

SEVEN NEW AFROTROPICAL SPECIES OF *POECILOSOMELLA*  
DUDA (DIPTERA: SPHAEROCERIDAE)

L. PAPP

*Department of Zoology, Hungarian Natural History Museum and  
Animal Ecology Research Group of the Hungarian Academy of Sciences  
H-1088 Budapest, Baross utca 13, Hungary, E-mail: lpapp@zoo.zoo.nhmus.hu*

Seven new species of the genus *Poecilosomella* DUDA, 1920 are described from the Afrotropical region. They are *P. additionalis* sp. n. (Republic of South Africa), *P. duploseriata* sp. n. (Republic of South Africa), *P. kittenbergeri* sp. n. (N Tanzania, Uganda), *P. occulta* sp. n. (Republic of South Africa), *P. parangulata* sp. n. (Republic of South Africa), *P. setimanus* sp. n. (République du Congo, Togo) and *P. setosissima* sp. n. (Republic of South Africa). The differentiating features of *P. longecostata* (DUDA, 1925) are re-defined. The relationships in the species groups are discussed. With 68 original drawings and 4 wing photos.

Key words: Sphaeroceridae, *Poecilosomella*, new species, taxonomy, Afrotropical region

INTRODUCTION

The genus *Poecilosomella* DUDA, 1920 consists of beautiful limosinine species of Sphaeroceridae with pictured body and wings. At least one Afrotropical and an Oriental species each are so abundant in collections, that *Poecilosomella* species are important also in (community) ecological works.

As I mentioned before (PAPP 1991, 2002), only a few of the known species are readily recognisable without genitalia preparations (and without a study under a rather high magnification). The differentiating characters of the genus were summarised by PAPP (1990, 2002). Of them, I may stress here “false” veins of wing base at cubital area. They are narrow and high folds of the wing membrane, on which more dense and darker (usually brown) microtrichia emerge. The upper one (from the cubital vein) emerges from the dorsal, the lower one (from the anal vein) emerges from the ventral surface of wing. This character may be a synapomorphy for the genus, since e.g. in *Giraffimiella* L. PAPP, 2008 it is completely missing. All the observations made recently showed that the long thread-like process of the distiphallus is indeed a strong synapomorphy (this thin process may break or even be lost during genitalia preparation though). In the male genitalia the cercal part of the epandrial complex, the hypandrium, the surstylus, the postgonite, the basi- and distiphallus as well as the subepandrial sclerite carry important differentiating characters. Also here I name the sclerotized structures above the phallobase and ventral to the cerci (connecting ventral arms of epandrium) as subepandrial

sclerite, although its origin may be more complex. In the female postabdomen the shape and ratios of the tergite and sternite 7 and 8, as well as the epiproct and hypoproct, cerci and spermathecae may hold specific features.

*Poecilosomella* has been a diverse genus also in the Afrotropical region with nine species described hitherto (DUDA 1925, VANSCHUYTBROECK 1950, 1951, HACKMAN 1965, 1967 and PAPP 1990), cf. ROHÁČEK *et al.* (2001); seven new species are described below but even more are expected in the future.

The species described by RICHARDS as *Leptocera* (*Poecilosomella*) now have been placed in other genera (see PAPP 2008). In the present study seven new species are described.

## MATERIALS AND METHODS

This paper resulted from the examination of many double mounted (mostly minuten pinned) specimens of *Poecilosomella*, which are housed in: Republic of South Africa (RSA), Natal Museum, Pietermaritzburg (NMSA); Diptera Collection of the Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM).

Some paratypes of *P. setimanus* sp. n. are deposited also in the collection of the Deutsches Entomologisches Institut (DEI).

Other institutions, whose names are abbreviated in the text below: Department of Entomology, California Academy of Sciences, San Francisco (CAS); Institut Royal des Sciences Naturelles, Brussels (IRSN); Muséum Royal d'Afrique Central, Tervuren (MRAC).

Abdomina of several specimens of each species were removed and treated with sodium-hydroxide and lactic acid, washed, etc. in the standard way, and kept in plastic microvials with glycerol.

In the records below, label data are quoted letter by letter (this is why e.g. the Republic of South Africa is given in several forms); hand-written label data are given in quotation marks, whereas my annotations of label data are in square brackets. The label data are not quoted for *P. angulata* (THOMSON, 1869), a very common species.

### *Poecilosomella pallidimana* species group

Genal seta distinct. Fore tarsi white, only fore basitarsus is – at least partly – black. Hind tibia black or dark brown, i.e. without pale rings. Wings patterned. False vein from cubital vein seems to close a cubital cell. Costal vein terminates at conjunction with R<sub>4+5</sub>, or slightly beyond it. Male sternite 5 with a large medio-caudal hairy process, which may bear thicker setae caudally (Fig. 9). Subepandrial sclerite high. Apical half of surstylus in 2 lobes, caudal lobe (process) long and rather thin with a comparatively small apical thorn. Postgonite rather long, broadened at its middle (Figs 7, 13).

Contrarily to my former grouping (PAPP 1990), *P. hyalipennis* HACKMAN, 1965 does not belong to this group (cf. Figs 52–57).

**Poecilomella additionalis** sp. n.  
(Figs 1–8, 69)

Holotype male (NMSA): SOUTH AFRICA, NATAL, Pietermaritzburg, “Epworth, 10. IX. 1987, light”, A. E. Whittington.

Paratypes: 1 male (abdomen with genitalia in a microvial, NMSA): SOUTH AFRICA: Natal, Pietermaritzburg, “Sept. 5”, 1976, col. Ray M. Miller. 1 female (NMSA): Karkloof range nr. Mt. Alida, Natal, S. Africa, B. & P. Stuckenberg, 24. XII. 1961. 1 female (HNHM, right wing on a slide): SOUTH AFRICA: Natal, Mtunzini Malaise Tr. 28°58'S : 31°46'E, Barringtonia Raphia swamp forest, iii 1990, Coll: P. E. Reavell. 1 male (HNHM): RSA, Eastern Cape Prov., Sunland, wet meadow, Jan 12, 2007, GPS12, S33°30'12.5" E25°36'31.0", 42 m, leg. L. Papp & M. FÖLDVÁRI (gen. prep.).

Measurements in mm: body length 2.58 (holotype), 2.36–2.48 (paratypes), wing length 1.97 (holotype), 1.88–2.13 (paratypes), wing width 1.05 (holotype), 0.93–1.08 (paratypes).

Body dark brown, silvery pattern of head and mesonotum incl. scutellum as in related species.

Head dark brown, only at most anterior margin reddish. Fronto-orbitals subequal, anterior pair 0.165 mm long. 3 (4) pairs of medium-long interfrontals. Gena rather narrow 0.12 mm broad below eye. A distinct genal seta present. Aristal cilia long, 0.03 mm.

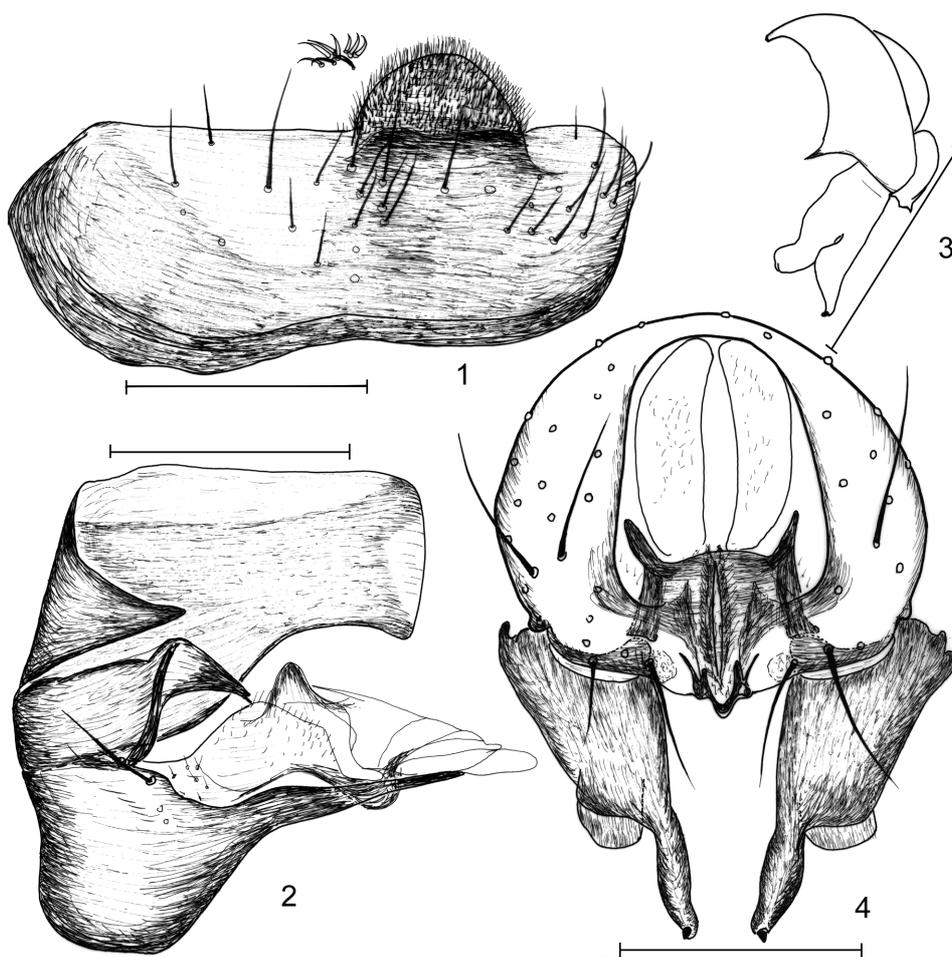
Both anterior dorsocentral and prescutellar (acrostichal) pairs strong. Anterior katepisternal 0.275 mm, posterior pair 0.31 mm long.

Wing (Fig. 69) rather broad and patterned: brown with dark diffuse colour basally and in  $r_1$  cell below apical part of  $R_1$  and around apical part of  $R_{2+3}$ . Two diffuse light spots in subcostal cell, sub-basally and apically, clear though narrow “windows” around cross-veins and 3 confluent “windows” discernible in  $r_{2+3}$ ,  $r_{4+5}$  and m cells. Cilia on wing membrane rather long. Costa thick, longest cilia on first costal section 0.09 mm. Second costal section much shorter than third section (0.385 mm vs. 0.57 mm). Costa overruns apex of  $R_{4+5}$  by 0.022 mm. Vein  $R_{2+3}$  strongly but not perpendicularly curved with a 0.08 mm (paratype) to 0.10 mm (holotype) long vein appendage.  $R_{4+5}$  strongly curved up. Inter-crossvein section of M 0.20 mm, hind cross-vein 0.17 mm. Anal vein thickened basally and continued into a long dark spot (actually not a vein) and a similar but curved dark spot present, which “closes” cubital cell.

Femora and tibiae all dark, no lighter rings, only knees dirty yellowish. Mid tibia (of the holotype) with anterodorsals at 19/61 (short), 23/61 (longer and thick), 36/61 (medium-long), 40/61 (long and thick); dorsals at 42/61 (medium), 49/61 (very long and thick); posterodorsals at 14/61 (short), 19/61 (long), 34/61 (long), 46/61 (very long and thick). Several slightly curved ventroapicals present. Fore tarsus white, except for basitarsus (one male and one female paratypes with light apex of basitarsus). Mid tarsi light: basitarsus lighter brown with yellowish apex, 2nd tarsomere light brown but both ends broadly yellow, 3rd and 4th tarsomeres yellow, 5th tarsomere light brown. Mid basitarsus long and slender, length 0.37 mm, thickness 0.033 mm, ventrally with close set rows of anteroventral and posteroventral black though not thick setae. Hind tarsi darker brown, 3rd and 4th tarsomeres as well as apex of 2nd tarsomere yellow.

Abdomen all dark brown. Abdominal tergites 1 and 2 with a large broad crocodile-heart-shaped (i.e. the shape of heart in love messages) desclerotised area. Longest marginal-lateral setae on tergite 4 and tergite 5 only 0.20–0.22 mm. Male sternite 3 and sternite 4 quadrate. Male sternite 5

(Fig. 1) strongly asymmetrical, with a large medio-caudal black setulose process, which bears thicker curved setae caudally (Fig. 1). Sternite 6 (Fig. 2) with a bilobed medial plate almost perpendicular to body axis (i.e. almost horizontal). Sternite 8 part comparatively long. Epandrium strongly asymmetrical, right half much larger (longer). Medial part of hypandrium comparatively large, as long as phallapodeme. Cerci large, protruding in lateral view (Fig. 3). Cerci protruding along the sagittal line, with fine hairs there, otherwise bare medially. Subepandrial sclerite high. Apical half of surstylus in 2 lobes (Fig. 3), cranial process well-sclerotised with numerous medium-long setae; caudal lobe (pro-



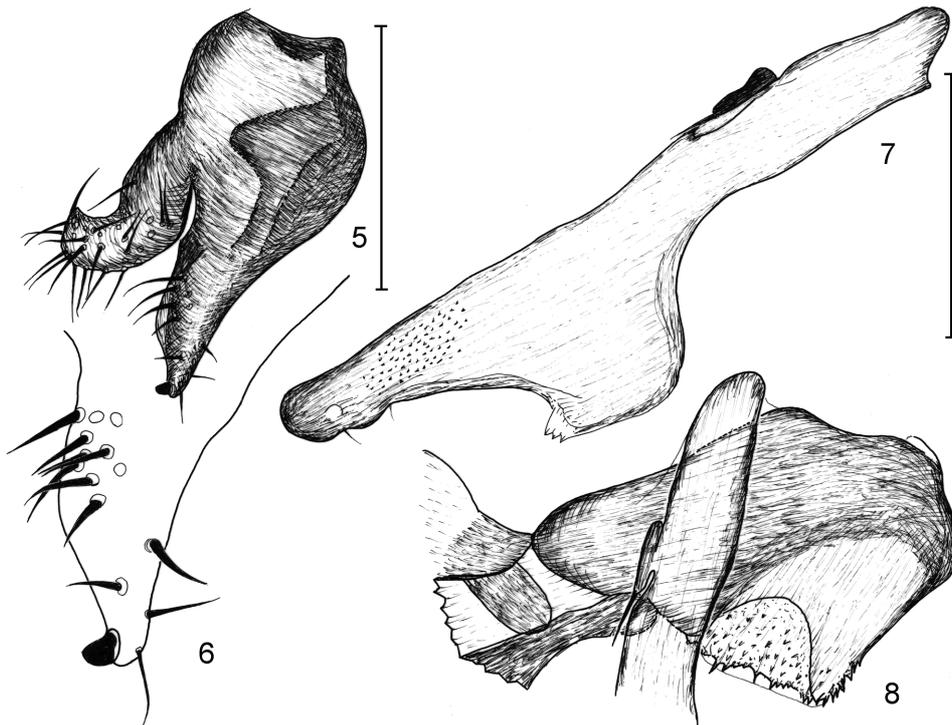
**Figs 1–4.** *Poecilosomella additionalis* sp. n., paratype male, postabdomen and genitalia. 1 = sternite 5, ventral view, 2 = postabdominal sclerites, ventral view, 3 = contours of epandrium, cercus and surstylus, lateral view (i.e. when caudal borders of epandrium overlapping), 4 = epandrium with modified cerci, subepandrial sclerite, anal plates and surstyli, subcaudal view, perpendicular to cerci (most of the epandrial setae omitted). Scales: 0.2 mm for Figs 1–2, 4, 0.4 mm for Fig. 3

cess) long and rather thin in caudal view (Figs 4–6) with a comparatively small apical thorn. Caudal lobe rather short setose. Inner (medial) plate of surstylus rather large (covered on Fig. 5). Postgonite long, broadened at its middle (Fig. 7), apical fourth with minute hairs. Basiphallus (Fig. 8) compact rather than curved, ventral caudal part with short thornlets.

Female cercus with a pair of thick thorns of 0.04 mm.

*Poecilosomella additionalis* sp. n. is related to *P. pallidimana* (DUDA), but it is easy to separate them. Also the wings are different, however, there are numerous distinct differences in male genitalia. Fortunately, also the female sex is identifiable through the thick thorn pair of cerci.

Etymology. It was a surprise to find an additional species to *P. pallidimana*, resulting in the formation of a species group instead of a very distinct species, as thought before; the specific epithet reflects this.



**Figs 5–8.** *Poecilosomella additionalis* sp. n., paratype male, genitalia. 5 = surstylus in broadest extension, 6 = same, caudal process in higher magnification, 7 = postgonite, in broadest (sublateral) view, 8 = basiphallus, lateral view. Scales: 0.2 mm for Fig. 5, 0.1 mm for Figs 6–8

**Poecilosomella pallidimana** (DUDA, 1925)  
(Figs 9–14)

Material studied: Holotype male (HNHM): Marako Abyssinia (Ethiopia), see Papp (1990); 6 males 3 females: as given in Papp (1990: 147); 1 male (HNHM): S. AFR.: Forest mega, dung trap, 31. xii. 1979, S. Peck; Republic of South Africa, 2007, leg. L. PAPP & M. FÖLDVÁRI (all HNHM): 2 males 2 females: Eastern Cape Prov., Bloukrans Pass, in a side valley, Jan 14–16, GPS16, S33°57'09.6" E23°37'59.4", 70 m, No. 23; 1 male: RSA: Eastern Cape Prov., beside Bloukrans River, Jan 14, GPS17, S33°57'20.9" E23°38'18.8", 28 m, No. 24; 1 male 3 females: *ibid.*, in a forest nr R102, Jan 15–16, GPS19, S33°56'57.3" E23°36'20.8", 224 m, No. 25; 1 female: KwaZulu Natal, N Drakensberg, over and along iMpofane River, Jan 29, GPS32, S29°03'12.7" E29°23'06.2", 1531 m, No. 42; 1 female (HNHM): SOUTH AFRICA, Limpopo Prov., Magde Blaskloof, 13. 12. 2003, leg. Mikó I. & Melika G. 1 male (NMSA): Port St. Johns, South Africa, B. & P. Stuckenberg, 20–25. Nov. 1961; 1 male (NMSA): Cape Prov., 3 km E Grahamstown, 3326BC 2&5. i. 1986, J. & B. Londt, Belmont Valley, Malaise; 1 female (NMSA): Cape Prov., 8 km S. Alexandria, 3. XI. 1978, 3326 CD, R. Miller & J. Londt, road & forest margin.

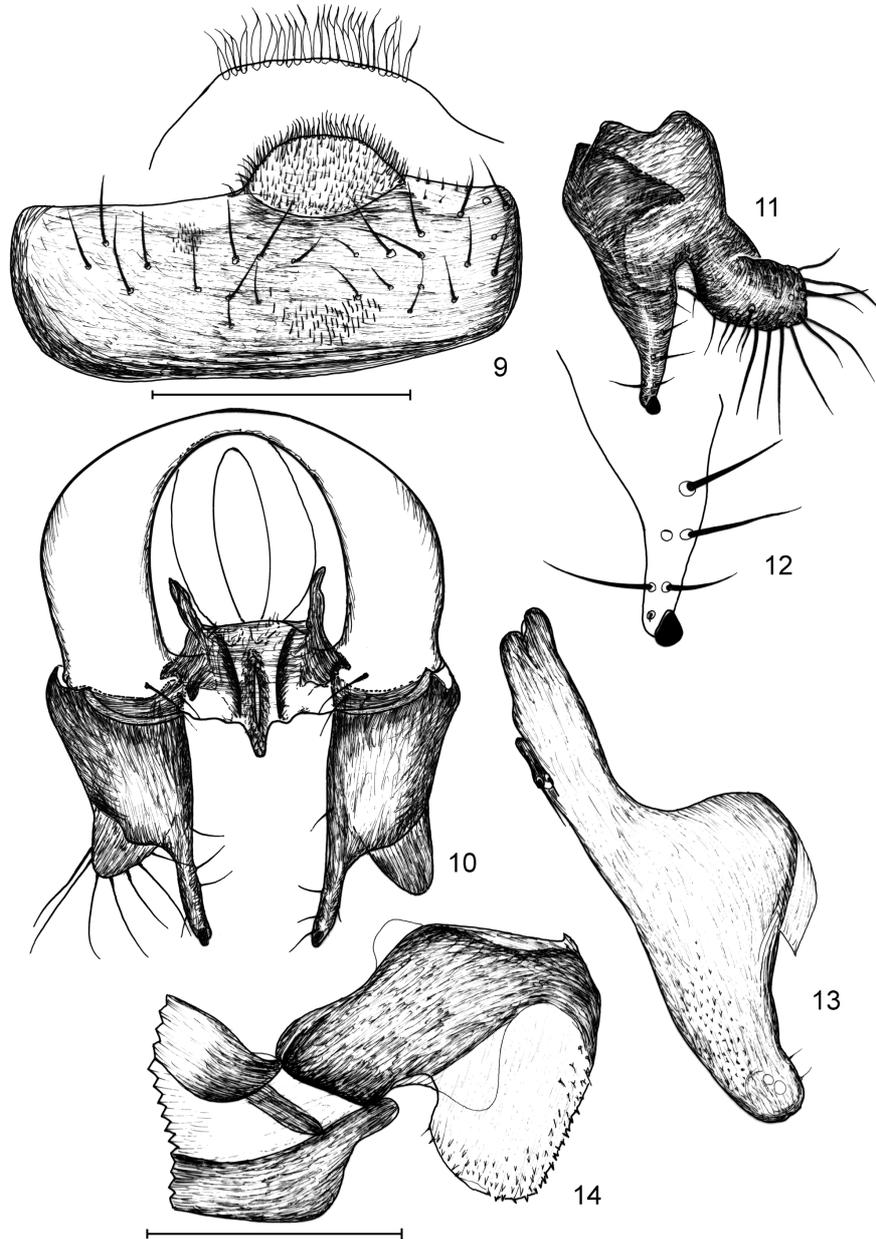
Abdominal tergites 1 and 2 with a large broad desclerotised area. Lateral setae on tergite 4 and tergite 5 only moderately long. Male sternite 5 (Fig. 9) strongly asymmetrical, with a larger than semicircular medio-caudal black setulose process; its most caudal medial setae thick with hairlike apices (Fig. 9). Sternite 6 with a large bilobed medial plate almost perpendicular to body axis (i.e. almost horizontal). Sternite 8 part comparatively long. Epandrium strongly asymmetrical, right half much larger (longer). Medial part of hypandrium comparatively large, as long as phallopodeme. Cerci large, protruding in lateral view (Fig. 3). Cerci protruding along the sagittal line, with fine hairs there, otherwise bare medially, strongly emerging from the caudal contour (Fig. 10). Consequently a sagittal high process visible in caudal view (Fig. 10, cf. Fig. 4). Subepandrial sclerite high with rather long dorsal processes. Apical half of surstylus in 2 lobes (Figs 10–12), cranial process well-sclerotised with numerous setae longer than those of *P. additionalis*; caudal lobe (process) long and rather thin in caudal view (Figs 4–6) with a comparatively small apical thorn. Also setae of caudal lobe longer. Inner (medial) plate of surstylus rather large (covered in lateral view, Fig. 11). Postgonite long, broadened at its middle (Fig. 13), apical third with minute hairs. Basiphallus curved (Fig. 14), ventral caudal part with short thornlets.

Female epiproct setal pair thin and at least 0.09 mm long. Female cercus with a 0.15 mm long wavy setal pair.

Distribution. Hitherto reported from Ethiopia, Tanzania, Uganda, Zaire, Zimbabwe, Republic of South Africa, and Madagascar. The latter record seems doubtful.

*Poecilosomella longecostata* species group

Shared characters of the group are as follows. Genal seta always present, moderate or strong. Wings not extensively patterned, costa overruns apex of R<sub>4+5</sub> considerably. The presence or absence of a vein appendage at terminal curvature of vein R<sub>2+3</sub> is not a constant character. Abdominal tergites 1 and 2 with large de-

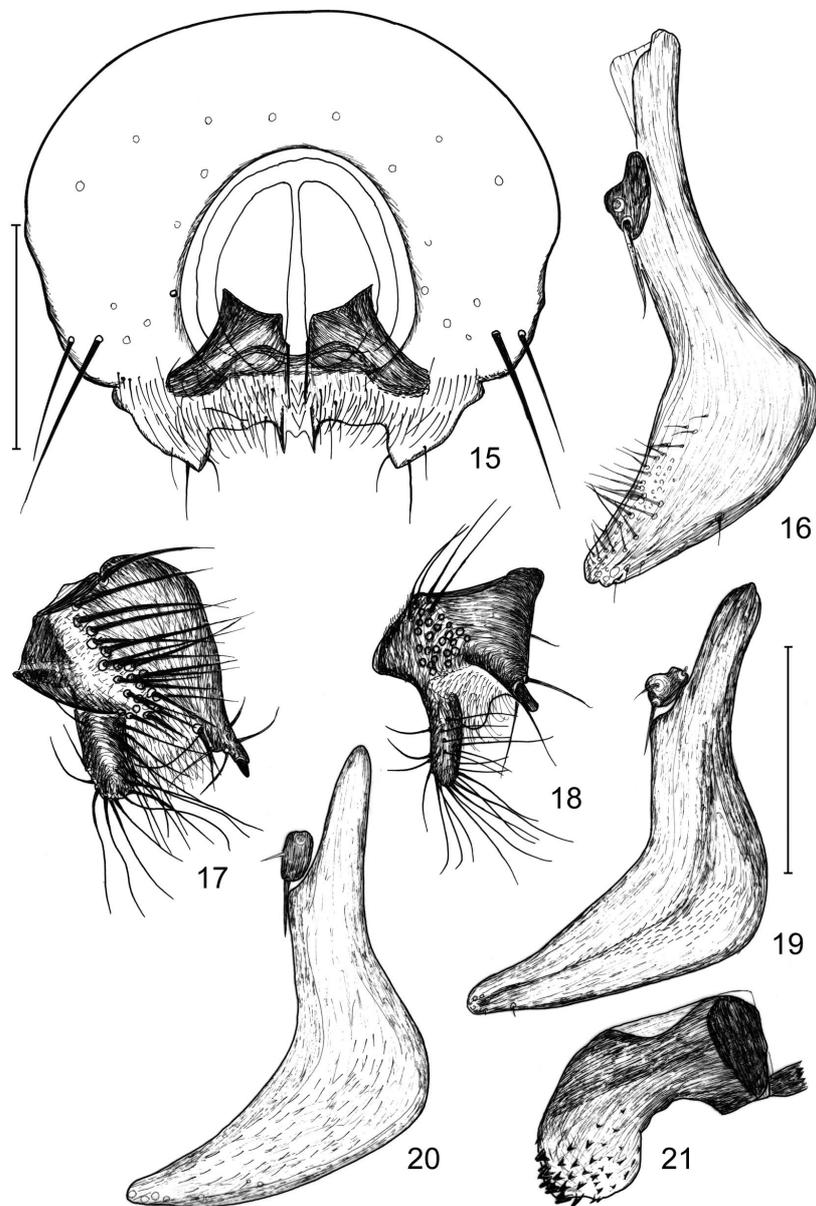


**Figs 9–14.** *Poecilosomella pallidimana* (DUDA), male postabdomen and genitalia. 9 = sternite 5, ventral view (outset: medial lobe in higher magnification), 10 = epandrium with modified cerci, subepandrial sclerite, anal plates and surstyli, subcaudal view, perpendicular to cerci (most of the epandrial setae omitted), 11 = surstylus in broadest extension, 12 = same, caudal process in higher magnification, 13 = postgonite, in broadest (sublateral) view, 14 = basiphallus, lateral view. Scales: 0.2 mm for Figs 9–11, 0.1 mm for Figs 12–14

sclerotised medial part. Male sternite 2 transverse, sternite 3 and sternite 4 subquadrate, sternite 5 strongly asymmetrical with a medio-caudal broad (0.15–0.20 mm) weakly sclerotised plate, covered by thin sharp hairs. Sternite 6 and 7 complex with large medial parts, forming a second vault below epandrium, phallopodeme moves in the spaces between this vault and the epandrium plus sternite 8. The sclerotised structures include a right-side ring of thin black sclerotisation (it is without a hole). Cerci (pseudocerci) without large lobes, caudally with or without 2 ridges. Subepandrial sclerites broader than high. Surstylus consist largely of 3 parts: caudal process with large black thick thorn, cranial lobe with more or less long setae and a “membranous” smaller lobe between them, which bears shorter thin setae. Postgonite with thin basal half and broad apical half, latter covered by thin hairs (at least partly).

**Poecilosomella capensis** L. PAPP, 1990 – Types: the holotype (Cape Province, Storms Rivier) and most paratypes are deposited in CAS, 15 male and 5 female paratypes in the HNHM. Material studied: Specimens in the NMSA: 1 male: Cape, Hermanus Nature Res., 23. ix.1979, 3419AC, J. Londt, Swept vegetation stream banks & kloof; 2 male 3 females: Natal #88 Weza State Forest, 30°32'S: 29°42'E, 1220 m, 21–22. xi. 1991, Coll.: D.A. Barraclough, Indig. Forest margin; 1 male 3 females: Transvaal, Entabeni For. Station, Zoutpansberg Range, Jan. 1975, Stuckenberg, Matiwa Summit. 2230CC; 1 male 1 female: *ibid.*, 23°00'S: 30°14'E, Vera Kop Forest c. 1350 m, 15-i-1974, Stuckenberg; 2 males: Natal, Pietermaritzburg, Town Bush, September 1976, R. Miller; 1 female: *ibid.*, 29.10.71., M.E. Irwin; 1 male: W Cape #5 Montagu Pass 3322Cd, Camferu George Road, 12. i. 1983, SAR bridge, R. Miller & P. Stabbins; 1 male: Cape Prov., Betty's Bay, 3.ix.1988, 34°21'S: 18°55'E, Coll. B. R. Stuckenberg, Botanical Gardens in Gorge Forest; 1 male 2 female: Coldstream, Tsitsikama area, Cape Province, 25–28 October 1964, B.&P. Stuckenberg; 1 female: W Cape #4, Robinson Pass, 3322Cc, 35 km N Mosel Bay, 12. i. 1983, mnt Spring, R. Miller & P. Stabbins; 1 female: Van Stadens Pass, Port Elizabeth District, 30 October 1964, B & P Stuckenberg; 1 female: Transvaal, 12 km S. Sabi, 2530BB, XII 3, 1976, R Miller, indigenous bush; 1 female: Natal Prov., Drakensberg Mts (2929Ad), Giants Castle reserv., Oct 18, 1971, 5800 ft., BR Stuckenberg & ME Irwin; Zimbabwe: 1 female: N. Vumba, S. Rhodesia 26.6.1965. D. Cookson.

Specimens in the HNHM other than paratypes: Republic of South Africa, 2007, leg. L. PAPP & M. FÖLDVÁRI: 1 male: Eastern Cape Prov., Hogsback, Wolf Ridge Road, undergrowth along a small brook, Jan 8, GPS03, S32°35'42.2" E26°56'51.3", 1143 m, No. 5; 1 male: *ibid.*, nr Kettlespout Falls, Jan 8–9, GPS04, S32°35'27.9" E26°57'36.1", 1338 m, No. 6; 1 male: Eastern Cape Prov., Bloukrans Pass, in a side valley, Jan 14–16, GPS16, S33°57'09.6" E23°37'59.4", 70 m, No. 23; 1 male 1 female: KwaZulu Natal, S Drakensberg, over and along Mashai River, Jan 24, GPS26, S29°45'13.4" E29°11'30.4", 1897 m, No. 37; 10 males 1 female: KwaZulu Natal, N Drakensberg, Rainbow Gorge, Jan 26–28, GPS29, S28°57'36.7" E29°13'33.6", 1529 m, No. 39; 3 males 1 female: KwaZulu Natal, N Drakensberg, over and along iMpofane River, Jan 29, GPS32, S29°03'12.7" E29°23'06.2", 1531 m, No. 42. 1 male 1 female: South Africa, őserdő [primary forest], 1978. XII. 12., leg. Endrődy [Sebő, Sr.]; 1 male 1 female: S. Africa, Drakensberg, 15. xii. 1979, Dung Trap and Sweeping, S. Peck; 2 males 1 female: *ibid.*, Forest mega, dung trap, 31. xii.; 1 male 1 female: Natal, 75 km SW Eastcourt, Cathedral Peaks For. Sta., 1400 m, 10–11. xii., S&J Peck, Dung Trap.



**Figs 15–21.** *Poecilosomella* spp., male genitalia. 15–16 = *P. capensis* L. PAPP, paratype: 15 = epiandrium with cerci and subepiandrial sclerite, caudal view, 16 = postgonite, in broadest (sublateral) view. 17–21 = *P. kittenbergeri* sp. n., paratypes: 17 = surstylus, broadest view, 18 = same, ventral (!) view, most of the setae on proximal part omitted, 19 = postgonite of a Kibosho specimen, in broadest (a slightly sublateral) view, 20 = the same, a specimen from Uganda, 21 = basiphallus, lateral view. Scales: 0.2 mm for Figs 15, 17–18, 0.1 mm for Figs 16, 19–21

Anterior row of setae on mid basitarsus long, and composed of stronger black setae (in contrast to *P. longecostata*). Subapical (terminal) curvature of vein  $R_{2+3}$  usually more or less edged, with a short vein appendage. Inter-crossvein section of M as long as or longer than hind crossvein. Male genitalia (Figs 15–16). The original figure in PAPP (1990: fig. 6) on its cerci and subepandrial sclerite is not properly positioned, and so a new figure is given for it (Fig. 15). A pair of comparatively high ridges present on ventral part of the fused cerci, which seem “broken”, but which are higher caudally than those of *P. longecostata* (cf. Fig. 22). Dorsal lobes of subepandrial sclerite rather large. My original figure of the postgonite (PAPP 1990: fig. 7) was satisfactory, but another drawing of it is given in higher magnification (Fig. 16) in order to show the fine differences between the species in the group. Apical half of postgonite rather short and broad, dorsally with fine hairs.

The cerci of the female are vivid yellow; this is a good character in separating its females from those of *P. longecostata* and *P. kittenbergeri* sp. n.. Female cercus with 4 long setae each: medial, apical and 2 shorter lateral pairs. The females of two new species of this group have been unknown. Three females of the *P. capensis* group in the HNHM were left unnamed as *Poecilosomella* sp. ♀.

Distribution. Republic of South Africa, Zimbabwe.

***Poecilosomella longecostata*** (DUDA, 1925) (*Leptocera (Poecilosomella)*) – Type locality: Ethiopia, Tshertsher. Lectotype male, designated by PAPP, 1990b: 145 (HNHM). Material studied (HNHM): lectotype, 19 male 3 female paralectotypes: Abyssinia, Kovács, Tsertsher, 1911. X., “*P. longecostata* ♂/♀” [DUDA’s handwriting], Det. Dr. O. DUDA. 1 female: Abyssinia, Kovács, Dire-Daua, 1911.11.19. “*P. longecostata* ♀” [DUDA’s handwriting], Det. Dr. O. DUDA. Kenya: 2 males: 25 mi NW. Nakuru (Kisumu-Nak. Rd.), 2300 m, XI–28–1957, E.S: Ross & R. E. Leech (cf. PAPP 1990: 145).

Nearly two decades ago one male and one female paralectotypes were sent to the IRSN (Brussels) for exchange with other sphaerocerid paratypes. Unfortunately, as I found in my files, the male was from Tshertsher, so it must be a specimen of *P. longecostata*, the female was from Kibosho, so it is in all probability a female of *P. kittenbergeri* sp. n. (see below).

Male genitalia (Figs 22–26) distinctly different from those of *P. kittenbergeri* sp. n. Cerci (pseudocerci) with a pair of unbroken ridges (Fig. 22), which are less high ventrally than in *P. capensis*; cerci bare in their ventral half. Dorsal lobes of subepandrial sclerite high but thin.

Surstylus with a thick and long thorn on caudal process, this process without long setae (Fig. 23, cf. Fig. 17 of *P. kittenbergeri*). Caudal surface of surstylus slightly concave (Fig. 24). Shape of postgonite in its broadest view and hairs on it resemble those of *P. capensis* but hairs are shorter (Fig. 25). Postgonite is distinctly shoe-shaped, incl. its sole. Basiphallus (Fig. 26) with curved and longer pegs (thornlets) than in *P. kittenbergeri* sp. n.

Female cerci dark brown or blackish in contrast to the vivid yellow cerci of *P. capensis*.

Reliable differentiating characters of this new species compared to the rest of the group are in details of the male genitalia only.

Distribution. Formerly it was recorded from most parts of the Afrotropical region: Ethiopia, Kenya, Nigeria, Tanzania, Togo, Uganda, South Africa, Zaire. Now I can corroborate its occurrence from Ethiopia and Kenya only.

**Poecilosomella kittenbergeri** sp. n.  
(Figs 17–21, and PAPP 1990: figs 14–17  
under *P. longecostata* (DUDA))

Holotype male (HNHM): Africa for., Katona [= K. Kittenberger], Kibosho 1600 m [N Tanzania], (on the other side of the label) “1904.IX.1–8.” – [red bordered] Paralectotypus “Leptocera ♂ (*Poecilosomella*) *longecostata* Duda” [L. PAPP’s handwriting].

Paratypes (HNHM): 6 males 8 females: same as for the holotype. 1 male 1 female: UGANDA: 16 mi. NW. of Bushenyi, XII-6–57, 1450 m, E. S. Ross & R. E. Leech collectors. (cf. PAPP 1990: 145).

Measurements in mm: body length 2.34 (holotype), 2.20–2.63 (paratypes), wing length 2.09 (holotype), 2.03–2.62 (paratypes), wing width 0.90 (holotype), 0.84–1.04 (paratypes).

All the body features are mostly resemble *P. longecostata*.

Facial plate and anterior half of frons reddish. 4 (5) pairs of medium-long interfrontal setae (a majority of *P. longecostata* specimens with 5 pairs but since there are specimens with 4 pairs only, this does not properly separate them). Anterior katepisternal pair much thinner and only 2/3 as long as posterior pair (like in *P. longecostata*).

Second costal section of the holotype 0.515, third section 0.505 mm, ratio 1.02 (holotype), curvature angled with a minute vein appendage. Another 2 males and 2 females of the paratypes are with minute appendages, i.e. most of the specimens are without it. Costal ratio may be more than 1.0, but never much more. Apical section of  $R_{2+3}$  of *P. longecostata* less angled and curvature never with appendage but of course, this is not sufficient to separate the two species. Similarly, intra-crossvein section of M slightly shorter or equal to hind crossvein.

Figures on male genitalia in PAPP’s (1990) paper were made on a Kibosho paralectotype male, i.e. they actually showed the genitalia of *P. kittenbergeri* sp. n. Ventral (cercal) area of the epandrial-cercal complex without any processes; ridges are so slight that they are not discernible at low magnification. Medial part bare, sub-laterally with a few long setae (PAPP 1990: fig. 14). Lateral view figure of surstylus (PAPP 1990: fig. 16) is not sufficient for comparison, although the figure is otherwise correct. Surstylus in its broadest view (Fig. 17) clearly in 3 lobes: apical thorn on caudal process rather short, cranial lobe with numerous wavy setae. Medial lobe small, with fine hairs. Proximal half of surstylus with numerous very long and thick setae. Caudal surface of surstylus convex or straight (Fig. 18, best seen in ventral view). Postgonite of the Kibosho paratypes (Fig. 19) and that of an Ugandan paratype (Fig. 20) are slightly different but this is clearly within the intra-specific variance. Apical half of postgonite otherwise shaped as in *P. longecostata* (cf. Fig. 25), proximal half shorter and broader. Postgonite without longer hairs. Caudal part of basiphallus more down-curved (Fig. 21, PAPP 1990: fig. 15), its pegs (thornlets) are short and blunt, in contrast to those of *P. longecostata* (cf. Fig. 26).

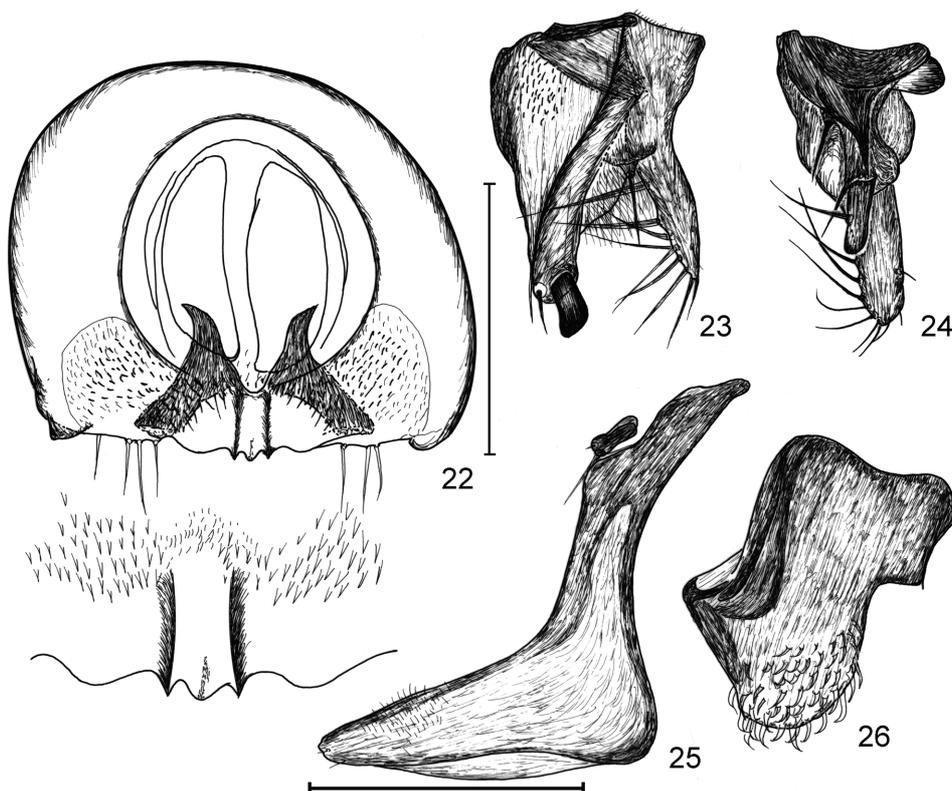
Female cerci blackish like in *P. longecostata* (DUDA). Cercus with a pair of long apical and a pair of long medial subapical hairs; unfortunately they are the same as in *P. longecostata*.

*Poecilosomella kittenbergeri* sp. n. is very closely related to *P. longecostata* (DUDA), its distinctness was not appreciated by me in 1990. In addition, other species of this species group are to be separated by an analysis of the male genitalia. In *P. kittenbergeri* the numerous long setae on proximal part of surstylus are the most characteristic feature. Hitherto this is the only species in the group, where the

emerging ridges of the cercal part is so low (slight), that they are not discernible at low magnification (PAPP 1990: fig. 14).

**Etymology.** I name this new species *P. kittenbergeri*, to honour KÁLMÁN KITTENBERGER, the collector of its type series. As in many other instances, “Katona” was written on the labels to designate the collector. Dr GÉZA HORVÁTH, the Director General of the Natural History Museum in those years, “magyarized” Kittenberger’s name to “Katona”. It was made without consultation with KITTENBERGER, and although he objected to it repeatedly, the labels were not changed (cf. FEKETE 1962).

Based on a letter, which KITTENBERGER sent to ARZÉN DAMASZKIN on the 3rd of September 1904 (FEKETE 1962), we may be sure, that during those days, which are written on the collection label, KITTENBERGER was convalescent on Mr. MEIMARIDIS’s plantation at Kibosho (near Moshi, North Tanzania), after his “lion calamity”, as he said (a lion almost killed him in June).



**Figs 22–26.** *Poecilosomella longecostata* (DUDA), paralectotype male. 22 = epandrium with cerci and subepandrial sclerite, caudal view (outset: ventral-most part in higher magnification), 23 = surstylus, broadest (a sublateral) view, 24 = same, ventral (!) view, 25 = postgonite in broadest view, 26 = basiphallus, lateral view. Scales: 0.2 mm for Figs 22–24, 0.1 mm for Figs 25–26

**Poecilosomella occulta** sp. n.

(Figs 27–32)

Holotype male (HNHM): RSA [Republic of South Africa], Eastern Cape Prov., beside Bloukrans River, Jan 14, 2007, GPS17, S33°57'20.9" E23°38'18.8", 28 m, leg. L. PAPP & M. FÖLDVÁRI.

Paratype male (HNHM): *ibid.*, KwaZulu Natal, N Drakensberg, Rainbow Gorge, Jan 26–28, GPS29, S28°57'36.7" E29°13'33.6", 1529 m, No.39.

Measurements in mm: body length 2.37 (holotype), 2.31–2.42 (paratypes), wing length 2.04 (holotype), 1.85–2.07 (paratypes), wing width 0.90 (holotype), 0.79–0.92 (paratypes).

Head all dark brown, at most frons reddish anteriorly. Facial plate brown and shiny. Antennae dark, only pedicel somewhat dark reddish. Aristal cilia short, not longer than 0.015 mm. Genal seta strong.

Anterior katepisternal seta minute.

Wing mostly clear, membrane light brownish, only a darker brown spot present around junction of R<sub>1</sub> and costa, down to the R fork and almost to vein M. A dark brown spot around curved apical section of R<sub>2+3</sub> present. Veins ochre, dark brown on the areas of spots. Second costal section 0.505, third section 0.495, ratio 1.02 (holotype, but rather similar also on paratypes). Apical part of vein R<sub>2+3</sub> strongly but not angled curved, without any vein appendage, or, with a short vein appendage (3 paratypes). Inter-crossvein section of M shorter than hind crossvein and both are white.

Legs brown, both ends of tibiae dirty (brownish) yellow; a broad ring of this colour present on middle of each tibia. Anterodorsals on mid tibia (holotype): 11/55 (small), 13/55 (short), 20/55 (long and thick), 38/55 (long and thick). A very long a thick subdorsal seta at 47/55. Posterodorsals: 18/55 (small), 21/, 25/, 31/, 38/55 (all short), 43/55 (medium long). Anteroventral and posteroventral setal rows of mid basitarsus not strong (i.e. not characteristic). Ventro-apical of mid tibia weak, slightly incurved. Tarsi dirty yellow, tarsomeres 4 and 5 brown.

Male genitalia (Figs 27–32) distinctive. Cerci (pseudocerci) with a pair of not too high (0.01–0.015 mm) and comparatively distant ridges, which do not overrun caudal margin. Medial part of the cercal area with fine hairs only (Fig. 27). Dorsal lobes of subepandrial sclerite not too high. Surstylus (Figs 28–29) with small medial (membranous) lobe, proximal part without numerous long setae (characteristic in *P. kittenbergeri*), cranial lobe with long setae. Thorn on apex of caudal lobe (Fig. 29) rather long. Postgonite (Fig. 30) with large broad apical half and rather short and thin proximal part. Hairs on apical part laterally are rather short. Basiphallus (Figs 31–32) much curved, setae on ventral part not peg-like but rather long and sharp.

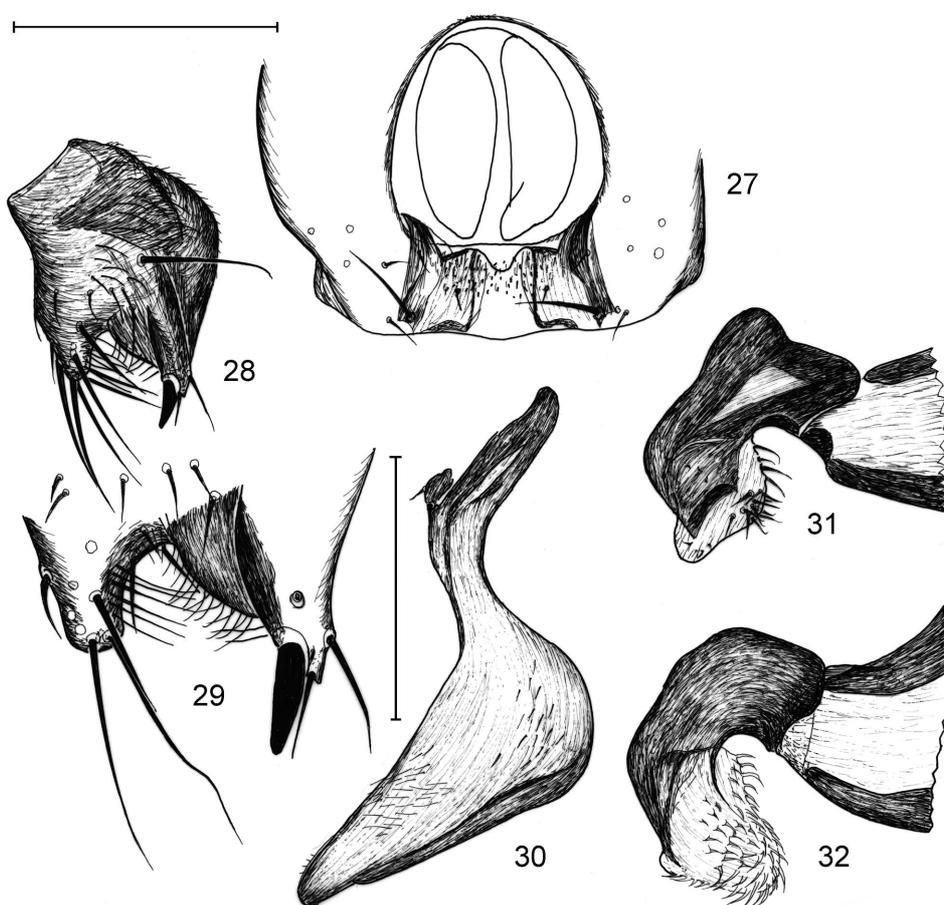
Female not known (at least I was not confident in selecting any female as a paratype).

*Poecilosomella occulta* sp. n., as any other member of the *P. longecostata* species group, is to be identified by an analysis of the male genitalia.

Etymology. The specific epithet of this new species refers to the cryptic appearance, since it is very similar to its related species, except for male genitalia ('occultus' = hidden, concealed).

*Poecilosomella angulata* species group

The characteristics of this species group are as follows. Frons (postfrons) microtomentose (i.e. not shiny), 2 (1) pairs of fronto-orbitals. Mesonotum microtomentose, mostly dark, with silvery pattern. Genal seta comparatively short and fine, or not separable in the row of genal setae. Wing not much patterned: diffuse brown spots are around base of  $R_{2+3}$ , of  $R_{4+5}$  and on apices of radial veins. Costal vein terminates at vein  $R_{4+5}$ , or produced slightly behind it. False vein from cubital



**Figs 27–32.** *Poecilosomella occulta* sp. n., paratype male, genitalia. 27 = ventral part of epandrium with cerci and subepandrial sclerite, caudal view, 28 = surstylus in broadest extension, 29 = same, apical part in higher magnification, 30 = postgonite in broadest (sublateral) view, 31 = basiphallus of the holotype, lateral view, 32 = basiphallus of a paratype. Scales: 0.2 mm for Figs 27–28, 0.1 mm for Figs 29–32

vein does not close a cubital cell. At least hind tibia bicolourous, there are pale rings on the dark tibiae. In the Oriental region there are a number of species, which fit to this diagnosis, but only three (plus one) species in the Afrotropical region, incl. a new species.

In my paper on the Afrotropical *Poecilomella* spp. (PAPP 1990) I included also *P. mirabilis* (VANSCHUYTBROECK, 1951) in the *P. angulata* group. Indeed, its surstylus is with 3 short apical lobes (anterior setose, mid lobe with apical thorn, caudal ridged, sharp in lateral view). Also the form of the postgonite and of the cercal part of the epandrial complex with a small sagittal projection show that it is really a member of this species group. However, its peculiar wing venation and the single long fronto-orbital seta places *P. mirabilis* more distant from the rest of the group.

***Poecilomella angulata*** (THOMSON, 1869) (*Limosina*) – I have seen specimens from the following countries (specimens mostly in the HNHM): Brazil, Columbia, Paraguay, Cuba, Dominica, Santa Lucia and Florida; the Canary Islands, Ethiopia, Kenya, Uganda, Tanzania, Burundi, both the Congos, Gabon, Ghana, Nigeria, Togo, Republic of South Africa, and Madagascar. In the NMSA there are numerous specimens from the RSA, and also from Kenya.

As formerly corroborated (PAPP 2002), all records from the Oriental and Australasian regions are based on misidentifications.

***Poecilomella maxima*** (VANSCHUYTBROECK, 1950) (*Limosina (Poecilomella)*). Type locality: Zaire, Rutshuru. HT male (MRAC, Tervuren, see PAPP 1990). Material studied: specimens in the NMSA: 1 male 2 females: Kenya, Trans Nzola #70, Mount Elgon Nat. Park, 01°05'N: 34°49'E, 2320 m, 23.xi. 1992, J Londt & A Whittington, Kitum Cave/forest path; 1 female: *ibid.*, September 15, 1976, R. Miller; 1 female: Natal, Pietermaritzburg, Town Bush, August 1976, R. Miller; 1 female: Port St. Johns, South Africa, B. & P. Stuckenberg, 20–25. Nov. 1961. Specimens in the HNHM: 4 males 5 females (incl. 1 female paratype): as given in PAPP (1990: 146).

Distribution. Nigeria, République Démocratique du Congo (formerly Zaire), Cameroon, Kenya, Rwanda, Republic of South Africa.

***Poecilomella mirabilis*** VANSCHUYTBROECK, 1951 – Type: holotype female (IRSN, Brussels) from Likete (Zaire) (see PAPP 1990). Material studied: 3 males 3 females (HNHM): as given in PAPP (1990: 146). 8 males 10 females (HNHM, 3 m 3 f in DEI): Togo: Région des Plateaux: Zogbégan, village part Zogbégan-Carrière (SE of Badou), at creek Elèbè, 7°34'50"N, 0°40'03"E, 650 m, 20–25. 4.2008, leg. M. v. Tschirnhaus, Tg 1888 [V-shaped valley near cocoa-plantation downstream of village, remains of secondary rainforest, dense bank vegetation, dead wood, leaf litter, mud and sparsely running water near creek spring, swept, filled into eclector].

Distribution. Nigeria, Togo (new), Sudan, Uganda, République Démocratique du Congo (Zaire).

**Poecilosomella parangulata** sp. n.

(Figs 33–45)

Holotype male (HNHM): RSA [Republic of South Africa], Eastern Cape Prov., Hogsback, Wolf Ridge Road, undergrowth along a small brook, Jan 8, 2007, GPS03, S32°35'42.2" E26°56'51.3", 1143 m, No. 5, leg. L. PAPP & M. FÖLDEVÁRI.

Paratypes in the HNHM: 3 males, 5 females: same data as holotype; 2 males, 4 females (HNHM): *ibid.*, Marie & Child Falls, along a streamlet, Jan 9, 2007, GPS07, S32°36'23.5" E26°57'55.3", 1101 m, No. 10; 1 female: *ibid.*, 39 Steps Waterfall, Jan 7–8, 2007, GPS06, S32°35'22.8" E26°55'57.5", 1233 m, No. 4; 1 male: nr Kettlespout Falls, Jan 8–9, 2007, GPS04, S32°35'27.9" E26°57'36.1", 1338 m, No. 6; 3 females: *ibid.*, Contour Path, Jan 8–9, 2007, GPS04, S32°35'27.9" E26°57'36.1", 1338 m, No. 7; 1 female: *ibid.*, in a park, Jan 8–9, 2007, GPS05, S32°35'18.0" E26°56'56.0", 1298 m, No. 8. 2 males 1 female (HNHM): REP. S. AFR.: Natal, 75 km WSW Eastcourt, Cathedral Peaks For. Sta. 1400 m, 10–11. xii. 1979, S&J Peck, Dung Trap, [another label] *Poecilosomella angulata* det. L. PAPP; 1 female. S. AFRICA: Drakensberg, 15. xii. 1979, Dung Trap AND Sweeping, [another label] *Poecilosomella angulata* det. L. PAPP. Paratypes in the NMSA: 1 male: NATAL, Cathedral Peak area, XII.26–27, 1977. 2829CC, R.M. Miller, indigenous for.; 1 male: Natal, 20km SE Nkandl, 2831Ca, Nkandla Forst res., 26. I. 1980, for. Margin, R. Miller & P. Stabbins; 2 males: Van Stadens Pass, Port Elizabeth District, 30 October 1964, B & P Stuckenberg; 2 males: Gillitts, Pinetown district, Natal, S. Africa, B. & P. Stuckenberg; 3 males: Natal, Umlalazi Nature Res., 26–27.i. 1987, JGH Londt, SE2831DD, Dune forest & margin; 2 males: KZ-Natal, Ozabeni-Manzimbomvu Section, Greater St. Lucia, Wetland park (2732DA), 27–28.v.2006, G.B.P. Davies; 1 male: Natal Prov., Zululand, 20 mi. S. Ndumu Game Res., Camp (2732Aa), No. 29, 1971, M.E.&B.J. Irwin, dry scrub forest, 320 ft; 1 female: Transvaal, Entabeni Forestry Station, Zoutpansberg Range, 23°00'S: 30°14'E, Vera Kop Forest c. 1350m, 15-i-1974, Stuckenberg; 1 female: Natal, kosi Bay Nat. Reserve, 2532DD, 30.xi.–2.xi. 82, Londt, Barraclough & Stuckenberg, Forest & open woodland areas.; 1 female: Natal, Karkloof, 2930AB, Coll. Barraclough, Date 19. i. 1983. 1 female (damaged, not a paratype): [Zimbabwe] N. Vumba, S. Rhodesia, 4.3.1965, D. Cookson.

Measurements in mm: body length 3.46 (holotype), 3.52–4.86 (paratype males), 2.53–4.15 (paratype females), wing length 2.97 (holotype), 3.01–3.44 (paratype males), 2.54–4.15 (paratype females), wing width 1.24 (holotype), 1.26–1.46 (paratype males), 1.10–1.43 (paratype females).

Body dark brown, finely grey microtomentose, head and thorax with dark silvery pattern like in *P. angulata*.

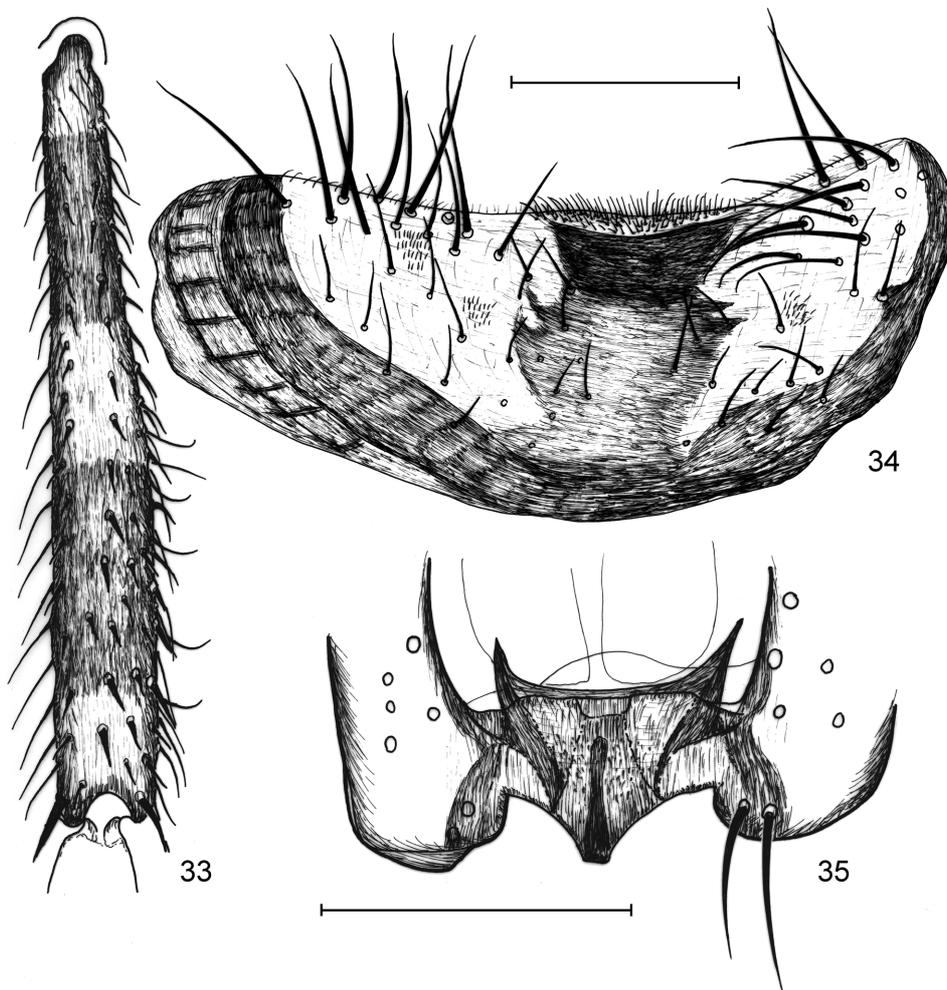
Interfrontal stripes very short, 0.10–0.12 mm. 3 or 4 short, strongly medioclinate interfrontal pairs. Two pairs of subequal, closely set fronto-orbital setae. Outer and inner vertical, outer and inner occipitals comparatively short but thick. Postocellars fine. Vibrissa emerges well dorsally to mouth margin. Genal seta fine, 0.14 to 0.17 mm long, plus several genal setae present on lower half of genae. Scape and pedicel dark brown. First flagellomere slightly longer than broad, with a subapical not sharp edge, colour brown but covered by c. 0.015 mm long dark grey hairs. Arista comparatively short (0.44 mm on holotype) with 0.02–0.025 mm long cilia. Palpi yellow with 5–6 longer setae apically and ventrally.

Two pairs of medium long dorsocentral setae, acrostichals in c. 10 not well ordered rows. 1 posterior katepisternal only, plus 3 anterior short hairs. Scutellar setae thick but not particularly long, apicals 0.63 mm (holotype) to 0.84 mm long. Other thoracic setae as in *P. angulata*.

Wings yellowish, base brown, veins yellow or ochre. Brown spots (and veins dark brown there) at H, at base of medial and anal veins, at apical section of vein R<sub>2+3</sub>, and a fine diffuse one at

apex of  $R_{4+5}$ . Apical part of  $R_{2+3}$  edged but without a vein appendage in a majority of specimens (some specimens with a fine short appendage). Second costal section shorter than third section (ratio 1.12 to 1.40, on holotype 1.40, lower values on females), the ratio is not a diagnostic feature. Discal cell short, hind cross-vein 0.23 mm (holotype), inter-crossvein section 0.21 mm; also R-M rather long, 0.14 mm on holotype. Vein  $R_{4+5}$  slightly curved, medial vein strongly S-shaped curved. Terminal section of Cu as long as dM-Cu. Alula large and broad. Halteres yellow, medial part of knob in some specimens darkened.

Legs dark brown, finely grey microtomentose. Femora with ochre apices. All tibiae with an apical and a sub-basal broad ochre rings each (the latter ones centred at basal 1/3 on mid tibia). Fore



**Figs 33–35.** *Poecilosomella parangulata* sp. n., paratype male. 33 = hind tibia, dorsal view, 34 = sternite 5, ventral view, 35 = epandrium with modified cerci and subepandrial sclerite, caudal view. Scales: 0.2 mm for Figs 34–35, 0.4 mm for Fig. 33

basitarsus darkened basally, otherwise tarsomeres 1–3 ochre, tarsomeres 4–5 dark brown. Male fore femur thickened, posterodorsal base with short thick black spines, posterior (outer) half with dense fine hairs. Fore tibia ventrally and on the whole posterior half with thick long hairs, longest on the posterior line (up to 0.22 mm), those hairs thickened into setae. Tarsomeres 1 to 4 posteriorly and ventrally with long thick hairs. Mid tibia with a long thick anterior seta at 5/8, anterodorsals at 3/20 (small), ¼ (short), 31/80 (longer), 55/80 (short) and 7/8 (very strong); posterodorsals at 18/80 (short), 2/8 and 46/80 (slightly longer) and 66/80 (long). No mid ventral or ventroapical setae on mid tibia but apex with 5–6 medium long and slightly curved setae. No long setae or hairs on ventral half of male mid tibia but hairs slightly thicker ventrally. Dorsal half of male hind tibia with short thick sharp spiniform setae (Fig. 33).

In both males and females only the anteroventral row of setae is strong on mid basitarsus; only 2 or 3 posteroventral setae present and only thin normal setae are in the anterior row.

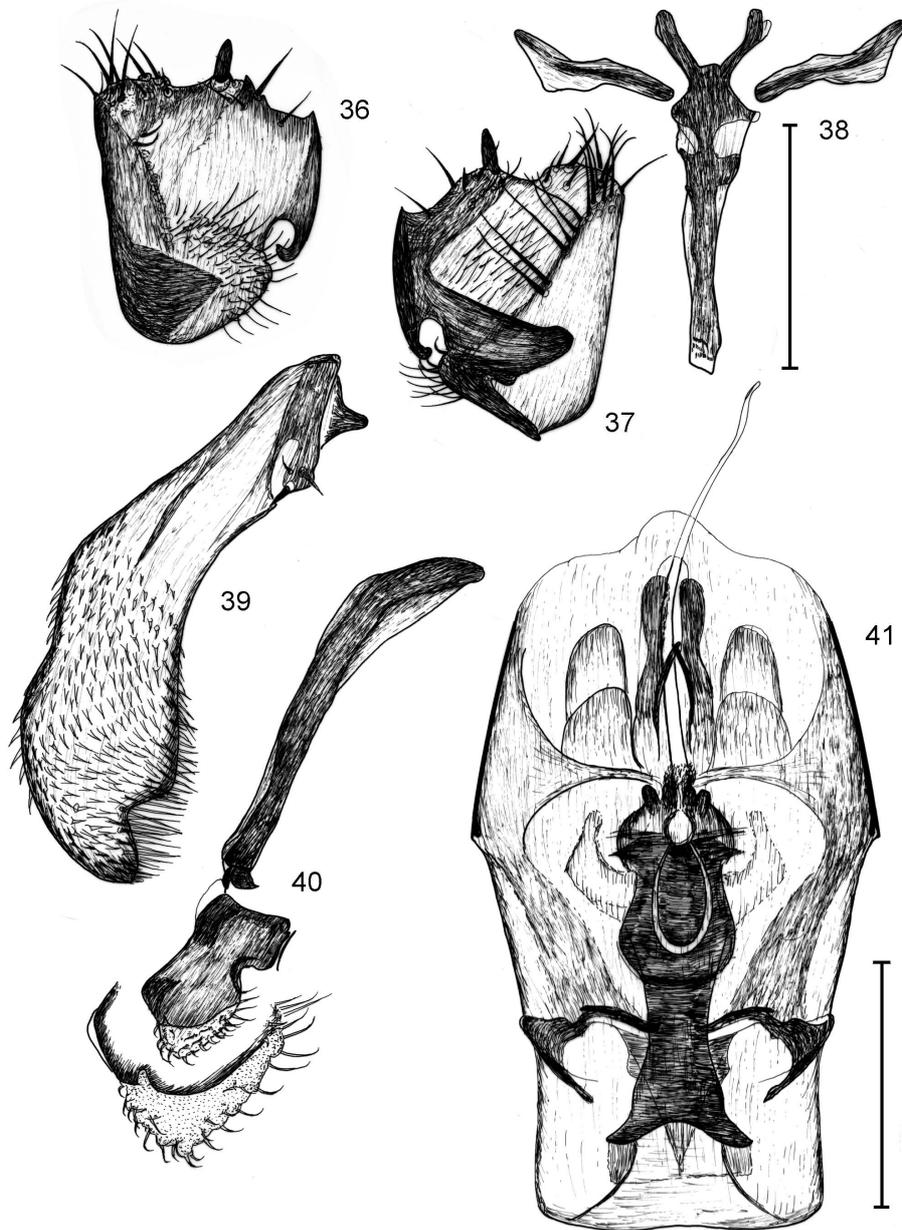
Female mid tibia with distinct though not long ventroapical seta. Dorsal half of female hind tibia all along with thicker long setae, longer than half of tibial diameter.

Abdominal tergites with narrow light caudal marginal bands and a pair of dark silvery lateral spots on tergites 2 to 5 in males and 2 to 6 in females. Male abdominal tergite 1 is comparatively well sclerotised, desclerotised only on a narrow sagittal line and on a transverse and not long medial section bordering tergite 2. Male tergite 2 not desclerotised at all. Tergite 3 to 5 broad, dark with rather short thick black setae. Male sternites 2 to 4 rather normal, c. 0.35 mm broad (compared to the more than 1.5–1.6 mm broad tergite 3), less sclerotised and darkened than tergites.

Male tergite 5 c. 0.11 mm broad, i.e. 2/3 of pre-abdominal tergites, sternite 5 (Fig. 34) asymmetrical, medially without any appendages and with short setulae in several rows, a bare dark area cranially to those setulae. Lateral setae on sternite 5 not particularly long. Synsternite complex comparatively long but narrow. No right side sclerites developed. Sternite 6 portion not much overruns sagittal line (and short (narrow) there), left lateral part strongly broadened. Sternite 7 portion with an arched curved and inside directed large lobe in the sagittal axis of the body plus a curved, more caudal sclerite. Sternite 8 part more than 0.3 mm long and much convex, consequently abdominal end seems bulbous. Epandrium not large with a pair of very long (0.35 mm or even longer) dorsal setae; other epandrial setae sparse but comparatively long (ventral ones 0.22–0.25 mm). Modified cerci joining epandrium with a rather deep concave edge (Fig. 35). Subepandrial sclerite (Fig. 35) with a pair of dorsal processes, medial part slightly higher than cerci there. Anal plates large but weakly sclerotised. Hypandrium (Fig. 38) with lateral arms separated (not fused to) medial part. Medial part of hypandrium with a pair of short thin caudal processes. Male surstylus (Figs 36–37) rather compact without very long setae and with a dark sub-basal medial process. Apical thorn rather small, longest surstylar setae on inner (medial) side; medial side bears more setae than lateral (outer) side. Basiphallus (Fig. 40) short but high, with a pair of ventral, medio-cranial, less sclerotised and short setose lobes; setae on lobes recurved. Distiphallus (Fig. 41) intricately sclerotised but not strongly melanised; thread-like appendage emerges from the apical 1/3–2/3; length of distiphallus without appendage c. 0.3 mm. Postgonite (Fig. 39) broadened in apical half in lateral view; apical 4/7 with short thick yellow setae. Phallapodeme (Fig. 40) comparatively short 0.32–0.35 mm.

Female abdomen about as broad as long. Sternites 2 to 5 about 0.3 mm broad only. Post-abdomen not evertible at all.

Female terminalia (Figs 42–45). Tergite 8 composed of two comparatively large subtriangular sclerites; a rather small medial sclerite between them, which joins epiproct and which is interpreted here as a part of tergite 8. Sternite 8 (Fig. 44) nearly trapezoid with a pair of 0.16 mm long setae and with several setulae, incl. 4 subapical ones. Epiproct (Fig. 43) medium, with a pair of rather long (c. 0.15 mm) setae. Hypoproct U-shaped, evenly microsetose. Cerci yellowish, very short 0.07 mm only (Fig. 42) with several (usually 5) long setae. A weakly sclerotised spectacles-shaped sclerites detect-



**Figs 36–41.** *Poecilosomella parangulata* sp. n., paratype male, postabdomen and genitalia. 36–37 = surstylus in broadest (sublateral) view: 36 = outer view, 37 = inner (medial) view, 38 = hypandrium, dorsal view, 39 = postgonite in widest extension, i.e. sublateral view, 40 = basiphallus and phallopodeme, lateral view (outset: caudal part in higher magnification), 41 = distiphallus, dorsal view. Scales: 0.2 mm for Figs 36–38, 40, 0.1 mm for Figs 39, 41

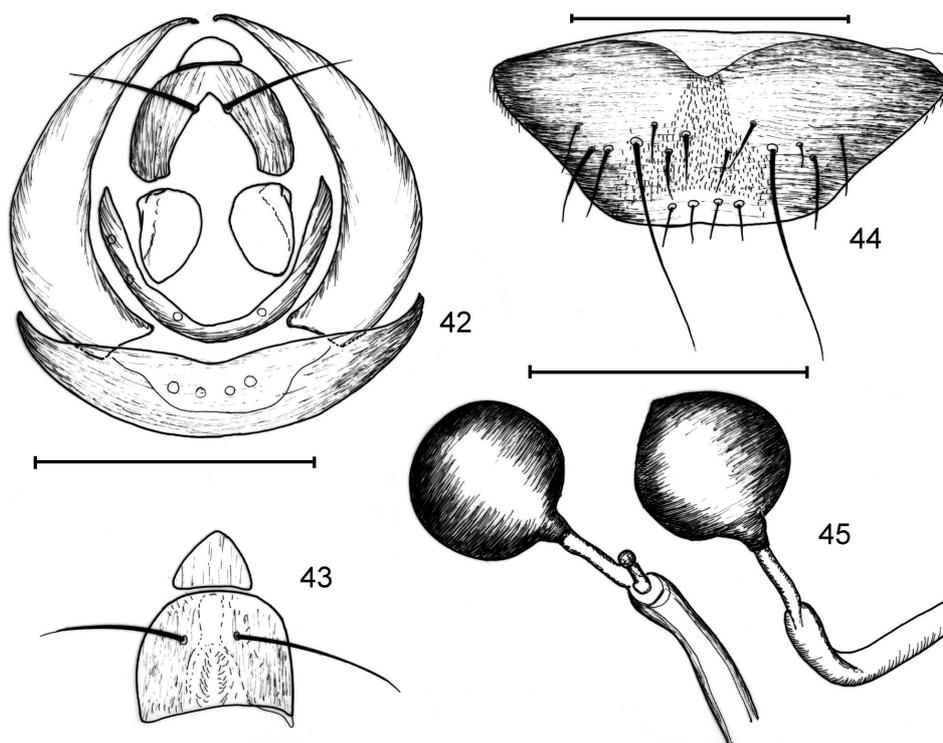
able. The paired and unpaired spermathecae on the left and the right abdominal wall, i.e. rather far from each other. Spermathecae (Fig. 45, cf. PAPP 1991: fig. 1), globular, surface rather smooth, diameter 0.05–0.055 mm, paired and unpaired ones similar. The sclerotised ducts (joining spermathecae) thinner than the less sclerotised ones distally. On one of the females prepared, one of the paired spermathecae is reduced (Fig. 45).

A tendency for reduction of one of the paired spermathecae is not unknown in Sphaeroceridae. It was even depicted in a species of *Pterogrammoides* (PAPP 1989: fig. 7), although at that time it was attributed to the effect of glycerol.

Distribution: Republic of South Africa.

*P. parangulata* sp. n. seems to be close to *P. angulata*, though it is identifiable without any use of the male genital characters (see key below).

Much to my regret I have to note that at least a part of the *P. angulata* specimens in collections are misidentified, including those, which were named formerly



**Figs 42–45.** *Poecilosomella parangulata* sp. n., paratype female, postabdomen and genitalia. 42 = outlines of the female postabdomen, caudal view, 43 = epiproct, dorsal view; 44 = sternite 8, ventral view, 45 = spermathecae (one of the paired ones reduced), lateral view. Scales: 0.2 mm for Figs 42–44, 0.1 mm for Fig. 45

by the present author. This is particularly so as regards specimens from Southern Africa. It is a matter of course that *Poecilosomella* specimens from the New World all belong to *P. angulata* (THOMSON) (see above).

I summarise differentiating characters for the identification of the *P. angulata* group species in the key below.

#### Ungrouped species

***Poecilosomella arnaudi*** L. PAPP, 1990 – Types: the holotype (Zaire, Thysville) and a majority of paratypes are deposited in CAS, 17 male and 5 female paratypes in the HNHM.

Distribution. République Démocratique du Congo. Not emerged again in the material studied presently.

#### ***Poecilosomella duploseriata* sp. n.**

(Figs 46–51, 70)

Holotype male (NMSA): S AFRICA [Republic of South Africa]: Natal #45, Mhlatuzana, (18.xii. '90, 29 48'S : 30 45'E, 500 m. Reared out: 18. I. 1991, Coll: A. E. Whittington, from hyrax faeces.

Paratypes: 2 males 2 females (NMSA, 1 male in HNHM): data as for the holotype. 1 male 2 females (NMSA, 1 female in HNHM): SOUTH AFRICA: Natal #45, Royal Natal Nat. Park, 28°41'S : 28°47'E, 1400 m, 3.ix.1992. Rock scree at Main Office Area, Barraclough Whittington. 1 male (NMSA): "TOWNBUSH, PIETERMARITZBURG, 29.10.71, M. E. IRWIN". 1 female (NMSA): SOUTH AFRICA: W. Cape, 12km sw. Clainwilliam, Kransvlei R., 3218BB, 5-X-1977, R.M. Miller.

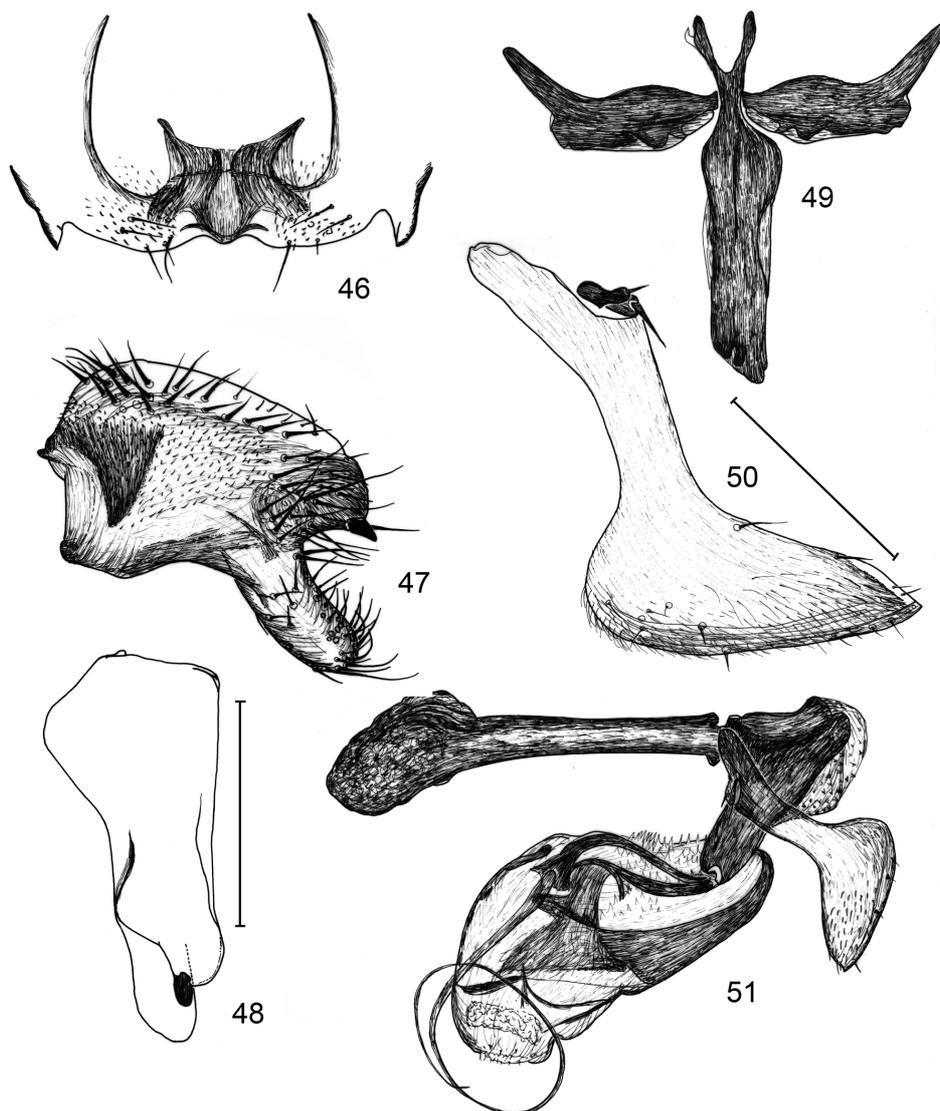
Measurements in mm: body length 2.91 (holotype), 2.93–3.30 (paratypes), wing length 2.25 (holotype), 2.37–2.83 (paratypes), wing width 0.96 (holotype), 1.02–1.23 (paratypes).

Head mainly brown, frons brown, anteriorly reddish yellow, interfrontal and the oblique orbital plates as well as ocellar triangle silvery. Anterior and posterior fronto-orbital setae equal in length. 4 medium-long interfrontal pairs. Gena rather broad, 0.15–0.20 mm just below eye. No genal seta, i.e. upcurved genal seta shorter than 1st peristomal setae behind vibrissa. Antennae reddish brown, lunule broad triangular, facial carina low. Arista cilia c. 0.02 mm long.

Mesonotum with the usual *Poecilosomella* pattern but sagittal and dorsocentral silvery lines rather thin. Anterior dorsocentral pair rather strong. Anterior katepisternal seta 0.22 mm long (holotype).

Wings (Fig. 70) patterned. Wing membrane light greyish (dirty) brown, no light "windows" but some darker diffuse dark brown spots discernible: basally, around H vein down to anal vein, around apical parts of R<sub>1</sub> down to R fork, around transverse apical part of R<sub>2+3</sub>. Veins dark brown on areas of dark spots. Second costal section slightly longer than third (0.63 mm vs. 0.58 mm). Costa distinctly overruns apex of R<sub>4+5</sub>, by 0.065 mm. Sub-basal thorn on costa conspicuous, 0.21 mm and 0.15 mm. Apical part of R<sub>2+3</sub> curved up, arched, without a vein appendage. Vein M S-shaped. Inter-crossvein section of M 0.20 mm, hind cross-vein 0.17 mm long. Basal 2/5 of anal vein thickened and continued into a less dark brown spot (not a vein); darker colour (in the form of a curved spot) *not* closing cubital cell.

Both ends of tibiae yellowish, other parts mainly dark browns, as follow. Fore tibia otherwise all dark, mid tibia with some lighter diffuse brown hue at about basal 1/3. Hind tibia with a distinct yellowish band around basal 2/5. Tarsi dirty yellow, except for 5th tarsomeres. Mid basitarsus and 2nd tarsomere with rather distant rows of thick black setulae. 5th tarsomeres are divided by the proxi-



**Figs 46–51.** *Poecilosomella duploseriata* sp. n., paratype male, genitalia. 46 = ventral part of epandrium with cerci and subepandrial sclerite, caudal view, 47 = surstylus in broadest extension (a sublateral view), 48 = outline of surstylus, caudal view at its longest extension, 49 = hypandrium, ventral view, 50 = postgonite in broadest (sublateral) view, 51 = phallus, phallapodeme and postgonite, lateral view. Scales: 0.2 mm for Figs 46–49, 51, 0.1 mm for Fig. 50

mal darker colour; pulvilli longer than the distal light part of tarsomeres on mid and hind legs. Mid tibia (of the holotype) with anterodorsals at 11/80 (very short), 17/80 (short), 26/80 (long), 45/80 (short), 5/8 (long); an extremely long (0.32 mm) dorsal at 64/80, a thinner dorsal at 61/80; posterodorsals: medium-long at 38/80, 52/80, very long at 4/5.

Abdomen definitely longer than broad, dark brown, caudal margins narrowly lighter.

Both epandrium and anal opening are slightly asymmetrical. Cercal part of epandrial complex low (Fig. 46), latero-caudal epandrial processes distinct. Caudal edge with a slight rounded sagittal emargination. Subepandrial sclerite comparatively high (Fig. 46). Medial part of hypandrium slightly asymmetrical (Fig. 49). Surstylus (Fig. 47) with an inner medial triangular process, whose base joins subepandrial sclerite with a pair of short dorsal and a pair of longer blunt ventral processes. Apical half of surstylus in two lobes: caudal lobe short with a rather small black thorn apically, cranial process longer, rounded with medium long hairs; surstylus rather narrow in caudal view (Fig. 48). There is a round swelling between apical processes, which bears medium-long setae. Otherwise all the thicker (stronger) setae of surstylus are rather short, caudal edge without setae. Postgonite (Figs 50–51) with narrow medial part and broad apical half. At least a half of its apical half with distinct hairs. Basiphallus (Fig. 51) compact with comparatively few peg-like thornlets. Thread-like process of distiphallus very long, spiralic when at rest. Dorsal surface of the basal half of distiphallus with light spines.

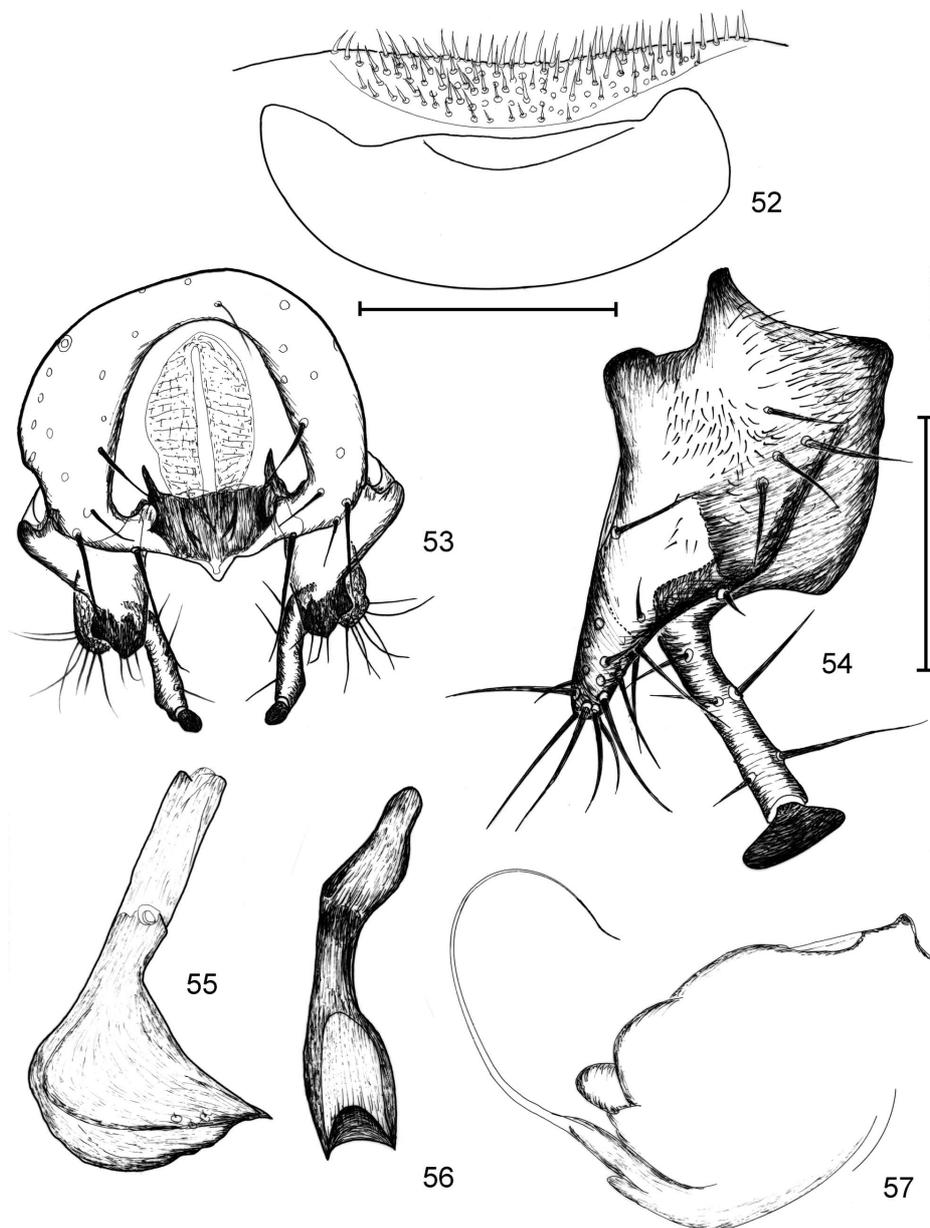
Female cerci short, longest (apical) hairlike setae 0.22 mm long.

**Etymology.** Its specific epithet ‘duploseriata’ refers to the two rather distant ventral rows of dense short setae of its mid basitarsus. This is the main differentiating character for the species and also details of the male genitalia separate it from the 3 species of “Other *Poecilosomella* spp.” in the key below.

***Poecilosomella hyalipennis* HACKMAN, 1965.** I had the opportunity to study its holotype male (NMSA): Bainskloof, Wellington c. 2000 ft, W Cape, 4–5 Oct 1959, B & P. Stuckenberg. Distal half of abdomen cut. An uncovered [?] balsam preparation on a celluloid label under the specimen. Unfortunately, this preparation is unsatisfactory, being dirty and broken into pieces. Its label: [red] Holotype “*Poecilosomella hyalipennis* Hackm.” [HACKMAN’s handwriting]. Paratype (NMSA): GRAHAMSTOWN, South Africa, “2-x-1953”, B. Stuckenberg. Its second label is similar to the one on the holotype but paratypus. In a good state of preservation. A note: the apex of its fore basitarsus is also white.

**Holotype.** A small specimen. Antenna all dark, arista with very fine short cilia. Fronto-orbital setae subequal and comparatively short. Basal scutellar setae twice longer than distance of the basal and the apical scutellar setae. Wings clear but apex of vein R2+3 diffuse brown. Vein R2+3 curved angulate, without a short vein appendage (!). R4+5 nicely curved up. Costa continued over R4+5 on a distance equalling thickness of costa. Inter-crossvein / hind crossvein ratio c. 1.3. Legs dark brown, fore tarsomeres 2–5 white, also tarsomeres 3–5 of hind tarsi white, mid tarsomeres 2–5 yellow. Anterodorsals on mid tibia: an extremely long at distal 5/7, 1 long each at basal and distal third, short anterodorsals at c. basal 1/6 and distal 3/5; posterodorsals: a very long one just proximally to the ad, plus 3 short posterodorsals: at proximal 1/6, 1/3 and 1/2.

Male sternite 5 asymmetrical, but less so than that of the *P. pallidimana* species group. No medio-caudal rounded process; sternite 5 medio-caudally with a short but broad area of short sharp setae (Fig. 52). Male genitalia figures (Figs 53–57) are based on a specimen from Ethiopia. Cercal part of the epandrial complex without long setae, caudal edge with a small sagittal process (Fig. 53). Surstylus (Figs 53–54) most characteristic: caudal apical process long and thin its thorn is like an anvil, caudal process with some 4–5 long setae only, cranial process shorter with several long setae.



**Figs 52–57.** *Poecilosomella hyalipennis* HACKMAN, male postabdomen and genitalia. 52 = outline of sternite 5 in ventral view and medio-caudal part of the sternite in higher magnification, 53 = epandrium with cerci, surstyli and subepandrial sclerite, caudal view, 54 = surstylus in its broadest extension (a sublateral view), 55 = postgonite, in broadest view, 56 = same, caudal view, 57 = apical thread-like process of phallus with contours of distiphallus. Scales: 0.2 mm for Figs 52–53, 0.1 mm for Figs 54–57

Postgonite (Fig. 55) peculiar with narrow basal part and broad apical part. Apical part pointed in lateral view, actually with 2 edges, similarly to a skate (Fig. 56). Threadlike process of distiphallus medium long but its apical half very thin and faint, hardly discernible (Fig. 57).

Material studied: Ethiopia: 1 male 1 female (HNHM): Addis Abeba, Akaki river, 13/29. IX. 1980, leg. A. DEMETER. Republic of South Africa, leg. L. PAPP & M. FÖLDVÁRI 2007: 1 male (HNHM): KwaZulu Natal, S Drakensberg, a riverside meadow nr Garden Castle (Mlambonja River), Jan 20, 2007, GPS21, S29°44'59.4" E29°12'42.1", 1811 m, No. 28; 1 female (HNHM): ibid., Garden Castle, under overhanging rocks, Jan 23, No. 36; 1 male (NMSA): Natal, Giant's Castle Game Res., Injamuti area, SE2929AB, JGH Londt, 5–11. xii. 1983.

*Poecilosomella hyalipennis* HACKMAN is a peculiar species in the genus. Its wings are clear (except for a diffuse spot under costa around apex of  $R_{2+3}$ ), which is unique in the genus. The shape of its surstylus, its anvil-shaped apical thorn and other features of male genitalia define its special position. Its white fore tarsomeres 2 to 5 (and white hind tarsomeres 3 to 5) would suggest a relationship to the *P. pallidimana* group, but that is misleading.

Distribution. Ethiopia, South Africa. It is probably a widespread but nowhere common species.

***Poecilosomella perinetica*** (HACKMAN, 1967) (*Leptocera* (*Poecilosomella*)). – The holotype is deposited in the Natural History Museum (Basel) from Madagascar, Province of Diégo-Suarez, Mtge d'Ambre. This ninth formerly known species has hitherto been only known from Madagascar. Not seen during this study.

### ***Poecilosomella setimanus* sp. n.**

(Figs 58–63, 71)

Holotype male (HNHM): [République du Congo]: Congo Brazzaville, ORSTOM park, 2. I. 1964, No. 572, J. Balogh – A. Zicsi.

Paratypes: 1 female (HNNM): same as for the holotype; 7 males 3 females (HNHM, 3 m and 1 f in DEI): Togo: Région des Plateaux: Zogbégan, village part Zogbégan-Carrière (SE of Badou), at creek Elèbè, 7°34'50"N, 0°40'03"E, 650 m, 20.–25.4.2008, leg. M. v. Tschirnhaus, Tg 1888 [V-shaped valley near cocoa-plantation downstream of village, remains of secondary rainforest, dense bank vegetation, dead wood, leaf litter, mud and sparsely running water near creek spring, swept, filled into eclector].

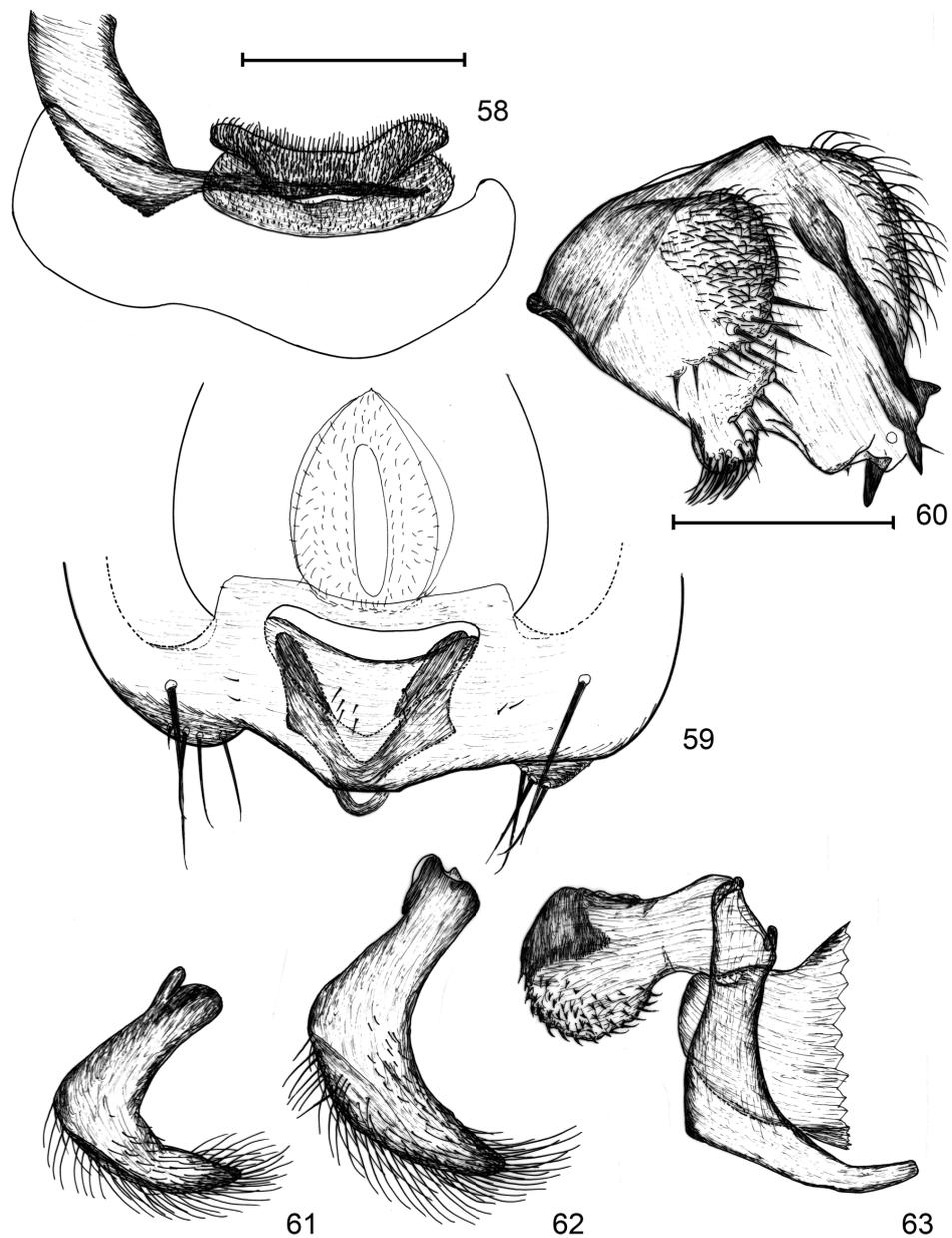
Measurements in mm: body length 2.64 (holotype), 2.29–2.81 (paratypes), wing length 2.05 (holotype), 1.76–2.15 (paratypes), wing width 1.01 (holotype), 0.79–1.00 (paratypes).

Body mainly dark brown, silvery pattern of head, mesonotum and scutellum as in its congeners.

Facial plate dark yellowish red, frons reddish brown. Antennae are red on holotype, brownish red on paratypes. Arista cilia long, up to 0.04 mm. Anterior fronto-orbital seta subequal to posterior pair. (2)–3–(4) pairs of medium long and rather thin infraorbital setae.

Anterior katepisternal seta strong, subequal to (holotype) or 4/5 length (paratypes) of posterior pair.

Wings (Fig. 71) patterned. Wing membrane light brownish, veins light brown, but dark brown on areas of dark spots. Darker brown spots on humeral vein down to base of M, around apical section of  $R_{2+3}$ , on bifurcation of  $R_{2-5}$ , incl. R1. Apical section of  $R_{2+3}$  perpendicular to costa but without a vein appendage at curvature. Longitudinal section of  $R_{2+3}$  S-shaped. Vein  $R_{4+5}$  gently curved up to costa and as a consequence, terminates as far from wing apex as a virtual continuation of M would be.



**Figs 58–63.** *Poecilosomella setimanus* sp. n., male postabdomen and genitalia. 58 = sternite 5 of a paratype, ventral view, 59 = ventral part of epandrium with cerci and subepandrial sclerite (holotype, most of the epandrial setae omitted), 60 = surstylus of the holotype in broadest extension (a sublateral view), 61 = postgonite of the holotype, broadest extension, in a  $\pm$  lateral view, 62 = same, of a paratype, 63 = basiphallus with postgonite of a paratype, lateral view. Scales: 0.2 mm for Fig. 58, 0.1 mm for Figs 59–63

Costa not continued, or only slightly continued over apex of  $R_{4+5}$  (by 0.01 mm). Sub-basal thorn of costa 0.19 mm long (holotype). Setae on first costal section max. 0.10 mm long. Second costal section definitely shorter than third (0.49 mm vs. 0.60 mm on holotype). Inter-crossvein section of M 0.19 mm, hind cross-vein 0.17 mm (holotype).

Legs dark brown, both ends of tibiae as well as a broad ring on the middle of tibiae dirty yellow. Setosity of legs very strong. Anterodorsals on mid tibia: 11/63 (small), 16/63 (medium), 24/63 (very long and thick), 37/63 (medium), 47/63 (very long and thick). Posterodorsals: 11/63 (small), 15/63 (medium long), 21/63 (very long and thick), 39/63 (long and thick), 49/63 (very long and thick). An extremely long and thick anteroventral (!) seta present at 38/63. Several short, slightly curved ventro-apicals discernible. Mid basitarsus with rows of strong anteroventrals and posteroventrals of c. 8–9 setae each. A similar anterior row also present. Male fore tibia and metarsus as well as second tarsomere with long hairs ventrally and anteroventrally. Male fore femur anteroventrally with similar hairs. Tarsomeres 4 and 5 of all tarsi brown. Basal 2/3–3/4 of fore basitarsus dark brown. Also hind tarsi mainly yellow but dorsal half of basitarsus and that of second tarsomere dark brown.

Male sternite 5 (Fig. 58) asymmetrical, with less melanised medial plates. The two parts of the medial plate separated by a thin gap, caudal part wholly covered by short hairs. Ventrally placed part of sternite 6 narrow. Sternites 6+7 strongly fused and much shorter than sternite 8. Epandrium short but not small, with rather long setae. Cercal (ventral) part of the complex short, without long setae, most ventrally with a blunt projection (Fig. 59). Medial part of hypandrium thin and shorter than phallapodeme. Surstylus (Fig. 60) compact, apical lobes broad and short, caudal lobe terminates in a short small process (sharp in the broadest view of surstylus), apical thorn rather short. No long setae on surstylus. Postgonite (Figs 61–62) comparatively short and broad, proclinate with blunt apex, ventrally and apically with numerous long hairs. Threadlike process of distiphallus long, forming almost a complete ring of a diameter of the distiphallus. Phallapodeme thin, bacilliform. Caudal part of basiphallus bulbous, its ventral part less sclerotised with numerous peg-like thornlets (Fig. 63).

Etymology. Its specific epithet 'setimanus' (noun) means setose hand, referring to its long setose basitarsus.

**Poecilosomella setosissima** sp. n.  
(Figs 64–68, 72)

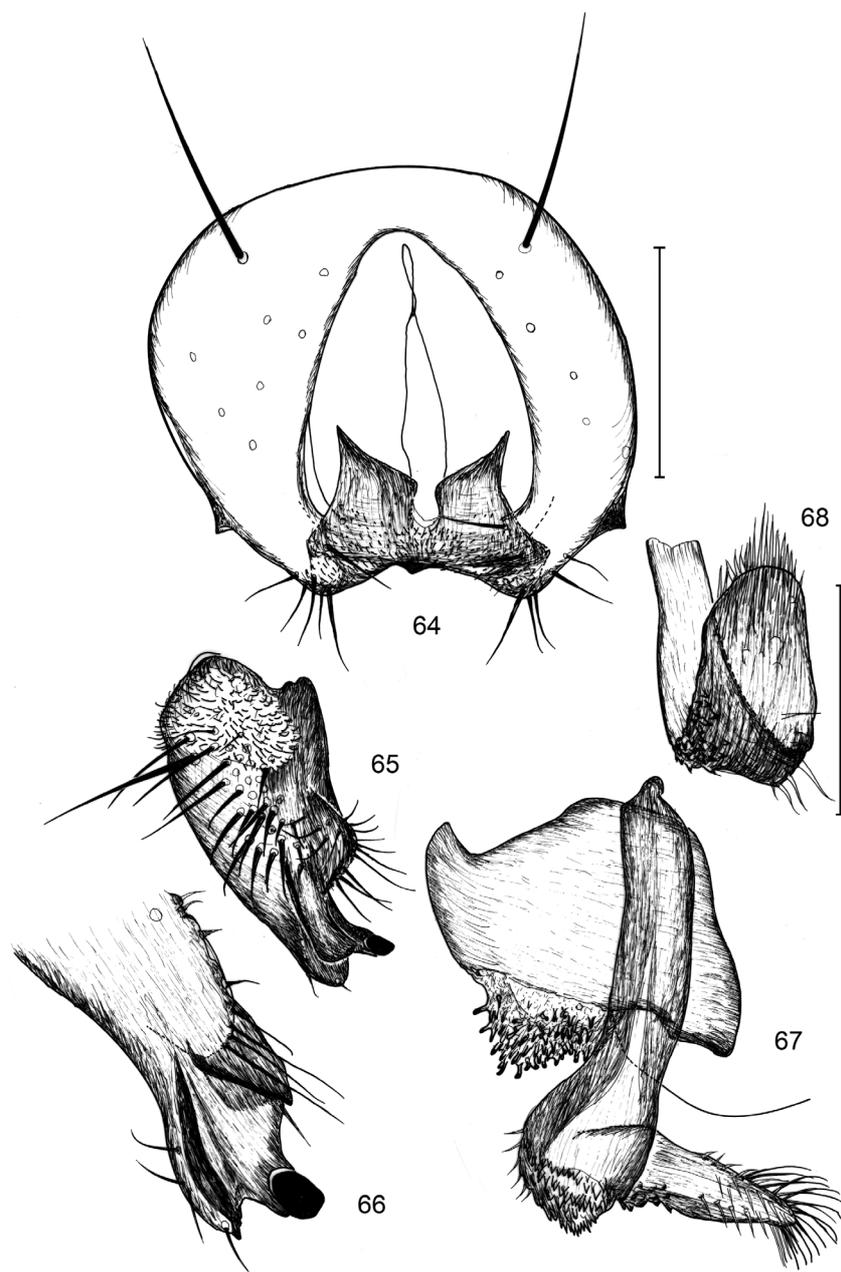
Holotype male (NMSA): [Republic of South Africa] HOGSBACK NORTH OF ALICE, E CAPE PROVINCE 2–3 NOVEMBER 1964 B & P STUCKENBERG. Its left wing is prepared on a slide, its abdomen with genitalia prepared and is in a plastic microvial with glycerol.

Paratype female (NMSA): SOUTH AFR: Cape Prov Hogsback 3226DB, 13–16.xii. 1985, J. & B. Londt Forest & forest margins.

Measurements in mm: body length 2.97 (holotype), 3.08 (paratype), wing length 2.42 (holotype), 2.51 (paratype), wing width 1.10 (holotype), 1.14 (paratype).

Body dark greyish brown, mesonotum with rich silvery pattern.

Three pairs of rather long interfrontals (only 2 pairs on paratype female). Anterior fronto-orbital much shorter than posterior pair (0.165 vs. 0.24 mm). No genal setae, i.e. anterior genal seta slightly shorter than the 1st peristomal behind vibrissa. Facial plate, antennal bases and lunule yellow (♂) or brown (♀). Gena reddish below eye and not broad (0.14 mm on holotype, 0.13 mm on paratype). Arista cilia rather short (somewhat shorter than 0.02 mm).

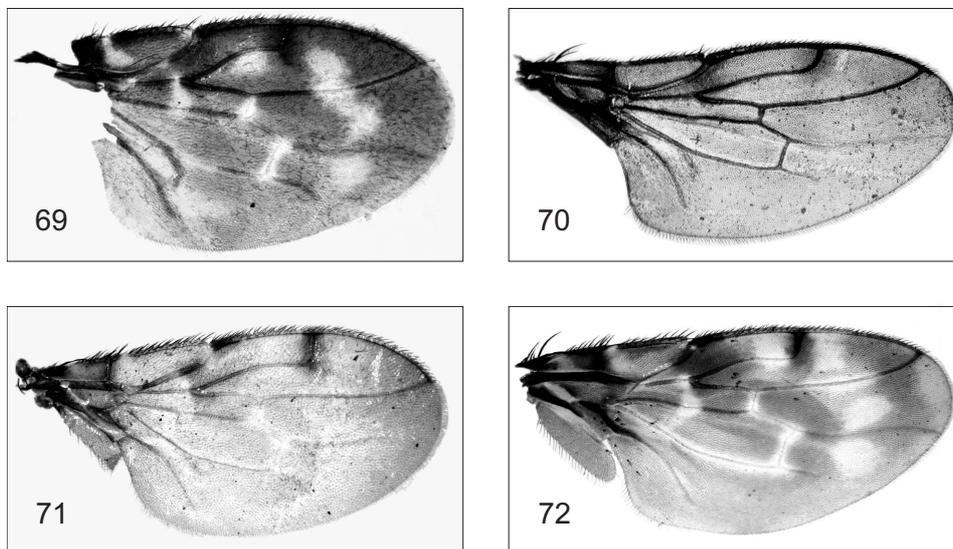


**Figs 64–68.** *Poecilosomella setosissima* sp. n., holotype male, genitalia. 64 = epandrium with cerci and subepandrial sclerite, caudal view, 65 = surstylus in broadest extension (a sublateral view), 66 = apex of caudal lobe of surstylus, caudal view, 67 = postgonite and basiphallus, lateral view, 68 = postgonite, ventral (!) view. Scales: 0.2 mm for Figs 64–65, 0.1 mm for Figs 66–68

Thoracic setae: 1 postpronotal, 2 notopleural (posterior pair on a swelling in supra-alar position), 1 true postalar, 1 presutural, 1 intra-alar (over wing base) and 1 intra-alar in prescutellar position; 2 pairs of strong dorsocentral setae. Prescutellar acrostichal pair of 0.29 mm (paratype). Anterior katepisternal seta 0.35 mm, posterior katepisternal 0.40 mm long (subequal on paratype female).

Wings (Fig. 72) richly patterned. Wing membrane light brown, with darker brown diffuse spots, and marble brown spots. Second costal section shorter than third (0.55 mm vs. 0.64 mm on holotype). Costa overruns apex of  $R_{4+5}$  by 0.015 mm. Sub-basal thorns of costa 0.24 mm and 0.19 mm long (holotype). Apical section of  $R_{2+3}$  strongly thickened, almost perpendicular to costa, angle at base of apical section not edged, longitudinal part strongly curved medially. Apical half of  $R_{4+5}$  strongly curved up, arched, and ends farther from wing apex than vein M; vein M present almost to wing margin as a vein. Inter-crossvein section of M 0.25 mm, discal cell with a small upper triangular emargination, hind cross-vein 0.22 mm long (holotype). Basal third of anal vein strongly thickened.

Femora and tibiae all dark brown, base of fore tibia as well as both ends of mid tibia dirty yellow. Tarsi mostly yellow, 5th tarsomeres, fore and hind basitarsus as well as 2nd mid and hind tarsomere brown. Male fore basitarsus with long hairs posteriorly and subventrally. Male fore femur and tibia with very long hairs ventrally and posteriorly. Mid femur with a row of long thick black setae in basal  $\frac{3}{4}$ , anteriorly subapically a large thorn present. Male mid tibia anteroventrally with medium-long black setae in apical  $\frac{3}{4}$ , posteroventrally with long hairs. Mid basitarsus with a complete though not straight row of short black setae, a posteroventral row on basal  $\frac{3}{4}$  only, posteriorly with 2–3 unarranged rows of long hairs (no such hairs in female). Mid tibia of holotype with anterodorsal setae at 21/73 (long), 29/73 (very long), 52/73 (very long); long dorsal at 48/73 and an extremely long at 54/73; posterodorsals at 20/73 (long), 29/73 (very long), 44/73 (very long). Ventral hairs of hind femur and tibia also long, up to 0.2 mm.



**Figs 69–72.** Wings of *Poecilosomella* spp. n. 69 = *P. additionalis* sp. n. (paratype female); 70 = *P. duploseriata* sp. n. (paratype male), 71 = *P. setimanus* sp. n. (holotype male); 72 = *P. setosissima* sp. n. (holotype male)

Abdomen broad (1.05 mm, length ca. 1.32 mm). Abdominal tergites dark brown with thick dark grey microtomentum, i.e. abdomen subshiny. Tergites 1 and 2 with a huge desclerotised and demelanised area, which almost reaches caudal margin and occupies almost half of tergite 2 medially. Longest marginal setae on tergite 5 0.29 mm. Sternites 2 to 5 transverse. Sternite 5 without any special setosity (armature), or sclerotised modifications medio-caudally. Sternite 6 with a – partly detached – plate in the medial area, which is almost horizontal (forming a cranial part of genital pouch). Sternite 8 at longest (sublaterally-subdorsally) not longer than sternite 6 and 7 combined, and continued ventrally. Epandrium slightly asymmetrical (Fig. 64) and sparsely setose, longest (dorsal) pair only 0.19 mm long. Cercal lobes with thicker setae, other setulae thin. Subepandrial sclerite rather high with narrowed dorsal projections. Hypandrial arms rather thin and perpendicular to body axis (i.e. the possibly shortest), medial part 8 with processes to postgonites) much shorter and thinner than phallapodeme. Surstylus (Figs 65–66) composed of a shorter simple setose cranial and an intricate slightly trifid caudal lobe (one of the latter bears the blunt apical tooth). Some long setae on surstylus sub-basally, its setae on medial part not long but thick. Postgonite (Figs 67–68) L-shaped; its longer vertical part ends in a swelling with short blunt pegs, apical (more horizontal) part covered with longer light hairs, better seen in ventral view. Basiphallus compact, a smaller ventral less sclerotised part with numerous blunt pegs. Threadlike process of distiphallus is broken on holotype but probably long. Phallapodeme 0.50 mm, broad based and rather high subapically.

Female cerci with medium-long dorsal and apical hairs (0.12–0.15 mm).

Etymology. Its specific epithet ‘setosissima’ [‘the most setose one’] refers to the unusually setose legs and the very strong body setosity of the new species.

I have not found a close relative of *P. setosissima* sp. n. among the Afrotropical species. This new species is characterised by its strong setosity of body and legs, richly patterned wing and by details of male genitalia. Cercal part of the epandrial complex covered by long hairs, surstylus long (high) with a shorter simple setose cranial and an intricate slightly trifid caudal lobe (Figs 65–66); postgonite of peculiar shape (Figs 67–68).

A KEY FOR THE SPECIES AND GROUPS  
OF THE AFROTROPICAL *POECILOSOMELLA*  
(incl. species of *P. angulata* species group)

- |   |   |                                     |
|---|---|-------------------------------------|
| 1 | Fore tarsomeres 2–5 or all the fore tarsi white. 2 well developed pairs of katapisternal setae.   | 2                                   |
| – | Fore tarsomeres incl. basitarsus may be light (yellow) but not white, or, fore tarsomeres 1 to 3 white. Anterior katapisternal seta may be reduced.                           | 3                                   |
| 2 | Wing clear, only apex of vein $R_{2+3}$ diffuse brown. Vein $R_{2+3}$ without even a short vein appendage. Postgonite (Fig. 55) with narrow basal part and broad apical part. | <i>P. hyalipennis</i> HACKMAN, 1965 |

- Wing richly patterned (Fig. 69),  $R_{2+3}$  with or without a vein appendage. Postgonite long, broadened at its middle (Figs 7, 13).  
*P. pallidimana* species group (*P. additionalis* sp. n.,  
*P. pallidimana* (DUDA, 1925))
- 3 Cercal part of the male epandrial complex with a simple sagittal projection (Fig. 35), surstylus compact (i.e. lobes not long or emerging, Figs 36–37). Mid basitarsus (usually shorter) with thick black setae, at least a complete anteroventral row, always present. *P. angulata* species group 5
- Cerci and surstylus are different (e.g. Figs 46–47, 59–60). Mid basitarsus (usually longer) with rows of at least 1 anteroventral and 1 posteroventral rows of small flexible, mostly not black setae. 4
- 4 Genal seta always present, moderate or strong. Wings not intensively patterned, costa overruns apex of  $R_{4+5}$  considerably, a vein appendage at terminal curvature of vein  $R_{2+3}$  present or absent. Male sternite 6 and 7 complex with large medial parts, forming a second vault below epandrium. Cerci (pseudocerci) without large lobes, caudally with or without 2 ridges. Subepandrial sclerites broader than high. Surstylus consist largely of 3 parts: caudal process with large black thick thorn, cranial lobe with more or less long setae and a “membranous” smaller lobe between them, which bears shorter thin setae. Postgonite with thin basal half and broad apical half, latter covered by thin hairs (at least partly).  
*P. longecostata* species group (*P. capensis* L. PAPP, 1990,  
*P. kittenbergeri* sp. n., *P. longecostata* (DUDA, 1925), *P. occulta* sp. n.)
- Other set of characters.  
 Other *Poecilosomella* spp. (*P. arnaudi* L. PAPP, 1990,  
*P. duploseriata* sp. n., *P. setimanus* sp. n. and *P. setosissima* sp. n.)
- 5 First radial cell with an additional crossvein, halving cell into two. A single long fronto-orbital seta present. Togo, Zaire, Uganda, Sudan  
*P. mirabilis* VANSCHUYTBROECK, 1951
- First radial cell normal. Two pairs of fronto-orbital setae 6
- 6 All fore basitarsus light. Costal vein continued distinctly beyond apex of  $R_{4+5}$ . Vein  $R_{4+5}$  strongly, S-shaped sinuate. Vein  $R_{2+3}$  with vein appendage. Genal seta rather weak. Also anterior katapisternal seta distinct. Abdominal tergites 1 and 2 conspicuously desclerotised medially. Male surstylus

very large, with extremely large cranially curved process and very thick strong apical thorn. Widespread in Africa

*P. maxima* (VANSCHUYTBROECK, 1950)

- At least base of fore basitarsus dark. Costal vein terminates at apex of  $R_{4+5}$ . Vein  $R_{4+5}$  less strongly, not S-shaped curved. Vein  $R_{2+3}$  mostly without a vein appendage. Desclerotisation of abdominal tergites 1 and 2 indistinct. Male surstylus smaller, compact, without a cranially curved process and only with a small apical thorn. 7

- 7 Mid basitarsus with 3 rows of stronger setae: an anterior row, a strong anteroventral row and a complete row of posteroventral setae. Dorsal half of male hind tibia with normal setae. Male genitalia (PAPP 1991: figs 6–10): cerci less separated from epandrium (fig. 6), apical thorn of surstylus longer and more caudally positioned (figs 7–8), than in *P. parangulata*; postgonite (fig. 10) curved, angular in lateral view, apical part narrower and its setulae longer. Female spermathecae (PAPP 1990: fig. 1) slightly ovoid, sclerotised ducts somewhat shorter than in *P. parangulata*. Originally Afrotropical, but human activity has made it widespread in South and Central America (incl. the Caribbean's) and also in North America up to Florida and Texas; in the Palaearctic found on the Canary Is.

*P. angulata* (THOMSON, 1869)

- Only the anteroventral row of setae is strong on mid basitarsus; only 2 or 3 posteroventral setae present and only thin normal setae are in the anterior row. Dorsal half of male hind tibia with short thick sharp spiniform setae (Fig. 33). Male genitalia (Figs 34–41): cerci more separated from epandrium (Fig. 35), apical thorn of surstylus shorter and more centrally positioned (Figs 36–37), than in *P. angulata*; postgonite (Fig. 39) not angular curved, apical part thicker and its setulae shorter. Some of the female genital parts (Figs 42–45) also characteristic, spermathecae (Fig. 45) globular with slightly longer sclerotised ducts than in *P. angulata*. Southern Africa

***P. parangulata* sp. n.**

\*

*Acknowledgements* – I am grateful to Dr MICHAEL MOSTOVSKI and Mr. BURGERT MILLER (NMSA, Pietermaritzburg, RSA) for the loan of the *Poecilosomella* specimens, and to Dr MICHAEL VON TSCHIRNHAUS (University of Bielefeld, Germany) for sending me his material from Togo. Mr GÁBOR LENGYEL (HNHM, Budapest) was kind enough to help me in preparing the wing photos. This study was supported by the National Scientific Research Fund (OTKA, No. K60593).

## REFERENCES

- DUDA, O. (1925) Die aussereuropäischen Arten der Gattung Leptocera Olivier – Limosina Macquart (Dipteren) mit Berücksichtigung der europäischen Arten. *Archiv für Naturgeschichte* **90A**(1924): 5–215.
- FEKETE, I. (1962) *Kittenberger Kálmán élete* [K. K.'s life]. Móra Ferenc Könyvkiadó, Budapest, 279 pp.
- HACKMAN, W. (1965) Diptera (Brachycera): Sphaeroceridae (Borboridae). *South African Animal Life, Lund* **11**: 485–503.
- HACKMAN, W. (1967) Sphaeroceridae (Diptera) from Madagascar. *Notulae Entomologicae* **47**: 25–36.
- PAPP, L. (1989) Revision of the species of Pterogrammoides L. Papp (Diptera, Sphaeroceridae). *Acta Zoologica Academiae Scientiarum Hungaricae* **35**(3–4): 327–338.
- PAPP, L. (1990) A review of the Afrotropical species of Poecilomella Duda (Diptera, Sphaeroceridae). *Annales historico-naturales Musei nationalis hungarici* **81**(1989): 133–151.
- PAPP, L. (1991) A review of the Oriental species of Poecilomella Duda (Diptera, Sphaeroceridae). *Acta Zoologica Academiae Scientiarum Hungaricae* **37**(1–2): 101–122.
- PAPP, L. (2002) Eighteen new Oriental species of Poecilomella Duda (Diptera: Sphaeroceridae). *Acta Zoologica Academiae Scientiarum Hungaricae* **48**(2): 117–156.
- PAPP, L. (2008) New genera of the Old World Limosininae (Diptera, Sphaeroceridae). *Acta Zoologica Academiae Scientiarum Hungaricae* **54**(Suppl. 2): 47–209.
- ROHÁČEK, J., MARSHALL, S. A., NORRBOM, A. L., BUCK, M., QUIROS, D. I. & SMITH, I. (2001) *World Catalog of Sphaeroceridae (Diptera)*. Slezské zemské Museum, Opava, 414 pp.
- VANSCHUYTBROECK, P. (1950) Diptères Sphaeroceridae du Musée du Congo belge. *Annales du Musée du Congo Belge, Tervuren, Série in 8° (Sciences Zoologiques)* **5**: 5–46.
- VANSCHUYTBROECK, P. (1951) Contribution à l'étude des Sphaeroceridae africains (Diptera Acalypratae) (3me note). *Bulletin Institut royal des Sciences naturelles de Belgique, Bruxelles* **27**(41): 1–20.

Revised version received September 16, 2009, accepted January 26, 2010, published March 31, 2010

# *Contributions to a Manual of Palaearctic Diptera*

Edited by L. Papp and B. Darvas

## *Volumes 1–3, Appendix*

The excellently illustrated volumes of the “Contributions to a Manual of Palaearctic Diptera” morphological, physiological, genetic, ecological and economic up-to-date knowledge of dipterous species (midges and flies), which have significant importance in genetics as model organisms, in plant cultivation as pests or beneficial parasitoids, in animal husbandry and human health as vectors of serious illnesses and which are important for ecosystem function, are treated. Morphological keys to generic level for adults and larvae are provided, which help readers with identification of dipterous pests and parasitoids, while readers in the field of applied dipterology will find suitable environmentally friendly methods against pests or biological control methods.

Volume 1 (published in 2000): 24 chapters of general and applied dipterology, by 31 specialists, on 978 pages with 956 figures on 176 plates. Volume 2 (published in 1997): 38 dipterous family chapters, by 23 specialists, on 592 pages with 1895 figures on 258 plates. Volume 3 (published in 1998): 56 dipterous family chapters, by 32 specialists, on 880 pages with 1773 figures on 294 plates. Appendix (published in 2000): 16 dipterous family chapters, by 19 specialists, on 604 pages with 2134 figures on 207 plates.

ISBN 963 04 8836 1 (Series)

ISBN 963 04 8839 6 (Volume 1)

ISBN 963 04 8837 X (Volume 2)

ISBN 963 04 8838 8 (Volume 3)

ISBN 963 04 8840 X (Appendix)

Foundation for the Publicity of the Hungarian Science  
Publisher: Science Herald, Budapest

### **Order should be sent to**

NEST Foundation, Collegium Budapest  
Ms Szilvia Zimmer, E-mail: [szimmer@colbud.hu](mailto:szimmer@colbud.hu)