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NEW GENERA OF THE OLD WORLD LIMOSININAE (DIPTERA, SPHAEROCERIDAE)

PAPP, L.

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

Twenty-five new genera of the subfamily Limosininae from the Old World are described. They are, *Afropterogramma* gen. n. (type species *A. minor* sp. n.), *Archipterogrammoides* gen. n. (type species *A. metatarsalis* sp. n.), *Australimosina* gen. n., (type species *Acuminiseta flaviterga* RICHARDS, 1973), *Biconnecta* gen. n. (type species *B. mirabilis* sp. n.), *Cephalimosina* gen. n. (type species *C. simplicipes* sp. n.), *Chaetosifemur* gen. n. (type species *Ch. longiventre* sp. n.), *Eximilimosina* gen. n. (type species *Paralimosina eximia* L. PAPP, 1991 with *E. elegantula* (DUDA, 1925), *E. major* sp. n., *E. thailandica* sp. n.), *Giraffimyiella* gen. n. (type species *Leptocera giraffa* RICHARDS, 1938), *Gonitella* gen. n. (type species *G. flavipes* sp. n.), *Minialula* gen. n. (type species *M. poeciloptera* sp. n.), *Mixolimosina* gen. n. (type species *M. orientalis* sp. n.), *Monorbiseta* gen. n. (type species *Leptocera* (*Limosina*) *monorbiseta* DEEMING, 1969), *Paracuminiseta* gen. n. (type species *P. tetraspinosa* sp. n.), *Paramera* gen. n. (type species *P. robusta* sp. n., with *P. ornata* sp. n.), *Paraminilimosina* gen. n. (type species *P. miraculisterna* sp. n., with *P. elephantis* sp. n.), *Parapoecilosomella* gen. n. (type species *Limosina lusingana* VANSCHUYTBROECK, 1959), *Parapterogramma* gen. n. (type species *P. asiatica* sp. n.), *Piliterga* gen. n. (type species *P. thaii* sp. n.), *Pseudacuminiseta* gen. n. (type species *P. formosana* sp. n.), *Pseudaspinilimosina* gen. n. (type species *P. tanzan* sp. n.), *Pseudopterogramma* gen. n. (type species *Ps. siamensis* sp. n., with *Ps. insularis* (L. PAPP, 1972)), *Rohacekia* gen. n. (type species *R. baechlii* sp. n.), *Setositibiella* gen. n. (type species *S. terrestris* sp. n.), *Thailimosina* gen. n. (type species *Th. maculata* sp. n.), *Trilobitella* gen. n. (type species *T. taiwanica* sp. n.).

In addition, two new subgenera of *Minilimosina* ROHÁČEK, 1983: *Sagittaliseta* subgen. n. (type species *M.* (*S.*) *siamensis* sp. n.) and *Amediella* subgen. n. (type species *M.* (*A.*) *endrodyi* sp. n.), as well as a new subgenus of *Phthitia* ENDERLEIN, 1938: *Rufolimosina* subgen. n. (type species *Ph.* (*R.*) *ornata* sp. n., with *Ph.* (*R.*) *oswaldi* L. PAPP, new name for *Leptocera (Scotophilella) rufa* (DUDA, 1925) are described.

Two former subgenera of *Spelobia* SPULER, 1925 have been elevated to genus rank: *Bifronsina* ROHÁČEK, 1983, stat. n. (with *B. bifrons* (STENHAMMAR, 1855) comb. n., *B. elegantula* sp. n., *B. latitarsis* sp. n., *B. nepalensis* sp. n., *B. nigroscutellata* (DUDA, 1925), comb. n.) and *Eulimosina* ROHÁČEK, 1983, stat. n. (with *E. ochripes* (MEIGEN, 1830) comb. n., *E. dudai* (L. PAPP, 1978) comb. n., *E. oroszi* sp. n., *Eulimosina* sp.). *Acuminiseta* Duda, 1925 is re-described (based on a re-description of its type species *A. pallidicornis* (VILLENEUVE, 1916) and *A. ceropteroides* sp. n.). The generic characters and status of *Acuminiseta*, *Anommonia*, *Ceroptera*, *Spinilimosina* are discussed. A key to the fully winged genera of the Old World Limosininae is given. With 329 figures on 63 + 2 photo plates.

Key words: Sphaeroceridae, Limosininae, new genera, *Afropterogramma*, *Archipterogrammoides*, *Australimosina*, *Biconnecta*, *Cephalimosina*, *Chaetosifemur*, *Eximilimosina*, *Giraffimyiella*, *Gonitella*, *Minialula*, *Mixolimosina*, *Monorbiseta*, *Paramera*, *Paracuminiseta*,

Paraminilimosina, *Parapoecilosomella*, *Parapterogramma*, *Piliterga*, *Pseudacuminiseta*, *Pseudaspinilimosina*, *Pseudopterogramma*, *Rohacekia*, *Setositibiella*, *Thailimosina*, *Trilobitella*, *Minilimosina* (*Sagittaliseta* subgen. n.), *Minilimosina* (*Amediella* subgen. n.), *Phthitia* (*Rufolimosina* subgen. n.), 33 new species, taxonomy, Afrotropical region, Oriental region, Australia

INTRODUCTION

The family Sphaeroceridae has been recently divided into five subfamilies (ROHÁČEK *et al*. 2001). Two of them (Tucminae and Homalomitrinae) are very small in species. The Sphaerocerinae and Copromyzinae are richer in species but generic revisions have already been written on them (e.g. HAN & KIM (1990) on *Ischiolepta*, NORRBOM & KIM (1987) on *Gymnometopina*, etc., for detailed bibliography see ROHÁČEK *et al*. 2001). Consequently, although numerous new species are expected to be described in these latter two subfamilies in the future, at the same time it is unlikely to add further unknown genera.

The species richest subfamily is the Limosininae. The so-called classical authors (HALIDAY, MEIGEN, LOEW, ZETTERSTEDT, STENHAMMAR, RONDANI, etc.) did not attempt to group the small sphaerocerids in the 19th century. This was accomplished only in the 20th century, mainly as subgenera of *Leptocera* OLIVIER, 1813 or *Limosina* MACQUART, 1835 particularly by DUDA (1918, 1920, 1925), SPULER (1925) and RICHARDS (1938 to 1973). HACKMAN (1969) elevated these subgenera to genera in his review of the zoogeography and classification of the Sphaeroceridae, but no revision of the limosinine genera was made.

ROHÁČEK (1982, 1983, 1985) published a book-size revision paper in four parts for the Palaearctic Limosininae (formerly mostly united under the generic name *Limosina*). Without any exaggeration, that was the most important work on the Sphaeroceridae in the 20th century. I was premature in stating, after the publication of that revolutionary work, that the tropical, exotic species should also have been studied for such a revision. On the contrary, the generic status of very few of the species treated by ROHÁČEK (1982, 1983, 1985) has been changed since then. Even in the case, where an exotic genus incorporated the Palaearctic one (e.g. *Phthitia/Kimosina*) ROHÁČEK's work greatly facilitated descriptions on a higher level. Prof. STEPHEN A. MARSHALL and co-authors have achieved important results on the Nearctic and Neotropical Limosininae, describing a number of new genera. No such a work has been carried out on the Afrotropical and Oriental species yet. There are known species, which must belong to new genera (*Limosina monorbiseta* DEEMING, the *Poecilosomella multicolor* species group and the *Paralimosina eximia* species group are among those examples, see e.g. PAPP 1991).

In his Oriental catalog HACKMAN (1977) listed only *Acuminiseta* DUDA, *Anommonia* SCHMITZ and *Poecilosomella* DUDA, which are really tropical genera (but see below). Since that time *Indiosina* L. PAPP, 1981 (micropterous sp.), *Pellucialula* L. PAPP, 2004, *Aspinilimosina* L. PAPP, 2004 were described from the Oriental region. Most recently HAYASHI (2006) described *Papualimosina* from New Guinea. The genera *Biroina* RICHARDS, 1973 and *Pterogrammoides* L. PAPP, 1972 were reported from the Oriental region, not to mention rather numerous species, which belong to genera which are represented also in the Palaearctic region. However, we knew formerly that some other genera are richly represented, though not published from the Oriental and the Afrotropical regions. One may say that information on limosinine taxa has been multiplied since the time of HACKMAN's (1969) review, but there is much to be done in the Old World Limosininae and so this paper is just a small contribution to that unknown.

Below, 25 new genera of the Old World Limosininae are described. Formerly the tribal name Limosinini was proper to aggregate all the species (in known and unknown genera), which were treated as *Limosina* species by classical authors. I am convinced that this usage must be discontinued. The genera described below do not seem to belong to a monophyletic unit. In any case, they all belong to the subfamily Limosininae.

Since new genera are mainly based on the characteristics of male genitalia, in the cases of "gen. et sp. n." features of male genitalia are given in the description of genera, those of other body parts are in the descriptions of the type species.

Abbreviations are not commonly and consequently used below. However, checking the MS, I found the following abbreviations in some places for cephalic, thoracic and tibial setae: *ifr*: interfrontal, *occe*: outer occipital, *occi*: inner (medial) occipital, *fr-orb*: fronto-orbital, *pvt*: postvertical, *pprn*: postpronotal, *dc*: dorsocentral, *np*: notopleural, *kepst*: katepisternal, *ad*: anterodorsal, *pd*: posterodorsal setae; for wing veins: R_{4+5}: radial vein 4+5, M: medial vein, Cu: cubital vein, dM-Cu: posterior cross-vein; abdominal sclerites: T: tergite, S: sternite.

MATERIALS AND METHODS

This paper is based on the limosinine specimens in the Diptera Collection of the Hungarian Natural History Museum (HNHM). The Sphaeroceridae specimens accumulated there in the last two decades had been selected into genera and identified in 2007 or before.

The descriptions below are based mainly on the features of the male genitalia. For studies on genitalia mostly the whole abdomen of the male specimens was removed. As for the procedure of genitalia preparation, dissection of genitalia and making figures, see the first (*Coproica*) part of this issue (PAPP 2008). Measurements were taken on the holotype if not otherwise stated.

Terminology of male genitalia follows SINCLAIR (2000) whenever possible; in some cases ROHÁČEK (1998) was consulted. Male postabdominal sclerites between segment 5 and epandrium are

named as synsternite 6–8 (a very intricate but fused sclerite in some genera, several sclerites in others)* in most cases. For female tergite 10 (in earlier works tergite 9) the term epiproct, for sternite 10 (in earlier works sternite 9) the term hypoproct are used. I name the sclerotised structures inside (ventrally and cranially to) epandrial shell as subepandrial sclerite, although I know that the situation from the point of view of the origin of those sclerite(s) are usually more complicated (see SINCLAIR 2000, ROHÁČEK 1998). At the same time I hope, my figures and descriptions are unequivocal.

Representatives of several formerly known Old World genera and 25 new genera are treated (cf. ROHÁČEK *et al*. (2001). In the last part of this paper a key is given for the fully winged genera of the Old World Limosininae. Data about the distribution (in some cases also species numbers) of the formerly known genera are mostly included in the key.

I have had to group the genera below for practical reasons. Most of the groups are technical and are not phylogenetically based (cf. General remarks below).

The type specimens are preserved in the Diptera Collection of the Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM), if not otherwise stated.

DESCRIPTIONS OF NEW GENERA AND SPECIES

The *Ceroptera* genus group

Pulvilli and claws considerably enlarged. Hind tibia mostly with short but robust ventroapical spur. Frons long, usually with numerous *ifr* pairs. Abdominal tergites and sternites in many species rudimentary but tergal marginal setae are not extremely long. Male genitalia with a pair of large ventral (ventro-medial) epandrial processes (Fig. 6), surstyli placed between epandrium and the processes.

PAPP (1977) regarded the group as a separate subfamily. This is possibly not well based but the distinctness of the genus group is obvious. In the Old World the *Ceroptera* group is represented by two genera.

Ceroptera MACQUART, 1835 – Type species: *Borborus rufitarsis* MEIGEN, 1830 – Ocellar setae well developed. Many yet weaker interfrontal pairs present. Frontal triangle either small, or not shiny. Position of ocelli normal. No differentiated postocellar setae. Inner vertical setae emerge close to outer verticals. Lunule small, often only micropubescent. 0 + 1–2, or 1 + 2 pairs of dorsocentral setae. Usually many (6–8) rows of acrostichal setae present. Abdominal tergites maybe reduced but sternites never completely desclerotised.

* This was made adopting the proposal of one of the reviewers, saying that tergites 6-8 were lost in Limosininae. It is mostly so, but I disagree in general, since I think that the sclerotised parts beside the sternite 6 are sclerotised through the activity of the same genes, as coded the sclerotisation of tergite 6 (7) in the ancestors (a rather probable parsimony). So this is not the case of "which was lost once that is lost forever". As a consequence of changing 'syntergosternite' to synsternite, I have to name those sclerites as 'right side sclerites of postabdomen'.

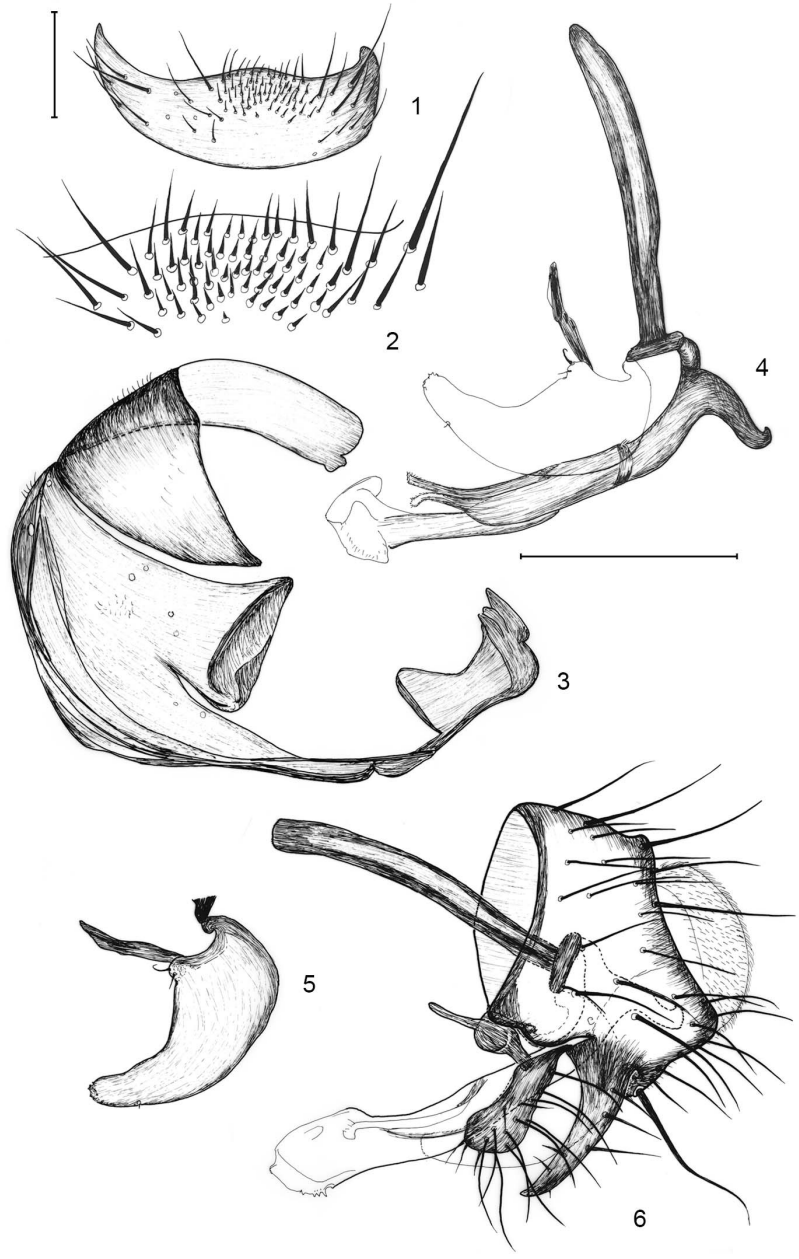
The male genitalia of the type species are figured in Figs 1–6.

In the type species the setae on the first costal section are extremely long and the costa runs to the apex of R_{4+5} only. 3 *dc* pairs. Pulvilli as broad as tarsomere 4, ventroapical spur of hind tibia short, 0.07–0.08 only. Vein M runs to wing margin.

Abdominal tergites reduced, not reaching lateral margin of abdomen. Sternites large, broader than tergites above them. Synsternite 6–8 (Fig. 3) comparatively small. Sternite 5 (Fig. 1) without caudal-medial appendage, but numerous, more or less ordered rows of acute thick setae there (Fig. 2). Ventral part of sternite 6 without appendage, and without cranial supporting dilatations (i.e. dilatation small), right side part distinct in an intricate form, sclerotisation comparatively strong there (Fig. 3). Epandrium asymmetrical (right half much longer (Fig. 6), anal opening large, hypandrium very small. Subepandrial sclerite not broad, reaching base of surstylus thinly. Anal plates (sclerotised plates of anal opening) large but not strongly sclerotised. Surstylus (Fig. 6) broadly rounded apically, with numerous long setae. Epandrial process large, longer than surstylus, slightly proclinate. Both lateral arm (thin but rather strong) and medial part of hypandrium very small. Phallus long and thin. Basiphallus and distiphallus fused strongly, basiphallus projecting in large, recurved, fused epiphallus (Fig. 4). Phallapodeme with extremely broad discuss-like base; as a consequence of connection of basiphallus dorsally and postgonite ventrally. Postgonite (Fig. 5) comparatively large with broad base and rounded apex.

Female abdominal terga reduced, i.e. much broader than long. Tergite 2 always depigmented medially. Sternites not shorter, but even less broad than tergites (shape in some cases species-specific). Female tergite 6 and sternite 6 quadrate but usually shorter than broad. Tergite 8 divided into three parts or parts connected. Hypoproct divided in 2 pieces in several species. Cerci usually longer or much longer than broad, with several long setae or even with long thick thorns. Spermathecae globular, sclerotised ducts usually not longer than diameter of spermathecae, duct of the paired spermathecae Y-shaped.

Ceroptera is a species rich genus in the Palaearctic and Afrotropical regions (HACKMAN 1965, PAPP 1977, ROHÁČEK *et al*. 2001). Some species currently placed in this genus should be confirmed. Based on the specimens of the other species preserved in the HNHM, the status as species of *Ceroptera* is here corroborated: *C. aharonii* DUDA, 1938, *C. algira* (VILLENEUVE, 1916), *C. alluaudi* (VILLENEUVE, 1917), *C. crispa* (DUDA, 1925), *C. equitans* (COLLIN, 1910) [the only Oriental species!], *C. ghanensis* L. PAPP, 1977, *C. nasuta* (VILLENEUVE, 1916), *C. picta* (BECKER, 1913) [its relationship to *C. rufitarsis* will be discussed in a subsequent paper], *C. rubricornis* (DUDA, 1918), *C. setigera* VANSCHUYTBROECK, 1945.



Figs 1–6. *Ceroptera rufitarsis* (MEIGEN), male postabdomen and genitalia (based on a male from Vedi, Armenia). 1 = sternite 5, ventral view, 2 = medio-caudal part of sternite 5 in a higher magnification, 3 = synsternite 6–8, ventral view, 4 = inner genitalia, lateral view, 5 = postgonite, broadest extension (lateral view), the whole male genitalia, lateral view. Scales: 0.2 mm for Fig. 1, 0.2 mm for Figs 2–6, respectively.

Ceroptera ealensis VANSCHUYTBROECK, 1951 is not a *Ceroptera* species but it belongs to a new, still undescribed genus (for remarks see under *Paraminilimosina*).

Ceropterella RICHARDS, 1953 – Type species and the only hitherto known species *Ceroptera nitidosa* RICHARDS, 1953 (Afrotropical) – Described from Mozambique, in the HNHM there are numerous specimens from South Africa and from Congo.

The generic features differentiating it from *Ceroptera* can be summarised as follows (PAPP 1977): Ocellar setae absent. Only 4 pairs of comparatively large interfrontal setae. A large shiny frontal triangle present, which extends so anteriorly that anterior ocellus placed nearly at middle of frons. Postocellar setae well developed. Inner vertical setae emerge well anterior to outer verticals. 1 + 1 pairs of robust dorsocentral setae present. Lunule large and setose. Only 3 (4) rows of irregularly placed acrostichals.

Male abdominal sternites 1–4 and tergite 3 not sclerotized at all, tergite 4 represented by 2 minute sclerites (PAPP 1977: figs 5–6). No right side sclerites of synsternite 6–8 but S6 part with a large dorso-cranial convex projection ± medially. Modified cerci distinct, narrowly fused sagittally but not projecting. Surstylus bipartite both parts broad. Both phallapodeme and medial part of hypandrium long (cf. Fig. 6). Basiphallus without epiphallus.

Female preabdomen as in males, sternite 5 trapezoid, tergite 5 twice broader than long with 2 (3) submarginal pairs of setae. Tergite and sternite 6 subquadrate. Segment 6 partly, postabdominal segments (but cerci) wholly telescopic. Tergite 8 in 3 parts. Epiproct and hypoproct weakly sclerotised, cerci not much longer than broad with 1 pair of medium-long and several short setae. Spermathecae globular with a proximal central umbilicus, sclerotised ducts slightly shorter than single spermatheca and somewhat longer than diameter of paired spermathecae. Ripe eggs 0.60–0.67 mm × 0.20–0.22 mm, whitish without appendages.

Genera with desclerotised abdominal tergites (sclerites) and extremely long tergal setae

Chaetosifemur gen. n.
(Figs 7–13)

Type species: *Chaetosifemur longiventre* sp. n.
Gender: neuter.

Head with lunule longer than a half of a circle. Vibrissa very long, genal setae not much longer than peristomals. Six pairs of interfrontals and a pair of very strong postverticals present. First flagellomere rounded, arista dorsal subapical, scape and pedicel setae very long.

Thorax with 1 postpronotal, 2 notopleural and 2 dorsocentral pairs well developed, also some short *dc* anteriorly. Anterior katepisternal 0.4–0.5 times as long as posterior pair. Acrostichal setae sparse but strong, c. 6 rows countable between dc lines.

Wings with R_{4+5} straight or slightly recurved in its whole length from R-M. Discal cell long (inter-crossvein section of M more than 2 times longer than dM-Cu), edged with short Cu appendage. Vein M reaches wing margin as a faint fold. Alula narrow, apex rounded.

Fore femur basally with 2 pairs of long ventral setae, which are much thickened in males, thin in females. All male tarsi slightly flattened. Mid tibia without a mid ventral seta. Mid basitarsus with rows of strong anteroventral and posteroventral setae.

Abdomen long. Male tergite 2 short and broad with only 2 pairs of long submedial marginal setae, tergite 3 quadrate, much narrower than tergite 2 (Fig. 7). Tergite 5 forms half of a ring, much narrower than abdomen. Male sternite 5 very small.

Male genitalia (Figs 8–13) rather small. Synsternite 6–8 partly hidden under tergite 5 (i.e. even smaller). Sternite 6 part laterally with a pair of black processes, left one continued backwards (i. e. cranially), right one directed caudally. Sternite 8 portion of synsternite 6–8 short. Right side parts of the complex membranous though discernible.

Epandrium without a large pair of setae, but with numerous medium-long setae. Hypandrium (Fig. 12) narrow with an asymmetrical ventral ridge. Subepandrial sclerite small, narrow but high (Fig. 10). Surstylus (Figs 8–9, 11) of an intricate form, much higher than long, with a digitiform ventral cranial process, which bears 2 longer and some shorter setae. Basiphallus and distiphallus fused (Fig. 13), a virtual border between them formed by the contrasting pigmentation. Basiphallic part with a large ventral epiphallus (subtriangular in lateral view), distiphallic part with a hard strong ventral, caudally directed process, subapically ventrally with numerous minute setulae and with a small globular structure inside. Phallapodeme short.

Female postabdomen not long when everted, since postabdominal sclerites (tergites and sternites 6–8, epiproct and hypoproct) very short. Tergite 8 thin U-shaped (not divided), sternite 8 semicircular. Cerci short with several long thin setae. Spermathecae pear-shaped, sclerotised ducts J-shaped, that of the paired ones not fused.

Etymology. The new genus named after its long ventral setae basally on fore femur.

Chaetosifemur longiventre sp. n.
(Figs 7–13)

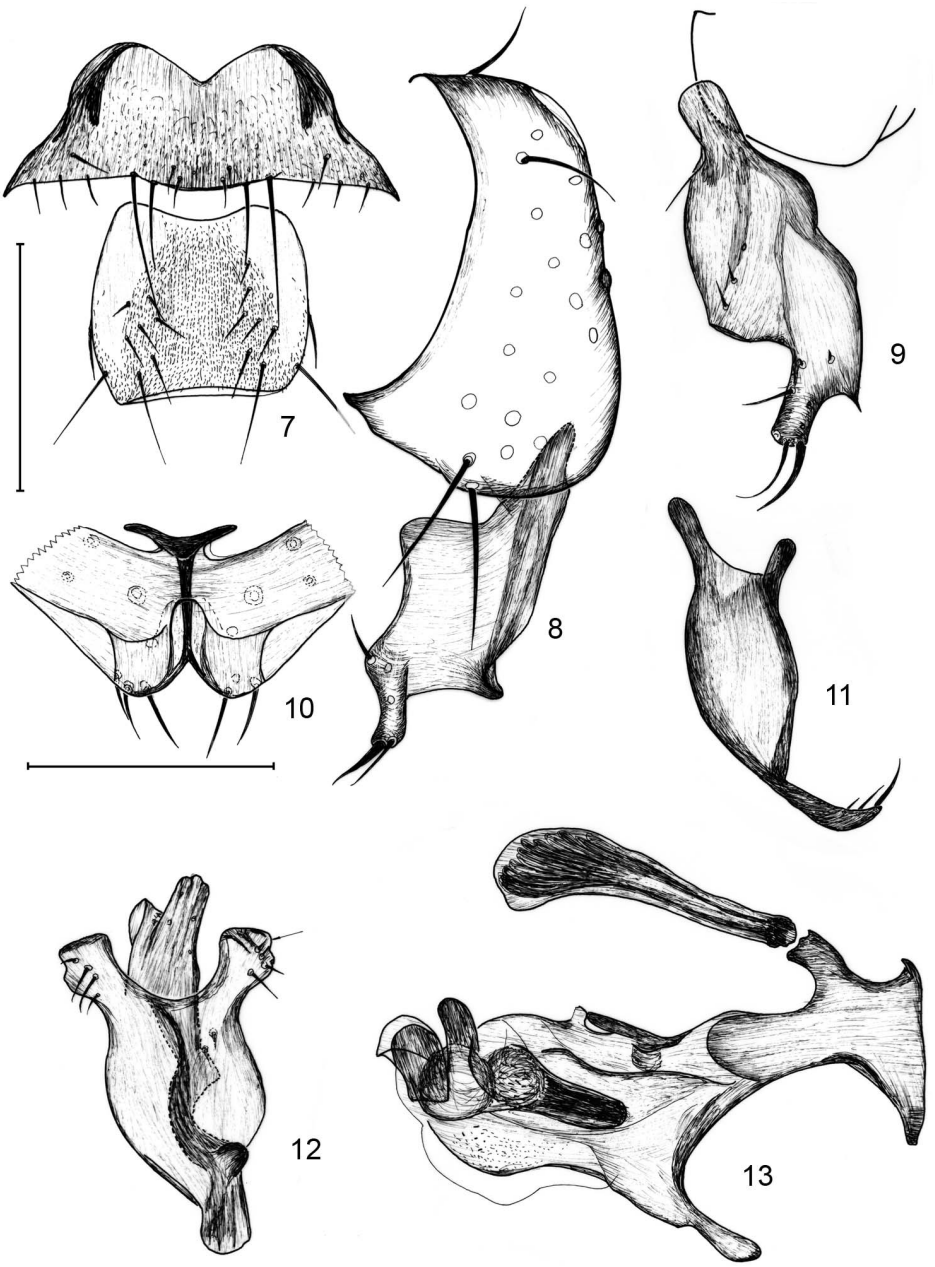
Holotype male (HNHM): Tanzania: Morogoro region, Mikumi National Park, Mikumi Tented Camp, netting over excrement of elephant, Feb 1, 1987, leg. S. Mahunka – T. Pócs – A. Zicsi, No. 8.

Paratypes (HNHM): 1 male (genitalia with abdomen in a plastic microvial with glycerol) 2 females: same as for the holotype.

Measurements in mm: body length 1.65 (holotype), 1.82 (paratype male), 1.75, 1.80 (paratype females), wing length 1.45 (holotype), 1.59 (paratype male), 1.65, 1.70 (paratype females), wing width 0.63 (holotype), 0.66 (paratype male), 0.67, 0.69 (paratype females).

Head, mesonotum (incl. scutellum), abdomen, as well as legs yellow.

In males 6 pairs, in females 7 pairs of interfrontal setae. Postocellars well developed but also a true extremely long postvertical pair behind the level of medium long *occe* and *occi* present. First flagellomere rounded, aristal cilia nearly 0.02 mm.



Figs 7–13. *Chaetosifemur longiventre* sp. n., male abdomen and genitalia. 7 = tergites 2 and 3, 8 = surstylus in broadest extension (a sublateral view) with left half of epandrium, 9 = surstylus, submedial view, 10 = subepandrial sclerite and modified cerci, inner (= anterior) view, 11 = surstylus, true lateral view, 12 = hypadrium, dorsal view (arrow shows insertion point), 13 = phallus and phalllapodeme, lateral view. Scales: 0.4 mm for Fig. 7, 0.1 mm for Figs 8–13

Wings yellowish, veins ochre. Second and third costal sections almost equal (0.505 vs. 0.495 mm). Costal setae on first section 0.05 mm, on second section half as long. Costagial seta 0.14–0.15 mm long. Discal cell long, edged, inter-crossvein section of M 0.18 mm, dM-Cu 0.07 mm, M reaches wing margin as a faint fold.

Fore femur basally with 2 pairs of long setae (0.11 mm and 0.075 mm long on holotype), the slightly more distal pair longer; these long setae thickened in males. Mid trochanteral seta rather strong. No mid ventral seta on mid tibia, ventroapical rather strong, no ventral row of setae even on male. Dorsal half of mid tibia with strong anterodorsals at 18/47, 41/47, a small more dorsal at 38/47, an anterior at 35/47, strong posterodorsals at 20/47 and 40/47; a strong anterior seta almost at apex. Mid basitarsus with rows of strong anteroventral and posteroventral setae. Hind tibia without dorsal preapical seta, ventral spur indistinct.

Abdomen long, 1.43 mm when stretched, slightly more than half as long when dry (paratype male). Male tergite 2 short and broad (0.33 x 0.30 mm), with only 2 pairs of long submedial marginal setae, tergite 3 quadrate, much narrower than tergite 2 (Fig. 7). Tergite 5 forms half of a ring, much narrower than abdomen. Male sternite 5 very small: 0.07 mm long, 0.15 mm broad only.

Male postabdomen and genitalia (Figs 8–13) rather small. Synsternite 6–8 partly hidden under tergite 5 (i.e. even smaller). Sternite 6 part laterally with a pair of black processes, left one continued backwards (i. e. cranially) that is 0.06 mm long, right one directed caudally, 0.03 mm long only. Sternite 8 portion of synsternite 6–8 at longest only 0.095 mm. Tergal parts of the complex membranous though discernible.

Male genitalia as described above.

Female tergites 3 and more distal ones reduced, only 1/3 as broad as abdomen. Sternites ca. 2/3 width of tergites. Epiproct with a pair of long (0.05 mm) setae. Cerci short with several long hair-like setae. All the sclerites of the 6th and 7th segments transverse, i.e. more than twice broader than long. Sternite 8 forms half of a circle, tergite 8 thin U-shaped, only 0.02 mm medially. Both epiproct and hypoproct are very short. Cerci only as long as broad with several medium-long setae. Spermathecae pear-shaped, their proximal end slightly concave. Sclerotised ducts J-shaped, that of the paired spermathecae not fused but touching in distal half. Both spermathecae and ducts (to base of "J") 0.05 mm high.

Etymology. The abdomen of this new species is rather long, when stretched (when alive), so hence the name 'longiventre' (long bellied).

Paraminilimosina gen. n.
(Figs 14–29)

Type species: *P. miraculisterna* sp. n.
Gender: feminine.
Other included species: *P. elephantis* sp. n., plus two undescribed spp. (Tanzania, India).

Genal seta short but distinct, postocellar setae longer.

Costa overruns apex of R_{4+5}. Alula small and narrow.

Fore femur without long setae basally. Mid tibia with more long setae but without a posterodorsal seta in basal 1/3–2/5 (Fig. 26). Hind tibia without thick apical spurs.

Abdominal tergites (sclerites) desclerotised *and* with extremely long marginal tergal setae on tergite 2 and similar setae also on desclerotised segments (Figs 18, 20). Sternite 2 with a peculiar

structure (Figs 16–17). Male sternite 5 long (about as long as broad, Figs 14–15), medio-caudal part various, but without a paired comb of short stiff setae.

Epandrium (Figs 24, 29) with long setae subdorsally and caudally. Hypandrium without medial process (Figs 24, 29). Surstylus (Figs 27, 29) much longer than high, both ends rounded, no basal setae, but several long setae on caudal half. Postgonite various, usually with broad base, setulae on postgonite short.

Female postabdominal sclerites usually well sclerotized, e.g. tergite 8 not divided. Spermathecae (1+2, as usual) globular, paired ones slightly cylindrical (Fig. 22), with long thin sclerotized ducts in both the unpaired and paired spermathecae, sclerotized and membranous ducts separated by small spherical vessels.

Etymology. The new genus is named after its resemblance to the genus *Minilimosina* ROHÁČEK, 1983, although I am not sure whether they are closely related.

In the HNHM there are specimens of another species from Nigeria and Tanzania (from elephant dung) and a fourth one from India (inter-crossvein section of M only slightly longer than dM-Cu, otherwise related to *P. elephantis*).

Paraminilimosina elephantis sp. n.
(Figs 14–15,18–19, 23–25)

Holotype male (HNHM): Thailand: Mae Taeng Elephant Camp, 50 km N of Chiang Mai, on elephant dung, Oct 29, 2004, No. 5, leg. L. Papp & M. Földvári.

Paratypes (HNHM): 7 males 4 females: same as for the holotype; 15 males 16 females: Mae Ta Man elephant park, 45 km N from Chiang Mai, swept on elephant dung, 01. XII. 2003, No. 25, leg. M. Földvári, L. Peregovits & A. Szappanos; 1 female: Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, 2004, No. 42, leg. L. Papp & M. Földvári.

Measurements in mm: body length 1.15 (holotype), 1.10–1.17 (paratype males), 1.15–1.27 (paratype females), wing length 1.08 (holotype), 1.05–1.15 (paratype males), 1.10–1.20 (paratype females), wing width 0.52 (holotype), 0.50–0.53 (paratype males), 0.51–0.54 (paratype females).

Head, mesonotum (incl. scutellum), abdomen and legs all yellow, only first flagellomere darker.

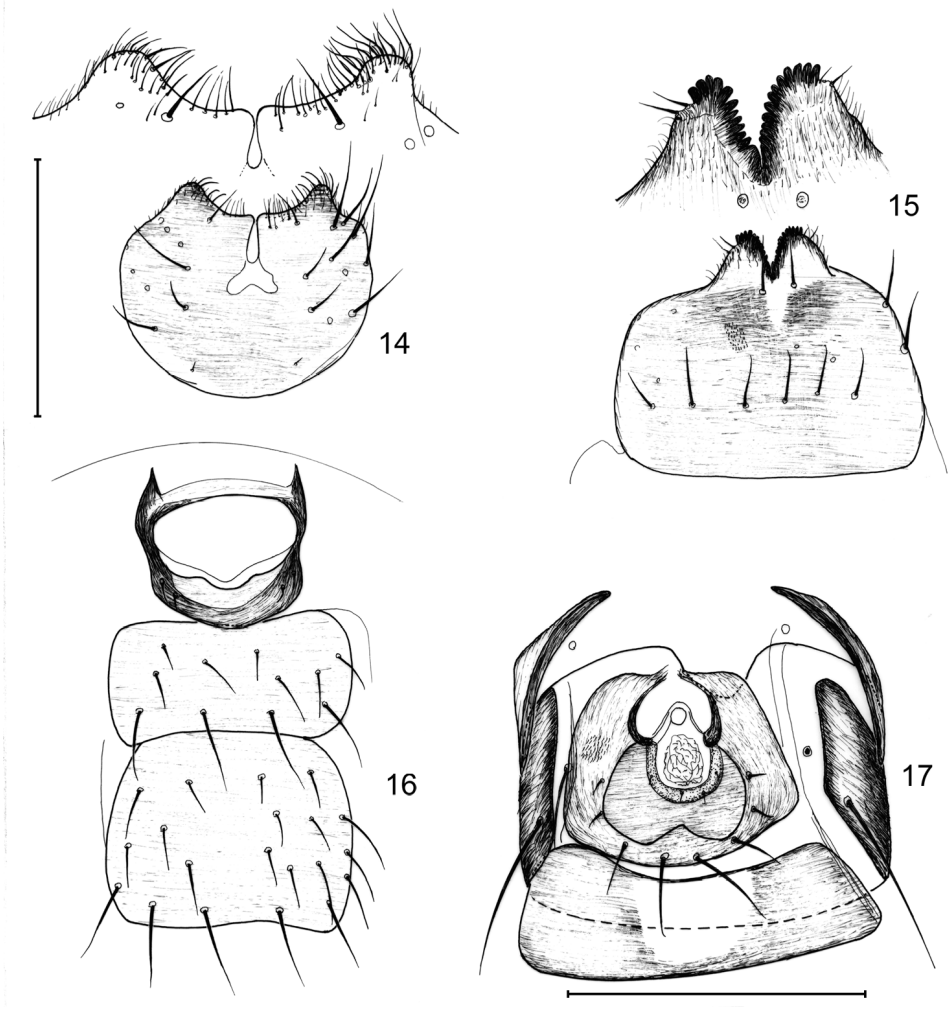
Facial plate short, mouth margin upturned. All head setae short, *occe*, *occi* and postvertical pair all very short and thin. Three pairs of short and fine interfrontals. Genal seta very weak. Scape medial seta minute, pedicel setae longer. First flagellomere rounded with short cilia. Arista subdorsal-sublateral on first flagellomere. Aristal cilia only 0.01 mm long.

Only 4 rows of acrostichal microchaetae. Anterior dorsocental seta only slightly longer than acrostichals. Anterior katepisternal half as long as posterior pair. No prescutellar acrostichal seta.

Wing membrane light greyish yellow, veins ochre. Costa ends well distal to apex of R_{4+5}. Second costal section less than half as long as third (0.22 mm vs. 0.47 mm). Vein R_{4+5} straight, rarely slightly curved up. M nearly reaches wing margin as a faint fold (shadow of a vein). Costal setae on first section as short as on second section (ca. 0.015 mm). Inter-crossvein section of M vein is not much longer than hind crossvein (0.12 mm vs. 0.07 mm on holotype). Anal vein sinuate. Alula small.

All legs yellow (ochre). Mid tibia without mid ventral seta or any longer setae ventrally, ventroapical seta normal.

Abdominal terga 1 and 2 unevenly sclerotised, particularly so for their border, tergite 2 caudally with about 4 pairs of very long setae, sternite 2 comparatively simple (Fig. 18, cf. Fig. 20), best described as one-and-a-half of rings. Tergite 3 wholly membranous but at least 3 pairs of long setae emerge from membrane (Fig. 16). Sternites 3 and 4 rather broad (large). Male sternite 5 (Fig. 14) long, i.e. about as long as broad, medially with a deep incision; caudal setae rather short. Synsternite 6–8 (Fig. 19) not continued to the right side of abdomen; there abdomen membranous.



Figs 14–17. *Paraminilimosina* species, male abdomen. 14–15 = *P. elephantis* sp. n.: 14 = sternite 5, upper outset: caudal part in higher magnification, 15 = sternites 2–4; 16–17 = *P.miraculisterna* sp. n.: 16 = sternite 5, upper outset: caudal part in higher magnification, 17 = sternites 2–3 (S3 setae omitted). Scales: 0.2 mm for Figs 14, 16, 0.1 mm for Figs 15, 17 and for the outsets

Epandrium with a pair of large lateroventral processes (modified cerci) and with several long setae dorsally and caudally. Hypandrium short. Surstylus (Figs 23–24) much longer than high with long basal setae but without a thick thorn anywhere. Postgonite (Fig. 25) very broad based, apical 1/3 narrow with some short setae. Basiphallus not high and without any ventral appendage. Distiphallus long, rod-like, dorsal subapical process short. Phallapodeme long (Fig. 25).

Female cerci long (0.12–0.13 mm) narrow with long hair-like setae (longest 0.13 mm).

Etymology. The specific epithet refers to the fact that most of the type specimens were captured on elephant dung.

Paraminilimosina miraculisterna sp. n.
(Figs 16–17, 20–22, 26–29)

Holotype male (HNHM): Thailand: Mae Ta Man elephant park, 45 km N from Chiang Mai, swept on elephant dung, 01. XII. 2003, No. 25, leg. M. Földvári, L. Peregovits & A. Szappanos.

Paratypes (HNHM): 67 males 45 females: same as for the holotype; 2 males 3 females: Thailand: Mae Taeng Elephant Camp, 50 km N of Chiang Mai, on elephant dung, Oct 29, 2004, No. 5, leg. L. Papp & M. Földvári; 1 female: ibid., Prov. Fang, 5 km N of Mae Ai, on cow pats, Nov 2, No. 16; 1 female: ibid., Ban Namphang, on fresh cow pats, Nov 5, No. 20.

Measurements in mm: body length 1.20 (holotype), 1.15–1.32 (paratype males), 1.22–1.43 (paratype females), wing length 1.18 (holotype), 1.15–1.30 (paratype males), 1.20–1.37 (paratype females), wing width 0.52 (holotype), 0.52–0.54 (paratype males), 0.54–0.59 (paratype females).

Head, thorax and legs light brown, vertex, occiput and abdominal sclerites darker brown.

Both cephalic and thoracic setae longer than in *P. elephantis*. Both outer and inner occipitals as well as postvertical strong, latter 0.065 mm. 5 pairs of interfrontals. Genal seta discernible but very weak.

Eight rows of acrostichal microchaetae. Prescutellar acrostichal large, 0.10 mm long. Anterior katepisternal thin and only 1/4 of the length of posterior pair. Posterior pair very long, 0.185 mm.

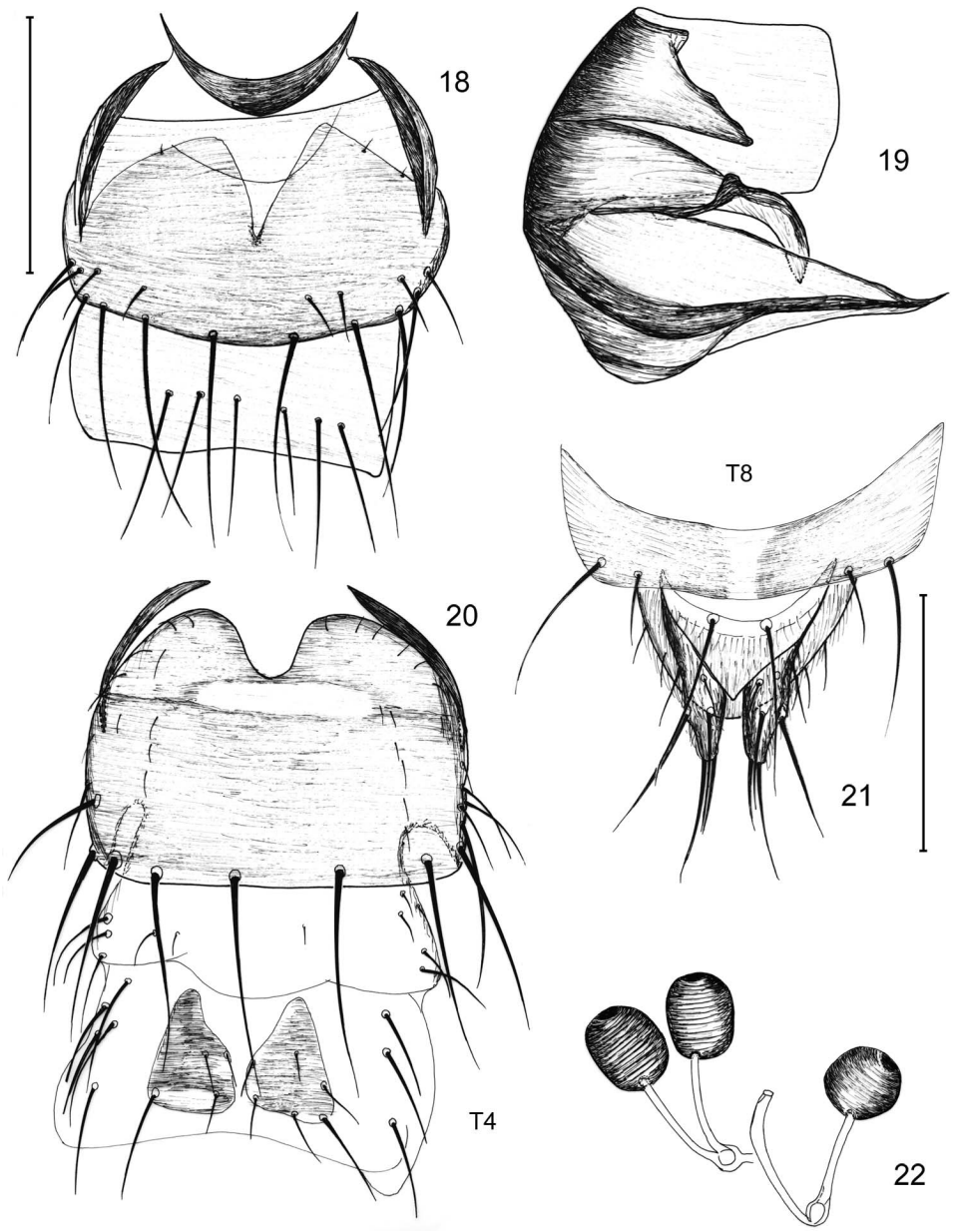
Wings light brownish, veins darker brown. Costa and radial veins thicker than in *P. elephantis*. Second costal section half as long as third (0.23 mm vs. 0.46 mm). Costal setae longer on first section, 0.02 mm. Vein R_{4+5} slightly upcurved, costa ends well distal to apex of R_{4+5}. Inter-crossvein section of vein M much longer than hind crossvein (0.11 mm vs. 0.07 mm).

Mid tibia with a large anterodorsal seta below proximal 1/3 (Fig. 26), a shorter anterior setae below distal third and with a pair of anterodorsal and posterodorsal setae at distal fifth; anterior seta very long. Apex of mid tibia with a small posterior, a large anterior and a strong ventral seta.

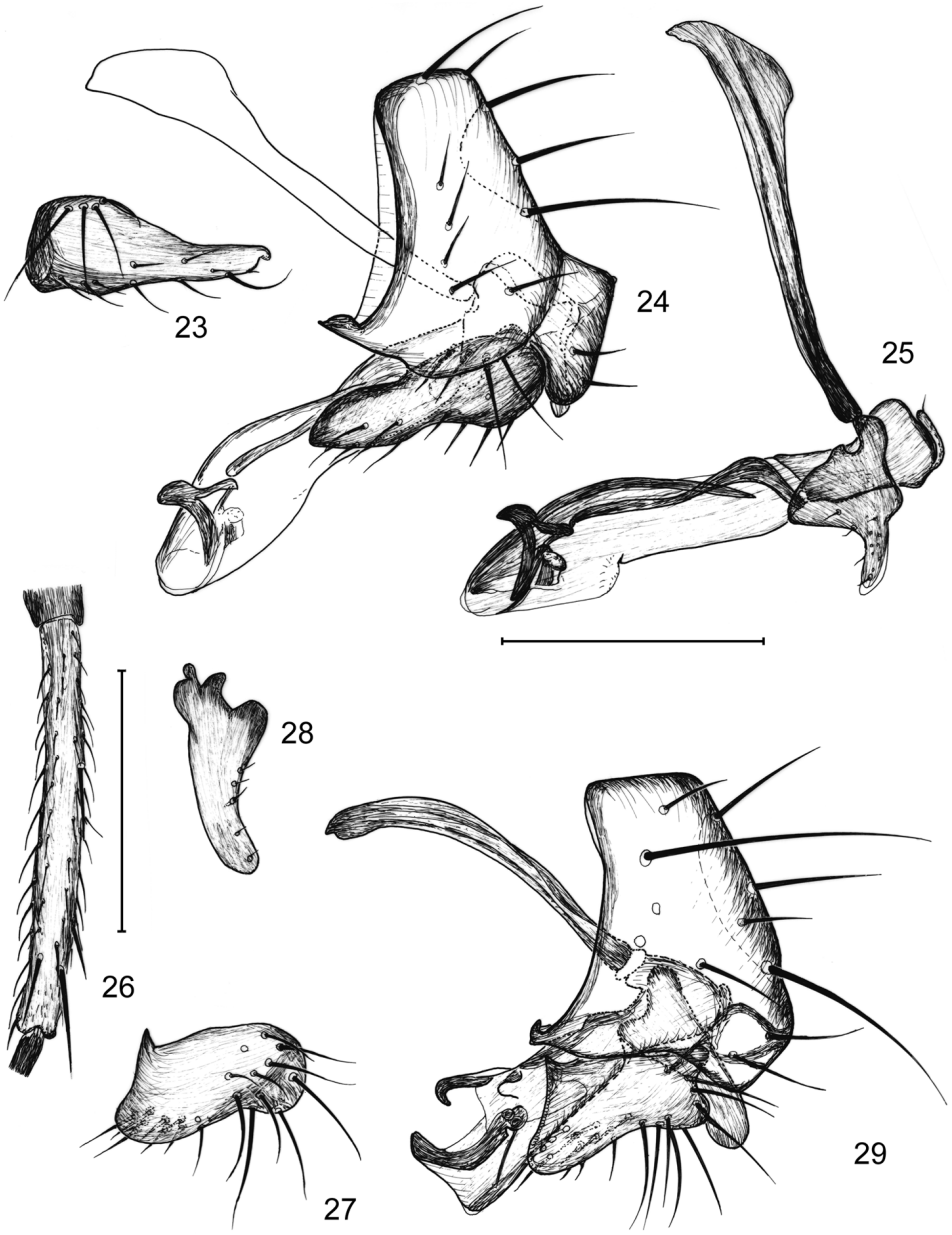
Abdominal tergites 1 and 2 separated by a short but broad medial hole. Tergite 2 with (3)–4 pairs of long marginal setae. No sclerotised parts of tergite 3 and setae also reduced (Fig. 20). A thin, uncertain border visible between segments 3 and 4 dorsally. Tergite 4 bipartite, a pair of subtriangular medial sclerites present. Setae on segment 4 medium long dorsally.

Sternite 2 with an intricate structure (Fig. 17), visible also in lateral view, sternite 3 broad, comparatively long, with bare area medially. Male sternite 5 (Fig. 15) long with sparse setae, mediocaudally projecting into a pair of processes, which bear peg-like prensisetae (very common on genital parts of Drosophilidae) on medial margin and on tip.

Epandrium (Fig. 29) with long setae subdorsally and caudally, subdorsal pair much longer than epandrium. Hypandrium very short, without medial rod. Surstylus (Figs 27, 29) much longer



Figs 18–22. *Paraminilimosina* species, male and female abdomen. 18–19 = *P. elephantis* sp. n.: 18 = tergites 1–3, dorsal view, 19 = synsternite 6–8, ventral view; 20–22 = *P. miraculisterna* sp. n.: 20 = male tergites 1–4 (!), dorsal view, 21 = female postabdomen, dorsal view, 22 = spermathecae (T4: tergite 4, T8: tergite 8). Scales: 0.2 mm for Figs 18, 20, 0.1 mm for Figs 19, 21–22



Figs 23–29. *Paraminilimosina* species, mid tibia and male genitalia. 23–25 = *P. elephantis* sp. n.: 23 = surstylus, broadest extension, 24 = male genitalia, lateral view, 25 = inner genitalia, lateral view. 26–29 = *P. miraculisterna* sp. n.: 26 = right mid tibia, dorsal view, 27 = postgonite, broadest extension (a sublateral view), 28 = surstylus, broadest extension, 29 = male genitalia, lateral view. Scales: 0.2 mm for Fig 26, 0.1 mm for Figs 23–25, 27–29

than high, both ends rounded, no basal setae, but several long setae on caudal half. Postgonite (Figs 28–29) with broad base (although much less broad as in *P. elephantis*), apical half rather narrow with broadly rounded apex. Setulae on postgonite short. Basiphallus similar to that of *P. elephantis* (short, without any ventral projections), distiphallus somewhat shorter and subapical dorsal process much more distinct (Fig. 29). Phallapodeme long and thin.

Female. Abdominal tergite 8 desclerotised but not divided medially (Fig. 21), epiproct with a pair of very long setae. Cerci parallel with the sagittal plane of body, well sclerotised. Cerci with 2 pairs of straight long thick spine-like setae apically, plus a pair of long dorsal and lateral setae each and an additional pair of short sub-basal setae. 1+2 globular spermathecae (Fig. 22), paired ones slightly cylindrical; unpaired as well as paired ones with thin but rather long sclerotised ducts.

Etymology. The specific epithet refers to the intricate and beautiful structure of its sternite 2.

The two species differ rather significantly. Their main characters are summarised in the key below.

1. Only 4 rows of acrostichal microchaetae. All legs yellow (ochre). Structure of abdominal sternite 2 smaller, not visible in lateral view (even under a 100× magnification). 3 pairs of short interfrontals. Female cerci very long with bent long hair-like setae **P. elephantis** sp. n.

– Eight rows of acrostichal microchaetae. Legs light brown. Central part of male and female sternite 2 complex visible in profile as a yellow subshiny pouch. 4 pairs of interfrontal setae. Female cerci with straight thick twistle-like setae **P. miraculisterna** sp. n.

Remarks on *Ceroptera ealensis* VANSCHUYTBROECK, 1951

Material studied: Paratype male: Congo-belge, Eala – 24 –V –1935, 527. J. Ghesquière – P. Vanschuytbroeck det., 1951 "Ceroptera ealensis Vansch." – [red] Para-type – cf. Bull. Inst. Sc. Nat. Belg. "T.XXVII, N°-33, 1951, p. 11".

Yellow, including legs. First flagellomere conical, arista subdorsal but emerges far from apex. Postocellars weak, 3 pairs of weak interfrontal setae. Genae less broad than fore tibia distally. No large genal seta present, peristomals also short. One pair of dorsocentral setae only.1 long posterior katepisternal present, anterior *kepst* very short. Costa overruns end of vein R_{4+5}, the latter straight. First costal section with short (!) setae. Second costal section definitely shorter than third. Alula medium-long, apex rounded. Fore femur simple. Mid tibia without mid ventral seta, ventroapical seta short. No paired setae on mid tibia dorsally in basal half. Hind tibia simple. Pulvilli minute, claws comparatively short and thin. Second abdominal tergite with 2 pairs of long marginal setae. Male abdominal sternite 5 extreme: with a pair of very large transverse comb of thick black thorns caudally. Male surstylus more or less horizontal, with 2 apical sharp processes.

This short description is valid for nominate species *C. ealensis*, if the above paratype is conspecific with the holotype.

Piliterga gen. n.
(Figs 30–37)

Type species: *P. thaii* sp. n.
Gender: feminine.

Head with rather strong cephalic setae, facial plate longer than that of *Paraminilimosina*. 4–5 pairs of longer interfrontal setae. Genal seta strong, occipital pairs as well as postvertical setae long and thick.

Prescutellar setae very strong. Two pairs of katepisternals.

Costa ends at apex of R_{4+5}. On apical part of costa setae emerge on membrane beside (inside) costal vein, both dorsally and ventrally. Anal vein angularly curved (this is clearly visible also in the African species, i.e. this is a true generic feature).

Mid tibia with anterodorsal and posterodorsal setae also in basal half.

Abdomen. Tergites 1 and 2 fused, medially with a weakening of the sclerotisation almost back to the caudal margin of tergite 2 (Fig. 31). Tergite 2 with numerous very long thick setae, medial ones reaching middle of tergite 4. Tergite 3 present as two subtriangular sclerites with a pair of long caudal lateral setae. Tergite 4 quadrate with long caudal setae, tergite 5 asymmetrical much broader than long. Sternite 2 normal. Male sternite 5 caudally with rows of short stiff setae, more precisely mediocaudal emargination of sternite 5 with 3 rows of acute setulae plus some additional similar setulae present there (Fig. 36).

Epandrium with large anal opening and with modified cerci (Figs 34, 37). Epandrial setae rather long, particularly so for a pair of subdorsal and ventro-caudal setae. Medial process of hypandrium indistinct. Subepandrial sclerites very small (narrow). Synsternite 6–8 (Fig. 30) rather small, sternite 7 and sternite 8 parts strongly fused. Ventral part of sternite 6 broadened both cranially and caudally.

Male genitalia small compared to the whole abdomen. Anal plates comparatively large, weakly sclerotised. Surstylus (Figs 32, 37) large if compared to other parts of the genitalia, in 2 lobes, a lateral one (long but not high) and with a large setose medial lobe. Postgonite (Fig. 33) broad based, narrowing apically, with 2 long setae on cranial edge (Fig. 33). Basiphallus high (Fig. 33), distiphallus with a recurved dorsal process (Figs 33, 37). Phallapodeme long.

Female abdominal tergites reduced (see under species description), sternites 2 divided into 3 parts, sternites 3–6 rather large. Abdominal end not protruding (can be hardly stretched and telescopic slightly), almost bulbous. Female cerci short with short straight thick setae. Spermathecae not globular, since proximal part flat or even slightly concave. Sclerotised parts of ducts short but ducts long, so spermathecae can be found far from each other in the abdomen (this is valid also for the paired ones).

Etymology. This new genus is named after the very long setae on the margin of its abdominal tergites.

In the collection of the HNHM there is another species of the genus from the Afrotropical region (Tanzania, Nigeria) from elephant dung and from dung of other large hoofed mammals. That will be described elsewhere.

Piliterga thaii sp. n.
(Figs 30–37)

Holotype male (HNHM): Thailand: Prov. Fang, 5 km N of Mae Ai, on cow pats, Nov 2, 2004, No. 16, leg. L. Papp & M. Földvári.

Paratypes (HNHM): 9 males 7 females: same as for the holotype; 2 males 1 female: Mae Taeng Elephant Camp, 50 km N of Chiang Mai, on elephant dung, Oct 29, No. 5; 3 males 2 females: ibid., Pak Thang Salwang, ca. 30 km N Chiang Mai, pine plantation, weeds & herbs, Oct 29, No. 6; 4 males 3 females: ibid., [Nan Prov.] Ban Namphang, on fresh cow pats, Nov 5, No. 20; 6 males 1 female: ibid., Trang Prov., Ban Yong Sata, on cow pats, Nov 16, No. 33; 1 female: ibid., Ban Liphang, over a shadowed slow brook, Nov 16, No. 34; 1 male 2 females: Ban Nam Lee Pattana, 28. 11. 2003, UV light, No. 20, leg. L. Peregovits, M. Földvári, Á. Kőrösi, A. Szappanos & B. Maklári-Kis; 3 males: Kaeng Krachan, 14. 11. 1994, korhadékból, leg. Mahunka. Vietnam: 3 males 1 female: Sin Chai, "Legendary Place", 10. 11. 2003, No. 1, leg. M. Földvári, L. Peregovits & Á. Kőrösi. Vietnam 1963, leg. T. Pócs: 1 male: Homg Gai, 5. IX.; 1 male: Hanoi, 5. 10.; 2 males: Hanoi, 40 m, l'hôtel, à la lumière, 3. IX.; 3 males: Hanoi, Kim-lien, 6–10. V. 1966, leg. Topál. 2 males: Minh xuan, Luc Yen közelében, Prov. Yen Bai, 300 m, 1976. XII. 2., Matskási – Topál. India: 1 male: Orissa, Konarak, No. 84, leg. Gy. Topál, 26. XII. 1966, on lamp. 58 indiv.

Measurements in mm: body length 1.46 (holotype), 1.30–1.50 (paratype males), 1.35–1.65 (paratype females), wing length 1.29 (holotype), 1.20–1.40 (paratype males), 1.30–1.70 (paratype females), wing width 0.60 (holotype), 0.53–0.67 (paratype males), 0.55–0.78 (paratype females).

Body and legs dark brown, tarsi ochre.

Cephalic (incl. *occe, occi* and postvertical setae) and thoracic setae strong. Genal seta strong, 0.10 mm long on holotype. 4–5 pairs of long interfrontals. Arista dorsal subapical, cilia short (about 0.01 mm).

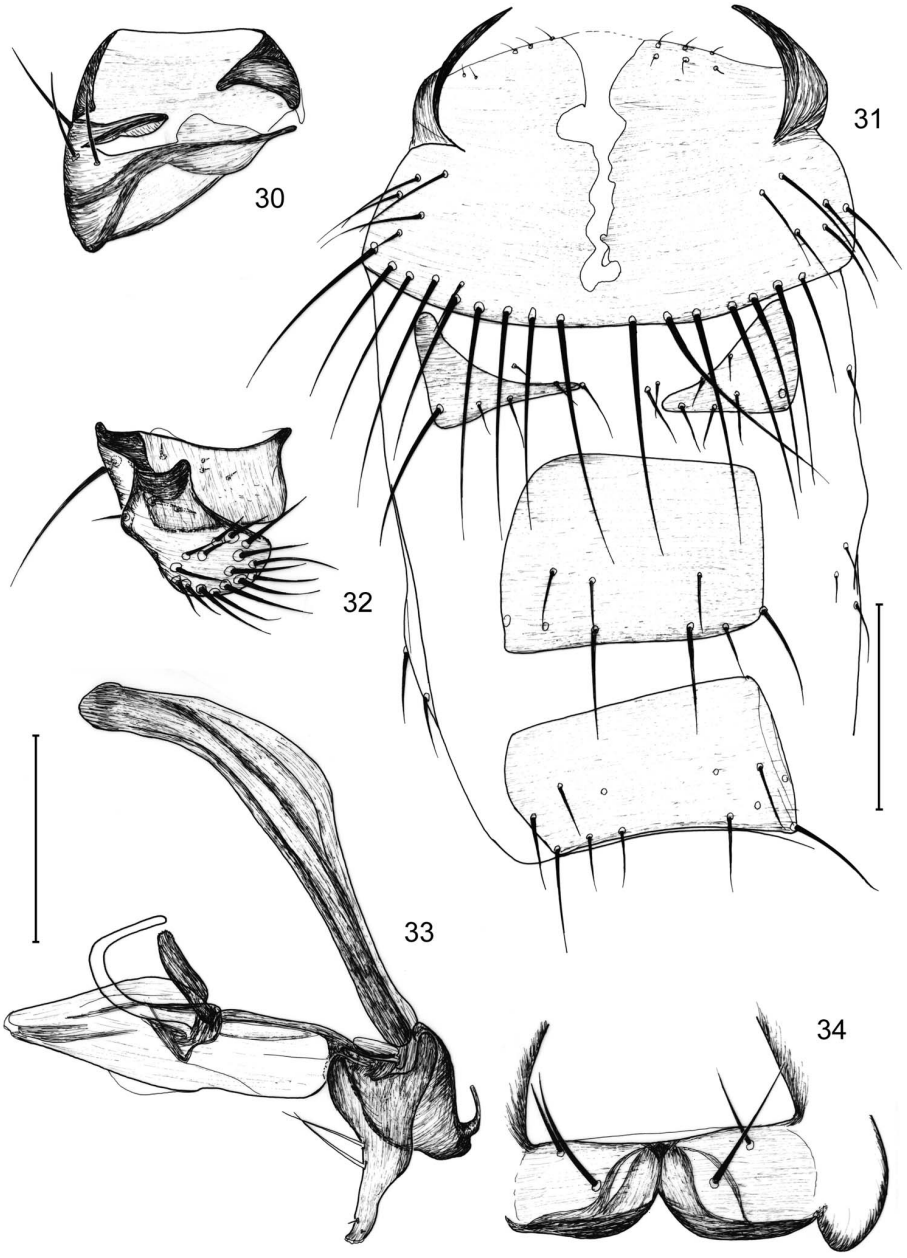
Inner postpronotal pair discernible. Actually 1 dorsocentral pair only, several short dorsocentrals anteriorly but none of them eminent. Prescutellar acrostichal pair long, 0.14 mm. Acrostichals in 8 rows. Anterior katepisternal 1/3 as long as posterior pair.

Wings brownish, veins light brown. Setae on first costal section much longer than those on second section (0.055 mm vs. 0.03–0.035 mm). Second costal section shorter than third (0.34 mm vs. 0.49 mm). Vein R_{4+5} more or less straight, costa ends at its apex. Vein M reaches wing margin, discal cell rather long, edged (inter-crossvein section of M 0.15 mm, dM-Cu 0.09 mm). Cu terminal section visible on a 0.15–0.18 mm long section as a colourless fold. Anal vein angularly curved. Alula very narrow.

Mid tibia without mid seta, ventroapical normal, also an anterior apical distinct. Mid tibia with strong posterodorsal setae at 20/41 and 33/41, a short dorsal at 32/41, strong anterodorsal setae at 12/41, 34/41, a shorter, slightly more anterior one at 30/41 of tibia.

Male terminalia as described above.

Female abdominal tergites 1–2 as in males, tergite 3 not divided but pigmented medial part only 0.02 mm long. Tergite 4 divided medially, tergites 5 to 7 not divided but pigmentation much lighter medially. Tergite 8 with less sclerotised ventrally placed parts (just dorsal to sternite 8). Cerci not protruding with shorter thicker straight setae (longest 0.045 mm). Epiproct large triangular, base nearly 0.10 mm broad, hypoproct short, consequently anus opens obliquely downwards. Spermathecae as described above, sclerotised ducts thin and only 0.02 mm long.

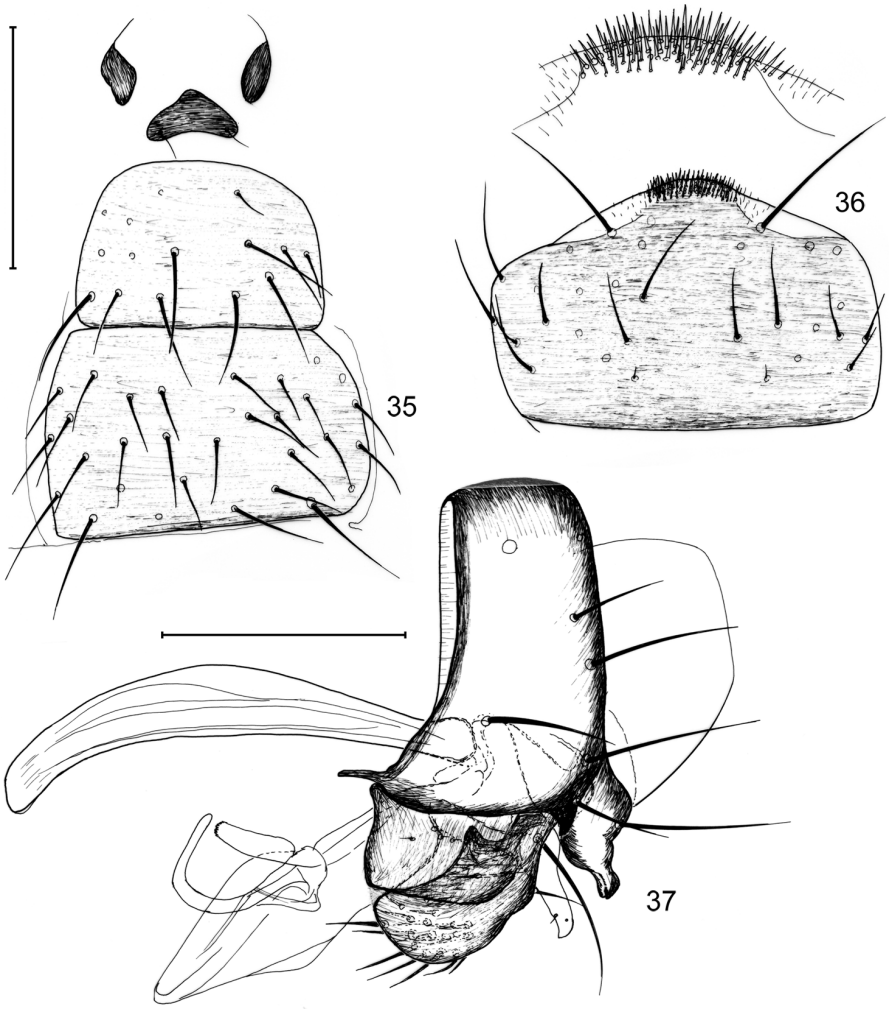


Figs 30–34. *Piliterga thaii* sp. n., male abdomen and genitalia. 30 = synsternite 6–8 in the broadest extension of ventral part of S6, i.e. not an exact ventral view, 31 = preabdomen, dorsal view (tergite 5 slightly flattened), 32 = surstylus, broadest inner view, 33 = inner genitalia, lateral view, 34 = ventral-caudal part of epandrium with modified cerci and subepandrial sclerite, caudal view. Scales: 0.2 mm for Figs 30–31, 0.1 mm for Figs 32–34

Pseudaspinilimosina gen. n.
(Figs 38–47)

Type species: *Pseudaspinilimosina tanzan* sp. n.
Gender: feminine.

Inner occipital setae distinct.
0–1 + 3 *dc* pairs, though anterior 2 pairs short.
Costal vein just reaching end of vein R_{4+5}.



Figs 35–37. *Piliterga thaii* sp. n., male abdomen and genitalia. 35 = sternites 2–4, 36 = sternite 5, upper figure: medio-caudal part in higher magnification (slightly stretched), 37 = genitalia, lateral view. Scales: 0.2 mm for Figs 35–36, 0.1 mm for Figs 37 and for upper figure of 36

Hind tarsi with thickened basitarsus and 2nd tarsomere. Anterior or anteroventral spur, plus dorsal/anterodorsal preapical thorn on hind tibia, and also a small ventroapical spur present. Ventroapical spur on mid tibia short.

Abdominal tergites 1 and 2 fused, well sclerotised, tergite 2 caudally with several extremely long setae (Fig. 38). Tergite 3 reduced to 2 small lateral scales, tergite 4 to a pair of quadrate medial plates, the latter bear also long setae. Tergite 5 quadrate with long setae. Abdominal sternites desclerotised medially but not reduced in size (Fig. 39), sternite 2 almost bare. Male sternite 5 (Figs 39–40) large long, dilated medio-caudally, that area bears dense short setae and a separated well sclerotized medio-caudal plate.

Synsternite 6–8 (Figs 38–39) very characteristic. There are sclerotised parts also on the right (tergal portion), and there is a thin lath connecting those tergal parts to sternite 7 portion under the dorsal postabdominal membrane. Sternite 8 portion large.

Male genitalia small (see Fig. 38 at bottom, Fig. 42). Epandrium (Fig. 42) rather short, anal opening large, dorsally, sub-dorsally, caudally and ventrally with long setae. Hypandrium (Fig. 43) asymmetrical, curved to the right, forms a broad Y, lateral arms arcuate, medial part broad, curved up apically, apically with a narrow dark projection; processes to postgonites long. Subepandrial sclerite (Fig. 46) broad but short.

Surstylus (Figs 42, 45) large if compared to other genital part, much higher than long, apical part looks serrate as a consequence of small pegs emerging there, ventro-caudally with a row of short curved prensisetae. Postgonite (Figs 44, 47) short and simple. Basiphallus short and high. Distiphallus very large if compared to other genital parts. A long dorsal appendage of distiphallus (Figs 41–42, 47) present, which is longer than hypandrium. Distiphallus terminates in 2 pointed processes.

Female postabdomen not telescopic, only slightly retractable when at rest. Epiproct with 2 pairs of setae, apical pair particularly long. Both epiproct and hypoproct short. Cerci longer than broad with very long (0.09 mm) undulately bent apical pair of setae, plus 4 pairs of medium-long setae.

Spermathecae very small, not completely globular, proximo-distally slightly flattened, still not tyre-shaped. Sclerotised parts of spermathecal ducts not fused, c. 0.05 mm long. Ripe eggs long, large, c. 0.38–0.42 × 0.10–0.11 mm., white, chorion thin.

The differentiating characters to *Aspinilimosina* L. PAPP, 2004 can be summarised as follows:

Aspinilimosina	Pseudaspinilimosina
Costa overruns end of vein R_{4+5}	Costa just reaching end of vein R_{4+5}
All hind tarsomeres broadened (thickened)	Hind tarsi with thickened basitarsus and 2nd tarsomere
Inner occipital setae reduced	Inner occipitals distinct
2 pairs of dc, anterior pair strong	0–1+3 dc pairs, though anterior 2 pairs short
Anterior or anteroventral spur, plus dorsal/anterodorsal preapical thorn on hind tibia	Also a small ventroapical spur present
A distinct ventroapical spur on mid tibia	Ventroapical spur on mid tibia short
Oriental region	Afrotropical region

Pseudaspinilimosina tanzan sp. n.
(Figs 38–47)

Holotype (HNHM): Tanzania: Morogoro region, Mikumi National Park, Mikumi Tented Camp, netting over excrement of elephant, Feb 1, 1987, leg. S. Mahunka – T. Pócs – A. Zicsi, No. 8.

Paratypes (HNHM): 12 males 8 females: same as for the holotype.

Measurements in mm: body length 1.34 (holotype), 1.20–1.40 (paratype males), 1.25–1.45 (paratype females), wing length 1.32 (holotype), 1.25–1.40 (paratype males), 1.26–1.45 (paratype females), wing width 0.55 (holotype), 0.54–0.60 (paratype males), 0.54–0.62 (paratype females).

Head and thorax light brown, sclerites of abdomen slightly darker, legs brownish yellow. The true body length can not be judged on dry specimens. For instance, the length of head + thorax of the holotype 0.79 mm, but abdomen maybe other c. 0.75 mm when alive.

Lunule triangular 0.08 mm long. Cephalic and thoracic setae rather long, postvertical pair 0.12 mm long. Occipital pairs not enlarged but distinct (5)–6 pairs of interfrontal setae. Scape setae short and thin, pedicel setae long. First flagellomere rounded apically, arista subdorsal-sublateral, emerges far from apex of first flagellomere. Aristal cilia longer than 0.02 mm.

Mesonotum with 2 pairs of short anterior dorsocentral setae. Also presutural seta distinct. Anterior katepisternal minute.

Wings brownish, veins light brown. Costa ends at apex of R_{4+5}. Second costal section much shorter than third (0.34 vs. 0.49 mm). Costal setae on first section much longer than on the second (0.05–0.055 mm and 0.02 mm). Inter-crossvein section of M almost twice longer than dM-Cu (0.15 mm vs. 0.08 mm). Anal vein gently sinuate. Alula very small but apex rounded.

Fore tibia with a long, thin ventral seta near base, in both sexes. Mid tibia without mid ventral seta or row of setae, ventroapical long and also a strong apical anterior seta present. Dorsal half of mid tibia with strong anterodorsals at 14/36, 28/36, a strong dorsal at 31/36, a short dorsal at 29/36, posterodorsal only at 31/36 of tibia. Hind tibia with a long thick dorsal preapical seta, the huge apical spur anterior rather than ventral. Hind basitarsus very broad but also 2nd tarsomere dilated.

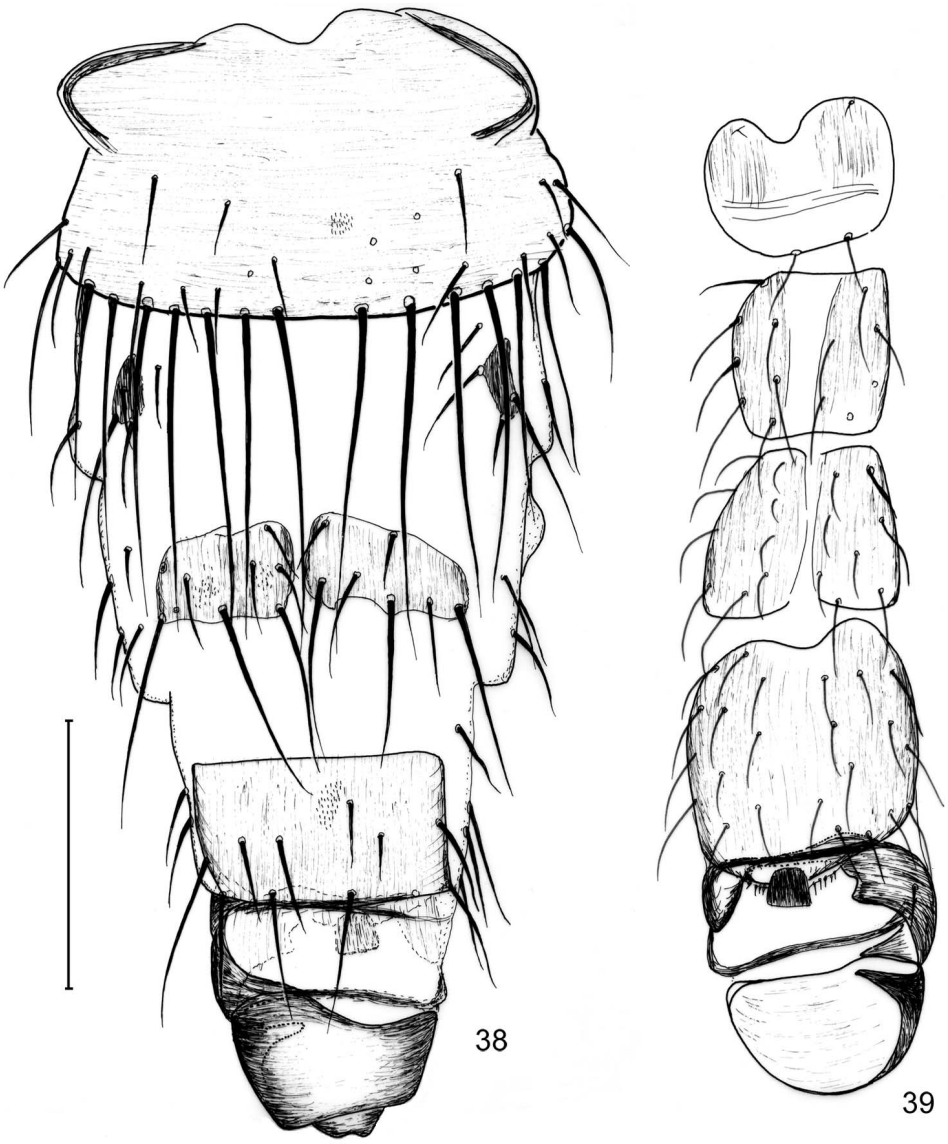
Male postabdomen and genitalia as described above.

Female tergites 6 and 7 transverse, i.e. more than twice broader than long, but not divided. Sternites 3 to 6 narrow, 0.06–0.08 mm broad. Tergite 8 U-shaped, only 0.02 mm long medially. Female cerci not much protruding, rather short, see above. Eggs very large if compared to body length (c. 0.40 vs. 1.40 mm).

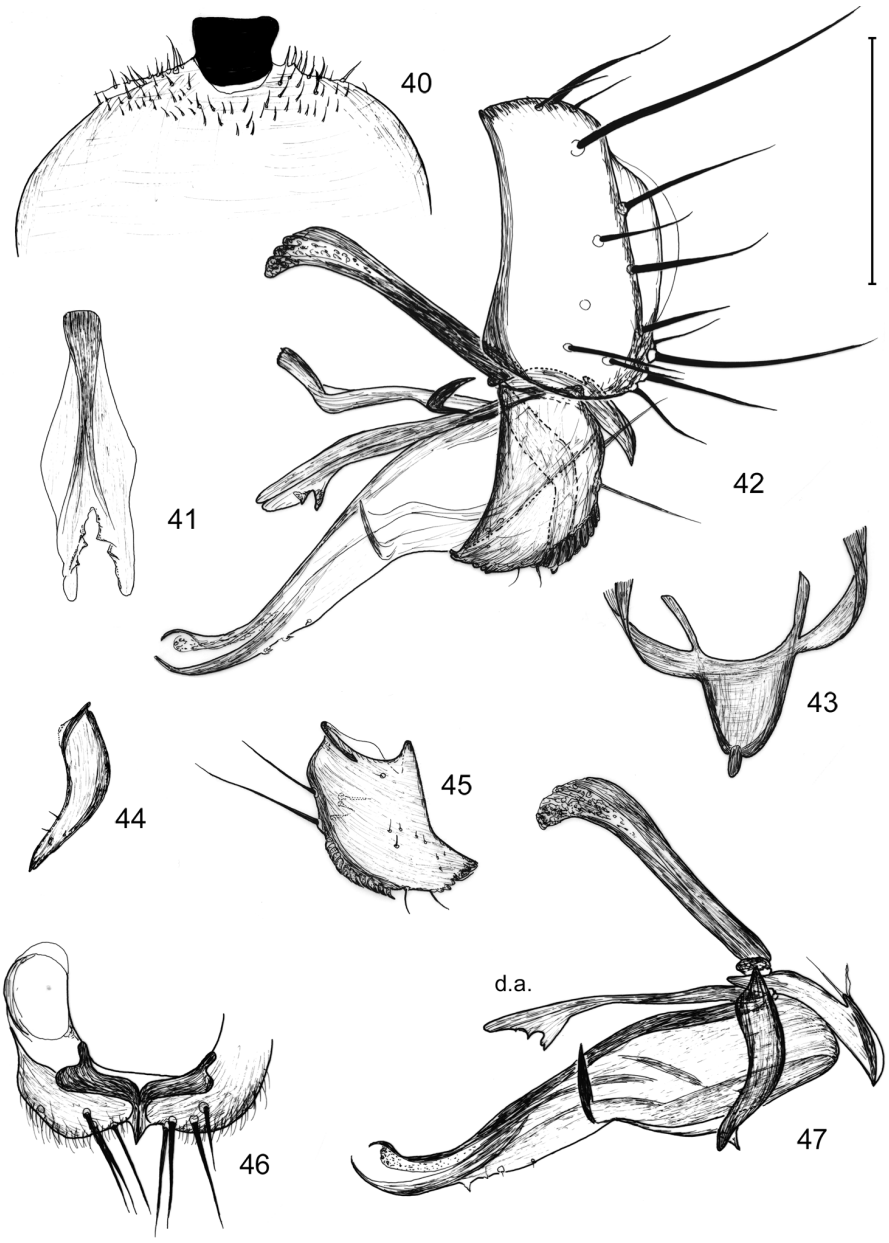
The *Spinilimosina* genus complex

Big headed, robust flies with a broad scutellum. A strong upcurved genal seta present. Postvertical setae weak (but *occi* or both occipital pairs maybe strong). Only 1 pair of dorsocentral setae. Wing mostly with long setae on 1st costal section, vein R_{4+5} strongly curved up, apex far from wing tip. Costal vein ends at the apex of R_{4+5}. Alula narrow. (3)–4 to 5 pairs of short or medium-long interfrontal setae.

Presently I cannot exclude that resemblance of the three genera is only superficial. At least I did not find true synapomorphies in the male genitalia. However, reduction of female postabdominal sclerites (beginning with the 6th ones) is probably a true synapomorphy (*Eximilimosina* and *Paramera* spp.).



Figs 38–39. *Pseudaspinilimosina tanzan* sp. n., male abdomen. 38 = abdomen in dorsal view, 39 = sternites, ventral view. Scale: 0.2 mm



Figs 40–47. *Pseudaspinilimosina tanzan* sp. n., male postabdomen and genitalia. 40 = caudal part of sternite 5, long setae omitted, 41 = dorsal sclerite of distiphallus, dorsal view, 42 = male genitalia, lateral view, 43 = hypandrium, dorsal view, 44 = postgonite in broadest (i.e. a sublateral) view, 45 = surstylus, inner (medial) view, 46 = ventral part of epandrium with subepandrial sclerite, modified cerci and base of right surstylus, 47 = inner genitalia, lateral view (d.a.: dorsal appendage of distiphallus). Scale: 0.1 mm for all

Eximilimosina gen. n.
(Figs 48–63)

Type species: *Paralimosina eximia* L. PAPP, 1991
Gender: feminine

Head setae comparatively short, genal seta conspicuous dorsally curved. No subocular (preocular) setae (not even the shortest setulae there). Medial seta of scape large, as long as pedicel. First flagellomere not conical, rounded apically, with long hairs, arista subapical (Fig. 48).

Thorax. Medial (inner) postpronotal seta indistinct. Notopleurals rather posterior, presutural seta above anterior notopleural. 1 posterior dorsocentral pair. 2 supra-alar pairs, but anterior one is 0.07 mm only, 1 intra-alar above wing base, l supracoxal seta. Prescutellar acrostichal seta very short (only 0.07 mm long on type species). Anterior katepisternal usually much shorter than posterior. Scutellum ca. twice broader than long, with the usual lateral and subapical pairs of macrosetae.

Wings short and rounded. Costagial seta comparatively short and thick. Setae on first costal section only 1.5 times as long as those on second section. Second and third costal sections equally long. Vein R_{4+5} straight or almost straight in basal half, simply upcurved in apical half. Discal cell rounded or edged, in latter case vein appendage hardly discernible. Alula narrow.

Legs thick, strong. Fore tibia with an anterodorsal row of thick setae, which continued in a crescentic row of anterodorsal and anterior setae. Mid tibia with a distinct mid ventral seta. Dorsal half of mid tibia (Fig. 49) with 3 very strong anterodorsal and (1)–2 particularly strong posterodorsal setae, forming 2 pairs, i.e. paired setae present in basal half (Fig. 49). A strong ventroapical present also on male mid tibia, but no ventral row of thick setae on male mid tibia. Mid basitarsus with strong rows of anteroventral and anterodorsal setulae, but no seta longer than others. Hind tibia with a distinct though not long ventroapical spur (Fig. 50), dorsal preapical seta indistinct. Hind basitarsus ventrally both proximally and distally with a thick seta each (Fig. 50). Pulvilli minute.

Abdomen. Tergites short and broad (e.g. third abdominal tergite 5 times as broad as long). Tergite 2 desclerotised and more or less depigmented medially. Tergites sparsely setose, setae on posterior corners shorter than the tergite bearing them. Male abdominal sternites broad and broadening posteriorad (sternite 5 almost as broad as abdomen), their setae all short.

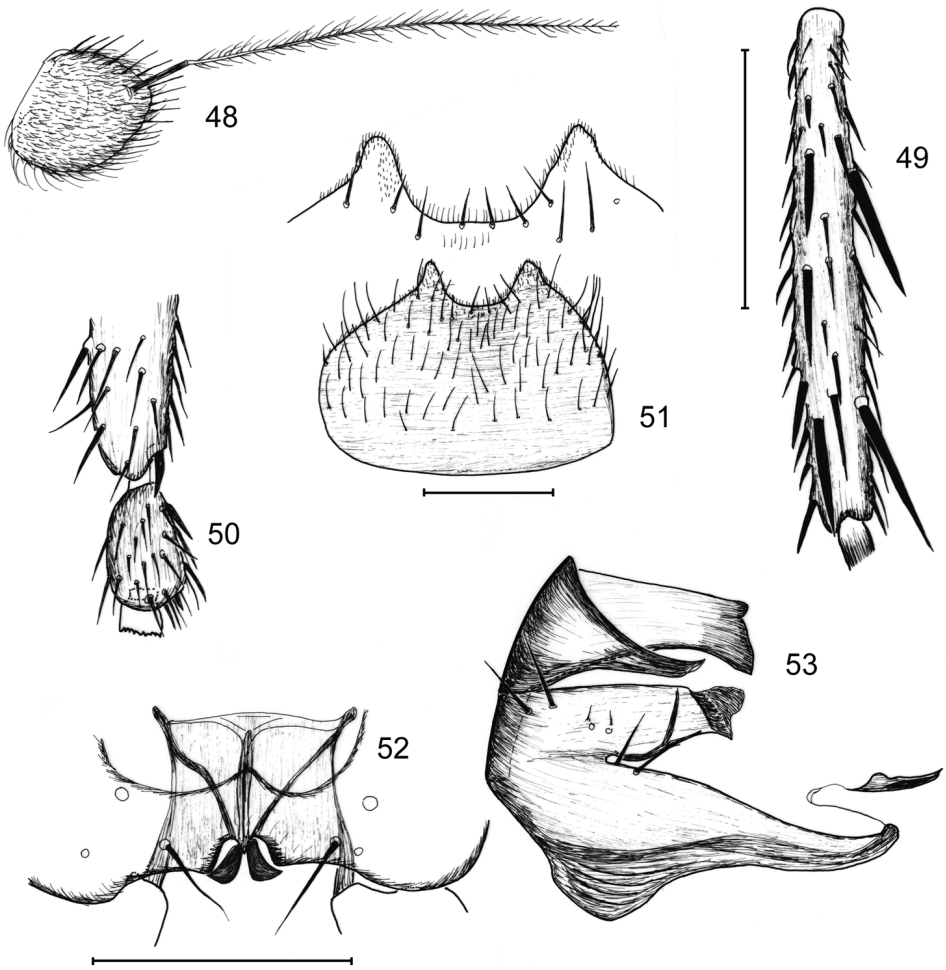
Male sternite 5 comparatively long. Synsternite 6–8 (Fig. 53) not long as a whole, sternite 8 part comparatively small. Some sclerotised vestige of tergite 7 clearly discernible (Fig. 53). Medially placed part of sternite 7 nearly perpendicular to the plane of sternite 5.

Epandrium strongly asymmetrical, right half much larger (longer) than left half. Epandrium sparsely setose, some setae thick but none of them long, i.e. no dorsal pair of long macrochaetae. Anal opening rather large. Epandrium with ventral part (ventral to anal opening, Fig. 52) rather high, that part supports subepandrial sclerite, which is only slightly higher. Hypandrium (Figs 55, 60) with a strong ventral process. Lateral arms of hypandrium thin but long and strong, inserted to epandrium and surstyli cranially to the level of ventral process. Medial part of hypandrium rather short (Fig. 55 cf. Fig. 57).

Surstylus (Figs 56, 62) structurally same as in *E. eximia* L. PAPP : cranial (basal) half of surstylus less strongly sclerotised bare or with a few short setae only; caudal (apical) part with an apical thorn and several long setae. Basiphallus short and rounded without ventral appendage (Fig. 57). Distiphallus compact medium-long. Sperm duct joins phallus rather dorsally. Phallapodeme long and thin. Postgonites with comparatively broad base (Figs 54, 59), apical half much narrowed, curved cranially, apex maybe pointed. Ejaculatory apodeme distinct, L-shaped (Fig. 58).

Female abdomen (based on the holotype of *E. elegantula* in situ and a female from India, see below). Preabdominal sternites broad quadrate, but much less broad than in *Paramera*: even sternite 5 narrower than maximum half width of abdomen (subbasally). Tergite 5 only slightly longer than tergite 4.

Postabdomen mostly membranous, wholly retractable into segment 5 (telescopic), not visible when retracted. Postabdominal tergites and sternites (incl. 6th) divided into 2 or 3 longitudinal weakly sclerotised plates. Cerci very small, about twice longer than broad, 1 dorsal and 1 apical medium long or very long undulately bent setae plus 1 rather long lateral seta on each. Epiproct and



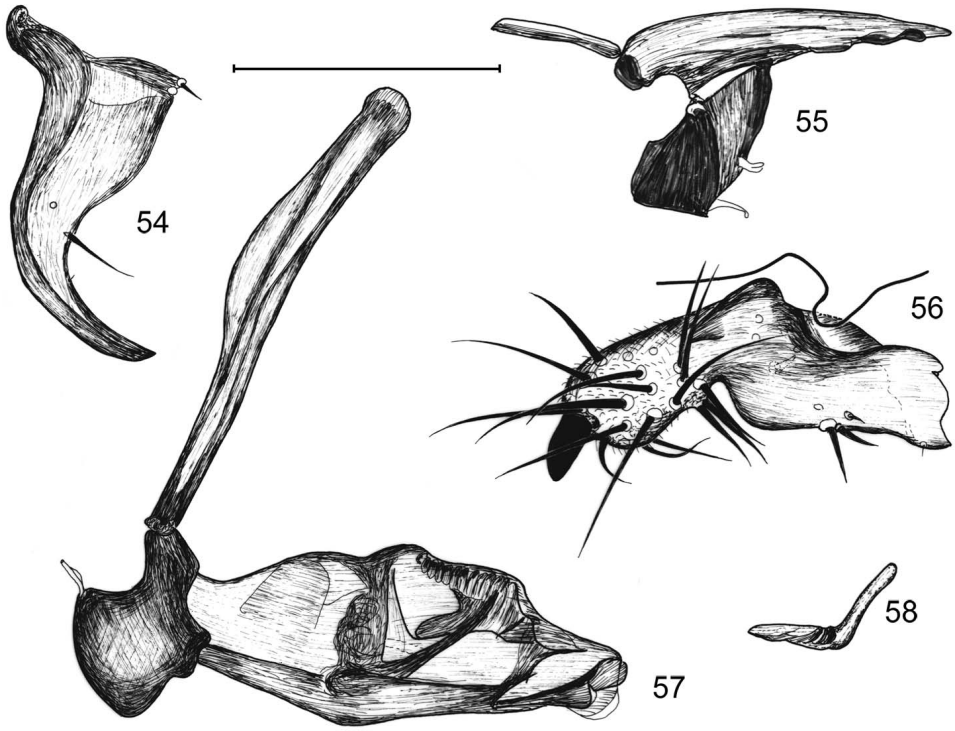
Figs 48–53. *Eximilimosina thailandica* sp. n. 48 = first flagellomere with arista, lateral view, 49 = mid tibia, dorsal view, 50 = end of hind tibia and hind metatarsus, anterior view, 51 = male sternite 5, upper figure: medio-caudal part in higher magnification, 52 = ventral part of epandrium with subepandrial sclerite and modified cerci, caudal view, 53 = male synsternite 6–8, ventral view. Scales: 0.2 mm for Figs 48–50, 53, for upper figure of 51, and for Fig. 51, respectively, 0.1 mm for Fig. 52

hypoproct very small like in *Paramera* females. I found only 1 of spermathecae in the single female dissected (surely not lost, probably an aberration). Spermathecae flattened though not tyre-shaped, distal end with an additional ring; ducts not sclerotised, its bulb very close to spermatheca, i.e. that part of duct very short.

Etymology. The genus name is composed of the specific epithet of its type species (*Eximi-*) and *Limosina*, the former large unifying genus of Limosininae.

I described *Paralimosina eximia* in 1991, although I knew even at that time, that it is not a *Paralimosina* species. Actually I do not know whether *Paralimosina* and this new genus are closely related or not. The large ventral process of hypandrium (?a shared apomorphy) alone is not enough to make such a proposal. Differentiating features to *Paralimosina* can be summarised as follow:

Paralimosina: vein R_{4+5} sinuate, anepimeral swelling usually less protruding, posterior lobe of male surstylus smaller and mostly without large spine, base of postgonite not broad, postgonite narrower longer, apex usually not sharp (see



Figs 54–58. *Eximilimosina thailandica* sp. n., male genitalia. 54 = postgonite in broadest (i.e. a sublateral) view, 55 = hypandrium, lateral view, 56 = surstylus, broadest (sublateral) view 57 = phallus and phallapodeme, lateral view, 58 = ejaculatory apodeme. Scale: 0.1 mm for all

e.g. ROHÁČEK & PAPP 1988: figs 23, 38, etc.), male hypandrial ventral process smaller and bifurcate, female postabdomen retractable but segment 6 always visible when at rest.

Eximilimosina: vein R_{4+5} straight or almost straight in basal half, simply curved up in apical half, posterior lobe of male surstylus longer, subcylindrical with a large spine caudally, base of postgonite very broad, postgonite curved, apex sharp (Figs 54, 59), male hypandrial ventral process larger and not bifurcate, sclerites of female postabdomen (incl. 6th) much reduced, divided into 2 or 3 longitudinal weakly sclerotised plates, segment 6 not visible when at rest.

It must be a species rich genus. In this paper I mention only four species: *E. eximia* (L. PAPP, 1991) comb. n., *E. elegantula* (DUDA, 1925), *E. major* sp. n., *E. thailandica* sp. n. I will describe in detail only two species below and give a key for their identification.

Distribution. For the time being the known species of *Eximilimosina* occur in the Oriental region but their occurrence elsewhere cannot be excluded.

Eximilimosina elegantula (DUDA, 1925), described as *Leptocera* (*Acuminiseta*) *elegantula*. – Holotype female: India or. Biró 1902; Matheran 800 m; 2) "Acuminiseta elegantula n. sp. ♀ d. Duda" [DUDA's handwriting] det. dr. O. Duda; 3) [red] TYPUS. There are 2 pairs of paired anterodorsal and posterodorsal setae on mid tibia. I did not find any other specimen but the holotype female in the HNHM. See also under *Acuminiseta* below.

Eximilimosina major sp. n.
(Figs 59–63)

Holotype male (HNHM): India, Ghum, W. Bengal, 1967. IV. 19., leg. [György] Topál. Measurements in mm: body length 1.71, wing length 1.32, wing width 0.57.

It is closely related to *E. eximia* (L. PAPP, 1991), so only main characters other than those of the male genitalia are given.

Body brown, anterior half of frons, face and antennae ochre.

3 strong pairs of interfrontal setae. Genal seta very long, 0.12 mm. Scape with medial seta 0.10 mm, also pedicel with long setae.

A distinct inner postpronotal present. Prescutellar acrostichal pair 0.10 mm long. Anterior katepisternal seta as long as half-length of posterior one.

Both costagial setae (dorsal and ventral) thick and 0.115 mm long. Second costal section slightly longer than third (0.43 mm vs. 0.40 mm). Discal cell long, inter-crossvein section of M 0.19 mm, dM-Cu 0.08 mm. Discal cell rounded, no Cu appendage.

Legs mostly ochre, fore femur brown. Mid ventral seta on mid tibia at 25/41. Dorsal half of mid tibia setose, as follow: anterodorsals at 8/41 (short), 11/41 (longer), 20/41 (medium long), 29/41

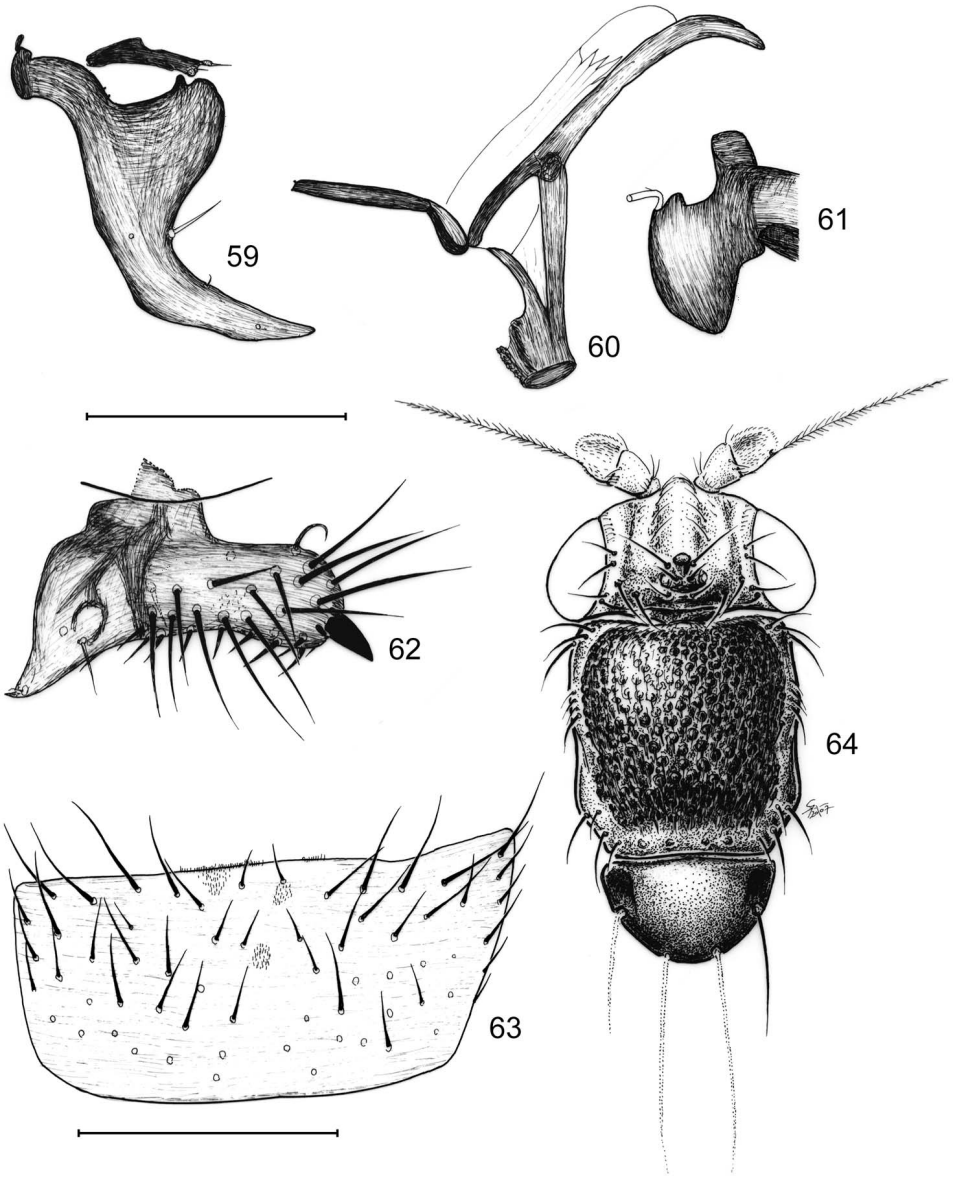


Fig. 59–64. 59–63 = *Eximilimosina major* sp. n., holotype male genitalia: 59 = postgonite, broadest extension (sublateral view), 60 = hypandrium with connecting process to postgonite, lateral view, 61 = basiphallus, lateral view, 62 = surstylus, broadest extension (a sublateral-subdorsal view), 63 = sternite 5. 64 = *Paramera ornata* sp. n., holotype female, head and thorax, dorsal view (del. A. Szappanos). Scales: 0.2 mm for Fig. 63, 0.1 mm for Figs 59–62

(0.05 mm), 32/41, dorsal at 30/41 (0.05 mm), posterodorsals at 7/41 (short), 11/41 (longer), 13/41 (very long), 22/41 (short), 32/41 (0.155 mm !). Ventroapical spur of hind tibia only 0.03 mm.

Male sternite 5 large with almost straight caudal margin (Fig. 63), rather evenly setose. No ventral appendage on epandrium. Ventral appendage of hypandrium (Fig. 60) large.

Male postgonite less broad in lateral view (Fig. 59). Cranial (basal) almost bare part of surstylus much shorter (Fig. 62) than that of *E. eximia* (cf. PAPP, 1991: fig. 31). Caudal (apical) part of surstylus comparatively short with numerous long setae. Basiphallus (Fig. 61) somewhat longer but less high than in *E. eximi*a.

Female not known. A female of *Eximilimosina* from India (Uttar Pradesh, Dehra Dun, Survey of India Campus, swept, 11. XII. 1989., leg. L. Papp) is probably conspecific; that was prepared and used in the description of the genus (see above).

Etymology. Its specific epithet refers to its comparatively large body size.

Eximilimosina thailandica sp. n.
(Figs 48–58)

Holotype male (HNHM): Trang Prov., Thung Khai Botanic Garden, primary lowland rainforest, Nov 12, 2004, No. 28, leg. L. Papp & M. Földvári.

Paratype (HNHM): 1 male: ibid., along the "Nature Trail", Nov 13, No. 29.

All the body of paratype is preserved in a plastic microvial with glycerol, measurements were taken on it.

Measurements in mm: body length 1.00 (holotype, with contracted abdomen), 1.60 (paratype male, with extended abdomen), wing length 0.92 (holotype), 1.11 (paratype male), wing width 0.42 (holotype), 0.57 (paratype male).

Brown, knees and tarsi yellow, also anterior part of frons yellow.

Head with 4 medium long pairs of interfrontals. Outer and inner occipitals rather long but postvertical seta less than 0.03 mm. Cheeks not broad, no preocular (subocular) setulae. Genal seta 0.07 mm. Vibrissa comparatively long. Scape medial seta very long, 0.10 mm. Aristal cilia ca. 0.015 mm.

Thorax. Inner postpronotal and presutural setae distinct. Only 1 long dorsocentral seta. Prescutellar acrostichal seta 0.09 mm. Anterior katepisternal seta distinct, 0.09 mm, posterior pair 0.21 mm. Scutellum 0.385 mm broad, 0.187 mm long with thick scutellars.

Wing membrane yellowish, veins ochre. First costal section with setae up to 0.065 mm long. Second costal section as long as third (0.37 mm). Inter-crossvein section of M 0.18 mm, hind crossvein 0.08 mm. Lower edge of discal cell slightly angulate with a short faint Cu appendage. Alula narrow.

Legs brown, knees and tarsi yellow. Mid trochanter with a very thick anterior subapical thorn-like seta. Mid tibia (Fig. 49) with pairs of anterodorsal and posterodorsal setae: anterodorsals at 11/72 (very short), 10/36 (short), 17/36 (longer), 25/36 (short, slightly more anterior), a dorsal at 26/36; posterodorsals at 1/4 (short), 11/36 (very strong), 1/2 (short), 28/36 (extremely long, 0.14 mm); i.e. mid posterodorsal seta much shorter and thinner than proximal posterodorsal (Fig. 49). Mid tibia with a distinct mid ventral seta at 20/36. Hind tibia with a distinct though short, 0.04 mm long ventroapical spur (Fig. 50), no dorsal preapical seta on hind tibia. Hind basitarsus ventrally both proximally and distally with a thick seta each (Fig. 50). Pulvilli minute.

Abdominal tergites short and broad (consequently, abdomen short: e.g. on the paratype male head + thorax 0.95 mm long and abdomen only 0.66mm). Third abdominal tergite 5 times as broad as long. Male sternite 5 comparatively long with a pair of caudal triangular processes and a broad U-shaped incision between them (Fig. 51). Synsternite 6–8 (Fig. 53) not long as a whole, sternite 8 part comparatively small. Some sclerotised right side sclerites clearly discernible (Fig. 53). Sternite 6 portion with rather large cranial dilatations. Medially placed part of sternite 7 nearly perpendicular to the plane of sternite 5.

Epandrium strongly asymmetrical, right half much larger (longer) than left half, sparsely setose, some setae thick but none of them long, i.e. no dorsal pair of long macrochaetae. Anal opening rather large. Epandrium with ventral part to anal opening (Fig. 52, modified cerci, fused) rather high with a pair of small processes. Subepandrial sclerite even higher. Hypandrium (Figs 55) with a strong ventral process. Lateral arms of hypandrium thin but long and strong, inserted to epandrium and surstyli cranially to the level of ventral process. Medial part of hypandrium rather short (Fig. 55 cf. Fig. 57).

Surstylus (Figs 56) similar to *E. eximia* (L. PAPP) : cranial (basal) half of surstylus less strongly sclerotised bare or with a few short setae only; caudal (apical) part with an apical thorn and several long setae. Basiphallus short and rounded without ventral appendage (Fig. 57). Distiphallus compact, medium-long. Sperm duct joins phallus rather dorsally. Phallapodeme long and thin. Postgonites with comparatively broad base (Figs 54, 59), apical half much narrowed, curved cranially, apex maybe pointed. Ejaculatory apodeme distinct, L-shaped (Fig. 58).

Female not known.

Etymology. The species is named after its type locality.

Key to the species of *Eximilimosina* L. PAPP

1. Discal cell rounded, no Cu appendage. Male sternite 5 with almost straight caudal margin (Fig. 63). Anterior katepisternal seta as long as half-length of posterior one. 3 strong pairs of interfrontals 2

– Lower edge of discal cell angulate with an indistinct Cu appendage. Caudal margin of male sternite 5 (male not known in *E. elegantula*) with a sagittal deep broad emargination, surrounded by a pair of subtriangular lobes (Fig. 51). Anterior katepisternal seta usually weak, shorter than ½ length of posterior one. 4 shorter pairs of interfrontals 3

2. Male postgonite broader in lateral view (PAPP 1991: fig. 33). Cranial (basal) half of surstylus much longer (PAPP 1991: fig. 31), bare area of surstylus as long as half its length. Flores (Indonesia).
E. eximia (L. PAPP, 1991)

– Male postgonite less broad in lateral view (Fig. 59). Cranial (basal) almost bare part of surstylus much shorter (Fig. 62). India **E. major** sp. n.

3. Anterior katepisternal seta indiscernible. Mid posterodorsal seta on mid tibia much shorter and thinner than proximal posterodorsal seta (Fig. 49). **E. thailandica** sp. n.

– Anterior katepisternal seta longer, ca. 1/3 of posterior one. Mid posterodorsal seta on mid tibia almost as long as proximal posterodorsal seta *E. elegantula* (DUDA, 1925)

Paramera gen. n.
(Figs 64–72)

Type species: *Paramera robusta* sp. n.
Gender: feminine

Head. Inner occipital pair very long, postverticals thin and short. Genal setae rather long. Though gena broad, no subocular setae present. Medial seta on scape comparatively very long (ca. as long as pedicel).

Thorax. Also inner (medial) postpronotal seta well developed. Only 1 long dorsocentral pair but an oblique row of enlarged dorsocentrals observable. Anterior katepisternal seta usually only 1/3 as long as posterior, possibly also a third *kepst* present. Scutellum c. twice broader than long, with the usual lateral and subapical pairs of macrosetae.

Wings with long setae on first costal section, vein R_{4+5} strongly curved up, apex far from wing tip. Costal vein ends at the apex of R_{4+5}. Discal cell rounded.

Mid tibia without mid ventral seta, but with longer posteroventrals at basal 1/3 to 2/5, i.e. paired setae present also on basal half of mid tibia. Ventroapical seta of male mid tibia short, but a row of thick ventral setae in apical 3/5 present (no such setae on female but ventroapical longer). Hind tibia with a long dorsal preapical seta.

Abdominal tergite 2 medially with a large, lighter and less sclerotised area reaching almost to caudal edge of tergite. Tergal setae sparse, those at lateral corners not particularly long. Sternites broad. Male preabdomen of five more or less unmodified segments, but genitalia asymmetrically placed, ventral parts turned to the right. Male sternite 5 (Fig. 65) rather broad, lateral setae comparatively short, with a left and right caudal row of blunt thorns (10 or 11 each), which continued into a stripe of unarranged similar thorns. Synsternite 6–8 much reduced dorsally (i.e. its S8 portion), apex bifid, facing to the right. S8 and S6+7 parts connected sclerotically only dorsally at edge. Right side parts only membranous, form a part of the inner wall of the genital cavity, only a minor (0.05 mm) scale-like part discernible at right cranial tip of the S6+7 complex. Left side of the S6 part with 2 strong setae, S7 part with at least 1 seta caudally.

Epandrium asymmetrical, right part being longer (Fig. 71), anal opening rather small (Fig. 67), dorsal caudal part above anal opening with numerous short thornlets (Fig. 67). No long setal pair on epandrium. Epandrium without ventral process, concave medio-caudally. Sclerotised plates of anal opening weakly sclerotised, membranous. Hypandrium (Figs 66, 71) with a large ventral process, which bears a pair of blunt ventral processes. Medial part of hypandrium slightly asymmetrical. Subepandrial sclerite high, medial part subtriangular.

Surstylus (Figs 68, 70) rather small; cranial lobe divided into 2 short blunt lobes, lateral one bears 3 thick medium-long setae. Caudal lobe with 3 strong thorns and several long setae. Basiphallus

consists of 2 blade-like, caudally concave, long sclerites (sickle-shaped in lateral view); those sclerites fused apically from the insertion point of ventral sclerites of distiphallus down to apex. Main parts of distiphallus are a single 0.11 mm long ventral (medial) sclerite and a pair of dorsal-lateral sclerites. Ventral sclerite proceeded by a quadrate sclerite with the ventral appendages. Distiphallus ventrally subapically with a pair of broad weakly sclerotised processes. No epiphallus. Phallapodeme (Fig. 69) rather large. Postgonites (Figs 69, 72) very large, long, curved, as a consequence of their size, also the Y-shaped sclerite connecting them to hypandrium, rather large.

Female abdominal tergite 2 desclerotised and depigmented medially. Otherwise preabdominal tergites and sternites large and well sclerotised. Segment 5 always large, tergite 5 (with also discal setae) longer than tergite 4. Sternites large, sternite 5 touching tergite 5 laterally, sternites 3 and 4 nearly so as for their tergites.

Female postabdominal sclerites reduced (tergite 6 only about 1/3 width of tergite 5); when at rest, wholly retractable into segment 5 (telescopic). When ejected (e.g. for egg laying) not long, postabdomen mostly membranous: also tergite 6 and sternite 6 depigmented and weakly sclerotised medially, quadratic, turning 180° to form another sheath for the rest of postabdomen. Both epiproct and hypoproct extremely short transverse. Cerci rather short, comparatively far from each other, with several curved (usually medium-long) setae. Three (1+2) spermathecae with long ducts: paired spermathecae on the right side, unpaired one on the left side laterally. Details of spermathecal structure known only in *P. robusta* (see there below).

Distribution. For the time being the known species of *Paramera* occur in the Oriental region. At least other two unnamed species were recognised in the HNHM from Thailand and from Papua New Guinea.

Etymology. I named the genus based on the very large male postgonite (formerly: "paramere").

Paramera ornata sp. n.
(Fig. 64)

Holotype female (HNHM): Vietnam, Thanh Loc – 12–19. X. 1988, leg. Mahunka, Vásárhelyi.

Measurements in mm: body length 1.87, wing length 1.76, wing width 0.78.

A beautiful robust fly with patterned mesonotum and very long inner occipital setae.

Vertex, occiput, thorax and scutellum dark blackish brown, mesonotum with round silvery spots around base of every characteristic seta and microchaeta (Fig. 64, their diameter is 0.02–0.022 mm). Frons yellowish red, but orbits and ocellar triangle silvery, alike antennae. Upper 2/3 of sublunular stripe of facial plate also yellowish red, lateral parts of facial plate, cheeks and genae brown.

Genal seta 0.165 mm long. Four pairs of minute setulae anteriorly on frons between interfrontal lines and eye margin. Two pairs of subequal fronto-orbitals, 4 long interfrontal pairs.

Scape with medial seta extremely long, 0.135 mm, also a second more dorsal thick medial seta present on scape. Pedicel setae very thin, longest 0.075 mm. First flagellomere covered by greyish cilia. Aristal cilia 0.04 mm.

Also medial (inner) postpronotal seta rather long. Only 1 long dorsocentral pair but several more anterior enlarged dc setae discernible. Three katepisternals: 0.09 mm, 0.11 mm, 0.31 mm; and some additional enlarged *kepst* more ventrally.

Wing membrane yellowish, veins yellow. Costa ends at apex of vein R_{4+5}, which strongly curved up to wing margin and apex far from it. First costal section with 0.09–0.10 mm long setae. Second costal section slightly longer than third (0.55 mm, 0.51 mm). Discal cell with rounded lower corner, no Cu appendage there. Inter-crossvein section of M 0.22 mm, dM-Cu c. 0.10 mm. Haltere white.

No mid ventral seta on mid tibia. Setosity of dorsal half of mid tibia: anterodorsals at 11/47 and 14/47 (short), 22/47 (strong), 34/47 (rather long), 38/47 (very long); dorsal at 36/47; posterodorsals at 9/47 (short), 14/47 (longer), 22/47 (very strong), 38/47 (extremely long, 0.20 mm). Ventroapical seta of male mid tibia short, but a row of thick ventral setae in apical 3/5 to 7/10 present; no ventral row setae on female but its ventroapical longer). Dorsal preapical seta on hind tibia comparatively short, only 0.12 mm.

Abdominal tergites black microtomentose with narrow light margins. Tergite 2 strongly desclerotised medially. Sternites broad. Postabdomen rectracted into segment 5. Tergite 5 longer than tergite 4. Cerci light (yellow), not much longer than broad. Two pairs of 0.08–0.09 mm long cercal setae plus several shorter ones.

Etymology. The specific epithet ‘ornata’ (Latin for ‘decorated’) refers to the beautiful pattern of its mesonotum.

Paramera robusta sp. n.
(Figs 65–72)

Holotype male (HNHM): Thailand: Mae Fang N. P., on buffalo and cow pats, Nov 1, No. 15, 2004, leg. L. Papp.

Paratypes (HNHM): Thailand: 7 males 5 females: same as for the holotype; 1 male 1 female: ibid., Mae Taeng Elephant Camp, 50 km N of Chiang Mai, on elephant dung, Oct 29, No. 5; 4 males 2 females: Prov. Fang, 5 km N of Mae Ai, on cow pats, Nov 2, No. 16; 2 males 1 female: Ban Namphang, on fresh cow pats, Nov 5, No. 20; 2 females: Trang Prov., Thung Khai Botanic Garden, along the “Nature Trail”, Nov 13, No. 29; 2 males 1 female: Khao Chong Botanic Garden, rainforest, Nov. 22, No. 43. Vietnam: 2 males: Cuc phuong, Ninh binh / Hanoi, Kim-lien, 6–18. V. 1966., leg. Topál. India: 4 males: Kanha N. P., 26.8.–18.9. 1972, G. Bächli coll.

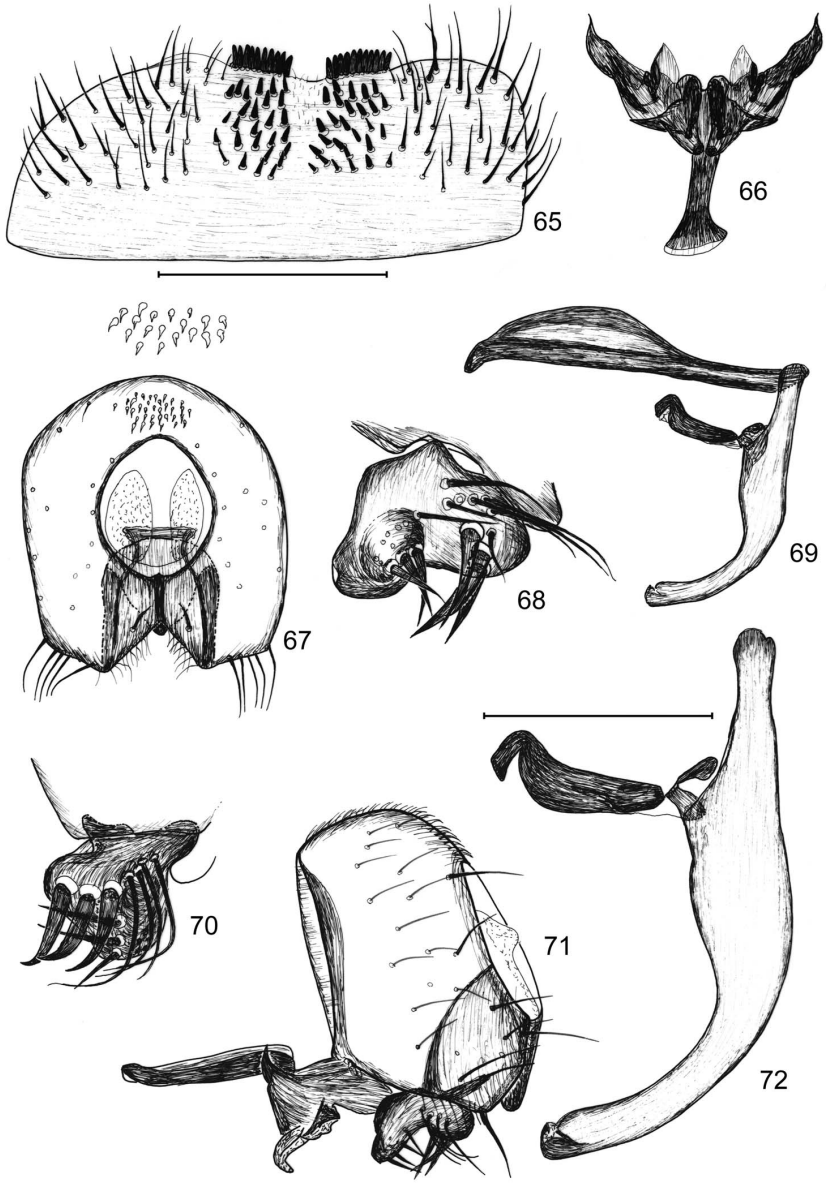
Measurements in mm: body length 1.60 (holotype), 1.21–1.60 (paratype males), 1.43–1.96 (paratype females), wing length 1.47 (holotype), 1.25–1.54 (paratype males), 1.42–1.60 (paratype females), wing width 0.66 (holotype), 0.55–0.69 (paratype males), 0.57–0.77 (paratype females).

Body dark brown, legs brown, tarsi yellowish. Anterior 1/3 of frons reddish yellow.

Medial occipital setae 0.155 mm. Postvertical setae thin and short. No preocular setulae. Genal seta 0.155 mm. Medial seta on scape 0.11–0.12 mm, a more dorsal medial seta there 0.07 mm. Longest pedicel setae 0.08 mm.

Medial postpronotal 0.14 mm, and even a third (more medial) *pprn* seta developed on the bigger specimens. Anterior katepisternal 0.10 mm, posterior one 0.27 mm. Prescutellar acrostichal pair 0.11 mm long. Apical scutellar setae 0.42 mm long (holotype).

Costal vein ochre, veins light yellow, wing membrane light yellowish. First costal section with 0.08 mm long seta, costagial seta thick but only 0.10 mm long. Second and third costal section equally long (0.46 mm vs. 0.45 mm on holotype). Discal cell rounded, inter-crossvein section of M 0.14 mm, dM-Cu ca. 0.08 mm. Haltere light yellow.



Figs 65–72. *Paramera robusta* sp. n., paratype male, postabdomen and genitalia. 65 = sternite 5, ventral view, 66 = hypandrium, ventral view, 67 = anal plates and epandrium with subepandrial sclerite and modified cerci, caudal view, dorsal thornlets of epandrium in higher magnification, 68 = surstylus in broadest (a subventral) view, 69 = postgonite and phallapodeme, with a Y-shaped sclerite connecting hypandrium and postgonites, lateral view, 70 = surstylus, caudal view, 71 = hypandrium, epandrium and surstylus, lateral view, 72 = postgonite in higher magnification, lateral view. Scales: 0.2 mm for Figs 65–67, 69, 71, 0.1 mm for Figs 68, 70, 72

Mid tibia without mid ventral seta. Anterodorsal setae at 6/37, 10/37 (short), 15/37 (strong), 22/37 (short), 26/37 (long), 31/37 (very long); small dorsal at 29/37; posterodorsals at 9/37 (short), 14/37 (long), 30/37 (very long, 0.12 mm). Preapical seta on hind tibia 0.13 mm long.

Male postabdomen and genitalia as described in the description of the genus above.

Female abdomen with desclerotised tergite 2 medially. Tergite 5 somewhat longer than tergite 4, sternites very broad, sternite 5 almost touching tergite 5 laterally. Postabdomen from the 6th segment retracted into segment 5 when in rest. Spermathecae globuliform but both ends slightly flattened. The more sclerotised duct (just distal to spermathecae) 1.5 times longer than spermathecal diameter. Both paired and unpaired spermathecae with a pair of long sacculiform glands (?), joining apex of the more sclerotised duct each. The non-sclerotised ducts are long, since spermathecae positioned laterally (as described above). Spectacles-shaped sclerite not found.

Ripe eggs 0.42 mm long, 0.20–0.21 mm thick, more cylindrical than barrel-shaped, both end broadly rounded. Surface with reticulated chorion but without long process.

Etymology. The specific epithet (Latin 'robusta' means hard and strong like oak) refers to the impressive appearance of the body of this new species.

I designated the four males from India as paratypes with some hesitation, since minor details of the male genitalia differ.

Notes on *Spinilimosina* ROHÁČEK, 1983

Subocular setae may be long. Medial seta of scape minute, at least much shorter than pedicel. There is no posterodorsal seta on basal half of mid tibia, i.e. anterodorsal setae are unpaired there. Mid tibia with a mid ventral seta. Mid basitarsus without any longer setae posteroventrally. A strong ventroapical present also on male mid tibia but no ventral row of thick setae there. Dorsal preapical seta on hind tibia indistinct. Male postgonites (e.g. Fig. 54) shorter than in *Paramera* spp. Vein R_{4+5} strongly bent up to wing margin, costa ends at apex of R_{4+5}. Discal cell angular with a short vein appendage.

A species rich genus in the Old World tropics but only a small part of the species has been described hitherto. The diversity in male genitalia seems very high. Without a thorough study of male genital structures, any grouping in the species is premature. This is why the separate subgenus for *S. ciliata* (DUDA, 1925) and for other undescribed species with a redescription of *S. latipes* (DUDA, 1925) can be published in a subsequent paper only.

Spinilimosina ciliata (DUDA, 1925) comb. n., described as *Leptocera* (*Acuminiseta*) *ciliata*. The holotype female is preserved in the HNHM. Holotype female: Singapore Biró 1902; 2) "Acuminiseta ciliata n. sp. ♀ d. Duda" [DUDA's handwriting] det. dr. O. Duda; 3) [red] TYPUS. This is surely a species of

Spinilimosina ROHÁČEK, 1983; its redescription will be given in a forthcoming paper on *Spinilimosina*.

It is also mentioned under *Acuminiseta* below. It is a species with 5 pairs of interfrontal setae, costal setae all long, dorsal costagial seta 0.165 mm (!) (characters other than given in the key).

I seem to have a male from Vietnam: Quy chan, fénycsapda [light trap], forêt pluv. trop. semidecid., 28. VIII. 1963, T. Pócs.

Spinilimosina latipes (DUDA, 1925) – Syntype male: 1) Singapore Biró 1898; 2) "Scotophilella latipes n. sp. ♂ d. Duda" [DUDA's handwriting] det. dr. O. Duda; 3) [red] TYPUS. Syntype female: 1) and 3) as above; 2) "S. latipes n sp ♀" det. dr. O. Duda.

See also above.

New genera with patterned wings

Afropterogramma gen. n.
(Figs 73–80, 317)

Type species: *Afropterogramma minor* sp. n.
Gender: feminine.

Head broad. Antenna short, first flagellomere rounded apically, with very long hairs, arista almost apical (Fig. 73).

Second costal section of wing much shorter than third. Vein R_{4+5} strongly curved up, ends far from wing apex. $R_1 + R_{2+3}$ area with a large dark spot, other parts of wing with lighter diffuse spots. Costa overruns apex of R_{4+5} (Fig. 317) on a rather long section.

Mid tibia with a small middle ventral seta at 3/5. Hind tibia without long dorsal preapical seta

Abdomen with tergites 1 and 2 fused but desclerotised medially. Tergite 2 depigmented medially. Tergite 5 reduced to a small sclerite on the right side (Figs 74–75). Sternite 2 small, weakly sclerotised, 2/3 breath of sternite 5, sternite 3 and sternite 4 medium large, almost as broad as sternite 5. Male sternite 5 with extremely thick thorns centrally (Figs 75, 78).

Synsternite 6–8 very small (Figs 74–75), width of its sclerotised parts only half of that of tergite 4. Epandrium without a long dorsal pair of setae, ventral part high with a pair of long setae. Subepandrial sclerite (Fig. 80) rather small. Hypandrium (Figs 77, 79) rather thin, medial part much shorter than phallapodeme, medial part and arms to epandrium not fused (Fig. 77).

Surstylus much higher than long (Fig 76), apically rounded, without thick thorns, caudally with curved setae.

Basiphallus short, quadrate in lateral view, distiphallus (Fig. 79) with 1 long medial dorsal lath. Ventral sclerites pointed. Postgonite (Fig. 79) rather simple, apically narrowed apex not pointed. Ejaculatory apodeme not detected (i.e. not sclerotised).

Female not known.

Etymology. The name of this new genus is composed of Africa and *Pterogramma* (because of its resemblance to that New World genus with patterned wing and very short second costal section).

Afropterogramma minor sp. n.
(Figs 73–80, 317)

Holotype male (HNHM): Tanzania, Kwamsambia, Tanga region – 1–18. II. 1987, leg. Mahunka, Zicsi. The wings of the holotype are prepared on a normal microscopic slide; abdomen with genitalia are preserved in a plastic microvial with glycerol.

Measurements in mm: body length 1.18, wing length 1.11, wing width 0.53.

Pleura and abdomen dark brown, head and mesonotum patterned.

Head rather large. Frons reddish yellow, ocellar triangle and a stripe back to occiput dark brown. Posterior *fr-orb*, vertical setae and occipital setae on a dark triangle each, 2 silvery spots between dark areas on occiput. 4 medium long interfrontal pairs. Outer vertical as long as inner vertical, i.e. longer than usual; inner occipitals large, outer occipitals small, postvertical pair short but well visible. Lunule continued into a long triangle, which reaches ventral edge of antennal hole in profile. Face short, brown. Gena broad, 0.07 mm, genal seta hardly longer than peristomal setae (0.06 mm). 3–4 peristomals only. Vibrissa 0.13 mm. Antennae brown, first flagellomere with very long cilia apically (Fig. 73).

Mesonotum greyish brown with 3 broad light yellowish bands (sagittal and dorsocentrals). 2 strong dorsocentral pairs. Scutellum with 2 diffuse lighter spots cranially to apical sc. Apical scutellar seta very long, 0.32 mm. Only posterior katepisternal developed (0.08 mm), anterior kepst thin and minute.

Wings patterned (Fig. 317), veins thick. Costa overruns apex of R_{4+5} by 0.18 mm. Vein R_{2+3} well curved up. Second costal section much shorter than third (0.19 mm vs. 0.34 mm). Setae on first costal section (0.05 mm) not much longer than on second section (0.04 mm). Inter-crossvein section of M 0.12 mm long, dM-Cu 0.08 mm. Discal cell angularly rounded but no coloured Cu appendage discernible. Alula very short but 0.025 mm broad and apex not acute.

Femora dark brown; tibiae as dark with basal and submedial broad yellow rings; tarsi yellow. Male mid tibia with ventroapical seta comparatively long, 0,05 mm, anterior apical also well developed. Mid tibia with a small middle ventral seta at 3/5. Setosity of mid tibia: anterodorsals at 3/10 (short), 2/3 (long), 5/6 (long), a longer posterodorsal at 11/15; the longest seta on mid tibia is a dorsal one at 4/5. Hind tibia without ventral spur or dorsal preapical seta.

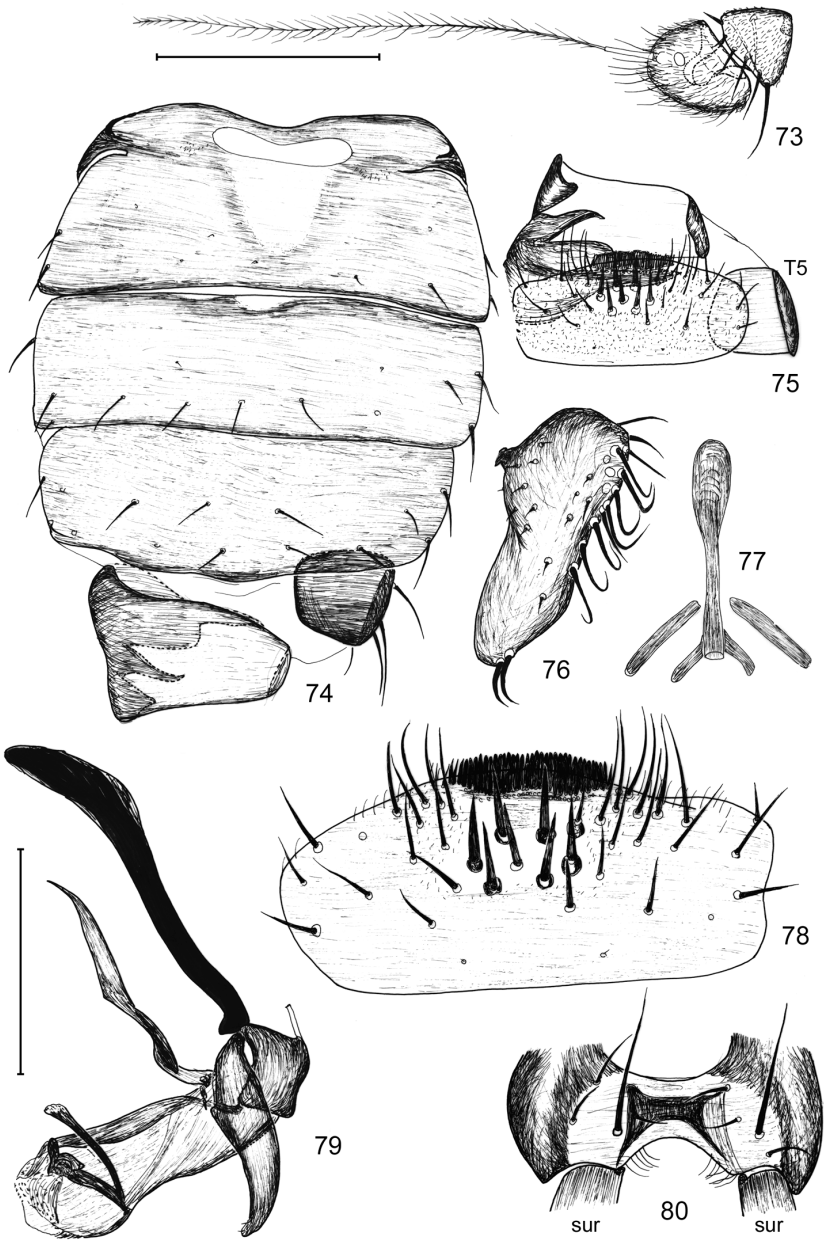
Male postabdomen and genitalia as described above.

Female not known.

Archipterogrammoides gen. n.
(Figs 81–87, 318)

Type species: *Archipterogrammoides metatarsalis* sp. n.
Gender: feminine.

Head as broad as thorax. Frons with 2 pairs of strong *fr-orb,* also *vte, vti* rather long, *occi* long, *occe* shorter but distinct, interocellars and postocellars minute. Two pairs of longer interfrontals and 1 short anterior pair. Genal seta thin long and emerges close to mouth margin. Medial seta of scape as in *Pseudopterogramma*. First flagellomere with a dorsal conus but apex not pointed, apical cilia (as



Figs 73–80. *Afropterogramma minor* sp. n., holotype male. 73 = left antenna, lateral view, 74 = abdomen without genitalia, dorsal view, 75 = tergite 5, sternite 5 and synsternite 6–8, ventral view, 76 = surstylus in broadest (± sublateral) view, 77 = hypandrium, ventral view, 78 = sternite 5, ventral view, 79 = inner genitalia, lateral view, 80 = subepandrial sclerite with surstylar bases, caudal view (T5: tergite 5, sur: surstylus). Scales: 0.2 mm for Figs 73–75, 0.1 mm for Figs 76–80

well as aristal cilia) long. Arista subapical, not very long. Arista broadly separated by a large but low sublunular swelling.

Wing (Fig. 318) patterned. First costal section with 6 perpendicular very long setae (longer in female). Costa ends at apex of vein R_{4+5}. Second costal section only half as long as third (Fig. 310). Discal cell very short.

Hind tibia with a short ventroapical spur (Fig. 87). Hind basitarsus ventrally with thick, medium-long light setae, posterior side covered by subapically directed thick shorter setae.

Tergite 2 with a narrow medial desclerotised-depigmented area, which reaches caudal margin (there as broad as second hind tarsomere). Sternite 2 small, partly membranous, sternite 3 to 5 broad but much less broad than tergites. Sternite 5 strongly asymmetrical (Fig. 86). Ventral part of the synsternite 6–8 peculiar with a comparatively well sclerotised tergal part on the right side. In addition, a subtriangular plate joining sternite 6 part caudally (submedially, Fig. 86).

Epandrium short with a pair of large rounded ventromedial lobes (modified cerci), which bear 2 medium-long and several short setae each. Subepandrial sclerite (Fig. 81) low but broad with a pair of thin but strongly sclerotised connection to surstyli. Subepandrial sclerite and inner wall of the ventromedial processes (cerci) are not fused, which leaves a conspicuous thin disconnection open between them. Hypandrium short, medial part horizontally broadened, lateral arms dorso-ventrally extended with broad base to epandrium.

Surstylus (Fig. 82) superficially similar to that of the *Spelobia* spp., with a large medial thorn; sparsely setose but thickly setose basally. Phallapodeme (Fig. 83) is a very long thin rod. Postgonite (Fig. 83) very long thin, slightly S-curved in lateral view; in caudal view postgonites form a broad U, embracing basiphallus. Basiphallus (Fig. 84) very long, compact, insertion of phallapodeme close to its caudal end. Distiphallus (Figs 84–84) longer with definite ventral and dorsal sclerites; ventral sclerites long and narrow, the slightly more dorsal pair forms a long hexagonal structure with a pair of long caudal processes, which fused at caudal end, that pair of sclerites joins basiphallus. Dorsal side of distiphallus with a pair of broad medial sclerites; distiphallus conspicuously "empty" inside. Ejaculatory apodeme found as a small cylindrical sclerotised structure sitting on the tip of a membranous sack (Fig. 83).

Female tergite 2 with a large medial depigmented area, tergite 3 and 4 reduced in length (but rather broad, cf. Fig. 112). All preabdominal sternites transverse. Tergite 6 and sternite 6 normal, tergite 7 very thin dorsally, lateral parts hardly connected through pigmented sclerite. Sternite 7 as broad as abdomen there. Postabdomen cannot be stretched long, since not only sclerites but also connecting membrane short. Sternite 8 transverse, slightly curved linear. Tergite 8 in two halves not connected medially; both halves consist of 2 (lateral, caudal) sclerites each.

Cerci short, epiproct and hypoproct very small, weakly sclerotised. Cerci tent to be positioned vertically. Spermathecae bowl-shaped, proximal end straight in profile, 0.04 × 0.025 mm, unpaired 0.045 × 0.03 mm. Sclerotised ducts thin short (0.02–0.025 mm) ending in a globular bulb, but not sclerotised ducts also of the paired spermathecae long, so they can be found far from each other.

Etymology. The name of the new genus is composed of *Archi-* (Greek 'beginning') and of *Pterogrammoides* (name of a genus of reduced-winged Oriental and Papuan species). This does not necessarily mean that it might be an ancestor of *Pterogrammoides* but I think *Archipterogrammoides* and *Pterogrammoides* may belong to a monophyletic group.

In the HNHM there is a female from India (Orissa), which may belong to another species of this genus.

Archipterogrammoides metatarsalis sp. n.
(Figs 81–87, 318)

Holotype male (HNHM): Thailand: Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, 2004, No. 42, leg. L. Papp & M. Földvári.

Paratypes (HNHM): 1 male: same as for the holotype; 7 males 4 females: ibid., Trang Prov., Khao Chong Botanic Garden, rainforest, Nov 22, No. 43; 1 female: ibid., Khao Chong Botanic Garden, along the stream below waterfall, Nov 14, No. 30; 1 male: ibid., Khao Chong Botanic Garden, along a forest path, Nov. 15, No. 31; 3 males 2 females: ibid., Khao Chong Botanic Garden, rainforest, Nov 18, No. 36; 1 female: ibid., Thung Khai Botanic Garden, primary lowland rainforest, Nov 19, No. 38.

Measurements in mm: body length 1.21 (holotype), 1.05–1.20 (paratype males), 1.12–1.21 (paratype females), wing length 1.00 (holotype), 0.90–1.06 (paratype males), 1.10–1.16 (paratype females), wing width 0.49 (holotype), 0.43–0.53 (paratype males), 0.53–0.59 (paratype females).

Head and antennae yellow (apex of first flagellomere dark greyish), mesonotum (incl. scutellum) yellowish brown, subshiny, abdomen dark brown.

Frons with 2 pairs of strong *fr-orb, vte, vti* particularly strong, *occe* distinct, *occi* 0.10 m long, but interocellars and postocellars minute. 2 pairs of longer interfrontals and 1 short anterior pair. Genal seta thin but 0.10 mm long, emerges close to mouth margin. Scape medial seta thin but 0.10 mm long. First flagellomere with a dorsal conus, apex not pointed, apical cilia 0.035–0.045 mm. Arista subapical, not very long, c. 0.50 mm. Longest aristal cilia 0.035 mm.

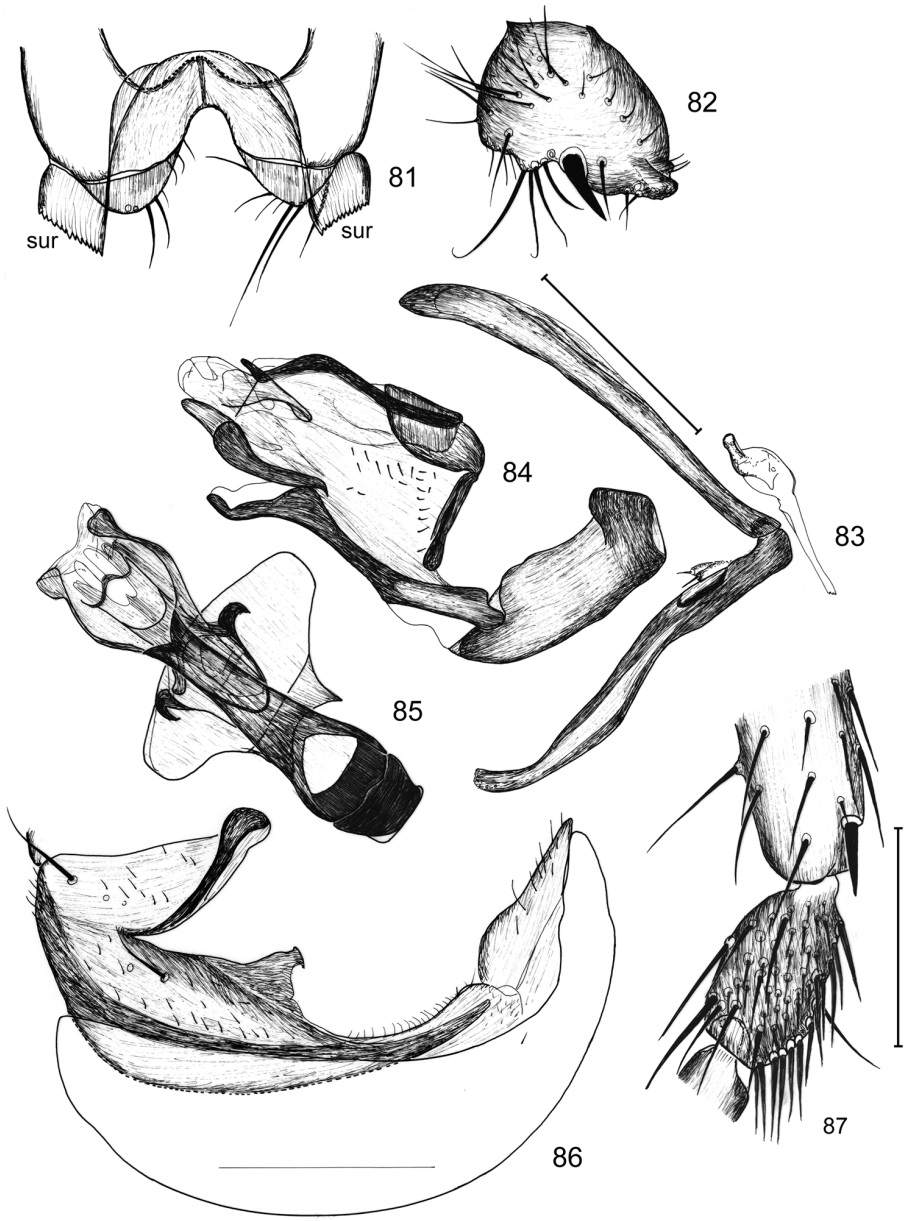
Thoracic setae similar to those of *Pseudopterogramma*: 2 strong dorsocentral pairs emerge rather anteriorly, *acmi* in ca. 8 rows, no microchaetae caudal to posterior *dc*. No inner postpronotal; presutural seta distinct. Also lateral scutellar seta long, 0.26 mm, apical pair 0.36 mm.

Wing (Fig. 318) twice longer than broad (1.06 mm vs. 0.53 mm, paratype male), costa rather thick (second section 0.025 mm). Second costal section more than twice longer than third (0.175 mm and 0.45 mm). Female first costal section with 6 perpendicular very long setae: 0.09 to 0.10 mm! Setae on male shorter there: 0.075–0.08 mm. Contrarily to *Pseudopterogramma* no long seta on vein H. Otherwise setae on first section 0.08 mm, on second section 0.045 mm. Discal cell short, inter-crossvein section 0.075–0.08 mm, dM-Cu 0.09 mm. Although lower edge of discal cell not rounded, Cu appendage not coloured. Wings tend to be downcurved, but not all of the specimens show this character.

Tibia yellowish light brown with apical and subbasal broad brown rings. Mid tibia without middle seta, ventroapical very long and thick, 0. 11 mm long on holotype. Anterodorsals on mid tibia at 9/29 (strong), 18/29 (short), 23/29 (very strong), posterodorsals at 17/58 (strong) and 22/29 (0.165 mm long, thick). Mid metatarsus with a longer subbasal posteroventral seta.

Male abdominal tergite 3 reduced, consequently a larger membranous space between tergite 3 and tergite 4 exists. Female tergites 2 to 4 reduced, consequently a narrower membranous area between tergites 2 and 3, and a broad membranous area between tergites 3 and 4 left open (tergite 3 0.08 mm, tergite 4 0.09 mm long). Collection specimens show contracted abdomen. Female postabdomen only partly telescopic: postabdomen cannot be withdrawn into segment 6.

Female cerci short (0.04 mm) and broad, epiproct and hypoproct very small, cerci tend to be positioned vertically. Cerci with a long apical undulately bent seta, a similar dorsal subapical seta and a shorter straight lateral seta each, plus several short setae (see more under generic description).



Figs 81–87. *Archipterogrammoides metatarsalis* sp. n., hind leg, male postabdomen and genitalia. 81 = ventral part of epandrium with bases of surstyli, anterior view, 82 surstylus, broadest view, 83 = postgonite and phallapodeme with ejaculatory apodeme, lateral view, 84 = phallus, lateral view, 85 = phallus, ventral view, 86 = synsternite 6–8 with contours of sternite 5, subventral view, 87 = apex of hind tibia and hind metatarsus, anterior view (sur: surstylus). Scales: 0.1 mm for 81–85, and 86, and 87, respectively

Etymology. Mid metatarsus of this species is with a subbasal posteroventral longer seta; its specific epithet '*metatarsalis*' is to call attention to this feature.

Giraffimyiella gen. n.
(Figs 88–92, 319)

Type species: *Leptocera giraffa* RICHARDS, 1938
Gender: feminine.

Head. Outer and inner occipital setae very strong, at least so long as anterior orbital seta.

Wings (Fig. 319) richly patterned, with a dark spot virtually closing cubital cell.

Hind tibia with a long dorsal preapical seta.

Abdominal terga rather strongly sclerotised, tergite 2 without medial desclerotisation. Tergal lateral setae not long (shorter than tergites). Sternite 5 (Fig. 91) large with a deep incision medio-caudally, bordered by widely rounded emarginations. PAPP's (1990) fig. 18 for sternite 5 is not exact: that is medially with a part of sternite 6, and the long setae are actually more numerous.

Sternite 6 part of the synsternite 6–8 strong (Fig. 88), with a medial caudal quadrate continuation and a large cranial plate, which bears darker "ribs". Right part of sternite 6 continued (joins to) the tergal parts, which includes an annular pigmented lamella (? membrane). Sternite 8 part of the synsternite 6–8 rather short (Fig. 88).

Anal opening of epandrium large. Ventral caudal part of epandrium (cerci, Fig. 89) with 2 pairs of strong blunt black thorns (seen also on fig. 19 of Papp 1990). As for the inner wall, the two thorns are sitting on the same sclerite (better seen on Fig. 90), on the opposite side the base of the lateral thorn is isolated. Subepandrial sclerite weakly sclerotised, only an arch connecting bases of surstyli well sclerotised and dark (Fig. 89), its main part short, oblique to the body axis and found just under anal opening.

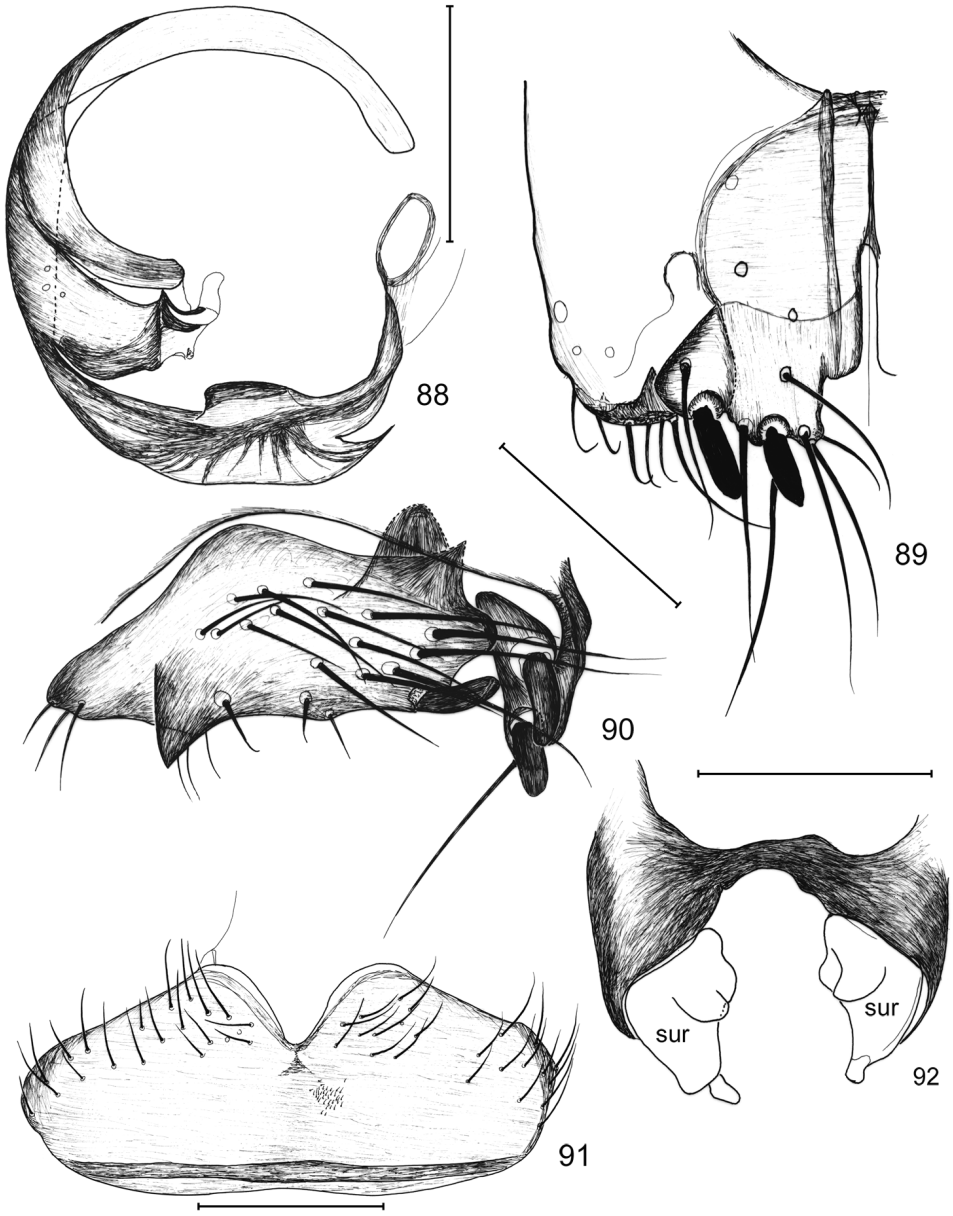
Hypandrium (Fig. 92) strongly fused to epandrium, forming a bridge medially. No medial process (rod) of hypandrium!

Surstylus (Fig. 90) of a rather intricate form: with a subapical triangular process, a subbasal process, a caudal medial flat blunt thorn. Its caudal part continued into a dorsal basal process, its medial part with several long setae. Surstylus is wholly misfigured on PAPP's (1990) fig. 19: that is distorted, showing only caudal flat rounded thorn. Postgonite in its broadest extension (PAPP's 1990: fig. 20) comparatively short and broad, shovel-shaped.

Basiphallus longer than half-length of phallus, distiphallus slightly asymmetrical short and broad (PAPP 1990: fig. 22).

Female abdominal sternites rather broad, sternite 5 nearly as broad as abdomen. Tergite and sternite 6 short c. 5 times broader than long, tergite and sternite 7 similar. Tergite 8 not divided, only with a linear depigmentation sagittally. Sternite 8 very small transverse; as a consequence, cerci directed obliquely downwards. Postabdomen not much evertible and retractable into segment 6. Epiproct small narrow triangular, 0.07 × 0.05 mm, divided into 2 parts, at least a broad depigmented area between the. Hypoproct broad U-shaped, extended dorsally, 0.08 mm long and 0.11 mm high, cerci lie in that U. Cerci 0.12 mm long, 0.03 mm broad with several medium-long undulately curved setae.

Spermathecae comparatively small, 0.08 mm × 0.05 mm, ovoid, proximal end flattened, sclerotised duct Y-shaped with branches 0.02 mm, common duct 0.015 mm, that of the unpaired one 0.02 mm. Sclerotised duct without a bulb.



Figs 88–92. *Giraffimyiella giraffa* (RICHARDS), male, postabdomen and genitalia (cf. PAPP 1990: figs 20–22). 88 = synsternite 6–8, ventral view, 89 = ventral part of epandrium, left half, caudal view, 90 = surstylus in broadest (subventral) view with cercus, 91 = sternite 5, ventral view, 92 = hypandrium with contours of surstyli, ventral view (sur: surstylus). Scales: 0.2 mm for Fig. 88, for Fig. 91, and for Fig. 92, respectively, 0.1 mm for Figs 89–90

There were problems formerly with some Afrotropical limosinine species relegated to *Poecilosomella* DUDA. PAPP (1990) did not question their position within *Poecilosomella*, although the figures on male genitalia of *giraffa* and *pictitarsis* show peculiarities. Actually separating *Leptocera giraffa* RICHARDS, 1938, *Limosina lusingana* VANSCHUYTBROECK, 1959, as well as *Leptocera pictitarsis* RICHARDS, 1938 and its allies into three different genera, the rest of the Afrotropical species, together with the species rich Oriental *Poecilosomella*, results in a true monophyletic group. The group of *L. pictitarsis* will not be described here in a new genus, but it is included in the key for genera as separated.

Giraffimyiella giraffa (RICHARDS, 1938) – Material studied: 1 male: Tanzania, Meru, 1979. II.-III., leg. Előry – Sipos. 2 males 1 female: Br. CAMEROONS, Cameroons Mt. Buea, Slope, V.13.–17. 49, B. Malkin – Elevation 4500–6000 ft. 1 male 1 female: Loango / Mateba (île), 9-xi–1948 / 3-ii–1949, p. Vanschuytbroeck, P. Vanschuytbroeck det. 1950: "Poecilosomella melania Vanschuytb." – [red] Para-type – cf. Bull. Inst. Sc. Nat. Belg. "T. XXVI, no. 25, 1950, p. 16" – "Poecilosomella giraffa RICH." det. L. Papp 1988.

Wings (Fig. 319) more than twice longer than broad (2.40 mm vs. 1.13 mm). Second and third costal sections almost equal (0.79 mm vs. 0.84 mm). Longest setae on first costal section not very long, 0.125 mm, setae on second section max. 0.07 mm. Costagial setae 0.16–0.175 mm long and thick. Costal cell long, inter-crossvein section of M 0.38 mm, dM-Cu 0.15 mm, discal cell angled with a 0.09–0.10 mm long Cu appendage. See also PAPP (1990).

Minialula gen. n.
(Figs 93–102, 320)

Type species: *Minialula poeciloptera* sp. n.
Gender: feminine

Head patterned.

Alula small, short and almost acute. Costa ends at apex of vein R_{4+5}, R_{4+5} strongly upcurved. First costal section with rather long setae. Second costal section very short (Fig. 320). Costagial seta only slightly longer than setae on first costal section.

Hind tibia (Fig. 93) without long dorsal preapical setae but with paired (anterodorsal and posterodorsal) hairs. No ventroapical spur but a short black seta instead (and a similar one anteriorly). Mid basitarsus with a small ventroapical thornlet only, with long straight light, subapically directed, ventral and posterior setae.

Sternite 5 (Fig. 95) not particularly broad or long, anteriorly with a bare area, medio-caudally without any process but with a row of slightly lateroclinate setulae on a desclerotised narrow caudal stripe. Synsternite 6–8 short (Fig. 97), with short and broad sternite 8 part. Sternite 6 part with a larger caudal sclerite, which forms a club-shaped setose process (Figs 97–98) caudally.

Epandrium actually open ventrally (Fig. 96). Subepandrial sclerite high, forms a broad Y. Hypandrium (Fig. 94) with large lateral arms, the three parts fused but medial part is slightly Y-shaped. Medial part without a medial process. Surstylus (Fig. 99) long but not broad with an almost perpendicular medially directed long blunt apical process. Caudal part of surstylus medially

with long setae. Basiphallus longer than distiphallus (!, Fig. 101). Phallapodeme joins basiphallus close to distiphallus. Basiphallus enlarged caudally to this junction, with a large caudal ventral part, which cannot be named as epiphallus. Distiphallus connected to basiphallus dorsally, connection is membranous and small. Distiphallus globular. Phallapodeme (Fig. 100) not particularly long but base very broad, apically extremely broadened with an almost straight apical end, visible only dorsally. Postgonite (Fig. 102) short, broad basally, connecting laths to hypandrium are conspicuous (see arrow on Fig. 102).

Female abdomen definitely longer than its width. Tergites 3 to 5 reduced in length (not in width), tergite 6 normal, all the sternites 2 to 6 transverse. Sternite 6 c. 5 times broader than long and nearly as broad as abdomen there. Postabdomen very short, hardly evertible, almost completely retracted into segment 6. Tergite and sternite 7 not divided, completely cover terminalia. Sternite 8 trapezoid, tergite 8 in two lateral parts, also a pair of 0.02 mm long peg-like additional sclerites present. Epiproct and hypoproct microscopically small and wholly desclerotised (!). Cerci c. 0.02 × 0.02 mm, only a pair of apical medium-long setae distinct. Spermathecae subglobular, bowl-shaped, proximal end straight in profile, ducts short, consequently spermathecae cannot move far from tip of abdomen. Sclerotised ducts very short and weakly sclerotised, short Y-shaped, branches 0.01 mm, common duct even shorter with a minute distal bulb.

Etymology. This new genus is named after its very small alula on wing.

In the HNHM there is a female from Thailand, which may belong to another species of this genus.

Minialula poeciloptera sp. n.
(Figs 93–102, 320)

Holotype male (HNHM): TAIWAN: Ilan Hsien, Fu-Shan LTER Site, March 27, 2003 – along/over a small river, No. 8, leg. L. Papp.

Paratypes (HNHM): 2 males 1 female: Taipei Hsien, Han-Lo-Dé, 450 m, forest undergrowth, March 29–30, 2003, No. 12, leg. L. Papp; 2 males: Taipei Hsien, Pinling, over/along Jinggualiao river, 319m, April 17, 2003, No. 27.

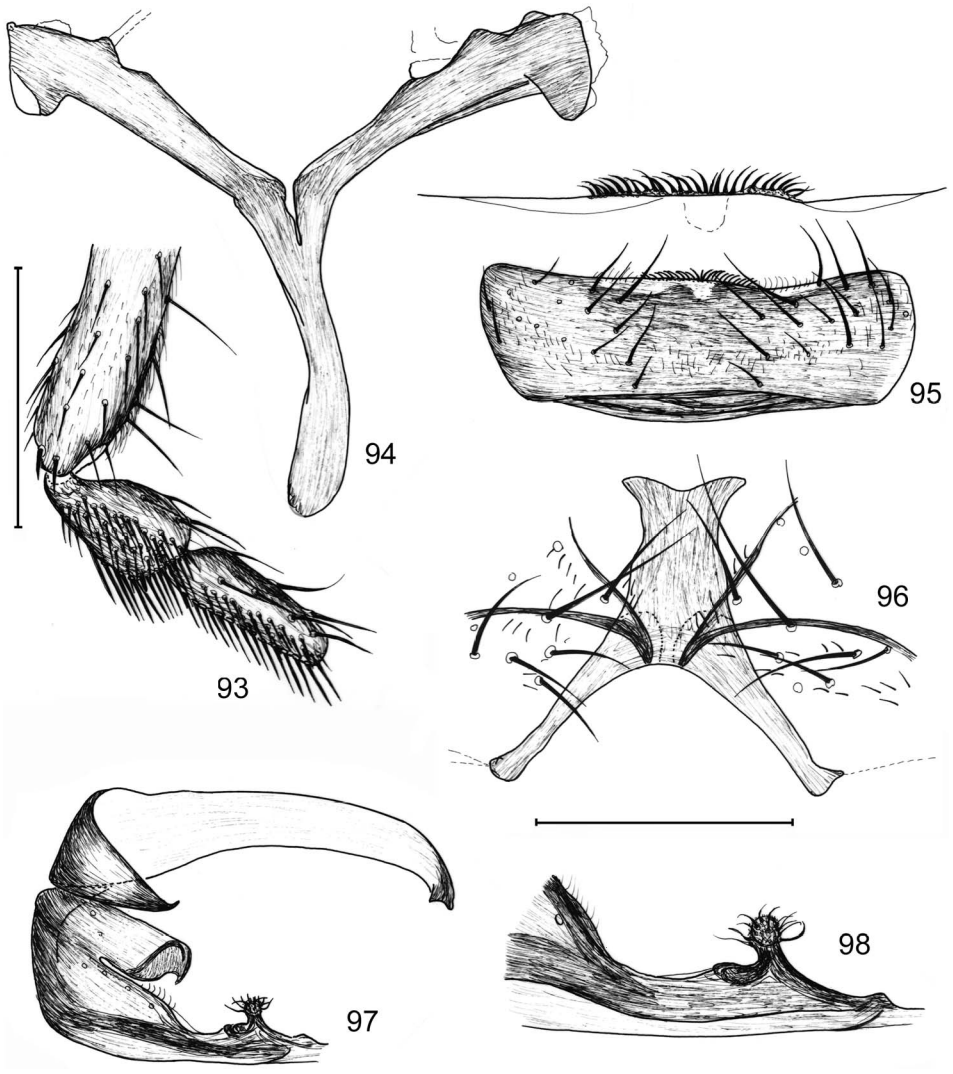
Measurements in mm: body length 1.76 (holotype), 1.43–1.75 (paratype males), 1.60 (paratype female), wing length 1.66 (holotype), 1.48–1.75 (paratype males), 1.60 (paratype female), wing width 0.83 (holotype), 0.67–0.84 (paratype males), 0.78 (paratype female).

Dark brown, lateral parts (sides) of mesonotum and pleura with diffuse lighter spots, mesonotum with thick grey microtomentum.

Swelling between antennae not high, mouth edge strongly produced. Frons basically dark brown, anteriorly reddish, interfrontal stripes and a large but narrow U-shaped stripe reaching from slightly cranially to anterior *fr-orb* back to postocular setae, silvery. Vertical pairs very long, occipitals medium long (0.09 mm) but thin. Postocellars (just in the line of occipital setae) medium-long, apices crossing. 3 pairs of long interfrontals. Genal seta 0.13 mm long. Scape with medial seta extremely long, 0.15 mm. First flagellomere with a dorsal conus, but apex rounded; all the flagellomere covered with long light cilia (up to 0.03 mm). Arista subapical. Palpus thin with a strong apical seta.

Mesonotum with 2 strong *dc* pairs, plus some 2 enlarged *dcmi* anteriorly. Acrostichals in c. 10 rows between anterior dc, no enlarged prescutellar seta (0.06–0.07 mm long only). 3 long setae in the intra-alar row, anterior pair only slightly cranial to anterior dc.

Wing (Fig. 320) with very short second costal section and very small alula. First costal section without very long perpendicular seta, long seta on vein H also missing. Second costal section only

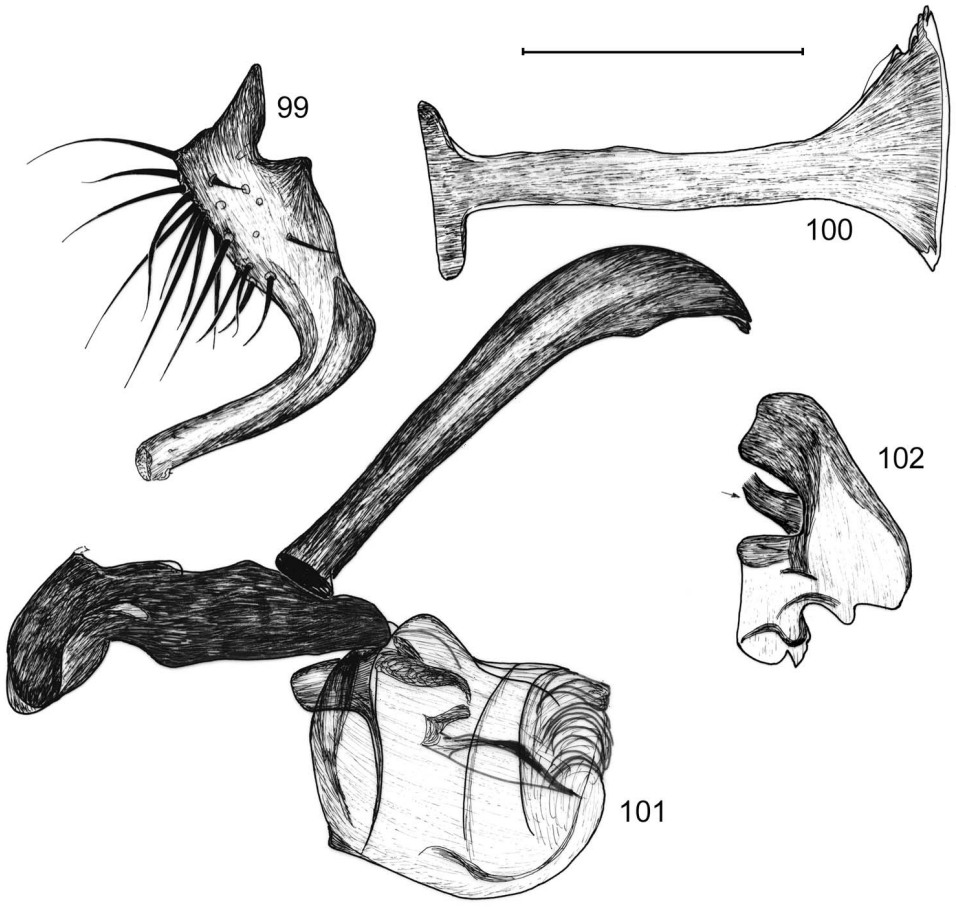


Figs 93–98. *Minialula poeciloptera* sp. n., male hind leg, postabdomen and genitalia. 93 = apex of hind tibia and hind metatarsus, anterior view, 94 = hypandrium, dorsal view, 95 = sternite 5, upper part: mediocaudal setae in higher magnification, 96 = ventral medial part of epandrium with subepandrial sclerite, caudal view, 97 = synsternite 6–8, ventral view, 98 = ventral part of the sternite 6 portion of synsternite 6–8, ventral view. Scales: 0.2 mm for Figs 93, 95, 97, 0.1 mm for Figs 94, 96, 98

slightly more than half as long as third (0.36 mm vs. 0.63 mm). Setae on first costal section 0.09 mm, on second section 0.06 mm. Costagial seta 0.10 mm. Inter-crossvein section 0.205 mm, dM-Cu 0.08 mm. Discal cell angularly rounded without a Cu appendage.

Legs dark brown, knees and tarsi yellow, apical (4–5) tarsomeres darkened. Mid tibia without middle ventral seta. Male mid tibia with medium-long but rather thin ventroapical but no ventral row of thick black setae. Setosity of dorsal half: anterodorsals at 19/42, (short), 30/42 (longer), dorsal setae at 10/42, 34/42 (long), posterodorsals at 8/42 (short), 18/42 (very long), 34/42 (0.19 mm!). Hind tibia with short (0.04 mm) curved ventroapical spur, no dorsal preapical seta.

Male and female terminalia as described above.



Figs 99–102. *Minialula poeciloptera* sp. n., male genitalia. 99 = surstylus, broadest view, 100 = phallapodeme, dorsal view, 101 = phallus and phallapodeme, lateral view, 102 = postgonite in broadest view, with connecting lath to hypandrium. Scale: 0.1 mm for all

Parapoecilosomella gen. n.
(Figs 103–111, 321)

Type species: *Limosina lusingana* VANSCHUYTBROECK, 1959
Gender: feminine

Head with a single large fronto-orbital pair, long *occi*, weak interfrontals and large antenna.

All costal setae long. Vein R_{2+3} ends perpendicularly in costa (Fig. 321).

Abdomen short and broad. Abdominal terga very strongly sclerotised (except tergite 1–2). Tergite 1 and 2 are *not* fused, tergite 1 sclerotised and pigmented only laterally, a quadrate medial desclerotised and depigmented part present. Tergite 2 with a small triangular area anteriorly and medially, its apex reaches only middle of tergite. Abdominal membrane thick. Sternites 2–4 (Fig. 103) peculiar: partly depigmented with marble dark indefinitely bordered spots. Male sternite 5 strongly asymmetrical: right to sagittal line short (Fig. 106), medial and right part of sternite 5 distorted, perpendicular to the plane of preabdominal sternites.

Sternite 8 portion of the synsternite 6–8 comparatively large, right half parts (i.e. tergal parts) mostly membranous, hairy with a closed ring of thin sclerotisation (Fig. 106).

Hypandrium (Fig. 109) not fused to epandrium, in 3 parts, with a pair of short thin but strong processes caudally joining postgonites. Medial part of hypandrium not particularly long (Fig. 109).

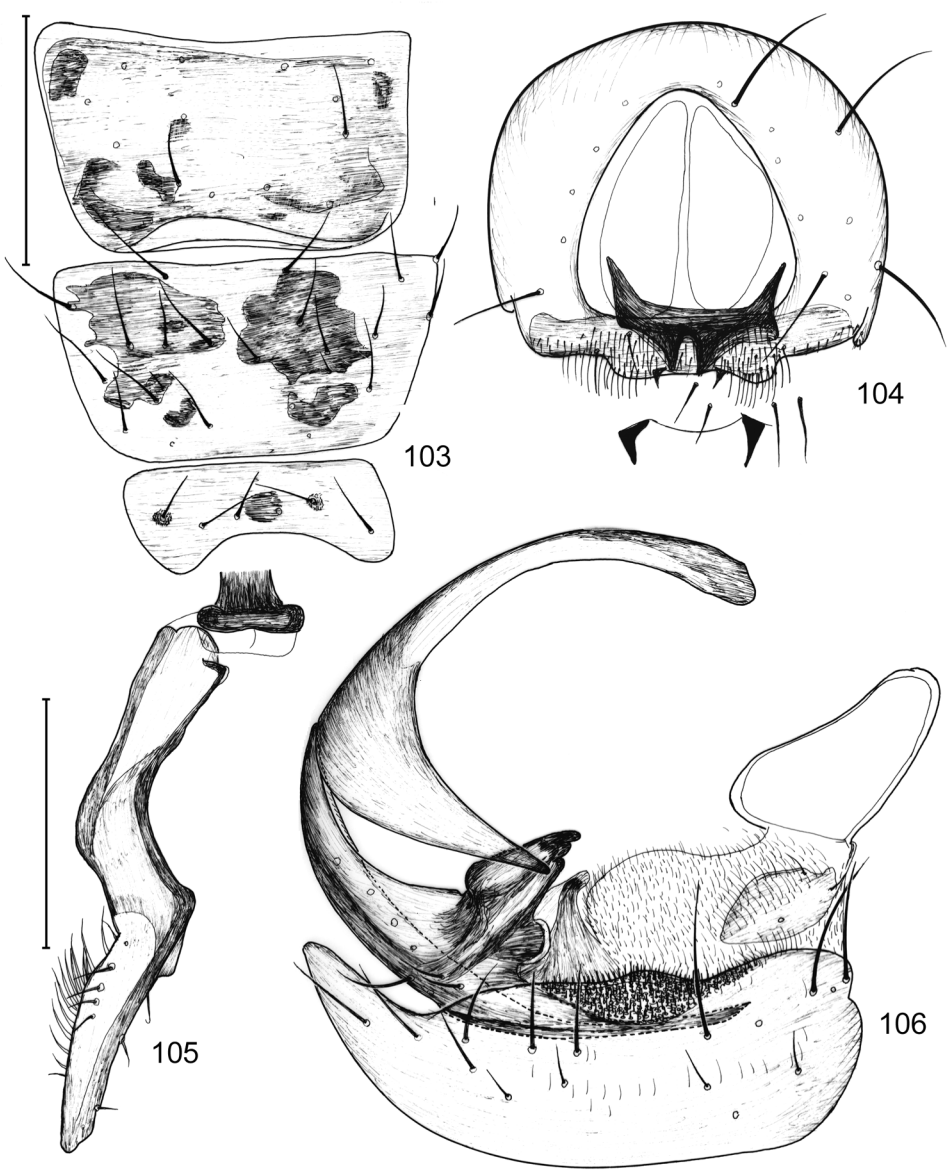
Surstylus (Figs 108, 110) subtriangular in its broadest extension, with a digitiform apical process, which bears 2 blunt black thorns. A large medial part of the surstylus covered by long thick, tipped black thorns. Basiphallus (Fig. 111) short, connection of basiphallus to phallapodeme only membranous. Distiphallus less sclerotised, without a long thread-like subapical process (its very thin subapical process is hardly homologous with that process of *Poecilosomella* spp.). Ventrally to base of distiphallus there is a shield of not darkly pigmented more or less membranous rod (which I hesitate to name as a sclerite). Distiphallus is deeply embedded in basiphallus. Postgonite (Figs 105, 107) in lateral view seems to be angularly curved; actually twice curved with apical 2/5 nearly straight (better seen in caudal view) and distinctly setulose.

Female preabdomen broad, sternites 2–5 similar to those of males but narrower. Sternites 6 to 8 all broad and very short (strip-like). Tergite 6 slightly more than half-length of tergite 5. Tergite 7 very small, sagittally much desclerotised and depigmented, practically in 2 parts (pigmented parts broadly separated), tergite 8 consists of 2 minute V-shaped lateral sclerites (V points dorsally). Epiproct short trapezoid with a pair of long setae. Hypoproct short transverse. Cerci short, with several undulately curved medium long setae. Paired and unpaired spermathecae of the same size, acorn-shaped with very short and thin sclerotised ducts. No trace of spectacles-shaped sclerite.

Parapoecilosomella lusingana (VANSCHUYTBROECK, 1959) – Material studied (HNHM): 2 males 4 females: Congo, Brazzaville, ORSTOM park, No. 572./575./694., 2./3./16. 1. 1964, J. Balogh – A. Zicsi; 1 male: Congo, Sibiti, IRHO, 2. XII. 1963, No. 322, J. Balogh – A. Zicsi; 1 male: ibid., 1–13. XII.; 1 female: Congo, Kindamba, Meya, 12. XI. 1963, No. 171, J. Balogh – A. Zicsi; 1 male: Congo Belge, P.N.G., Miss. De Saeger, II/hc/8, 23-iv–1951, Réc. J. Verschuren, 1590.

Wings (Fig. 321) about twice longer than broad (1.84 mm vs. 0.90 mm). Second costal section 0.35 mm, third section 0.58 mm. Setae on costa rather long: on first section 0.09 mm, on second section 0.075 mm, costagial seta 0.16 mm. Inter-crossvein section 0.175 mm, dM-Cu 0.14 mm. Discal cell angled, Cu appendage c. 0.12 mm long.

Female genitalia with a small sagittal yellow sclerite (nearly diamond-shaped) adjacent to epiproct cranially, which may be part of tergite 8 and epiproct (tergite 10).

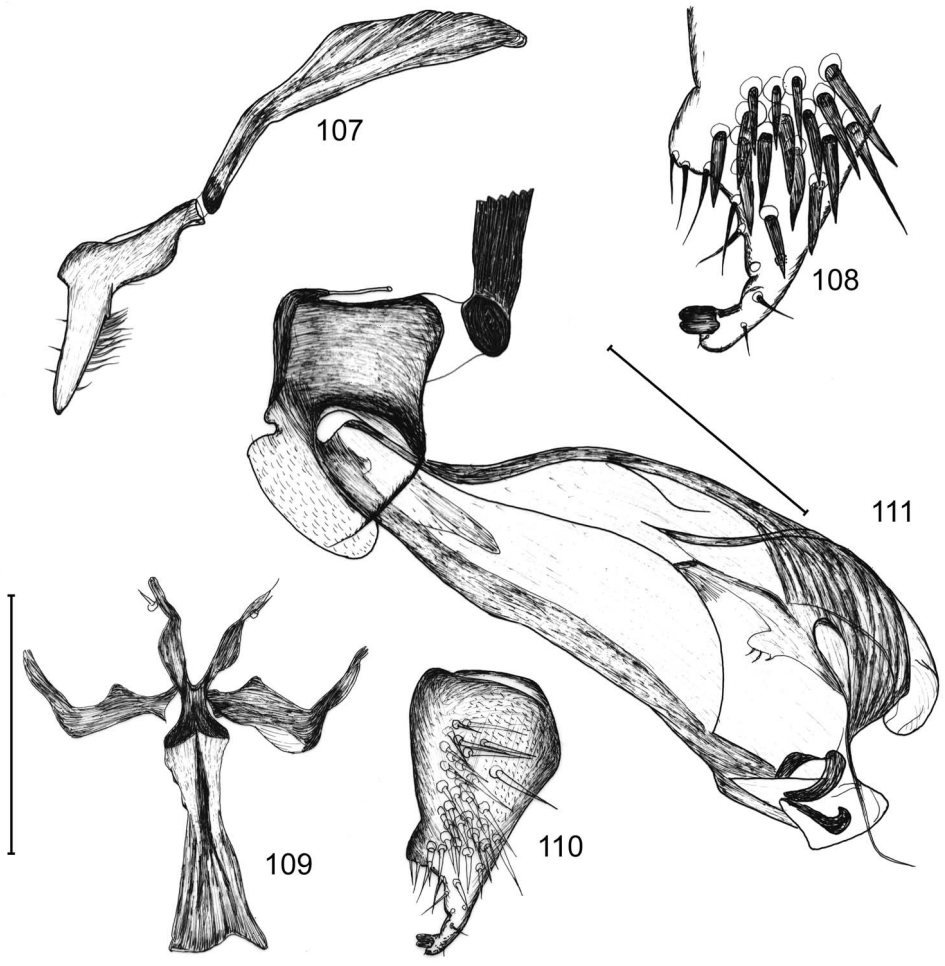


Figs 103–106. *Parapoecilosomella* gen. n., *P lusingana* (VANSCHUYTBROECK), male postabdomen and genitalia. 103 = sternites 2–4, ventral view (most of the sternite 4 setae omitted), 104 = epandrium with subepandrial sclerite, caudal view, 105 = left postgonie, caudal view, 106 = sternite 5 and synsternite 6–8, subventral view. Scales: 0.2 mm for Figs 103–104, 106, 0.1 mm for Fig. 105

Parapterogramma gen. n.
(Figs 112–119, 322)

Type species: *Parapterogramma asiatica* sp. n.
Gender: feminine.

Head. Palpi strongly reduced.



Figs 107–111. *Parapoecilosomella* gen. n., *P. lusingana* (VANSCHUYTBROECK), male genitalia. 107 = postgonite and phallapodeme, lateral view, 108 = apical part of surstylus, broadest (sublateral) view, 109 = hypandrium, ventral view, 110 = surstylus, broadest (sublateral view), 111 = phallus with base of phallapodeme, lateral view. Scales: 0.2 mm for Figs 107, 109–110, 0.1 mm for Figs 108, 111

Wings (Fig. 322) best characterised by dark membrane with light spots. Costa well overruns apex of vein R_{4+5}. Second costal section short.

Tergite 1 sclerotised and pigmented caudally, tergite 2 with a desclerotised medial triangular area. Tergite 3 and 4 strongly reduced (Fig. 112). Both sternite 5 and tergite 5 asymmetrical. Sternites 2–4 weakly sclerotised and sparsely setose with short setae. Caudal process of sternite 5 (Fig. 116) composed of 2 sclerites: a ventral one (that is a continuation of sternite 5) and a dorsal one ending free cranially. Also the dorsal plate is with small thornlets. Synsternite 6–8 (Fig. 113) very short, tergal parts indiscernible, membranous only. Sternite 6 portion continued far to the right. Sternite 7 part narrow i.e. far from reaching sagittal line. Sternite 8 portion light and less sclerotised caudally. Subepandrial sclerite (Fig. 114) almost hexagonal with a darker medial part, which widens both dorsally and ventrally.

Epandrium short, anal opening large, anal plates (sclerotised plates of anal opening) large but membranous. Hypandrium broadly Y-shaped (Fig. 115), lateral arms and medial parts united (strongly fused), medial part without ventral process. Surstylus (Fig. 118) peculiar: long but very low, with a cranial (!) medial tooth. Postgonite (Fig. 117) short, its broad apical part with a dark process and numerous thin setae. Basiphallus in 2 parts, or (another interpretation) low and its caudal part is a curved epiphallus (Fig. 119). Phallapodeme joins basiphallus rather cranially. Distiphallus compact, rather short with a subapical blunt ventral process. Phallapodeme (Fig. 119) long and rather narrow.

Female abdominal tergites 2 to 5 strongly reduced not only in length but also in width; as a consequence, abdomen hardly longer than broad. Tergites 2 to 5 less broad than abdomen. Tergite 6 much longer than tergite 5, sternite 6 almost as long as sternite 5. Postabdomen much retracted into segment 6. Tergite 7 divided into 2 lateral sclerites, sternite 7 transverse and very small, 0.04×0.15 mm. Tergite 8 in 2 parts, very small, triangular. No additional sclerites. Cerci transverse, setae indistinct. Spermathecae more cylindrical than globular, 0.03×0.02 mm, sclerotised ducts very short (less than 0.01 mm) and weakly sclerotised; spermathecal ducts otherwise longer than in *Minialula*, so spermathecae can move cranially.

It runs to couplet 5 in SMITH & MARSHALL's (2004) key of *Pterogramma* SPULER. However, since its palpi are reduced and male genitalia are so much different, it seems better to separate it as a new genus (together with the species-rich *Pseudopterogramma*, which is easily recognisable by its much different male genitalia and in cases, by the long dorsal preapical seta on hind tibia, at least in the type species). After all, the name of the new genus refers to its similarity to *Pterogramma.*

Cephalic and mesonotal patterns are similar to those of *Minialula* and some structure of their male genitalia (e.g. short postgonites) show similarities. However, I think their differences found in the male and female genitalia are enough to serve as a base for separating them as different genera.

Parapterogramma asiatica sp. n.
(Figs 112–119, 322)

Holotype male (HNHM): Thailand: Trang Prov., Khao Chong Botanic Garden, rainforest, Nov 18, 2004, No. 36, leg. L. Papp & M. Földvári 2004.

Paratypes (HNHM): 1 male: same as No. 36, Nov 22 (No. 43); 1 male: ibid., Trang Prov., Palian District, Nam Tok Nam Pan Forest Park, over streams & vegetation around waterfalls, Nov 17, No. 35; 1 female (damaged, wings glued on the card under the specimen): ibid., Thung Khai Botanic Garden, primary lowland rainforest, Nov 12, No. 28.

Measurements in mm: body length 1.09 (holotype), 1.05–1.12 (paratype males), 1.08 (paratype female), wing length 0.95 (holotype), 0.93–0.98 (paratype males), 1.00 (paratype female), wing width 0.44 (holotype), 0.43–0.49 (paratype males), 0.48 (paratype female).

In body coloration similar to that of *Minialula*, mesonotum and pleura with diffuse lighter spots.

Frons dark brown, anterior part reddish; interfrontal stripes and a pair of stripes from the level on mid *ifr*, just medially to *fr-orb*, back to occiput, silvery, also lunule silvery. 3 pairs of interfrontals, middle pair longer. Genal seta 0.08 mm long. Antennae 0.36–0.38 mm long. Scape medial seta very long, 0.09 mm. First flagellomere conical, its cilia very long (0.035 mm). Arista subdorsal but emerges rather far from apex. Aristal cilia 0.03 mm.

Anterior and middle intra-alar setae rather weak. Only 6 rows of acrostichals. Posterior katepisternal seta 0.12 mm, anterior one not discernible.

Wings (Fig. 322) twice longer than broad (0.98 mm vs. 0.49 mm). Second costal section 0.19 mm, third section 0.38 mm. Setae on costa not long: on first section 0.055 mm, more distally 0.05 mm, on second section 0.04 mm long only. Costagial seta 0.09 mm. Inter-crossvein section 0.15 mm, dM-Cu 0.08 mm. Discal cell edged but no Cu appendage discernible.

Legs dark brown with basal and medial broad yellow rings. Mid tibia without middle ventral seta. Male ventroapical seta not separable from the ventral row of short thick setae. Female with long ventroapical seta and no ventral row of thick black setae. Mid tibia with anterodorsals at 8/26, 14/26 (short), 23/28 (long), posterodorsals at 12/26 (large), 23/28 (very large). Also tarsi dark, fore and hind basitarsi light yellow.

Male postabdomen and genitalia as described above, female terminalia not studied.

Pseudopterogramma gen. n.
(Figs 120–133, 323)

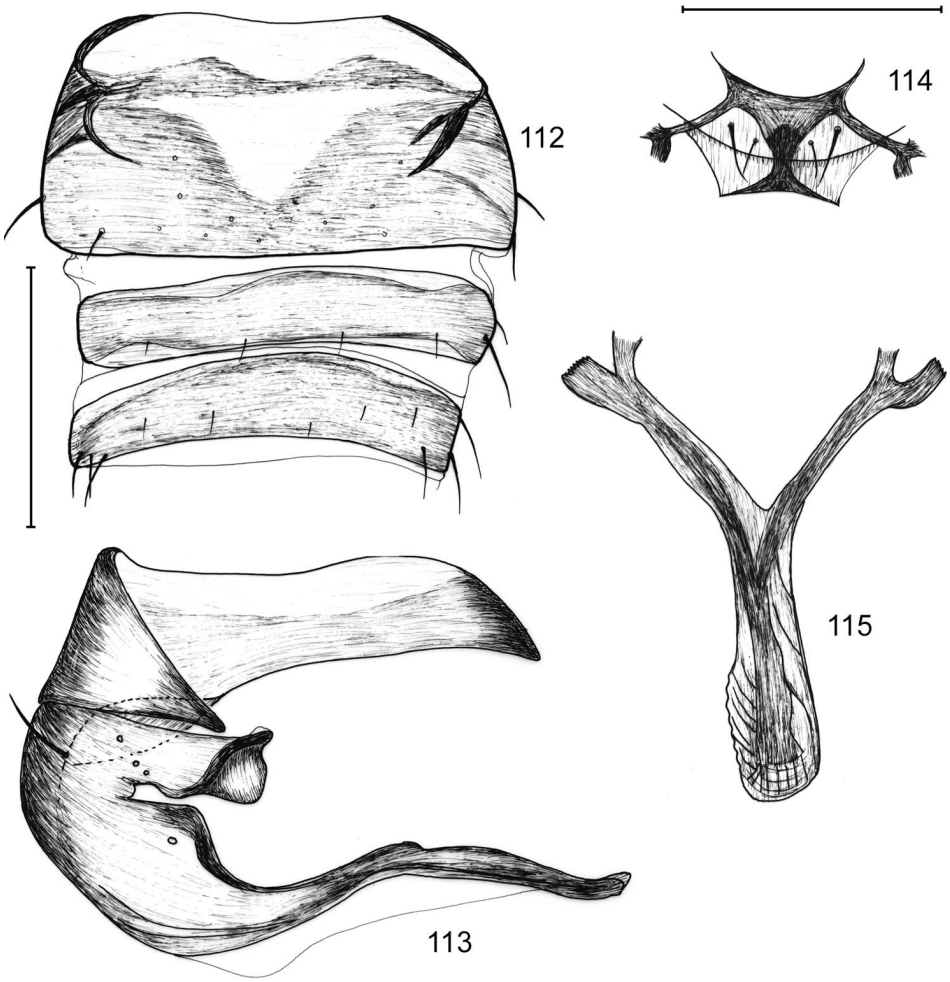
Type species: *Pseudopterogramma siamensis* sp. n.
Gender: feminine

Head. Palpi without long setae. Pedicel setae not too long (Fig. 120), pedicel with a rather cylindrical process sitting in the rather broad caudally open hole of the first flagellomere. First flagellomere with a slight dorso-apical rounded apex but not conical. Longer and thicker hairs on first flagellomere. Arista rather dorsal but not apical on first flagellomere. Basal 2 aristomeres comparatively long, third aristomere long with long (0.04 mm) cilia.

Costa ends at apex of vein R_{4+5}. First costal section with long setae (Fig. 323). Second costal section much shorter than third.

Mid tibia (Figs 123–124) with paired anterodorsal and posterodorsal setae at slightly basally to its basal third and at apical 1/4, plus an anterodorsal at apical third. Male mid tibia apicoventrally with 6 strong thick thorns, slightly more anteriorly a long row of slightly thinner thorns (or short black thick setae) up to basal third. Hind tibia (Fig. 122) with an extremely long (0.12–0.13 mm) dorsal preapical seta and with a curved black apicoventral spur. Hind basitarsus hexagonal in anterior view, with a longer basal and a short subapical thornlets and long light ventral setae.

Sternite 5 rather broad but very short (Fig. 121), without any caudal process, contrarily, membranous and microtrichose medio-caudally. Sternite 5 bare on a cranial depigmented area. Syn-

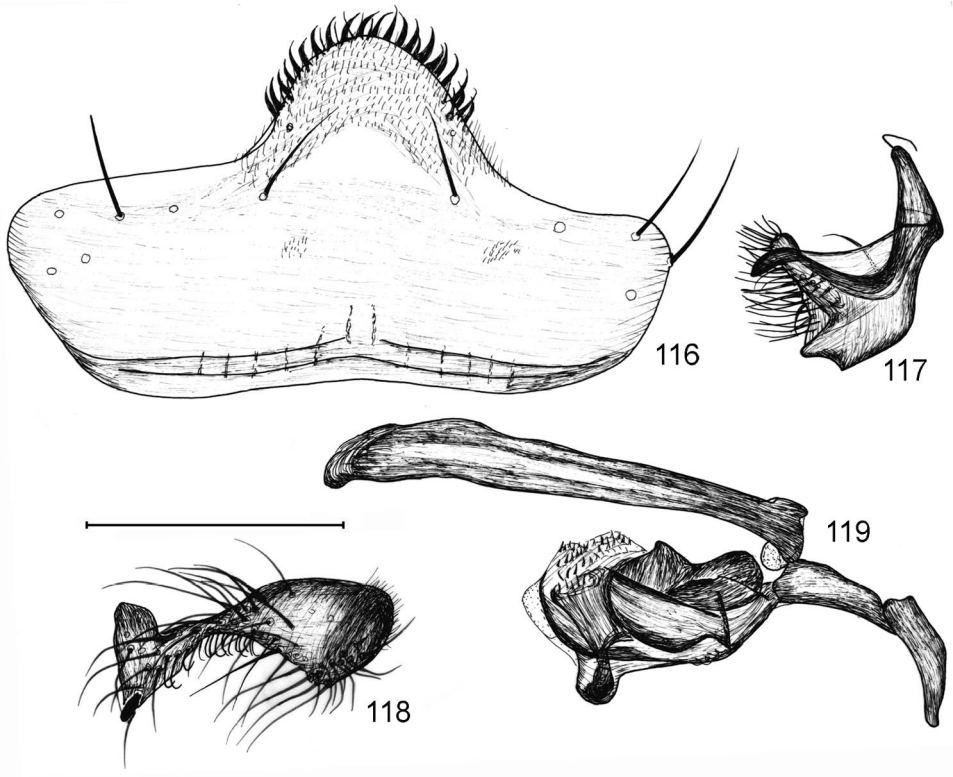


Figs 112–115. *Parapterogramma asiatica* sp. n., paratype male, abdomen. 112 = abdominal tergites, 113 = synsternite 6–8, ventral view, 114 = subepandrial sclerite, caudal view, 115 = hypandrium, ventral view. Scales: 0.2 mm for Fig. 112, 0.1 mm for Figs 113–115

sternite 6–8 (Fig. 125) very characteristic: sternite 8 portion rather long, right edge indistinctly sclerotised. Sternite 7 part restricted on a smaller sclerite on the left side. Sternite 6 part strong and on the right side continued in membranous but hairy parts, which includes an annular pigmented (rather than sclerotised) membrane. Medial process of hypandrium not particularly long, without ventral process (Fig. 128).

Surstylus (Fig. 126) consists of 2 lobes, with short and medium long setae only. Postgonite (Figs 127–128) very long and thin, embraces the broad distiphallus (Fig. 128). Antero-basal thorn of postgonite long but thin. Basiphallus connected to postgonites and phallapodeme at extreme caudal apex, with a small ventral "epiphallic" process. Distiphallus large, basally broader than apically, joining basiphallus on a very small ventral surface only (!). Distiphallus in basal half with a membranous "peplum", which is hairy with retrograde hairs on lateral sides (Fig. 129). Phallapodeme long, enlarged dorsally (medially).

Female preabdomen broad, not much longer than its width; depigmented part of tergite 2 not reaching margin. Tergites 3 and 4 reduced in length, so large membranous aeas present on their cranial margin. Sternites 2 to 6 c. 6 times broader than long. Tergite 6 visible from dorsal side. Tergite 7 perpendicular to the plane of preabdomen and other postabdominal parts positioned ventrally to it. Tergite 8 disconnected dorsally, each half consists of 2 connected sclerites (lateral, ventral). At least



Figs 116–119. *Parapterogramma asiatica* sp. n., paratype male, postabdomen and genitalia. 116 = sternite 5, ventral view, 117 = postgonite, lateral view, 118 = surstylus, broadest view, 119 = phallus and phallapodeme, lateral view. Scale: 0.1 mm for all

3 additional sclerites between tergite 8 and sternite 8. Epiproct and hypoproct minute, hypoproct with a thin cranial process. Cerci very small with 3 medium long and several short setae each.

Etymology. The name of the new genus refers to its resemblance to the species rich New World genus *Pterogramma* SPULER through its very short second costal section and rich wing pattern. Comparison of the male genitalia does not show a closer relationship though.

Pseudopterogramma insularis (L. Papp, 1972) comb. n., originally *Pterogramma* – The holotype female was kept in alcohol for nearly 40 years. It became very pale and soft. In order to prevent further damage, it was prepared into Canada balsam between two pieces of cover glass on a holed card, during this study. Fortunately, I found a conspecific male (Indonesia: Sulawesi, Dumoga, Toraut, forest edge, 15.6.–20.6. 1985, Malaise trap), whose genitalia (Figs 130–133) show typical features of the genus. Sternite 5 (Fig. 130) short simple with sparse setosity. Surstylus (Fig. 132) in 2 large lobes, without any thorn-like setae, both lobes with medium-long setae only. Structure of phallic complex similar to that of *P. siamensis* (Fig. 133). Postgonite (Figs 131, 133) long thin apically very narrow though not pointed, less medially curved than that of *P. siamensis* (Fig. 131, cf. Fig. 127).

It is important to know that in this new genus both species with posterodorsal setae in basal third of mid tibia, and species without it, occur.

I have seen specimens of other two species from India and Taiwan. Also *Leptocera* (*Poecilosomella*) *conica* RICHARDS, 1946 (Pacific islands, New Guinea) may belong here.

Pseudopterogramma siamensis sp. n.
(Figs 120–129, 323)

Holotype male (HNHM): Thailand: Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, 2004, No. 42, leg. L. Papp & M. Földvári.

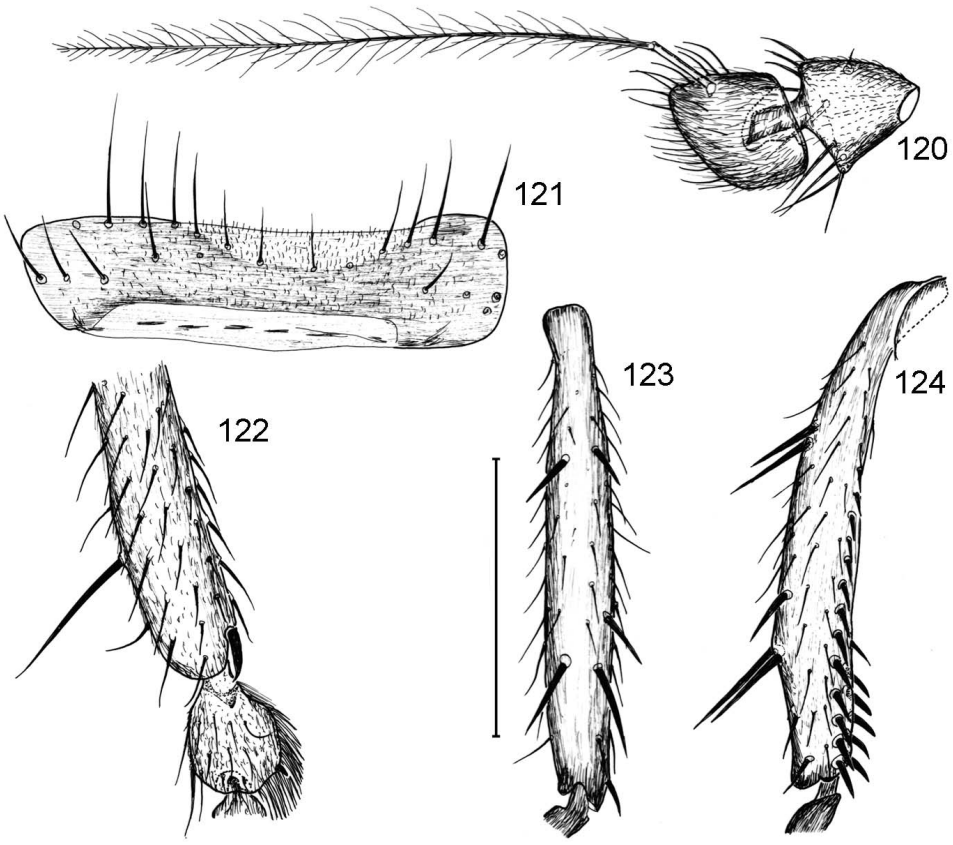
Paratypes (HNHM): 11 males 7 females: same as for the holotype; 11 males 8 females: ibid., Trang Prov., Khao Chong Botanic Garden, rainforest, Nov 22, No. 43; 2 males 1 female: ibid., Khao Chong Botanic Garden, rainforest, Nov 18, No. 36; 3 males 3 females: ibid., Thung Khai Botanic Garden, primary lowland rainforest, Nov 19, No. 38; 1 male: Khao Chong Botanic Garden, along a forest path, Nov 20, No. 41; 5 males 2 females: Palian District, Nam Tok Nam Pan Forest Park, over streams & vegetation around waterfalls, Nov 17, No. 35; 1 male 2 females: ibid., Phattalung Wildlife Breeding Research Centre, along a forest brook, Nov 20, No. 39; 1 male: ibid., Ban Liphang, over a shadowed slow brook, Nov 16, No. 34; 2 males: Doi Inthanon N. P., Pha Sum Ran Waterfall, forest & along the brook, Oct 30, No. 8; 1 female: Ban Na Lae, nr Pua, over a rocky forest brook, Nov 5, No. 19, leg. L. Papp & M. Földvári; 2 females: Mae Charim, dry forest, Nov 5, No. 21; 3 females: Nan Prov., along the rivulet above Mae Charim waterfall, Nov 6, No. 22, leg. L. Papp; 1 male 2 females: Nan Prov., over and along the rivulet above Mae Charim waterfall, Nov 7–8, No. 25.

Measurements in mm: body length 1.44 (holotype), 1.20–1.45 (paratype males), 1.19–1.32 (paratype females), wing length 1.15 (holotype), 0.93–1.18 (paratype males), 1.04–1.27 (paratype females), wing width 0.55 (holotype), 0.46–0.57 (paratype males), 0.52–0.60 (paratype females).

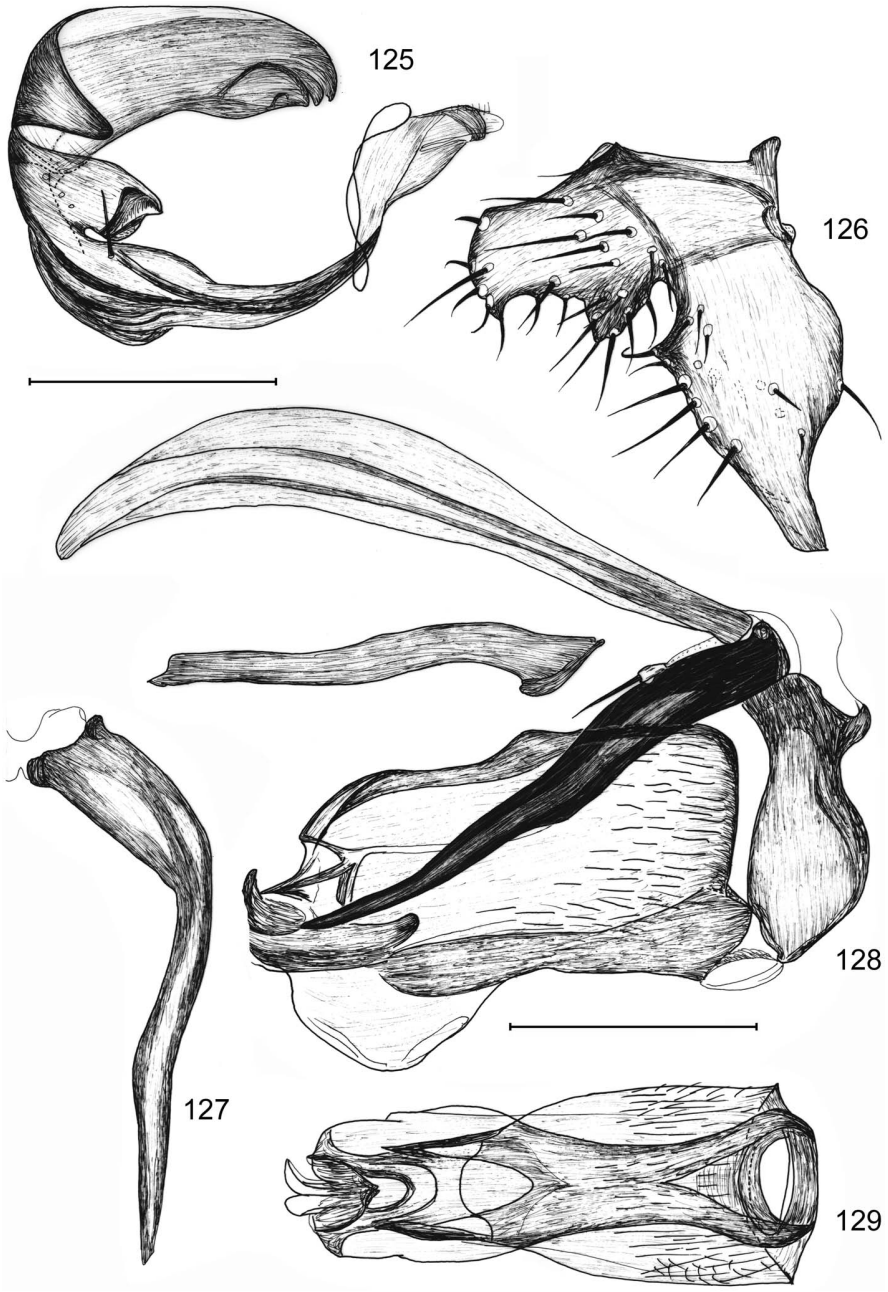
Body and legs brown, anterior part of frons, knees and tarsi yellow.

Head broad, 0.47 mm, about as broad as thorax at broadest. Cephalic and thoracic setae, compared to related genera, thick. 3 pairs of interfrontals, 2 posterior pairs long, anterior pair short. No true interocellars or postocellars, both occipital pairs rather long. Genal seta thin, 0.10 mm long. Antenna reddish yellow, apex of first flagellomere grey of the pilosity. Scape seta 0.06–0.065 mm. Discoloured curved seta ventrally on pedicel 0.085mm. First flagellomere with a dorsal conus, though apex rounded, apical cilia 0.035 mm. Arista subapical, 0.46–0.48 mm long i.e. comparatively short, its longest cilia 0.045 mm.

Both dorsocentral pairs very strong and rather anterior: posterior pair at 0.09–0.095 mm, anterior pair at 0.26 mm from scutellar suture. Medial postpronotal not developed, presutural pair 0.125 mm long. Acrostichals in c. 8 not well ordered rows between anterior *dc*. No microchaetae caudal to



Figs 120–124. *Pseudopterogramma siamensis* sp. n., paratype male. 120 = left antenna, lateral view, 121 = sternite 5, ventral view, 122 = apex of hind tibia and hind metatarsus, anterior view, 123–124 = mid tibia: 123 = dorsal view, 124 = anterior view. Scale: 0.2 mm for all



Figs 125–129. *Pseudopterogramma siamensis* sp. n., paratype male, postabdomen and genitalia. 125 = synsternite 6–8, ventral view, 126 = surstylus, broadest (a sublateral) view, 127 = right postgonite, caudal view, 128 = inner genitalia with medial part of hypandrium, 129 = phallus, ventral view. Scales: 0.2 mm for Fig. 125, 0.1 mm for Figs 126–129

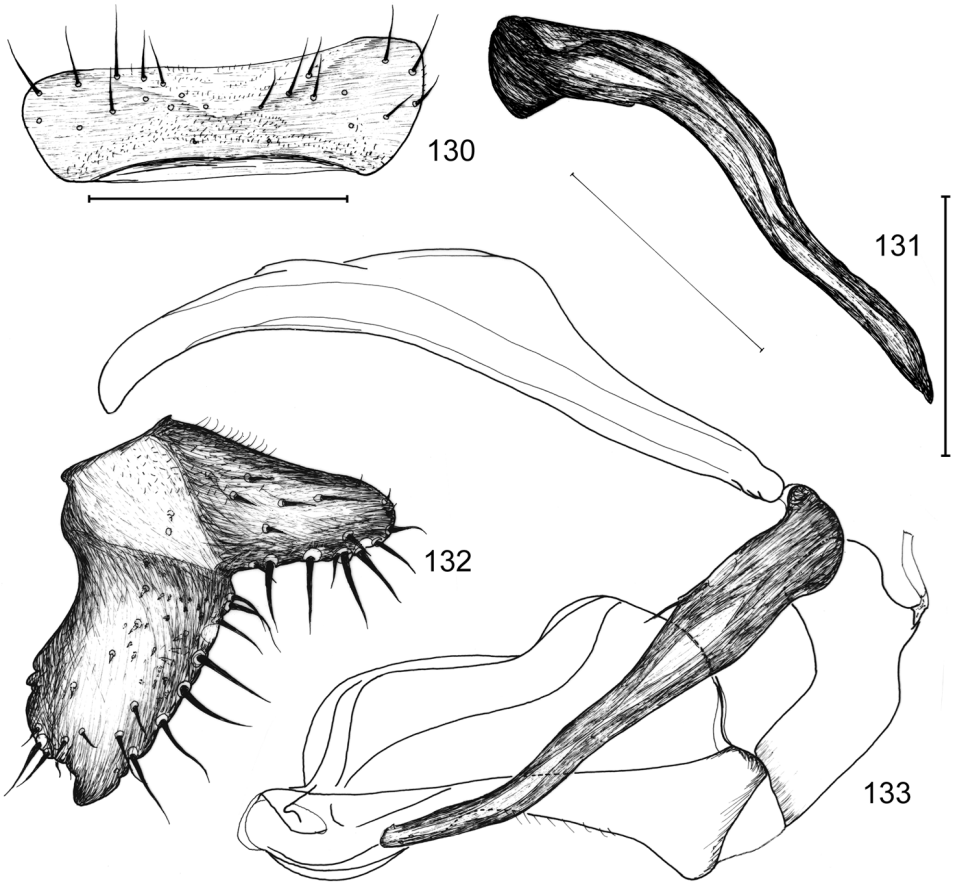
posterior *dc*. Apical scutellar seta very long, 0.40 mm. Posterior katepisternal rather long, 0.225 mm, anterior indistinct.

Wings (Fig. 323) broad, length/width ratio 2.0. Second costal section much shorter than third (0.20 mm vs. 0.38 mm). Setae on first costal section 0.05 mm, on second section 0.04 mm, costagial seta 0.09 mm. Inter-crossvein section of M 0.09 mm, dM-Cu 0.08 mm. Coloured part of vein M 0.17–0.18 mm. Cu appendage 0.09 mm. First costal section without long perpendicular setae, except one on vein H. Alula narrow, apex almost pointed.

Tibiae without brown rings. Mid tibia with anterodorsal at 1/3, 2/3 and 22/30 (strong), posterodorsals at 1/3 (0.09 mm, i.e. much longer than its anterodorsal pair), 23/30 (very long).

Male and female postabdomen and genitalia as described above.

Surstylus (Fig. 126) consists of a narrowed cranial and a medially enlarged caudal lobes. Surstylus with short and medium long setae only. Postgonite (Figs 127–128) very long and thin, al-



Figs 130–133. *Pseudopterogramma insularis* L. PAPP, male postabdomen and genitalia. 130 = sternite 5, ventral view, 131 = right postgonite, caudal view, 132 = surstylus, broadest (sublateral) view, 133 = inner genitalia, postgonite stressed, lateral view. Scales: 0.2 mm for Fig. 130, 0.1 mm for Figs 131–133

most L-shaped in caudal view, embracing the broad distiphallus (Fig. 128). Antero-basal thorn of postgonite long but thin. Basiphallus connected to postgonites and phallapodeme at extreme caudal apex, with a small ventral "epiphallic" process. Distiphallus large, basally broader than apically, joining basiphallus on a very small ventral surface only (!). Distiphallus in basal half with a membranous "peplum", which is hairy with retrograde hairs on lateral sides (Fig. 129). Phallapodeme long, enlarged dorsally (medially).

Etymology. The specific epithet of this new species refers to the old name of its type locality (Siam, Thailand).

Thailimosina gen. n.
(Figs 134–145, 324)

Type species: *Thailimosina maculata* sp. n.
Gender: feminine

Head (Fig. 134) with dorsal part of face protruding, mouth edge slightly less so, ventral part of face concave. Genae broad and strongly broadening posteriorad. Cheeks with 5 preocular setulae. Vibrissa only slightly longer than 0.1 mm, peristomal setae weak, genal setae not developed at all. Palpi small with very short and thin setae, apical seta only 0.035–0.04 mm long. Pedicel rather conical (base rather narrow) with long medial apical conical process, which is inside the rather large basal cavity of the 1st flagellomere. First flagellomere quadrate in lateral view (no dorsal apex), covered with hairs only, whose bases are comparatively large round spots. Arista rather dorsal on 1st flagellomere but far from apex. Basal aristomeres medium long, 3rd aristomere long, aristal cilia about 0.02 mm.

Prosternum linear.

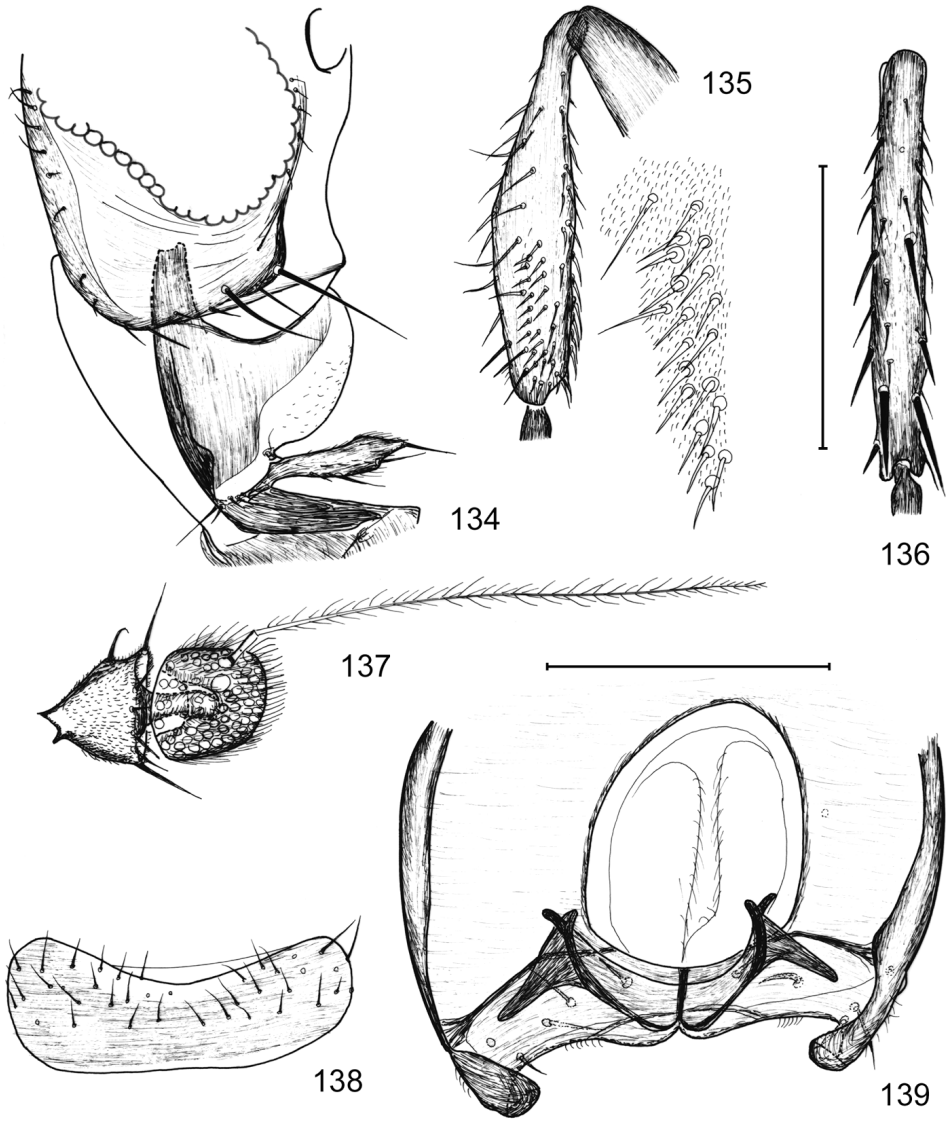
A large dark spot on R_{2+3} (Fig. 324). Costa ends at apex of vein R_{4+5}. Second costal section very short.

Fore tibia strongly thickened (Fig. 135). Apical inner (posterior) surface with stronger setae, more medially, dorsally to 2/5 of tibia a group of light straight, thick based but pointed setae present. Mid tibia (Fig. 136) with anterodorsal setae: a large one at apical fifth, another one at middle, a slightly more anterior at apical third and 2 short ones in the basal third. Posterodorsal setae: a very long and thick one at apical fifth, a strong one slightly dorsal to middle and a shorter one at apical third. Anterodorsal and posterodorsal setae are not paired except for the long ones at apical fifth. Also a distinct mid ventral seta present. Ventral tibial spur on hind tibia indiscernible.

Abdomen short, tergite 3 about 6 times broader than long. Tergite 2 with a small U-shaped depigmented area medially, which does not reach caudal margin. Sternite 5 (Fig. 138) without any caudal process, quite contrarily, caudal margin broadly concave, membranous medially. Synsternite 6–8 (Fig. 144) rather large with sternite 8 part long. Sternite 6 part with a rather large cranial lobe on the left side, ventral part reaches far on the right side, in the sagittal line of the body with a round caudal protuberance, which bears small setae in 5 rows.

Epandrium short, without long dorsal pair of setae. Anal opening medium large, no ventral appendage on epandrium, but a pair of short blunt slightly proclinate lobes ventro-*laterally*. Subepandrial sclerite (Fig. 139) short (low) but very broad. Hypandrium (Fig. 140) with a short but broad medial process. Lateral arms strong, structured, two (pairs of) small caudal protuberances visible.

Shape of surstylus (Fig. 145) rather simple, basal half quadrate, apical part parallel-sided with a slightly rounded caudal apex. Apical part and caudal margin with long and medium-long setae, a larger basal and medial part bare. Phallus (Fig. 143) short, basiphallus very short but very broad (this can be demonstrated by the very broad base of phallapodeme), basiphallus and distiphallus connected



Figs 134–139. *Thailimosina maculata* sp. n., paratype male. 134 = parts of head, lateral view, 135 = fore tibia, anterior view, outset: anterior setulae in higher magnification, 136 = mid tibia dorsally, 137 = right antenna, lateral view, 138 = sternite 5, ventral view, 139 = ventral part of epandrium with processes and with the subepandrial sclerite, a contra-caudal, sub-anterior view. Scales: 0.2 mm for Figs 134–138, 0.1 mm for Fig. 139 and for the outset of 135

broadly. Distiphallus globuliform, weakly sclerotized, its ventral part covered by reticulate membrane. Phallapodeme short and small, base extended (Fig. 141). Postgonite (Fig. 142) robust, curved, broadened subapically.

Female abdominal tergites comparatively short but broad, consequently abdomen rather short. Sternites almost as broad as abdomen. Consequently, membrane between tergites and sternites are not broad, with numerous short setae. Depigmented medial area of tergite 2 comparatively small.

Postabdomen very short, oblique to abdominal axis. Sternite 6 only half as broad as abdomen. Tergite 8 not divided but very short dorsally. Paired spermathecae much smaller than unpaired, cylindrical rather than globular, both ends rounded. Unpaired spermatheca globular though distal part collapses (invaginate) when in glycerol.

Etymology. The name of the new genus is composed from the name of its type locality and *Limosina*, the former large unifying genus of Limosininae.

Thailimosina maculata sp. n.
(Figs 134–145, 324)

Holotype male (HNHM): Thailand: Doi Suthep, over and along a brook, above and below a small waterfall, Nov 9, 2004, No. 27, leg. L. Papp & M. Földvári.

Paratypes (HNHM): 1 male 2 females: Trang Prov., Thung Khai Botanic Garden, primary lowland rainforest, Nov 12, No. 28; 1 male: Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, 2004, No. 42; 1 female: ibid., Trang Prov., Khao Chong Botanic Garden, rainforest, Nov 22, No. 43.

Measurements in mm: body length 1.23 (holotype), 1.10–1.20 (paratype males), 1.10–1.21 (paratype females), wing length 1.23 (holotype), 1.10–1.15 (paratype males), 0.89–1.11 (paratype females), wing width 0.56 (holotype), 0.52–0.57 (paratype males), 0.46–0.55 (paratype females).

Dark brown, frons but occiput reddish, facial plate shiny.

Antennae reddish brown. Scape with medial seta 0.09 mm. First flagellomere with a dorsal conus but apex rounded, cilia white and 0.04 mm long. Arista 0.46 mm, aristal cilia slightly less than 0.02 mm.

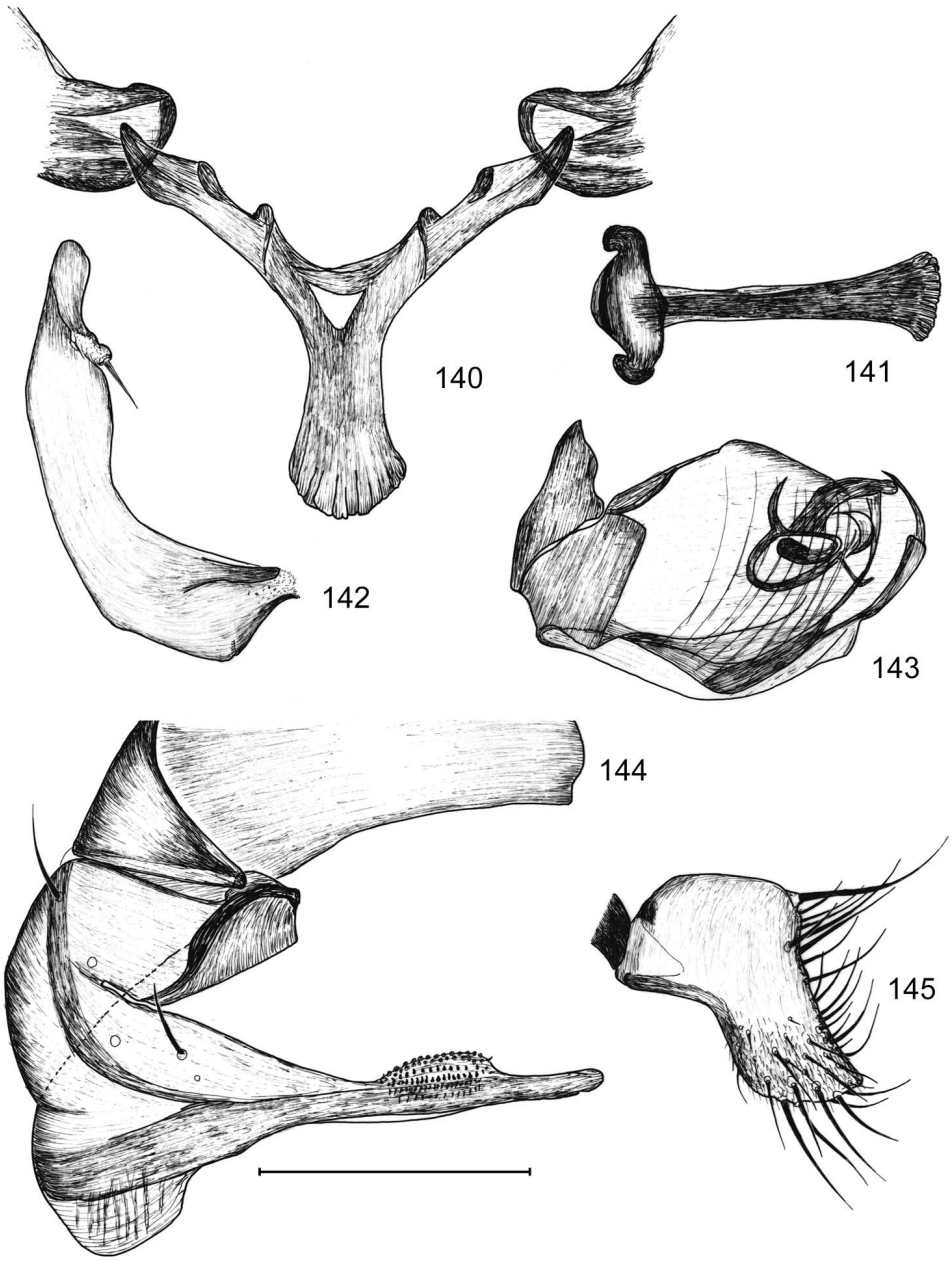
2 pairs of long dorsocentrals. Acrostichals in 8–10 unarranged rows. No prescutellar acrostichal pair. Presutural seta well developed. Posterior katepisternal 0.13 mm, anterior one minute.

Wing with a large dark spot on R_{2+3} (Fig. 324). Costa ends at apex of vein R_{4+5}. Second costal section very short 0.20 mm, third section 0.38 mm. Longest setae on first costal section 0.045 mm, on second section 0.025 mm. Costagial seta 0.08 mm. Inter-crossvein section of M 0.15 mm, dM-Cu ca. 0.07 mm. Discal cell rounded, no Cu appendage. Coloured part of M 0.09–0.10 mm long. Haltere white.

Fore tibia strongly thickened (Fig. 135), see above. Setosity of mid tibia (a paratype male, cf. Fig. 136): anterodorsals at 10/34 (short), 15/34 (longer), 25/34 (longer), 28/34 (very long), posterodorsals at 16/34, 29/34 (very long).

Male and female postabdomen and genitalia as described above.

In order to demonstrate dimensions of female genital parts of this genus and related genera, I took measurements on a female of *T. maculata* and I express them in μ. Epiproct length 20, width 27, its seta 27 (on the left side only in our specimen), cercus length 40, width 13, apical (undulate) seta 75, dorsal subapical (undulate) seta 55, lateral (straight) seta 31.



Figs 140–145. *Thailimosina maculata* sp. n., paratype male, postabdomen and genitalia. 140 = hypadrium with arms of epandrium, dorsal view, 141 = phallapodeme, dorsal view, 142 = postgonite, broadest view, 143 = phallus, right lateral view, 144 = synsternite 6–8, ventral view, 145 = surstylus, lateral (= broadest) view. Scale: 0.1 mm for all

Etymology. The specific epithet of this new species refers to its large dark spot on its wing.

New subgenera of *Minilimosina* ROHÁČEK, 1983

Amediella subgen. n.
(Figs 146–153, 315–316, 325)

Type species: *M. (Amediella) endrodyi* sp. n.
Gender: feminine

Head (Fig. 146) with very long postocellar setae (N.B.: they emerge cranially to occipital setae, so they are postocellars and not postverticals), 3 medium long interfrontal pairs; vertical setae not longer than ocellars, *occe* and *occi* distinct but not particularly long; a pair of interocellars is well developed. First flagellomere rounded.

Thoracic setae largely as in *Allolimosina* spp., bare area of anepisternum well discernible.

Wing (Fig. 325) with discal cell absent, distal parts of veins M and Cu practically missing.

Abdominal tergite 2 does not seem to be desclerotised, without long setae, tergites 3 to 5 much reduced, less broad than abdomen, rather large membranous area present between tergites.

Male sternite 5 (Fig. 153) rather long, setosity sparse but rather long. Medio-caudal projection large with a more cranial arcuate ridge with 8 strong setae, apically with a comb of ca. 12 blunt thick black spines. Synsternite 6–8 very small, visible under sternite 5 in ventral view.

Epandrium without long setae caudally, ventral part subtriangular (Fig. 147), subepandrial sclerite, comparatively small and high. Medial projection of hypandrium very small. Surstylus (Figs 147, 149–150) of an intricate form: in lateral view actually 5 lobes visible: a setose cranial, a broad one behind it, a thin process with a long apical seta, a digitiform subcaudal and a short broader caudal process with curved setae (in order to see their connection, surstylus depicted in two different caudal views). Male inner genitalia (Fig. 148) with compact basiphallus, distiphallus with a cranial apex. Base of postgonite broad, medial part narrowed, apex blunt, curved cranially.

Female postabdomen (Fig. 152, 315–316) not much protruding. Tergite and sternite 6 normal. Tergite 7 (Fig. 315) divided dorsally, distal margin of sternite 5 (Fig. 316, dark part) perpendicular to the plane of sternite. Tergite 8 divided into 2 lateral parts. Sternite 8 not discernible. There is a transverse sclerite between ventrally curved arms of tergite 8, but that must be an additional sclerite, since it is positioned distal to the genital opening. Epiproct triangular, its pair of bristle rather cranial (Fig. 315). Hypoproct inverse U-shaped. Cerci rather short with 1 supraapical, 1 apical and 1 subapical setae each (subapical one as long as apical). Spermathecae (Fig. 151) globular, sclerotised ducts not long, separate ducts of paired spermathecae rather short.

Etymology. The name of the new subgenus refers to the peculiar feature of the wing: distal parts of veins M and Cu are missing.

Below only its type species is described. However, in the HNHM there are other specimens of *Amediella*, as follow:

1 male 1 female: RSA [Republic of South Africa]: Eastern Cape Prov.; postocellars as long as ocellars or nearly so, 3 long interfrontal pairs, halteres black)

1 female of another species: Thailand: Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, No. 42; 4 pairs of shorter interfrontals, postocellars equal to 4/5 of ocellars, wing veins dark (brown), bare area of anepisternum very small, halteres black).

I think the South African specimens may represent another species, i.e. they are not *M.* (*A.*) *endrodyi*. They will be studied later.

M. (*Amediella*) subgen. n. is closely related to the subgenus *Allolimosina* ROHÁČEK, 1983. However, its more intricate surstylus, otherwise shaped modified male cerci, structure of sclerites of the female 7th and 8th abdominal segments, shorter female cerci and otherwise shaped (globular) spermathecae seem important differences, other than the reduced wing venation. A further point of argument is that it is at least three species included.

M. (Amediella) endrodyi sp. n.
(Figs 146–153, 315–316, 325)

Holotype male (HNHM): Ghana: Sese, 17. 6. 1969, air plancton [plankton], Budua-Pretsea, 18.30–19.30 p.m., No. 373, leg. Endrődy-Younga, S. (abdomen and genitalia in a plastic microvial with glycerol).

Paratypes (HNHM): 3 females: same as for the holotype; 2 females prepared on 2 slides in canada balsam: ibid., Kumasi, 31. 5., air plancton [plankton], Kum.-Bekwai road, 20 km, 5.30–6.30 p.m., No. 364. Congo: 1 female: Brazzaville, ORSTOM park, 26. X. 1963, light trap, leg. J. Balogh – A. Zicsi, No. 214; 4 females: ibid., No. 34 [Soil traps in forest opposite to burnt savannah].

The latter four paratypes were prepared into canada balsam in a single holed card label between two pieces of cover glass; the head of one of them is depicted on Fig. 146.

Measurements in mm: body length 0.80 (holotype), 0.82–1.00 (paratype females), wing length 0.67 (holotype), 0.68–0.84 (paratype females), wing width 0.32 (holotype), 0.325–0.385 (paratype females).

Dark brown, tarsi yellow.

Head (Fig. 146) as described above; there is a swelling between antennae, which is continued in a well-formed carina. Mouth edge protruding. First flagellomere rounded with longer cilia apically.

1 pair of dorsocentral setae, prescutellar acrostichal only 0.05 mm long.

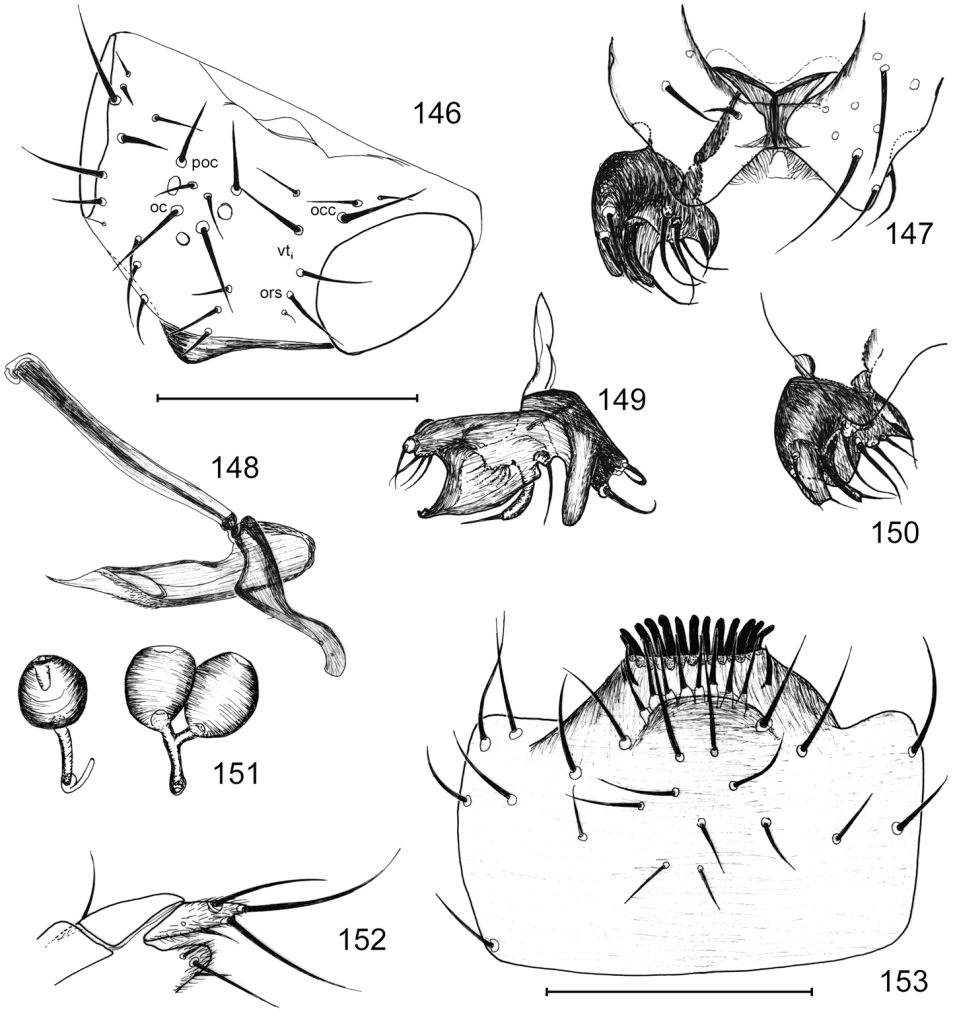
Wing (Fig. 325) clear, veins colourless, only costa and radial veins light yellowish. Vein R_{2+3} rather straight, joining costa in an acute angle. First costal section setae 0.03 mm, those on second section 0.025 mm, i.e. almost equal. Dorsal costagial seta minute, ventral costagial thick but only 0.08 mm long. Second costal section 0.18 mm, third section 0.37 mm long. Alular cilia 0.03 mm long, equalling the diameter of alula. Haltere yellow.

Mid femur without long setae ventrally subbasally. Mid tibia without mid ventral seta; anterodorsals at 13/50, 17/25 (a more anterior seta), 4/5 (large), posterodorsal only at 19–21/25 (large).

Male and female terminalia as described for the new subgenus.

Ripe eggs very large compared to the size of female abdomen, white, 0.29–0.30 mm x 0.085–0.09 mm, cephalic apex narrowed.

Etymology. I named this new species to commemorate the late Dr. SEBŐ ENDRŐDY-YOUNGA, the famous Hungarian born coleopterist, the collector of the type series and many more interesting dipterous specimens.



Figs 146–153. *Minilimosina* (*Amediella*) *endrodyi* sp. n. 146 = head, *in situ* figure on a female paratype in canada balsam, subdorsal view, 147 = ventral part of epandrium with left surstylus and subepandrial sclerite, caudal view, 148 = male inner genitalia, lateral view, 149 = surstylus with connection process to the subepandrial sclerite, broadest view, 150 = left surstylus, a subcaudal view, 151 = spermathecae (drawn in water), 152 = female postabdomen, lateral view, 153 = male sternite 5 (oc: ocellar, occ: occipital, ors: fronto-orbital, poc: postocellar setae). Scales: 0.2 mm for Fig. 146, 0.1 mm for Figs 147–153

Sagittaliseta subgen. n.
(Figs 154–163)

Type species: *M.* (*Sagittaliseta*) *siamensis* sp. n.
Gender: feminine

Gena with a small shiny area below eye. No genal seta.

Thorax with 2 dorsocentral pairs, acrostichal microchaetae in c. 8 rows. Pleura dull, its shiny area small (see below). Scutellum with the usual lateral and subapical pairs of macrochaetae.

Wing similar to that of *M.* (*Svarciella*) spp.

Fore femur slightly thickened. Mid femur basally and ventrally with 3 long thick setae (Fig. 159). Mid tibia short, no mid ventral setae, anterodorsal and posterodorsal setae above the very long anterodorsal are not paired (Fig. 159). Ventral apical part of tibia with some thicker oblique setae (Fig. 160). Mid tarsus and particularly mid basitarsus very long, do not bear specific characters.

Abdomen. Tergites normal, reaching lateral margin of abdomen. Tergite 2 with a large, less pigmented (?desclerotised) area reaching almost to caudal edge of tergite. Tergite 2 not much shorter than tergite 3 and 4 combined. Tergites sparsely setose, tergal setae short. Sternites (Fig. 155) peculiar: sternite 2 not too broad with a pair of long and very thick setae at medial margin, sternite 3 long and rather broad (quadratic) with 3 pairs of long and very thick setae, the two more caudal pairs emerge close to each other. Sternite 4 even broader with a short and a long sagittal setae plus a pair of long thick caudal pair, whose base touching. Male sternite 5 (Figs 156–157) rather broad and long, centrally without setae, lateral setae sparse and medium-long. Medio-caudally a row of prensisetae (apices light), surrounded by some short medially curved seta. Flanking lobes not developed. Cranially to that row ca. 5–6 rows of short setulae.

Synsternite 6–8 short (extended in caudal direction on Fig. 154). S8 not particularly short but occupies only a part of width of abdomen. S6 part rather small, with 4 setae laterally, and hidden under sternite 5, sternite 7 part strongly sclerotised but small. Tergal parts only membranous.

Epandrium long, anal opening rather large. Ventral medial (caudal) part of epandrium linear. Subepandrial sclerite horizontal. No long setal pair on epandrium. Sclerotised plates of anal opening weakly sclerotised, membranous. Hypandrium (Fig. 158) with a large ventral process, which bears a pair of blunt ventral processes. Medial part of hypandrium slightly asymmetrical.

Surstylus (Fig. 161) with a small paired lateral lobe only, no large thorns (structure on Fig. 161 is not a thorn but a process). Basiphallus consists of 2 blade-like, caudally concave, long sclerites (sickle-shaped in lateral view); those sclerites fused apically from the insertion point of the ventral sclerites of distiphallus down to apex. Distiphallus's main parts are a single 0.11 mm long ventral (medial) sclerite and a pair of dorsal-lateral sclerites. Ventral sclerite preceded by a quadrate sclerite with the ventral appendages. Distiphallus (Figs 162–163) ventrally subapically with a pair of broad weakly sclerotised processes. No epiphallus. Phallapodeme (Fig. 163) rather large. Postgonites (Fig. 163) very large, apical part curved, subapically with a number of thornlets; due to their size, also the Y-shaped sclerite connecting them to hypandrium, rather large.

Female not known.

The new subgenus is closely related to the subgenus *M.* (*Svarciella*). T1+2 about as long as T3 and T4 together (longer in *Svarciella*). Preabdominal sternites with one single seta in the sagittal line, or, paired setae tend to emerge so (setosity normal in *Svarciella*), tergites not long haired. Surstylus (Fig. 161) with a small paired lateral lobe only, no large thorns (usually longer than wide, lobe-shaped or bilobed, usually with thick thorns in *Svarciella*).

I suspect that flanking lobes of male sternite 5 are results of parallel evolution, so a simple presence/absence does not mean any evolutionary relationship.

Etymology. The subgeneric name *Sagittaliseta* refers to the peculiar position of long thick setae on abdominal sternites in the sagittal line.

M. (Sagittaliseta) siamensis sp. n.
(Figs 154–163)

Holotype male (HNHM): Thailand: Doi Inthanon N. P., below Haui Sai Nueng Falls, along the brook, Oct 30, 2004, No. 7, leg. L. Papp & M. Földvári.

Paratype male (HNHM): [Thailand] Fang, Mae Fang National Park, Doi Pha Hom Pok, 1430 m, 21. XI., 2003, No. 9, along creek and forest road, leg. M. Földvári (abdomen and genitalia in a plastic microvial with glycerol).

Measurements in mm: body length 1.80 (holotype), 1.78 (paratype), wing length 1.55 (holotype), 1.58 (paratype), wing width 0.66 (holotype), 0.67 (paratype).

Black, only mid tarsi yellowish.

Inner occipitals rather long. 2 pairs of strong plus a third posterior weak pair of *ifr* setae. Facial plate shiny, frons microtomentose. Two subequal pairs of fronto-orbital setae. No genal seta. Gena with a 0.02 mm broad shiny (free of microtomentum) area below eye. Dorsal edge of first flagellomere straight, apex broadly rounded, 0.14 mm long, 0.13 mm broad (subbasally), covered by 0.03 mm long white cilia. Scape with medial seta indiscernible, pedicel setae short.

Thoracic pleura microtomentose, only a small bare area on anterior upper edge of katepisternum and a minute round area on its border with anepisternum. Anterior dorsocentral seta cranial to wing base and only 1/2 of the length of posterior seta. Acrostichal microchaetae not well ordered about 8 rows between anterior *dc*.

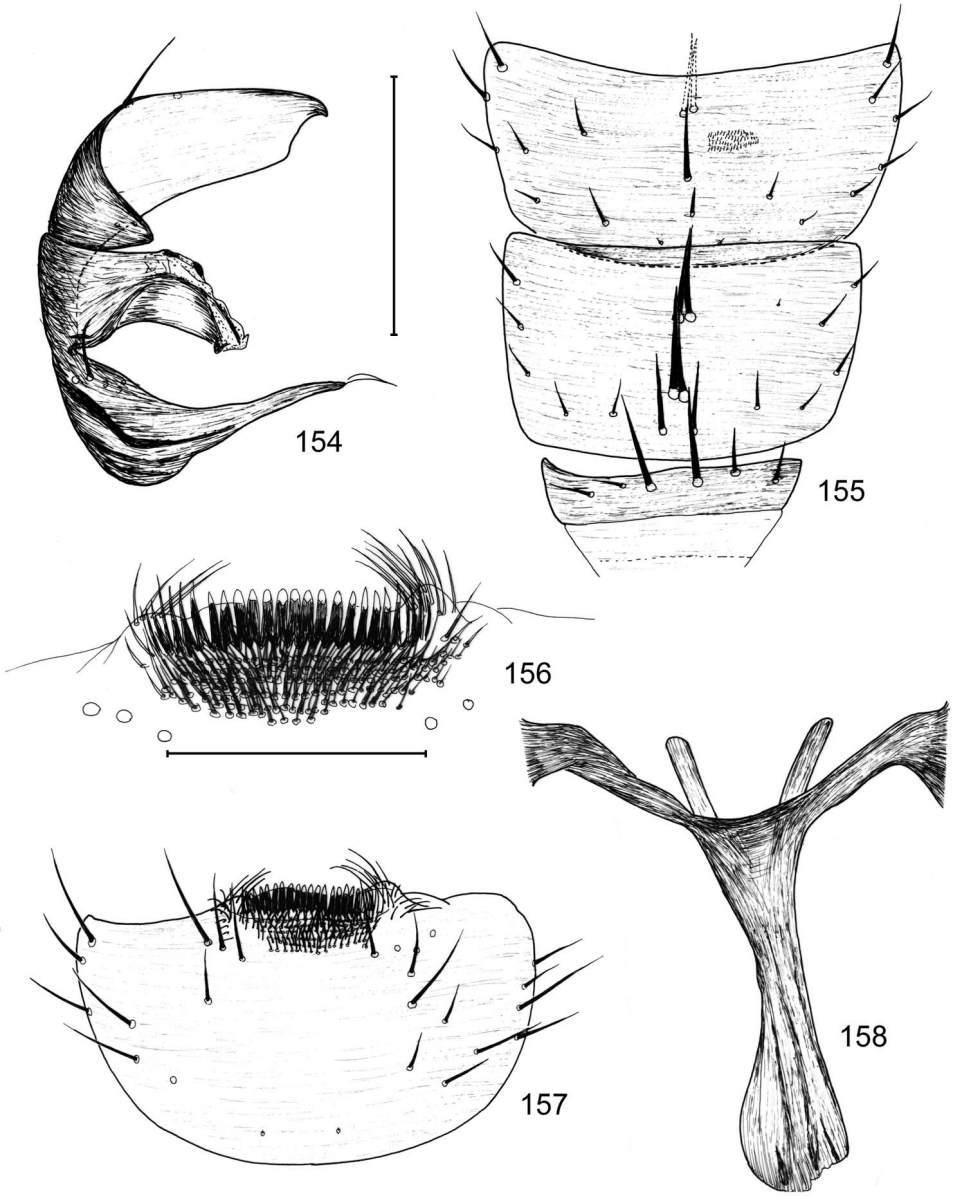
Wing light brownish, veins light brown. Costa well (by 0.06–0.07 mm) overruns apex of R_{4+5}. Vein R_{2+3} apically with a slight curvature, consequently joins costa in an acute angle. Second and third costal sections equal (0.44 mm vs. 0.45 mm on holotype). All costal setae thin, those on first section not much longer than on the second section. Discal cell edged, but vein appendage short (c. 0.02 mm). Inter-crossvein section 0.16 mm, dM-Cu 0.08 mm. Vein M reaches wing margin as a colourless fold. Alula narrow. Haltere blackish.

Fore femur subbasal setae 0.09–0.10 mm long. Mid tibia as on Figs 159–160. Anterodorsal setae at 11/40 (strong), a slightly more anterior at 27/40 (thinner), at 4/5 (0.10 mm), posterodorsal seta only at 31/40 (0.055 mm, i.e. much shorter than the distal ad).

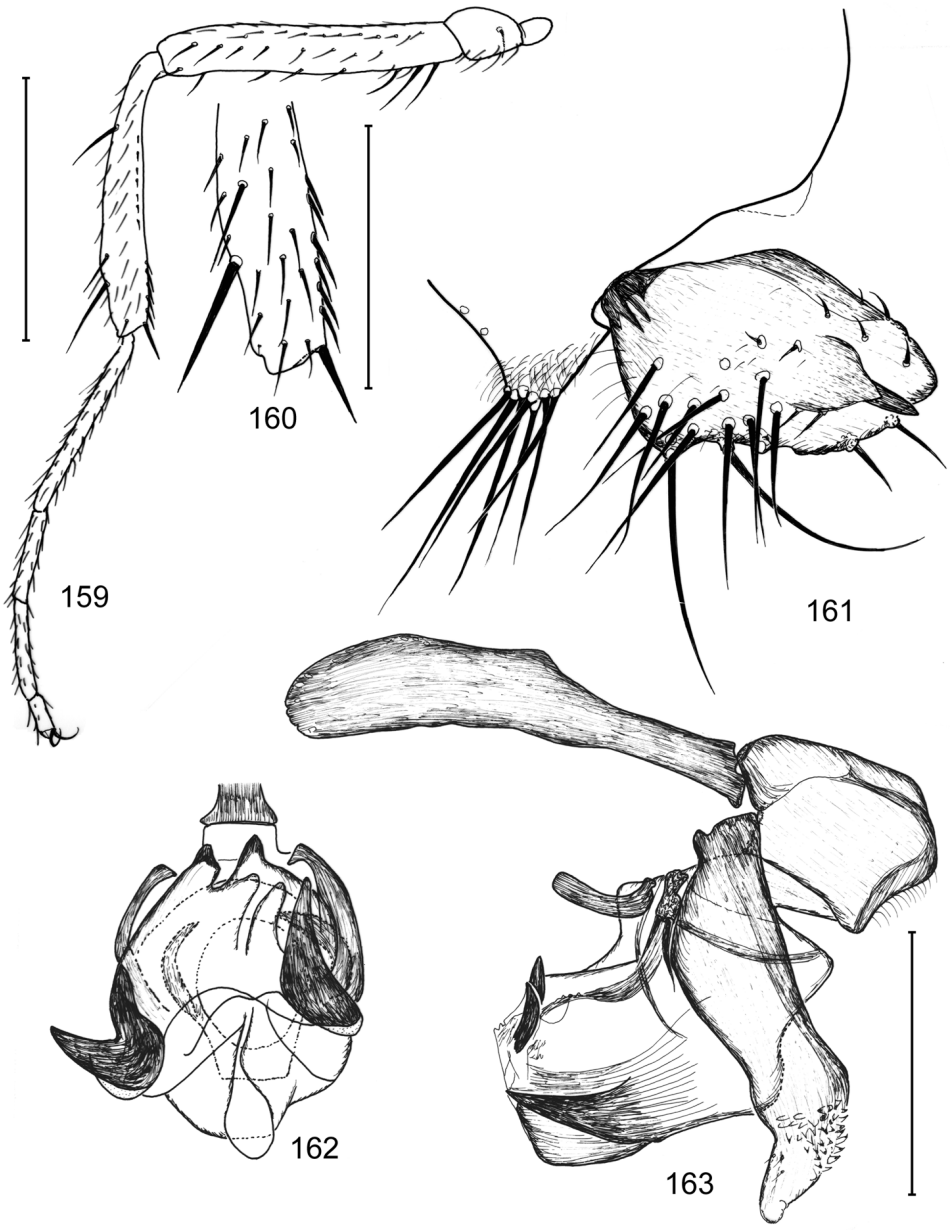
Tergites sparsely setose, tergal setae short (0.05mm). Tergite 2 not much shorter than tergite 3 and 4 combined (0.23mm, vs. 0.15 + 0.14mm). Sternite 4 even broader with a short and a long sagittal setae plus a pair of long thick caudal pair, whose base touching (paired setae broken on paratype, they are equally long but thinner than anterior one on holotype).

Male genitalia as described above.

Female not known.



Figs 154–158. *Minilimosina* (*Sagittaliseta* subgen. n.) *siamensis* sp. n., male postabdomen. 154 = synsternite 6–8, ventral view, 155 = sternites 2–4, 156 = medio-caudal part of sternite 5, 157 = sternite 5, 158 = hypandrium, dorsal view. Scales: 0.2 mm for Figs 154–155, 157, 0.1 mm for Figs 156, 158



Figs 159–163. *Minilimosina* (*Sagittaliseta* subgen. n.) *siamensis* sp. n., male mid leg and genitalia. 159 = mid leg, anterior view, 160 = apical part of mid tibia, anterior view, 161 = surstylus and ventral part of epandrium, true lateral view, 162 = distiphallus, anterior view, 163 = inner genitalia with connection sclerite to hypandrium, lateral view. Scales: 0.4 mm for Fig. 159, 0.2 mm for Fig. 160, 0.1 mm for Figs 161–163

A new subgenus of *Phthitia* ENDERLEIN, 1938

Rufolimosina subgen. n.
(Figs 164–175B, 326)

Type species: *Phthitia* (*R.) ornata* sp. n.
Gender: feminine.

Head large compared to thorax. Three pairs of interfrontal setae, medial pair very long, setal apices meet. 2 pairs of lateroclinate *fr-orb*, both *vte* and *vti* long and thick, *occi* very long, also *occe* mostly strong, postocellars hairlike (not characteristic setae). Scape mid seta distinct, pedicel with several long setae, some of them longer than first flagellomere. First flagellomere rounded, arista medio-dorsal, with more or less long cilia. Actually no facial carina, mouth margin protruding in profile. Vibrissa very long, genal seta not longer or slightly longer than peristomals.

Thorax. Outer postpronotal long, inner postpronotal seta not developed, 2 notopleural, 1 presutural, 1 supra-alar and 2 very long postalar pairs present. Posterior katepisternal long, anterior not developed. 0 + 3 dorsocentral pairs. No prescutellar acrostichal pair. Scutellum broad, scutellars long, even basal pair longer than scutellum.

Legs. Fore and hind leg without peculiarities. Mid femur basally with double row of thick slightly curved setae (Fig. 164). Mid tibia with a pair of *ad* and *pd* setae at proximal 1/3. Slightly above distal quarter 3(5) setae: long *ad* and *pd*, very long dorsal, plus a short *ad* and dorsal each. Male mid tibia curved, ventral side with a row of thick short spines, ventroapical seta distinct or not, no mid ventral seta. Female mid tibia ventrally without a row of setae but a mid ventral seta at 3/5 and a long ventroapical present. Ventroapical of hind tibia short.

Abdomen. Tergite 1 short and partly membranous, tergite 2 sagittally desclerotised in form of a narrow triangle. Sternite 2 bipartite, since medial part membranous. Male sternites 3 and 4, and female sternites 3 to 6 broad. Male sternite 5 (Figs 172, 165) sparsely setose with three small caudal sclerites: the paired lateral ones are asymmetrical with a number of medium long setae; medial one trapezoid with a pair of minute apical seta. Epandrium (Fig. 170) rather long basally, with an extremely long and thick setose pair of ventral processes (= cerci) being anteriorly curved. Hypandrium not strong, medial process only half as long as phallapodeme. Subepandrial sclerite comparatively small.

Surstylus (Figs 166, 173) consists of two parts: anterior part smaller with 2 thin apical setae; posterior part long its basal half get wedged into the space between ventral edge of epandrium and its ventral process. Phallus (Figs 168, 174) of an intricate form. Basiphallus rounded caudally. Distiphallus with a recurved pre-epiphallus. Phallapodeme extremely large (long and high). Postgonites (Figs 169, 175) with broad basal part, apical part nearly straight, apex sharp. Ejaculatory apodeme distinct (Fig. 174).

Female abdomen very broad, tergites and sternites of segments 3 to 6 short and broad, postabdomen not retractable (not telescopic); postabdomen blunt. Tergite 7 comparatively large not divided. Sternite 7 large. Tergite 8 in a form of 2 lateral subtriangular sclerites. Sternite 8 much reduced to 2 minute sclerites or sclerites not discernible, with 2 pairs of short setae similar to rose-spine. Epiproct fused to cerci but the 2 halves distinct except for a fused subapical part. Hypoproct weakly sclerotised broad U-shaped, medial part linear; hypoproct basally fused to a pair of dark small sickle-shaped additional sclerites. Cerci with an apical shorter and a subapical longer and thicker spiniform setae. Spermathecae (Figs 175A-B) globular or with a terminal umbilicus, surface rugose or even with some small warts. Sclerotised duct short or very short, common duct of paired spermathecae not sclerotised at all.

It runs readily to *Phthitia* in the key below. It is related to the subgenus *Kimosina* ROHÁČEK, 1983 (S1+2 simple, unmodified; S3 hardly longer than S4; female cerci with a thick and short spine each (there are 1–2 similar spines in the new subgenus); wings not sexually dimorphic; hind tibia without dorsal preapical seta). However, the large ventral epandrial process of the males separates it also from other *Kimosina* spp.

I am not convinced whether MARSHALL and SMITH's (1992) action to unify the former subgenera of *Kimosina* ROHÁČEK, 1983 and *Phthitia* ENDERLEIN, 1938 was practical. I do not want to question that all they form a monophyletic group, but I am afraid, the subgenera are so far distant morphologically that they deserve generic ranks. Without making a thorough revision of all those subgenera, I had to describe another subgenus.

Distribution. *Rufolimosina* is a species rich tropical subgenus in the Old World. In the HNHM there are at least four species other than the two species, which are discussed below. They are from Vietnam (6 males 2 females: Da Lat, Institute of Biology, 12. XII. 1994, Nos. 783, 786, leg. Mahunka, Sziráki & Zombori; 1 male: ibid., Da Lat, Cam Ly area, 8. XII., No. 734), India, Australia and from the sub-Saharan Africa (Ghana, Ethiopia, Tanzania).

P. (Rufolimosina) ornata sp. n.
(Figs 164–169, 326)

Holotype male (HNHM): Thailand: Fang, Mae Fang National Park, Doi Pha Hom Pok, 2000 m, 22–23. XI., 2003, No. 11, along forest road and creeks, leg. M. Földvári

Paratypes (HNHM): 1 male: Thailand, Erawan Nat. Park, 13–15. II. 1994., fénycsapda; 1 female: Thailand: Fang, Mae Fang National Park, Doi Pha Hom Pok, 2000 m, 20. XI., 2003, UV light, No. 8, leg. L. Peregovits, M. Földvári, Á. Kőrösi, A. Szappanos & B. Maklári-Kis.

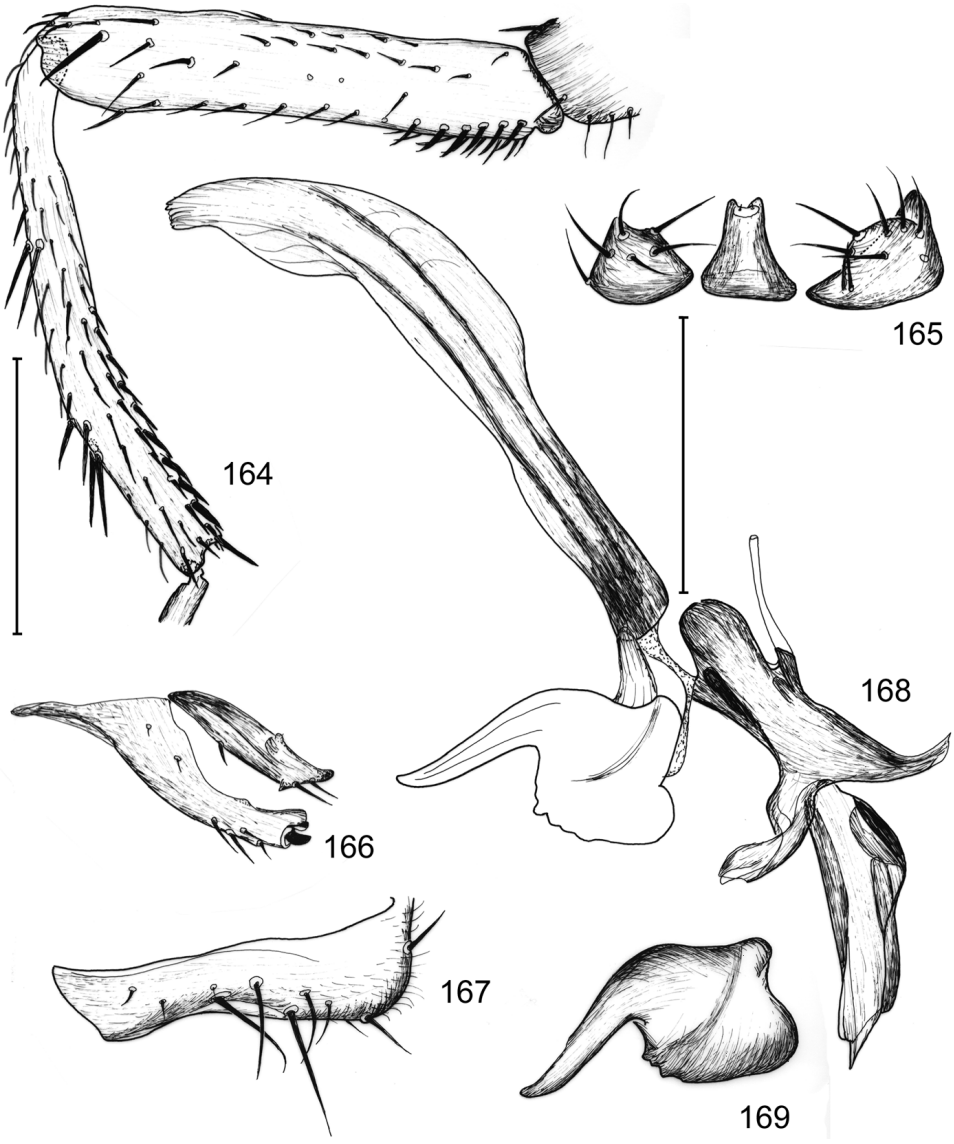
Measurements in mm: body length 1.32 (holotype), 1.15, 1.37 (paratype male and female, respectively), wing length 1.16 (holotype), 1.05, 1.47 (paratypes), wing width 0.48 (holotype), 0.50, 0.65 (paratypes).

Head yellow, mesonotum, scutellum and abdomen dark brown, pleura brown with a broad yellow diffusely bordered stripe from anterior spiracle to base of haltere.

Head rather large compared to thorax. 2 medium long fronto-orbital pairs. Ocellar, outer and inner verticals very strong, also inner occipitals large, 0.11 mm long on holotype. 1 very long medial interfrontal pair, posterior pair half as long, anterior pair short and thin. Gena not broad, just before genal seta 0.06 mm, but strongly broadening posteriorad. Genal seta thin 0.08 mm. Scape with medial seta 0.045 mm, ventral hair-like seta on pedicel 0.09 mm. First flagellomere short semiglobular (much higher than long), arista lateral with short cilia.

Thoracic setae all long, incl. pairs of intra-alars. Inner postpronotal not developed. 3 *dc* pairs as in its congeners. Acrostichals in 8 rows between *dc* lines, prescutellar acrostichal only slightly longer than others, 0.09 mm. Posterior katepisternal 0.18 mm, anterior not developed at all.

Wing (Fig. 326) patterned, membrane very light brown, a conspicuous diffuse brown spot present from around the perpendicular part of R_{2+3} through R-M to lower edge of discal cell, embracing Cu appendage. Apical part of R_{2+3} curved along a broad arch. Second costal section much shorter than third (0.275 mm, vs. 0.44 mm). Setae on first costal section sparse but very long: 6 pairs only,



Figs 164–169. *P. (Rufolimosina) ornata* sp. n., male mid leg and genitalia. 164 = mid femur and tibia, anterior view, 165 = medio-caudal sclerites of sternite 5, 166 = surstylus, broadest view, 167 = ventral process of epandrium, lateral view, 168 = inner genitalia, lateral view with postgonite in broadest view, 169 = postgonite, lateral view. Scales: 0.2 mm for Fig. 164, 0.1 mm for Figs 165–169

0.105–0.11 mm, setae on second section much shorter, 0.05 mm. Discal cell short, inter-crossvein section of M 0.07 mm, dM-Cu 0.06 mm, Cu appendage distinct, at least 0.06 mm long. Haltere light brown.

Fore coxa, all tarsi, and the basic colour of tibiae, ochre (light brownish yellow). Femora, mid and hind coxae dark brown. Tibiae with a subapical broad brown ring each. Fore and hind legs without peculiarities, hind tibia without dorsal preapical seta. Male mid tibia without middle ventral seta but with a row of short thick black setae distally. Anterodorsals at 9/38 (short), 11/38 (very strong), 23/, 26/38 (short), a strong dorsal at 28/38, posterodorsals at 13/38, 27 /38 (very long), a posterior at 24/38. Female with mid ventral seta at 3/5, ventroapical strong, but no ventral row of setae. 1 longer posteroventral seta on mid basitarsus subbasally.

Male sternite 5 with a caudal supplement of 3 sclerites (Fig. 165): lateral ones not symmetrical each with long setae, medial sclerite similar to that of *P. (R.) oswaldi*. Cerci (ventral processes, Fig. 167) fused to epandrium on a short section only, shorter than epandrium ventrally (i.e. shorter than in *oswaldi*). Surstylus (Fig. 166) in 2 pieces, thorns of caudal part weaker (shorter) than in *oswaldi*. Postgonite (Figs 168–169) similar to that of *oswaldi*, but ratio of the basal broad and the apical part is different (cf. Figs 174–175).

Female postabdomen and genitalia as described above. Cercal subapical thorn comparatively long, 0.06 mm. Spermathecae (Fig. 175B) with a terminal apex ("umbilicus"), sclerotised ducts very short, surface of spermathecae rugose.

Etymology. The specific epithet 'ornata' (Latin for 'decorated') refers to the pattern of its thorax and the patterned wing of this new species.

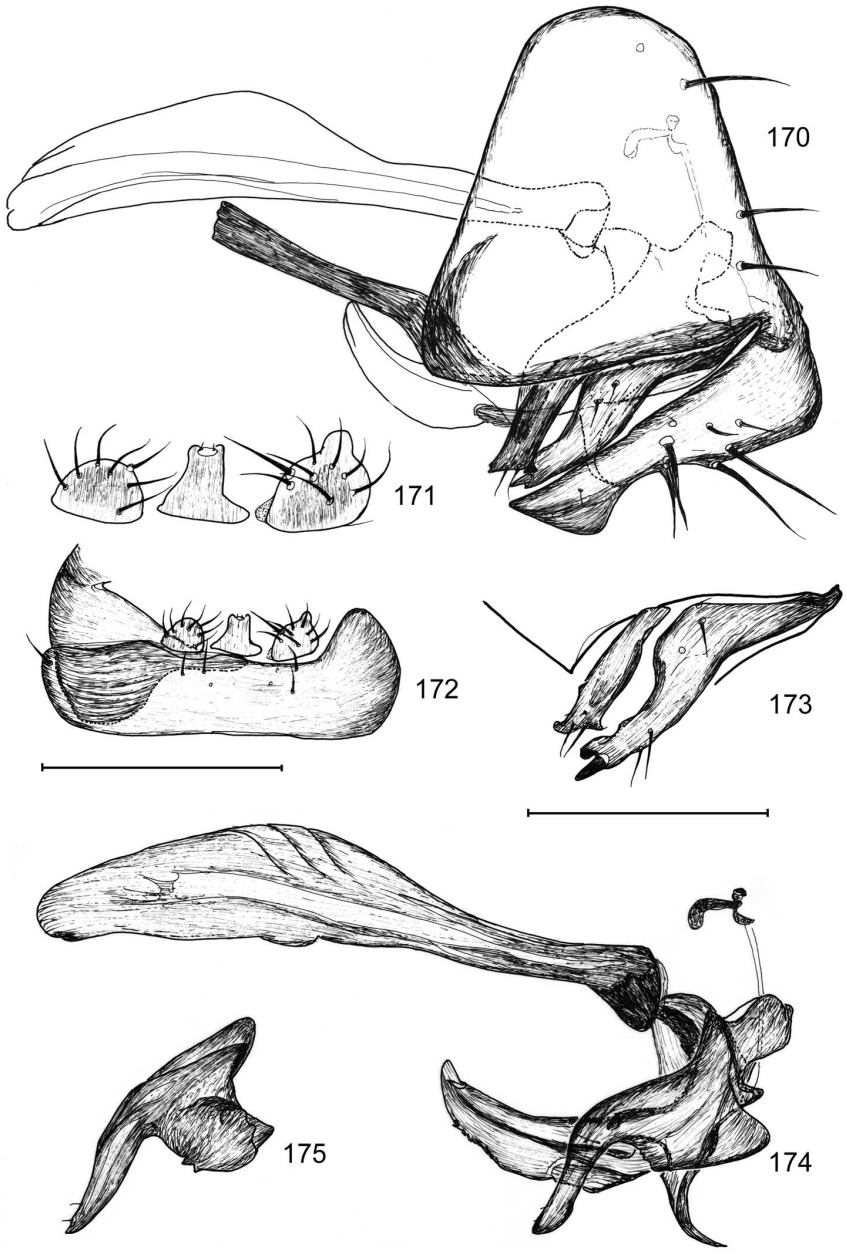
Phthitia (Rufolimosina) oswaldi L. PAPP, **nom. n.** for *Leptocera (Scotophilella) rufa* DUDA, 1925, a junior primary homonym of *Leptocera (Thoracochaeta) rufa* SPULER, 1925.

Material studied (HNHM): *L.* (*Scotophilella*) *rufa* DUDA, 1925, holotype female (left wing and left hind leg lost, mesonotum damaged, all thoracic (incl. scutellar), vertical and occipital setae broken off): 1) Formosa Sauter; 2) Takao 1907. "III. 22."; 3) "Scotophilella rufa ♀ n. sp." [Duda's handwriting] dET. DR. O. DUDA; 4) [red] TYPUS.

Other specimens: Vietnam: 2 males 3 females: Hanoi, fénycsapda/fényre repült, 1963. X. 1./VIII. 30., leg. Pócs T.; 1 female: ibid., 40 m, l'hôtel, à la lumière, 1. XII.; 1 male: Minh yuan, Luc yen közelében [environs of] Prov. Yen bai, 300 m, 1971. XII. 2., leg. Matskási – Topál, No. 188. Thailand: 1 male 1 female: Erawan Nat. Park, 7–9. II. / 13.–15. 1994, fénycsapda, leg. Mahunka; 1 female: ibid., Kaeng Krachan, 14. II.

In order to facilitate identification of this species, I made figures on male genitalia (Figs 170–175). Male sternite 5 (Fig. 172) with a caudal supplement of 3 sclerites (Fig. 171): lateral ones not symmetrical each with long setae, medial sclerite similar to that of *P. (R.) ornata*. Male genitalia as a whole (Fig. 170) much longer ventrally than dorsally. Ventral process fused to epandrium on a short section only, almost as long as epandrium ventrally (i.e. longer than in *ornata*). Surstylus (Fig. 173) in 2 pieces, thorns of caudal part stronger than in *ornata*. Postgonite (Figs 174–175) similar to that of *ornat*a, but ratio of the basal broad and the apical part is different (cf. Figs 168–169).

Female preabdominal sclerites as described above. Cerci short, 0.06 mm, subapical cercal thornlets minute, 0.02 mm only; also an apical spiniform seta (16 μ) longer lateral seta (39 μ) present. Spermathecae (Fig 175A) globular, sclerotised duct of paired spermathecae very short, common duct



Figs 170–175. *P. (Rufolimosina) oswaldi* L. PAPP, new name, male postabdomen and genitalia. 170 = whole male genitalia, left lateral view, 171 = medio-caudal sclerites of sternite 5, higher magnification, ventral view, 172 = sternite 5, ventral view, 173 = surstylus, broadest (a sublateral-subventral) view, 174 = postgonite, sublateral view, basal half at broadest, 175 = phallic complex, lateral view. Scales: 0.2 mm for Fig 172, 0.1 mm for Figs 170–171, 173–175

not sclerotised. Surface of spermathecae rugose and also some small dark warts discernible at high magnification.

Etymology. I gave a new name to this species to the honour of Dr OSWALD DUDA (died in 1944 or 1945), the founder of the knowledge on tropical Sphaeroceridae.

First I was to designate *Leptocera* (*Scotophilella*) *rufa* DUDA, 1925 (p. 172) as the type species of the new genus. But as ROHÁČEK *et al*. (2001) pointed out, this name is a junior primary homonym of *Leptocera* (*Thoracochaeta*) *rufa* SPULER, 1925. EVENHUIS *et al*. (1989) dated SPULER's work as published on the 28th of May (2nd part of the paper), while DUDA's published in September. I have no reason not to accept that precise dating, so it was obligatory to give a new name for DUDA's species.

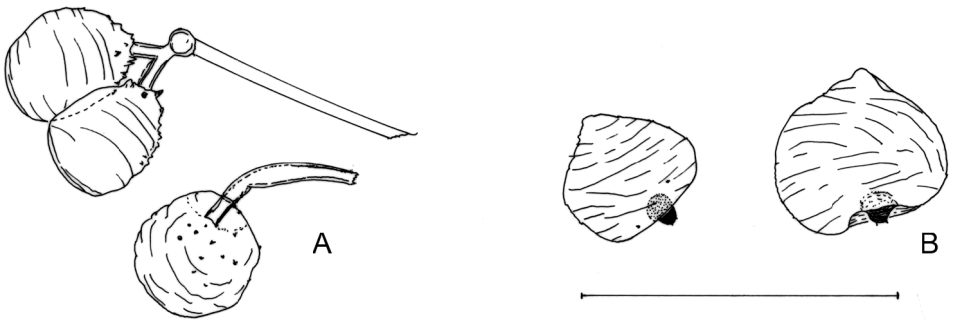
P. (R.) oswaldi seems to be a more distributed species in the Oriental region.

Bifronsina ROHÁČEK, 1983, genus, **stat. n**.
(Figs 176–192)

Bifronsina ROHÁČEK, 1983: 95, as a subgenus of *Spelobia* SPULER, 1924.
Type species: *Limosina bifrons* STENHAMMAR, 1854 (orig. des.).

Bifronsina ROHÁČEK, 1983 was described as a subgenus within *Spelobia*, to include a single species, *S*. (*B*.) *bifrons* STENHAMMAR. I think it deserves a generic rank, which is underlined here with description of three new species and a description of the male genitalia of a fourth species, whose identity had not been clarified formerly.

It is a matter of course, that all those characters, which ROHÁČEK (1983: p. 95–6) listed, are important and partly differentiating features. There are two strong



Figs 175. *Phthitia* (*Rufolimosina*) spp., spermathecae. A = *P. (R.) oswaldi* L. PAPP, nom. n., unpaired one in sublateral view, B = *P*. (*B*.) *ornata* sp. n., lateral view. Scale: 0.01 mm

thick setae on posterior surface of mid trochanter. In addition, I would like to stress the well-developed tergite 7 part of the synsternite 6–8; sternite 7 and tergite 7 parts are well-sclerotised plates, latter broadened on the right lateral side.

Bifronsina nigroscutellata (DUDA, 1925) **comb. n.**, described as *Leptocera* (*Scotophilella*) – Type male (HNHM): 1) Abyssinia Kovács; 2) Marako, 1912. III. 3) "Scotophilella nigroscutella-ta ♂ n. sp." [DUDA's handwriting] det. dr. O. Duda; 4) [red] TYPUS. A second male with the same label data (the above two labels only) – seriously damaged, head and most of the legs lost.

The holotype has 6 interfrontal setae on right side but only 4 on the left side.

The defective male was dissected and genital parts depicted (Figs 179–182). As far as I can judge on the type, hind tarsi are not flattened. Alula broad. Mesonotum, scutellum and abdomen only slightly darker than in the other *Bifronsina* species, but microtomentum thicker, so mesonotum less shiny. Mid metatarsus with strong anteroventral setae at middle and at distal 3/4, posteroventrals at proximal and distal third; subbasal setae much thinner and shorter.

Male sternite 5 (Figs 181–182) medium long with broad, rather large projection medio-caudally. That projection (Fig. 182) is with 2 apical rows of comparatively short sharp setae, there is one similar row on the inner surface of the projection (covered on Fig. 182). Several even shorter setae present caudally to apical rows. Right side portion of the synsternite 6–8 very large on the right side (Fig. 181). Surstylus (Fig. 180) bipartite: basal part seemingly forms a part of the genital vault (a continuation of epandrium), apical part nearly perpendicular to the basal part. Surstylar thorn parallel to base in profile. Postgonite (Fig. 179) nearly boot-shaped in profile, with 2 short setulae on cranial edge; basal part strongly medially curved (discernible in caudal view only).

Bifronsina elegantula sp. n.
(Figs 176–178)

Holotype male (HNHM): Thailand: Mae Ta Man elephant park, 45 km N from Chiang Mai, swept on elephant dung, 01. XII. 2003, No. 25, leg. M. Földvári, L. Peregovits & A. Szappanos.

Paratypes (HNHM): 1 male: same as for the holotype; 1 female (damaged, distal 4/5 of right wing lost): Thailand: Trang Prov., Thung Khai Botanic Garden, primary lowland rainforest, Nov 12, 2004, No. 28, L. Papp & M. Földvári.

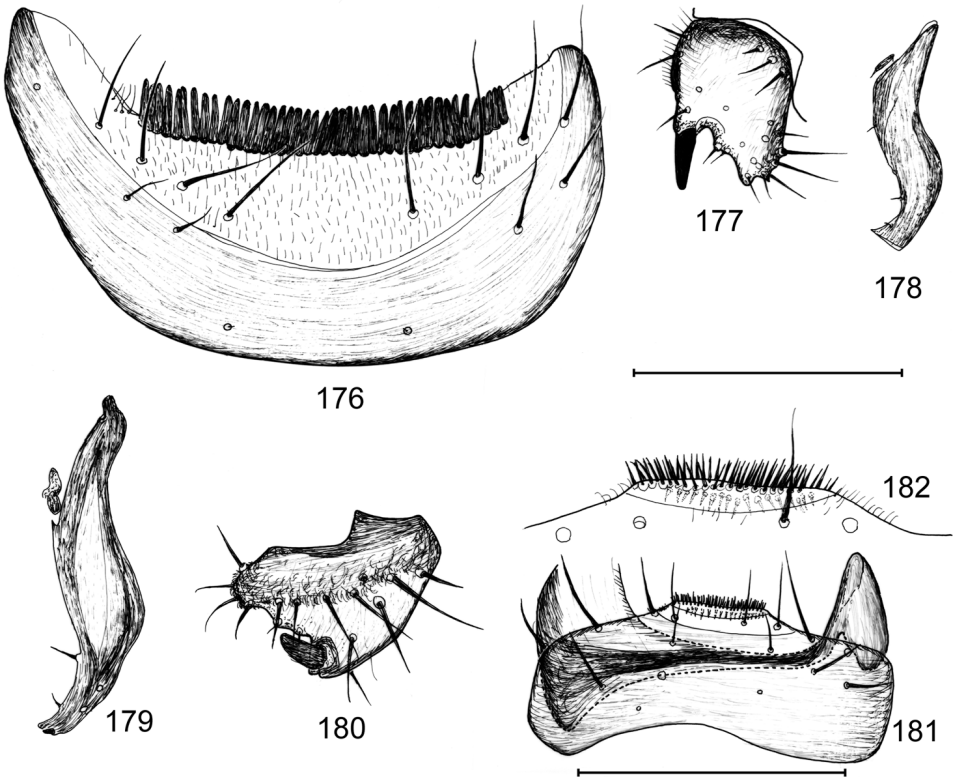
Measurements in mm: body length 1.37 (holotype), 1.20 (paratype male), 1.32 (paratype female), wing length 1.32 (holotype), 1.19 (paratype male), 1.21 (paratype female), wing width 0.57 (holotype), 0.49 (paratype male), 0.46 (paratype female).

Body more slender than those *B. bifrons* and *B. nepalensis*. Posterior 1/3 of frons, occiput, mesonotum (incl. scutellum) and abdomen dark brown, pleura mainly yellow. Upper caudal part of anepisternum triangularly and swelling of anepimeron dark brown. Anterior part of frons, face, genae and antennae yellow, first flagellomere darkened apically. 3 pairs of medium long interfrontals.

Wing longer than in *nepalensis*, membrane light brownish, veins light brown. Alula narrow, liguliform, not broader than fore tibia.

Legs yellow. Mid metatarsus long, ventrally with 5–6 pairs of comparatively thin and short setae (compared e.g. to those of *B. latitarsis*). Hind tarsi not flattened (second tarsomere cylindrical rather than flattened).

Male sternite 5 (Fig. 176) not shorter than in congeners, but seems shorter, since it consists of two parts: the less sclerotised and light caudal part is larger. Setae on darker (cranial) part comparatively short, on lighter caudal part rather long. The latter part is with an extremely long pecten of rather long thick blunt setae. No thicker setae basally to that pecten.



Figs 176–182. *Bifronsina* ROHÁČEK, 1983, stat. n., males of species. 176–178 = *B. elegantula* sp. n.: 176 = sternite 5, ventral view, 177 = surstylus, broadest view, 178 = postgonite, broadest view, 179–182 = *B. nigroscutellata* (DUDA): 179 = postgonite, broadest view, 180 = surstylus, broadest (sublateral) view, 181 = sternite 5 with ventral parts of sternite 6 portion of synsternite 6–8, ventral view, 182 = medio-caudal part of sternite 5 in higher magnification. Scales: 0.2 mm for Fig. 181, 0.1 mm for Figs 176–180, 182

Male genitalia comparatively small, except for the compact distiphallus. Surstylus (Fig. 177) less broad basally with two lobes: caudal lobe smaller and bears a long thick surstylar thorn, perpendicular to base. Cranial lobe large, with moderately long setae only. Postgonite (Fig. 178) shorter than in other *Bifronsina* species: largely S-shaped in profile, narrowing basally, apex cut, the resulting sharp apex is not ventral.

Female with almost all pleura and distal 2/3 of frons dark. Female abdomen as long as broad, sternites narrow. Sclerite of segment 7 normal. Tergite 8 not divided, shorter than in *B. bifrons*. Epiproct very short transverse, caudal margin straight, its setal pair distinct. Hypoproct weakly sclerotised and very short. Cerci as broad as long (0.03mm), with 1 medium-long (0.04 mm) and 4 shorter setae. Tergite 8 not divided, ventrally with a pair of medially directed small pair of processes. Sternite 8 trapezoid as a whole, its more sclerotised pigmented part broad triangular and minute darker pigmented parts caudally (to form the trapezoid shape). Spectacles-shaped sclerite as in *B. bifrons*. Spermathecae not tyre-shaped, since though terminal part concave, distal end not so. Paired spermathecae 0.042 × 0.02 mm, duct short ending in a comparatively large bulb (0.025 mm, bulb 0.01 mm), common duct not sclerotised at all. Unpaired one 0.05 mm x 0.025 mm, duct with bulb 0.04 mm long.

Bifronsina latitarsis sp. n.
(Figs 183–186)

Holotype male (HNHM): Tanzánia: Meru, 1979. II.-III., leg. [Miklós] Előry – [György] Sipos [most probably on elephant dung].

Paratypes (HNHM): 3 males 2 females: same as for the holotype; 4 males 1 female: Morogoro region, Mikumi National Park, Mikumi Tented Camp, netting over excrement of elephant, Feb 1, 1987, leg. S. Mahunka – T. Pócs – A. Zicsi, No. 8. Kenya: 3 males 3 females: Shimba Hills Nat. Park, 2003. 02. 20.–25., leg. Mahunka S. – Papp L.[Lujza]. Nigeria [Bauchi State]: 4 females: Yan~~gu~~kari Reserve, Wikki – Aug. 3, 1978, leg. A. Demeter, No. 2 [several days old elephant dung]; 1 male: ibid., Aug. 11, No. 5 [2 to 3 days old buffalo dung]; 1 male: ibid., Aug. 14, No. 16 [fresh buffalo dung].

Measurements in mm: body length 1.32 (holotype), 1.30–43 (paratype males), 1.09–1.37 (paratype females), wing length 1.34 (holotype), 1.10–1.38 (paratype males), 1.08–1.48 (paratype females), wing width 0.55 (holotype), 0.47–0.58 (paratype males), 0.46–0.62 (paratype females).

Dark brown, ventral part of anepisternum and anepimeron, as well as legs, anterior part of frons, face, genae and antennae yellow. First flagellomere darkened apically. 5 pairs of short interfrontals.

Alula twice broader than fore tibia.

Legs yellow or ochre. Mid basitarsus with 3 strong anteroventral (at 7/20, 1/2, 13/20) and 2 similar posteroventral setae; an additional shorter subbasal pair also distinct. Hind tarsi flattened, broad (2nd tarsomere definitely flattened), but also 3rd and 4th tarsomeres flattened (Fig. 184). Basitarsus with rather long straight colourless setae posteriorly (directed towards the tip of tarsus). Second tarsomere posteriorly with similarly colourless perpendicular setae.

Male sternite 5 (Fig. 183) medium long, plate slightly concave medio-caudally. Medial caudal part less sclerotised. Long setae on sternite concentrated around that medial part. Medial part caudally with a pecten of extremely long blunt tick setae (about 30). There are about 4 rows of short sharp setae cranially on the less sclerotised medial part, which seem to be arranged in longitudinal rows (i.e. 4 setae each); in low magnification they appear as short longitudinal lines. Surstylus (Fig. 186) broad

based, with two lobes. Caudal lobe with several long setae and with a long thick thorn, perpendicular to base. Cranial lobe broad round with several less thick setae. Basal 2/3 of postgonite (Fig. 185) broad in profile, apical part curved but caudal edge nearly straight.

Also female is easily identifiable through its flattened hind tarsi. Female tergites 7 and 8 as well as cerci strongly shiny. Marginal (caudal) setae on sternite 7 long and rather thick, but less strong than in *B. nepalensis*.

Etymology. The specific epithet refers to the flattened hind tarsi of this new species.

Bifronsina nepalensis sp. n.
(Figs 187–192)

Holotype male (HNHM): NEPAL: Royal Chitwan National Park, Bandarjhola Island – Jungle Island Resort, 84° 10' E, 27° 35' N, 150 m, 1995. 10. 30. – swept on *Rhinoceros unicornis* dung, leg. L. Peregovits.

Paratypes (HNHM): 63 males, 12 females: same as for the holotype. 32 males, 7 females: ibid., swept on *Elephas maximus* dung.

Measurements in mm: body length 1.15 (holotype), 0.95–1.21 (paratype males), 1.08–1.32 (paratype females), wing length 0.97 (holotype), 0.86–1.02 (paratype males), 0.93 –1.12 (paratype females), wing width 0.42 (holotype), 0.37–0.44 (paratype males), 0.42–0.48 (paratype females).

Dark brown, anterior 1/3 of frons, face, gena and antenna yellow.

Head with 4 rather short interfrontal pairs. First flagellomere darkened apically.

Mesonotum and pleura rather shiny, their grey microtomentum thin.

Wing membrane light brownish, veins light brown. Alula narrow, liguliform, not broader than fore tibia. Haltere light brown.

Legs light brown. On mid basitarsus at least basal posteroventral seta not thinner than others. Strong seta on trochanter 0.075 mm long, or even 0.085 mm (paratype female). Anterior apical seta of mid tibia 0.06 mm, up to 0.08 mm (paratype female).

Lateral marginal setae on preabdominal tergites not stronger than those on *B. bifrons*. Male sternite 5 (Fig. 187) not long and bipartite as in congeners. Less sclerotised medio-caudal part broad and projecting caudally. Larger setae of sternite mostly on caudal half but not concentrated on ligher part. Most caudally there is a pecten of very long thick blunt setae (up to 40). Cranially to pecten there are sharp setulae in 3 unarranged rows.

Surstylus (Fig. 189) comparatively small, basal section joining epandrium rather short. Apical part in two lobes: caudal lobe bears a long thick surstylar thorn perpendicular to base. Cranial lobe broad but not high, bearing long setae. Phallus with nearly globular large distiphallus. Postgonite (Fig. 188) S-shaped (or rather, a converse Z-shaped) with small upcurved apex.

Female with marginal (caudal) setae on sternite 7 long and very thick, black, in dry specimens appear as paired processes (Figs 191–192); longest 0.07 mm. Spermathecae (Fig. 192) basically similar to those of *B. bifrons* (ROHÁČEK, 1983: fig. 704), tyre-shaped. Strongly sclerotised basal ducts of paired spermathecae confluent somewhat distally to the bulbous proximal vessel.

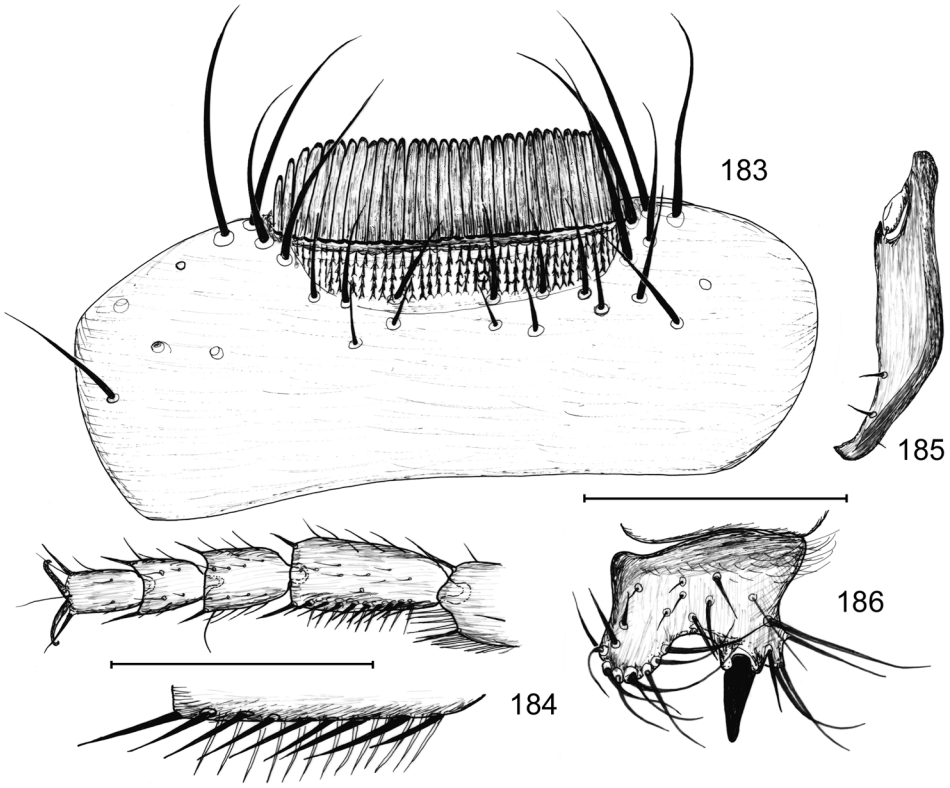
Etymology. The species is named after its type locality in Nepal.

Key to the species of *Bifronsina* ROHÁČEK

1. Alula broad, twice broader than fore tibia. Afrotropical species. 2

– Alula narrow, liguliform, not broader than fore tibia. Hind tarsi not flattened (2nd tarsomere cylindrical rather than flattened). Surstylar thorn more or less perpendicular to base in profile (Figs 177, 186, 189). 3

2. Hind tarsi not flattened (2nd tarsomere cylindrical rather than flattened). Surstylar thorn parallel to base in profile (Fig. 180). Male sternite 5 (Fig. 181) with broad medial caudal projection, which bears rather short sharp setae only. Mid basitarsus with only 2 strong anteroventral setae. Ethiopia
B. nigroscutellata (DUDA, 1925) **comb. n.**

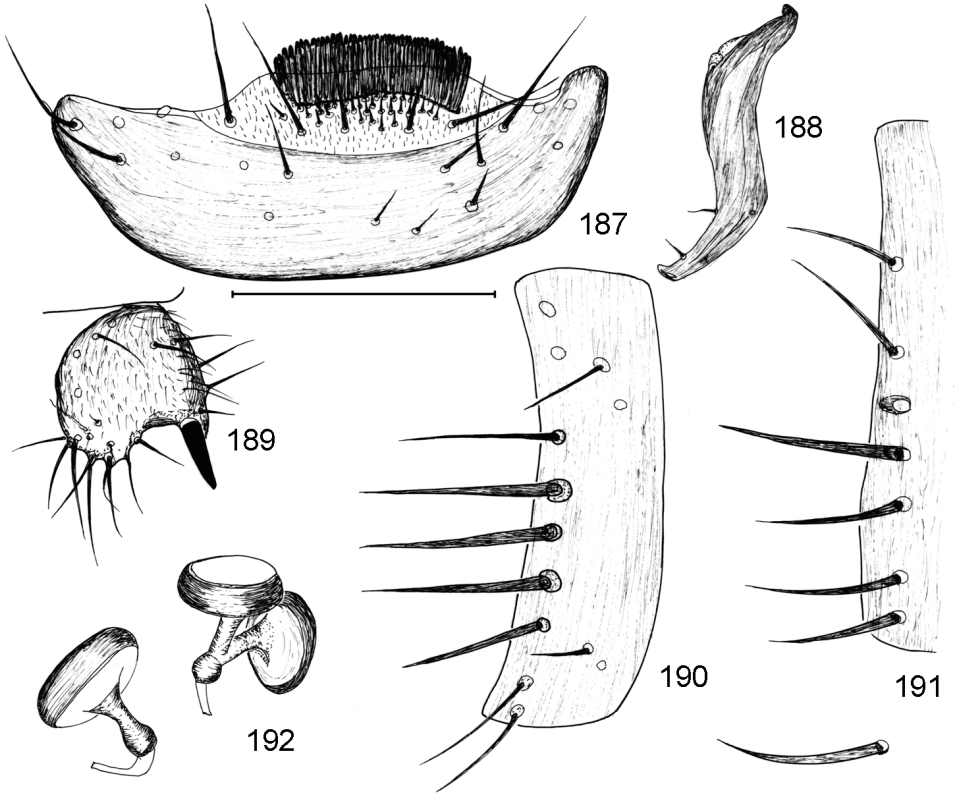


Figs 183–186. *Bifronsina latitarsis* sp. n., male paratype. 183 = sternite 5, ventral view, 184 = hind tarsomeres 2–5, anterior (subventral) view with armature of tarsomere 2 in higher magnification, 185 = postgonite, broadest view, 186 = surstylus, broadest view. Scales: 0.2 mm for Fig. 184, 0.1 mm for Figs 183, 184–186

– Hind tarsi flattened, broad (2nd tarsomere definitely flattened). Surstylar thorn perpendicular to base in profile (Fig. 186). Male sternite 5 (Figs 183) medially-caudally concave; there are a pecten of thick blunt long setae on it. Mid basitarsus with 3 strong anteroventral and 2 similar posteroventral setae. Afrotropical **B. latitarsis** sp. n.

3. Body more slender, wing longer. Mid metatarsus long, ventrally with 5–6 pairs of comparatively thin and short setae. Male genitalia (Figs 176–178). Thailand **B. elegantula** sp. n.

– Body short, wing shorter, apical third more rounded. Mid metatarsus ventrally with at least 2 anteroventral and 2 posteroventral thicker and longer setae. 4



Figs 187–192. *Bifronsina nepalensis* sp. n., male and female postabdomen and genitalia. 187–189 = male: 187 = sternite 5, ventral view, 188 = postgonite, broadest (sublateral) view, 189 = surstylus, broadest view. 190-192 = female: 190 = sternite 7 ventral view, 191 = marginal setae on sternite7, another female, ventral view, 192 = spermathecae. Scale: 0.1 mm for all

4. Marginal (caudal) setae on female 7th sternite long thick black (Figs 190–191), in dry specimens appear as paired processes. Male genitalia (Figs 187–189). On mid basitarsus at least basal posteroventral seta not thinner than others. Nepal **B. nepalensis** sp. n.

– Marginal setae on female 7th sternite shorter and much thinner (ROHÁČEK, 1983: fig. 703). Male genitalia (ROHÁČEK, 1983: figs 696–700). On mid basitarsus the larger seta in posteroventral row followed and proceeded by a thinner seta each. Nearly cosmopolitan
B. bifrons (STENHAMMAR, 1855) **comb. n.**

Eulimosina ROHÁČEK, 1983, genus, **stat. n.**
(Figs 193–200)

Eulimosina ROHÁČEK, 1983: 64, as a subgenus of *Spelobia* SPULER, 1924.
Type species: *Borborus ochripes* MEIGEN, 1830 (orig. des.).

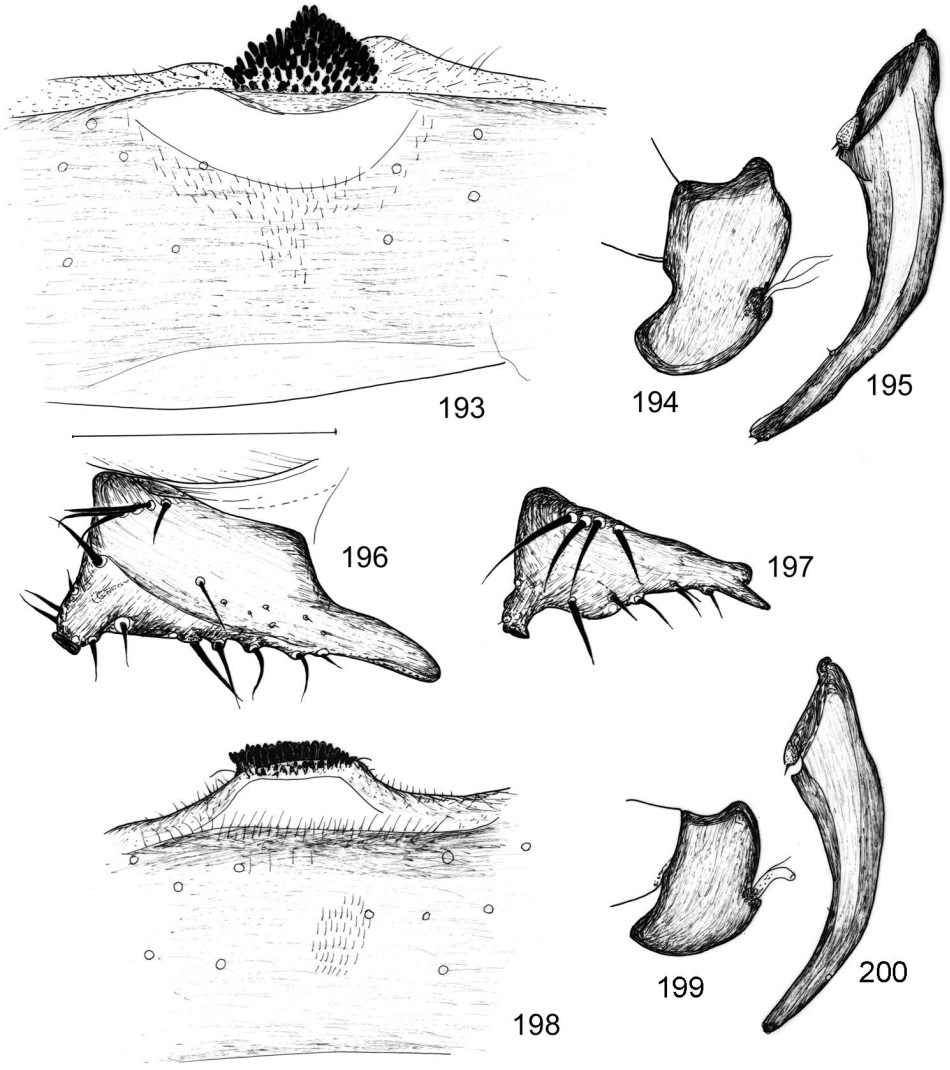
Eulimosina ROHÁČEK, 1983 was described as a subgenus within *Spelobia*, to include a single species, *S.* (*E.*) *ochripes* Meigen.

Eulimosina dudai (L. PAPP, 1978) **comb. n.** – It was described from the easternmost part of Afghanistan (Prov. Nangarhar: Bande Darunta, near Jalalabad), based on a single female. Actually it may occur in the whole Oriental region. Material studied: India: 2 males 2 females: Kanha National Park [pencil] "26. VIII. – 18. IX." G. Bächli coll. 1972.; 1 female: ibid., 26.8.–18.9.; 1 female: Daitari, Jajpur-Keonjahr, 1–5. I. 1967, leg. Topál. Vietnam: 2 males 1 female: No. 207, leg. Topál-Matskási 1971; 1 female: No. 169, leg. Matskási, Oláh & Topál. Thailand: 1 male: Erawan Nat. Park, 7–9. II. 1994, leg. Mahunka; 1 female: ibid., korhadékból, 14. II.; 1 male: Mae Ta Man elephant park, 45 km N from Chiang Mai, swept on elephant dung, 01. XII. 2003, No. 25, leg. M. Földvári, L. Peregovits & A. Szappanos; 1 male 1 female: Trang Prov., Thung Khai Botanic Garden, on compost & rotten grass, Nov 19, 2004, No. 37, leg. L. Papp; 2 females: Pak Thang Salwang, ca. 30 km N Chiang Mai, pine plantation, on cow pats, Oct 29, 2004, leg. L. Papp & M. Földvári; 2 females: Mae Taeng Elephant Camp, 50 km N of Chiang Mai, on elephant dung, Oct 29, 2004, No. 5, leg. L. Papp & M. Földvári; 1 female: Trang Prov., Thung Khai Botanic Garden, along the "Nature Trail", Nov 13, 2004, No. 29, leg. L. Papp & M. Földvári.

It is an easily recognisable species as soon as recognised as an *Eulimosina* species. It seems to be widespread on the continental part of the Oriental region. In order to facilitate a safe identification, I made four figures on its male genitalia (Figs 193–196).

Frons clearly yellow. 4 pairs of interfrontal setae, seldom 3 pairs. Mesonotum and scutellum yellow. Abdominal tergites reduced.

Male sternite 5 (Fig. 193) not particularly long, medial part caudally with a crescent bare area, most caudally with a triangular area covered by rather short thick blunt black prensisetae. No long setae on bare area. Surstylus (Fig. 196) structurally similar to that of *E. ochripes* (MEIGEN, 1830)



Figs 193–200. *Eulimosina* ROHÁČEK, 1983, stat. n., species; male postabdomen and genitalia. 193–196 = *E. dudai* L. PAPP : 193 = medial part of sternite 5, 194 = basiphallus, lateral view, 195 = postgonite, broadest (lateral) view, 196 = surstylus, broadest (sublateral) view,. *E. oroszi* sp. n.: 197 = surstylus, broadest (sublateral) view, 198 = medial part of sternite 5, 199 = basiphallus, lateral view, 200 = postgonite, broadest (lateral) view. Scale: 0.1 mm for all

(ROHÁČEK, 1983: fig. 425), e.g. without surstylar thorn. Base broad, apical third much narrowed but cranial apex rounded. Surstylus with numerous setae, but even basal ones are medium-long only. Postgonite (Fig. 195) arcuately curved with broad base; apex narrowly rounded with 3 minute setulae. Basiphallus (Fig. 194) deep (high), in profile subapically slightly swollen.

Eulimosina sp. – In the HNHM material I found a female from Thailand (Trang Prov., Khao Chong Botanic Garden, along a forest path, Nov 15, 2004, No. 31, leg. L. Papp & M. Földvári), that must belong to an undescribed species. In lack of a male, I do not describe this species now. However, in order to call attention to it, and to the possibly other still undescribed species, I involve it in the key with the most important characters as follow. Body length 1.60 mm, wing length 1.48 mm, wing width 0.62 mm. Mesonotum and scutellum dark, greyish brown. Antenna yellow, only apical half of first flagellomere greyish fumose. Aristal cilia 0.02 mm. Gena behind vibrissa much less broad than first flagellomere. Legs all yellow. Ventral spur of hind tibia long, half as long as tibial diameter. Abdominal tergites well-developed.

Eulimosina oroszi sp. n.
(Figs 197–200)

Holotype male (HNHM, abdomen with genitalia in a plastic microvial): Thailand: Trang Prov., Thung Khai Botanic Garden, pasture, 19. 11. 2004, A[ndrás]. Orosz.

Paratypes (HNHM): 1 female: same as for the holotype.

Measurements in mm: body length 1.19 (holotype), 1.23 (paratype female), wing length 1.09 (holotype), 1.18 (paratype female), wing width 0.49 (holotype), 0.50 (paratype female).

Head all yellow. 2 (holotype) or 3 (paratype) pairs of thin interfrontal setae. Antenna yellow, only apical half of first flagellomere greyish fumose. Aristal cilia 0.02 mm. Gena behind vibrissa not much less broad than first flagellomere.

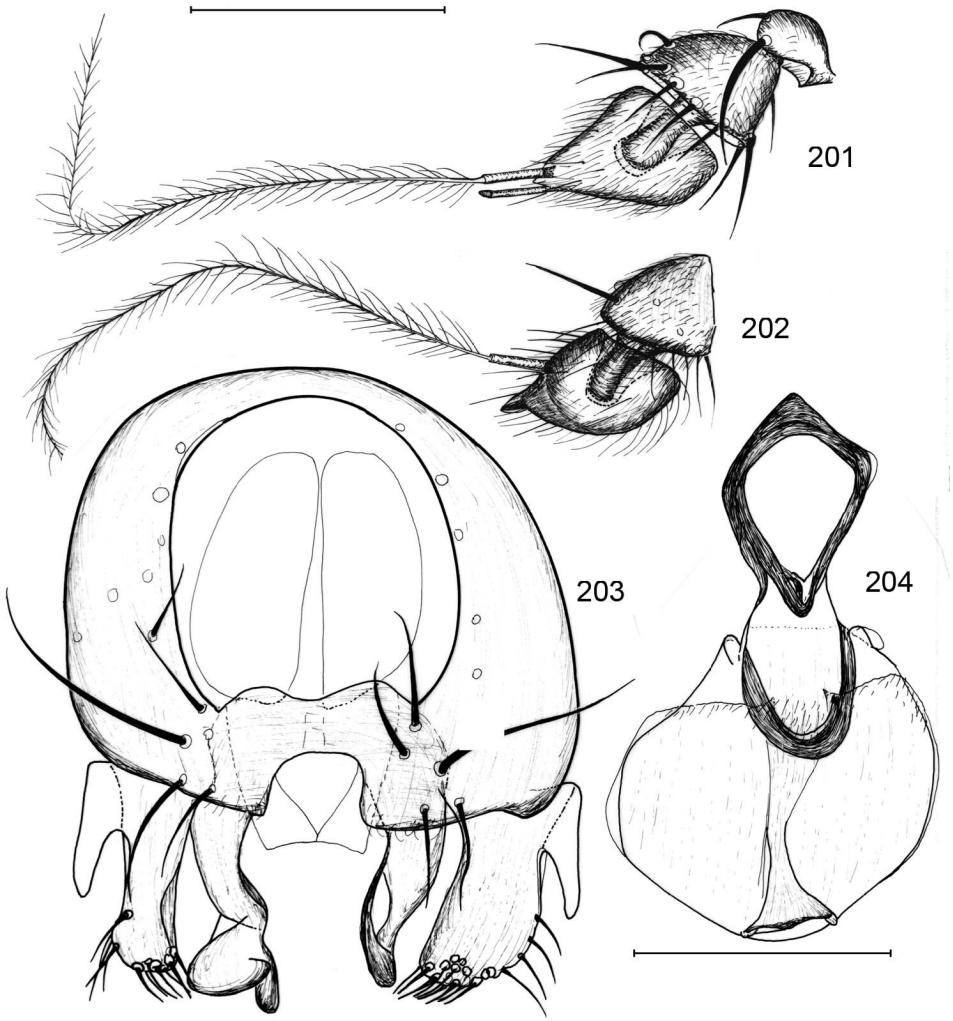
Mesonotum and scutellum yellow, only anepimeral swelling dark brown.

Legs all yellow. Ventral spur of hind tibia short, 1/3 as long as tibial diameter (male) or indistinct (female).

Abdominal tergites reduced. Male abdominal sternite 5 rather long, hence medio-caudally projecting (Fig. 198). That projection bears blunt thick black setae (prensisetae) in 2 row caudally. Behind them there are several short blunt black, rather unarranged pegs. Cranially to those pegs there is a bare area, which is much smaller than in *E. dudai*. Surstylus (Fig. 197) broad-based, with bilobed cranial apex: ventral lobe almost sharp. Caudal ventral process more prominent than in *E. dudai*. Basal setae of surstylus rather long. Postgonite (Fig. 200) slightly narrowed medially in profile. Basiphallus (Fig. 199) less deep (high) than in *E. dudai*, but more swollen subapically.

Etymology. The name this new species to express my thanks to Mr. ANDRÁS OROSZ (Department of Zoology, HNHM), who collected the type specimens and who was our partner on the Thailand collection trip in 2004.

A remark on *Leptocera* (*Limosina*) *lutea* RICHARDS, 1963. It was properly listed in the Palaearctic Diptera Catalogue (PAPP 1984) as a *Limosina* species, since *Limosina* was there used in the old, cumulative (unifying) sense. At the same time I agree wholly with ROHÁČEK *et al.* (2001), that its "Identity and placement questionable". I published a male under this name (PAPP 1991: 250) from Taiwan, but now I do not have access to this specimen. However, I am certain that the Taiwan-



Figs 201–204. 201 = *Anommonia alopecialis* (RICHARDS), right antenna, inner (medial) lateral view. 202–205: *Paracuminiseta tetraspinosa* sp. n.: 202 = left pedicel and 1st flagellomere with arista, outer lateral view, 203 = male genitalia, caudal view, 204 = phallus, ventral view. Scales: 0.2 mm for Figs 201–202, 0.1 mm for Figs 203–204

ese specimen belongs to *Eulimosina*. I am afraid that the identity of *L. lutea* cannot be solved without a study of its type. If it has really been lost, a study on numerous specimens from the Pacific islands may serve to help establishing its identity.

PAPP's (1991) record of *E. ochripes* (MEIGEN, 1830) from Pakistan is questionable. Unfortunately I have not had the opportunity to re-examine the specimen.

Key to the species of *Eulimosina* ROHÁČEK

1. Abdominal tergites well developed. Mesonotum and scutellum dark, greyish brown. 2

– Abdominal tergites reduced. Mesonotum and scutellum yellow. 3

2. Antenna all dark. Aristal cilia 0.012–0.015 mm. Gena behind vibrissa as broad as first flagellomere. At least hind basitarsus and 2nd tarsomere dark. Ventral spur of hind tibia short, at most 1/3 of the tibial diameter. Palaearctic *E. ochripes* (MEIGEN, 1830)

– Antenna yellow, only apical half of first flagellomere greyish fumose. Aristal cilia 0.02 mm. Gena behind vibrissa much less broad than first flagellomere. Legs all yellow. Ventral spur of hind tibia long, half as long as tibial diameter. Thailand *Eulimosina* sp.

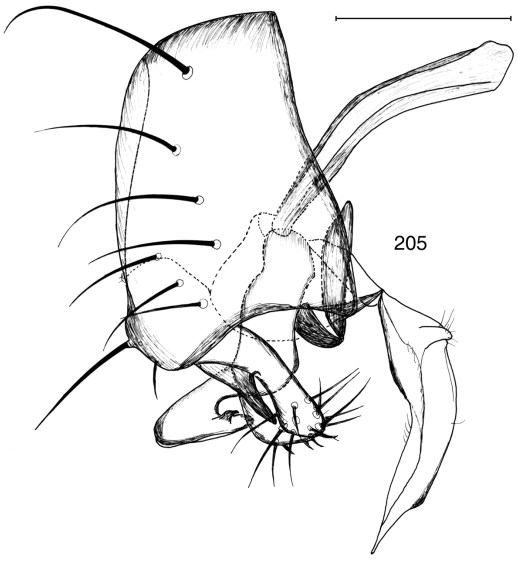


Fig. 205. *Paracuminiseta tetraspinosa* sp. n.: male genitalia, right lateral view. Scale: 0.1 mm

3. 4 pairs of interfrontal setae, seldom 3 pairs. Male surstylus (Fig. 196) rather straight basally, rather pentagonal in its widest view. Medial part of male sternite 5 (Fig. 193) not projecting medially, most caudally with a triangular area covered by rather short thick blunt black prensisetae. Afghanistan, Oriental region *E. dudai* (L. PAPP, 1978)

– 2–3 pairs of interfrontal setae. Male surstylus (Fig. 197) more triangular in its widest view. Medial part of male sternite 5 (Fig. 198) 5 rather long, hence medio-caudally projecting. Thailand **E. oroszi** sp. n.

UNGROUPED GENERA

Australimosina gen. n.
(Figs 206–216)

Type species: *Acuminiseta flaviterga* RICHARDS, 1973
Gender: feminine.

Head. 2 long pairs plus a short anterior pair of interfrontals. 2 lateroclinate *fr-orb*. Inner occipitals very long (apices meet). Medial seta of scape long (0.12 mm). First flagellomere not elongated, slightly conical dorsally. Arista emerges rather far from apex.

2 dorsocentral pairs, anterior pair weak. Posterior katepisternal long (0.20 mm), anterior pair not developed.

No long setae on first costal section. Costa distinctly overruns apex of vein R_{4+5}. Second costal section about as long as third. Vein R_{4+5} curved up along a gentle arch. Discal cell edged with a distinct M appendage, inter-crossvein section of M about as long as hind cross-vein.

Mid tibia without a mid seta but with an almost complete row of short thick black setae. Mid femur with a row of long black setae in its basal half. Ventroapical seta of mid tibia rather strong. No single strong seta ventrally on mid basitarsus. Hind tibia without long dorsal preapical seta.

Male preabdomen not modified. Tergites (Fig. 210) unevenly coloured, probably unevenly sclerotised. Tergite 5 quadratic. Preabdominal sternites (Fig. 211) broad, sternite 1 is a distinct transverse sclerite, sternite 2 with short setae only, sternites 3 and 4 rather long and broad. Sternite 5 (Figs 211, 212) slightly asymmetrical but setosity strongly asymmetrical: short pointed setae on medio-caudal part and on the left side. Ventrally placed sclerites of synsternite 6–8 (Fig. 211, 212) short and not broad: apex of sternite 6 hardly reaching over sagittal line. Sternite 8 part (Fig. 213) comparatively long with distinct narrow ventral parts. Tergal parts of synsternite 6–8 (on the right side) membranous.

Epandrium with short setae only. Epandrium ventrally with a pair of distinct setose processes (cerci, Fig. 206) and with a pair of long curved setae, medial connection only membranous. Hypandrium (Fig. 207) robust, all the medial projection and lateral arms thick, lateral arms connected through an additional broad sclerotised stripe. Subepandrial sclerite small (Fig. 214).

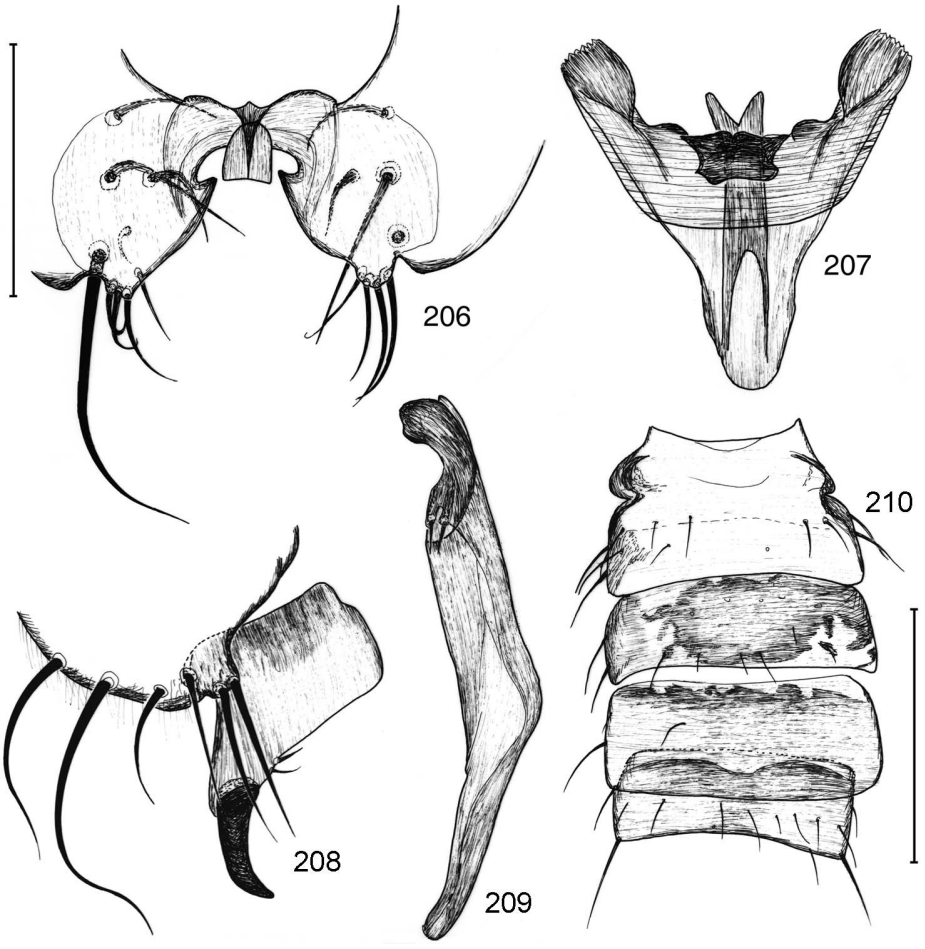
Male genitalia peculiar with short comparatively high lamelliform surstylus (Fig. 208), which bears a huge thick ventral thorn. Postgonite (Fig. 209) angularly curved distally to middle, in profile caudal margins almost straight. Basiphallus short and high (Fig. 216) actually connected to distiphallus only ventrally. Distiphallus conical not particularly long with minute setulae on subapical

dorsal parts. No direct contact between phallus and phallapodeme; the latter rather robust. Ejaculatory apodeme – though not large – in a rather characteristic form (Fig. 215).

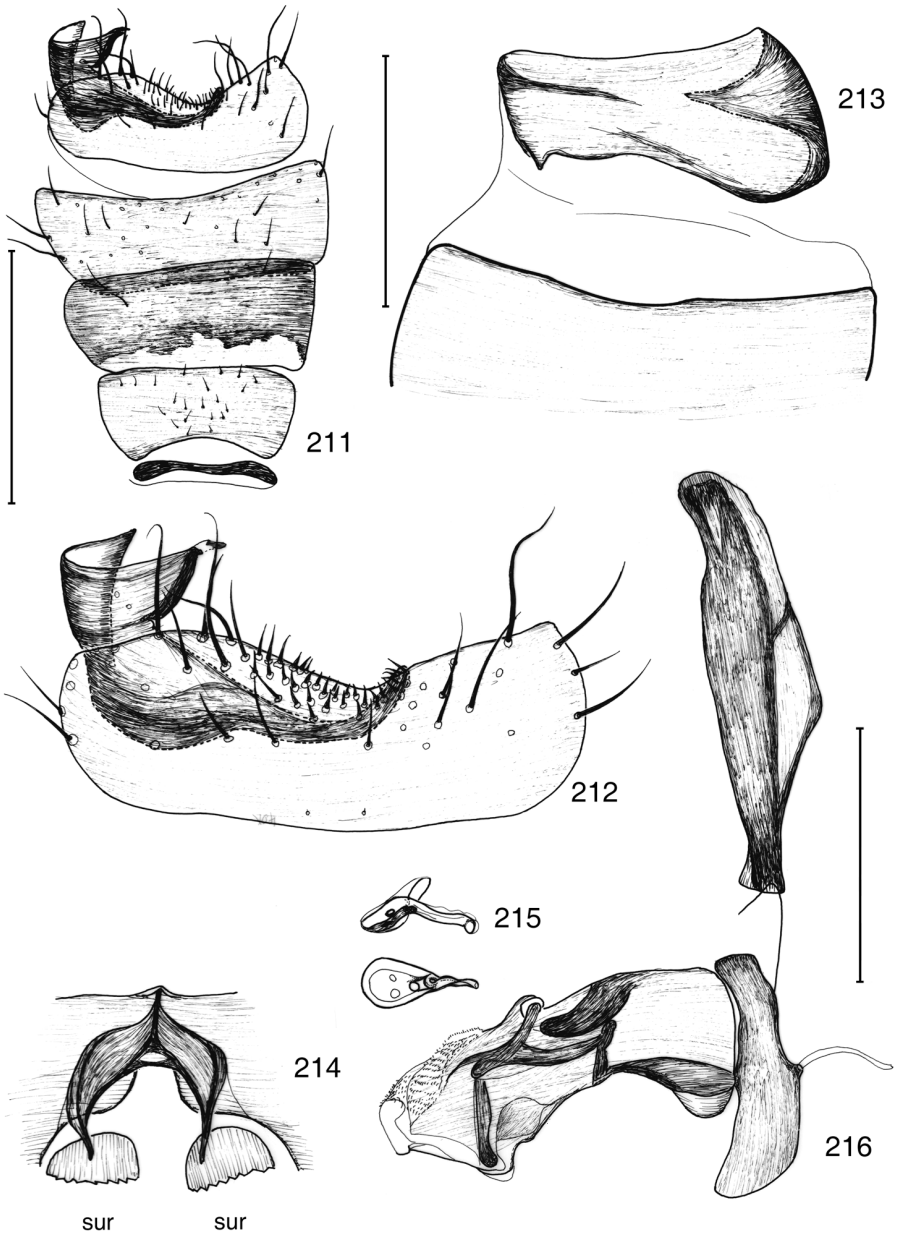
Australimosina flaviterga (RICHARDS, 1973) **comb. n.**

Acuminiseta flaviterga RICHARDS, 1973: 362.

Material studied: 1 male (HNHM): AUSTRALIA, NSW, Mt Wilson, 24. 7. 1978, No. 1179, pit fall traps.



Figs 206–210. *Australimosina flaviterga* (RICHARDS), male abdomen and genitalia. 206 = ventral part of epandrium with subepandrial sclerite (covered), 207 = hypandrium, ventral view, 208 = surstylus with ventral process of epandrium, broadest (sublateral view), 209 = postgonite, lateral view, 210 = tergites 1–5, dorsal view. Scales: 0.4 mm for Fig. 210, 0.1 mm for Figs 206–209



Figs 211–216. *Australimosina flaviterga* (RICHARDS), male abdomen and genitalia. 211 = abdominal sternites, ventral view, 212 = sternite 5 with sternite 6 & 7 portions of synsternite 6–8, 213 = sternite 8 portion of the synsternite 6–8 with border of tergite 5, dorsal view, 214 = subepandrial sclerite, inner (anterior) view, 215 = ejaculatory apodeme in lateral (upper) and in dorsal (lower) view, 216 = phallus and phallapodeme (sur: surstylus). Scales: 0.4 mm for Fig. 211, 0.2 mm for Figs 212–213, 0.1 mm for Figs 214–216

For more description see RICHARDS (1973: 362–365, figs 62, 66–67). Its large tergite 1+2 is yellow, indeed. I have not had even the slightest bias about its identity. RICHARDS' figures of genitalia are unequivocally defining this species.

Biconnecta gen. n.
(Figs 217–223)

Type species: *Biconnecta mirabilis* sp. n.
Gender: feminine.

A small sphaerocerid fly with peculiar male genitalia.

Head with large swelling between antennae, also carina high, i.e. facial plate strongly protruding before eye.

Wing not patterned, second costal section much shorter than third. First costal section with long setae. No mid ventral seta on mid tibia. Male mid tibia without a distinct ventroapical but with a row of thick black ventral setae.

Abdominal tergites not strongly sclerotised and very sparsely setose. Tergite 1+2 without medial bare area. Tergite 2 with ca. 6, tergite 3 with 8 dorsal setae, tergite 4 with ca. 12 setae only. Only some lateral setae, of which 2 pairs on tergite 5 long and thick. Preabdominal sternites medium large. Setae also on membrane (Fig. 218). Male sternite 5 (Figs 217–218) rather long, central area bare, caudal part less strongly sclerotised with 1 pair of long setae. Medio-caudal part with short thin setae. Sternite 5 bears very thick thorn-like setae

Genitalia with synsternite 6–8 rather small (compare them with the width of tergite 5 on Fig. 218). Synsternite's tergal (rightside) parts membranous with signs of secondary sclerotisation medially, right apex of sternite 7 (!) part with a less sclerotised ring (Fig. 218). Sternite 8 part long.

Epandrium dorsally normal with a pair of long dorsal setae. Otherwise epandrial setae sparse and not thick. Epandrium with a pair of long thin ventral processes (cerci, Figs 221–222). Epandrium on the right side with two, on the left side with 1 long thin curved sclerotic connections to hypandrium (Fig. 223). Outer wall of epandrial process (cercus) fused to epandrium on a short distance only (Fig. 222), inner wall not fused at all, so epandrial process movable in all probability. Hypandrium rather straight and lies actually under cranial edge of epandrium in profile. Hypandrium largely Y-shaped with special insertion points to epandrial processes. Subepandrial sclerite (Fig. 221) high, weakly sclerotised.

Surstylus (Figs 221–222) comparatively simple flat and setose but without long thick setae. Postgonite (Fig. 219) very characteristic: connection to hypandrium nearly medial, its large dorsal (caudal) part joining phallapodeme. Postgonite with 2 minute setae below middle of its cranial part. Phallapodeme comparatively thin, slightly downcurving. Ejaculatory apodeme (Fig. 220) pounder-shaped in profile.

The connection of epandrium and hypandrium looks decisive to the structure of the whole genitalia, e.g. phallapodeme parallel to hypandrium. Basiphallus and distiphallus short (I did not dissect the phallic organ of our single small specimen, since probably other parts of the genitalia bear the most important characters.

Female unknown.

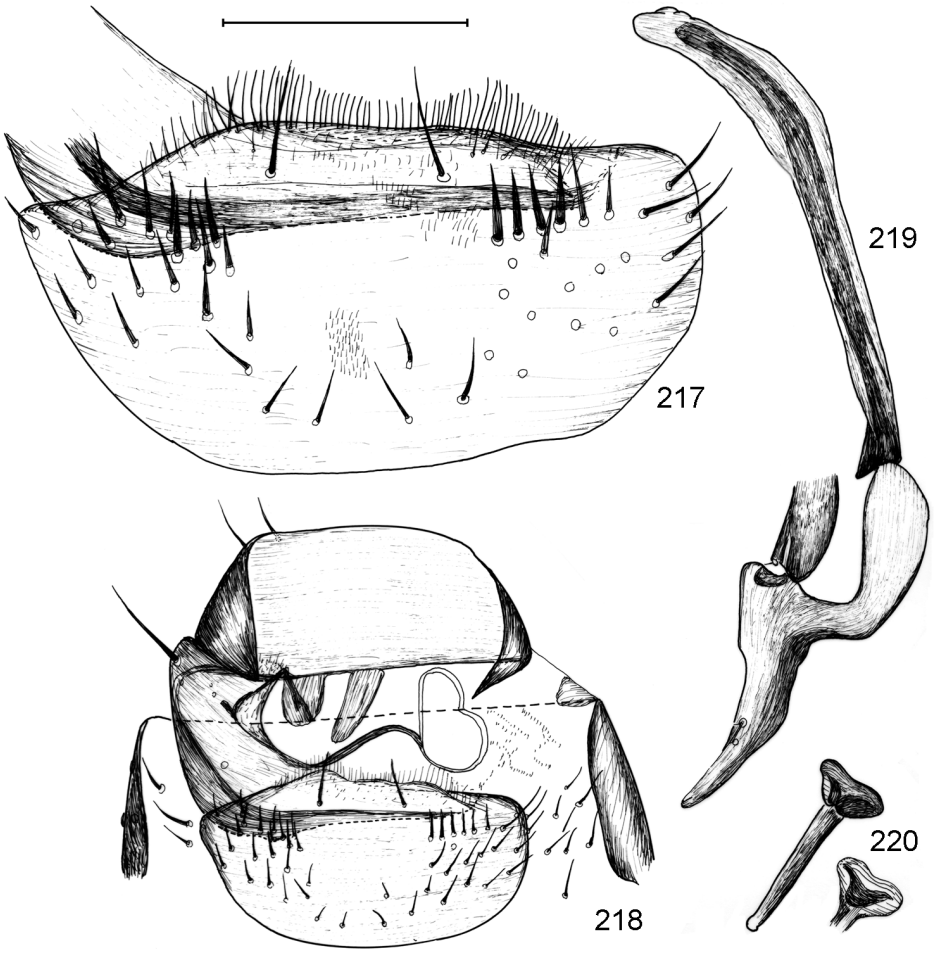
Biconnecta mirabilis sp. n.
(Figs 217–223)

Holotype male (HNHM): INDIA, Daitari, Jajpur-Keonjahr distr., Orissa [State] – 23. XI. 1967, leg. Topál.

Measurements in mm: body length 1.02, wing length 1.05, wing width 0.52.

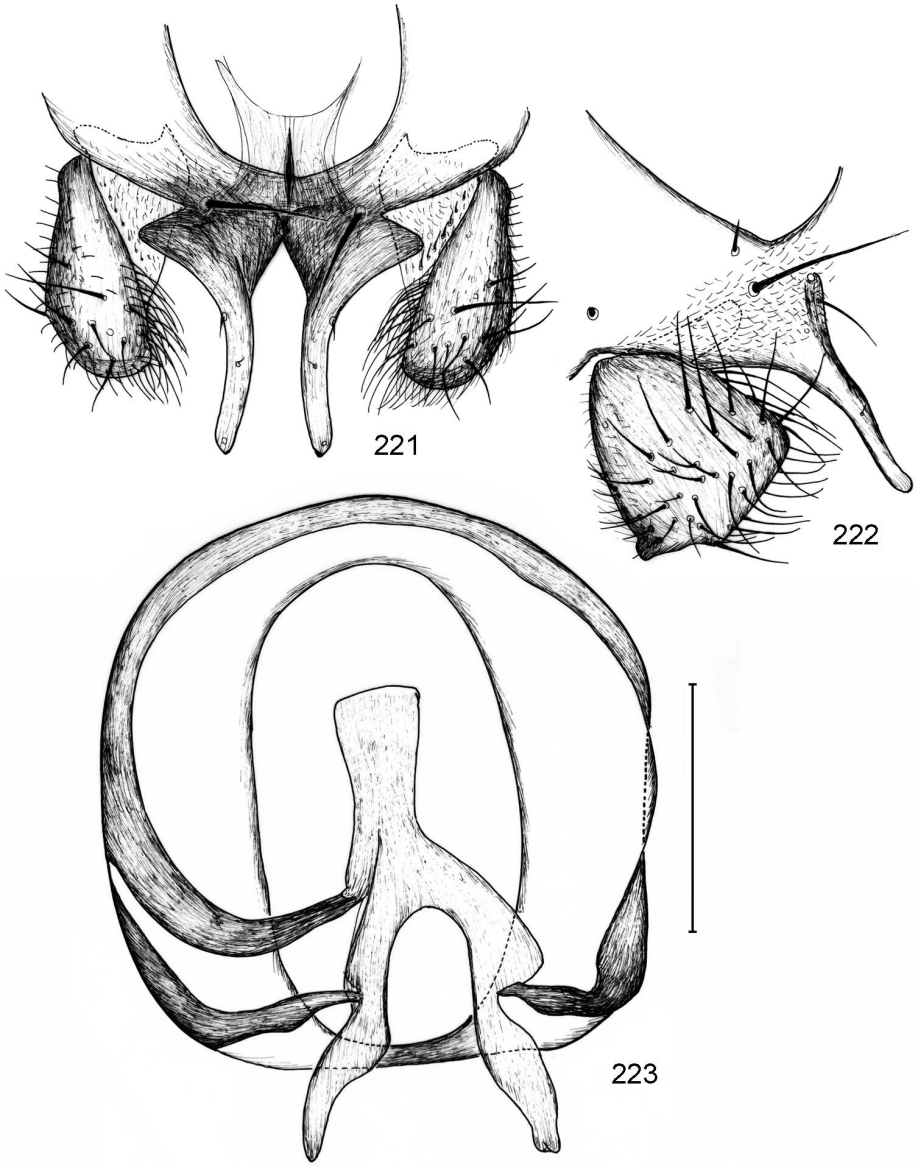
Dark brown, mid and hind tarsi ochre.

A large swelling between antennae, which is continued into carina; consequently facial plate in profile much protruding before eye. 3 pairs of long *ifr*. Genal seta 0.06 mm, vibrissa 0.15 mm. In-



Figs 217–220. *Biconnecta mirabilis* sp. n., holotype male, postabdomen and genitalia. 217 = sternite 5, ventral view, 218 = tergite 5, sternite 5 and synsternite 6–8, ventral view, 219 = postgonite and phallapodeme with connecting sclerite to hypandrium lateral view, 220 = ejaculatory apodeme. Scale: 0.1 mm for all

ner occipitals 0.10 mm, a pair of straight, 0.05 mm long setae in the line of the occipitals (so one can name than as postocellars or postverticals); that seems rather strong on such a small fly. Inner (medial) scape seta 0.065 mm long. First flagellomere rounded with long cilia apically. Aristal cilia dense but not long (slightly longer than 0.01 mm).



Figs 221–223. *Biconnecta mirabilis* sp. n., holotype, male genitalia. 221 = ventral part of epandrium with cerci, surstyli and subepandrial sclerite (partly covered), caudal view, 222 = surstylus in broadest view and left cercus in that view, 223 = epandrium and hypandrium, anterior view. Scale: 0.1 mm for all

1 pair of dorsocentrals. Anterior katepisternal only 1/3 length of posterior seta.

Wing rounded, broad (see length/width ratio). Membrane light brown, veins darker brown. Second costal section very short, 0.19 mm, third section 0.385 mm. Costagial seta 0.08 mm, setae on first costal section 0.05 mm, i.e. about twice longer than on second section. Vein R_{4+5} strongly curved up, costa ends at its apex. Discal cell with rounded lower edge, dM-Cu c. 0.08 mm, inter-crossvein section of M 0.105 mm. Alula narrow, apex almost sharp.

Mid tibia ventrally with a double row of thick black pointed setae, but no ventroapical separable and mid ventral seta also absent. No longer basitarsal seta. Posterodorsal seta also in distal half of mid tibia: anterodorsals at 11/56, (short), 13/28 (strong), 3/4 (very strong), posterodorsals at 13/56 (strong) and 19/28 (very long). Mid claws minute, not much longer than 0.01 mm, fore and hind claws twice longer.

Abdomen and male genitalia as described above.

Female unknown.

Etymology. Its specific epithet refers to the remarkable structure of the male genitalia.

Cephalimosina gen. n.
(Figs 224–232)

Type species: *Cephalimosina simplicipes* sp. n.
Gender: feminine.

Head (Fig. 224) large very broad with extremely long arista.

2 pairs of dorsocentral setae, also anterior pair strong: thick and about 2/3 length of posterior *dc*.

Costa ends at apex of vein R_{4+5} (Fig. 224). First costal section with short/medium long setae only. Second costal section about as long as third, or even shorter. Vein R_{4+5} curved up to costa. Discal cell long rounded.

No ventral seta on middle of mid tibia or distinct ventroapical, but a row of short thick sharp oblique setae present ventrally, up to basal 1/3 of tibia. Setosity of mid tibia simple. Mid basitarsus without strong seta ventrally, tarsomeres 2 and 3 ventrally without characteristic setae.

Abdomen comparatively short and high (Fig. 224).

Male preabdomen not modified, though tergites 2 to 5 less broad than tergite 2 (Fig. 228). Sternites (Fig. 226) broad, comparatively well sclerotised (except for sternite 2), sternite 5 very short and very broad, without any medio-caudal structure (shortest sagittally). Sternal setae rather thin but some of them are rather long. Sternite 8 part of synsternite 6–8 touching epandrium on both lateral cranial parts (Fig. 228), epandrium and sternite 8 dorsally rather broadly disconnected.

Male genitalia comparatively small (Fig. 228), much smaller than that of *Pachytarsella*, sclerotised plates of anal opening membranous. Genitalia strongly asymmetrical, epandrium rather short (Fig. 229). Cranial face of male genitalia as a whole concave (similarly to that of *Pachytarsella*), surstylus partly hidden in that vault (Fig. 229). Epandrium-hypandrium connection very weak, asymmetrical: left side through a thin but well-sclerotised lath, right side though membranous, at least colourless connection. Hypandrium narrow, forms an Y with long thick arms to postgonites and basiphallus, its epandrial connections are much thinner. The insertion point of the rather thin connecting sclerite to epandrium is marked with an arrow on Fig. 232. Medial, cranially directed process of hypandrium short broad, turned to the right.

Surstylus in 2 lobes: ventral one with long rather thin setae, dorsal lobes long curved, reclinate into epandrial cavity (Figs 227, 229). Medial part of surstylus with thick straight medially directed setae. Basiphallus compact, no epiphallus on basiphallus. Distiphallus short, much broadened ventrally (Fig. 230, 232). Postgonite (Figs 231–232) broad based, apex slightly curved cranially, narrowly rounded.

Cephalimosina gen. n. is best characterised by the character pair that vein R_{4+5} (Fig. 224) is strongly bent up to costal vein along a large curvature and at the same time mid tibia is without a mid anteroventral seta. So it runs to couplet 70 in the key below, where the peculiarities of male genitalia are to be taken into consideration. All in all, it is not difficult to recognise it as a genus.

Etymology. The name of the new genus is composed from the Greek '*cephalon*' (head, referring to the large broad head of the genus) and *Limosina*, the former large genus of Limosininae.

Cephalimosina simplicipes sp. n.
(Figs 224–232)

Holotype male (HNHM): THAILAND, [Trang Prov.] Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, 2004, No. 42, leg. L. Papp & M. Földvári.

Paratypes: 3 males: data same as for the holotype; 1 male: ibid., Trang Prov., Khao Chong Botanic Garden, rainforest, Nov 18, No. 36.

Measurements in mm: body length 1.53 (holotype), 1.35–1.70 (paratypes), wing length 1.37 (holotype), 1.18–1.43 (paratypes), wing width 0.60 (holotype), 0.51–0.63 (paratypes).

Frons and mesonotum with scutellum, as well as abdomen, dark brown, thinly grey microtomentose, subshiny. Pleura lighter greyish brown.

Head large (holotype: head 0.25, thorax 0.725, combined 0.96, abdomen contracted, c. 0.57 mm). Face protruding before eye in profile, carina not sharp. Upper part of facial plate between antennae 0.13 mm long, occupying half of facial plate. Mouth opening very large.

One pair of interfrontal setae very long, 0.15 mm, they emerge almost as close to eye margin as to sagittal line. Some (2 pre-, 1 post-) minute interfrontal pairs additionally. 2 strong *fr-orb*, both *occe* and *occi* strong, interocellars and postocellars very short. Vibrissa very strong, 0.24 mm, genal seta thin, almost on mouth margin, 0.10 mm long. Antenna reddish yellow, first flagellomere with grey cilia. First flagellomere much higher than long, arista subapical. Scape medial seta weak, pedicel setae strong, with a curved ventral discoloured hairlike seta of 0.09 mm. Arista extremely long with dense medium-long cilia; third aristomere more than 0.9 mm (!), partly broken in type specimens.

2 *dc*, 1 postpronotal, 2 *np*, 1 presutural, 1 prealar and 1 postalar intra-alar, 1 supraalar pairs. No enlarged prescutellar acrostichal setae. Acrostichals not well-ordered, c. 7 or 8 rows countable between anterior dorsocentrals. Only posterior katepisternal seta developed, that is weak, 0.05–0.06 mm long only.

Wing (Fig. 224) light brownish, veins light brown. Vein R_{4+5} strongly bent up to costa, costa ends at apex of R_{4+5}. Second costal section slightly shorter than third. (0.385 mm vs. 0.43 mm on holotype). Discal cell long, lower edge rounded. Inter-crossvein section of M 0.25 mm, dM-Cu oblique, c. 0.07 mm. Dorsal costagial seta 0.09 mm, ventral seta 0.08 mm. First costal section setae 0.045mm, those on the second section 0.035 mm, i.e. not much shorter.

Legs yellow. Fore and hind legs normal, not thickened. No dorsal preapical seta on hind tibia. Ventroapical seta on male mid tibia indistinct, but also thick black setae in the ventral row very short.

Anterodorsals on mid tibia at 11/38 (thick but only medium long), 32/38 (long and thick), posterodorsals at 12/38 (in some specimens very weak), 31/38 (medium long).

Female unknown.

Acuminiseta DUDA, 1925 and allies

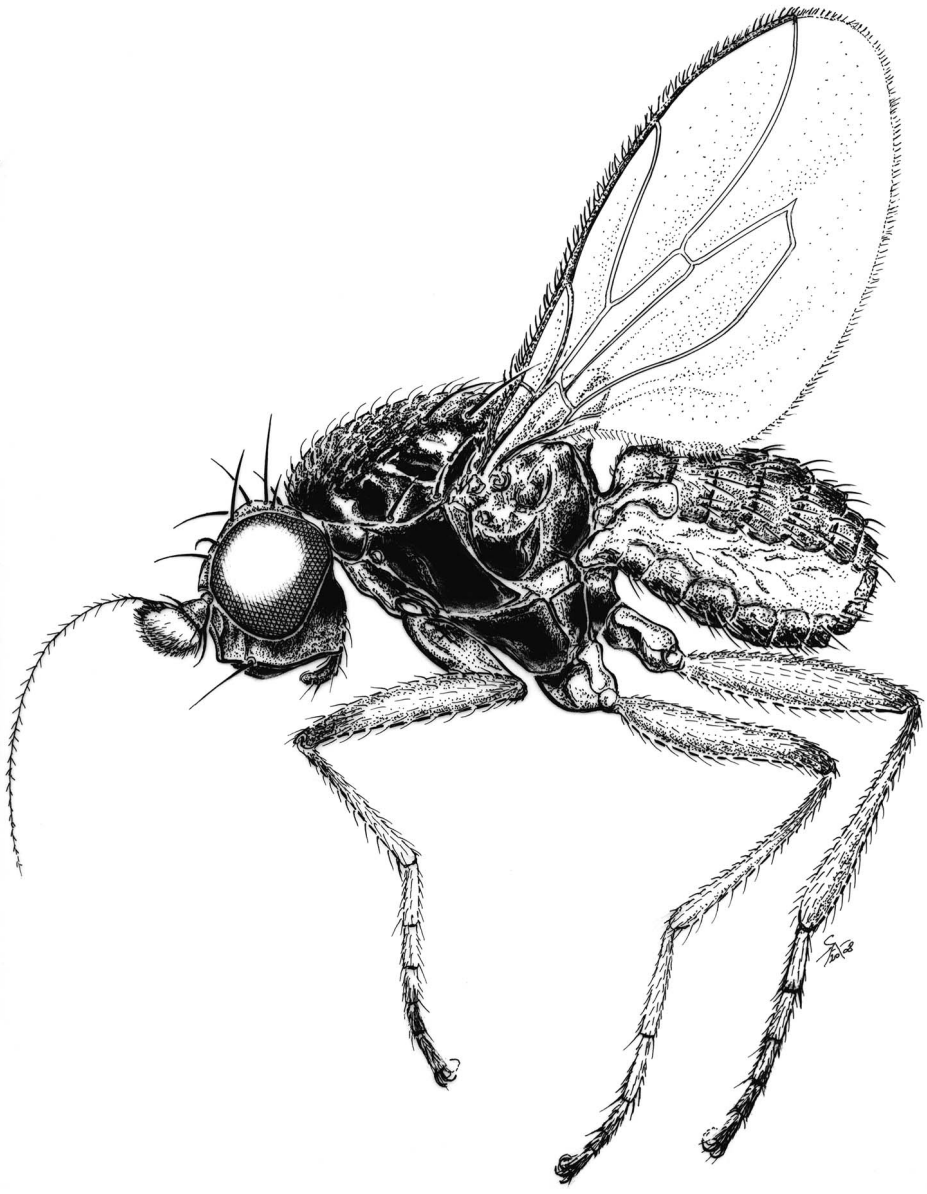
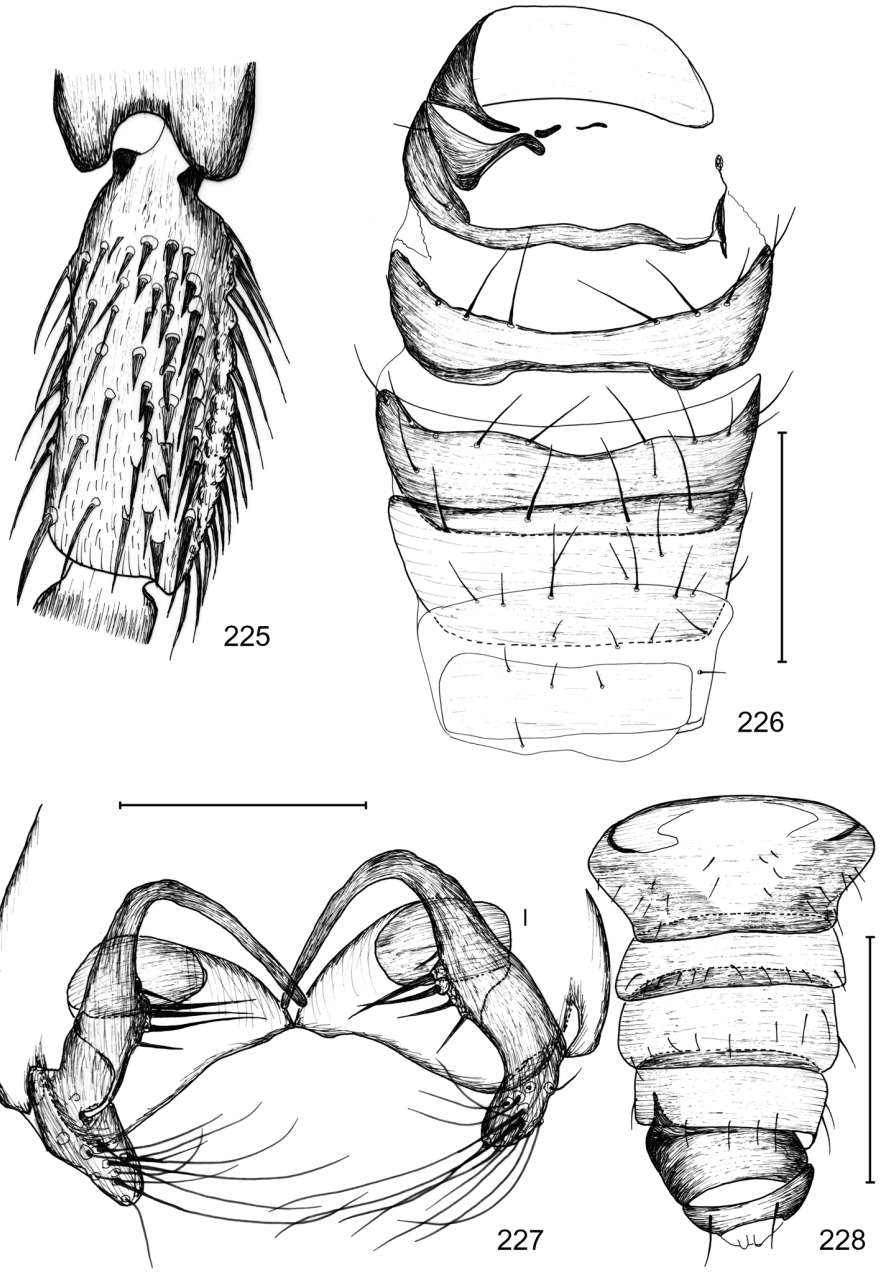


Fig. 224. *Cephalimosina simplicipes* sp. n., paratype male (del. A. SZAPPANOS)



Figs 225–228. *Cephalimosina simplicipes* sp. n., paratype male. 225 = hind metatarsus, ventral view, 226 = abdominal sclerites, ventral view, 227 = surstyli with ventral part of epandrium, subventral-subanterior view, 228 = abdomen, dorsal view (l: lobe of subepandrial sclerite). Scales: 0.4 mm for Fig. 228, 0.2 mm for Fig. 226, 0.1 mm for Figs 225, 227

Acuminiseta DUDA, 1925
(Figs 233–238, 309–314)

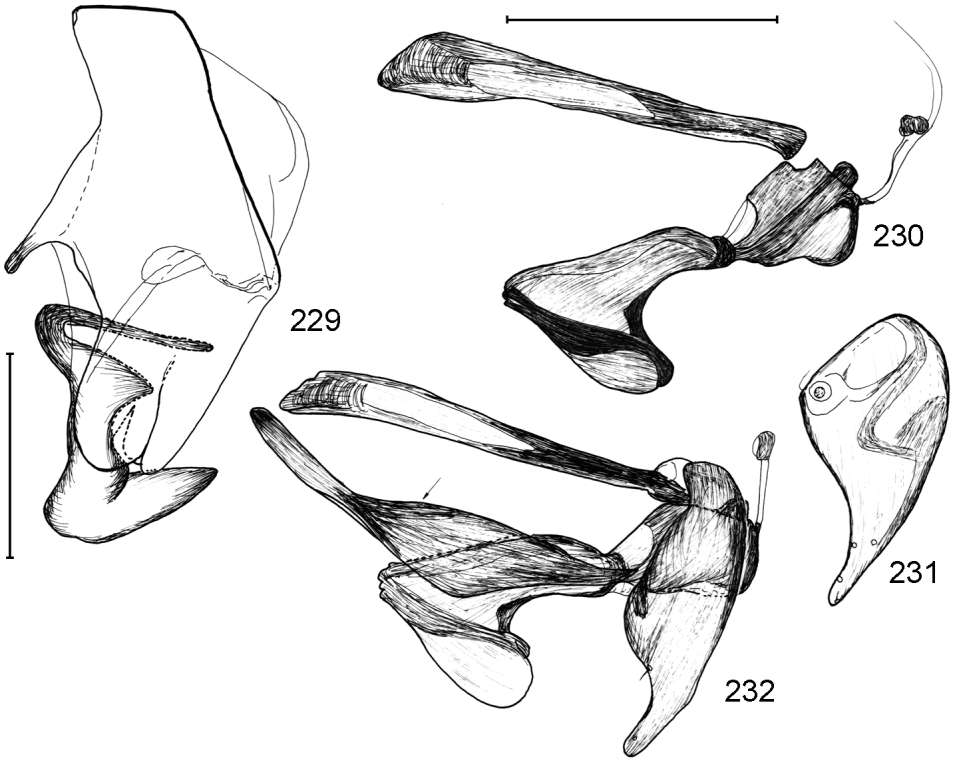
Type species: *Limosina pallidicornis* VILLENEUVE, 1916 (RICHARDS 1930: 268, subsequent designation).
Gender: feminine.

A re-description of the genus is made on the basis of studies on the type series of *A. pallidicornis* and of the new species *A. ceropteroides* sp. n.

A comparatively large robust fly (Fig. 233) with peculiar male genitalia.

Head with a single long fronto-orbital seta (anterior pair minute or not discernible), 1 pair of large interfrontals, ocellar pair normal, vertical pairs large, *occe* and *occi* weak. No postocellar setae developed. Antennae large. First flagellomere rather long, narrowly rounded apically to form a subdorsal apex, arista subapical.

2 strong dorsocentral pairs, anterior pair rather cranially placed, emerging practically on suture. Two pairs of katepisternals, anterior pair weaker.



Figs 229–232. *Cephalimosina simplicipes* sp. n., paratype male. 229 = contours of epandrium, cercus and surstylus (those of the latter are stressed), 230 = phallus and phallapodeme, lateral view, 231 = postgonite, broadest view, 232 = inner genitalia with medial part of hypandrium, lateral view. Scales: 0.1 mm for Fig. 229 and for 230–232, respectively

Wings brown clouded (unicolorous brownish on old museum specimens). Costa only slightly continued distally to apex of vein R_{4+5}. First costal section with extremely long setae (Fig. 233). Second costal section shorter than third. Vein R_{4+5} sinuate and curved up to costa. Discal cell with distinct lower edge and with a distinct vein appendage.

Pulvilli larger than in most genera of Limosininae. Mid tibia with a middle ventral seta at 3/5. No dorsal preapical seta on hind tibia. Mid basitarsus long with a very thick posteroventral seta at basal ¼, which is not much longer than other setae in the same (posteroventral) row. Ventroapical spur very thick but rather short.

Abdominal tergites and sternites with sparse but long setae (e.g. on male sternite 3 0.24 mm). Tergite 1 partly membranous. Male preabdomen not modified. Tergite 2 without less sclerotised medial area. Tergite 2 short (0.11 mm), only slightly longer than tergite 3, tergal setae particularly weak. Sternite 4 and sternite 3 with a robust setal pair each (Fig. 235). Sternite 5 (Fig. 234) very characteristic: no lateral setae or medio-caudal process but caudal and central parts with extremely thick thorn-like setae.

In synsternite sternite 8 and sternite 6+7 parts separated (i.e. not sclerotised connection at all). No right side sclerites. Sternite 8 part comparatively large but not much reaching over sagittal line (Fig. 311). Ventralmost (sagittal) part of sternite 6 with or without a pair of thick setae laterally and with a broad triangular caudal process, which is dorsally-caudally projected.

Epandrium without strong dorsal (subdorsal) or caudal setae (Fig. 237). Lateral arms of hypandrium to epandrium rather thin. Hypandrium with a large and intricate ventral process (Fig. 236). Subepandrial sclerite high in caudal view (Fig. 237). Surstylus (Fig. 238, posterior end on the left side) low basally with 2 large lobes: cranial one less sclerotised, broad, separable to 2 parts, longer setae on its posterior part only (which is actually the medial part of surstylus), caudal part long narrow with rather short setae. Basiphallus without epiphallus but ventral part narrowed into a slightly curved blunt ventral process. Distiphallus (Fig. 236) large, high, apico-ventrally with short thornlets. Connection of postgonite to hypandrium not strongly sclerotised (see Fig. 236). Postgonite very big (Fig. 236), curved with minute hairs only.

Female postabdomen not telescopic at all. Female sternites broadening from 2nd to 7th, 6th and 7th as broad as tergites. Sternite 8 broad triangular with a pair of minute lobes caudally. Tergite 8 only slightly desclerotised dorsally, although laterally twice longer than dorsally. Epiproct very broad, 0.11 mm, sagittally desclerotised, setae separated by 0.08 mm, i.e. their own length. Hypoproct broad, partly desclerotised. Cerci small, width 25 μ, lateral length 70 μ, apical seta 65 μ, subapical seta 55 μ. Spectacles-shaped sclerite present. Unpaired spermatheca globular, sclerotised duct bulbous. Paired spermathecae also globular (when in water, they collapse in glycerol) much smaller than unpaired, their individual duct shorter than their diameter.

Acuminiseta DUDA as defined above, is a very characteristic genus; it is easily recognisable. It has only 1 fronto-orbital pair. Its wings are also rather characteristic with the first costal section bearing extremely long setae (Fig. 233) and all the wings with pale brownish clouding. Its mid tibia bears several anterodorsal and posterodorsal setae and also with a mid anteroventral seta. Contrarily to former misinterpretations, first flagellomere is not "pointed or upper edge angled" but rounded with a subapical arista.

Through the courtesy of Dr JINDŘICH ROHÁČEK (Slezské zemské Muzeum, Opava, Czech Republic), I managed to examine the type series of the type species of *Acuminiseta*. It was made in the last phase of the publication process, this is why

figures (Figs 309–314) made on the male genitalia are given on the last table of figures.

Acuminiseta pallidicornis (VILLENEUVE, 1916) – Material studied: lectotype male, 1 male and 2 female paralectotypes (returned to the MNHN, Paris): see ROHÁČEK 2001: 469. The lectotype is somewhat damaged: right flagellomere lost, anterior dorsocentral and all scutellar setae broken off, also cephalic setae damaged. The abdomen of the paralectotype male was prepared and dissected; its abdomen with genitalia is preserved in a plastic microvial with glycerol. As for the body characters it is similar to those of *A. ceropteroides*. However, its eyes are larger: height of eye of the holotype 0.22 mm, gene below eye 0.165 mm broad, ratio 1.33. Second costal section 0.54 mm, third section 0.615 mm, inter-crossvein section 0.165 mm. Abdominal setae all dark brown.

Male abdominal sternites and figures on male genitalia are discussed in the key in opposition to *C. ceropteroides* sp. n. (see under its description below).

Most of the species described as, or relegated to *Acuminiseta*, does not belong here. There are types of two limosinine species, originally described as *Acuminiseta*, in the collection of the HNHM, which are given above (see under *Eximilimosina* and *Spinilimosina*).

Acuminiseta ceropteroides sp. n.
(Figs 233–238)

Holotype male (HNHM): CONGO, Brazzaville, ORSTOM park, No. 484 – 20. XI. 1963., J. Balogh – A. Zicsi.

Paratypes (HNHM): 1 male 2 females (male and a female with gen. prep.): same as for the holotype, but No. 694/209, 16. I. 1964. / 16. XI. 1963.; 1 male: ibid., Sibiti, 29. XI., No. 296.; 1 female: ibid., Sibiti, IRHO, 1–13. XII. 1963; 1 male: ibid., Lefinie reservation, 9. I. 1964.; 1 female: ibid., Kindamba Meya, cave, 9. XI. 1963, No. 131.

Measurements in mm: body length 1.70 (holotype), 1.32–1.95 (paratype males), 1.70–1.80 (paratype females), wing length 1.76 (holotype), 1.21–1.95 (paratype males), 1.60–1.170 (paratype females), wing width 0.73 (holotype), 0.50–0.80 (paratype males), 0.66–0.74 (paratype females).

Dark brown, grey microtomentose. Antennae yellow, wings clouded diffuse brown.

Occiput not concave, ocellar and both vertical pairs very long and thick. Occipital pairs and postvertical pair thin but distinct. Only 1 (posterior) lateroclinate fronto-orbital pair. 1 large medial interfrontal pair plus a very short anterior pair, as well as a similar posterior pair on some specimens. Face with a small swelling below antennal bases. Eye small, height 0.23 mm, gena very broad, height below eye 0.14 mm (on holotype male), ratio 1.62. Genal seta distinct though short (0.055 mm). Scape small, pedicel and first flagellomere large (Fig. 233). Medial seta of scape 0.10 mm, some of the pedicel setae even longer. Cilia on first flagellomere 0.05 mm. Arista subapical 0.58 mm long with short cilia.

2 very strong *dc* pairs, all inter-alars distinct, presutural one not much shorter than posterior one. No medial postpronotal and prescutellar setae. Scutellum rather long, 0.33 mm, apical scutellars 0.44 mm long. Posterior katepisternal seta 0.23 mm, anterior one 0.11 mm.

Costal ends slightly distally to apex of R_{4+5}. Vein R_{4+5} sinuate. Second costal section 0.49 mm (holotype), third section 0.64 mm. Costagial setae long: upper 0.11 mm, lower 0.19 mm, longest setae on first costal section sparse but long, 0.12 mm and very thick. Setae on second and third sections thin and max. 0.05 mm. Inter-crossvein section of M 0.165 mm, dM-Cu 0.09 to 0.165 mm. Discal cell with distinct M and Cu appendages. Inner length of alula 0.04 mm, narrowly rounded, its cilia 0.05 mm.

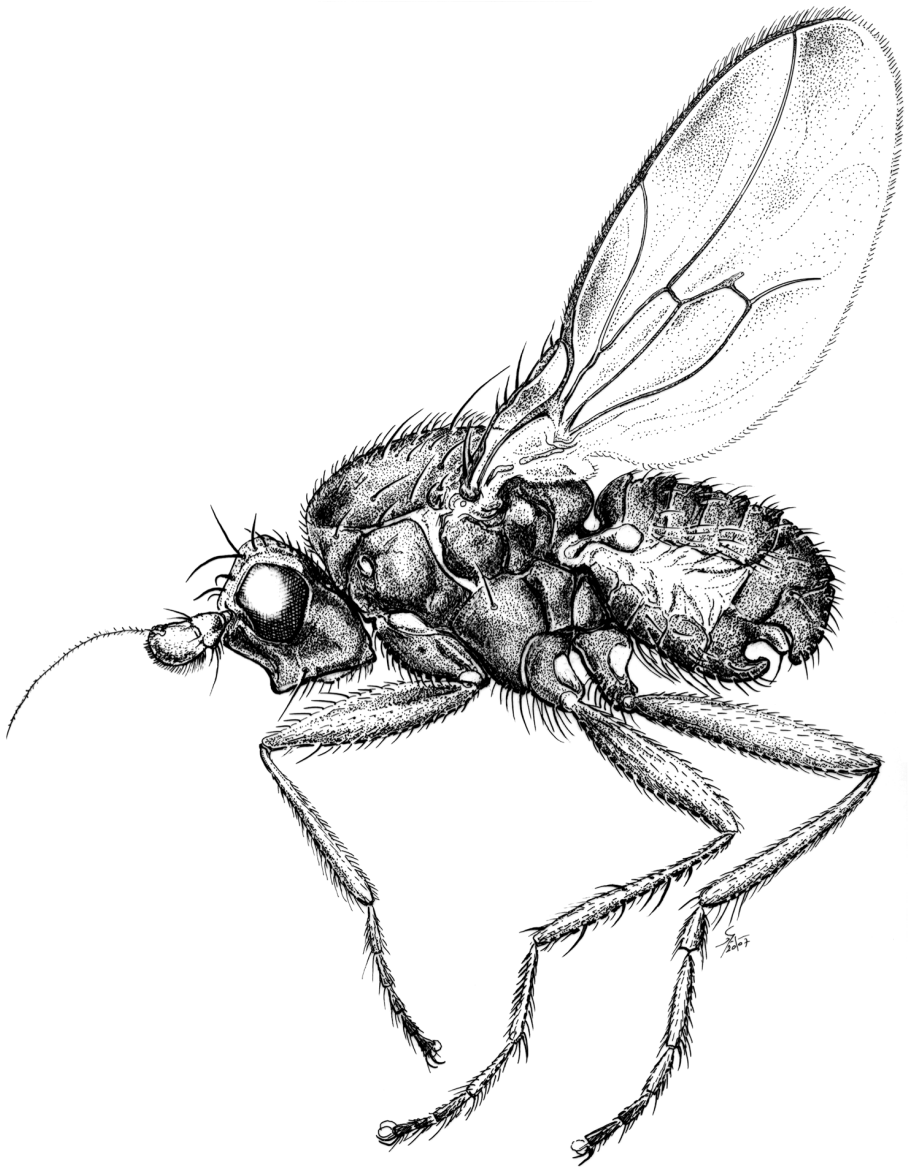
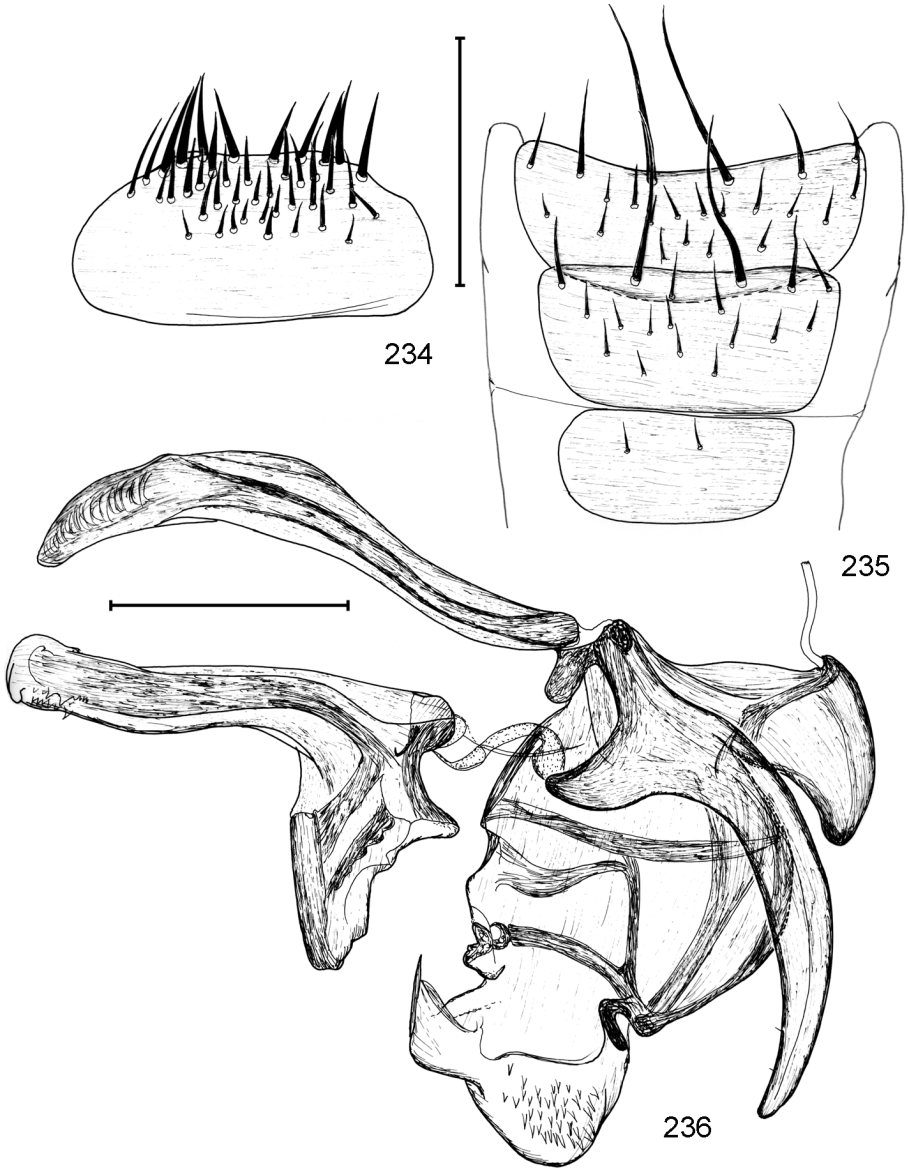


Fig. 233. *Acuminiseta ceropteroides* sp. n., paratype male (del. A. SZAPPANOS)

Fore and hind legs without peculiarities. Mid tibia with a middle ventral seta at 32/52. Ventroapical spur very thick but only 0.04 mm long. Anterodorsal setae at 11/52 (short), 20/52 (long), 15/, 25/ and 33/52 (all short), a slightly less anterior, very large at 44/52. A short dorsal at 36/52 and a long at 40/52. Posterodorsals at 15/52 (short), 20/52 (large), 42/52 (very large).



Figs 234–236. *Acuminiseta ceropteroides* sp. n., paratype male, postabdomen and genitalia. 234 = sternite 5, ventral view, 235 = sternites 2 to 4, ventral view, 236 = genital complex with hypandrium, lateral view. Scales: 0.2 mm for Figs 234–235, 0.1 mm for Fig. 236

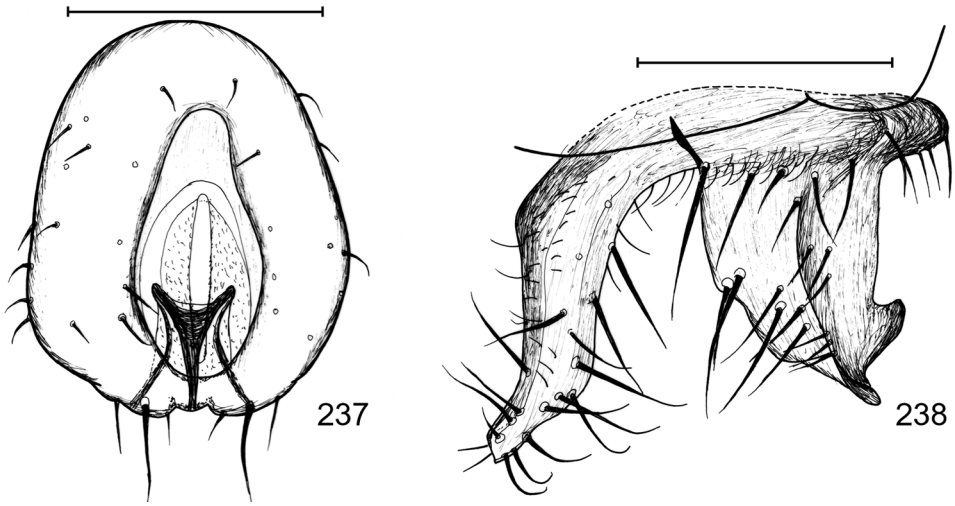
Abdominal setae lighter than in *A. pallidicorni*s, light brown to yellowish. Marginal setae on tergites of female seem longer (longest one 0.165 mm). Male and female postabdomen and genitalia as described above in general. Differentiating characters of male genitalia in the two species are as follow:

1. Male sternite 3 and 4 with more setae, including very long ones (Fig. 310). Male sternite 5 broader, its setae more numerous but most of them less thick (Fig. 309). Surstylus (Fig. 312) thinner basally, its lobes are more distant. Postgonite (Fig. 313) broader. *A. pallidicornis* (VILLENEUVE, 1916)

– Male sternite 3 and 4 with a few setae only and each with 1 pair of very long setae (Fig. 235). Male sternite 5 (Fig. 234) less broad, its setae sparse. Surstylus (Fig. 238) thicker basally, lobes are closer to each other. Postgonite thinner (Fig. 237). **A. ceropteroides** sp. n.

There are some other features, which seem to be slightly different, e.g. eye of *A. pallidicornis* is smaller (compare data of holotypes), abdominal setae of *A. ceropteroides* are less dark, even basiphallus is slightly different (Fig. 236, cf. Fig. 314). However, these characters are not distinct enough to separate species.

Etymology. The specific epithet 'ceropteroides' refers to the superficial resemblance of this species to some species of *Ceroptera*, although they are not closely related.



Figs 237–238. *Acuminiseta ceropteroides* sp. n., paratype male, postabdomen and genitalia. 237 = epandrium with cerci and subepandrial sclerite, caudal view, 238 = surstylus, broadest (a sublateral) view. Scales: 0.2 mm, 0.1 mm

Anommonia SCHMITZ, 1917

It is a genus with six Afrotropical species (the relegation of *A. flavicaput* (RICHARDS, 1968b) from Sumatra is highly questionable). They are associated with doryline ants. RICHARDS (1968b) redefined it as a subgenus of *Leptocera* OLIVIER and he gave a key for the identification of species. RICHARDS's re-description is supplemented below in comparison to *Paracuminiseta* gen. n. Now one *Anommonia* species was studied.

Anommonia alopecialis (RICHARDS, 1968) – Material studied: 1 female: CONGO: Brazzaville, Djoue River, riverside forest, soil traps, 27. 10. 1963, J. Balogh – A. Zicsi, No. 36; 1 female: ibid., Sibiti, IRHO rain forest, soil trap, 1. 12., No. 317; 1 male (without genitalia, which was probably lost whilst pinning from alcohol): ibid., Soso River, No. 312; 1 female: GHANA: Ho, Volta region, N 6° 70' E 0° 03', air plankton, No. 475, 15 Nov 1971, S. Endrődy-Younga.

Paracuminiseta gen. n.
(Figs 202–205)

Type species: *Paracuminiseta tetraspinosa* sp. n.
Gender: feminine.

Head not long, facial carina rather flat and broad, mouth opening protruding. Two pairs of lateroclinate *fr-orb*, ocellars large, almost lateroclinate, vertical pairs long and think, *occi* long, apices almost meet, *occe* similarly long. No postocellar setae. (1)–2 pairs of strong *ifr*, in cases only 1 strong + 1 small posterior (!) pair. Vibrissa large, genal setae short.

First flagellomere not particularly large with a large dorsal apical process, which seems slightly segregated from the body of flagellomere (Fig. 202). Arista with extremely long cilia (up to 0.04 mm). Cilia on first flagellomere nearly as long.

Two pairs of strong dorsocentral setae. Scutellar setae rather long, even basals much longer than scutellum. Anterior katepisternal much smaller than posterior pair.

Wings unicolorous. Costa not particularly thick, first costal section with short setae only. Costa ends at apex of R_{4+5}. Second and third costal sections equal or subequal (second section somewhat longer). Discal cell rather long, lower edge angled with or without vein appendage.

Dorsal half of mid tibia setose with anterodorsal and posterodorsal setae; arrangement partly species-specific. No mid ventral seta on mid tibia, males with a row of long hair-like anteroventral setae but also with a long ventroapical.

Abdominal tergites 1 and 2 simple, not depigmented medially. Male sternites 3 to 5 large, synsternite 6–8 small (short), its S6 part narrow. Epandrium only slightly asymmetrical; anal opening large, anal plates large but rather weakly sclerotised. Epandrial setae sparse but long. Ventral part of epandrium with the modified cerci fused, and with 1 pair of very long and several other setae. Medial part of hypandrium very small to short (Fig. 205), dorsally directed, arms maybe broadened in their own plane. Subepandrial sclerite rather high, but weakly sclerotised. Surstylus consists of a smaller lateral (mostly digitiform) and of a larger still not very broad medial lobes. Surstyli as well as postgonites strongly asymmetrical (Fig. 203). Postgonites (Figs 203, 205) large, caudally curved at

about apical 2/5, more apically recurved with a small additional process. Both basi- and distiphallus always flat, broad (Fig. 204), shape different in the undescribed species. Phallapodeme curved.

Female tergite 2 not desclerotised medially, tergites 2–5 normal, tergite 6 longer than tergite 5. Sternites transverse. Female tergite 7 comparatively long, tergite 8 very short and although not divided, very short medially. Sternite 8 broad not modified. Epiproct small triangular with a pair of minute setae, hypoproct indistinct, weakly sclerotised. Female cerci with 3 medium-long thin straight setae (apical, dorsal and ventral subapicals) and hairs only. Spermathecae large: one large left plum-shaped spermatheca plus 2 smaller longish right ones, whose common duct not sclerotised at all.

The differentiating characters to *Anommonia* SCHMITZ, 1917 are discussed below.

Etymology. I formerly thought this form to represent *Acuminiseta* spp. A comparison to its male genital structures to the true *Acuminiseta* has not corroborated a close relationship, though.

There are representatives of other two Afrotropical species in the collection of the HNHM. They have only 1 pair of strong interfrontals.

Paracuminiseta tetraspinosa gen. n.
(Figs 202–205)

Holotype male (HNHM, abdomen prepared, with genitalia in a microvial with glycerol): Guinea, Coyah, 21. X. 1967, leg. Ferencz.

Paratypes: Ghana, leg. Endrődy Y.[Younga] S. (abdomen of 1 m and 1 f prepared, with genitalia in a microvial with glycerol): 1 male: Kwadaso, Hg vapour light, on field, 27. 12. 1969; 2 females: Banda-Nkwanta, 1965. VIII. 6. /IX. 13–17., Nr. 49 /73.

Measurements in mm: body length 1.65 (holotype), 1.60 (paratype male), 1.60, 1.75 (paratype females), wing length 1.49 (holotype), 1.60 (paratype male), 1.56, 1.65 (paratype females), wing width 0.73 (holotype), 0.72 (paratype male), 0.67, 0.75 (paratype females).

Body dark brown, legs brow, tarsi yellow.

Head with occiput slightly concave. Two pairs of long and extremely thick *ifr,* cephalic setae as described above. Gena broad below eye 0.15 mm, height of eye 0.185 mm. First flagellomere without process c. 0.09 mm, process 0.02–0.022 mm long (Fig. 202). Medial seta of scape 0.07 mm.

Two pairs of strong dorsocentral setae, anterior pair emerge more caudally than in *Acuminiseta*, i.e. slightly behind wing base. Anterior katepisternal seta thin, only ¼ as long as posterior pair.

Wings unicolorous, light brownish, veins light brown. Vein R_{4+5} almost evenly curved up to costa. Costa ends at R_{4+5}, 0.02–0.022 mm thick on second section. Costal setae on first section short, 0.03 mm, with some 0.04–0.045 mm long setae proximally to vein H. Second and third costal sections equal. Discal cell very long, lower corner rather edged without vein appendage. Inter-crossvein section 0.26 mm, dM-Cu 0.08 mm long. Alula small and narrow. Haltere yellow.

Legs light brown, tarsi yellow. Mid tibia with a strong ad at 15/44 and 30/44 each, more dorsal setae at 12/44 (short), 33/44 (very short), 35/44 (extremely long, 0.19 mm), moderately long posterodorsal setae at 11/44 and 38/44.

Male and female postabdomen and genitalia as described above. Unpaired spermathecae 0.22 mm × 0.11 mm, sclerotised duct thin, only 0.045 mm. Paired spermathecae 0.12 mm × 0.07 mm, sclerotised own duct very thin and only 0.055 mm long.

Etymology. The specific epithet 'tetraspinosa' refers to the 2 pairs of extremely strong interfrontal setae.

The close relationship of the above three genera is rather questionable. It is true that two of them have a conical (tapered dorsally) 1st flagellomere with a subapical arista (Figs 201–202). However, *Anommonia* spp. also have a subapical rod-like process, which is paralleled only by that one in *Pseudacuminiseta* gen. n. I did not find true synapomorphies for *Paracuminiseta* and *Anommonia*, since shared characters (scape with a very long mesal seta, 1st flagellomere with long hairs, no inner orbitals, only 1 pair of katepisternal setae) cannot be valued as such. The main differentiating characters of *Paracuminiseta* and *Anommonia* can be summarised as follow:

Paracuminiseta	*Anommonia*
(1)–2 pairs of strong *ifr* (in cases only 1 strong + 1 small posterior)	(3)–4 small or medium-long *ifr*
No postocellar setae	Small but distinct pair of postocellar setae
2 pairs of strong dorsocentral setae	Only 1 *dc* pairs, plus an oblique row of small setae
Costa not particularly thick, first costal section with short setae only	Costa thickened with long setae and with rather long dorsal and ventral setae all along
No mid ventral seta on mid tibia, males with a row of long hair-like anteroventral setae	Male mid tibia with a row of strong ventral setae, female mid tibia with a small middle ventral (av)
Abdominal tergites 1 and 2 simple	Abdominal tergites 1 and 2 modified in a number of species
Female cerci with thin setae and hairs only	Female cerci in a number of species with 1 or more thick thorns
1 large left plum-shaped spermatheca plus 2 smaller longish right ones, whose common duct not sclerotised	Spermathecae globular, the single left one not (or only slightly) longer than the paired ones

Gonitella gen. n.
(Figs 239–247)

Type species: *Gonitella flavipes* sp. n.
Gender: feminine

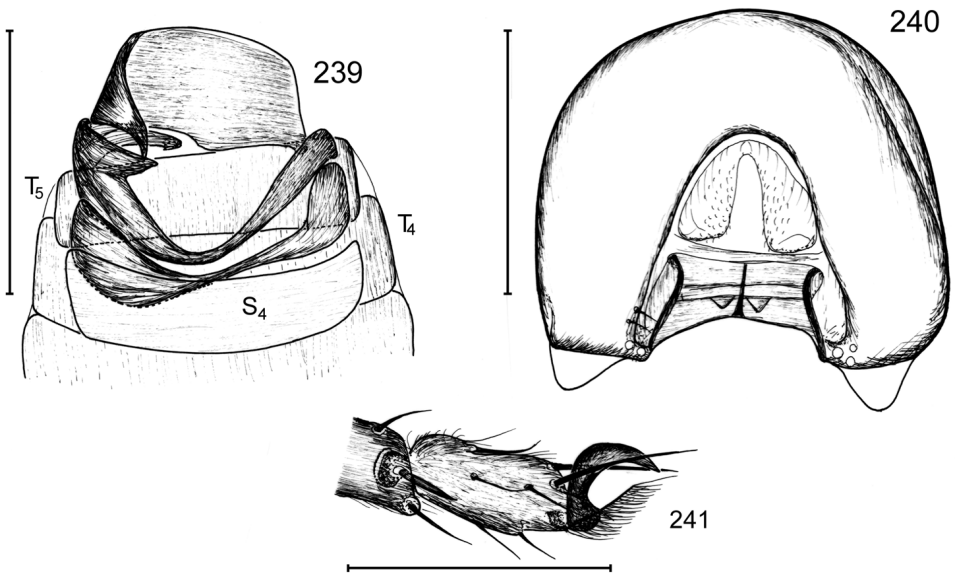
Body strongly sclerotised but not granulose, subshining. Prosternum narrow.

Wings rather narrow, second costal section much longer than third.

Male mid tibia without long ventral hair-like setae. Tarsomere 5 (Fig. 241) with small pulvilli and angularly curved claws.

Abdominal tergites and sternites almost meet laterally, abdominal setae thin and discoloured. Abdominal tergite 1 very short (0.033 mm), completely separated from tergite 2 by a large thinly membranous space. Length of tergites: 2: 0.33 mm, 3: 0.18 mm, 4: 0.165 mm, 5 medially: 0.15–0.165 mm. Sternites short and broad. Sternite 5 (Fig. 239) short, sagittally extremely short, its left part partly hidden under sternite 4, its right lateral part under tergite 5. Sternite 6 part of synsternite 6–8 very short but broad, reaching far to the right (there probably includes tergal parts), sternite 7 part small, particularly so in its dorsal portion. Sternite 8 part comparatively long (Fig. 239).

Male genitalia strongly asymmetrical: right half of epandrium larger than left half (see Fig. 242). Epandrium open ventrally except for subepandrial sclerite (Fig. 240), which is not massively sclerotised and lies almost in horizontal plane of the body. Hypandrium short triangular with comparatively strong but short lateral arms.



Figs 239–241. *Gonitella flavipes* sp. n. 239 = sclerites of abdominal segments 4 and 5 with synsternite 6–8, ventral view, 240 = epandrium with subepandrial sclerite, caudal view, 241 = 5th tarsomere (T4, T5: tergites, S4: sternite 4). Scales: 0.4 mm for Fig. 239, 0.2 mm for Fig. 240, 0.1 mm for Fig. 241

Surstylus (Figs 242, 244–245) very intricate, in 3 lobes. Anterior lobe seen at its broadest (Fig. 245) with a thick anterior thorn, apical thorn as if it would have been only slightly curved and with 4 caudal setae. Medial lobe long rather thin, apical part medially curved and much broadened (Fig. 242, cf. Fig. 244). Also caudal lobe long with an intricate curved but apically blunt apical thorn.

Phallus and phallapodeme (Fig. 243) not large compared to epandrium, etc. Basiphallus long curved, distiphallus (!) basally with a ventral process (Fig. 247). Postgonite (Figs 242–243, 246) very large, length actually 0.56 mm. Apex rounded, cranial margin with a large pointed lobe and rounded dilatation dorsally, i.e. at about middle of postgonite.

Female abdomen not telescopic, i.e. not much evertible. Tergite 1+2 very long (as long as tergites 3 and 4 combined), not depigmented medially. Sternites broad, sternite 2 being the largest, sternite 2 to 5 3/4 as broad as abdomen, membrane between tergites and sternites narrow (broader in well-fed specimens). Tergite and sternite 6 not modified though short. Tergite 7 elongated ventrally, so edges meet sternite 7 (not modified). Tergite 8 consists of 2 lateral parts, no dorsally placed sclerotised part present. Sternite 8 large (0.20 × 0.25 mm), medio-caudally with a rather large subtriangular incision. Epiproct long trapezoid, its hairs indistinct, hypoproct inverse U-shaped, less than 0.02 mm long medially. Cerci short (0.06 × 0.03 mm), each only with a longer apical hair plus several short hairs. Spermathecae large globular, weakly sclerotised, collapse even in water, diameter 0.09 mm with an additional rather large (0.04 mm long) bulbous part distally. Sclerotised ducts thin and short, 0.03 mm long only. No sclerotised common duct of the paired spermathecae.

Etymology. The name of this new genus refers to the large male postgonite of the type species.

Gonitella flavipes sp. n.
(Figs 239–247)

Holotype male (HNHM): CONGO: Sibiti, IRHO rain forest, soil traps, 1. 12. 1963, J. Balogh – A. Zicsi, No. 317.

Paratypes (HNHM): 3 males 2 females: same as for the holotype, but No. 316.

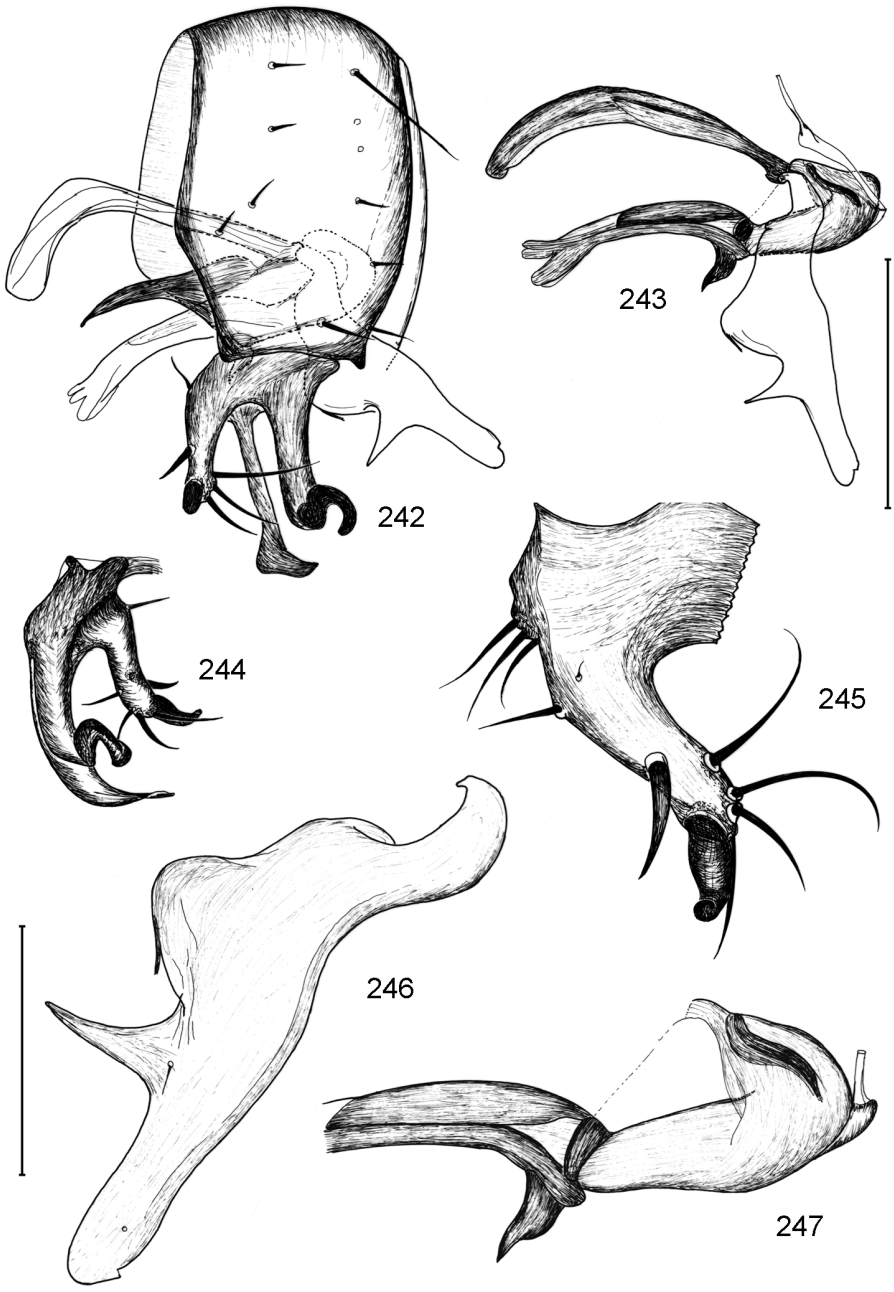
Measurements in mm: body length 1.88 (holotype), 1.85–2.10 (paratype males), 2.09–2.20 (paratype females), wing length 1.54 (holotype), 1.53–1.65 (paratype males), 1.65–1.70 (paratype females), wing width 0.49 (holotype), 0.49–0.54 (paratype males), 0.57–0.58 (paratype females).

Body dark greyish brown, strongly sclerotised but surface not granulated.

Head comparatively long but occiput concave; vertical setal pairs emerge close to occiput, occipitals reduced to thin hairs. Two pairs of short thin *ifr*. Ocellars very large, no intraocellar, postocellar or postvertical setae. Posterior fronto-orbital pair thick and very long (0.15 mm), anterior pair reduced to a short thin hair of 0.03 mm. Vibrissa long (0.165 mm), no genal seta, even peristomals short and thin. Scape very short, setae indistinct. Ventral pedicel seta much curved, 0.12 mm, a dorsal pedicel seta 0.09 mm. First flagellomere conical but arista subapical. Arista at least 0.9 mm long.

All the infra-alar setae (2 or 3 in other Limosininae) reduced to thin hairs. 2 strong *dc* pairs. No medial postpronotal, presutural, or prescutellar acrostichal pair developed. Scutellum broad, length 0.26 mm, breadth 0.38 mm.

Wings light brown, like veins, costa slightly darker. Costa ends at apex of R_{4+5}, vein R_{4+5} almost straight, slightly curved up apically. Second costal section 0.63 mm, third section 0.37 mm. Costagial seta 0.05 mm, all the costal setae short and thin (max. 0.05 mm). Discal cell rounded (edged



Figs 242–247. *Gonitella flavipes* sp. n., male genitalia. 242 = genital complex with epandrium, lateral view, 243 = postgonite, phallus and phallapodeme, lateral view, 244 = surstylus, caudal view, 245 = anterior lobe of surstylus, broadest view, 246 = postgonite, broadest (a sublateral) view, 247 = basiphallus with basal half of distiphallus, lateral view. Scales: 0.2 mm for Figs 242–244, 0.1 mm for Figs 245–247

on a paratype female), no Cu appendage but a distinct M appendage present. Inter-crossvein section 0.13 mm, dM-Cu 0.09 mm (holotype), 0.10 mm (paratype male). Alula very short, pointed, 0.04 mm long, nearly as wide, cilia 0.04 mm long. Haltere with knob brown, stalk light yellow.

Legs all yellow, incl. coxae, not thickened, no peculiarities on fore or hind leg. Mid femur with a long ventral hair-like seta subbasally. No middle ventral seta on mid tibia. Male mid tibia ventrally with short thick, pointed setae in distal half, at the same time ventroapical seta distinct. Female mid tibia without any ventral setae except for the ventroapical. Anterodorsals on mid tibia (paratype male) at 11/43 (short), 15/43 (strong), 34/43 (short), 37/43 (very strong), an anterior seta at 35/43, posterodorsals at 17/43 (short), 35/43 (short). In all, no paired setae on mid tibia. Mid metatarsus long without stronger seta ventrally.

Male and female postabdomen and genitalia as described above.

Etymology. This new species is named after its yellow legs.

Mixolimosina gen. n.
(Figs 248–259)

Type species: *Mixolimosina orientalis* sp. n.
Gender: feminine

Head without peculiarities.

Two pairs of dorsocentral setae but also other 2 pairs of short (more anterior) dorsocentrals are distinct from microchaetae. Anterior katepisternal minute or indiscernible.

Wings (Fig. 248) not patterned with long discal cell. Costa ends at apex of vein R_{4+5}. First costal section with medium-long setae. Second costal section about as long as third (Fig. 248). Vein R_{4+5} slightly but distinctly bent up. Discal cell long and edged, vein M reaches wing margin as a sinuate shadow of a vein.

A curved thick ventral spur present on mid tibia, which is not quite apical. A row of ventral (slightly anteroventral) setae on mid tibia up to basal half on the male mid tibia, while extremely long ventroapical but no mid ventral setae on female mid tibia. Mid basitarsus in both sexes with a thick posteroventral seta at basal 1/4 (3/13), which is much longer than adjacent setae. A distinct curved (though not long) hind tibial ventral spur present in both sexes.

Abdominal tergite 2 medially desclerotised. Sternites rather broad. Sternite 5 (Figs 249–250) much modified: cranially with less sclerotized dilatations, lengthened on the right side, medio-caudally with a trapezoidal projection, where a separate apically forked sclerite joins. No lateral setae on sternite 5 (Fig. 249). Inner (less ventral) pair of subapical processes of sternite 5 strongly connected to right apex of sternite 6.

Epandrium long (Fig. 254), hypandrium thin. Epandrium latero-caudally with a pair of long setae. Lateral arms of hypandrium (Fig. 252) thin, medial part rod-like, processes to postgonites long narrow.

Surstylus (Figs 154–155) characteristic: basal (= lateral) part transverse, i.e. almost perpendicular to sagittal plane, bearing several strong setae; medial part composed of 2 large lobes, more cranially (joining base) an additional thin, partly membranous process with an apical spine present. Postgonite (Figs 251, 253) rather simple, basal half broader, apical half narrow with a blunt apex.

Phallus (Figs 256–259) with short high basiphallus (apex blunt and slightly bifid), otherwise basi- and distiphallus fused. In dorsal view (Fig. 256) lateral sclerites and an Y-shaped sclerite visi-

ble, whose more distal part is short and broad. Apical part of distiphallus with 2 pairs of membranous flanges: a narrower more medial pair (mostly covered in lateral view, Fig. 258) and a broad slashed lateral pair. Proximally to those flanges a very large ventral sclerite present from flanges to basiphallus. Apical part of that large sclerite darker apically, i.e. on a semicircular surface, and also sagittally, which is better seen in ventral view (Fig. 257).

Female preabdomen with tergite 5 and sternite 5 normal, tergite 2 medially not depigmented, tergite 5 with long marginal setae, tergite 6 short, weakly sclerotised, slops downwards and bare. No parts of tergite 7 and 8 on dorsal side but tergite 7 and 8 fused into 2 well-sclerotised lateral subtriangular plates 0.17 mm long and 0.12 mm high. As a consequence of the structure of the sclerites postabdomen is not telescopic. Epiproct pentagonal, setal pair subapical, weak. Hypoproct mem-

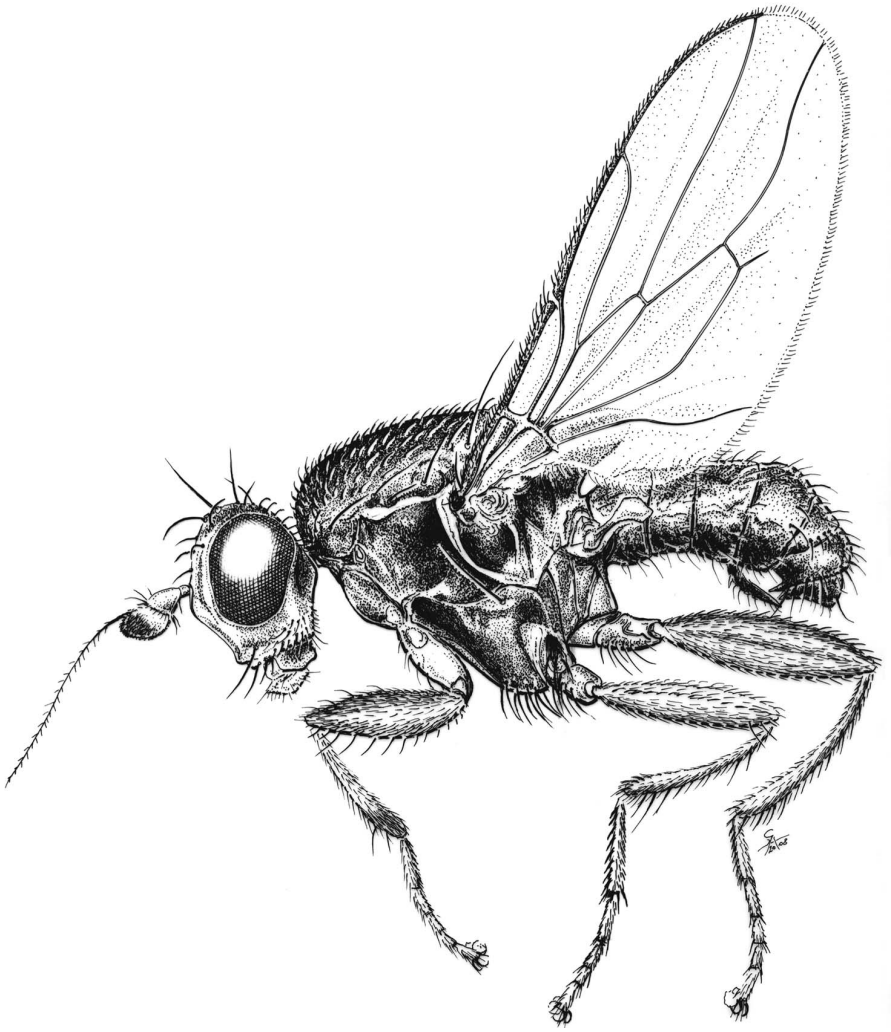
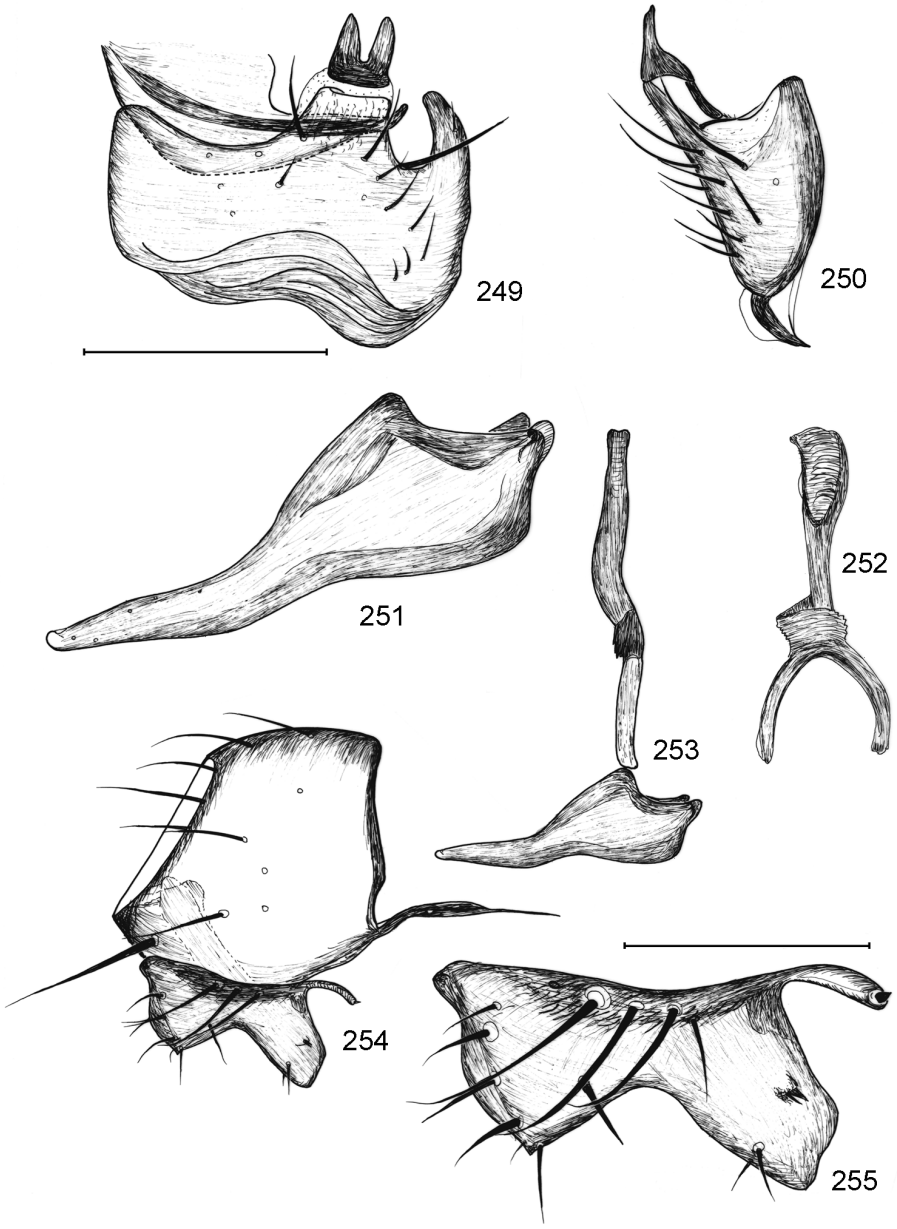


Fig. 248. *Mixolimosina orientalis* sp. n., paratype male (del. A. SZAPPANOS)



Figs 249–255. *Mixolimosina orientalis* sp. n., male postabdomen and genitalia. 249 = sternite 5 with ventral parts of sternite 6, 250 = sternite 5, right lateral view, 251 = postgonite, true lateral (= broadest) view, 252 = hypandrium in dorsal view without lateral connection sclerites to epandrium, 253 = postgonite, medial part of hypandrium and their connecting sclerite, lateral view, 254 = epandrium and surstylus with hypandrium, lateral view, 255 = surstylus, lateral view (higher magnification). Scales: 0.2 mm for Figs 249–250, 252–254, 0.1 mm for Figs 251, 255

branous, hardly discernible. Cerci sublateral with 1 pair of 0.11–0.12 mm long subapical and several short setae. A rather broad-walled spectacles-shaped sclerite present. Spermathecae black thick-walled, not collapse in glycerol. Unpaired spermatheca nearly globular 0.07 × 0.05 mm, its black duct with a "neck" of a ring broader than sclerotised duct 0.07 mm long with not sclerotised bulb. Paired ones 0.06 × 0.05 mm, ducts 0.07 mm, distal bulb less than 0.02 mm broad, common duct not sclerotised (pigmented).

Mixolimosina gen. n. shows a characteristic mix of genus group features among *Limosin*inae (hence its name). It is easily recognisable through its mid basitarsal seta and the presence of a large forked structured process of male abdominal sternite 5, which is easily discernible even at low magnification.

I have seen a closely related species from Papua New Guinea.

Mixolimosina orientalis sp. n.
(Figs 248–259)

Holotype male (HNHM): Thailand: Mae Fang N. P., over & along a forest brook – Nov 1, 2004, No. 14, L. Papp & M. Földvári.

Paratypes (HNHM): 61 males 38 females: same as for the holotype. Thailand 2004, leg. L. Papp & M. Földvári: 12 males 4 females: 8 km E Doi Anh Kang, over a rocky brook – Nov 2, No. 17; 1 female: Doi Inthanon N. P., over a small rocky brook, Oct 30, No. 9; 4 males: same as No. 14, on buffalo and cow pats, leg. L. Papp, No. 15; 1 female: Doi Phuka N. P., on light, Nov 3, No. 18; 1 male: Ban Na Lae, nr Pua, over a rocky forest brook, Nov 5, No. 19; 1 female: Trang Prov., Thung Khai Botanic Garden, primary lowland rainforest, along the "Nature Trail", Nov 13, No. 29; 1 female: Thung Khai Botanic Garden, on compost & rotten grass, Nov 19, leg. L. Papp, No.37; 1 male 1 female: Trang Prov., Khao Chong Botanic Garden, rainforest, Nov 18, No. 36; 1 female: Khao Chong Botanic Garden, along a forest path, Nov 20, No. 41; 1 male 1 female: Phattalung Wildlife Breeding Research Centre, along a forest brook, Nov 20, No. 39; 1 female: Khao Pu – Khao Ya N. P., along a forest brook below the (Pak Yam) waterfall, Nov 21, No. 42. 131 type specimens.

Measurements in mm: body length 2.31 (holotype), 1.65–2.10 (paratype males), 1.70–2.42 (paratype females), wing length 2.03 (holotype), 1.52–1.91 (paratype males), 1.45 –2.22 (paratype females), wing width 0.80 (holotype), 0.64–0.79 (paratype males), 0.62–0.89 (paratype females).

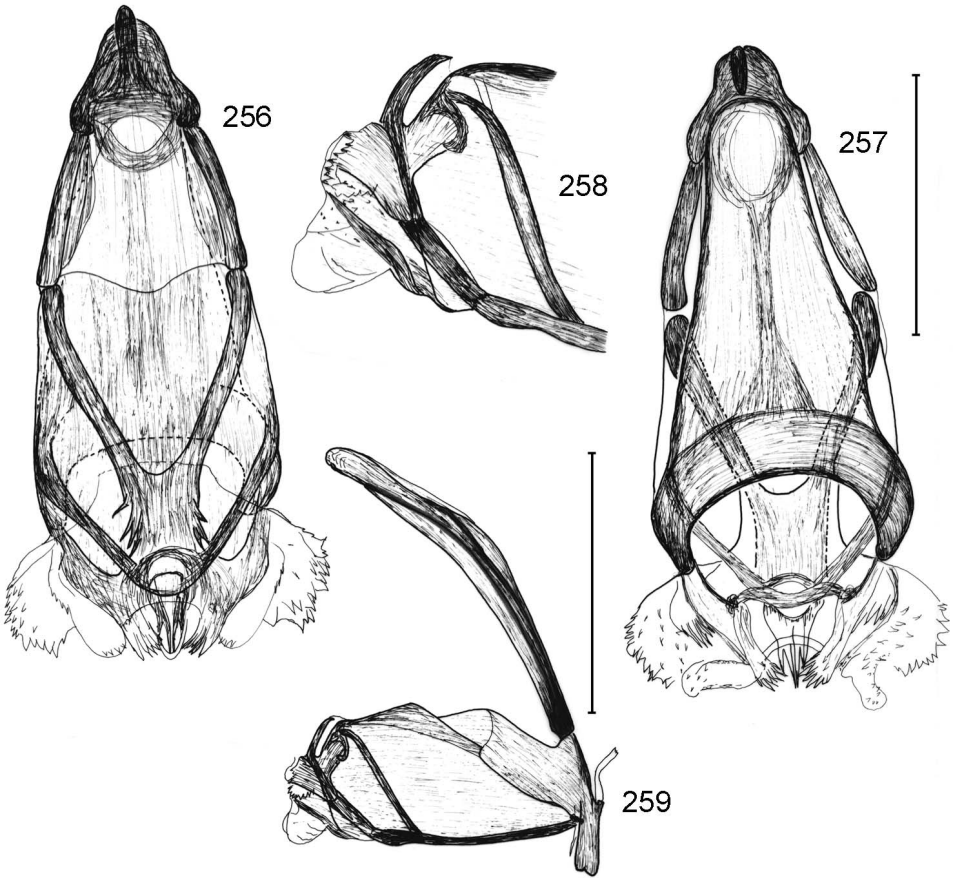
Body brown, legs light brown, fore tibia and hind femur dark brown (Fig. 248). Anterior 2/3 of frons, face and genae greyish yellow. Antennae yellowish, apical 2/3 of first flagellomere dark grey.

Two pairs of long lateroclinate fronto-orbitals. 4 pairs of rather long interfrontals. Interocellar and postocellar setulae short and thin. Occipital pairs large. Gena below eye only 0.10 mm broad, genal seta 0.125 mm long. Scape with medial seta very short (0.06 mm). Pedicel with setae longer, up to 0.12 mm. First flagellomere rounded, apical cilia 0.03 mm. Arista subapical, c. 0.75 mm long, cilia 0.02 mm.

Mesonotum with 2 pairs of strong *dc*, some enlarged *dcmi* cranial to the anterior pair. No prescutellar seta. Medial postpronotal thin, inclinate, presutural pair only 1/2 of the length of anterior *dc*. Supra-alar seta 0.49 mm long, apical scutellar 0.65 mm. Acrostichals not well ordered, c. 10 rows between anterior *dc*. Posterior katepisternal 0.32 mm, anterior only 0.075 mm.

Wings greyish, veins light brown. Vein R_{4+5} slightly curved up in its whole length. Costa ends at apex of R_{4+5}. Second costal section 0.53–0.54 mm, third section 0.60 mm. Costagial seta 0.13 mm, longest seta on first costal section 0.09 mm, on second section 0.05 mm. Discal cell long: intercrossvein section of M 0.29 mm, dM-Cu slightly oblique, 0.10 mm. Vein M definitely reaches wing margin as a bisinuate colourless vein. Cu appendage on discal cell 0.08 mm. Anal vein strongly curved (sinuate).

Mid trochanter anteroventrally apically with a thick 0.11 m long seta, anterodorsally subapically a half as long (0.055 mm) seta present. Mid tibia with a short but thick ventroapical seta and with a row of setae but there is no middle ventral seta. Mid tibia also with a thick anterior apical; anterodorsals at 15/48 (short), 19/28 (long), 40/48 (very long), a more anterior seta at 35/48, posterodorsal only at 39/48. Female seems to have longer setae on mid tibia, arrangement on a female specimen as follow: anterodorsals at 9/47, 11/47 (short), 16/47 (large), 39/47, a more anterior at



Figs 256–259. *Mixolimosina orientalis* sp. n., male, phallic organ. 256 = phallus, dorsal view, 257 = phallus, ventral view, 258 = apex of distiphallus, lateral view, 259 = phallus and phallapodeme, lateral view. Scales: 0.2 mm for Fig. 259, 0.1 mm for Figs 256–258

36/47, posterodorsal at 38/47. Ventral seta 0.16 mm long. Mid basitarsus with a long posteroventral seta at 6/26. No dorsal preapical on hind tibia.

Male and female postabdomen and genitalia as described above.

Etymology. The specific epithet of this new species is 'orientalis', since – based on its abundance in Thailand – I suppose that it occurs also on other parts of the Oriental region.

Monorbiseta gen. n.
(Figs 260–271)

Type species: *Leptocera* (*Limosina*) *monorbiseta* DEEMING, 1969
Gender: feminine.

Head with a single pair of fronto-orbital setae.

Thorax. 2 dorsocentral pairs, also anterior pair strong and emerges cranially to wing base.

First costal section with medium long setae (ca. 2 times longer than those on second section). Second costal section about as long as third. Vein R_{4+5} slightly curved up, discal cell rather long, edged with M and Cu vein appendages, i.e. medial vein not much continued distally to dM-Cu.

Mid basitarsus without stronger seta. Mid femur with a ventral row of long seta in its basal half. Mid tibia without middle ventral seta. Male with minute ventroapical seta but with a row of thick ventral setae almost up to base, or, in female ventroapical present but no row of ventral setae. Hind tibia without dorsal preapical seta.

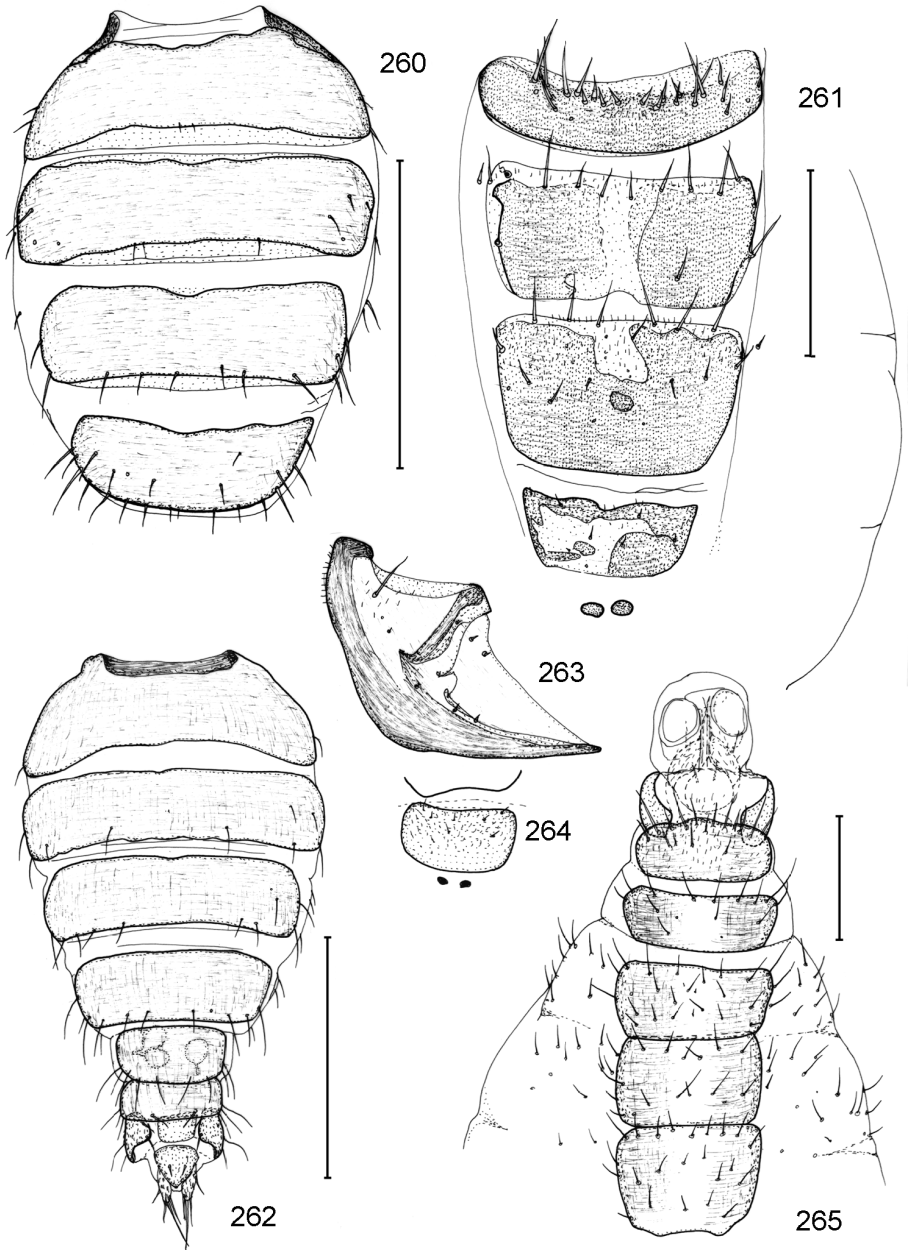
Male preabdomen not modified but tergites reduced (Fig. 260) and sternites with uneven pigmentation (and possibly with uneven sclerotisation, Fig. 261). Sternite 1 reduced to 2 minute plates, sternite 2 quadrate, almost without setae, in both sexes (Figs 261 *vs*. 264). Male sternites 3 to 5 rather large, broad, sternites 3 and 4 with long caudal setae, sternite 5 sub-caudally with thick thorn-like light setae. Sternite 6 & 7 portion of the synsternite 6–8 (Fig. 263) unevenly sclerotised.

Epandrium rather long (Fig. 266) semi-globular with medium-long setae only. Medial part of hypandrium short, lateral arms longer and thicker (Fig. 267).

Surstylus (Figs 266, 268) best characterised by its 3 parts: cranial part narrow, curved dorsally, apically with 3 short spines; medial part broadened with thick basal setae and numerous longer ventral setae; caudal part narrowed with several long setae and a ventrally directed huge thorn. Postgonites (Fig. 267) bisinuate with almost straight apical third, apex slightly broadened. No epiphallus in male genitalia, basiphallus short rounded ventrally. Distiphallus (Figs 266–267) rather cylindrical, apical part slightly swollen with minute scale-like spinules. A distinct curved ejaculatory apodeme present.

Female preabdomen (Fig. 262) narrowing posteriorad. Female sternites (Fig. 265) quadrate, sternites 6 and 7 transverse. Postabdomen (Fig. 269) slightly retractable. A quadrate plate present between lateral sclerites of tergite 8, being medial part of tergite 8. Epiproct with a pair of short setae (Fig. 269). Cerci with 3 long setal pairs, subapical pair shorter. Spectacles-shaped sclerite (Fig. 270) distinct. Spermathecae (Figs. 271) globular with a minute terminal umbilicus. Individual sclerotised ducts of paired spermathecae very short.

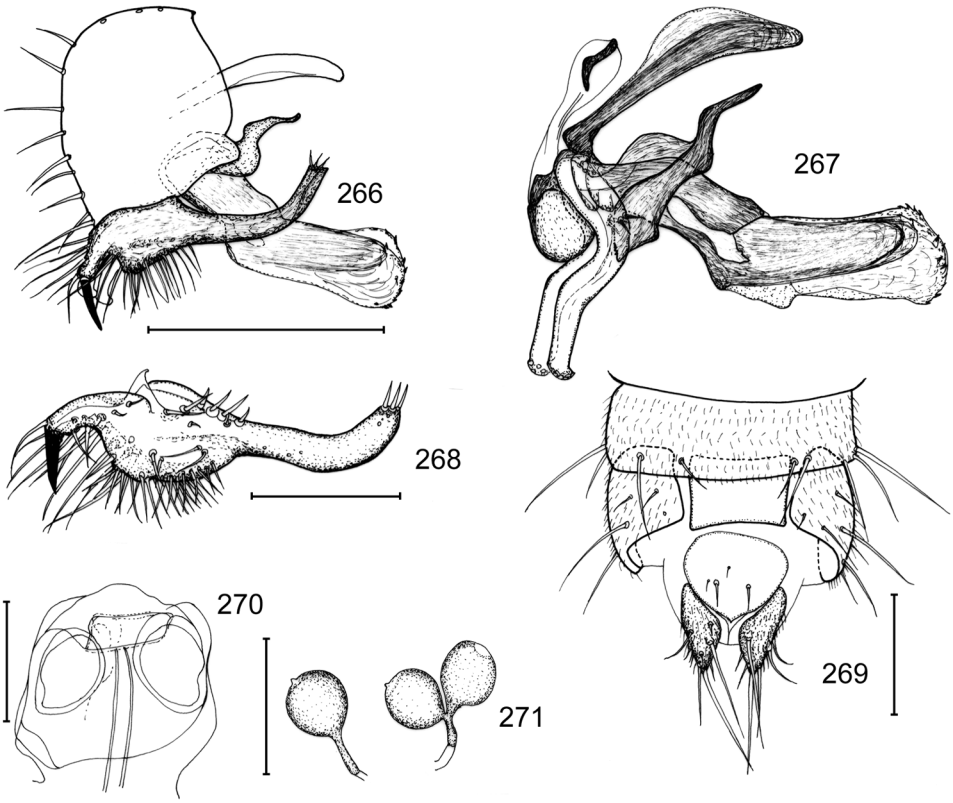
As early as 1991 I had expressed my doubts about the relationship of this species (PAPP 1991). That was why I have given the name in its original combination.



Figs 260–265. *Monorbiseta monorbiseta* (DEEMING, 1969), male and female abdomina (after L. PAPP 1991). 260 = male preabdomen, dorsal view, 261 = male sternites 1–5, ventral view, 262 = female abdomen, dorsal view, 263 = sternite 6 & 7 portion of the synsternite 6–8, semiventral view, 264 = female sternites 1–2, 265 = female abdomen from third segment to apex, ventral view. Scales: 0.5 mm for Fig. 260, 262, 0.2 mm for Fig. 261, 263, and for 264–265, respectively

I think the present paper is the proper place to describe it as a new genus but I am still not sure of its phylogenetic relationships.

Monorbiseta monorbiseta (DEEMING, 1969) **comb. n.** – Material studied in the course of this study (HNHM): India, Uttar Pradesh, leg. I. Löbl 1979: 2 males 2 females: 1 male: Kumaon, Chaubattia, 12–13. X., ca. 1800 m, No. 10 ("tamisage dans la forêt, feuilles mortes, fougères et mousses"); 1 male 2 females: Kumaon, Rangarh, env. 2000 m, 9. X., No. 6 ("ravin boisé: a. sous des écorces et sur les troncs avec champignons, b: tamisage des feuilles mortes"). West Bengal (new): Darjeeling Distr., Ghum, Senchal Res. Forest, 2200 m, 11. 8. [19]67., leg. Topál Gy.



Figs 266–271. *Monorbiseta monorbiseta* (DEEMING,1969), male and female genitalia (after L. PAPP 1991). 266 = epandrium, hypandrium and genitalia, lateral view, 267 = phallic complex with ejaculatory apodeme and medial part of hypandrium, lateral view, 268 = surstylus, broadest (a subventral) view, 269 = female postabdomen, dorsal view, 270 = spectacles-shaped sclerite, 271 = spermathecae, drawn in water. Scales: 0.2 mm for Figs 266, 0.1 mm for Figs 267–268 and 269–271, respectively

Pseudacuminiseta gen. n.
(Figs 272–280, 327)

Type species: *Pseudacuminiseta formosana* sp. n.
Gender: feminine.

A genus with an apical process on the apex of first flagellomere (Fig. 273).

Vibrissa well developed, an upcurved genal plus 3 small, more posterior genal setae present, peristomals short and less numerous (5). Postocellars (8–9) in one row. 6 pairs of medium-long *ifr*. First flagellomere (Fig. 273) conical with a rod-like apical process. Arista subapical with long cilia. Also basal aristomeres hairy.

Prosternum shortly linear. 1 posterior dorsocentral and 1 posterior katepisternal pairs of setae present.

Costal vein with long setae on first and also on second section (Fig. 276). Costa ends definitely distally to apex of vein R_{4+5}. Costa thickened, on the second section more or less 4 rows of setae discernible. Second costal section slightly shorter than third. First costal section with 0.075–0.09 mm long seta, setae on second section not much shorter (0.055–0.06 mm).

Fore claws double and much enlarged (Fig. 275), other claws long and thin. Contrarily to *Anommonia* and *Acuminiseta*, which have rather large pulvilli, the pulvilli of this new genus are small (Fig. 275). Mid trochanter without a long seta but with about 10 short setae ventrally. Mid tibia with a mid ventral seta (like in *Acuminiseta*), mid tibial setosity as in Fig. 274; apical ventral seta comparatively long, 0.065 mm, posterior apical also strong (0.04 mm). Hind leg without peculiarities, hind tibia with a comparatively short (0.03 mm) ventral spur, no dorsal preapical seta.

Both tergites and sternites large with moderately long setae only. Sternite 5 without any process or modification. Synsternite 6–8 short.

Epandrium bulbous with numerous medium-long setae, anal opening extremely small (Fig. 278). Epandrium with definite ventral projections (= cerci), which bear numerous long (longer than 0.1 mm) setae. Hypandrium with long narrow medial part, which is however much shorter than phallapodeme. Subepandrial sclerite rather small (low). Surstylus fused to epandrium (Fig. 277), rather small but apically with numerous long setae. Postgonite simple (Fig. 279), rather broad, apex broadly rounded. Phallus (Fig. 280) peculiarly shaped: basiphallus very large with dorso-caudal and ventro-caudal large processes and with a submedial cranial part, which bears distiphallus. Distiphallus much smaller than basiphallus. Phallapodeme long rod-like.

Etymology. The name of the genus refers to its resemblance to *Acuminiseta*, as regards antenna and arista. However, an analysis of the male genitalia will reveal that they are actually not related.

Pseudacuminiseta formosana sp. n.
(Figs 272–280, 327)

Holotype male (HNHM): TAIWAN: Pingtung Hsien, Kenting, Heng-Chun Trop. Botanical Garden, light traps, October 4–6, 2000, No. 15, leg. L. Peregovits & L. Papp.

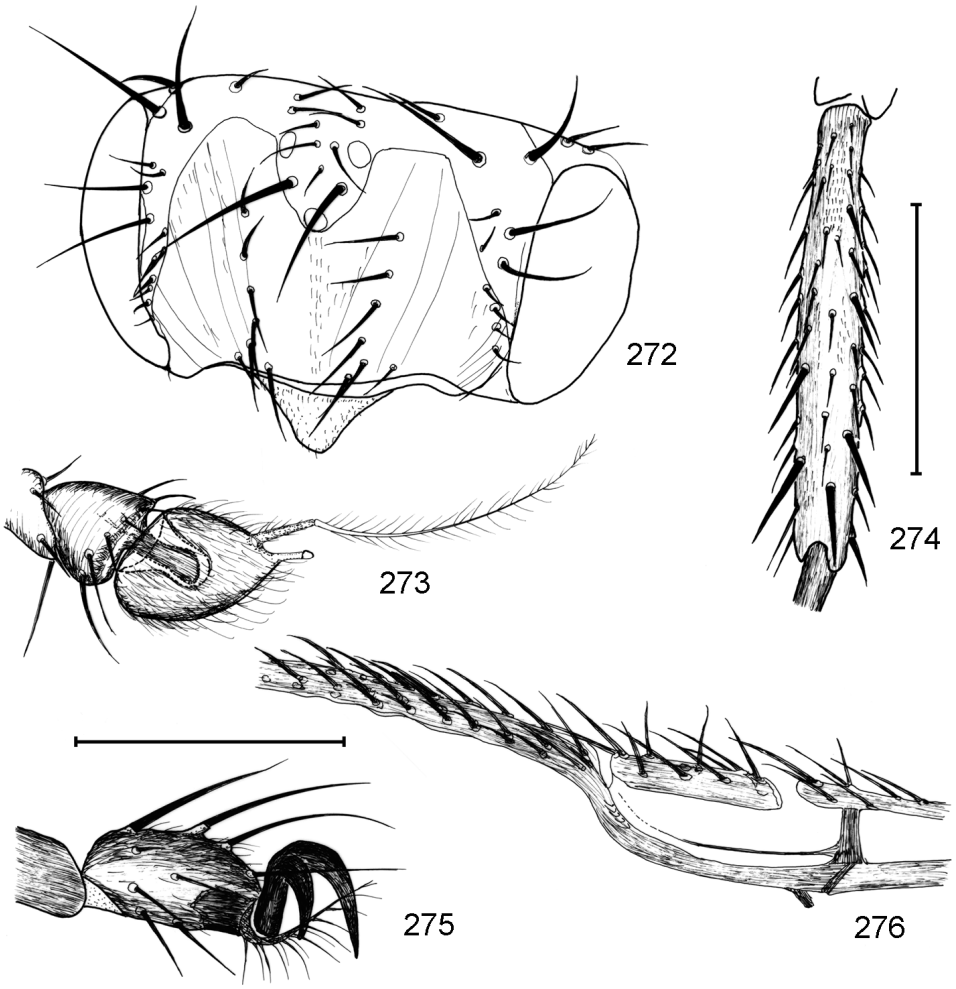
Measurements in mm (holotype male): body length 1.25, wing length 1.19, wing width 0.60.

Body and legs light yellowish brown.

Vibrissa 0.19 mm, inner vertical seta 0.15 mm long. Ocellar pair very long, interocellar and postocellar setae short. *occe* and *occi* short but distinct. Several (6–7) short setulae medially to fronto-orbitals partly on orbits (Fig. 272), partly just beside it; they are not particularly arranged but most are lateroclinate.

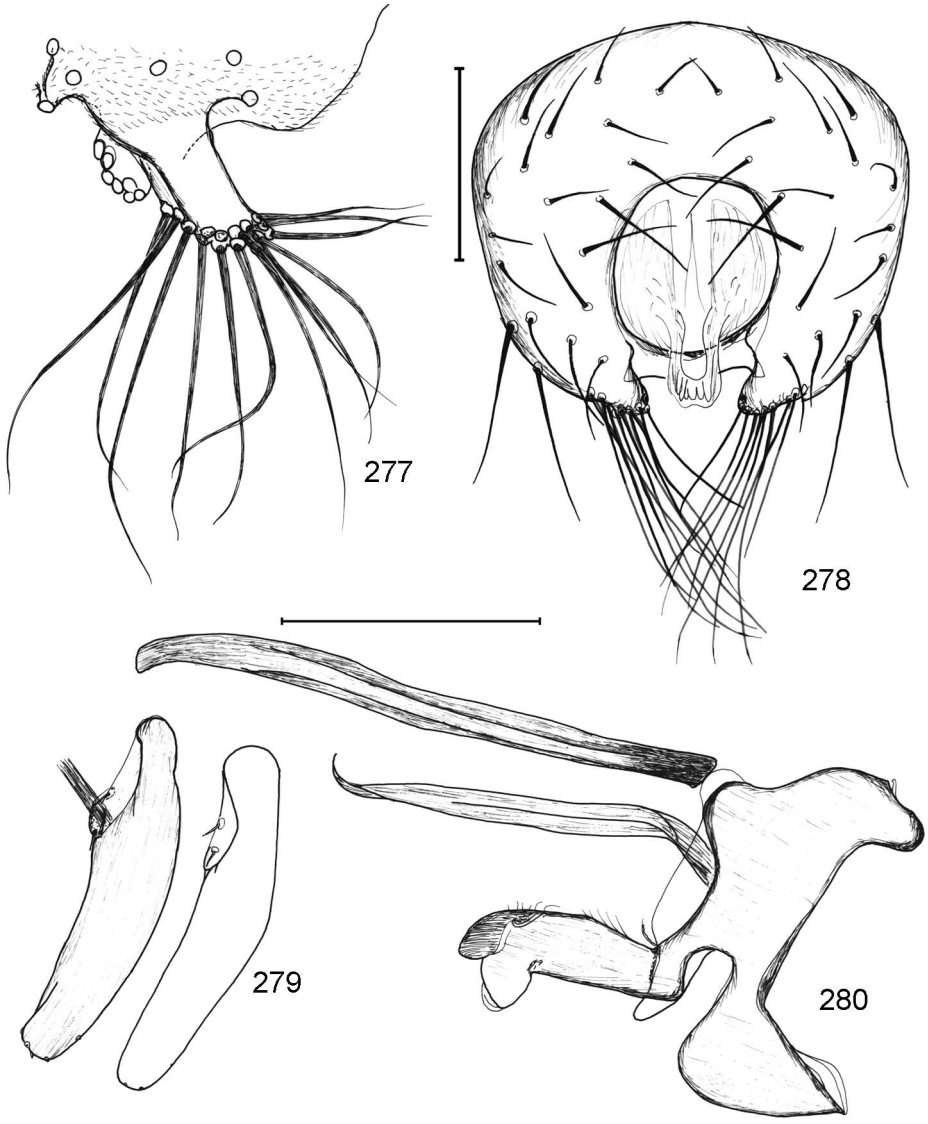
Scutellum short (0.15 mm) but looks robust, apical scutellar seta 0.24 mm, lateral scutellar 0.19 mm.

Wings (Figs 276, 327) clear, costa thickened, on the second section more or less 4 rows of setae discernible: 1 dorsal, 2 ventral rows and a 4th one on the edge. Costa ends definitely distally to



Figs 272–276. *Pseudacuminiseta formosana* sp. n., holotype male. 272 = head, dorsal view, 273 = right antenna, lateral view, 274 = mid tibia, dorsal view, 275 = fore 5th tarsomere, lateral view, 276 = first and second section of costal vein. Scales: 0.2 mm for Figs 272–274, 0.1 mm for Figs 275–176

apex of vein R_{4+5}. Second costal section slightly shorter than third (0.35 mm vs. 0.375 mm). First costal section with 0.075–0.09 mm long seta, setae on second section not much shorter (0.055–0.06 mm) (Fig. 276). Discal cell not very long, inter-crossvein section of M 0.15 mm, dM-Cu oblique, 0.10 mm, lower edge of discal cell angulate but no Cu appendage developed.



Figs 277–280. *Pseudacuminiseta formosana* sp. n., holotype, male genitalia. 277 = surstylus with ventral part of epandrium, broadest (sublateral) view, epandrial setae omitted, 278 = epandrium and cerci, caudal view, 279 = postgonite, in broadest (sublateral) and in lateral view, 280 = phallus and phallapodeme with medial part of hypandrium (basiphallus and distiphallus fused). Scales: 0.1 mm for Fig. 277 and for Figs 278–280, respectively

Mid tibia dorsally with several short but characteristic setae, among them a subdorsal subapical and a posterodorsal at distal 1/6 are the longest; 3 other anterodorsal and 1 posterodorsal distally to middle are well visible. Some other thinner setae present, which are almost as long but thinner than characteristic ones. None of the anterodorsal and posterodorsal setae paired.

Genitalia as described above for the genus.

Female unknown.

Etymology. The specific epithet of this new species is 'formosana', after the old name of Taiwan, its type locality.

Rohacekia gen. n.
(Figs 281–285)

Type species: *Rohacekia baechlii* sp. n.
Gender: feminine.

Head without special features. 5 pairs of *ifr* setae.

Prosternum linear. Mesonotum with 2 pairs of dorsocentral setae, also anterior pair strong, plus 3 short dorsocentrals more anteriorly. Acrostichal microchaetae surprisingly well-ordered: 8 rows at the level of anterior *dc*, which are almost as well-ordered anteriorly as posteriorly. Prescutellar pair rather short.

Costa ends at apex of vein R_{4+5}. First costal section with short setae. Second costal section about as long as third, or slightly shorter. Vein R_{4+5} slightly but distinctly upcurved. Medial vein reaches wing margin as a sinuate shadow of a vein, discal cell edged.

Long medial hairlike setae on fore coxa and on ventral sclerites of thorax between fore and mid coxae. Male fore femur with long hairs. Mid tibia with 5 anterodorsal and 4 posterodorsal distinct setae but without a mid ventral seta, ventroapical weak but long ventral hairs present. No enlarged seta ventrally on mid basitarsus but long hairs also there. Fore and hind tarsomeres shortened, consequently fore and hind tarsi much shorter then fore and hind tibia, respectively. Hind tibia without dorsal preapical seta. Pulvilli large.

Male preabdomen not modified but tergites reduced in size (less sclerotised), to lateral edge of abdomen only (not laterally curved). Caudal edge of sternites 2 to 4 with a depigmented stripe. Tergite 2 with a medial depigmented area. Tergite 5 slightly asymmetrical (right lateral margin longer than left one). Tergites with sparse setae, lateral setae shorter than tergites (as for T2 to T5). Sternite 2 shorter than 1/3 of sternite 3. Sternites 3 and 4 twice broader than long and covered by short setae. Sternite 5 broad, asymmetrical, caudally without any medial processes. Ventral medial process of sternite 6 portion of synsternite 6–8 oblique, better seen in a subcaudal view (Fig. 281).

Male sclerotised plates of anal opening small (Fig. 283). Epandrium asymmetrical, right half being distinctly longer (not distinctly so in caudal view, Fig. 283). Medial process of hypandrium long (Fig. 284), the fork to postgonites short and thin though strong lateral arms (connections to epandrium) not fused with medial part. Subepandrial sclerite (dark on Fig. 283) not large.

Medial part of surstylus nearly parallel to the sagittal plane (Fig. 283), consequently its figure in lateral view is characteristic. Surstylus (Fig. 282) cranially with serrate apex. Male basiphallus without an epiphallus, though with a proclinate blunt apex (Fig. 284). Distiphallus (Fig. 285) is a rather intricate complex of several symmetrical sclerites. Postgonite simple, curved and narrowed apically, with a minute cranial apex.

Female unknown.

A robust though only medium-large limosinine fly with thickened tibia and special set of characters. Its long row of dorsocentral setae and high number of setae on dorsal half of mid tibia, as well as the numerous long hairlike setae on fore femur and on mid tibia ventrally and on ventral part of thorax, are all conspicuous. The structure of male synsternite of sternite 6 part and that of the phallus are peculiar but its surstyli are rather simple. I have not found closer relatives but it is easy to find in the key of the genera below.

Etymology. I name this new genus to honour Dr JINDŘICH ROHÁČEK (Slezské zemské Muzeum Opava, Czech Republic), for his unparalleled achievements in the taxonomy of Sphaeroceridae and of several other dipterous families.

Rohacekia baechlii sp. n.
(Figs 281–285)

Holotype male (HNHM): INDIA, Kanha National Park [pencil] "26. VIII. – 18. IX." G. Bächli coll. 1972.

Paratype male (HNHM, received as a gift from the collector): same as for the holotype (abdomen prepared, with genitalia in a microvial with glycerol).

Measurements in mm: body length 2.03 (holotype), 1.83 (paratype), wing length 1.87, 1.70, wing width 0.77, 0.66.

Mesonotum and abdomen yellowish brown, other parts of body and legs yellow.

Head rather large, eyes large, genal height only 0.06 mm below eye. Facial plate rather flat, swelling between antennae small, carina low and rounded. Occipital pairs very long, postvertical pair though thin, apices crossing. Genal seta 0.10 mm, emerges far from mouth margin. Palpi thin with a strong apical and subapical setae each. Medial seta of scape indistinct, longest pedicel seta 0.09 mm. First flagellomere rounded (apical cilia only 0.02 mm), arista emerges far from apex. Arista at least 0.70 mm long, cilia 0.03 mm.

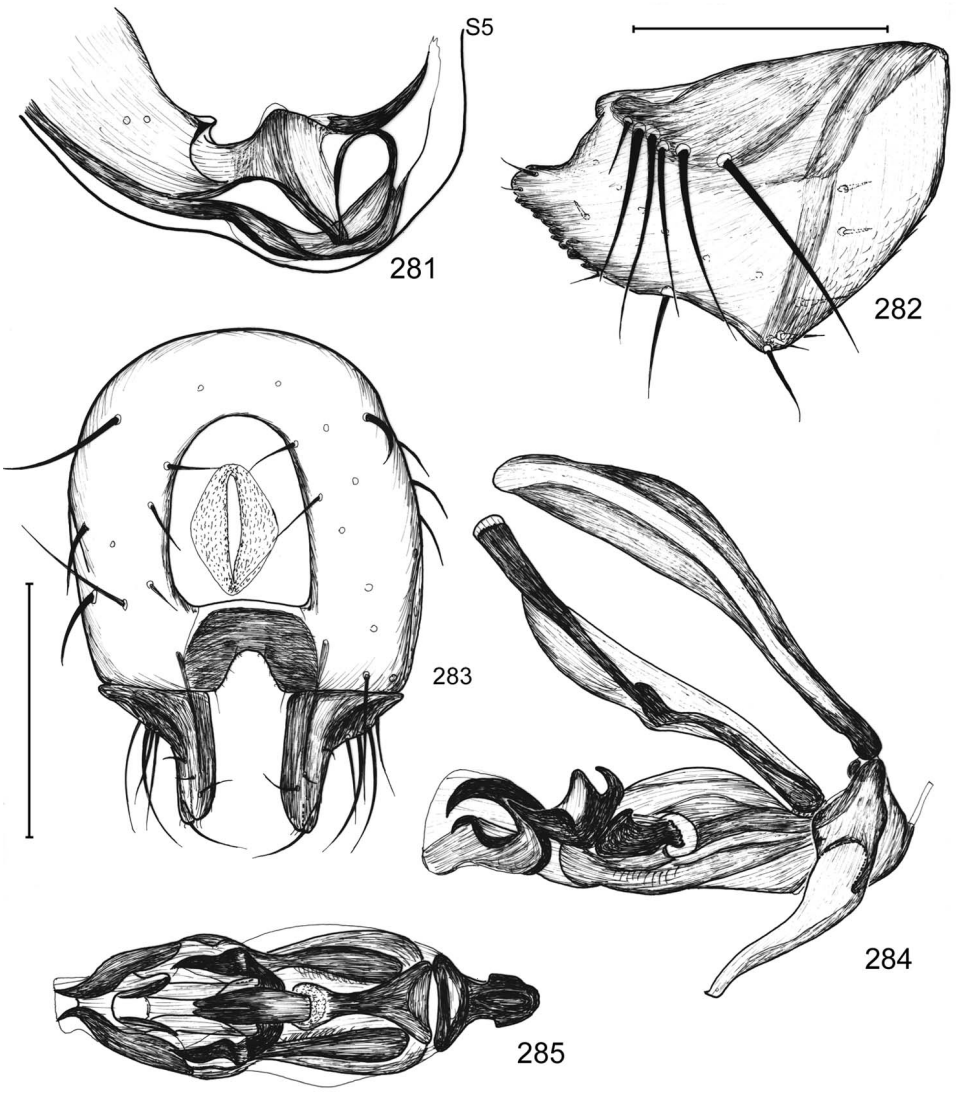
Prosternum linear. 2 strong pairs of dorsocentral setae plus 3 short pairs anteriorly. All three intra-alar pairs long, incl. presutural pair. Inner postpronotal only slightly longer than microchaetae. Prescutellar acrostichal pair 0.12 mm long. Anterior katepisternal 0.075 mm, posterior 0.21 mm.

Wing membrane yellowish, costal vein ochre, other veins yellow. Costa ends at apex of vein R_{4+5}. Vein R_{4+5} slightly but distinctly upcurved. Second costal section 0.51 mm, third section 0.56 mm. Dorsal costagial seta 0.18 mm, longest setae on first costal section short, 0.055 mm, those on second section 0.045 mm. Discal cell long, edged, inter-crossvein section of M 0.25 mm, dM-Cu 0.10 mm. Vein M sinuate, reaching wing margin as a colourless vein. Cu appendage long, more than 0.10 mm. Anal vein sinuate, almost reaching wing margin. Alula narrow with narrowly rounded apex. Haltere white.

Fore femur with long hairs ventrally. Mid trochanter with several thick setae. Mid femur with a row of posteroventral setae. Mid tibia as described above. In addition, long ventral hairs on mid tibia ventrally, longest 0.165 mm. Setosity of the dorsal half of mid tibia: anterodorsals at 10/48 (short) 13/48 (longer), 19/48 (long), 30/48 (short), 34/48 (very long); a very long dorsal at 40/48, a short thin seta proximally to it; short posterodorsals at 12/, 20/, 28/48, a very long seta at 38/48 (paratype). Hind tibia with a thick but only 0.05 mm long ventral spur.

Male abdomen and genitalia as described above, female not known.

Etymology. I dedicate this new species to the collector of the type specimens, to Dr. GERHARD BÄCHLI (Zoological Museum of the Universität Zürich, Switzerland), who has published invaluable works on Drosophilidae, and who was my master in quantitative sampling and handling of drosophilids.



Figs 281–285. *Rohacekia baechlii* sp. n., paratype male, genitalia. 281 = ventral part of synsternite 6–8, subcaudal view, 282 = surstylus, lateral view, 283 = epandrium and surstyli, caudal view, 284 = phallic complex with medial part of hypandrium, lateral view, 285 = phallus, dorsal view (S5: caudal border of sternite 5). Scales: 0.2 mm for Figs 281, 283–285, 0.1 mm for Fig. 282

Setositibiella gen. n.
(Figs 286–294)

Type species: *Setositibiella terrestris* sp. n.
Gender: feminine

Head and all body dark greyish brown, very strongly sclerotised, not granulated but microtomentose.

Wings round, second costal section only about half as long as third.

Male mid tibia with very long ventral hair-like setae.

Abdominal tergites 2 to 5 complete though slightly reduced in size: cover only dorsal side of abdomen. Sternites 2 to 4 broad (Fig. 287) but weakly sclerotised, strongly overlapping (abdomen comparatively short). Sternite 3 very short with a pair of long medial cranial setae. Cranial edges of sternites 4 and 5 nearly at the same level. Sternite 5 medially bare and depigmented, medio-caudally with a small intricate structure of sclerites and setulae (Fig. 287).

Sternite 8 portion of synsternite 6–8 large long (Fig. 289), sternite 6 and 7 portions small, the right side parts all membranous. Sternite 8 portion fused to sternite 7 on a short dorsal section only.

Epandrium globose, anal opening small, sclerotised plates of anal opening even smaller (Fig. 290), weakly sclerotised. Epandrium ventrally with a small submedial pair of processes (cerci), 3 pairs of very thick setae and a pair of ventral processes, which bear 2 characteristic setae each (better seen laterally, Fig. 293). Medial part of hypandrium strongly reduced, only lateral arms developed, not broken off (!) (Fig. 288), which are rather strong and slightly asymmetrical. Subepandrial sclerite extremely small, as shown in Fig. 290.

Surstylus (Figs 293–294) composed of 4 lobes. Cranially there are 2 lobes but medial one not visible in lateral view (Fig. 294), lateral cranial lobe is actually made of 2 processes, with a thick thorn and several setae. Medial lobe continued caudally (Fig. 293) and bears black tooth, short thick pointed spines and an apical seta. Caudal lobe broad, and densely short haired. Postgonite (Figs 291–292) complex, difficult to demonstrate it even in two different views: long with broadly rounded apical part, with a large cranial tooth at apical 1/5, medially dilated medial part, etc. Phallus (Fig. 291) thin, i.e. basiphallus long with subcaudal dilatation, distiphallus joins basiphallus rather dorsally. Phallapodeme (Fig. 291) comparatively short but its keel very high.

Female not known.

Etymology. The name of this new genus refers to the very long thin setae on its mid tibia ventrally.

Setositibiella terrestris sp. n.
(Figs 286–294)

Holotype male (HNHM): CONGO: Sibiti, IRHO rain forest, soil traps, 1. 12. 1963, J. Balogh – A. Zicsi, No. 316.

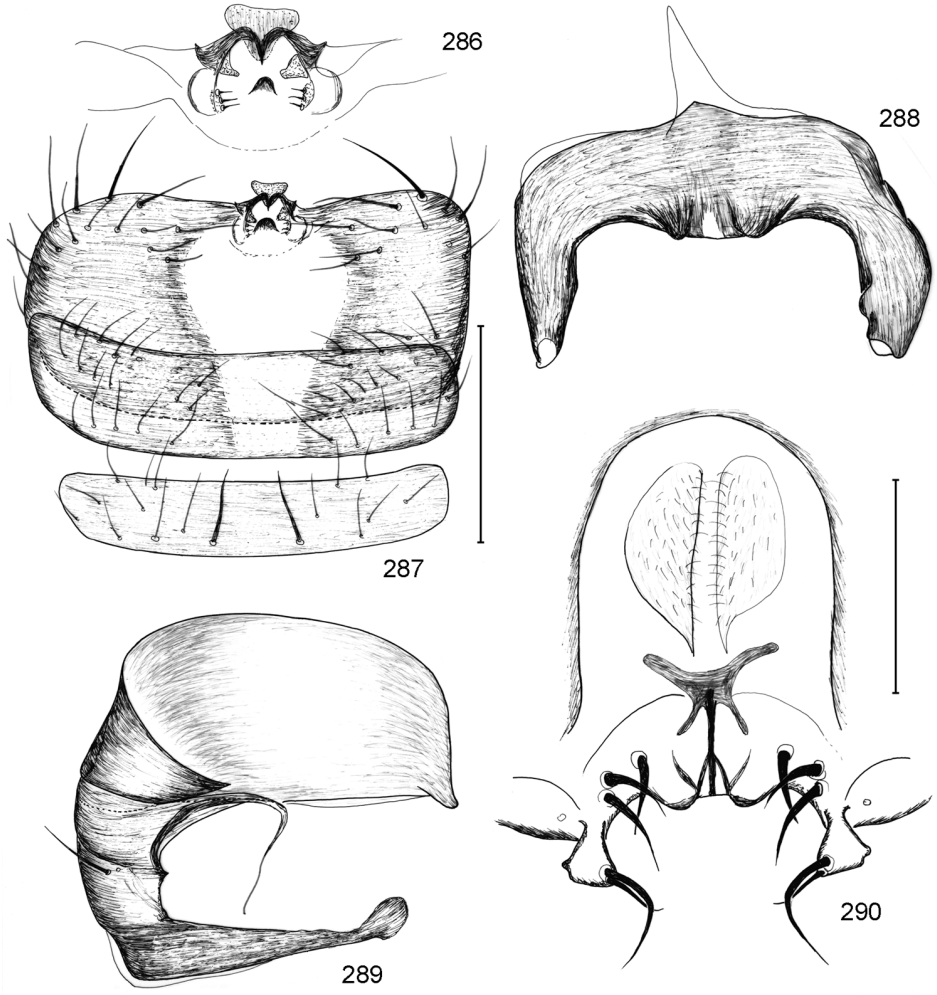
Measurements in mm: body length 1.60, wing wrinkled, not precisely measurable, length c. 1.28–1.29, wing width 0.58.

Dark greyish brown, incl. most parts of the legs.

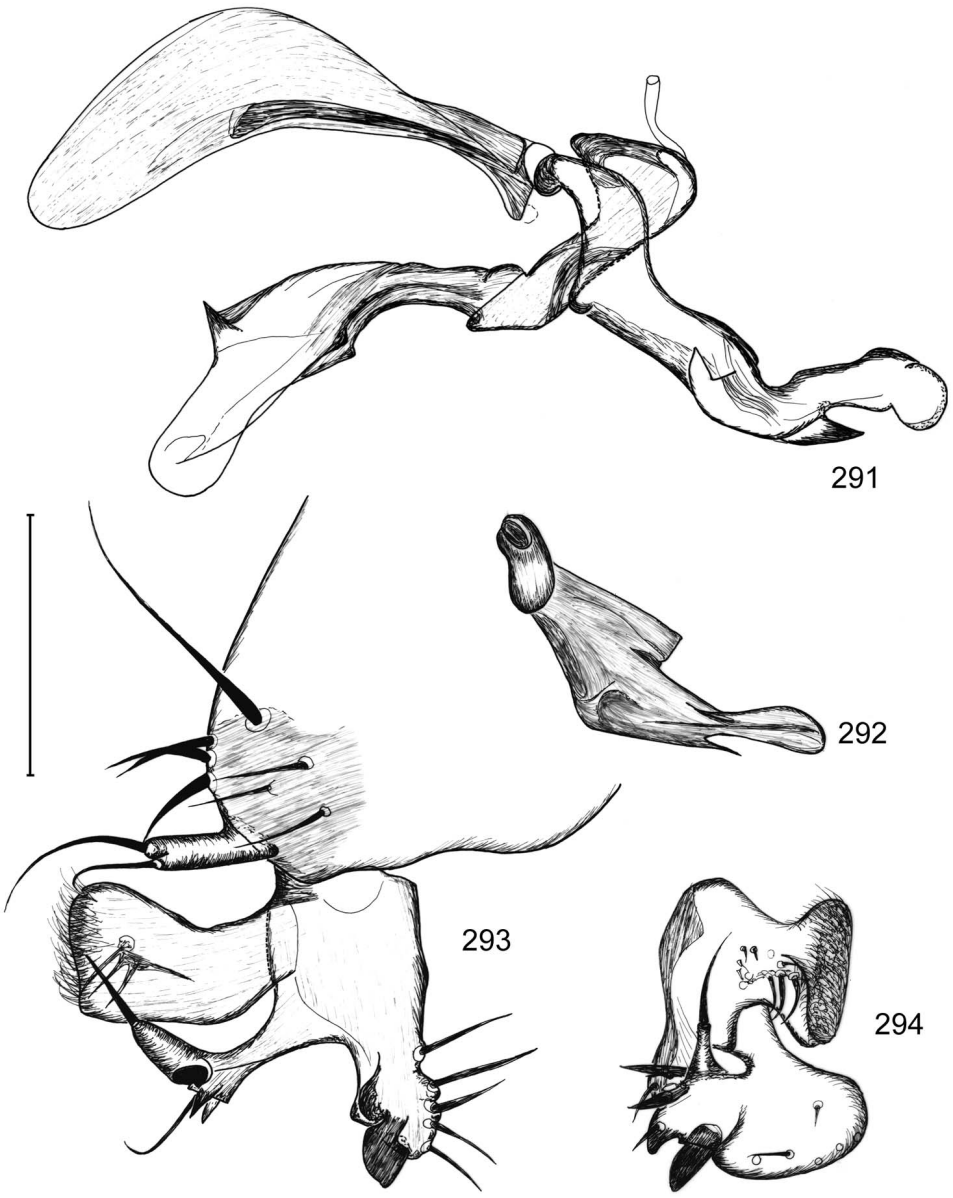
Head rather large, occiput strongly concave. Face only slightly convex between antennae, mouth edge not strongly protruding. Posterior ocelli just on the ridge, i.e. ocellar setae just anterior to

it. Occipital setae deep on occiput, no interocellar, postocellar or postvertical setae. Frons rather flat, strongly sclerotised. Posterior fronto-orbital 0.20 mm, anterior *fr-orb* very thin, only 0.08 mm. 2 pairs of thin *ifr*. Gena narrow, only 0.04 mm below eye. No genal seta, peristomals short. Vibrissa 0.19 mm. Scape very short with very small medial seta. Longest pedicel seta is a ventral thin semicircularly curved seta from base to tip (it is a diameter rather than a length measure) 0.12 mm, a subdorsal pedicel seta 0.10 mm long. Arista nearly 1.0 mm. Arista apical, cilia up to 0.03 mm.

2 strong *dc* pairs, posterior 0.32 mm long. No medial postpronotal, presutural, or prescutellar acrostichal pair developed. Acrostichal microchaetae sparse and discoloured, c. 6 rows between ante-



Figs 286–290. *Setositibiella terrestris* sp. n., male postabdomen. 286 = medio-caudal part of sternite 5, ventral view, 287 = sternites 3 to 5, ventral view, 288 = hypandrium, ventral view, 289 = synsternite 6–8, ventral view, 290 = ventral part of epandrium with cerci and subepandrial sclerite, caudal view. Scales: 0.2 mm for Figs 287, 289, 0.1 mm for Figs 286, 288, 290



Figs 291–294. *Setositibiella terrestris* sp. n., male genitalia. 291 = phallus, phallapodeme and postgonite, lateral view, 292 = postgonite, anterior view, 293 = surstylus with ventral process of epandrium, true lateral view, 294 = surstylus, caudal view. Scale: 0.1 mm for all

rior *dc*. Scutellum flat, 0.26 mm long, 0.41 mm broad, scutellars (as well as several thoracic setae) broken off. Posterior katepisternal 0.18 mm, anterior one not developed.

Wings rounded apically, membrane light brown like veins. Costa ends at apex of vein R_{4+5}. First costal section very long (wing base to R_1 0.57 mm), second costal section 0.26 mm, third section nearly twice longer (not precisely measurable on the wrinkled wing of holotype). Both veins R_{2+3} and R_{4+5} strongly curved up, R_{2+3} along a broad arch, consequently first radial cell short and broad. Discal cell very short, rounded, no M or Cu appendage. Inter-crossvein section of M extremely short, 0.06 mm, dM-Cu ca. 0.10 mm. Alula very short, 0.09 mm, almost pointed, at base 0.065 mm broad. Costagial seta 0.12 mm long, setae on first and second costal sections thin and not long.

Femora and tibia thickened particularly so for fore and hind femora. Tarsi and apices of mid and hind tibiae yellow.

Mid tibia posteroventrally with long white setae in its whole length: basally 0.12 mm, at distal 1/3 0.17 mm long. Similar but thicker setae posteriorly at 39/50 and 42/50 (0.22 mm, 0.165 mm). Mid tibia ventrally with a row of thicker black setae, adpressed to tibia, from basal 1/5 to almost distal apex (longest 0.08 mm). Apical ventral spur caudally curved, 0.06 mm long. Anterodorsals on mid tibia at 12/50, 41 /50 (short), a very long dorsal at 43/50, short posterodorsals at 18/50, 38/50. Mid basitarsus ventrally without longer seta. Preapical dorsal hair on hind tibia 0.08 mm, apical spur indistinct (0.03 mm).

Male postabdomen and genitalia as described above.

Etymology. The specific epithet of this new species refers to its terricolous habits. Although wings rather long, at the same time their surface is reduced through their narrowing, and, it seems probable that they cannot lift high their much sclerotised body.

Trilobitella gen. n.
(Figs 295–306)

Type species: *Trilobitella taiwanica* sp. n.
Gender: feminine.

A robust limosinine fly with peculiar male genitalia.

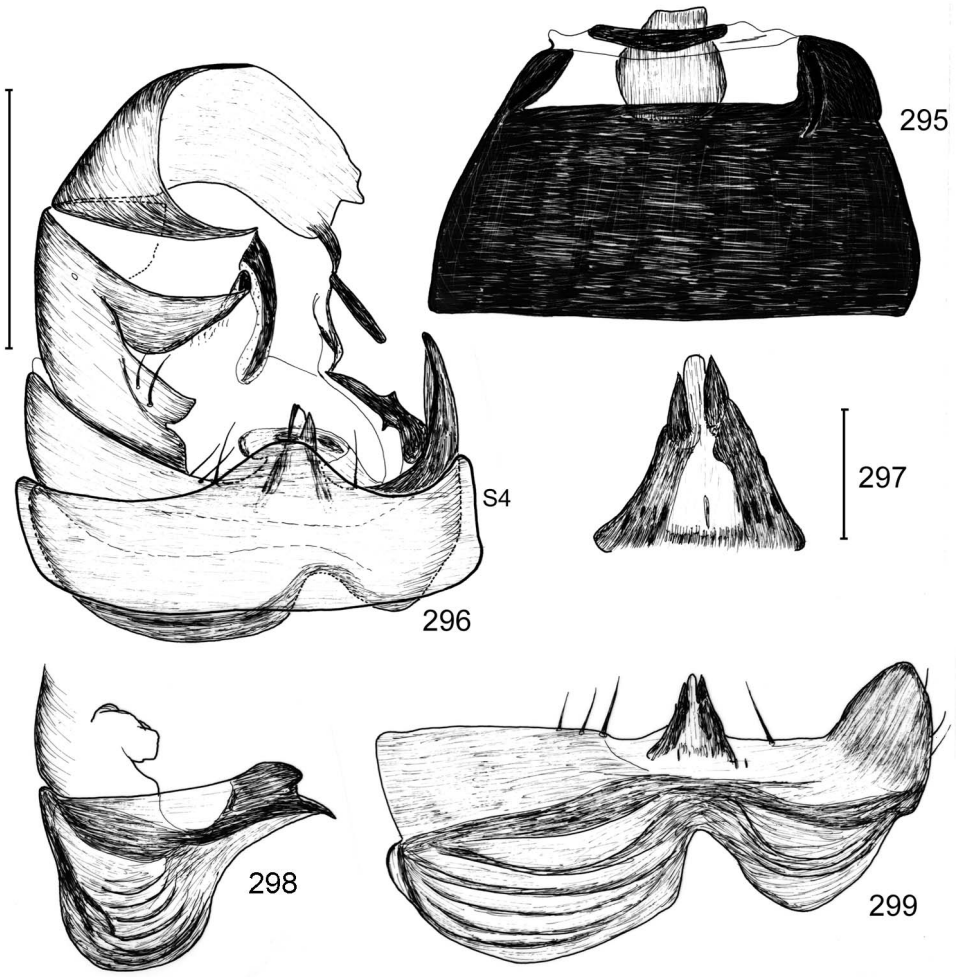
Head with antennae widely separated by a large lunula and facial swelling. Two pairs of rather weak lateroclinate *fr-orb, oc, vte, vti* thick and long, *occe* and *occi* short and thin, no postocellars. 3 *ifr* pairs, middle pair extremely long, apices crossing, anterior and posterior pairs hairlike. Eyes large, gena narrow, ratio of their height 4:1. Vibrissa strong, genal seta 0.15 mm, i.e. conspicuous. Medial seta of scape 0.13 mm, pedicel longer than first flagellomere. First flagellomere with long hairs and with dorsal subapical conus, apex narrowly rounded, arista dorsal-preapical. Arista long (1/3 of body length).

Thorax with 2 strong pairs of dorsocentral setae, anterior pair just behind suture. Outer postpronotal, 2 notopleural, 1 presutural pairs of setae; 1 long supra-alar (slightly caudal to wing base) and 1 weaker postalar present. No prescutellar acrostichal macrosetae. Only 1 pair of katepisternals. Scutellum broad trapezoid, 0.5 mm wide (thorax 0.68 mm), length 0.32 mm, basal scutellar setae 0.37 mm, apicals 0.53 mm. Fore supracoxal seta and trochanteral setae weak.

First costal section with medium-long setae. Second costal section longer than third. Costa ends slightly distally to apex of vein R_{4+5}. Vein R_{4+5} slightly sinuate. Discal cell long (inter-crossvein section more than twice longer than dM-Cu) with lower corner edged and with a long vein appendage.

Male mid tibia curved, without a mid ventral (anteroventral) but with a short ventroapical and with anteroventral row of thick black thornlets in almost its whole length and a posteroventral row in distal 1/4. Male mid femur with double row of rather long and thick black setae in basal half (4/7) ventrally. Female mid tibia with a distinct ventroapical seta but no mid ventral seta. Mid basitarsus with longer setae posteroventrally but none of them eminent. Hind tibia without dorsal preapical seta.

Male preabdomen not much modified. Tergites (Fig. 295) and sternites very strongly sclerotised and tanned. Tergites and sternites meet at lateral edge of abdomen. Tergites 4 and 5, as well as sternites 2 and 3, 3 and 4, 4 and 5 overlap (Fig. 296). Tergite 5 slightly asymmetrical, left lateral mar-



Figs 295–299. *Trilobitella taiwanica* sp. n., male abdomen. 295 = tergites 1 and 2, dorsal view, 296 = sternite 4, sternite 5 and synsternite 6–8, ventral view, 297 = medio-caudal process of sternite 5, 298 = ventral parts of synsternite 6–8, ventral view, 299 = sternite 5, slightly flattened, depressed (S4: sternite 4). Scales: 0.4 mm for Figs 295–296, 298–299, 0.1 mm for Fig. 297

gin shorter than right margin. Tergite 1 consists of 2 parts: a transverse cranial and a small caudal plate. Tergite 2 twice as long as tergite 3, sternite 4 modified.

Male sternite 5 and synsternite 6–8 much modified (Figs 296–299). Sternite 5 with large cranial dilatations (Fig. 299) and with a triangular medio-caudal process, which consists of a blunt medial and 2 sharp lateral black projections (Fig. 297). Sternite 6 and 7 portion (i.e. ventral portion) of synsternite 6–8 (Fig. 298) not much reaching over sagittal line to the right, sternite 6 portion with extremely large cranial dilatations. The right side parts (medially and on the right side) well sclerotised mostly as separate black sclerites.

Male genitalia large, wholly asymmetrical (Figs 300, 303). Hypandrium forms a broad lamella, its left side with 2 bunches of hairs (Figs 300, 302). Subepandrial sclerite subtriangular in caudal view but actually arcuate, connecting cranial edge of surstyli. Surstylus asymmetrical (Figs 300, 303), broad based, composed of 3 lobes: a lateral lobe with numerous long setae, a thin cranial lobe, which bears some short setae apically and a medio-caudal lobe with short black thick spines and some setae.

Phallus minute compared to the body size. Basiphallus short and high, ventral projection of basiphallus can be regarded as epiphallus (Fig. 301). Apical part of distiphallus dilated, membranous, dorsally subapically with minute scale-like spinules. Phallapodeme large robust, base forms a strong transverse V-shaped extension. Postgonite connection to hypandrium short but strong. Postgonites long and wholly asymmetrical (Figs 300, 303). A small ejaculatory apodeme discernible.

Female abdominal tergite 2 very long, postabdomen deeply retracted into segment 5, under tergite 5. Membranous connection between tergite 5 and tergite 6 long (as long as tergite 6), which makes inversion (retraction) easier. Postabdomen (Fig. 304) with simple tergite 7, no sclerotised medial part of tergite 8. Epiproct small triangular with 1 pair of short setae, hypoproct broad. Cerci with 1 pair of long and several pairs of shorter setae. Sternite 8 (Fig. 305) with a deep medio-caudal incision. Spermathecae (Fig. 306) peculiar, slightly mushroom-shaped, head of unpaired spermatheca more globular, basal part thick with minute warts. Sclerotised ducts emerge from the lateral apical part of basal part both as for the unpaired and the paired spermathecae. Spectacles-shaped sclerite present, though small and thin.

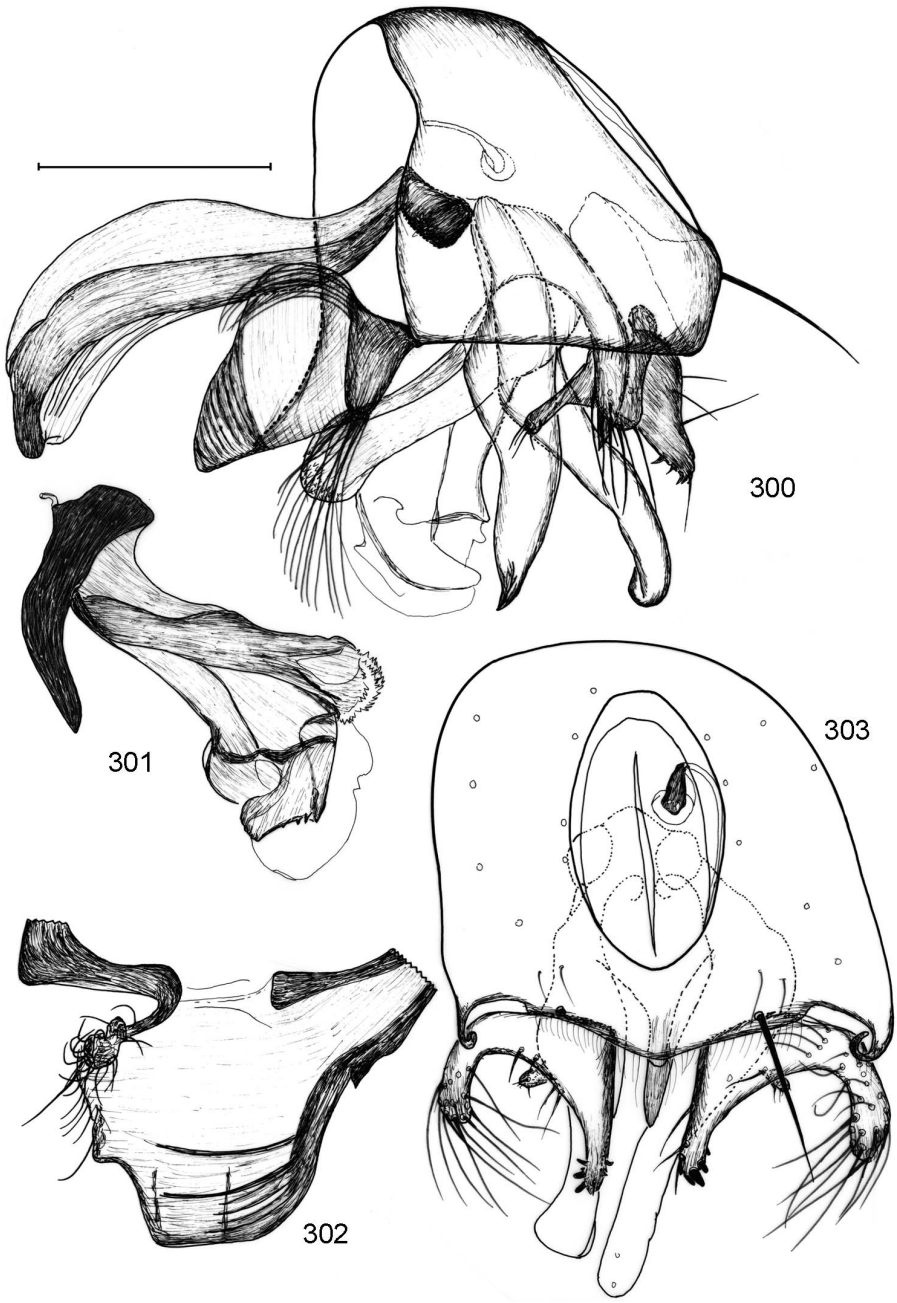
Trilobitella gen. n. is based on a new species from Taiwan. However, I do not think that the genus is restricted to that island. I presume that other species will later be found in the SE Asian continent. In the last phase of writing this paper I found a male of a second species from Thailand.

Etymology. The new genus is named after the male surstylus in three lobes.

Trilobitella taiwanica sp. n.
(Figs 295–306)

Holotype male (HNHM): TAIWAN: Ilan Hsien, Fu-Shan LTER Site, March 27, 2003, No. 9, leg. L. Papp & M. Földvári.

Paratypes (HNHM): 1 male 3 females: Kaohsiung Hsien, Liukuei, Shan-Ping LTER Site, along a creek, April 3, 2003, No. 19, leg. L. Papp & M. Földvári; 1 male (abdomen and genitalia of one male in a plastic microvial with glycerol): ibid., over/along a creek, April 2–3, leg. L. Papp, No. 15; 3 females: ibid., creek valley, March 31 – April 1, 2003, No. 13, leg. L. Papp & M. Földvári; 2 females: ibid., UV light traps, March 31 – April 4, No. 14; 1 female: ibid., April 2, No. 17.

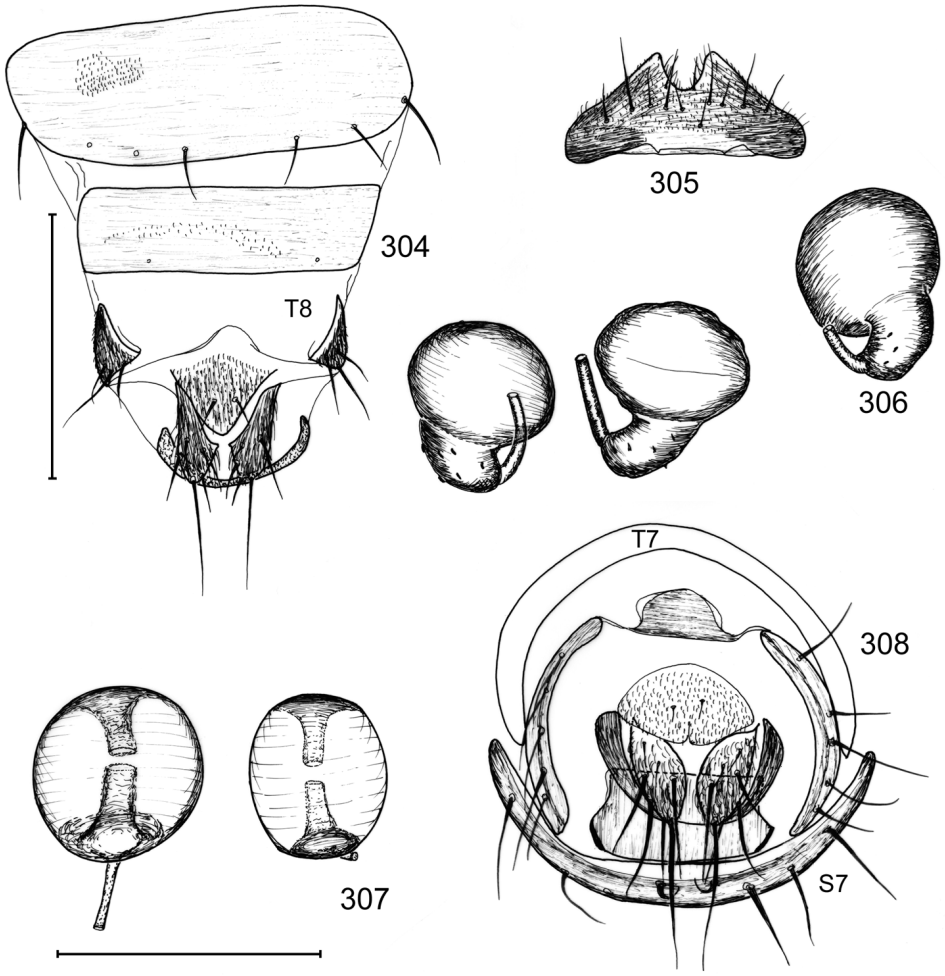


Figs 300–303. *Trilobitella taiwanica* sp. n., male genitalia. 300 = epandrium, hypandrium and genitalia, lateral view, 301 = phallus, lateral view, 302 = hypandrium, ventral view, 303 = epandrium and genitalia, caudal view. Scale: 0.2 mm for all

Measurements in mm: body length 2.30 (holotype), 2.15–2.25 (paratype males), 1.76–1.90 (paratype females), wing length 2.25 (holotype), 2.10–2.20 (paratype males), 1.70–1.90 (paratype females), wing width 0.89 (holotype), 0.70–0.80 (paratype males), 0.67–0.75 (paratype females).

All body and legs dark brown, greyish microtomentose, frons reddish anteriorly, stalk of haltere light yellow; tarsi of some specimens yellow.

2 fronto-orbital, ocellar, outer and inner vertical pairs of setae strong. One long thick *ifr*, and 1+1(2) short *ifr* anteriorly and posteriorly. Genal seta 0.18 mm. Antenna 0.27 mm long, scape medial



Figs 304–308. Female postabdomen and spermathecae. 304–306 = *Trilobitella taiwanica* sp. n.: 304 = female postabdomen, dorsal view, 305 = sternite 8, ventral view, 306 = spermathecae. 307–308 = *L. mediospinosa* DUDA, female: 307 = unpaired spermatheca (left) and one of the paired spermathecae (right), 308 = female postabdomen, caudal view, perpendicular to cerci (T: tergites, S7: sternite7). Scales: 0.2 mm for Figs 304–305, 308, 0.1 mm for Figs 306–307

seta 0.13 mm, ventral hair-like seta of pedicel 0.13 mm, arista 0.86 mm long (with short cilia). First flagellomere with a dorsal conus, though apex not pointed, arista subdorsal-subapical; cilia on first flagellomere 0.03 mm.

Acrostichal setae sparse, c. 6 rows between anterior *dc*. Posterior katepisternal 0.20 mm, anterior not developed.

Wings light brownish, veins but costa light brown, costa dark. Costa ends slightly distally to apex of R_{4+5}. Vein R_{4+5} curved up in its whole length or very slightly bisinuate. Second costal section 0.85 mm, third section 0.71 mm. Costagial seta 0.15 mm; setae on first costal section sparse but long, 0.10 mm; those on second and third sections thin and 0.07 mm. Discal cell rather long, edged, inter-crossvein section of vein M 0.33 mm, dM-Cu 0.16 mm. Vein M almost reaching wing margin, and a rather long Cu appendage also present. Knob of halteres black, stalk contrasting dirty yellow.

Male mid tibia slightly curved, with an anteroventral row of thick black thornlets in almost its whole length and a posteroventral row in distal 1/4; ventroapical not eminent but distinct. Female mid tibia ventrally, without rows of short setae, but with a distinct ventroapical. Setosity of dorsal half of mid tibia: anterodorsals at 28/50, 36/50, an almost dorsal, very long at 40/50, posterodorsals at 27/50, 35/50 (paratype female); anterodorsals at 28/50, 40/50, a short at 35/50, posterodorsals at 25/50, 36/50 (paratype male). Some thickened *ad* and *pd* microchaetae may emerge more proximally. Mid femur with short dense black setae ventrally on its proximal 3/5. Mid metatarsus with very short but dense setae in an anteroventral row, very long thick setae in a posteroventral row but no eminent seta among them. Hind tibia without a long dorsal preapicals seta but with anterodorsal and posterodorsal rows of thin long hairs.

Male and female postabdomen and genitalia as described above. In addition, female spectacles-shaped sclerite very distinct though small, 0.05 mm × 0.03 mm per "lens".

Etymology. The specific epithet of this new species is 'taiwanica', after its type locality in Taiwan.

A note to *Pellucialula* L. PAPP, 2004

In the original paper (PAPP 2004) some sclerites of the female genitalia are misinterpreted. I would like to correct it as follow:

The most distal unmodified tergite is the 6th. Tergite 7 in 2 large lateral parts (PAPP 2004: fig. 20, medial part of the figure). Tergite 8 in 3 small parts: a small dorsal platelet well visible on fig. 19, the lateral bare shiny parts distal to tergite 7 large sclerites, probably partly fused with those. The ventral hairy plate (ventrocaudal on fig. 20) must not be the hypoproct, since it is cranial to ovipositor. That is really sternite 8.

Some other, formerly unplaced Limosinini species in the HNHM Collection

Pullimosina kivuensis (VANSCHUYTBROECK, 1950) – Described as a *Limosina* sp. This is really a *Pullimosina* sp. based on the study of a damaged male paratype in the HNHM (N. Kivu: Kibati, etc.), whose genitalia were prepared and studied.

Leptocera (*Scotophilella*) *opaca* DUDA, 1925 – Holotype female (HNHM): 1) Africa or. Katona 904 [actually Kálmán Kittenberger]; 2) Kilima-Njaro [reverse side] "X."; 2) "Scotophilella opaca n. sp. ♀" [DUDA's handwriting] det. dr. O. Duda; 3) [red] TYPUS. This is probably a large-bodied *Pullimosina* sp. (1.8 mm) and should be restudied in a the revision of the Afrotropical *Pullimosina* spp.

Leptocera (*Scotophilella*) *mediospinosa* DUDA, 1925 – This species is not related to *Spelobia, Rufolimosina* subgen. n., *etc.* (cf. ROHÁČEK *et al*. 2001: 290). Since the syntypes (type series) are from three continents, it would have been reasonable to make a lectotype designation. Unfortunately the syntype series in the HNHM consists of females only.

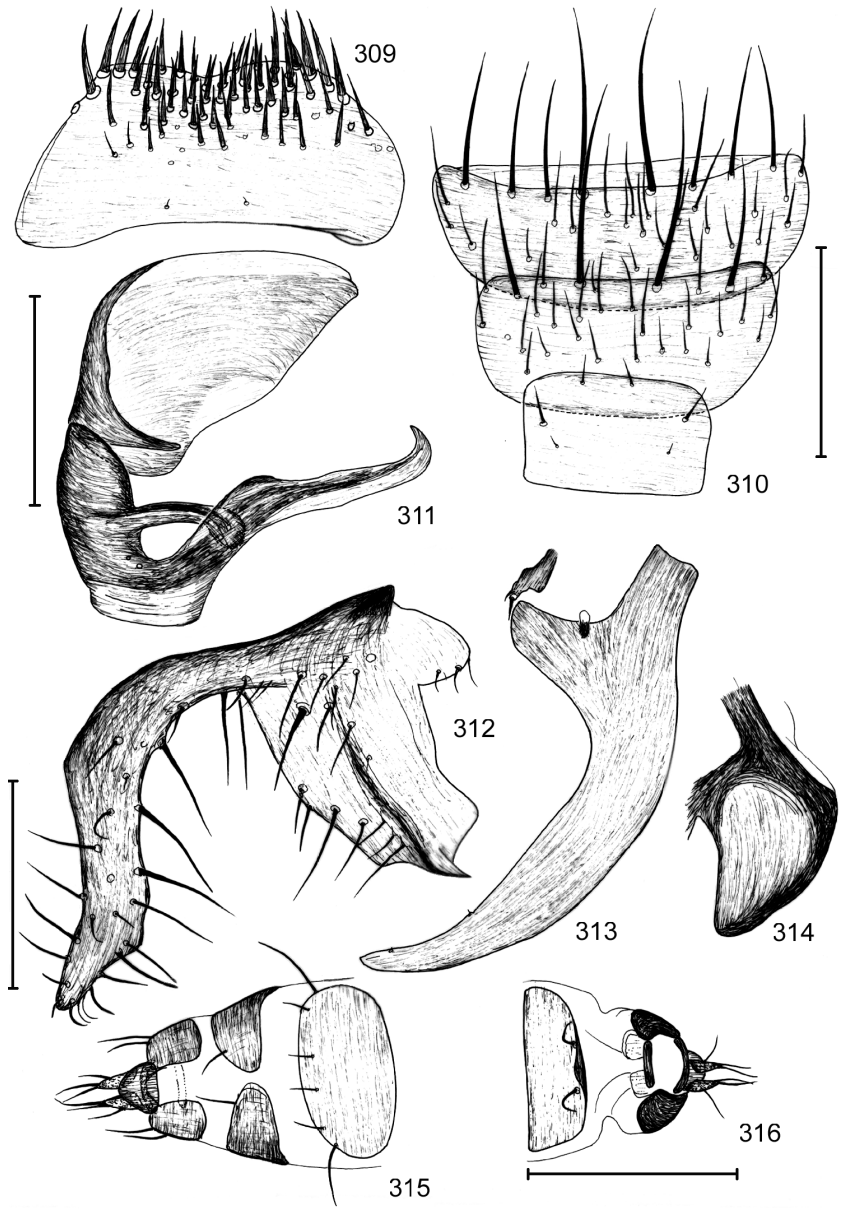
Syntype females in the HNHM: 1) Transvaal Pretoria [reverse side] "1912. IX. 11."; 2) "S. medio-spinosa ♀" [DUDA's handwriting] det. dr. O. Duda; 3) [red] TYPUS. 3 females: same, without 3) [one of them without head, gen. prep. made, one without head and abdomen]. 1 female: label 1) as above, 2) "Scotophilella mediospinosa ♀" [DUDA's handwriting] det. dr. O. Duda ; 1 additional collection pin with the same data but without the specimen. 1 female [abdomen prepared, in a plastic microvial with glycerol]: 1) Australia Biró 1900; 2) Sydney Botany B. [reverse side] "XI. 2."; 3) = 2) of the first specimen.

Syntypes in the Berlin Museum (ZMHB): 1 male: Australia …; 1 female: Transvaal … (they are to be found in the 14th box of the sphaerocerid collection of the ZMHB). The syntypes from Chile, Santiago must be in the Dresden Museum (SMTD), not seen.

I compared the female postabdomen and spermathecae of a South African and an Australian specimen. I am not quite sure that they are conspecific. So I did not select a lectotype. A study of the male genitalia of the ZMHB specimen may serve as evidence for its relationships, and it seems advisable now to select that specimen as a lectotype.

In order to facilitate a clarification of this name, I figured female terminalia and spermathecae of one female from Transvaal (Figs 307–308).

Anal end obliquely blunt, not telescopic, i.e. not protractile. Tergite 7 broad, almost reaching edges of sternite 7. Sternite 7 broad and setose. Tergite 8 in 3 parts. Sternite 8 without setae. Epiproct covered with hairs and a pair of longer hairs discernible. Hypoproct broad but only shortly sclerotised. Cerci medium-long with 1 long apical, 2 marginal plus 2 dorsal pairs of setae. Spermathecae (1+2) globular, paired one rather barrel-shaped (Fig. 307), sclerotised ducts very short (other ducts not sclerotised but those on figure).



Figs 309–316. Additional figures. 309–314 = *Acuminiseta pallidicornis* (VILLENEUVE, 1916), paralectotype male, postabdomen and genitalia: 309 = sternite 5, ventral view, 310 = sternites 2 to 4, ventral view, 311 = synsternite 6–8, ventral view, 312 = surstylus, broadest (a sublateral) view, 313 = postgonite, broadest (lateral) view, 314 = basiphallus, lateral view. 315–316 = *M.* (*Amediella*) *endrodyi* sp. n., female postabdomen: 315 = dorsal view, 316 = ventral view. Scales: 0.2 mm for Figs 309–311, 315–316, 0.1 mm for Figs 312–314

GENERAL REMARKS

The aim of this paper is not to produce a re-classification of the limosinine genera of the Old World tropical-subtropical Limosininae, as ROHÁČEK (1982, 1983, 1985) published for the Palaearctic genera. ROHÁČEK's work was comprehensive, in that he took all the species previously relegated to the old genus *Limosina* into consideration. And indeed, no more genera from the Palaearctic region have been described after ROHÁČEK's work was published: three genera have been added but one of them is a species representation of a New World genus (*Sclerocoelus clarae* (L. PAPP, 1973)), and the other two are introductions, see ROHÁČEK and BUCK (2003), WHEELER and MARSHALL (1991).

An early initiative to write such a paper was, that a high proportion of the sphaerocerid species collected in samples of flies on elephant dung, were undescribed. Actually those species in the subfamilies Sphaerocerinae and Copromyzinae were mostly known, quite contrarily to the Limosininae, where even a significant proportion of the genera were undescribed. And while a major proportion of the specimens from African elephant dung belonged to several *Coproica* species, a bigger half of the limosinine flies captured on elephant dung in the Oriental region belonged to several genera, including formerly undescribed ones. Indeed, two new genera of those Afrotropical flies (*Chaetosifemur, Pseudaspinilimosina*) and three genera from the Oriental region (*Paramera, Paraminilimosina, Piliterga*) are described here (also the Oriental *Aspinilimosina* is significant in this respect but its was described formerly, see PAPP 2004).

The new genera are mainly based on the features of the male genital structures. I do not object to differentiating closely related species based on details of male genitalia, but at the same it is desirable to define genera based on male genital structures. On one hand, very small differences in male genitalia are safe morphological barriers in crossing back among sister species. On the other hand, basic structures cannot change easily in male genitalia, since the functioning (mating) must be unchanged while any morphological modification of genital parts. Consequently, we can find strong synapomorphies in the male genital structures, if their details are not taken into consideration.

Important supplementary data are derived from study of female postabdomen and genitalia (e.g.: *Monorbiseta, Trilobitella*).

Contrary to my original plan, no phylogenetic analysis was made after completing the descriptions. The main reason for this is that highly conspicuous characters have proven not to be synapomorphies. The patterned-winged limosinine genera are not closely related. Again, the astonishingly peculiar modifications of the abdomen through massive reduction of abdominal sclerites and enlargement of

setae on margin of second (third, etc.) tergites do not refer to close phylogenetic relationship. The study of the male genitalia of those "groups" reveals excessive differences among patterned winged genera as well as in the other peculiar group with long setose tergites. I believe that results from molecular analysis of the known genera and description of a higher proportion of those, which are still undescribed, is needed before such a phylogenetic study would be reasonable.

One can see from the key that several more genera have been left undescribed. In the HNHM there are representatives of some additional new genera, not to mention collections of other large museums.

A KEY FOR THE IDENTIFICATION OF THE FULLY-WINGED GENERA OF THE OLD WORLD LIMOSININAE

Within the family Sphaeroceridae, the Limosininae is by far the subfamily with the largest number of species. The most important differentiating characters of this subfamily are as follows:

Costal vein reaching to or beyond R_{4+5}, but not to vein M. Vein M mostly shortened i.e. it does not reach wing margin (if does, as a colourless vein only). Basal medial cell coalesced with discal cell and cell *cup* not developed. Hind tibia usually with small or indistinct ventroapical seta; fore and hind basitarsi simply haired. Females usually with 3 spermathecae, paired ones on a unifying Y-shaped sclerotised duct.

In the key below all those genera are included where wings and halteres are present; in cases (specified below) where wings are shortened, venation is still clearly visible. This key is based on ROHÁČEK's (1998) for the Palaearctic genera. References to original figures are written in upper case, as Fig., Figs, references to those in the literature are written in lower case, fig., figs, incl. those from ROHÁČEK's (1998).

There is no doubtful genus in the subfamily (but cf. ROHÁČEK *et al.* 2001: 292). I saw representatives of all but seven genera while compiling this key; those latter genera all have modern well-illustrated descriptions, so there is no doubt about their placement.

1. Pulvilli and claws considerably enlarged, hind tibia with short but robust ventroapical spur. Frons long, usually with numerous *ifr*. Abdominal tergites and sternites in many species rudimentary but tergal marginal setae are not extremely long. Male genitalia with a pair of large ventral (ventromedial) epandrial processes, surstylus placed between epandrium and the processes
2

– Pulvilli and claws weakly developed (except for *Pseudacuminiseta*'s fore claws); ventroapical spur of hind tibia mostly reduced. Abdomen well sclerotised; in cases if tergites reduced, marginal setae extremely long. Male genitalia different 3

2. 1 + 1 pairs of robust dorsocentral setae present. Ocellar setae absent. Only 3 (4) rows of irregularly placed acrostichals. Only 4 pairs of comparatively large interfrontals. A large shiny frontal triangle present, which extended so anteriorly that anterior ocellus placed nearly middle of frons. Post-ocellar setae well developed. Inner vertical setae emerge well anterior to outer verticals. Abdominal sternites 1–4 and tergite 3 not sclerotised at all, tergite 4 represented by 2 minute sclerites (PAPP 1977: figs 5–6). Lunule large, setose *Ceropterella* RICHARDS, 1953

One sp., *Ceropterella nitidosa* (RICHARDS, 1953), Afrotropical.

– 0 + 1–2, or 1 + 2 pairs of dorsocentral setae. Ocellar setae well developed. Usually many (6–8) rows of acrostichals. Many yet weaker interfrontals. Frontal triangle either small, or not shiny. Position of ocelli normal. No differentiated postocellar setae. Inner vertical setae emerge close to outer verticals. Abdominal tergites maybe reduced but sternites never completely desclerotised. Lunule small, often only hairy
Ceroptera MACQUART, 1835

A species rich genus in the Palaearctic and Afrotropical regions, 1 Oriental sp. (HACKMAN 1965, PAPP 1977).

3. Scutellum (ROHÁČEK 1998: fig. 16) between apical scutellar setae with at least one pair of small setulae, disc of scutellum also more or less setulose; at most 2 pairs of scutellar setae long. 4

– No setulae between apical sc; disc of scutellum usually bare, when setulose (ROHÁČEK 1998: fig. 15) then at least 3 pairs of long marginal sc present and first costal section sparsely long-haired (ROHÁČEK 1998: fig. 22) 5

4. Disc of scutellum densely setulose (PAPP 2008: fig. 84). Anal vein mostly angular (ROHÁČEK 1998: fig. 23) *Coproica* RONDANI, 1861

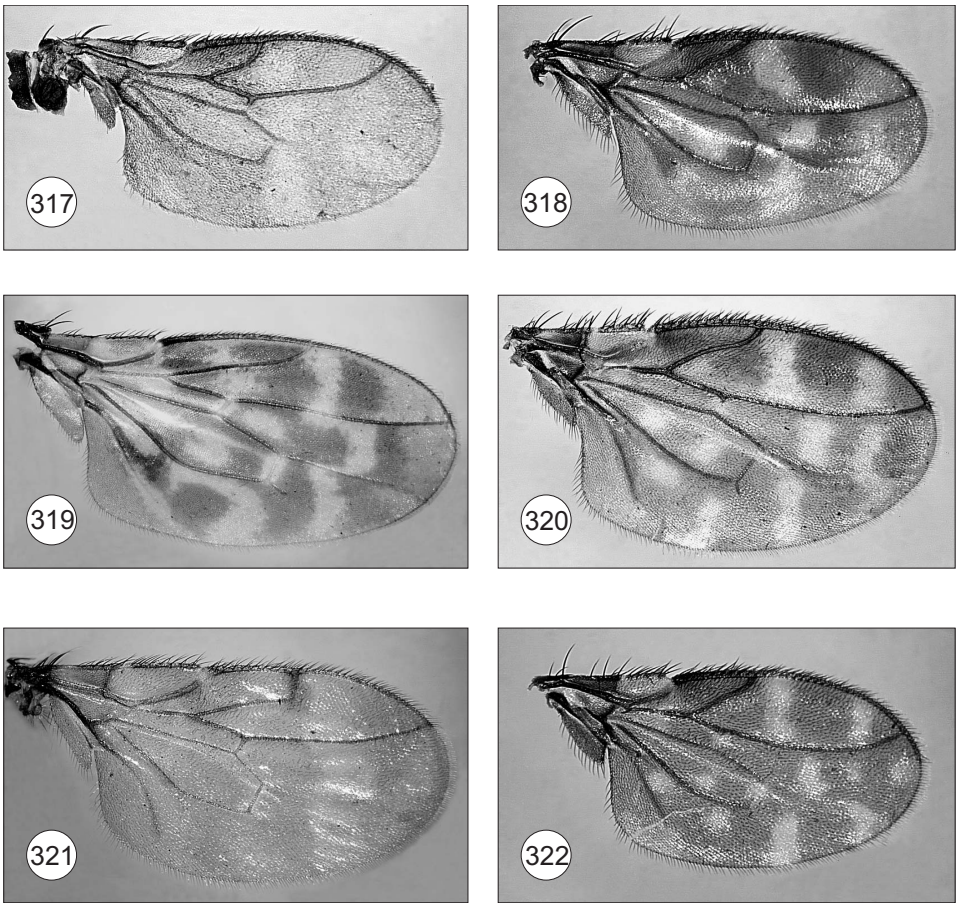
Widespread; see Papp 2008 (in this volume).

– Disc of scutellum with only 2 pairs of small setulae. Anal vein sinuate
Philocoprella RICHARDS, 1929

Palaearctic, Oriental and Afrotropical regions; a number of undescribed spp..

5. Mid tibia with distinct ventral preapical seta (sometimes together with a ventroapical) or without any long bristle ventrally but in these cases mid basitarsus always with a distinct ventral seta 6

– Mid tibia always without ventral preapical seta, but usually with a ventroapical seta (reduced sometimes only in males). Long ventral seta on mid basitarsus present only in species with distinct ventroapical seta on mid tibia (ROHÁČEK 1998: fig. 75), though very short in *Pleuroseta*, which has a number of anepisternal setae 10

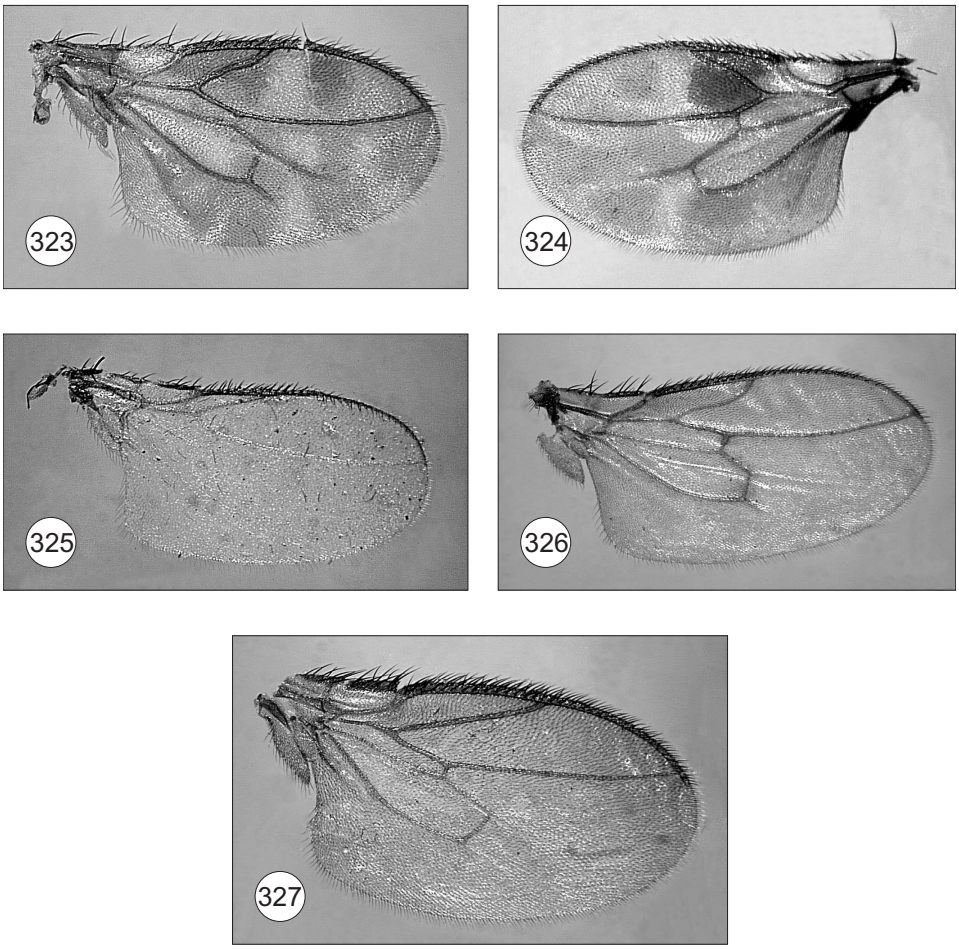


Figs 317–322. Photos of the right wings: 317 = *Afropterogramma minor* sp. n., 318 = *Archipterogrammoides metatarsalis* sp. n., 319 = *Giraffimyiella giraffa* (RICHARDS), 320 = *Minialula poeciloptera* sp. n., 321 = *Parapoecilosomella lusingana* (VANSCHUYTBROECK), 322 = *Parapterogramma asiatica* sp. n.

6. Scutellum with 3–4 pairs of marginal setae (ROHÁČEK 1998: figs 14–15), in some species also with setae on its disc. Mid trochanter with a long upcurved seta (ROHÁČEK 1998: fig. 11) 7

– Scutellum with only 2 pairs of long marginal setae, disc always bare. Mid trochanter without or with a short seta 8

7. Foremost pair of dorsocentral setae directed posteriorly. Carina never protruding between antennae. Male epandrium not fused below anal fissure



Figs 323–327. Photos of the right wings (but Fig. 324): 323 = *Pseudopterogramma siamensis* sp. n., 324 = *Thailimosina maculata* sp. n., left wing; 325 = *Minilimosina* (*Amediella*) *endrodyi* sp. n., 326 = *Phthitia* (*Rufolimosina*) *ornata* sp. n., 327 = *Pseudacuminiseta formosana* sp. n.

and a pair of processes (modified cerci) separate from epandrial complex (ROHÁČEK 1998: fig. 49). Scutellum always with 4 pairs of marginal setae.
Leptocera OLIVIER, 1819

15 spp. in the Palaearctic region, a number of undescribed spp. in the tropics; widespread.

– Foremost pair of dorsocentral setae inclinate (ROHÁČEK 1998: figs 6,14); if it is reclinate then carina strongly bulging between antennae. Male epandrium fused below anal fissure to form subanal plate and a pair of processes coalesced with epandrial complex (ROHÁČEK 1998: fig. 37)
Rachispoda LIOY, 1864

At least 50 spp. in the Palaearctic region, a number of undescribed spp. in the tropics; ROHÁČEK 1991.

8. Only 1 (posterior) pair of *dc* setae. Mid tibia (ROHÁČEK 1998: fig. 57) always with ventral preapical seta, usually together with a ventroapical one; mid basitarsus with a small or without ventral setula
Pteremis RONDANI, 1856

A Holarctic genus with 4 Palaearctic and 2 Nearctic spp.

– Usually more than 2 *dc* setae. Mid basitarsus always with a distinct ventral seta; mid tibia always without ventroapical seta; ventral preapical seta on mid tibia sometimes present only in females 9

9. 3 or more *dc* pairs, at least one of them presutural. First costal section usually with long setae. Male surstylus bipartite, complex and its posterior part more or less covered by a ventrolateral process or lobe of epandrium (ROHÁČEK 1998: fig. 103). Basiphallus simple (ROHÁČEK 1998: fig. 104)
Pseudocollinella DUDA, 1924

22 spp., most of them in the Nearctic region.

– All (1–3) *dc* pairs postsutural. First costal section usually with short setae. Epandrium without lateral process overlapping surstylus. Basiphallus with posteriorly projecting epiphallus (ROHÁČEK 1998: fig. 102)
Opacifrons DUDA, 1918

More than 30 spp. worldwide.

10. Head with lateroclinate or mesoclinate inner orbitals between *ifr* and *fr-orb*. Small or very small species (body length 0.7 to 1.3 mm) 11

– Head without inner orbitals, at most with several minute additional lateroclinate setulae close to orbitals. Mostly larger species (body length 1.5 mm or more) 16

11. Head with a row (or at least 1 longer and 1–2 small setae) of lateroclinate inner orbitals between *ifr* and *fr-orb*. Alula small and narrow (ROHÁČEK 1998: fig. 27). Vein R_{4+5} strongly curved up to C and the latter far extended beyond apex of R_{4+5} *Trachyopella* DUDA, 1918 13

ROHÁČEK and MARSHALL 1986 (Holarctic monograph), MARSHALL and MONTAGNES (1990) (Pacific monograph). ROHÁČEK *et al*. (2001) synonymised all the subgenera but *Nudopella* under *Trachyopella*; here I follow the former arrangement.

– Head with a distinct row of inclinate inner orbitals. Alula large, rounded apically. 12

12. R_{4+5} very strongly curved up to C, anal vein more or less distinctly angular. No strong costagial seta, costa with erect hairs, perpendicular to alar plane. Inner orbital setulae farther from *fr-orb*. Male sternite 5 with lateral thornlets, or combs of setae *Elachisoma* RONDANI, 1880

Several Afrotropical, Oriental and Palaearctic spp.; PAPP 1983.

– R_{4+5} bisinuate (ROHÁČEK 1998: fig. 24), anal vein gently sinuate. A large inclinate costagial seta present (directed posteriorly). Costa without erect hairs. Inner orbital setulae close to *fr-orb*. Male sternite 5 with a single medial comb of setae
Gonioneura RONDANI, 1880 (= *Halidayina* DUDA, 1918)

2 Palaearctic, 1 Neotropical spp. and *G. exserta* (MARSHALL, 1982), which has been found in the Nearctic and Neotropical regions as well as on Hawaii.

13. Eye (seemingly) bare. Medial (internal) postpronotal seta much shorter than external 14

– Eye distinctly pilose. Medial (internal) postpronotal seta relatively long, only slightly shorter than external one
Trachyopella subgenus *Trachyopella* DUDA, 1918

14. Cephalic and mid tibial setae robust; wing broad (ROHÁČEK 1998: fig. 27). Abdominal tergites 4 and 5 (in female also tergite 6) with strong setae in posterior corners. Surstylus short and wide, with single robust spine on posterior lobe. Paired spermathecae with sclerotized parts of ducts connected far from their bodies
Trachyopella subgenus *Nudopella* ROHÁČEK et MARSHALL, 1986

– Cephalic and mid tibial setae weak; wing narrower (ROHÁČEK 1998: fig. 26). Abdominal tergites 4 and 5 with short setulae. Surstylus longer and narrower, often with a number of spines. Paired spermathecae with sclerotized parts of ducts connected close to their bodies 15

15. Only 1 inner orbital and 1–2 minute setulae in front of it. 4–8 rows of acrostichal microsetae on suture. Vein R_{2+3} connected with C in very acute angle (ROHÁČEK 1998: fig. 26). Male cerci reduced, surstylus with at least 2 robust spines *Trachyopella* subgenus *Insulomyia* L. PAPP, 1972

– 2 longer and 1 short inner orbitals. 10 rows of acrostichal microsetae countable on suture. Vein R_{2+3} connected with C in less acute angle. Male cerci (ROHÁČEK 1998: fig. 59) prominent, enlarged and densely setulose, surstylus with 1 robust spine and long hairs (ROHÁČEK 1998: fig. 59) *Trachyopella* subgenus *Minuscula* ROHÁČEK et MARSHALL, 1986

16. Body heavily sclerotized or even distinctly granulose (abdomen in particular). Postgonites either asymmetrical or very large. 17

– Body usually less sclerotized and not granulose; if so (some species of *Paralimosina, Aptilotus*) then postgonites normal 19

17. Body granulose. Prosternum broadly triangular posteriorly. Abdominal sternite 3 long (ROHÁČEK 1998: fig. 32), almost as long as T3 and T4 together; postgonites asymmetrical (ROHÁČEK 1998: fig. 42). Palaearctic species *Puncticorpus* DUDA, 1918

Three spp. in south Western Europe; ROHÁČEK & MARSHALL 1982.

– Body not granulose, subshiny. Prosternum narrow. Abdominal sternite 3 not long (Fig. 287). Afrotropical genera 18

18. Wings rather narrow, second costal section much longer than third. Postgonites extremely large straight with a long mid anterior process (Fig. 246). Male mid tibia without long ventral hair-like setae **Gonitella** gen. n.

– Wings round, second costal section only about half as long as third. Postgonites (Figs 291–292) curved, mid anterior process small. Male mid tibia with very long ventral hair-like setae **Setositibiella** gen. n.

19. Wings unicolorous, at most crossveins clouded, or if all wings with pale cloudy coloration (*Acuminiseta*, Fig. 233), 1 *fr-orb* only 20

– Genera with patterned wings (Figs 309–316, 318). In case of bias (rather diffuse pattern, or darkened wings only, vein R_{2+3} bisinuate: *Biroina* RICHARDS) 80

20. Genera with desclerotised abdominal tergites (sclerites) *and* extremely long marginal tergal setae 21

– Abdominal tergites not reduced but if so, they are without very long marginal setae 26

21. Hind tibia with very thick spurs apically. Postocellar setae very strong 22

– Hind tibia without thick apical spurs. Postocellars various 23

22. Costa overruns apex of vein R_{4+5}. All hind tarsomeres broadened (thickened). Inner occipital setae reduced. 2 pairs of *dc*, anterior pair strong. Anterior or anteroventral spur, plus dorsal/anterodorsal preapical thorn on hind tibia. A distinct ventroapical spur on mid tibia. Oriental region
Aspinilimosina L. PAPP, 2004

A. postocellaris L. PAPP, 2004 from Sri Lanka and undescribed species from other parts of the Oriental region.

– Costa just reaching apex of vein R_{4+5}. Hind tarsi with thickened basitarsus and 2nd tarsomere. Inner occipitals distinct. 3 *dc* pairs, though anterior 2 pairs short. Also a small ventroapical spur present on hind tibia. Ventroapical spur on mid tibia short. Afrotropical region
Pseudaspinilimosina gen. n.

23. Fore femur basally with 2 pairs of long setae. 6 pairs of interfrontals and a pair of very strong postocellars present. Mid basitarsus with rows of strong anteroventral and posteroventral setae. Afrotropical
Chaetosifemur gen. n.

– Fore femur without long setae basally 24

24. Mid tibia with a posterodorsal seta at basal half. Costa ends at apex of R_{4+5}. Sternite 2 normal. Male sternite 5 with rows of short stiff setae.
Piliterga gen. n.

Oriental region (1 sp. from Thailand), also undescribed species from the Afrotropical region.

– Mid tibia without a posterodorsal seta in basal half. Costa overruns apex of R_{4+5} 25

25. Genal seta short but distinct, postvertical setae long. Alula small and narrow. Mid tibia with more long setae dorsally. Sternite 2 with a peculiar structure (Figs 16–17). Male sternite 5 without a paired comb of short stiff setae. **Paraminilimosina** gen. n.

Two Afrotropical spp., undescribed species in the Afrotropical and Orietnal regions.

– No larger genal seta, postvertical setae indistinct. Alula medium long, apex rounded. Mid tibia with few setae dorsally, 2 anterodorsal over the long

subapical *ad*. Sternite 2 normal. Male sternite 5 with a pair of extremely large transverse pair of setal combs. Afrotropical
New genus for *C. ealensis* VANSCHUYTBROECK, 1951

26. Mesonotum with 4–6 pairs of *dc* setae incl. 1–2 anterior (presutural) inclinate *dc* pairs. First costal section with long and sparse setulae; surstylus short (low), usually bilobed, with spine(s) on posterior lobe (ROHÁČEK 1998: fig. 52); male cerci not or little projecting ventrally
Thoracochaeta DUDA, 1918

Widespread on seashore, mainly on seaweed; MARSHALL & ROHÁČEK (2000): revision of extra-Holarctic species; ROHÁČEK & MARSHALL (2000): revision of Palaearctic species.

– Mesonotum with 1–6 pairs of *dc* setae; if presutural *dc* present, they are directed posteriorly and surstylus and male cerci are differently formed. 27

27. Antennae lying in a deep hollow, whose lateral and ventral margins are sharp-edged. Gena with 2 moderately strong peristomals behind vibrissae. First flagellomere with a dorsal conus (almost pointed), arista subapical
Papuella RICHARDS, 1973

1 sp., Papua New Guinea.

– Facial plate normal, antennae not in deep hollow, or if in a shallow hollow, edges are not sharp. Peristomals weaker 28

28. First flagellomere strongly conical with acute apex (Figs 201–202, 273), or even with a small rod-like projection. Arista with long hairs 29

– First flagellomere not conical but if slightly so, never with rod-like projection. 31

29. Male fore outer claw enlarged, bifid (Fig. 275). Male surstylus with very long colourless sinuate setae (Fig. 277). Arista short (Fig. 273).
Pseudacuminiseta gen. n.

Only 1 sp., *P. formosana* sp. n., Taiwan

– Male fore claws normal. Male surstylus never with long sinuate setae. Arista longer (Figs 201–202) 30

30. (3)–4 small or medium-long *ifr*. Small but distinct pair of postocellar setae. Only 1 *dc* pair, plus an oblique row of small setae. Costa thickened with long setae and with rather long dorsal and ventral setae all along. Male mid tibia with a row of strong ventral setae. Female mid tibia with a small middle

ventral (*av*). Abdominal tergites 1 and 2 modified in a number of species. Female cerci in a number of species with 1 or more thick thorns. Spermathecae globular, the single left one not (or only slightly) longer the paired ones *Anommonia* SCHMITZ, 1917

Afrotropical spp. (1 questionable Oriental sp.)

– 2 pairs of strong *ifr* (in cases only 1 strong + 1 small posterior). No postocellar setae. 2 pairs of strong dorsocentrals. Costa not particularly thick, first costal section with short setae only. No mid ventral seta on mid tibia, males with a row of long hair-like anteroventral setae. Abdominal tergites 1 and 2 simple. Female cerci with thin setae and hairs only. 1 large left plum-shaped spermatheca plus 2 smaller longish right ones, whose common duct not sclerotised **Paracuminiseta** gen. n.

Its type species *P. tetrasetosa* sp. n. and two undescribed spp. are Afrotropical.

31. Male epandrium on the right side with 2 sclerotised connections to hypandrium (Fig. 223). Second costal section much shorter than third. First costal section with long setae. No mid ventral seta on mid tibia. Male mid tibia without a distinct ventroapical but with a row of thick black ventral setae **Biconnecta** gen. n.

1 sp., *B. mirabilis* sp. n., India.

– Male epandrium with one connection on each side to hypandrium 32

32. Anepisternum with 6 setae on posterior margin. Mid tibia with 3 pairs of setae on dorsal half. Mid basitarsus with a ventral seta *Pleuroseta* RICHARDS, 1973

1 sp., Australia.

– Anepisternum without setae. Character combination different 33

33. First costal section basally with a single long (costagial) seta (ROHÁČEK 1998: fig. 24), directed parallel to costa. Only 1 (postsutural) *dc*. Epandrium laterally with 3–4 long setae; R_{4+5} slightly bent up to costa; no inclinate inner orbital setulae; Male cerci unusually enlarged; surstylus large and complex (ROHÁČEK 1998: fig. 44); female cerci modified into long curved spines (ROHÁČEK 1998: fig. 43) *Rudolfina* ROHÁČEK, 1987

5 spp., Palaearctic, Nearctic and Neotropical.

– First costal section basally with 2 shorter (paired) setae, one of them at most twice length of the second; 1–6 *dc* 34

Big headed robust flies with a broad scutellum. A strong upcurved genal seta present. Postvertical setae weak (but *occi* or both occipital pairs may be strong). Only 1 pair of dorsocentral setae. Wing with long setae on first costal section, R_{4+5} strongly curved up, apex far from wing tip, costal vein ends exactly there. Alula narrow. 4 to 5 pairs of short interfrontals. 35

– Genera with other combination of characters 38

35. Mid tibia without mid ventral seta, mid basitarsus with a longer posteroventral at basal 1/3 to 2/5. Paired setae present also on basal half of mid tibia. Ventroapical seta of male mid tibia short, but a row of thick ventral setae of apical 3/5 (no such setae on female but ventroapical longer). Hind tibia with a long dorsal preapical seta. Genal setae farther from mouth edge and more or less strong. Though gena broad, no subocular setae present. Male genitalia with extremely large postgonites (Fig. 72). Discal cell rounded
Paramera gen. n.

2 described Oriental spp. (see above); undescribed spp. from the Oriental region and P.N.G.

– Mid tibia with mid ventral seta, mid basitarsus without any longer setae posteroventrally. A strong ventroapical present also on male mid tibia but no ventral row of thick setae on male mid tibia. Dorsal preapical seta on hind tibia indistinct. Subocular setae may be long. Male postgonites shorter.
36

36. No posterodorsal seta on basal half of mid tibia, i.e. anterodorsals are unpaired there. Discal cell angulate with a short vein appendage. Medial seta of scape minute, at least much shorter than pedicel.
Spinilimosina ROHÁČEK, 1983 37

One Palaearctic species, numerous spp. on the Old World tropics.

– Also 1 or 2 pairs of posterodorsal setae on mid tibia in basal half, i.e. paired setae present in basal half (Fig. 49). Discal cell rounded or angulate. Medial seta of scape large, as long as pedicel. Male surstylus with a strong thick thorn (Figs 56, 62) caudally, base of postgonite very broad, apical half narrowed and cranially curved (Figs 54, 59). Oriental region
Eximilimosina gen. n.

For the species see in the key above.

37. Gena very broad. Genal setulae behind genal seta shorter and emerge farther from mouth margin. Subocular setae long. Aristal cilia very long (lon-

ger than 0.02 mm). At least dorsal costagial seta very long (in cases similar to *Gonioneura* spp.). Dorsal appendage of phallus overruns phallic apex.
A new subgen. for *E. ciliata* (DUDA, 1925)
and for a number of undescribed spp.

– Gena less broad. Genal setulae behind genal seta longer and emerge closer to mouth margin. Subocular setae missing or short. Arista usually with shorter cilia. Costagial setae shorter. Dorsal appendage of phallus not longer than phallus. *Spinilimosina* ROHÁČEK s. str.

38. Scutellum velvety black microtomentose; mid basitarsus with a distinct anteroventral seta (ROHÁČEK 1998: fig. 75); male S5 with a pair of digitiform projections (ROHÁČEK 1998: fig. 111)
Chaetopodella DUDA, 1920

One Palaearctic sp. (*Ch. scutellaris* (HALIDAY, 1836)) and several Afrotropical and Oriental spp. (HAYASHI & PAPP 2007, PAPP 2008).

– Scutellum never velvety black marked; mid basitarsus usually without long anteroventral seta; if the latter present, then male S5 different 39

39. Hind tibia with 3 long setae (ROHÁČEK 1998: fig. 12); male mid tibia curved and with 2 tufts of sinuate setae (ROHÁČEK 1998: fig. 13); male epandrium with 3 pairs of very long setae; female cercus with 2 shorter and thick setae
Limosina MACQUART, 1835

1 sp., *L. silvatica* (MEIGEN, 1830); Europe.

– Hind tibia at most with a long dorso-preapical seta; male mid tibia, epandrium and female cerci different 40

40. Mesonotum with 3–6 *dc* setae, the presutural being usually small; R_{4+5} sinuate or almost straight 41

– Mesonotum usually with only 1–2 *dc* setae; when 3 *dc* present, then R_{4+5} slightly recurved (ROHÁČEK 1998: fig. 93) or eye strongly reduced 45

41. 3 *dc* (1 presutural, 2 postsuturals). Carina bulging between antennae, antennal foveae deep because of protruding lower facial margin. 2 katepisternal pairs, also anterior pair long. Mid tibia with distinct midventral seta. Male cerci ventrally projecting as narrow curved bare processes. Surstylus simple *Archicollinella* DUDA, 1925

1 sp., *A. penteseta* (RICHARDS, 1929); Great Britain (probably introduced from Namibia (KIRK-SPRIGGS 2007)).

– 3–6 *dc* (0–3 presuturals, 3 postsuturals). Carina small, antennal foveae shallow. Anterior *kepst* much shorter and weaker than posterior. Mid tibia with at most small ventral setula. Male cerci never forming bare narrow processes; subepandrial sclerite usually projecting ventrally and forming a medial mesolobus (ROHÁČEK 1998: fig. 55). Surstylus complex, bipartite
Phthitia ENDERLEIN, 1938 42

42. Male epandrium with a pair of long cranially directed ventral processes (cerci, Figs 167, 170). Surface of female spermathecae rugose
Rufolimosina subgen. n., p.p.

2 described and several undescribed spp. in the Old World tropics.

– Male epandrium different, surface of spermathecae smooth 43

43. Wing relatively short and broad, usually shorter than body length (of dry specimen); R_{4+5} slightly curved or almost straight. Epandrium with 1–3 lateral setae near ventral margin; male cerci very large; mesolobus weak (ROHÁČEK 1998: fig. 58). Distiphallus without hairs, postgonite not angularly bent. Female S7 long, with pale oval posterior area
Phthitia subgenus *Collimosina* ROHÁČEK, 1983

1 sp., *Ph. (C.) spinosa* (COLLIN, 1930), N and C Europe.

– Wing longer and narrower, usually longer than body length (of dry specimen); R_{4+5} slightly sinuate. Epandrium uniformly setose; male cerci not as large but often modified; mesolobus well developed (ROHÁČEK 1998: fig. 55). Distiphallus with fine hairs, postgonite angularly bent. Female S7 simple, shorter 44

44. S1+2 modified, with a pair of long posteromedial setae; S3 twice as long as S4 (ROHÁČEK 1998: fig. 53); female cerci fused with epiproct and each with a longer sinuate seta; wing sexually dimorphic (longer and narrower in female). Hind tibia with a dorsal prepical seta (ROHÁČEK 1998: fig. 3)
Phthitia subgenus *Alimosina* ROHÁČEK, 1983

1 sp., *Ph. (A.) empirica* (HUTTON, 1901), cosmopolitan.

– S1+2 simple, unmodified; S3 hardly longer than S4; female cerci with a thick and short spine each (ROHÁČEK 1998: fig. 54); wings not sexually dimorphic. Hind tibia without dorsal preapical seta
Phthitia subgenus *Kimosina* ROHÁČEK, 1983

Numerous spp. worldwide.

45. Mid basitarsus with strong anteroventral and posteroventral setae, an eminent subbasal posteroventral one present. Numerous perpendicular macrotrichia on both side of wing on the upper (radial) part. A third, basal pair of scutellar setae present. Oriental *Pellucialula* L. PAPP, 2004

– Mid basitarsus with distinct ventral seta (ROHÁČEK 1998: fig. 51), wing without macrotrichia, only 2 pairs of scutellars. 46

– Mid basitarsus without ventral seta, wing without macrotrichia. Eye larger or, if small, all other characters different; female hypoproct without medial fillet like structure 47

46. Eye strikingly small, its longest diameter shorter than smallest genal height (ROHÁČEK 1998: fig. 83); Longer mid metatarsal seta at basal 1/3. Male sternite 5 symmetrical with a medio-caudal setal comb. Surstylus very complex, with anterior and posterior parts, the latter with a robust short spine (ROHÁČEK 1998: fig. 50). *Paraspelobia* DUDA, 1938

1 sp., *P. vlasovi* (DUDA, 1938), Central Asia.

– Eye normal. Longer mid metatarsal seta at basal 1/4. Male sternite 5 strongly asymmetrical, with a structured medial process (Figs 249–250). Surstylus much different (Figs 254–255). **Mixolimosina** gen. n.

1 sp., *M. orientalis* sp. n., other undescribed spp.

47. Larger flies (2.6 to 3.5 mm) with long rounded distal cell (ROHÁČEK 1983: fig. 80, HAYASHI 2006: fig. 1). 48

– Smaller flies; if body length close to 2.6 mm then discal cell never long and rounded. 49

48. Second costal section 1.8–2.2 times as long as third and R_{4+5} sinuate. Male S3–S5 with incised anterior margins but sternite 5 with a broad caudal emargination only. Postgonite with unusually long setae (ROHÁČEK 1983: fig. 85). Female tergites 6 and 7 reduced, transversely strip-shaped in contrast to large associated sterna (ROHÁČEK 1983: figs 40–41), cerci protruding *Gigalimosina* ROHÁČEK, 1983

1 sp., *G. flaviceps* (ZETTERSTEDT, 1847), Europe

– Second costal section at most 1.3 times as long as third section and R_{4+5} not sinuate. Male S3-S4 not incised anteriorly, sternite 5 with large medio-caudal process. Postgonite simple (HAYASHI 2006: fig. 8). Female tergite 6 and 7 not reduced, postabdomen with cerci not protruding *Papualimosina* HAYASHI, 2006

1 sp., *P. longidiscoidalis* (DUDA, 1925), Papua New Guinea.

49. Male preabdomen with modified S1+2 (more or less bulging), S3, S4 and with very short (transversely strip-like) S5; male postabdomen strongly down-curved because of enlarged T5 and S8 (ROHÁČEK 1998: fig. 38); male cercus modified into long, slender, double-pointed projections below anal fissure (ROHÁČEK 1998: fig. 39); female postabdomen telescoping, retractable, with T8 undivided; larger species (2–3 mm) with costa not extended beyond apex of R_{4+5} *Herniosina* ROHÁČEK, 1983

3 Palaearctic and 1 Nearctic spp.

– Male preabdomen differently formed; male postabdomen less downcurved; male cerci and S5 different; species with similarly projecting male cercus and telescoping female postabdomen much smaller (less than 2 mm), with costa overrunning R_{4+5} or with wings shortened 50

50. Male S4 and S5 peculiarly modified, with large processes (ROHÁČEK 1998: figs 46–47). Epandrium with a lateral projection at ventral margin, male cercus provided with a strong spine (ROHÁČEK 1998: fig. 45). Female T7 postero-medially prolonged and flattened, T8 divided (ROHÁČEK 1998: fig. 48), S8 flat and bare; female cerci with sinuate hairs. Vein R_{4+5} sinuate *Apteromyia* VIMMER, 1929

1 sp.; *A. claviventris* (STROBL, 1909), Palaearctic.

– Male S4 normally without processes; male genitalia and female postabdomen different. Vein R_{4+5} of various shape (even sinuate) 51

51. Epiphallus distinctly developed (ROHÁČEK 1998: figs 64, 66, 68); female epiproct short, reduced and often fused with cerci; body heavily microtomentose, rather dull, mesonotum somewhat opalescent *Opalimosina* ROHÁČEK, 1983 52

– Epiphallus not developed but pre-epiphallus (ROHÁČEK 1998: fig. 81) sometimes present (*Xenolimosina*); female epiproct discrete, not fused with cerci; body usually more shiny, despite some microtomentum 55

52. Scutellum with 1 additional small seta in front of basal scutellar seta. Male cercus modified in a long, ventrally projecting process (ROHÁČEK 1998: fig. 65), epiphallus very long and slender (ROHÁČEK 1998: fig. 64). Female S7 large and covering all subsequent sterna in ventral view *Opalimosina* subgenus *Dentilimosina* ROHÁČEK, 1983

1 sp., *O. (D.) denticulata* (DUDA, 1924), Europe.

– Scutellum with only 2 usual *sc* pairs. Male cercus not or slightly projecting ventrally; epiphallus different. Female S7 smaller and transverse 53

53. Aedeagal complex with robust, apically forked epiphallus; distiphallus with double postero-medial projection (ROHÁČEK 1998: fig. 66); postgonite long and curved several times; female T7 with lateral wing-like appendages; T8 divided and S6 very long (ROHÁČEK 1998: fig. 69)
Opalimosina subgenus *Pappiella* ROHÁČEK, 1983

1 sp., *O. (P.) liliputana* (RONDANI, 1880), widespread.

– Aedeagal complex with simple and smaller epiphallus; distiphallus without postero-medial projection (ROHÁČEK 1998: fig. 68); postgonite simply and slightly bent; female T7 without lateral appendages; T8 undivided and S6 short 54

54. Head with an additional inclinate seta between *occi* and *occe*; distiphallus very wide; postgonite bare and pointed; female T6 narrower than T7; epiproct strikingly enlarged to form an oblong plate covering bases of cerci (ROHÁČEK 1998: fig. 63); female S8 simple and broad; hypoproct bipartite; female cercus with 2 robust apical spines
Opalimosina subgenus *Hackmanina* ROHÁČEK, 1983

1 sp., *O. (H.) czernyi* (DUDA, 1918), N. and C. Europe.

– No additional seta between *occi* and *occe*; distiphallus narrower; postgonite not apically pointed and with some setulae (ROHÁČEK 1998: fig. 68); female T6 not essentially narrower than T7; epiproct small and more or less fused with cerci (ROHÁČEK 1998: fig. 70); female S8 small, narrow, modified; hypoproct simple, horseshoe-shaped (ROHÁČEK 1998: fig. 71); female cercus differently armed
Opalimosina subgenus *Opalimosina* ROHÁČEK, 1983

6 described species from the Palaearctic and Oriental regions and several undescribed spp.

55. Costal vein distinctly produced beyond apex of R_{4+5} (ROHÁČEK 1998: figs 29, 84) 56

– Costal vein not or indistinctly produced beyond apex of R_{4+5} (ROHÁČEK 1998: figs 90, 92–93) 68

56. R_{4+5} either almost straight (rarely slightly bent or sinuate but then surstylus long and slender) or strongly curved up to costa (ROHÁČEK 1998: fig. 84); female postabdomen short, as wide as preabdomen at 6th segment and suddenly tapered apically, not telescopic (ROHÁČEK 1998: fig. 82) 57

– R_{4+5} sinuate or slightly bent up to costa; surstylus never long and slender; female postabdomen long and narrow, essentially narrower than preabdomen at 6th segment, gradually tapered apically and telescopically retractable (ROHÁČEK 1998: figs 77–78) 61

57. R_{4+5} almost straight or very slightly sinuate, or if somewhat bent then wing never reduced. 58

– R_{4+5} curved up to costa and ends farther from wing apex than virtual continuation of M would do, or the wing reduced and R_{4+5} straighter (ROHÁČEK 1998: fig. 84); rarely R_{4+5} less curved but then scutellum with some additional setulae. 59

58. Wing clear and never reduced. Postocellars rather strong. Eye small and flat. Male subepandrial sclerite absent (ROHÁČEK 1998: fig. 62). Surstylus very long and slender, postgonite finely pilose. Female spectacles-shaped sclerite indistinct. Scutellum with only 2 pairs of marginal *sc*.
Telomerina ROHÁČEK, 1983

Holarctic with 15 spp.; *T. flavipes* (MEIGEN, 1830), which has become cosmopolitan through human activity.

– Wing darkened though not patterned, and wing maybe reduced. Postocellars absent. Eyes normal. Male subepandrial sclerite present. Surstylus not very long. Afrotropical *Limosinella* RICHARDS, 1968

59. Scutellum with a pair of additional short marginal setae. Surstylus long and slender. Female epiproct much reduced or wholly membranous, spectacles-shaped sclerite much modified, i.e. not present as such. Spermathecae longer than tyre-shaped *Chespiritos* MARSHALL, 2000

The only species, *C. pervadens* ROHÁČEK et BUCK, 2003, occurring the Old World is actually Neotropical but it has been introduced to the Canary Island.

– Scutellum mostly without additional short marginal setae (except for *Dahlimosina*). Surstylus roughly quadrate to triangular (ROHÁČEK 1998: fig. 89). Female epiproct well-developed, spectacles-shaped sclerite well-sclerotized (Figs 85–86). Spermathecae disc- or tyre-shaped
Pullimosina ROHÁČEK, 1983 60

A species rich genus, particularly so for the Afrotropical region.

60. Scutellum with some minute setulae in addition to usual 2 pairs of long scutellar setae (ROHÁČEK 1998: fig. 34). Only 1 *dc*; R_{4+5} more straight and

less overpasses by costa. Epandrium without dorsolateral long setae. Female S8 large *Pullimosina* subgenus *Dahlimosina* ROHÁČEK, 1983

– Scutellum with only 2 usual scutellar pairs. Vein R_{4+5} more curved up and far overpasses by costa (except for brachypterous forms). 2 *dc* and usually 1–2 shorter in front of them in addition. Epandrium (ROHÁČEK 1998: fig. 89) with a long dorsolateral seta. Female S8 smaller, shorter (ROHÁČEK 1998: fig. 82) *Pullimosina* subgenus *Pullimosina* ROHÁČEK, 1983

61. Hind tibia with a dorsal preapical seta (ROHÁČEK 1998: fig. 5). Basiphallus large and with distinct (though short) pre-epiphallus (ROHÁČEK 1998: fig. 81), distiphallus of complex form. Vein R_{4+5} sinuate, wing large. Female cerci widely separated, female epiproct broad; hypoproct large, with 2 anterior incisions (ROHÁČEK 1998: fig. 80)
Xenolimosina ROHÁČEK, 1983

1 sp., *X. setaria* (VILLENEUVE, 1918), W Europe; ROHÁČEK 1983.

– Hind tibia without dorsal preapical seta. Basiphallus without pre-epiphallus. Female cerci close to one another, female epiproct usually narrow; hypoproct without anterior incisions 62

62. R_{4+5} distinctly sinuate; discal cell with rounded posterior outer corner; alula large and broad (ROHÁČEK 1998: fig. 91). Epandrium with a long dorsolateral seta; surstylus with a comb of spines on its inner side (ROHÁČEK 1998: fig. 79); basiphallus short, frame-shaped
Terrilimosina ROHÁČEK, 1983

– R_{4+5} definitely, or usually slightly bent up to costa, or very slightly sinuate; posterior outer corner of discal cell usually not rounded; alula small, narrow and pointed (ROHÁČEK 1998: fig. 28, RICHARDS 1973: fig. 62) 63

63. R_{4+5} slightly bent up to costa, or in some species very slightly sinuate. Medial seta on scape indistinct. Surstylus usually of an intricate form but without internal comb of spines. Medial part of male sternite 5 with various structures but those are symmetrical. Epandrium (ROHÁČEK 1998: fig. 74) without dorsolateral seta, uniformly haired.
Minilimosina ROHÁČEK, 1983 64

A widespread and species rich genus.

– R_{4+5} definitely bent up to costa (RICHARDS 1973: fig. 62). Medial seta on scape as long as pedicel. Surstylus simple with a large caudal spine (Fig.

208). Medial part of male sternite 5 (Figs 211–212) with asymmetrically placed setae. Australia **Australimosina** gen. n.

64. 2 pairs of dorsocentral setae, only 4–6 rows of acrostichal microsetae between anterior *dc* 65

– 1 dorsocentral pair in prescutellar position, 6 or more rows of acrostichal hairs in front of suture. T1+2 shorter than T3 and T4 together. Preabdominal terga sparsely and very shortly haired; surstylus flat, shorter than wide, with internal processes and keels. Female S8 reduced to a narrow sclerite (ROHÁČEK 1998: fig. 77) or wholly absent 66

65. T1+2 longer than T3 and T4 together. Setosity of male preabdominal sternites normal, tergites sparsely but long pale haired. Surstylus usually longer than wide, lobe-shaped or bilobed, usually with thick thorns. Female S8 large and broad
Minilimosina subgenus *Svarciella* ROHÁČEK, 1983

– T1+2 about as long as T3 and T4 together. Preabdominal sternites with one single seta in the sagittal line, or, paired setae tend to emerge so, tergites not long haired. Surstylus (Fig. 161) with a small paired lateral lobe only, no large thorns. Postgonites (Fig. 163) very large, apical part broadly curved, subapically with a number of thornlets. Female not known
Minilimosina subgenus **Sagittaliseta** subgen. n.

66. Discal cell present and longer, with anterior outer corner acute-angled to rectangular or rarely obtuse-angled; its posterior outer corner never acute-angled. Costal index usually over 0.70. Male mid femur ventrally with a row of basal setae. Hypandrial apodeme of medium length; surstylus with a posterior robust spine (ROHÁČEK 1998: fig. 74); basiphallus shorter, compact. Female S8 (ROHÁČEK 1998: fig. 77) reduced to a narrow, elongate sclerite (sometimes divided into more small sclerites)
Minilimosina subgenus *Minilimosina* ROHÁČEK, 1983

– Discal cell very short or absent. Costal index always less than 0.70. Medial projection (apodeme) of hypandrium very short (small). Very small species, body length 0.80 to 1.25 mm 67

67. Discal cell absent, vein M practically missing (Fig. 317)
Minilimosina subgenus **Amediella** subgen. n.

1 Afrotropical sp. and at least other 2 undescribed spp. from the Afrotropical and Oriental regions.

– Discal cell very short, with anterior outer corner obtuse-angled and posterior outer corner acute-angled (ROHÁČEK 1998: fig. 29). Male mid femur simple. Surstylus without posterior spine; basiphallus longer and more slender. Female S8 reduced to a small short sclerite or absent
Minilimosina subgenus *Allolimosina* ROHÁČEK, 1983

68. First costal section with extremely long setae (Fig. 233). All the wings with pale brownish clouding. Only 1 large *fr-orb*. Mid tibia with a mid anteroventral seta and several anterodorsal and posterodorsal setae. Male sternite 3 and 4 with a pair of extremely long setae, sternite 5 with very thick and long spines (Figs 234–235). **Acuminiseta** gen. n.

2 Afrotropical spp., all the other species ever described in or relegated to this genus, need revision.

– First costal section with short or medium-long setae only (e.g. Fig. 224). Wings without brown clouding. 69

69. Only 1 pair of fronto-orbital setae. Male mid tibia with a minute ventroapical but with a row of thick ventral setae, female with a long ventroapical but without a mid anteroventral seta. Male sternite 5 with pale strong setae on all its width (Fig. 261). Abdominal tergites slightly reduced. Oriental
Monorbiseta gen. n.

– 2 pairs of fronto-orbital setae. Mid tibia with or without mid anteroventral setae. Male sternite 5 different. 70

70. One of the *ifr* setae extremely long and emerge close to eye margin. Vein R_{4+5} (Fig. 224) strongly bent up to costal vein along a large curvature. Surstylar (Figs 227, 229) medial lobe long and thin, and placed deep inside genital cavity. Mid tibia without a mid anteroventral seta. 71

– Several pairs of interfrontal setae present. If one of them very large, it emerges far from eye margin. Combination of other characters different 72

71. Legs normal. Male sternite 5 very short, without thick black spines. Synsternite 6–8 normal. The large interfrontal pair preceded and followed by short interfrontals. Oriental **Cephalimosina** gen. n.

– All legs thickened, mid basitarsus short, stout and flattened. Male sternite 5 longer with 2 caudal patches of thick black spines. Male synsternite 6–8 peculiar: right (tergal) part well developed and form a ring through fusion to sternite 6 ventrally and sternite 8 subdorsally. No short interfrontals. Mid tibia with 5–7 anterodorsal and 4–6 posterodorsal setae.
Pachytarsella RICHARDS, 1963

2 spp. in New Guinea and in the Pacific region.

72. Vein R_{4+5} gently but distinctly bent up to costal vein along a smaller curvature. 5 medium-long *ifr* setae. Mid tibia without a mid anteroventral seta, male ventroapical weak but long ventral hairs present. Male with rather simple bilobed surstylus (Fig. 282–283) but sternite 6 part of the synsternite 6–8 of a very intricate structure medially (Fig. 281). Oriental **Rohacekia** gen. n.

– Vein R_{4+5} straight (or even apically slightly recurved), apically bent up or sinuate. Usually less than 5 *ifr* setae. Mid tibia with or without mid anteroventral seta. 73

73. Vein R_{4+5} (ROHÁČEK 1998: figs 92–93) straight (or apically slightly recurved); short-winged forms with anteroventral seta below middle of mid tibia (ROHÁČEK 1998: fig. 95) 74

– Vein R_{4+5} sinuate or apically bent up to costa (fully winged forms); brachypterous forms with R_{4+5} less sinuate and without anteroventral seta below middle of mid tibia 76

74. Mid tibia without anteroventral seta below middle, in male with a long row of short ventral spinulae (ROHÁČEK 1998: figs 87–88); surstylus without robust ventral spine; spectacles-shaped sclerite very large, with a long, tongue-shaped projection (ROHÁČEK 1998: figs 99–100) *Eulimosina* ROHÁČEK, 1983

For species identification see above.

– Mid tibia with anteroventral seta below middle; surstylus (ROHÁČEK 1998: fig. 101) with a robust ventral spine; spectacles-shaped sclerite normal 75

75. 2 *dc*, alula large and apically rounded (ROHÁČEK 1998: fig. 92). Surstylus short, wide (ROHÁČEK 1998: fig. 101). Hypandrial apodeme longer; distiphallus more simple. At most 1 additional sclerite behind female S8 *Spelobia* SPULER, 1924, in part

A genus very rich in species, particularly so for the Palaearctic and Nearctic regions.

– 3 *dc* (2 anterior short), alula small and pointed. Vein R_{4+5} usually slightly recurved (ROHÁČEK 1998: fig. 93). Hypandrial apodeme small; distiphallus very complex (ROHÁČEK 1998: fig. 696). Female postabdomen with more small additional sclerites behind S8 **Bifronsina** ROHÁČEK, 1983

For species identification see above.

76. Mid tibia with a mid anteroventral seta (missing only in males of some Nearctic species). Vein R_{4+5} in its apical 1/3 definitely curved up to costa. In male genitalia large subcerci present. Posterodorsal seta(e) also in proximal half of mid tibia. Mid basitarsus with several long setae on ventral half but none of them is eminent. The only Palaearctic species with long dorsal preapical seta on hind tibia *Sclerocoelus* MARSHALL, 1995

Several species in the New World; the only Palaearctic species (*S. clarae* (L. PAPP, 1973)) is from Mongolia. This species has 4–5 *ifr* pairs and extremely long postocellars, 1 pair of dorsocentral setae; costa slightly overruns apex of vein R_{4+5}, first costal section with short setae, second costal section much longer than third; hind tibia with dorsal preapical seta.

– Mid tibia with anteroventral seta below middle; R_{4+5} strongly or slightly curved up to costa. Male S5 (ROHÁČEK 1998: fig. 97) with a medio-caudal comb of short spines, rarely coalesced in a sclerotized lamella; female spermathecae tyre- or dish-shaped 77

– Mid tibia without anteroventral seta below middle; R_{4+5} sinuate, slightly bent or almost straight (brachypterous forms); male S5 with different armature medio-caudally or simple; female spermathecae vesiculate or subspherical 78

77. Vein R_{4+5} very strongly bent up to costa (ROHÁČEK 1998: fig. 90). Male epandrium with several robust spine-like setae (ROHÁČEK 1998: fig. 96), surstylus with external and internal lobes. Female S8 complex, with posterior projections, spermathecae dish-shaped

Spinilimosina ROHÁČEK, 1983, p.p.

A widespread and species rich genus in the tropical Old World.

– Vein R_{4+5} apically less upcurved to costa. Male epandrium with thin long setae; surstylus simple, with 1 robust ventral spine (ROHÁČEK 1998: fig. 101). Female S8 simple, spermathecae tyre-shaped (ROHÁČEK 1998: fig. 98) *Spelobia* SPULER, in part, see couplet 73

78. Frons usually with velvety black (or dark brown) M-shaped mark (ROHÁČEK 1998: fig. 2). Male sternite 5 simple, without medio-caudal armature. Hypandrium with ventral bifurcate appendage (ROHÁČEK 1998: fig. 33). Surstylus short, without robust ventral spines (ROHÁČEK 1998: fig. 108); basiphallus short. *Paralimosina* L. PAPP, 1973

A species rich genus in the Palaearctic, Afrotropical and Oriental regions, various forms of wingless and reduced-winged species (ROHÁČEK & PAPP 1988, HAYASHI 1994, 2007, 2008).

– Frons always without velvety M-shaped mark. Male sternite 5 with a medio-caudal lobe. Hypandrium different. 79

79. Male sternite 5 with a triangular medio-caudal lobe and with very large cranial lobes (Fig. 299), sternite 6 part of synsternite 6–8 (Fig. 298) with an extremely large cranial lobe on the left side. Hypandrium (Fig. 302) with broad medial part, which bears 2 bunch of hairs on the left side. Surstylus in 3 lobes (Figs 300, 303). Postgonites asymmetrical (Figs 300, 303).
Trilobitella gen. n.

Oriental: Taiwan, *T. taiwanica* sp. n., Thailand (undescribed).

– Male sternite 5 with a medio-caudal tab-like lobe and groups of spines in front of it (ROHÁČEK 1998: fig. 106), sternite 6 part of synsternite 6–8 without a large cranial lobe on the left side. Hypandrium without ventral appendage. Surstylus bilobed with 2 (anterior and posterior) robust ventral spines (ROHÁČEK 1998: fig. 105). *Aptilotus* MIK, 1898

A widespread species rich genus.

80. R_{2+3} apically sharply bent, sometimes with a short appendage, cubital cell partly closed by an incomplete colourless Cu_2; wings mottled or with dark spots (ROHÁČEK 1998: fig. 25). Legs variegated possibly with some tarsal segments white; also thorax usually variegated, with paler microtomentose spots. Phallus with a thread-like central process
Poecilosomella DUDA, 1920

A tropical Old World genus with numerous species. The originally Afrotropical *P. angulata* (THOMSON, 1869) has been introduced to South America and spread up to the southern USA; also in the Palaearctic (the Canary Is., introduced) and *P. punctipennis* (WIEDEMANN, 1830), from the Oriental region to the Pacific basin up to Hawaii and westwards introduced to Zanzibar.

– R_{2+3} usually less strongly bent, R_{2+3} always without a vein appendage. Cu_2 usually not developed. Phallus without a long thread-like process. Also other characters differ** 81

** Several species of *Paralimosina* L. PAPP, 1973 run also here. HAYASHI (2008) described five patterned winged species from Thailand. In the collection of the HNHM there are representatives of seven species of this kind. The most characteristic features of *Paralimosina* spp. are: preabdominal tergites and sclerites of segment 6 not reduced in size, male hypandrium with a ventral process, surstylus consists of a larger cranial lobe, bare or with a few small setae, and of a smaller caudal lobe with several long setae, postgonite not broad based, long curved, apex seldom sharp, surface of female spermathecae wrinkled. In case of bias continue at couplet 20.

81. Wings evenly darkened, only cell r1, cross-veins and apical part of discal cell darker brown. Male epandrium with a pair of long cranially directed ventral processes (Figs 167, 170)
Phthitia (**Rufolimosina**) subgen. n., p. p.

– Wing pattern usually much richer. Male epandrium without large, cranially directed ventral process 82

82. Vein R_{2+3} usually strongly bisinuate. Male hypandrium usually with a cranio-medial (ventral) process. Mesonotum and scutellum with scaly microtomentum, the latter short and broad. Mid basitarsus, in some species, with a distinct ventral seta. Prosternum more or less triangular.
Biroina RICHARDS, 1973

Widespread in the Australian and Oriental regions.

– Vein R_{2+3} not bisinuate or much less so. Male hypandrium various, but without a cranio-medial process. Genera with other combination of characters 83

83. Prosternum broadly triangular or rectangular. Facial plate centrally rather protruding. Costal setae basally to apex of R_1 rather short. Postocellar setae reduced. Australia *Popondetta* RICHARDS, 1973

– Prosternum linear. Facial plate not protruding centrally. Costal setae basally to apex of R_1 various, but mostly long 84

84. Outer and inner occipital setae very strong, at least so long as anterior orbital seta. Wings (Fig. 311) with a dark spot virtually closing cubital cell. Ventral part of epandrium with 2 pairs of strong thick thorns (Fig. 89). Male sternite 5 medio-caudally with a deep incision (Fig. 91). Hypandrium without any medial part, the 2 lateral arms only present (Fig. 92). Afrotropical **Giraffimyiella** gen. n.

– Occipital setae much weaker, definitely shorter than anterior orbital seta. Wing pattern different (Figs 310, 312–316). Male genitalia different 85

Leptocera (*Poecilosomella*) *multicolor* RICHARDS, 1968 with its subspecies, plus *L.* (*P.*) *pictitarsis* RICHARDS, 1938 key here (see RICHARDS 1968: figs 7–9). They form an Afrotropical species group, which must be described as a separate genus. Since I have not had an opportunity to study type specimens during this study (I saw them in the BMNH in 1994), I do not describe it now.

85. Vein R_{2+3} oblique, almost straight, apical part perpendicular to costa (Fig. 313). Second costal section slightly longer. Costa ends at apex of R_{4+5}, with

longer setae on all its length. Postgonites with numerous setae (Figs 105, 107). Surstylus (Figs 108, 110) with numerous thick spiniform setae **Parapoecilosomella** gen. n.

– Vein R_{2+3} mostly sinuate, apical part not perpendicular to costa. Second costal section very short (Figs 310, 315). Costa basally to R_1 mostly with very long setae, contrasting with those short distally to R_1. Postgonites (except *Parapterogramma*) not setose, surstylar setae different 86

86. Costa ends far distally to apex of R_{4+5} 87

– Costa ends at apex of R_{4+5} 88

87. Male tergite 5 reduced to a small sclerite on the right side (Figs 74–75). Male sternite 5 with extremely thick thorns centrally (Figs 75, 78). Surstylus much higher than long (Fig 76). R_1–R_{2+3} area of wing with a large dark spot, other parts of wing with lighter diffuse spots (Fig. 309). Afrotropical **Afropterogramma** gen. n.

– Male tergite 5 normal. Male sternite 5 medio-caudally with a large emargination and numerous caudal setae but no central thorns (Fig. 116). Surstylus much longer than high (Fig. 118). Wings with numerous light spots on the dark membrane (Fig. 314). Oriental **Parapterogramma** gen. n.

88. Male genitalia with very long and thin postgonites (Figs 83, 127–128). Distiphallus joins to the ventral edge of a short and very high basiphallus (Figs 84, 128). Hind tibia with strong ventral tibial spur (Figs 87, 122) 89

– Males with postgonites much shorter, at least not long and thin (Figs 102, 142). Insertion of distiphallus to basiphallus different. Ventral tibial spur on hind tibia indiscernible (*Thailimosina*) or very short (*Minialula*) 90

89. Male surstylus rather compact with a strong ventrally directed thorn (Fig. 82). Distiphallus with a broad dorsal plate (Fig. 85). Wing (Fig. 310) on first costal section with 6 perpendicular very long setae but no long seta on vein H **Archipterogrammoides** gen. n.

– Male surstylus in 2 large lobes but without a ventrally directed thorn (Fig. 126). Distiphallus without a broad plate dorsally (Fig. 129). Wing (Fig. 315) without long perpendicular setae on first costal section but with a long seta on vein H **Pseudopterogramma** gen. n.

90. Surstylus (Fig. 99) long curved, apical half non-setose, digitiform. Postgonite (Fig. 102) short, of an intricate form. Male sternite 5 (Fig. 95) with a row of setae medio-caudally. Mid tibia without middle ventral seta. Wing (Fig. 312) **Minialula** gen. n.

– Surstylus (Fig. 145) not very long with long setae also in apical half. Postgonite (Fig. 142) longer, curved with blunt apex. Male sternite 5 (Fig. 138) very simple, medio-caudally without a row of setae. Mid tibia with a middle ventral seta. Wing (Fig. 316) **Thailimosina** gen. n.

*

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