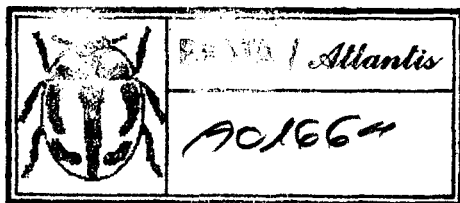


New species of the *Paralimosina beckeri*-group from  
the Canary Is. (Diptera: Sphaeroceridae)

By

L. PAPP and J. ROHÁČEK

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Abstract. - Four new species of the *Paralimosina beckeri*-group (*P. anaptera* sp.n., *P. franzi* sp.n., *P. gomerensis* sp.n. and *P. pilifemorata* sp.n.) are described from the Canary Islands (Tenerife and La Gomera) with the differentiating characteristics of this species-group. With 23 figures.

The genus *Paralimosina* was described by L. Papp (1973) for a single Mongolian species, viz. *P. kaszabi* L. Papp, 1973. The recent re-examination of the type-material of this species (deposited in HNHM, Budapest) resulted in a finding that it actually belongs to the *Limosina fucata*-group sensu ROHÁČEK (1977). Since this species-group is homogenous and well characterized, we consider it a distinct genus for which the name *Paralimosina* L. Papp, 1973 is to be used. There is, however, another Palearctic species: *Limosina beckeri* Duda, 1918 not placed into the *L. fucata*-group by ROHÁČEK (1977) but showing affinities to *Paralimosina*, at least in some external features (wing, chaetotaxy of middle tibia, sclerotization of abdomen).

Through the courtesy of Prof. H. FRANZ (Wien) we had the opportunity to study some material of brachypterous species of the *Limosina*-complex from the Canary Islands, together with specimens of *L. beckeri*. Until now no brachypterous Sphaerocerid has been reported from this area (cf. FREY, 1936, HACKMAN, 1958, PAPP, 1977); i.e. these specimens should belong to new species. After dissecting the male genitalia of these specimens we recognized that there are five species in the material; all of them are undoubtedly closely related to *Limosina beckeri*. Since this species-group seems rather closely related to *Paralimosina* in the above sense, we propose to place them into this genus but only tentatively; the *beckeri*-group seems rather distinct and shows significant differences when comparing with the *Limosina fucata*-group sensu ROHÁČEK (1977).

The *Paralimosina beckeri*-group can be characterized as follows: 1/ pvt bristles absent, 3(4) pairs of lf, middle pair extremely long; 2/ very long vti pair, comparatively very long ocellar and occi pairs (the latter pair almost cruciate); 3/ genal bristle rather strong, proclinate and not upcurving, in peristomial position; 4/ thoracic chaetotaxy: 1 h, 2 np, 1 prst, 1 short + 1 long sa, 1 short pa (or 1 short sa and 1 long + 1 short pa), 2 dc (also anterior dc very long), no prsc, 2 sc, 1 st pairs of bristles; scutellum only 2/3 as long as wide; 5/ chaetotaxy of mid tibia: two groups of bristles on dorsal side: the proximal one is consisting of 3 bristles (2 ad, 1 pd), distal group of 3-4 bristles (1 ad, 1-2 d, 1 pd); no mid av, ventroapical always present but often reduced in males; male mid tibia sometimes with a row of short ventral spines; 6/ wings normal or very much reduced, no halteres in brachypterous forms, costal vein not extending beyond r4+5, r4+5 sinuate in fully-winged forms, discal cell (if any) broad; 7/ abdomen convex, terga strongly chitinized, abdominal sterna wide, lateral margin almost reaching terga in both sexes; 8/ male 5th sternum with a weakly sclerotized posteromedial lobe carrying a pair of medial setae and with at least several thick short spines (often forming a characteristic row or groups)

cranial lobe with 9/7 setae; perianthrium (e. andrium) with more or less distinct pseudocerci, each pair with some longer hairs; perianthrial bristles short and uniform; subanal plate reduced; perianthrium of medium length, Y-shaped; 11/ telomeres (surstyli) rather bilobed with a flat anterior lobe and a robust posterior lobe armed with long setiform hairs; ventral side of telomere carrying two very robust but short spines, anterior spine bicuspidate; 12/ aedeagal complex with rather long phallosphere (i.e. not reduced as in the *B. fucata*-group), comparatively weakly sclerotized distiphallus with two areas of fine spinules, postgonites slender with a pair of proximal tubercles and a usually small (? sometimes absent) ejaculatory apodeme; 13/ female postabdomen short but similar when comparing to preabdomen, spectacles-shaped sclerite present but rather tuberculous; 14/ female cerci comparatively slender and with rather short hairs.

*Paralimosina beckeri* (Duda, 1918) comb.n.  
(Figs. 6, 9, 19)

Material examined: 1 ♂: Anagageb., Tenerife, leg. H. FRANZ (on the other side of label: "Sp.1155") - Kanarische Inseln, leg. H. FRANZ; 1 ♀: Isla der Hierro, El Golfo, leg. H. FRANZ (on the other side of label: "Sp.1387").

This species differs from all its known relatives (see below) by its fully developed wings (see Fig. 43 in DUDA, 1918), strikingly shining, non-pruinose preabdominal terga and male genital structures. Because the male has not been described until now, we include a brief characterization of the male 5th sternum and genitalia.

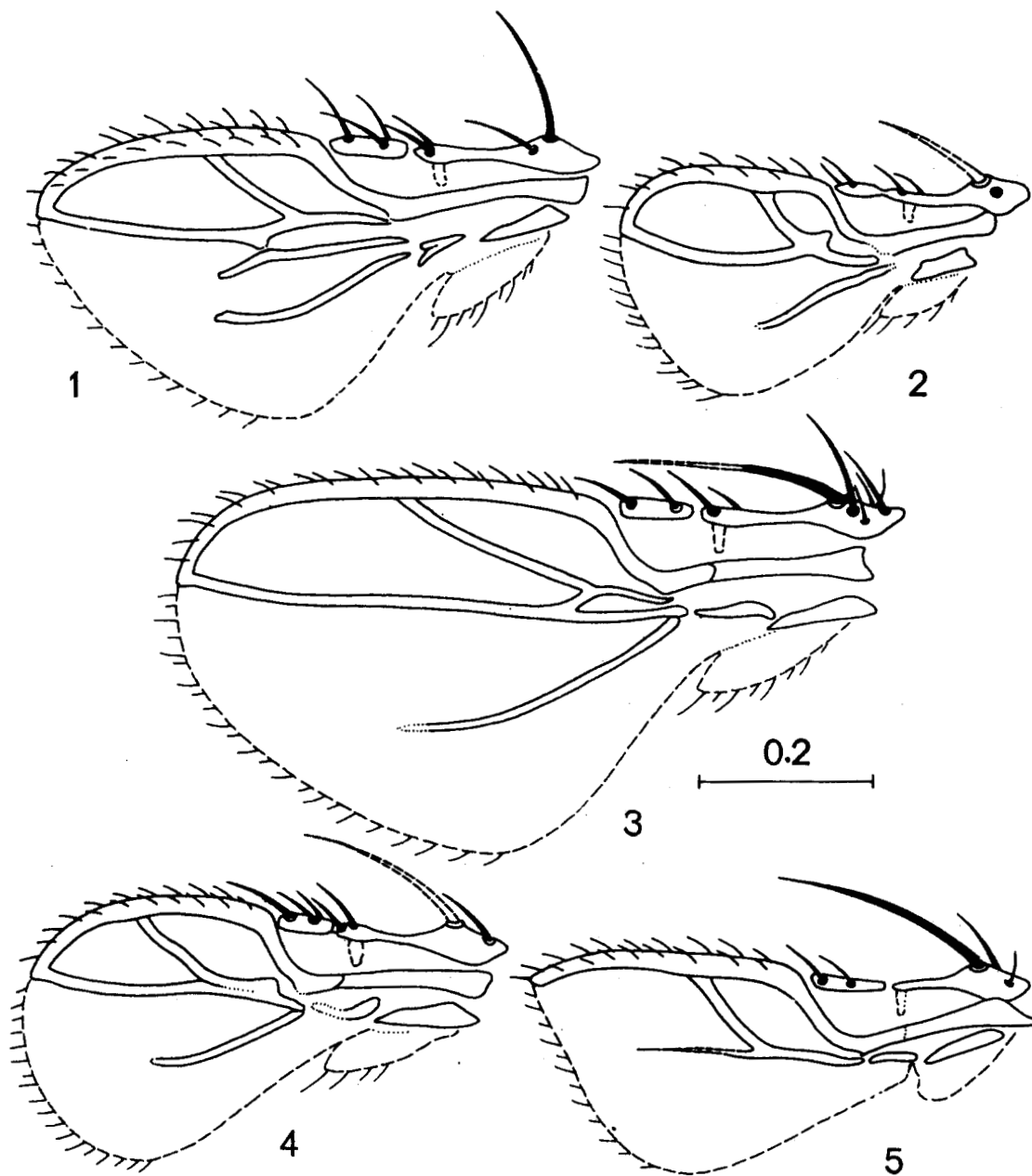
Male 5th sternum (Fig. 6) with pale, weakly sclerotized posteromedial lobe with some microsetae on posterior margin. Its medial thick is dark pigmented and relatively short; there are three pairs of characteristically sitting spines cranially to it. Perianthrium of medium length, pseudocerci rather reduced, each with one longer and shorter hair-like setae. Hypandrium comparatively short. Telomere (Fig. 9) short (i.e. low) and wide with a rather large anterior lobe. Posterior lobe with comparatively short setiform hairs (compared to the related species), posterior ventral spine as robust as anterior one. Micropubescence of telomere reduced. Aedeagal complex (Fig. 19) with characteristic distiphallus being distinctly spinulose dorsoapically, laterobasally and ventrobasally. Postgonite slightly bent with a small tubercle subapically. Ejaculatory apodeme minute.

*Paralimosina gomerensis* sp.n.  
(Figs. 1, 7, 10, 21)

Measurements in mm: body length 1.81 (holotype), 1.70, 1.71 (paratypes); wings: 0.61 x 0.28 (holotype), 0.685 x 0.25, 0.66 x 0.25 (paratypes); length of abdomen: 0.93 (holotype), 1.03, 0.96 (paratypes); length of middle interfrontal bristle: 0.21 (holotype); apical scutellar bristle: 0.52 (holotype).

Body dark brown, only notopleural area of mesonotum and a distal part of sternopleura and hypopleura reddish. Abdomen much convex and pruinose dorsally, only proximal margin and a small central spot of *syntergum* 1+2 shining. Legs largely dark brown, fore coxae, bases and apices of femora and tibiae reddish. Frons dark subshining, only anterior part laterally to lunula reddish or yellowish. Wings (Fig. 1) very short, much reduced in size but venation the least reduced in this species group (excl. *beckeri*); costa dark brown and very thick (0.03 mm on section *mg*<sub>2</sub>), its base with a very long (0.17 mm) and somewhat shorter bristles, also section *mg*<sub>1</sub> with some very long bristles (up to 0.08 mm); radial vein *r*<sub>1</sub> less upcurving than in its relatives; *r*<sub>4+5</sub> ending at wing apex (radial veins light brown); *t*<sub>a</sub> present (at least as an appendage of vein *r*<sub>4+5</sub>), medial vein and also cubital vein present and ending at about distal third of wing, also base of anal vein discernible. Alula comparatively big with some hair-like bristles of moderate length.

Male 5th sternum comparatively short and transverse but longer than in *franzii* sp.n.; its posteromedial lobe short (Fig. 7) with rather long pilosity, armature cranially to lobe highly characteristic, formed by a very dense row of short and thick spines, laterally terminating in 2-3 very robust about thrice longer spines. Perianthrium small and strikingly short. Pseudocerci much reduced, each with dense micropubescence and probably with several longer bristles (c. 5 basal rings discernible). Hypandrium broken but probably rather short. (Telomere (Fig. 10) most similar to that of *franzii* sp.n. Anterior flat lobe with an acute anterior ventral spine



Figs 1-5. Wings of *Paralimosina* species - 1: *P. gomereneis* sp.n., paratype female - 2: *P. franzi* sp.n., paratype female - 3: *P. pilifemorata* sp.n., holotype male - 4: *P. pilifemorata* sp.n., paratype female - 5: *P. anaptera* sp.n., paratype female. Scale = 0.2 mm

with interior apex more pointed than that of franzi. Posterior lobe with a row of setiform hairs somewhat longer than in beckeri. Posterior ventral spine slightly differing from that of franzi (Fig. 10, cf. Fig. 11) and the **area** covered by micropubescence of smaller extent. Aedeagal complex with phallosome and distiphallus resembling those of beckeri (see Fig. 19) but somewhat more robust and setosity more reduced on ventrobasal part of distiphallus. Postgonite (Fig. 21) more curved than that of related species, with short but conspicuous posterior process in proximal part and a rounded tubercle on apex. Ejaculatory apodeme not observed.

Holotype male: La Gomera, El Cedro. leg. H. FRANZ (on the other side of label: "Sp. 1308"). - Paratypes: 2 ♂; data same as for holotype. The type-specimens are glued on labels, the genitalia of holotype are preserved in glycerine in microvial. The holotype and one paratype are deposited in the collection of Prof. H. FRANZ, one female paratype in the Hungarian Natural History Museum, Budapest.

Regarding the male genitalia this species seems most closely allied to P. beckeri and P. franzi sp.n. It can be easily distinguished from the other brachypterous relatives by its comparatively complete venation of wing, male 5th sternum with extremely robust spines on lateral ends of a row cranially to the posteromedial lobe, different anterior lobe of telomere and by its curved postgonite with small posterior process.

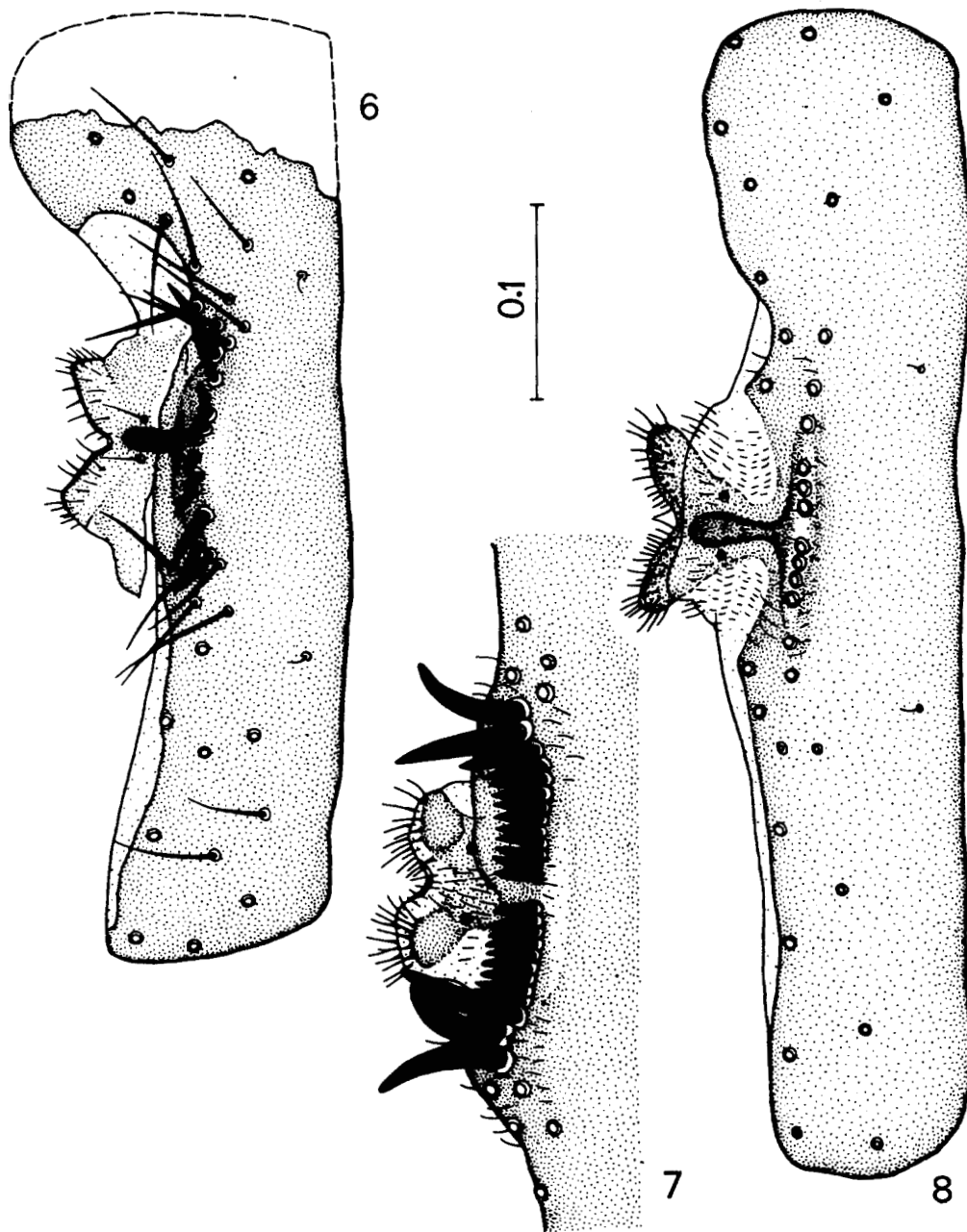
Paralimosina franzi sp. n.  
(Figs. 2, 8, 11, 20)

Measurements in mm: body length: 1.63 (holotype), 1.89 (paratype); wings: 0.46 x 0.21 (holotype), 0.47 x 0.25 (paratype); length of abdomen: 0.76 (holotype); postalar bristle (posterior sa): 0.25; strong interfrontal bristle: 0.18 (holotype); length of mt<sub>2</sub>: 0.27 (holotype), 0.29 (paratype); length of middle tibia: 0.49 (holotype), 0.52 (paratype); ratio of the two latter measurements: 0.545 and 0.565, respectively.

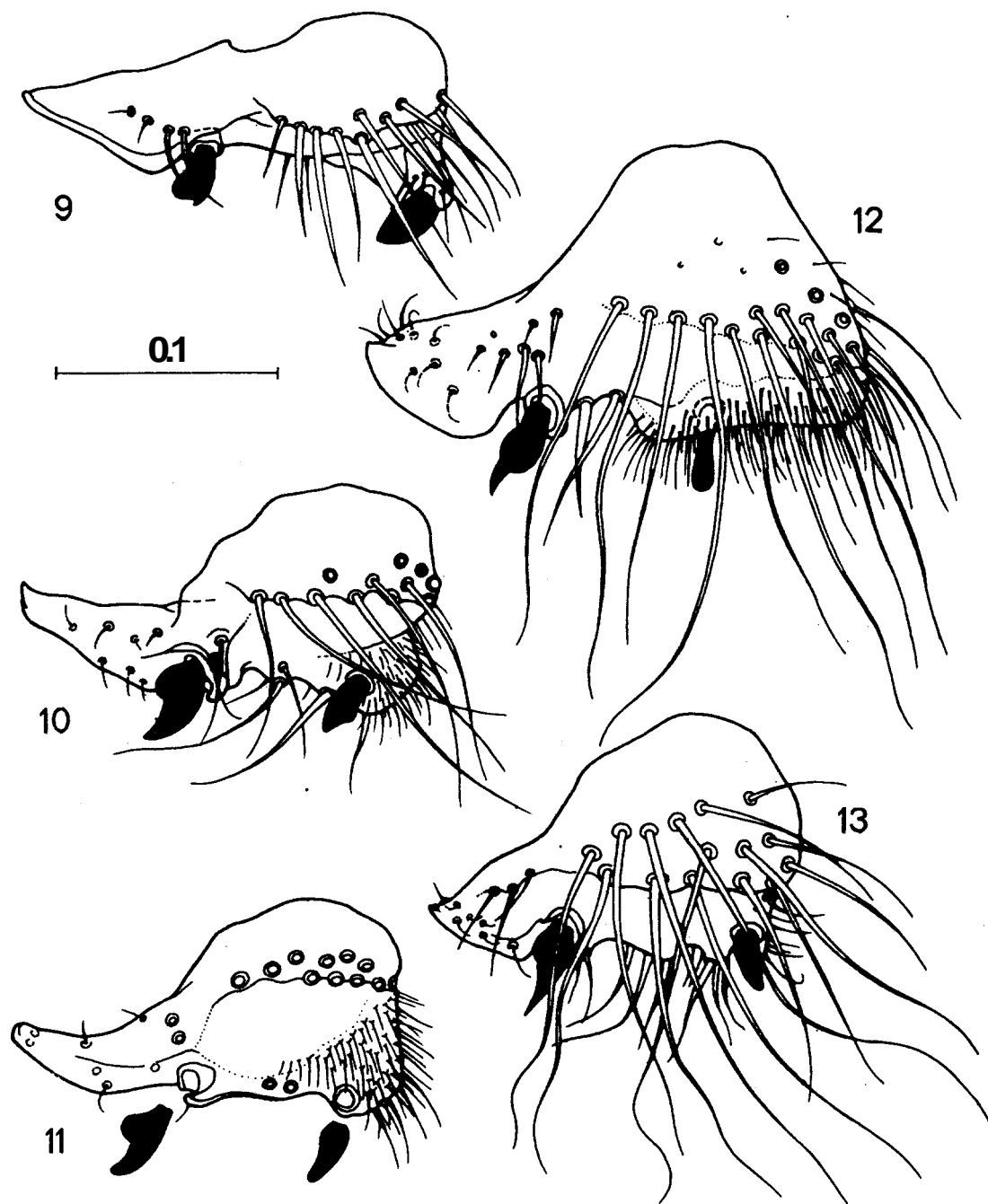
Mesonotum reddish brown, abdomen dark brown and pruinose (somewhat shining), i.e. syntergum 1+2 of female almost completely pruinose, only a small transverse spot shining on basis. Thoracic pleurae red, subalar callus dark brown and also a major part of sternopleura brown. Anterior 2/5 of frons and facial plate reddish yellow; genae greyish brown but yellowish on peristomial margin. Legs yellowish red, dorsal side of femora and tarsi brown. Wings (Fig. 2) much reduced, the shortest in this species-group but with rounded apex (not acute as in anaptera sp.n.). Costa and radial veins very thick, brown; strong basal costal bristle broken off but it must have been very long judged by its base; radial vein r<sub>1</sub> strongly upcurving apically, section mg<sub>2</sub> very short (shorter than r<sub>2+3</sub>), radial veins r<sub>2+3</sub> and r<sub>4+5</sub> upcurving; rudiment of cubital vein present as an almost straight vein not reaching apical fourth of wing. Alula small. Its apex less rounded with some moderately long hairs.

Male 5th sternum (Fig. 8) very short and transverse. Posterior medial lobe short and rather similar to that of gomerensis sp.n., including its micropubescence but its medial thick well developed, narrow, dark and well sclerotized. All bristles on disc of 5th sternum broken (owing to the glue used for preparation.) but the position of basal scars (rings) quite different from that of gomerensis and beckeri. Periandrium small but longer than that of gomerensis sp.n., with short hairs. Pseudocerci reduced similarly as in gomerensis, each densely pubescent and probably with some long setae (3 basal scars discernible). Hypandrium comparatively robust. Telomere (Fig. 11) small, resembling that of gomerensis sp.n. All its longer setae, incl. robust medial spines broken owing to the inappropriate method of preservation. Anterior flat lobe long and slender but with rounded apex; anterior ventral spine as in gomerensis but its interior apex more blunt. Posterior lobe armed by a row of setiform bristles (see basal scars) but their length remains unknown (since they are missing). Posterior ventral spine simple, tapering apically but with blunt apex. Micropubescence covering a larger area than in gomerensis. Some posterior microsetae enlarged and thickened. Aedeagal complex rather similar to that of beckeri (cf. Fig. 19) but distiphallus with finer setosity, especially dorsoapically. Postgonite (Fig. 20) long, slender and in contrast of the related species with a quite simply pointed apex. Ejaculatory apodeme not observed.

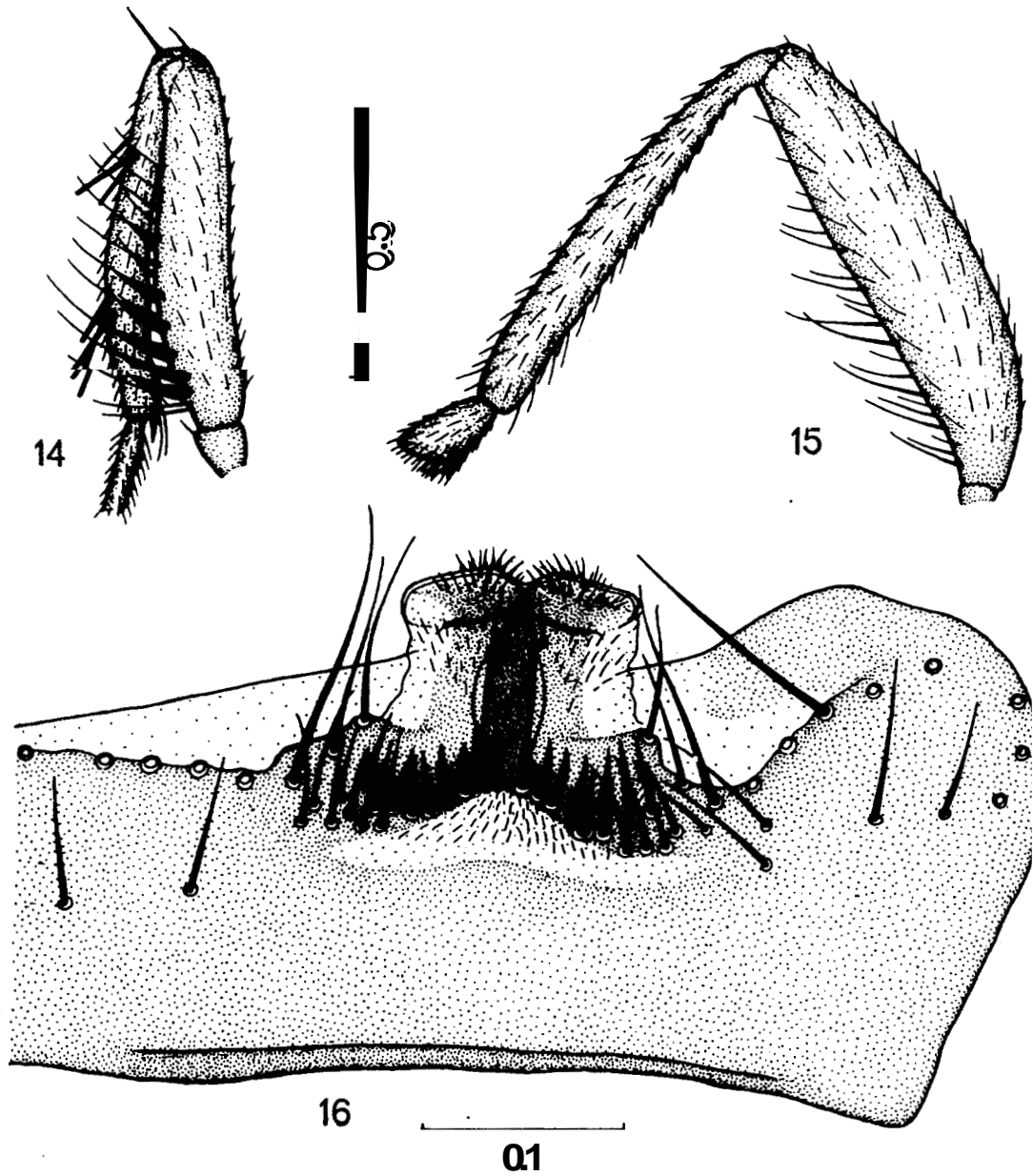
Holotype male: Anagageb., Tenerife, leg. H. FRANZ (on the other side of label: "Sp. 1155") - Kanarische Inseln, leg. H. FRANZ. - Paratype female: data same as for holotype. The type-specimens are glued on labels, the male genitalia are preserved in glycerine in microvial. The holotype is deposited in the collection of Prof. H. FRANZ, the paratype female is in the Hunga-



Figs 6-8. Male 5th sternum of *Paralimosina* species - 6: *P. beckeri* (Duda) - 7: *P. gomerensis* sp.n., holotype, detail of posterior structure - 8: *P. franzi* sp.n., holotype. Scale = 0.1 mm



Figs 9-13. Telemores (surstyli) of *Paralimosina* species - 9: *P. beckeri* (Duda) - 10: *P. gome-  
rensis* sp.n., holotype - 11: *P. franzi* sp.n., holotype - 12: *P. pilifemorata* sp.n., holotype  
13: *P. anaptera* sp.n., paratype. Scale = 0.1 mm



Figs 14-16. *Paralimosina pilifemorata* sp.n., holotype male - 14: middle leg without tarsus - 15 hind leg without tarsus - 16: 5th sternum. Scales: 14, 15 = 0.5 mm, 16 = 0.1 mm

rian Natural History Museum, Budapest.

P. franzi sp.n. appears to be related to P. gomerensis sp.n. and P. beckeri (Duda), judging from the similarities in the aedeagal complex, reduced male pseudocerci and the form of telomere. However, its wing venation rather resembles that of P. pilifemorata sp.n., but apart from the quite different male genitalia it can be distinguished from the latter species by its smaller body, paler thorax, more pruinose syntergum 1+2 and by its short small spines on the ventral side of male mid femur.

We dedicate this new species to Professor Dr. H. FRANZ, who collected this highly valuable material of short-winged forms.

*Paralimosina pilifemorata* sp.n.

(Figs. 3, 4, 12, 14-16, 22)

Measurements in mm: body length: 2.60 (holotype), 2.12, 2.50 (paratypes); wings: 0.84 x 0.36 (holotype), 0.47 x 0.26, 0.56 x 0.29 (paratypes); strong interfrontal bristle: 0.17 (holotype); middle tibia and femur: 0.67 + 0.70 (holotype); hind tibia and femur: 0.81 + 0.84 (holotype).

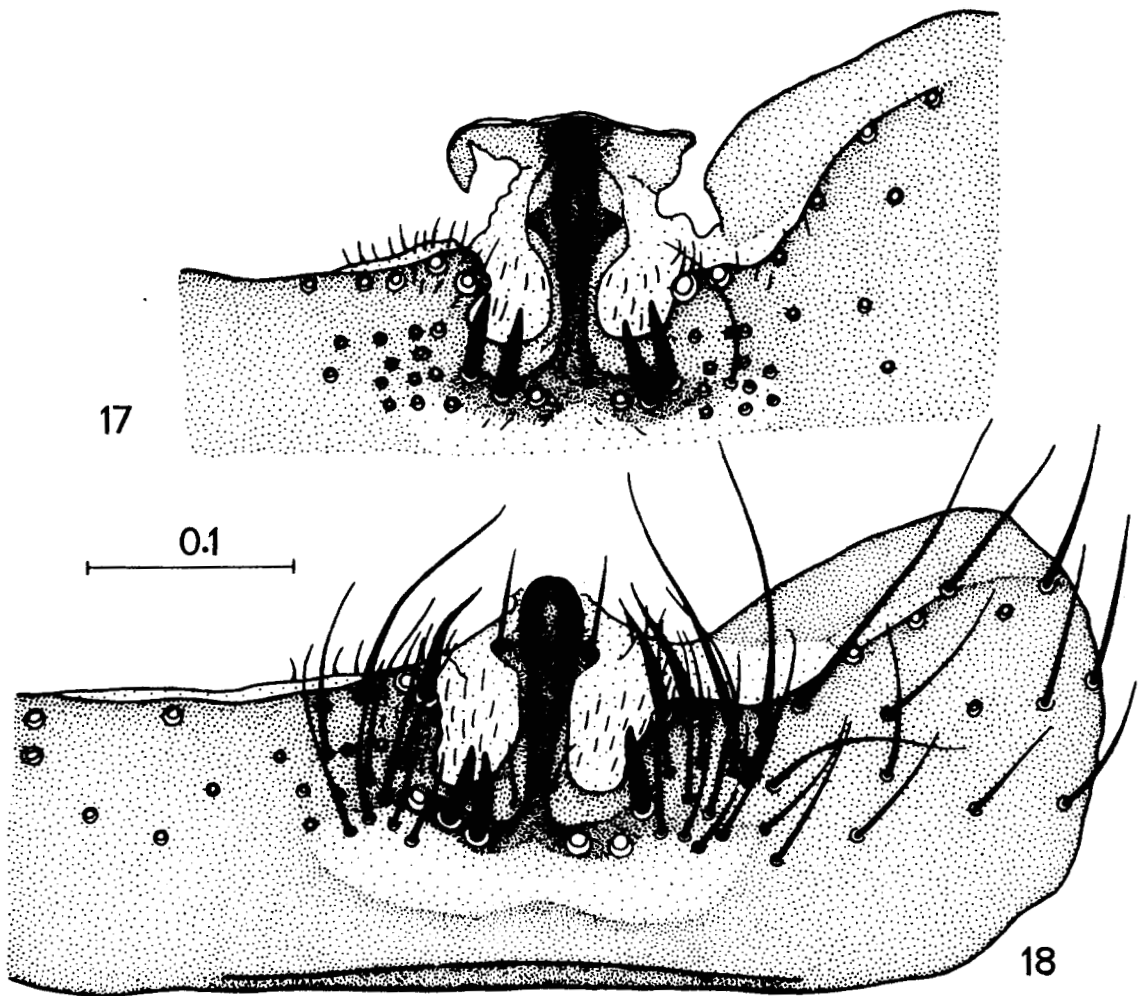
Body and legs dark brown, only a pair of spots laterally to antennal bases reddish, and also apices of femora and tibiae and tibial bases red to yellowish red. Longest hairs on arista only 0.03 mm. Ventral side of male middle and hind femora and tibiae with long hairs (Fig. 14, 15): hairs on middle femora extremely long (0.23 mm) and thick, bristle-like, longest hairs on hind femora 0.11 mm (Fig. 15). Ventroapical bristle of male middle tibia rather short. Wings of male the least reduced, i.e. the longest one in this species-group; costa thick and dark brown with a very long bristle at base (this bristle broken, thus not measurable but it must be over 0.2 mm), another long bristle (0.12 mm) on base (Fig. 3) and some long bristles on  $mg_1$ ; apical part of  $r_1$  strongly upcurving,  $r_{2+3}$  almost straight, section  $mg_2$  comparatively long,  $r_{4+5}$  terminating at wing apex; medial vein ends in radial  $r_{4+5}$ ; cu longest in this species group; alula comparatively large, apex narrowly rounded with some hairs. Syntergum 1+2 shining on a large central spot reaching distal margin, pruinose laterally. Female wings much shorter than those of male (see above); costa dark brown and very thick (0.023 mm on section  $mg_2$ ), its basal bristle broken off (but it must be very long judged by its base), another bristle of 0.08 mm on base and five long bristles on  $mg_1$ ; apical part of  $r_1$  heavily upcurving, radial veins  $r_{2+3}$  and  $r_{4+5}$  fused in their basal half, free section of  $r_{2+3}$  short, apical part of  $r_{4+5}$  upcurving, i.e. ends at a distance from wing apex; medial vein short and ending in the fused part of radials; cu distinct and comparatively long (Fig. 4). Alula same as in male.

Male 5th sternum (Fig. 16) comparatively long with long posteromedial lobe of characteristic setosity and with a long medial, more sclerotized and dark pigmented thick. In front of posteromedial lobe a dense row of short thick acutely pointed spines present. Bristles laterally to this row of spines sparser and shorter than in anaptera sp.n. Periandrium (epandrium) rather long, somewhat longer than in anaptera. Pseudocerci longest among the related species, distinctly projecting ventrally and forming an apically somewhat dilated but laterally flattened lobe. Pseudocerci with some very thin bristles and dense micropubescence each. Hypandrium hardly longer than in other relatives. Telomere (Fig. 12) large and comparatively long (high), similar to that of anaptera. Anterior flat lobe small with several small setulae subapically. Anterior ventral spine large with sharply pointed interior apex as in anaptera. Posterior lobe large with 1 row of very long setiform hairs (and 2-3 additional hairs posteriorly). Ventral margin and adjacent area with dense and rather long micropubescence. Posterior ventral spine highly characteristic, because of its more anterior position and rather slender but apically rounded form. Aedeagal complex with phalophore shorter than in anaptera sp.n. but distiphallus rather similar, particularly as regards its slender and elongate form. Setosity of ventrobasal part of distiphallus distinctly longer. Postgonite (Fig. 22) long, slender, slightly sinuate with shortly forked apex. Ejaculatory apodeme small but discernible.

Holotype male: Anagageb., Tenerife, leg. H. FRANZ (on the other side of label: "Sp. 1155") - Kanarische Inseln, leg. H. FRANZ. - Paratypes: 2 ♀: data same as for holotype. The type-specimens are glued on labels, the genitalia of holotype are preserved in glycerine in microvial. The holotype and one paratype are deposited in the collection of Prof. H. FRANZ, one female paratype is in the Hungarian Natural History Museum, Budapest.

P. pilifemorata sp.n. is a highly distinct species. Its venation resembles that of P. franzi sp.n. (at least as regards paratype females) but actually it seems closest to P. anaptera sp.n.





Figs 17-18. *Paraltmosina anaptera* sp.n., paratypes - 17: posterior structure of male 5th sternum - 18: male 5th sternum. Scale = 0.1 mm

(cf. their well-developed pseudocerci, shape and long setosity of telomeres, long and slender distiphallus). *P. pilifemorata* sp.n. can be easily separated from all relatives by the long ventral setosity of male middle and hind femora, rather large non-pruinose spot on syntergum 1+2, and male genital structures (e.g. apically forked postgonite).

*Paralimosina anaptera* sp.n.

(Figs. 5, 13, 17, 18, 23)

Measurements in mm: body length 1.79 (holotype), 1.75-1.79 (paratype ♂♂), 1.67, 1.77 (paratype ♀♀); wings: 0.49 x 0.21 (holotype), 0.53 x 0.22, 0.54 x 0.22 (paratype ♂♂), 0.47 x 0.20, 0.60 x 0.23 (paratype ♀♀); length of abdomen: 0.91 (holotype), 0.93 (paratype ♂), 0.96 (paratype ♀♀); length of arista: c. 0.56 (holotype); length of vti bristle: 0.29 (holotype), 0.30, 0.35 (paratype ♀♀); strong interfrontal bristle: 0.17 (holotype), 0.18, 0.24 (paratype ♀♀), length of sternopleural bristle: 0.38, 0.43 (paratype ♀♀).

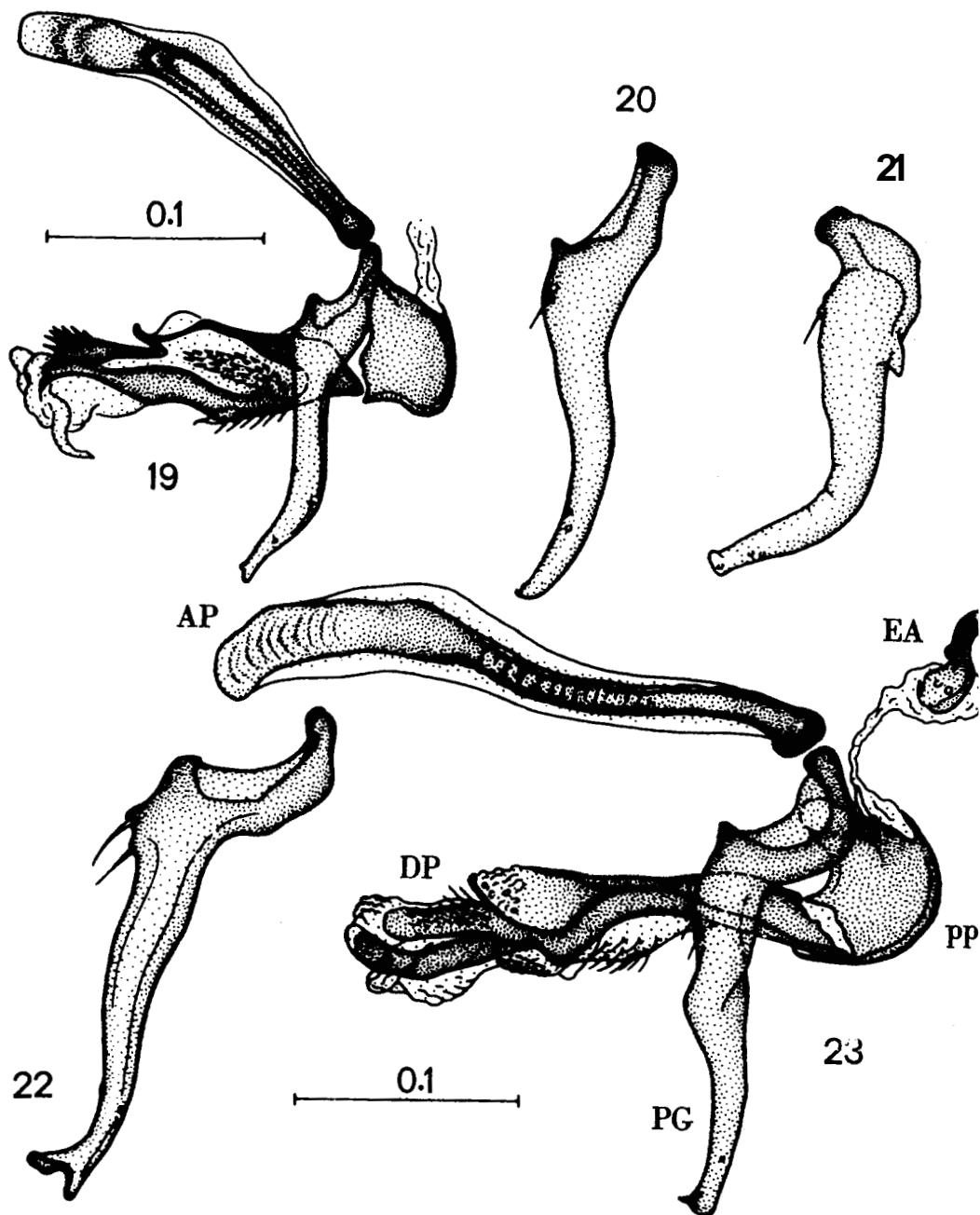
All type-specimens are damaged, majority of bristles broken and lost. Body dark brown, mesonotum with some reddish hue, pleurae reddish except for subalar callus on pteropleura. Abdomen much convex and pruinose dorsally, only proximal third of syntergum 1+2 shining. Frontal triangle subshining, anterior third of frons reddish, facial plate reddish or ochreous, genae greyish brown. Legs brown but fore coxae, bases and apices of femora and tibiae yellowish red (this colour extends on posterior surface of femora down to distal third but it may be caused by the fading effect of alcohol). Wings and venation of wings much reduced (Fig. 5); costa brown and very thick with a very long bristle at base (0.25 mm); apex of wing rather acute, radial vein  $r_1$  downcurving in basal 2/3 and strongly upcurving in apical third; section  $mg_2$  very short, radial vein  $r_{2+3}$  strongly upcurving, radial vein  $r_{4+5}$  present only as a faint fold; no other veins observable. Alula short and rounded.

Male 5th sternum (Figs. 17, 18) comparatively long with only three robust spines in front of the posteromedial structure on each side and two pairs of additional spines more posteriorly, in the corners of dark pigmentation. Posteromedial lobe (see Fig. 17) with long medial, more chitinized and dark pigmented thick (stripe). Bristles surrounding posteromedial structure thin and very long. Periandrium of medium length (about as in *beckeri*). Pseudocerci rather long and well developed though fused with periandrium, each with three long caudal hairs, some shorter setae and two thicker but short bristles. Hypandrium about as long as in *beckeri*. Telomere (surstylus) (Fig. 13) smaller than in *pilifemorata* sp.n. rather long (high) but narrow. Its anterior pale lobe small and indistinctly separated from posterior lobe, subapically with only one minute hair. Anterior ventral spine with very sharply pointed interior apex. Posterior lobe carrying two rows of very long setiform hairs anteriorly (posteriorly some additional ones). Micropubescence almost absent on ventral and posterior margins and posterior ventral spine situated near posteroventral corner. Ventral margin of telomere between ventral spines armed by several distinct setae. Aedeagal complex (Fig. 23) with phallosophore largest among related species. Distiphallus very slender with fine, somewhat reduced setosity. Postgonite long, slightly angulate in the middle and with a characteristic thorn on apex. Ejaculatory apodeme present.

Holotype male: La Gomera, El Cedro, leg. H. FRANZ (on the other side of label: "Sp 1308" (in blue ink). Paratypes: 3 ♂, 2 ♀: data same as for holotype (on one of the males an additional label: Kanarische Inseln, leg. H. FRANZ). The type-specimens are glued on labels, the genitalia of two paratype males are preserved in glycerine in ANDERSSON'S microvial. The holotype and one male and female paratype each are deposited in the collection of Prof. H. FRANZ, two male and one female paratypes are in the collection of the Hungarian Natural History Museum, Budapest.

This new species is characterized by its shortened wings with acute apex and extremely reduced venation (Fig. 5): only basal part of  $r_{4+5}$  developed. The structures of the male genitalia (pseudocerci, telomeres, aedeagal complex) indicate its close affinity to *P. pilifemorata* sp.n. but both these species differ not only in some details of genital structures but also in size, colour, wing, chaetotaxy of the male femora, etc.

*Paralimosina* sp.n. - 1 ♀: Isla de La Palma, Umg. Brana Baja, leg. H. FRANZ (on the other side of label in blue ink: "Sp 1105"). A specimen in a comparatively good state of preservation. A large part of the surface of syntergum 1+2 shining, ocell bristles very long, almost cruciate. Length of body: 1.81, wings: 0.76 x 0.28, length of abdomen: 1.07, basal scutellar



Figs 19-23. Aedeagal complex (right postgonite omitted) or postgonite of *Paraiimosina* species - 19: *P. beckeri* (Duda) - 20: *P. franzi* sp.n., holotype - 21: *P. gomerensis* sp.n., holotype - 22: *P. pilifemorata* sp.n., holotype - 23: *P. anaptera* sp.n., paratype. Scales: 0.1 mm. Abbreviations: AP = aedeagal apodeme, DP = distiphallus, EA = ejaculatory apodeme, PG = postgonite, PP = phallore

bristle: 0.40, apical scutellar **0.56** (in mm). We are convinced that this specimen represents an additional new species but we do not want to make a description on the basis of a single female in this species-group.

Paralimosina sp. - 1 ♂: La Gomera, El Cedro, leg. H. FRANZ ("Sp 1308"). It belongs probably to one of the two new species from La Gomera but because of the poor state of preservation it cannot be identified unequivocally.

#### DISCUSSION

Six species of the newly discovered Paralimosina beckeri-group (all of them limited to a comparatively very small area, the Canary Is.) indicate that this group is probably much richer in species. Two recognized subgroups of more closely related species show at least two ancestral lines within the P. beckeri-group. The first subgroup with three species: beckeri, gomerensis, franzi, includes two brachypterous species, each endemic to different islands (La Gomera and franzi to Tenerife) and one macropterous species: P. beckeri (Duda). A rather similar situation is also with the second subgroup comprising two brachypterous species, of which P. pillifemorata is restricted to La Gomera and P. anaptera to Tenerife (the sixth, unnamed species is not taken in consideration, since its relationships cannot be understood from the single female). Thus, the ancestors of both subgroups had to be macropterous, easily dispersable forms like P. beckeri (Duda) in recent times. It is worth mentioning that a very similar reduction of venation of wing has evolved in both brachypterous species from La Gomera (i.e. in P. franzi and P. pillifemorata), apparently as a consequence of the so-called convergent evolution. However, this is not surprising; similar reductions of venation have already been described in other brachypterous species of clearly non-related sphaerocerid taxa.

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Authors' address: Dr. L. PAPP

Zoological Department  
Hungarian Natural History Museum  
H-1088 Budapest  
Baross u. 13  
HUNGARY

Dr. J. ROHÁČEK

Entomologické oddělení Slezského Muzea  
746 01 Opava  
Vítězného února 35  
CZECHOSLOVAKIA