n.

Figs 1–6

Etymology: The species is named in honour of Thea and Cobus Erasmus, on whose property the types were collected.

Description:

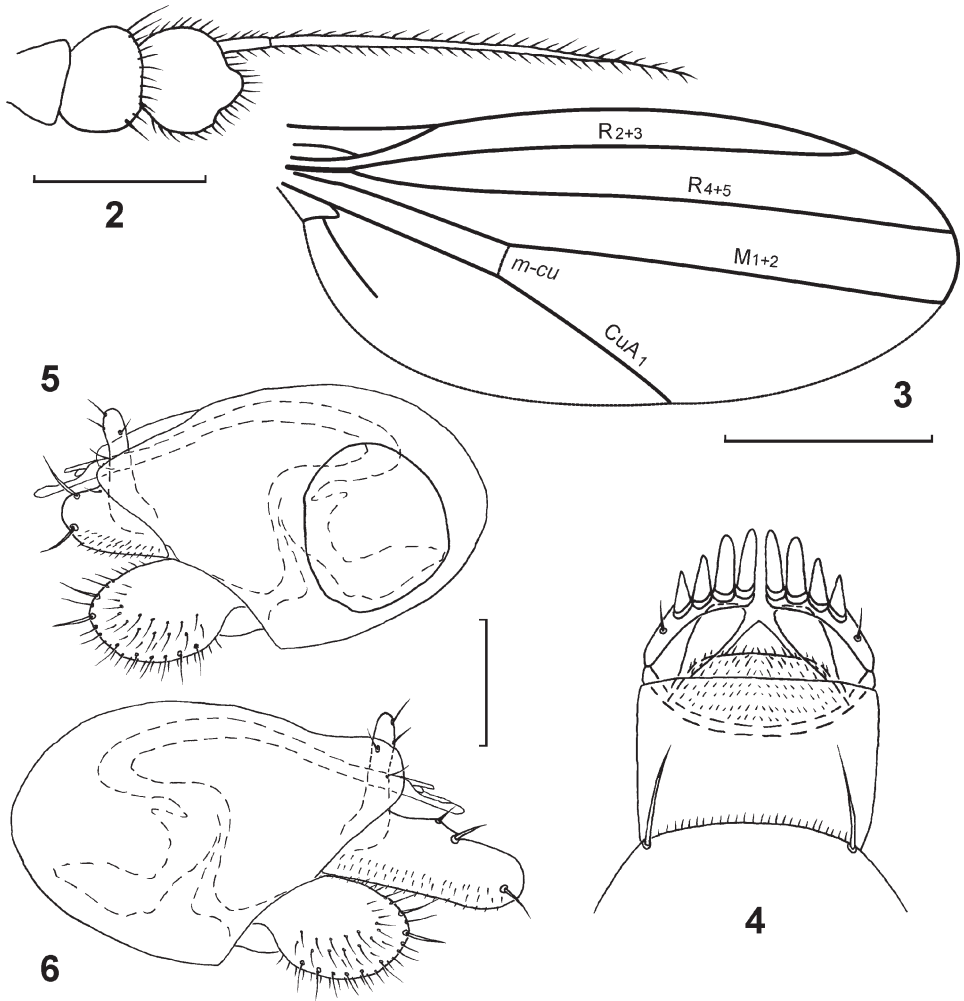
Colour (dry paratypes): Frons and face weakly shining bronze, brownish pollinose. Palpus and proboscis blackish brown; thorax bluish black; legs with coxae, femora and tarsi from apex of basitarsus mainly light brown; other podomeres mainly reddish yellow; abdomen black with brown sternites.

Male.

Head: Frons and face with black ground colour. One strong but short postvertical seta positioned far from postocular setal row; postocular setae all dark; 1 or 2 upper and 1 lower setae slightly longer than the others. Face under antennae 2× as wide as height of postpedicel. Antenna black, slightly longer than head height. Scape small, vase-like, with projecting inner angle forming distal denticle; pedicel larger, globular, with ring of short setulae and elongate apicodorsal seta; postpedicel subtriangular, as long as high at base, densely haired; stylus inserted dorsally at 2/3 from postpedicel base, 2× as long as main segments of antenna combined, shortly pubescent, with short thick segment 1 and filiform segment 2. Ratio of lengths of scape to pedicel to postpedicel to stylomere 1 to stylomere 2, 3:3:4:1:20. Palpus and proboscis yellow-brown, palpus subtriangular, with dark pubescence and dark short bristle.

Thorax: With dark bristles, mesonotum blackish brown, pleura dark brown. One long and 1 short intra-alar, 1 humeral, 1 supra-alar, 2 notopleurals, 1 sutural, 1 presutural; 6 (2+4) dorsocentrals, with first slightly shorter and last slightly longer than others; 5th seta not shifted towards lateral margin; 6 or 7 pairs of biserial acrostichals extending to well-developed posterior mesonotal flattening. Upper propleuron without setae; proepisternum with 1 strong seta and 1 short hair above fore coxa.

Legs: Mainly dirty yellow; mid and hind coxae, hind femur and apical segments of all tarsi distinctly brownish. Fore and mid coxae with dark anterior and apical cilia; hind coxa with 1 black bristle at middle. Fore leg without extraordinary setae; fore femur with just 1 or 2 short posteroventrals at apex; fore tibia simple, without strong setae; fore tarsus simple, with ordinary setulae. Length ratio of fore femur to tibia to tarsus (segments from first to fifth), 19:23:10:4:3:3:4. Mid femur simple, bearing 1 strong



Figs 2–6. Details of *Meuffelsia erasmusorum* Grichanov, sp. n.: (2) antenna; (3) wing; (4) oviscapt, dorsal aspect; (5, 6) hypopygium, left and right lateral aspects. Scale bars: 0.5 mm in Fig. 3, otherwise 0.1 mm.

anterior subapical bristle and 1 fine posteroventral seta; mid tibia simple, with 1 very strong anterodorsal and 1 fine posterodorsal setae at basal third and 3 apical setae; no ventral setae; mid tarsus simple; segments 1–4 each with cirlet of short apical spinules. Length ratio of mid femur to tibia to tarsus (segments from first to fifth), 30:31:14:5:4:3:4. Hind femur with 1 strong anterior subapical seta; hind tibia simple, with 1 strong anterior at basal 1/3, and 3 short posterodorsal, 2 or 3 very short ventral, 3 simple short apical setae, with only anterior apical seta somewhat longer, without strong dorsal subapical seta; hind tarsus simple; hind basitarsus with 1 short basoventral and 1 or 2 short apicoventral setae, with very small basal tooth posteriorly directed towards apex of hind tibia. Length ratio of hind femur to tibia to tarsus (segments from first to fifth), 35:35:15:14:6:4:5.

Wing: Entirely greyish, veins brown. Costa simple, with simple costal setulae reaching R_{2+3} . Ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_{1+2} , 18:12. R_{2+3} , R_{4+5} and M_{1+2} practically straight; R_{2+3} and R_{4+5} slightly diverging towards wing apex; R_{4+5} and M_{1+2} parallel in distal half. Ratio of apical to basal part of M_{1+2} , 70:27. Ratio of $m-cu$ to apical part of CuA_1 , 6:32. Crossvein $m-cu$ somewhat weaker than adjacent longitudinal veins, forming right angles with M_{1+2} and CuA_1 . Anal vein distinct, short; anal lobe developed, narrow. Lower calypter small, brownish, with short dark cilia. Haltere brown.

Abdomen: Dark brown, with black hairs and marginal setae, cylindrical; sternites 2–4 large, light brown; sternites 5 and 6 small. Segment 7 short, with tergum broad and sternum reduced; segment 8 brown, large, covering about half of left lateral surface of epandrium, bearing numerous short cilia; epandrium brown, globular, asymmetrical, slightly longer than high, as wide as high, longer than tergite 5; hypopygium with rounded-ovate, densely haired cercus; hypandrium concealed, with large triangular lobe on right side at 2/3 of its length; aedeagus with small ventral subapical excavation and short thin process before excavation; ventral surface of epandrium bare; distal epandrial lobes asymmetrical, short and broad, bare, without projections; surstyli asymmetrical, with left dorsal arm half the length of right one, both broad, bearing a few short setae, and ventral arms of surstyli subequal in length, thin, directed ventrad, bearing a few short setae at apex.

Measurements (mm): Body length 1.7, antenna length 0.4, wing length 1.65, wing width 0.65, hypopygium length 0.4.

Female.

Similar to male except lacking male secondary sexual characters; each hemitergite arcuate, narrow, with four short black setae (acanthophorites); cercus short, widened distad; anal plate broad, wider than long.

Measurements (mm): Body length 1.2–1.3, antenna length 0.35, wing length 1.5, wing width 0.55.

Holotype (in glycerol): ♂ SOUTH AFRICA: *KwaZulu-Natal*: Louwsburg, Sanyati Farm, 27°34'00"S: 31°17'57"E, alt. 1090 m, 18.xii.2005–6.ii.2006, Malaise trap, M. Mostovski.

Paratypes: SOUTH AFRICA: *KwaZulu-Natal*: ♀ same data as holotype, but apparently teneral, with lightened and shrunken body; ♂ (in glycerol) ♀ (on pin) Clifton Canyon, Gillitts, nr Hillcrest, 2930Dd, 17.x.1976, R.M. Miller & P. Stabbins.

Habitat: The type specimens from Sanyati Nature Farm were collected in the primarily indigenous riverine bush (Fig. 7). The surrounding vegetation includes Magic guarri (*Euclea divinorum*), Thorny elm (*Chaetachme aristata*), Flame thorn acacia (*Acacia ataxacantha*), Wild mulberry (*Trimeria grandifolia*), Pink dombeya (*Dombeya burgessiae*), Lemon thorn (*Cassinopsis ilicifolia*), Broom-cluster fig (*Ficus sur*), Waterberry (*Syzygium cordatum*), Horsewood (*Clausena anisata*), Thorny rope (*Dalbergia armata*), Climbing flatbean (*Dalbergia obovata*), Bladdernut (*Diospyros whyteana*), Silky fibre-bush (*Englerodaphne pilosa*), False assegaai (*Maesa lanceolata*), *Rhus* spp., Silkybark (*Maytenus acuminata*), Turkeyberry (*Canthium inerme*), Wild pomegranate (*Burchellia bubalina*), Tree fuchsia (*Halleria lucida*), Zulu spurflower (*Plectranthus zuluensis*), Traveller's joy (*Clematis brachiata*), Wild iris (*Dietes iridiodes*), and Wild impatiens (*Impatiens hochstetteri*). Temperatures ranged between 16–32 °C during Dec. 2005 – Jan. 2006, and the precipitation was about 350 mm.



Fig. 7. Habitat at Sanyati Farm where the holotype and one of the paratypes of *M. erasmusorum* sp. n. were collected. (Photo courtesy Th. & C. Erasmus.)

As reported by Dr R.M. Miller, the collecting site of the other two paratypes was most probably along the small river that runs down the valley with indigenous forest.

Meuffelsia manningi Grichanov, sp. n.

Figs 8, 9

Etymology: The species is named after J. Manning, who collected the type series.

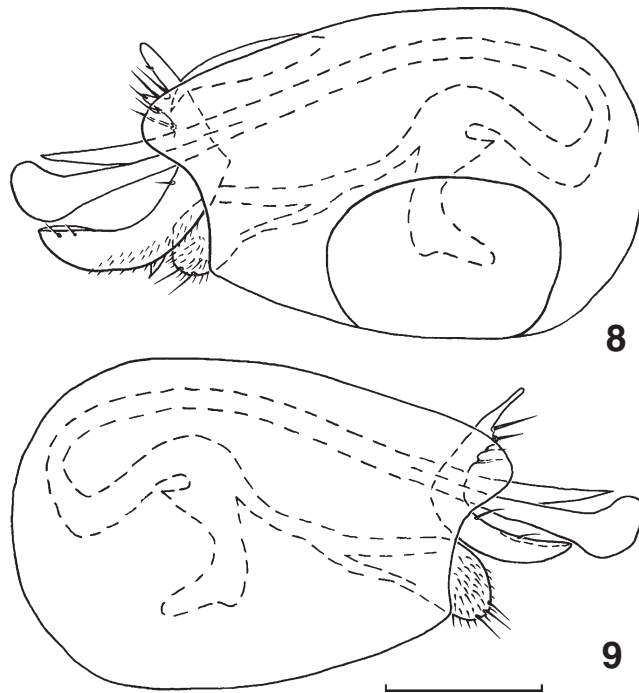
Description:

Male.

Similar to *M. erasmusorum* sp. n. in all respects except as noted.

Ratio of scape to pedicel to postpedicel to stylus, 3:2:3:18. Length ratio of fore tarsomeres from first to fifth, 10:4:3:3:4. Length ratio of mid tarsomeres from first to fifth, 12:6:4:3:4. Length ratio of hind tarsomeres from first to fifth, 10:8:6:4:6. Ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_{1+2} , 16:10. Ratio of apical to basal part of M_{1+2} , 60:28. Ratio of *m-cu* to apical part of CuA_1 , 6:26.

Epandrium globular, asymmetrical, distinctly (1.5×) longer than high, as wide as high; hypopygium with rounded-ovate densely haired cercus; hypandrium mostly concealed, asymmetrical, slightly shifted towards left side, deeply bifurcated from its midlength (ventral view), with broad, apically pointed lobes almost equal in length and shape; aedeagus expanded at apex, with adjacent long thin process; ventral surface of epandrium bare; distal epandrial lobes short and broad, bare, without projections; surstyli



Figs 8, 9. *Meuffelsia manningi* Grichanov, sp. n., hypopygium, left and right lateral aspects. Scale bar = 0.1 mm.

flat, asymmetrical, with left dorsal arm 2× length of right, both broad (dorsal view), bearing a few weak setae, and ventral arms of surstyli directed ventrad, subequal in length, each wider in proximal half where it bears 3 or 4 strong pedunculate setae, and distinctly thinner in distal half that is devoid of setae.

Measurements (mm): Body length 1.4, antenna length 0.4, wing length 1.4, wing width 0.5, hypopygium length 0.4.

Female.

Similar to male except lacking male secondary sexual characters. Similar to female *M. erasmusorum* sp. n. in all respects.

Measurements (mm): Body length 1.3, antenna length 0.35, wing length 1.5, wing width 0.5.

Holotype (in glycerol): ♂ SOUTH AFRICA: *KwaZulu-Natal*: Umlaas Road, 29°40'35"S:30°29'20"E, alt. 747 m, 24.xi.1982, J. Manning, rolling grassland, small vegetated stream – on stones in & along water, dappled sunlight.

Paratype (on pin): ♀ same data as holotype.

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 2 ♀ Ashburton, 29°39'24"S:30°26'25"E, alt. 625 m, 26.xii.1982, J. Manning.

Note: Females from Ashburton have been assigned to *M. manningi* sp. n. tentatively on the basis of a subtle similarity in the wing venation (the position of *m-cu*), and their origin from a nearby locality. Otherwise, one would expect difficulty in a confident identification of isolated females.

Comparison: The two described species can hardly be distinguished by external morphology. Nevertheless, wing vein *m-cu* is located slightly closer to the wing base in *M. erasmusorum* than in *M. manningi*; therefore, wing vein ratios differ somewhat in both males and females of the two species. The species are easily distinguished by hypopygium morphology. The hypandrium is deeply bifurcated, with almost equal lobes in *M. manningi*, but with only a large triangular lobe on the right side of the main arm in *M. erasmusorum*. The surstyli are rather distinct in their shape and setation pattern, and their ventral arm in *M. manningi* is peculiar in bearing several long and strong pedunculate setae on the basal half. The latter species also has a somewhat more elongated epandrium and smaller cercus than *M. erasmusorum*. It is also worth noting that the left dorsal arm is shorter than the right one in *M. erasmusorum*, and vice versa in *M. manningi*.

Key to Afrotropical peloroepodine and allied genera and species groups

Regarding Afrotropical Peloroepodinae and Sympycninae, the ‘World catalog of Dolichopodidae’ includes 11 genera, some of which should be excluded from the list (Grichanov 1998, 2008*a, b*). This key does not reflect phylogenetic relations of included taxa, being compiled for practical use only. Species groups in the genus *Sympycnus* follow Grichanov (2008*b*).

- 1 Antennal pedicel, seen on inside face, forming a more or less long thumb-like projection into postpedicel **Syntormon** Loew, 1857 (part)
 - Antennal pedicel simple, vase-like or globular, without thumb-like projection .. 2
- 2 Acrostichal setae absent 3
 - Acrostichals distinct, even though sometimes small 6
- 3 Hind femur without subapical bristle; hind basitarsus distinctly shorter than tarsomere 2 **Acropsilus** Mik, 1878
 - Hind femur with subapical bristle 4
- 4 Face narrow in middle, extending downward
 - **Campsicnemus** Haliday in Walker, 1851 (part)
 - Face narrowed more or less gradually downward; scutellum with only one pair of strong setae 5
- 5 Proepisternum with strong seta above fore coxa; 4 or 5 pairs of strong dorsocentrals, no reduced setae **Micromorphus** Mik, 1878
 - Proepisternum without strong setae; 6 pairs of dorsocentrals with 1st and/or 5th setae being greatly reduced or shortened, so there are 4 or 5 pairs of strong dorsocentrals **Sympycnus** Loew, 1857 (Group I)
- 6 Acrostichal setae uniserial at least anteriorly 7
 - Acrostichal setae in two regular rows 14
- 7 Antennal stylus apical or subapical 8
 - Stylus distinctly dorsal 9
- 8 Antennal scape with hairs above; antennal postpedicel undivided; legs slender; hind basitarsus shorter than next segment; body dark pubescent
 - **Syntormon** Loew, 1857 (part)
 - Scape bare; antennal postpedicel bisegmented; legs robust; hind basitarsus longer than next segment; body white pubescent **Epithalassius** Mik, 1891

- 9 Face narrow in middle, extending downward
 **Campsicnemus** Haliday in Walker, 1851 (part)
 – Face narrowed gradually downward or with more or less parallel sides 10
- 10 Three or 4 pairs of strong dorsocentrals; male anterior tarsomeres rarely simple, usually shortened, some often flattened or ornamented with processes, spines or remarkable hairs; hind tarsomeres 2–5 regularly decreasing in length; male hind basitarsus often ornamented with remarkable setae or hairs; female clypeus strongly bulging **Sympycnus** Loew, 1857 (Group III)
 – At least 5 pairs of strong dorsocentrals; fore tarsomeres usually simple or shortened, rarely ornamented with remarkable hairs; hind tarsomeres 2–5 of male usually irregularly decreasing in length; male hind basitarsus rarely ornamented with remarkable setae or hairs 11
- 11 Two rather than one postverticals; strong ventral subapical seta on hind tibia; wing veins R_{4+5} and M_{1+2} slightly diverging rather than parallel; strongly oblique crossvein $m-cu$ forming acute ($ca\ 60^\circ$) angle with CuA_1 ; mid femur with ventral bristles in basal part; male wing costa with long and thick stigma beyond R_1 ; epandrial foramen mostly middorsal **Teuchophorus** Loew, 1857
 – One postvertical seta; wing veins R_{4+5} and M_{1+2} parallel; epandrium with mostly left basolateral foramen 12
- 12 Five pairs of strong dorsocentrals; two basal hind tarsomeres shortened; male hind tarsomere 2 with apicoventral worm-like process; tarsomere 3 longer than 2; tarsomere 4 shorter than 3; female face narrow
 **Chaetogonopteron** De Meijere, 1913
 – Usually 6, rarely 5 pairs of strong dorsocentrals; two basal hind tarsomeres not shortened; male hind tarsomere 2 never having worm-like process 13
- 13 Proepisternum without setae, with microscopic hairs; male anterior tarsomeres simple; male hind tarsomere 3 shorter than 2, often bearing one or more modified setae; tarsomere 4 usually longer and thinner than 3, often polished; dorsal and ventral surstyli separated **Sympycnus** Loew, 1857 (Group II)
 – Proepisternum with seta; male anterior tarsomeres rarely simple, usually shortened; hind tarsus simple; strong setae usually present at end of anal wing lobe; dorsal and ventral surstyli fused almost to apex **Olegonegrobovia** Grichanov, 1995
- 14 Crossvein $m-cu$ strongly oblique, forming acute ($ca\ 60^\circ$) angle with CuA_1 ; male with symmetrical claws on fore tarsus; male hind tarsus often modified
 **Sympycnus** Loew, 1857 (non-Afrotropical species)
 – Crossvein $m-cu$ straight, forming usually right angles with M_{1+2} and CuA_1 ; male hind tarsus simple 15
- 15 Crossvein $m-cu$ very short, at least $5\times$ shorter than apical part of CuA_1 , located at basal $1/3$ of wing length; male face broad, slightly narrowed downward; face under antennae twice as wide as height of postpedicel
 **Meuffelsia** Grichanov, gen. n.
 – Crossvein $m-cu$ at most $2-3\times$ shorter than apical part of CuA_1 ; male face under antennae about as wide as height of postpedicel; eyes often contiguous in lower half of face 16

- 16 One strong proepisternal seta; abdomen as long as thorax, with reduced sternites 5 and 6 in males; male with asymmetrical claws on fore tarsus; mid coxa with apical spine of glued cilia **Peloropeodes** Wheeler, 1890 (Afrotropical species)
- Proepisternum usually without strong setae; abdomen usually longer than thorax, with at least sternite 5 normally developed; male with symmetrical claws on fore tarsus; mid coxa without apical spine of glued cilia
 **Sympycnus** Loew, 1857 (Group II (part))

DISCUSSION

The following character states places *Meuffelsia* in the Peloropeodinae (see Yang *et al.* 2006):

Occiput convex backward. Vertex nearly flat. Upper occiput slightly concave, verticals located nearly at level of lateral ocellus; 1 short postvertical. Postocular bristles one-rowed. Eyes with tiny hairs. Male eyes separated on face; male face distinctly narrowing downward. Mesonotum with flat mid-posterior slope. Propleuron sparsely haired, with 1 bristle on lower portion. Mid and hind femora with 1 anterior preapical bristle. Hind coxa with 1 outer bristle at middle. Anal cell present; anal vein present as a short fold. Male abdominal tergite 7 short triangular, without hairs and bristles; sternite 7 reduced. Male genitalia relatively large and mostly exposed; surstylus well developed; epandrial lateral lobe distinct; hypandrium long.

The following character states are common to *Meuffelsia*, Afrotropical *Micromorphus* and *Peloropeodes* (after Grichanov 2000):

Antenna slightly longer than head height. Scape small, bare, vase-like, with slightly projecting inner apex. Stylus dorsal. Palpus and proboscis short, haired; palpus with one black seta. Pseudotracheae symmetrically sclerotised. One strong vertical seta, half as long as head height; 2 strong ocellar setae of the same length with additional pair of short hairs posteriorly. Postocular setae in one row. Mesonotum distinctly flattened in front of scutellum. Mesonotum with 1 humeral, 1 posthumeral, 2 notopleural, 1 pre-sutural, 1 sutural, 2 intra-alar and 1 supra-alar setae, 1 strong propleural seta. Scutellum with 2 strong setae, with or without very short lateral hairs. Fore tibia without major setae. Hind coxa with 1 black external seta. Mid and hind femora with 1 anterior subapical seta. Mid tarsomeres 1–4 with short apicoventral spinules. Wing costa with 2 strong bristles before humeral crossvein; upper seta longer than lower. Anal lobe long and narrow; anal vein fold-like; alula undeveloped; anal angle obtuse or absent.

Meuffelsia shares with *Micromorphus* such characters as simple legs, no strong dorsal seta on antennal pedicel, and distal part of CuA_1 being 4–5 times longer than *m-cu*. Nevertheless, *Micromorphus* shows striking differences to *Meuffelsia*: no acrostichals and basal denticle on hind basitarsus; dorsal and ventral subapical setae on hind tibia, 1 strong and 1 hair-like intra-alar setae; setose epandrial lobes at base and at apex of ventral epandrial surface; and symmetrical surstyli. *Meuffelsia* shares with examined Afrotropical and European species of *Peloropeodes* such characters as: presence of two rows of acrostichals; well developed segment 7 in males; and usually asymmetrical hypopygium. Nevertheless, *Peloropeodes* differs in many morphological characters: antennal pedicel with strong dorsal seta; postpedicel usually much larger than pedicel; male mid coxa with apical spine of glued cilia; hind tibia with 1 stronger subapical dorsal seta, slightly longer than diameter of tibia; various podomeres, especially on

fore leg, often modified, bearing long setae or cilia; and fore tarsomere 5 always modified, with enlarged asymmetrical claws.

The combination of character states is distinctive to *Meuffelsia* but any of them may also occur in other Peloropeodinae. However, the postabdomen morphology is very remarkable for the genus, and the unusual male surstylus shape has not yet been described in other genera of the subfamily.

ACKNOWLEDGEMENTS

Our appreciation extends to Thea and Cobus Erasmus (Sanyati Nature Farm), who allowed collecting on their property, professionally helped with servicing a Malaise trap, and provided additional information on the local floral assemblage and weather conditions over the collecting period at Sanyati. We also grateful to V. Kolyada (Zoological Museum, Moscow) for his invaluable help in sorting bulk samples when he was visiting the Natal Museum, to B. Muller (NMSA) for his professional input in graphics editing, and to R.M. Miller (University of KwaZulu-Natal) for information on the habitat at Clifton Canyon. Many thanks to I. Shamshev (All-Russian Institute of Plant Protection) and anonymous referees, whose opinions have been taken into consideration as much as possible.

REFERENCES

- BICKEL, D.J. 1992. The Australian Sympycninae (Diptera: Dolichopodidae): Introduction and description of a new genus, *Yumbera*. *Invertebrate Taxonomy* **6**: 1005–1017.
- 1999. Australian Sympycninae II: *Syntormon* Loew and *Nothorhaphium* gen. nov., with a treatment of the Western Pacific fauna, and notes on the subfamily Rhaphiinae and *Dactylonotus* Parent (Diptera: Dolichopodidae). *Invertebrate Taxonomy* **13**: 179–206.
- 2004. *Alishania*, a new genus with remarkable female terminalia from Taiwan, with notes on *Chrysotimus* Loew (Diptera: Dolichopodidae). *Bishop Museum Bulletin in Entomology* **12**: 27–34.
- GRICHANOV, I.Ya. 1998. Afrotropical species of the genus *Acropsilus* Mik (Diptera: Dolichopodidae). *International Journal of Dipterological Research* **9** (3): 183–190.
- 2000. New Afrotropical Sympycninae and redescription of European *Peloropeodes acuticornis* (Oldenberg) (Diptera: Dolichopodidae). *International Journal of Dipterological Research* **11** (2): 77–102.
- 2007. *A checklist and keys to Dolichopodidae (Diptera) of the Caucasus and East Mediterranean*. St Petersburg: VIZR RAAS.
- 2008a. Systematics of the genus *Epithalassius* Mik, 1891 (Diptera, Dolichopodidae). *Caucasian Entomological Bulletin* **4** (1): 137–139.
- 2008b. Afrotropical *Sympycnus* Loew (Diptera: Dolichopodidae). *International Journal of Dipterological Research* **19** (1): 17–65.
- GROOTAERT, P. 2006. The genus *Teuchophorus* (Diptera: Dolichopodidae) in Singapore. *The Raffles Bulletin of Zoology* **54** (1): 59–82.
- MEUFFELS, H.J.G. & GROOTAERT, P. 1987. Dolichopodidae (Diptera) from Papua New Guinea VI. New species in the genus *Sympycnus* Loew. *Indo-Malayan Zoology* **4**: 317–397.
- 1997a. Dolichopodidae (Diptera) from Papua New Guinea XVI. *Scotiomyia* gen. nov. a new Sympycninae genus from the rain forest with notes on the Papuan Sympycninae. *Studia dipterologica* **4** (1): 247–255.
- 1997b. A remarkable new sympycninae genus *Hercostomoides* from South Asia, with remarks on the genus *Telmaturgus* (Diptera, Dolichopodidae). *Studia dipterologica* **4** (2): 473–478.
- 2004 [2003]. The genus *Teuchophorus* in South-east Asia and New Guinea, description of new species, species-groups and their phylogeny (Insecta, Diptera, Dolichopodidae). *Journal of Natural History* **38**: 143–258.
- NEGROBOV, O.P. 2003. A new genus of the family Dolichopodidae (Diptera) from the Russian Far East. *International Journal of Dipterological Research* **14** (1): 35–37.
- PARENT, O. 1938. Diptères Dolichopodidés. *Faune de France*. T. 35. Paris: L'Académie des Sciences de Paris.

- ROBINSON, H. & VOCKEROTH, J.R. 1981. Dolichopodidae. In: McAlpine, J.R. *et al.*, eds, *Manual of Nearctic Diptera*. Vol. 1. Monograph 27. Ottawa: Research Branch, Agriculture Canada, pp. 625–639.
- RUNYON, J.B. & HURLEY, R.L. 2003. Revision of the Nearctic species of *Nepalomyia* Hollis (= *Neurigonella* Robinson) (Diptera: Dolichopodidae: Peloropeodinae) with a world catalog. *Annals of the Entomological Society of America* **96** (4): 403–414.
- STUCKENBERG, B.R. 1999. Antennal evolution in the Brachycera (Diptera), with a reassessment of terminology relating to the flagellum. *Studia dipterologica* **6** (2): 33–48.
- YANG, D., ZHU, Y.J., WANG, M.Q. & ZHANG, L.L. 2006. World catalog of Dolichopodidae (Insecta: Diptera). Beijing: China Agricultural University Press.