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EIGHTEEN NEW ORIENTAL SPECIES OF POECILOSOMELLA DUDA (DIPTERA: SPHAEROCERIDAE)

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Eighteen new species of the genus *Poecilosomella* DUDA, 1920, *P. borborus* sp. n. (Philippines), *P. brevisecunda* sp. n. (Sumatra), *P. conspicua* sp. n. (Sabah), *P. curvipes* sp. n. (Taiwan), *P. formosana* sp. n. (Taiwan), *P. hayashii* sp. n. (Philippines), *P. longicalcar* sp. n. (Taiwan), *P. nigra* sp. n. (Taiwan, Sri Lanka), *P. paraciculata* sp. n. (Sumatra), *P. paracryptica* sp. n. (Sabah), *P. peniculifera* sp. n. (Sumatra), *P. pilimana* sp. n. (Sumatra), *P. pilipino* sp. n. (Philippines), *P. ronkayi* sp. n. (Taiwan), *P. sabahi* sp. n. (Sabah), *P. spinicauda* sp. n. (Philippines, Tonga, Tahiti), *P. spinipes* sp. n. (Sumatra), and *P. subpilimana* sp. n. (Sumatra) are described from the Oriental region. *P. picturata* (MALLOCH, 1913) (Philippines) and *P. ornata* (DE MEIJERE, 1908) are restituted from synonymy. A key is given for all 41 known Oriental species. With 72 original figures.

Key words: Sphaeroceridae, *Poecilosomella*, new species, taxonomy, Oriental Region

INTRODUCTION

The genus *Poecilosomella* DUDA, 1920 consists of beautiful limosinine species of Sphaeroceridae with pictured body and wings. Some species are abundant in nature, and it is seldom that a large collection of Oriental flies does not contain representatives of one or more species.

The problem with *Poecilosomella* is that only a few of the known species are readily recognisable by body characteristics at low (40 to 60x) magnification. The majority of species form groups of very closely related species, the reliable identification of which is possible based on the study of male genital parts only (at about 300× or higher magnification). The differentiating characters of the genus were summarised by PAPP (1990) in his review of the Afrotropical species, to which not much needs to be added. The long tread-like process of the distiphallus, however, is a strong synapomorphy (this process is short in some species but one must be careful with such a statement, as of course, this thin process may break during genitalia preparation). One observation, however, needs correction: the postgonites are long in a number of species. It must be stressed that the male subepandrial sclerite ("subanal plate") carries important differentiating characters. I here name the sclerotized structures above the phallobase and ventral to the cerci (connecting

ventral arms of epandrium) as subepandrial sclerite, although its origin may be more complex.

Poecilosomella is a diverse genus also in the Oriental region. DUDA (1925) described nine species, DEEMING (1964, 1969) six species, HAYASHI (1997, 2002) three species, WALKER (1860), WIEDEMANN (1824), DE MEIJERE (1908), MALLOCH (1913) and PAPP (1991*a*) one species each. In this study 18 new species are described. In a previous, partial revision of the Oriental species (PAPP 1991*a*) a large number of specimens were identified but only one new species was added. Quite by chance, I prepared the male genitalia of several individuals of the "commonest Oriental species", *P. punctipennis* (WIEDEMANN), which were true *punctipennis* specimens. Consequently, I overlooked its closely related sister-species, *P. affinis*, which was discovered by Dr T. HAYASHI years ago, but which was described most recently (HAYASHI 2002).

MATERIALS AND METHODS

This paper results from the examinations of many specimens of *Poecilosomella*, which are housed in: The Carnegie Museum of Natural History, Section of Invertebrate Zoology, Pittsburgh, PA, USA (CMNH), Diptera Collection of the Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM), Muséum d'Histoire naturelle Genève (MHNG), Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA (NMNH), The Royal Ontario Museum, Toronto, Canada (ROM).

In the records below, hand-written label data are given in quotation marks, whereas my annotations of label data are in square brackets.

NEW RECORDS OF ORIENTAL POECILOSOMELLA, AND ADDITIONAL NOTES ON THE PREVIOUSLY KNOWN SPECIES

Poecilosomella aciculata (DEEMING, 1969)

Material studied: SRI LANKA (Ceylon, NMNH): 10 males, 11 females (1 male, 1 female in HNHM): Bad. Dist., Kande-ela Reservoir, 6200', Kan. Dist., Thawalamtenne 2200 ft., Udawattakele Sanct. 1800 ft., Kandy, Peradeniya 2300 ft., Upper Hantane Hill, N.E. Dist., Hakgala Botanical Gardens 6000 ft., Jan, Apr, Sep to Nov; Nepal: 1 male (HNHM): Royal Chitwan National Park, Bandarjhola Island – Jungle Island Resort, 84°10' E, 27°35' N, 150 m, 1995. 10. 30. – swept on *Elephas maximus* dung, leg. L. Peregovits. India: 1 female (NMNH): Yercaud., S. India, Shevaroy Hills 4500', III. 1955, P. Susai Nathan.

Known from Nepal, India, Sri Lanka and Indonesia (W. Flores, Lombok), see PAPP (1991*a*) for male genitalia figures.

Poecilosomella albipes (DUDA, 1925)

Material studied: 1 female (ROM): PHILIPPINES, Negros, Oriental: Cuernos de Negros, 7 km W. Valencia, 29 JUN – 8 JUL 1987. DC Darling, E. Mayordo. ROM 873061 – 1° rainforest edge, 700 m, Malaise w/pans.

I described a specimen from Sri Lanka (PAPP 1991*a*: 103), which may indeed belong to this species, but I cannot re-check its identity during the present study. It is, however, even more likely, that the above specimen is conspecific with the type specimen from Mt Banahao (Luzon, Philippines). In the key below it is far from *P. nigrotibiata* (DUDA), but I think they are in a closer relationship.

Poecilosomella amputata (DUDA, 1925)

Material studied: 5 males, 2 females (ROM): INDONESIA: Sumatra, Aceh, Gunung Leuser Nat. Pk., Ketambe Res. Sta., 9–21 SEP 1989, DC Darling, ROM 893087 – 1° rainforest. Young forest, Terrace 3, closed canopy, 350 m, 3°41'N, 97°39'E, Malaise trap head. 2 males, 1 female (NMNH, 1 male in HNHM): MALAYSIA: Sabah: 1 km S. Kundasang, el. 1530 m, 6/27 Aug. 1983, G. F. Hevel & W. E. Steiner.

Formerly known only from its type locality (Taiwan), see PAPP (1991a), new to Indonesia (Sumatra) and to Malaysia (Sabah).

Poecilosomella annulitibia (DEEMING, 1969)

Material studied: 18 males, 29 females (CMNH, 5 males, 7 females in HNHM): TAIWAN: Taichung, Anmashan, 2230 m, 30 Apr–4 May 1990, A. Smetana (T32).

All the important features, including armature of mid tibia (DEEMING 1969: fig. 5) and those of the male postabdomen and genitalia, i.e. the medial projection of sternite 5 & 6, lobes of surstylus (DEEMING 1969: fig. 18) seem to fit the description of the holotype male. I have previously redescribed this species (PAPP 1991*a*: 106). Formerly known from Nepal (cf. also ROHÁČEK *et al.* 2001), so its occurrence in Taiwan significantly widens its known distribution.

Poecilosomella borboroides (WALKER, 1860) species group

Some of the most surprising findings were with the species of this group. Hitherto there was only one species known with the following conspicuous combination of features: arista with very long cilia, costal hairs rather long, second costal section much shorter than third. I discovered five species in this group, two of them originally described by DE MEIJERE (1908) and MALLOCH (1913), but later put in synonymy with the widespread *P. borboroides* (WALKER, 1860). The fourth species is from the Philippines and the fifth one was collected more recently from Taiwan. The five species can be distinguished mainly by the male genitalia but one can make two subgroups of the *P. ornata* (DE MEIJERE) and *P. borboroides* (WALKER), easily recognised by the characteristics of the setae on mid tibia.

These findings underline again the risk of weakly based proposals to synonymizations of species.

Poecilosomella borboroides (WALKER, 1860) (Figs 1–5)

Ephydra borboroides: WALKER 1860: 171.
Holotype female (BMNH): Celebes, Makessar [now Sulawesi, Ujungpandang].

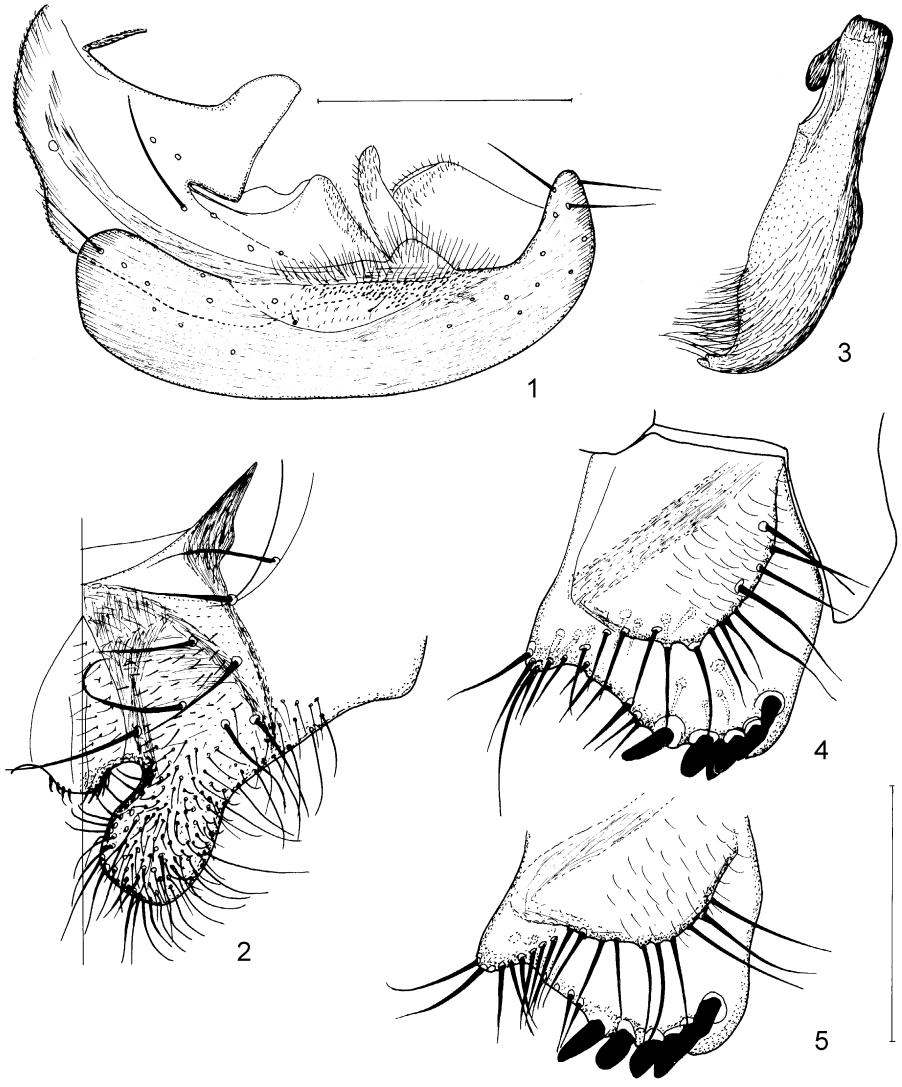
The original description says: "Length of the body 1 1/2 line; of the wings 3 lines" [that would be 7.62 mm], which must be an overstatement.

Mr NIGEL WYATT (The Natural History Museum London) examined the only type specimen and he wrote: "I have examined the holotype of *Poecilosomella borboroides* WALKER and it seems to belong to your 'species 2' [my term to differentiate the two forms I saw]. There are no ventral or anteroventral setae on the mid tibia except for the ventral seta at the apex." This piece of information is critically important in arbitration of the closely related *P. ornata*, which was formerly erroneously placed into synonymy with *P. borboroides* (see below).

Material studied: 3 males, 7 females: MALAYSIA: Sabah, G. F. Hevel & W. E. Steiner 1983 (NMNH, 1 male, 1 female in HNHM): 1 km S Kundasang, el. 1530 m, 6 Aug; Kinabalu National Park, Poring, el. 570, 8 Sept., ibid., Summit trail below Carson Camp, 1980–2700 m, 16 Sept., Telipok, 12 August. 1 male (ROM): INDONESIA, Sumatra, W. Sumatra: Kerinci-Seblat Nat. Pk., trail to L. Tujuh, 14 SEP 1989. B Hubley, DC Darling, ROM 893074 – 1° rainforest, 1640 m, screen sweep, 1°42'N, 101°19'E. 1 male, 2 females (HNHM): India, leg. Topál.

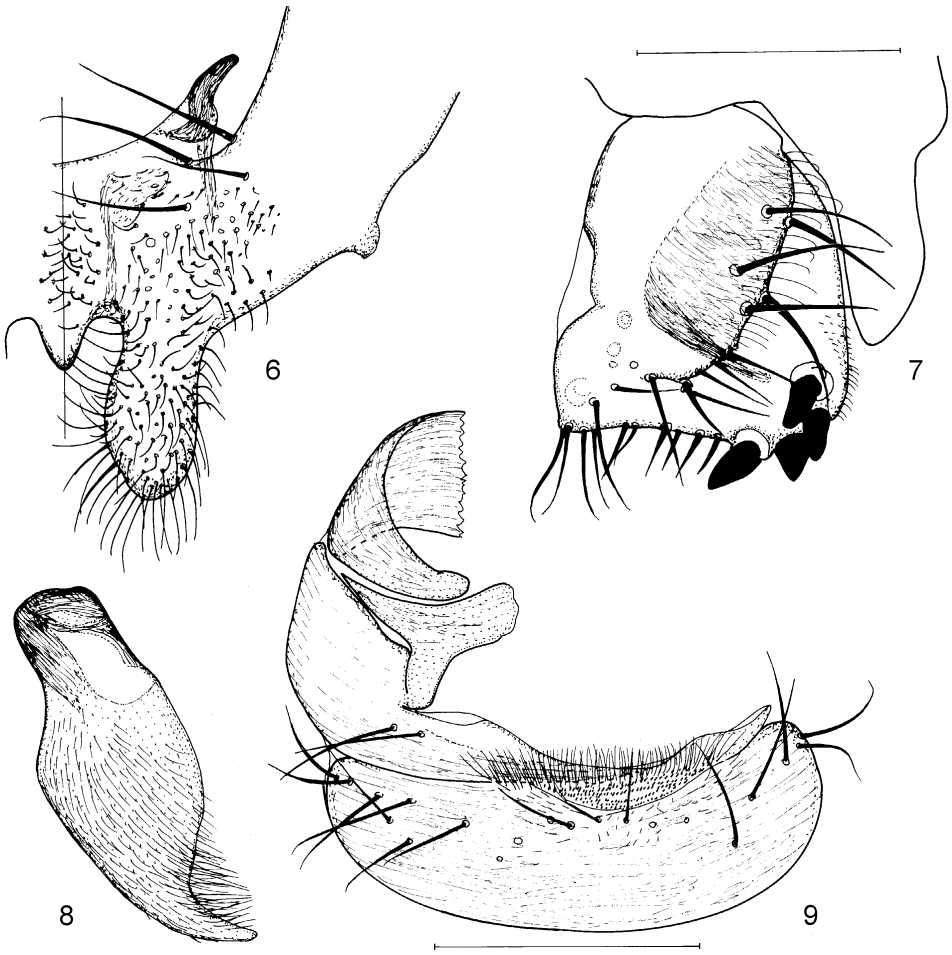
Male abdominal sternite 5 strongly asymmetrical, sternite 6 contiguous with 2 asymmetrical median lobes and a broad lobe on the left side (Fig. 1). Subepandrial sclerite (Fig. 2) with a broad

paired, apically rounded process (characteristic for this species group), whose hairlike setae are longer than in the species from the Philippines. Surstylus (Figs 4–5) apically with 6 thick black teeth (prensisetae). Postgonite (Fig. 3) less broad medially than in the Philippines form, apex more demarcated. There are slight variations in the fine details of the surstylus among specimens from different localities (Fig. 4, vs Fig. 5) but I think this normal.



Figs 1–5. *Poecilosomella borboroides* (WALKER), male postabdomen and genitalia. 1 = sternite 5 and 6, ventral view, 2 = right half of subepandrial sclerite, caudal view, 3 = postgonite, 4 = surstylus, lateral view (Sabah), 5 = apical part of surstylus (India). Scales: 0.2 mm for Fig. 1, 0.1 mm for Figs 2–5

It is useless to say that any specimens identified as *P. borboroides* before (incl. by myself before 2000) are doubtful. I hope colleagues will not regard my decision to select this biological species for the name *P. borboroides* (WALKER) just as an arbitrary decision. The form fixed by Figs 1–5 seems to be the widespread one, and I also found specimens collected rather close to its type locality (Sulawesi (Celebes) vs. Borneo, Sabah). A dissection of the female holotype of *P. borboroides* (being a female) would not get closer to a better solution.



Figs 6–9. *Poecilosomella borborus* sp. n., paratype male, postabdomen and genitalia. 6 = right half of subepandrial sclerite, caudal view, 7 = surstylus, lateral view, 8 = postgonite in widest extension, i.e. not lateral view, 9 = sternite 5 and pregenital sternites, ventral view. Scales: 0.2 mm for Fig. 9, 0.1 mm for Figs 6–8

In the last phase of work on the Oriental *Poecilosomella*, I managed to study the type of *P. picturata* (MALLOCH, 1913), described from the Philippines and formerly regarded as a junior synonym of *P. borboroides*. Based on a study of its genitalia, I would like to remove it from synonymy (see also below)

Poecilosomella ornata (DE MEIJERE, 1908), **sp. restit.**
(Figs 10–13)

Limosina ornata: DE MEIJERE 1908: 177.

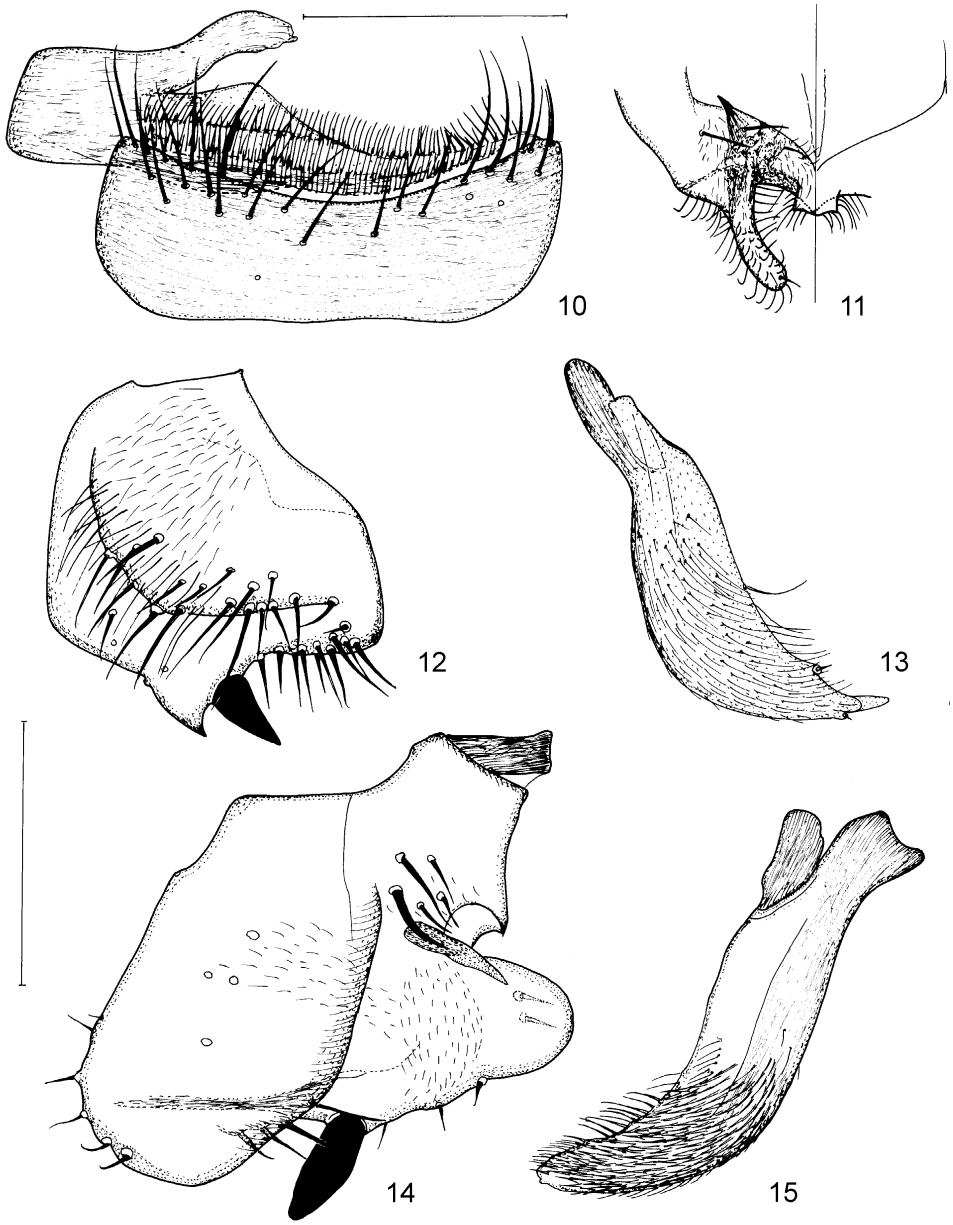
Originally two syntypes were known from Java, Semarang. It was proposed as synonymous erroneously on two different occasions for two different species (DE MEIJERE 1918, HACKMAN 1977)

Dr. HERMAN DE JONG (Amsterdam) sent me the following information: "DE MEIJERE (1918; Tijdschrift voor Entomologie 60: 323) regarded his *ornata* as a variety of *venalicia* OSTEN SACKEN. According to DE MEIJERE, both should differ in the extent of the dark coloration of the wing membrane.

The single remaining type specimen of *ornata* was placed under '*venalicia*' in our collection. It has the legs folded and closely appressed to the body. Nevertheless it is clear that the right t2 carries a strong (antero) ventral bristle near midlength. I could not find a ventro-apical bristle on either t2, although the view of both legs is quite obscured."

Material studied: 2 males (HNHM): TAIWAN: Pingtung Hsien, Kenting, Heng-Chun Trop. Botanical Garden – forest undergrowth, Oct 5, 2000, leg. L. PAPP, No. 19. 2 males, 1 female (ROM, 1 male in HNHM): INDONESIA: Sumatra, Aceh, Gunung Leuser Nat. Pk., Ketambe Res. Sta., 9–21 SEP 1989, DC Darling, ROM 893087 – 1° rainforest. Young forest, Terrace 3, closed canopy, 350 m, 3°41'N, 97°39'E, Malaise trap head; 1 female (ROM): ibid., 3–10 SEP, B Hubley, DC Darling, ROM 893027; 1 female (ROM): ibid., 7 SEP, ROM 893059 – 1° rainforest, 350 m, 3°41'N, 97°39'E. Screen sweep; 1 female: INDONESIA: E. Kalimantan, Kac. Pujungan, Kayan-Mentarang Nat. Reserve, Jun-Aug. 1993, DC Darling, Rosichon U. IIS 930596 – lowland diptero.[Dipterocarpus] forest, WWF Station, Lalut Birai, vicinity of Base Camp. Log emergence traps, 2°52'N, 115°49'E, 378 m.

Male sternite 5 (Fig. 10) less asymmetrical than in its relatives, there are 3 wide (long) rows of comparatively long hairs on the sternite 5 & 6 complex medially (Fig. 10), setae on sternite 5 long and comparatively thick. Ventral process of subepandrial sclerite (Fig. 11) long, comparatively thin, finger-like. Sursylus (Fig. 12) with only 1 thick black tooth but there is a dentate process behind it. Postgonite (Fig. 13) rather curved with definitely demarcated dentiform apex. See more in the key below.



Figs 10–15. *Poecilosomella* spp. males. 10–13 = *P. ornata* (DE MEIJERE), Taiwan: 10 = sternite 5 and 6, ventral view, 11 = left half of subepandrial sclerite, caudal view; 12 = surstylus, lateral view, 13 = postgonite, lateral view. 14–15 = *P. meijerei* (DUDA): 14 = surstylus, true lateral view, 15 = postgonite, lateral view. Scales: 0.2 mm for Figs 10–11, 0.1 mm for Figs 12–15

Poecilosomella picturata (MALLOCH, 1913)
(Figs 69–72)

Limosina picturatus: MALLOCH 1913: 653 (cf. ROHÁČEK *et al*. 2001: 201).

Holotype male (NMNH): 1) Manila PI – 2) RobtBrown Collector – 3) Type No. 15308 U.S.N.M. – 4) "Limosina picturatus MALLOCH Type" [pencil handwriting]; glued to the tip of a small long narrow card, right wing much damaged; abdomen with genitalia in a plastic microvial with glycerine.

Body features, other than mentioned below, are the same as in *P. borboroides* (WALKER) and in *P. ornata* (DE MEIJERE).

Apical part of vein R_{2+3} rather edged at curvature, distally to this point a distinct brown spot present, similarly as in *P. formosana* sp. n. Mid tibia with ventral medial seta at 3/5.

Male abdominal sternite 5 (Fig. 72) asymmetrical, median hairs located on a broad medial section, similarly as in *P. ornata*. Subepandrial sclerite (Fig. 69) unique, with comparatively broad and bare medial process and with straight and edged ventral (lateral) pair of processes, broader than in *P. ornata*; lateral processes bear thicker setae, contrary to *P. ornata* and similarly to *P. formosana*. Apical part of surstylus (Fig. 70) caudally with a single thick black tooth, whose size and position are different from those of *P. ornata*, i.e. without a process caudally to the tooth. Postgonite (Fig. 71) not very broad, not strongly narrowing apically, apical part curved apically but less strongly, apex with a small blunt projection (rather than a tooth as in *P. ornata*).

This species is distinguishable from *P. borboroides* by the distinct brown spot on its wings just distal to the curvature of R_{2+3}. Of course, the safe distinction is based on the characteristics of the male postabdomen and genitalia.

Poecilosomella cryptica L. PAPP, 1991

1 male (HNHM): TAIWAN: Pingtung Hsien, Kenting, Heng-Chun Trop. Botanical Garden – light traps, Oct 4–6, 2000, L. Peregovits & L. PAPP, No. 15. 1 male (CMNH): Taiwan: Kaohsiung, Shanping, 640 m, 21–30 April 1988. C. Young, R. Davidson, J. Rawlins.

This is a distinct species in the *P. varians* group (PAPP 1991a: figs 11–15), known only from Taiwan. It was a pleasure for me to find individuals additional to the type specimens during this project.

Poecilosomella furcata (DUDA, 1925)

1 male, 2 female (HNHM): TAIWAN: Ilan Hsien, Fu-Shan LTER Site, Sep 27, 2000 – along/over a small brook, leg. L. PAPP, No. 11.; 1 male: Taiwan, Liu-Kuei, Kaohsiung Hsien, San-Ping Forest Research Station, 700 m, Dec 30, 2001, leg L. Ronkay & A. Kun; 2 females (CMNH): Taiwan: Kaohsiung, Shanping, 640 m, 1–10 May/21–30 April 1988. R. Davidson, C. Young, J. Rawlins. 2 males, 4 females: MALAYSIA: Sabah, 1983, G. F. Hevel & W. E. Steiner (NMNH, 1 female in HNHM): 1 km S Kundasang, el. 1530 m, 6 Aug, Kinabalu National Park, Poring, el. 570 m, 8 Sept., ibid., Headquarters Area, e. 1560 m, 13. Sept.

Hitherto known from Taiwan and Viet Nam (PAPP 1991*a*), new to Malaysia.

Poecilosomella longinervis (DUDA, 1925)

Material studied: 51 males, 40 females (NMNH, 2 males, 2 females in HNHM): Nepal: Sundarijal, 4500–5000 feet, 29 October 1977, Gary F. Hevel. 2 females (ROM): Pakistan: Punjab, 3 km N. Muree, ca. 5000', 24. V. 1985, J. Lasalle, open slopes with flowers & grasses, pine forest. 1 male, 1 female (NMNH): Pakistan, Punj.[ab] Prov., Murree, 7000–7500 ft., 26–28 September 1976, G. F. Hevel & R. E: Dietz IV. 1 male (CMNH): TAIWAN: Taichung, Anmashan, 2230 m, 30 Apr–4 May 1990, A. Smetana (T32). 1 female: (NMNH): Malaysia, Sabah: 14 km W. Kundasang, el. 1450 m, 21 Aug. 1983, G. F. Hevel & W. E. Steiner.

New to Pakistan and Malaysia (Sabah).

Poecilosomella meijerei (DUDA, 1925)
(Figs 14–15)

Material studied: 3 males (ROM, 1 in HNHM): INDONESIA, Sumatra, W. Sumatra: Kerinci-Seblat Nat. Pk., trial to L. Tujuh, 14 SEP 1989. B Hubley, DC Darling, ROM 893074 – 1° rainforest, 1640 m, screen sweep, 1°42'N, 101°19'E.

Gena 0.155 mm broad below eye, genal bristle 0.10 mm long. Apical section of vein R_{2+3} 0.17 mm, appendage 0.18 mm long. Scape plus pedicel are 0.155 mm, first flagellomere 0.225 mm long.

Abdominal tergite 2 with a U or V-shaped depression (as long as tergite) medially. Third tergite bears a patch of 9–10 long setae on lateral margin of the abdomen. Surstylus (Fig. 14) peculiar: anterior lobe broad and broadly rounded apically, posterior lobe continued caudally into a broad rounded process, tooth large and ventrally directed. Postgonite (Fig. 15) curved, apex rounded, apical half of postgonite covered with long pointed scales (i.e. not hairs).

The biological species (form), which I identified as *P. meijerei* (DUDA) and *P. ronkayi* sp. n. are closely related species. I have named the form, which is from a locality closer to the type locality of *P. meijerei* (DUDA), as *meijerei*. I have prepared two figures of the male genitalia in order to facilitate further findings of this

form. One of the intact males in the Royal Ontario Museum can be designated as the neotype, if the original type specimen is not found in the future (see PAPP 1991a, ROHÁČEK *et al*. 2001: 205–6).

Poecilosomella multipunctata (DUDA, 1925)

Material studied: 1 male (NMNH): MALAYSIA: Sabah: 1 km S. Kundasang, el. 1530 m, 6 Aug. 1983, G. F. Hevel & W. E. Steiner.

Widespread (see PAPP 1991*a*), new to Malaysia.

Poecilosomella nepalensis (DEEMING, 1969)

Material studied: 2 males (NMNH): NEPAL: Sundarijal, 4500–5000 feet, 29 October 1977, Gary F. Hevel. 1 male (NMNH): Pakistan, Punj.[ab] Prov., Murree, 7000–7500 ft., 26–28 September 1976, G. F. Hevel & R. E: Dietz IV.

I have added further to the original description, including with five figures of the male postabdomen and genitalia (PAPP 1991a: figs 21–25). I would like to call attention to the peculiar sclerotization of the phallus, which is also partly depicted in its original description (a thick black line behind surstylus in fig. 17 of DEEMING 1969). Formerly known from Nepal and India, new to Pakistan.

Poecilosomella pectiniterga (DEEMING, 1964) species group

DEEMING (1964) described a peculiar *Poecilosomella* species from Christmas Island, whose male tergite 5 was broadened on right side with 9–13 extremely long thick marginal setae (erroneously as "sternite 5" in PAPP's (1991a) key). This character is so impressive that it led me to assume that any and all specimens with such setae should automatically be assigned to *pectiniterga*. Nevertheless, HAYASHI (1997) described two additional new species with this character (*P. insularis* from the Biak I. and Papua New Guinea and *P. pappi* from Sri Lanka and Malaysia). Below a fourth species is described from the Philippines. All identifications (published or not), made between 1964 and 1997 must be checked.

Poecilosomella punctipennis (WIEDEMANN, 1824) species group

Much to my regret, we must regard all identifications prior to Dr. HAYASHI's discovery of *P. affinis* in 2002 as unreliable, incl. all material published by myself in 1991 (a, b) and 37 specimens, preserved in the NMNH and identified by myself in 1991. Reliably identified specimens are as follow:

P. affinis HAYASHI, 2002

Material studied: TAIWAN, leg. L. PAPP 2000 (HNHM, 67 ex.): 27 males, 35 females: Ilan Hsien, Fu-Shan LTER Site, Sep 26, 2000, leg. L. PAPP, No. 7 – lake shore vegetation and along a brook bed; 1 male: ibid., over a rocky brook, No. 6; 2 female: ibid., Sep 27, along/over a small brook, No. 11; 1 male: Pingtung Hsien, Kenting, Heng-Chun Trop. Botanical Garden – light traps, Oct 4–6, L. Peregovits & L. PAPP, No. 15; 1 male: Taipei, Nanshih Chiao, Han-Lo-Da, 450 m, along a small canal, Oct 13, No. 24. NEPAL: 37 males, 85 females (HNHM): Royal Chitwan National Park, Bandarjhola Island – Jungle Island Resort, 84°10'E, 27°35'N, 150 m, 1995. 10. 30. – swept on *Elephas maximus* dung, leg. L. Peregovits; 2 males (NMNH): Sundarijal, 4500–5000 feet, 29 October 1977, Gary F. Hevel; 1 male (NMNH): Papua New Guinea: Central P., near Kamulai, 3 Apr. 1983, 1200–1300 meters, J. W. Ismay; 1 male (NMNH): Cyclops Mts., Dutch N. G. [now Irian Jaya], 1000 ft. Jean Lafoon coll., IV–1–45. – "308".

P. punctipennis (WIEDEMANN, 1824)

Material studied: INDIA: 3 males (HNHM, see PAPP 1991b): Uttar Pradesh, Agra, Shah Jehan Gardens, 23/25 XI. 1989, leg. PAPP L. – swept on shore of small ponds and on a watered grassy area. VIET NAM: 1 male (HNHM): Topál – Matskási, 1971, No. 252. PHILIPPINES: 6 males, 1 female (NMNH, 1 male in HNHM): Leyte Island, Tacloban, Aug. 12, 1945, David G. Hall. New Caledonia: 2 males (NMNH): Aug 12 1944, Noumea, Wilfred Crabb. Tubuai Is: 4 males (NMNH): Tubuai, VI–8–10, 1965, D. Sixberry – between stone pyramid & Mataura. Tonga: 1 male (NMNH): Vavau, Neiafu, 0–100m, III–74, N.L.H. Krauss. FIJI: 7 males, 12 females (NMNH, 1 male, 1 female in HNHM): Suva Island, Oct 24, 1945, David G. Hall; 3 males (NMNH): Fiji Isls, June 15, D./L. Stoner, Vivia. 5 males (NMNH): Segond Chan.,: Esp. Santo, N. Hebrides, Jean Laffoon coll., VII–44, "143"/"135"/"127". IRIAN JAYA: 3 males (NMNH): NETH. N. GUINEA: ajoe[?], 26 Oct '45, D. G. Hall. 1 male (NMNH): FR. POLYNESIA, Opunohu, VII. 6. 1959, D. E. Puleston.

Poecilosomella rectinervis (DUDA, 1925)

Material studied: 1 male, 1 female (ROM): INDONESIA, Sumatra, W. Sumatra: Kerinci-Seblat Nat. Pk., trial to L. Tujuh, 14 SEP 1989. B Hubley, DC Darling, ROM 893074 – 1° rainforest, 1640 m, screen sweep, 1° 42'N, 101° 19'E.; 1 male, 1 female (CMNH, HNHM): TAIWAN: Nantou Hsien, Meifeng, 2130 m, 10–17 July 1993. A. Smetana, T147 – yellow pan traps; 2 males, 3 females

(CMNH, 1 female in HNHM): TAIWAN: Taichung, Anmashan, 2230m, 30 Apr–4 May 1990, A. Smetana (T32).

I redescribed this species (PAPP 1991*a*: 118) based on a study of its holotype. It was described from Java, but HACKMAN (1977) listed it also from Burma. It belongs to a difficult species group and since I have not seen specimens from Burma, I think its occurrence from only Indonesia (Java, Sumatra) and Taiwan is well based.

Poecilosomella varians (DUDA, 1925)

Material studied: 2 males, 1 female (NMNH, 1 male in HNHM): SRI LANKA: Mate. Dist., Sigiriya, 800 feet, black light, 13–14 November 1976 – Collected by: G. F. Hevel, R. E: Dietz IV, S. Karunaratne, D. W. Balasooriya; 1 male (NMNH): CEYLON, Anu. Dist., Irrigation Bungalow, Padaviya 180 ft., 27 Feb.–9 Mar. 1970, Dawis & Rowe.

This species seems widespread if we take all the former distribution data into consideration (HACKMAN 1977, PAPP 1991a,b). However, since there are a number of species which can be separated from *P. varians* only by the characteristics of their genitalia, some of the earlier records must be corroborated. It was recorded as new to Sri Lanka by PAPP (1991b), and is also reliably known from Singapore (type locality), India, Indonesia (W. Flores), cf. PAPP (1991*a*).

P. brunettii (DEEMING, 1969), *P. nigrotibiata* (DUDA, 1925) and *P. himalayensis* (DEEMING, 1969) were not found during this study. For their detailed morphology see DEEMING (1969) and PAPP (1991*a*).

DESCRIPTIONS OF THE NEW SPECIES

Poecilosomella borborus sp. n.
(Figs 6–9)

Holotype male (ROM): PHILIPPINES, Negros, Oriental: Cuernos de Negros, 7 km W. Valencia, 8–15 JUL 1987. DC Darling, E. Mayordo. ROM 873062 – 1° rainforest edge, 700 m, Malaise w/pans.

Paratypes: 1 female (ROM): same as for holotype; 1 male (HNHM): ibid., 29 JUN – 8 JUL 1987. ROM 873061.

Measurements in mm: body length 2.08 (holotype), 2.10, 1.90 (paratype male/female), wing length 2.13 (holotype), 2.15, 2.05 (paratypes), wing width 1.02 (holotype), 1.07, 0.92 (paratypes).

Body features, incl. wing and armature of mid tibia, are the same as in *P. borboroides* (WALKER, 1860).

Male abdominal sternite 5 (Fig. 9) asymmetrical, medial hairs similar as in *P. borboroides* but thick black spinules seem more evenly set. Subepandrial sclerite (Fig. 6) with longer and less broad ventral process than in *P. borboroides*. Apical part of surstylus (Fig. 7) caudally with 4 thick black teeth, whose size and position are different from those of *P. borboroides*. Postgonite (Fig. 8) very broad, strongly narrowing and curved apically but apex not definitely demarcated.

Etymology: The specific epithet of this species is *borborus*, for its very close relation to *borboroides*.

Distribution: Philippines.

This species is not distinguishable from *P. borboroides* except on the characteristics of the male postabdomen and genitalia. That is, I cannot differentiate between females. However, males are different in all four morphological parts depicted on Figs 6–9 vs 1–5, i.e. there is no doubt about their identity as different species.

Poecilosomella brevisecunda sp. n.
(Figs 16–19)

Holotype male (ROM): INDONESIA: Sumatra, Aceh, Gunung Leuser Nat. Pk., Ketambe Res. Sta., 9–21 SEP 1989, DC Darling, ROM 893087 – 1° rainforest. Young forest, Terrace 3, closed canopy, 350 m, 3° 41'N, 97° 39'E, Malaise trap head.

Paratypes: 1 male (HNHM): ibid., 3–10 SEP, B Hubley, DC Darling, ROM 893027; 1 male (ROM): ibid., 7 SEP, ROM 893059 – 1° rainforest, 350 m, 3°41'N, 97°39'E. Screen sweep; 1 female (ROM): ibid., B Hubley, DC Darling, ROM 893045 – Mature forest, Terrace 4, light gap, 400 m.

Measurements in mm: body length 1.85 (holotype), 1.55–1.80 (paratype males), 2.00 (paratype female), wing length ca. 1.87 (holotype), 1.57–1.95 (paratypes), wing width 0.86 (holotype), 0.85–0.95 (paratypes).

A single strong, posterior, 0.18 mm long orbital seta present, anterior one hair-like and hardly longer than diameter of the posterior one at base. Facial plate shiny reddish yellow. Antennae reddish, first flagellomere enlarged but less than in *P. hayashii*, 0.125 mm, scape and pedicel combined 0.103 mm long. Arista 0.05+0.50 mm long, aristal cilia 0.04 mm, cilia on flagellomere slightly shorter than 0.02 mm. Two pairs of thin and short *ifr* setae.

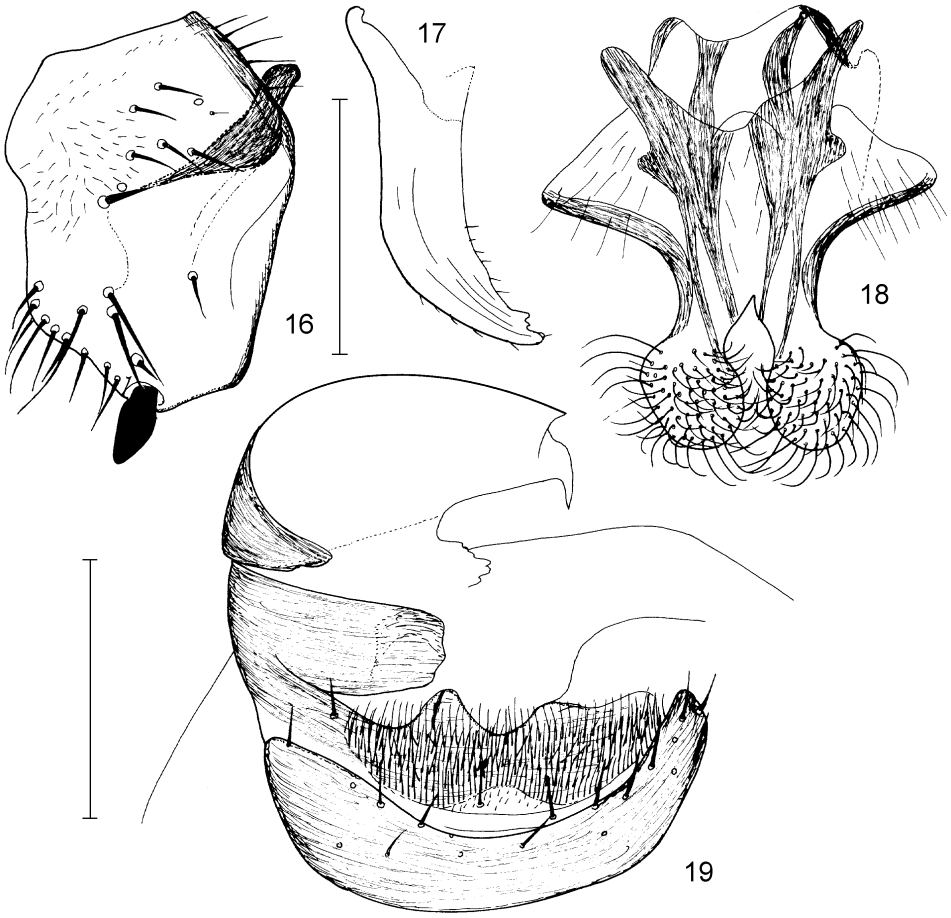
Mesonotum blackish brown, almost dull, with 4 sagittal, 4 dorsocentral and 3 lateral silvery spots. Scutellum somewhat wider than long, with 5 silvery spots.

Costal vein terminates at R_{4+5}, vein R_{2+3} meets costa perpendicularly. Second costal section about 3/5 length of third section (not precisely measurable on downcurved wings). Wings without vein appendage on R_{2+3} subapically. Second costal section much shorter than third, costa terminates at vein R_{4+5}. Wings completely dark, only cross-veins light, no light spot amidst cell r2+3, as in *hayashii*. Knob of halter dark brown, stalk yellow.

Legs dark brown, except for the following: apices of femora yellowish, all tibiae with broad medial and apical light rings. Basal 3/4 of fore basitarsus and the whole 5th tarsomere dark, other parts of fore tarsus white. Mid tarsus white at apices of basitarsus and 2nd tarsomere, as well as whole 3rd tarsomere white, other parts dark. Hind basitarsus and 2nd tarsomere enlarged and thickened but

in a less extent than in HAYASHIi, only 3rd hind tarsomere white. Fore tibia thickened but less than in *P. hayashii*. Mid tibia with a strong anterior seta at 11/20, anterodorsals at 1/4 and 17/20, posterodorsals at 1/5, 9/20 and 3/4, and a strong mid ventral seta distally to the middle (at 13/20). Male mid tibia without long hairs. No true ventroapical on mid tibia, 3 small black setae instead, though the longest one longer than basitarsal diameter.

Sternite 5 slightly asymmetrical, the complex of sternite 5 & 6 (Fig. 19) with at least 3 rows of long thin hairs on a rather broad median part. Epandrium with comparatively short setae. Subepandrial sclerite (Fig. 18) peculiar with a pair of sclerotized and black melanized inner processes and with a pair of rather long, knobbed, rounded, hairy, ventral (outer) processes. Male surstylus (Fig. 16) comparatively long, anterior and posterior lobes not clearly separated but with a posterior, rather ventral tooth. Postgonite (Fig. 17) rather short, apical third strongly curved, with two small apical



Figs 16–19. *Poecilosomella brevisecunda* sp. n., paratype male. 16 = surstylus, lateral view, 17 = postgonite, 18 = subepandrial sclerite, caudal view, 19 = sternite 5 and pregenital sternites, ventral view. Scales: 0.1 mm for Figs 16–18, 0.2 mm for Fig. 19

projections over its narrowly rounded apex. Distiphallus shorter than aedeagal apodeme, without any conspicuous (melanized) sclerotization, apically upcurving.

Female terminalia not studied in detail; both epiproct and hypoproct rather short, female cerci with 2 pairs of rather straight medium long hairs, i.e. shorter than in *P. hayashii*.

Etymology: The name of this species refers to its rather short second costal section.
Distribution: Indonesia (Sumatra).

P. brevisecunda sp. n. is an easily recognisable species; it is probably closely related to *P. hayashii* sp. n. However, not only is the second costal section comparatively short, but vein R_{2+3} meets the costa perpendicularly. Anterior orbital seta reduced to a minute hair (see more in key).

Poecilosomella conspicua sp. n.

Holotype male (NMNH): MALAYSIA: Sabah: 1 km S. Kundasang, el. 1530m, 22 Aug. 1983, G. F. Hevel & W. E. Steiner.

Paratype male (HNHM): data same as for the holotype; paratype female (NMNH, abdomen much contracted): ibid., 25 km N Tambunan, el. 1500 m, 10 Aug.; 1 female (MHNG, in a vial with alcohol): [Malaysia] Sabah, Crocker Range, 1550–1650 m, 16. V. 87, leg. D. H. Burckhardt et I. Löbl, 27a. [à proximité du col (route Kota Kinabalu – Tambunan), forêt de Lithocarpus – Castanopsis; a) tamisage de bois pourri, feuilles mortes et mousses].

Measurements in mm: body length 2.98 (holotype), 2.50 (paratype male, not precisely measurable), not measurable on NMNH paratype female (c. 2.50 when alive), 2.64, wing length 2.89 (holotype), 2.47, 2.55, 2.64 (paratypes), wing width 1.36 (holotype), 1.23, 1.28, 1.24 (paratypes).

Comparatively large, robust, dark winged and dark bodied species. Body dark brown, frons, face and genae reddish, the usual frontal and thoracic spots light grey with some silvery reflection. Frontal setae and vibrissa comparatively strong, a very long (0.28–0.29 mm) upcurving genal seta present; gena below eye 0.155–0.17 mm broad. Scape plus pedicel 0.19 mm long, first flagellomere 0.21 mm. Apical wreath of bristles on pedicel comparatively long. Scape dark brown, pedicel and first flagellomere light reddish yellow, flagellomere with diffuse grey hue in its apical 2/3. Arista with long (0.05 mm) cilia. Two pairs of weak *ifr* (3 on holotype).

Anterior katepisternal half as long as posterior one. Scutellum definitely shorter than broad.

Wing covered by long microtrichia; wing margin on costa with long dense hairs (though shorter than in species of the *P. borboroides*-group). Basic colour of wings brown. Darker brown diffuse spots around H cross-vein, apical area of R_{2+3} and above the apex of Rs. Veins light brown, cross-veins plus intercrossvein section of M, apex of R_1, apex of Rs and a very short section of M opposite pale area of Rs are pale yellow or even whitish. Cells r_{4+5} and m with a darker brown diffuse spot at about their middle. Second costal section much shorter than third (0.83 mm vs. 1.16 mm, ratio 0.716). Vein R_{2+3} angulately bent to costa, with a long vein appendage (which is longer than half of the apical section of the vein). Costa ends at tip of R_{4+5}. Intercrossvein section as long as, or slightly longer than, dM-Cu. Knob of halteres and apical half of stalk dark, its basal half yellow.

Femora dark brown, only apices lighter. Tibiae also dark brown with sharply bordered pale yellow rings medially and apically, tibial bases pale coloured. Hairs on ventral part of male fore fe-

mur not particularly long but male fore tibia with hairs longer than tibial diameter ventrally, and similar hairs in its apical half also posteriorly. Fore metatarsus, as well as 2nd and 3rd tarsomeres, with extremely long hairs posteriorly. Male mid tibia ventrally with short hairs only, no mid ventral seta but a rather long ventroapical seta present. Armature of mid tibia: anterodorsals: at 12/53 small, at 18/53 long, at 43/53 very long seta and a more anterior at 32–33/53; posterodorsals: at 10/53 small, at 15/53 long, at 28/53 and 44/53 a very long seta each; longest seta 0.31 mm. Basal part of basitarsi, as well as of 2nd tarsomeres, and basal parts of 4th and 5th tarsomeres dark, apical parts and the whole 3rd tarsomere yellow.

Male genitalia are rather small. Terminalia not studied.

Female cerci short (not much longer than broad), with 2 pairs of long apical and dorsoapical hairs.

This is a rather conspicuous species; possibly only *P. furcata* (DUDA) is more or less closely related (see key).

Poecilosomella curvipes sp. n.

Holotype male (HNHM): TAIWAN: Ilan Hsien, Fu-Shan LTER Site, Sep 26, 2000 – over a rocky brook, leg. L. PAPP, No. 6.

Measurements in mm: body length 3.08 (as measurable on holotype but since abdomen downcurved and contracted, definitely longer when alive), wing length 3.15, wing width 1.29.

Body dark brown, mesonotum almost black with the usual silvery *Poecilosomella* pattern. Legs dark with the usual light rings.

Frons dark with some reddish hue, facial plate dark reddish brown. Antennae dirty red. Cephalic setae strong, 2 pairs of widely set fronto-orbitals present. Four pairs of medium long *ifr.* Genal seta only 0.21 mm long, gena below eye 0.28 mm broad. Aristal cilia rather short, 0.03 mm.

Scutellum 0.50 mm long, 0.74 mm broad, apical scutellar seta 0.71 mm. Katepisternals subequal, 0.29 and 0.33 mm.

Fore and hind femora strongly swollen, fore tibia also thickened, 0.19 mm at broadest. Male fore tibia ventrally and posteriorly, as well as all fore tarsomeres with extremely long hairs. Longest hairs on fore metatarsus 0.48 mm(!), ventrobasal hair of fore femur 0.36 mm long. Male mid tibia apically curved inwards and dorsoventrally flattened, ventrally with medium-long hairs. Male mid tibia apically without *va* seta but with a patch of short black spinules. Armature of mid tibia: anterodorsals: a short seta at 9/42, a long one at 13/42, a strong, more anterior at 25/42, the longest one at 34/42; posterodorsals: several short setae basally, long at 13/42, 2 shorter at 20 and 24/42, the longest one at 32/42.

Wings with limited patterns, pale brownish, veins yellow, brown only on the areas of brown spots. Humeral cell dark brown, costa to humeral break, humeral vein and R vein trunk to Rs dark brown, R_1 just distally to Rs and at level of R_{2-5} fork also dark brown. Costa at junction with R_1, distal section of R_{2+3} and R_{2-5} fork dark brown. A small dark spot each connecting R_1 and R_{2-5} fork and over apex of R_{2+3}. Apex of R_{4+5} is also a little darker. Second costal section comparatively very short, only 0.745 mm, third section 0.825 mm, ratio 0.90. Vein R_{2+3} without an appendage. Costa overruns R_{4+5} by a distance of its width. Medial vein strongly S-shaped.

Male tergite 5 is normal, with the usual marginal bristles. Genitalia not prepared.

Etymology: I name this species by virtue of its medially curved mid tibia.
Distribution: Taiwan.

P. curvipes sp. n. is an easily recognisable species. Among the species with normal male tergite 5 it is conspicuous by its curved mid tibia and by the extremely long hairs on fore tibia and on all fore tarsomeres. Based on its wing pattern, I cannot exclude that this is a large-bodied member of the *P. varians* species group.

Poecilosomella formosana sp. n.
(Figs 20–23)

Holotype male (HNHM): TAIWAN, Ilan Hsien, Fu-Shan LTER Site, Sep 26, 2000 – over a rocky brook, leg. L. PAPP, No. 6.

Paratypes (HNHM): TAIWAN, leg. L. PAPP, 2000: 1 male: data same as for the holotype; 1 female: ibid., lake shore vegetation and along a brook bed, No. 7; 1 male: ibid., Sep 27, along/over a small brook, No. 11; 1 female: ibid., 2 km downstream Bot. Garden, along a small river, Sep 27, No. 10; 1 male, 1 female: Taipei, Nanshih Chiao, Han-Lo-Da, 450 m, rocky forest undergrowth, Sep 23, No. 1; 2 males: Nantou Hsien, Shuili, forest undergrowth, Sep 30, No. 12.

Measurements in mm: body length 2.05 (holotype), 2.10–2.56 (paratype males), 1.80–1.86 (paratype females), wing length 2.13 (holotype), 2.15–2.45, 1.95–2.05 (paratypes), wing width 1.02 (holotype), 1.07–1.17, 0.90–0.93 (paratypes).

Body features, incl. wing and armature of mid tibia, are the same as in *P. borboroides* (WALKER, 1860). I consider the following two differences as well based: antennae blackish and wing with a diffuse dark spot distal to apex of R_{2+3}.

Male abdominal sternite 5 (Fig. 22) asymmetrical, widely emarginated medially, median hairs similar to *P. ornata*, no thick black spinules present. Subepandrial sclerite (Fig. 20) differently shaped than in *P. borboroides* or *P. ornata*, with 3 pairs of long thick setae. Surstylus (Fig. 21) with only 1 large thick black tooth, but no process behind it as in *P. ornata*. Postgonite (Fig. 23) with hairs longer than in *P. ornata*, apex rounded, no apical process but 2 minute subapical projections.

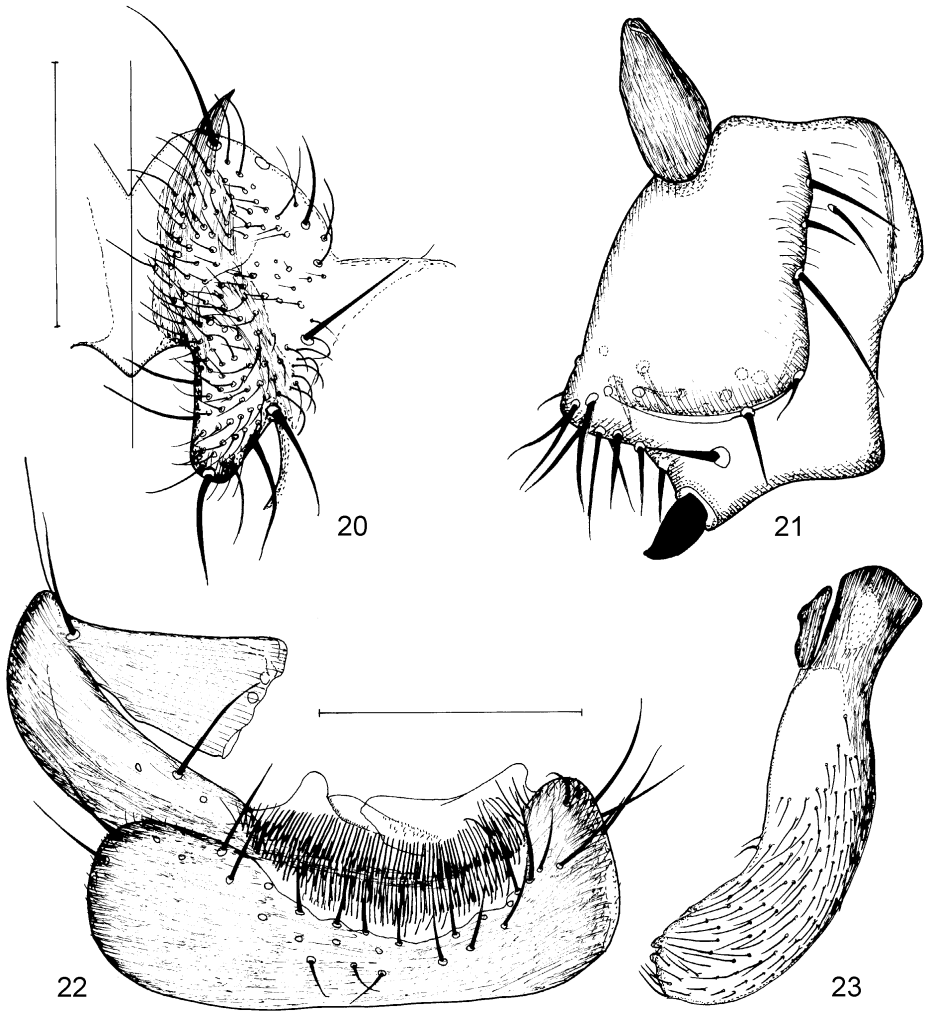
Females smaller than males, differring from females of other species in the species group as in the key below.

This species is only distinguishable from *P. borboroides* by characteristics of the male postabdomen and genitalia. I think we can differentiate between females of the two species by the two features described above. However, males are different in all the four morphological parts depicted on Figs 20–23 vs. 1–5, i.e. there is no doubt about their identity as different species.

Poecilosomella hayashii sp. n.

Holotype female (ROM): PHILIPPINES, Negros, Oriental: Cuernos de Negros, 7 km W. Valencia, 29 JUN – 8 JUL 1987. DC Darling, E. Mayordo. ROM 873061 – 1° rainforest edge, 700 m, Malaise w/pans.

Measurements: body length 2.18 mm (holotype), wing length not measurable (wing perpedicularly curved at middle), breadth 1.00 mm.



Figs 20–23. *Poecilosomella formosana* sp. n., paratype male. 20 = right half of subepandrial sclerite, caudal view, 21 = surstylus, true lateral view, 22 = sternite 5 and 6, ventral view, 23 = postgonite, lateral view. Scales: 0.2 mm for Fig. 22, 0.1 mm for Figs 20–21, 23

Body dark brown, less pictured than in the other species of the genus. Wings uniformly dark brown.

Frons dull dark brown with silvery orbitalia and interfrontal stripes, silvery dots at bases of *vti, vte* and a pair of silvery dots on uppermost part of occiput. Orbital setae close to each other and reduced: thin and the posterior one is only 0.28 mm long. Face bright reddish, dark brown above mouth edge. First flagellomere enlarged, 0.21 mm long, scape plus pedicel 0.155 mm long. Arista medium long, aristal cilia 0.055 mm long, cilia on flagellomere dense but much shorter. Only 2 pairs of short *ifr*. Genal bristle extremely long, 0.24 mm, ventrally placed (arising just above peristomals), gena below eye 0.14 mm broad.

Mesonotum shiny dark brown, silvery dots only at bases of the 2 pairs of strong *dc* and of the scutellar setae. Scutellum broader than long. Only 1 (posterior) katepisternal, 0.26 mm long.

Legs shiny dark brown with yellowish rings on the middle and apices of mid and hind tibia. Fore basitarsus wholly dark brown but tarsomeres 2–5 are clear white. Fore tibia thickened 0.53 mm long and 0.10 mm thick. No ventral or anteroventral setae on mid tibia, no strong ventroapical on mid tibia, 3 rather thin setae instead. Mid tarsomeres 1 and 2 dark brown, tarsomeres 3 to 5 white, shortened, their length combined less than length of mid basitarsus. Hind basitarsus and second tarsomere enlarged and extremely thickened: thickness of basitarsus is larger than that of the hind femur. Apical three tarsomeres of hind tarsus white and shortened, shorter than mid apical three tarsomeres.

Wing almost uniformly dark brown, only cross-veins and a small spot amidst cell r2+3 lighter. Costa of wing with long dense but comparatively thin fringe and without vein appendage on R_{2+3}. Second costal section only 0.465 mm, third section 0.825 mm, ratio 0.56

Female abdominal sternites rather narrow. Epiproct very small and almost quadrate. Cerci short, round with 2 pairs of long, wavy bent hairs.

Male unknown.

Etymology. I name this species in honour of Dr. Toshihiko HAYASHI, for his achievement in studies on *Poecilosomella* and other species of Sphaeroceridae.

Distribution: Known only from the Philippines.

P. hayashii sp. n. is a peculiar species. Despite the reduced pattern on its body, this is probably the most beautiful species of the known *Poecilosomella*. I think it is closely related to the *P. borboroides* species group, based on the structures of wing (long dense but thin fringe, rather short second costal section, etc.), with the similar armature of mid tibia. The coloration of body and legs make it easily identifiable.

Poecilosomella longicalcar sp. n.
(Figs 24–30)

Holotype male (CMNH): TAIWAN: Nantou Hsien, Meifeng, 2130 m, 10–17 July 1993. A. Smetana, T147 – yellow pan traps.

Paratypes: 21 males, 20 females (CMNH, 4 males, 4 females in HNHM): same as for holotype; 17 males, 10 females (CMNH, 3 males, 2 females in HNHM): TAIWAN: Taichung, Anmashan, 2230m, 30 Apr–4 May 1990, A. Smetana (T32).

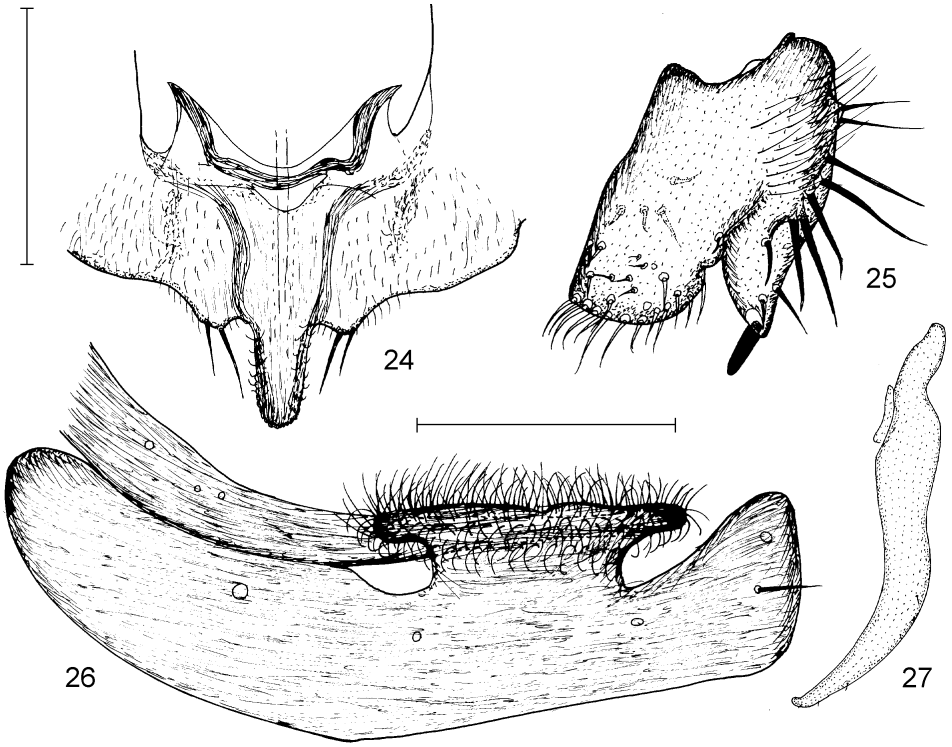
Measurements in mm: body length 3.83 (holotype, abdomen downcurved), 3.70–3.95 (paratype males), 2.64–4.00 (paratype females), wing length 3.57 (holotype), 2.98–3.88 (paratypes), wing width 1.66 (holotype), 1.54–1.72 (paratypes).

Body dark, mostly dull greyish brown,

Facial plate yellow, occiput black dusted, frons reddish except for the silvery spots. Antennae rather long, red, first flagellomere darkened apically. Arista less than twice as long as antenna, aristal cilia rather short, cilia on flagellomere not much longer. Palpi yellow. No strong genal seta. Anterior fronto-orbital much shorter and thinner than posterior one. Three pairs of *ifr*, anterior and posterior pair medium long, but median pair rather long, 0.23 mm on holotype.

Mesonotum rather dull, silvery spots tend to be confluent into silvery lines. Both dorsocentral pairs strong. Anterior katepisternal much thinner than posterior and only 1/3 to 2/5 as long. Scutellum 0.65 mm long, 0.77 mm broad, apical scutellar seta 0.95 mm (male paratype).

Wing light brown, veins ochreous but brown on the area of dark spots. Wing with vein appendage on R_{2+3}, but there are also specimens without it. Rather large and well demarcated dark brown spots around apical section of R_{2+3}, and from costa at junction with R_1 down into the discal cell, including apical part of R_1 and R_{2-5} fork. Costa overruns apex of R_{4+5} by a distance of 1.5 its width. Medial part of R_{2+3} concave, apex of R_{2+3} upcurving to costa perpendicularly, angularly, arcus usually



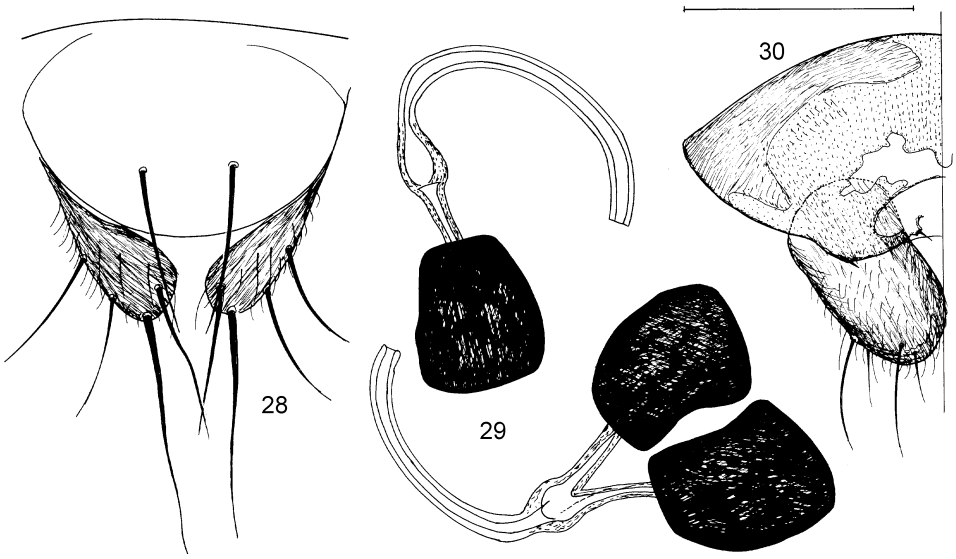
Figs 24–27. *Poecilosomella longicalcar* sp. n., paratype male, terminalia. 24 = subepandrial sclerite, caudal view, 25 = surstylus, lateral view, 26 = sternites 5 and 6, ventral view, 27 = postgonite, true lateral view. Scale: 0.2 mm for Fig. 26, 0.1 mm for Figs 24–25, 27

with a vein appendage (stump vein). Premedial part of vein R_{4+5} slightly bent towards the costa but apical half almost straight. Second costal section shorter than third section (0.90 vs. 1.125 mm on a male paratype). Cross-vein dM-Cu is much longer than intercrossvein section of M (0.27 mm vs. 0.22 mm on a paratype male).

Legs largely black, tibiae without light medial rings, bases and apices of tibiae light. Fore and hind femora much thickened. Male fore tibia ventrally and posteriorly with long hairs; hairs on fore tarsomeres somewhat longer than their own diameter. Male mid tibia in apical 3/5 ventrally with very long hairs, longest hairs 0.30 mm long: No mid ventral seta but an extremely long curved spur present, 0.25 mm on a male paratype vs. 0.49 mm long basitarsus. Apex of fore basitarsus, as well as whole 2nd and 3rd fore tarsomeres yellow, whole mid tarsomeres 1–3 yellow, apex of 2nd tarsomere and whole 3rd tarsomere of hind tarsi yellow.

Male sternite 5 strongly asymmetrical, the well sclerotized medial part of sternite 6 rather short (narrow), complex sternite 5 & 6 with a hairy, caudally broadened medial process (Fig. 26). Subepandrial sclerite (Fig. 24) sagittally with a long blunt process, which is slightly dentate around; this process is bordered by 2 pairs of setae. Otherwise subepandrial sclerite is without long setae. Male surstylus bilobed (Fig. 25), anterior lobe almost straight in profile, rounded apically, posterior lobe with a blunt ventrally directed tooth. Posterior lobe basally with a hairy ridge, which bears long setae. Postgonite (Fig. 27) rather slender, curved along a fine arcus with a few minute hairs only.

Female terminalia small, sternite 8 unsclerotized mediocaudally, there a pair of minute medioclinate setae present. Epiproct (Fig. 28) broad, undivided with a pair of medium long thin setae. Hypoproct (Fig. 30) divided; parts broadly rounded apically, with short hairs and with 2 pairs of medium long hair-like setae. Cerci small, rounded apically with 4 pairs of long or medium long thin



Figs 28–30. *Poecilosomella longicalcar* sp. n., paratype female, terminalia. 28 = epiproct and cerci, dorsal view, 29 = the three spermathecae, 30 = sternite 8 and hypoproct, ventral view. Scale: 0.1 mm for all

setae. Spermathecae (Fig. 29) black, slightly collapsed even in water, initial ducts joining spermathecae are thin, followed by a small bulbus.

Etymology: The name of this species refers to its extremely long curved ventral spur on mid tibia.

Distribution: Taiwan.

P. longicalcar sp. n. is an interesting species, whose specimens are usually with a vein appendage (stump vein) on R_{2+3} subapically, i.e. at the turning point of curvature to costa. Indeed, I think it is related to species with this character. It is distinct enough to be separated easily from all those species by the key below. However, there are specimens without vein appendage on R_{2+3}, which are to be identified carefully. The species "sp. near brunettii" of DEEMING (1969: 65) and PAPP (1991*a*: 107) might be an aberrant specimen of *P. longicalcar*.

Poecilosomella nigra sp. n.
(Figs 31–34)

Holotype male (HNHM, abdomen and genitalia in a plastic microvial): TAIWAN: Pingtung Hsien, Kenting, Heng-Chun Trop. Botanical Garden – light traps, Oct 4–6, 2000, L. Peregovits & L. PAPP, No. 15.

Paratype female (HNHM): same as for holotype; paratype male (NMNH, abdomen and genitalia in a plastic microvial): Sri Lanka: Kan. Dist., Udwattakele Sanct., Kandy, 600 meters, 12–14-X–1980 – collected in Malaise trap – K. V. Krombein, P. B. Karunaratne, T. Wijesinhe, L. Jayawickrema, V. Gunawardane.

Measurements in mm: body length 2.50 (holotype), 2.55 (paratype male), 2.72 (paratype female), wing length 2.25 (holotype), 2.34, 2.30 (paratypes), wing width 0.98 (holotype), 0.98, 0.96 (paratypes).

Body black, including frons and antennae. Mesonotum with the usual silvery *Poecilosomella* pattern, incl. 3 rather large spot sagittally, in addition to a triangular prescutellar spot.

Facial plate brown, frons with silvery spots around setal bases. Arista medium long, aristal cilia short, at most 0.03 mm, cilia on flagellomere even shorter. Cephalic setae somewhat shorter than usual but thick, incl. 2 pairs of fronto-orbitals, their distance 0.055mm. Three pairs of short *ifr*.

Anterior dorsocental pair rather long, 0.225 mm on holotype. Two pairs of almost equally long katepisternals. Scutellum 0.41 mm long, 0.54mm broad, apical scutellars very thick, 0.56 mm.

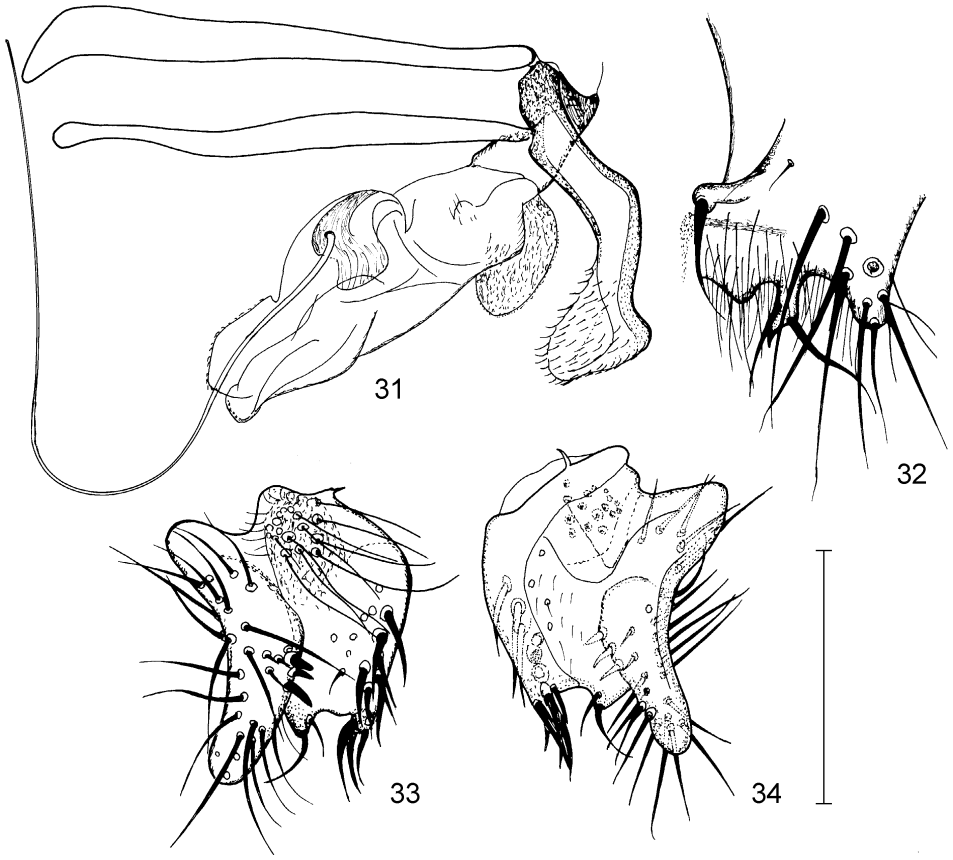
Wings clear, light yellowish grey, veins yellow but dark on the area of dark spots, dark brown spots around tips of R_1, R_{2+3} and R_{4+5} (a small spot around R_{2-5} fork continuously over R_1); also veins in basal part of wing dark brown. No vein appendage on R_{2+3}. Second costal section 0.585 mm, third section 0.56 mm, ratio 1.045. Intercrossvein section of M/dMCu 0.18/0.155 mm (paratype male).

Legs black with dirty yellow rings medially and apically. Fore and hind femora thickened, fore tibia also thicker than usual. Male fore tibia as well as fore tarsomeres 1–3 ventrally and posteriorly with long dense hairs. Armature of male mid tibia (holotype): a short anterodorsal each at 18/60 and 37/60, a very long and thick anterodorsal at 42/60; a very long and thick dorsal setae at 49/60; me-

dium long posterodorsals at 23, 28, 38/60, a longer one at 48/60. Mid tibia ventrally without a medial seta but with a distinct ventroapical. Anterodorsal and posterodorsal hair-like setae longer than usual.

Abdominal tergite 2 less melanized and probably less sclerotized on its medial third. Epandrium with the usual setae dorsally and caudally but there are numerous thick setae on ventral part. Cerci rather weakly sclerotized, without setae. Male subepandrial sclerite (Fig. 32) with a pair of acutely pointed straight processes, which bear 2 long seta. Postgonite (Fig. 31) bisinuate with broader, though partly membraneous, apical part. Male surstylus (Figs 33–34) trilobed, similar to that of *P. varians*, posterior lobe with at least 7 thick black thorns, medial lobe with 2 thick thorn-like setae, anterior lobe with numerous long hairs but also with some straight short setae (Fig. 33). Both medial part of hypandrium and phallapodeme comparatively long (Fig. 31). Distiphallus rather compact, apical threadlike process (Fig. 31) at least three times longer than distiphallus.

Female terminalia not studied. Paratype female assigned on the basis of association with holotype male.



Figs 31–34. *Poecilosomella nigra* sp. n., paratype male. 31 = genital complex with postgonite, lateral view, 32 = right half of subepandrial sclerite with apex of epandrium, 33 = surstylus, outer lateral view, 34 = surstylus, inner (medial) view. Scale: 0.2 mm for all

Distribution: Taiwan, Sri Lanka. It must be rather widespread but species in this species group are to be identified based on the characters of the male genitalia only.

P. nigra sp. n. is a member of the *P. varians* species group, so the true characteristics for its reliable identification are in the male genitalia (see Figs 31–34 and key below).

Poecilosomella paraciculata sp. n.
(Figs 35–38)

Holotype male (ROM): INDONESIA, Sumatra, W. Sumatra: Kerinci-Seblat Nat. Pk., trail to L. Tujuh, 14 SEP 1989. B Hubley, DC Darling, ROM 893074 – 1° rainforest, 1640 m, screen sweep, 1°42'N, 101°19'E.

Paratypes (ROM, 1 male, 1 female in HNHM): 2 males, 2 females: same data as holotype; 2 males, 2 females (ROM, 1 male in HNHM): Sumatra, Aceh, Gunung Leuser Nat. Pk., Ketambe Res. Sta., 9–21 SEP 1989, DC Darling, ROM 893087 – 1° rainforest. Young forest, Terrace 3, closed canopy, 350 m, 3° 41'N, 97° 39'E, Malaise trap head.

Measurements in mm: body length 1.86 (holotype), 2.00 (paratype males), 1.90–1.95 (paratype females), wing length 1.63 (holotype), 1.82–1.85 (paratypes), wing width 0.79 (holotype), 0.79–0.82 (paratypes).

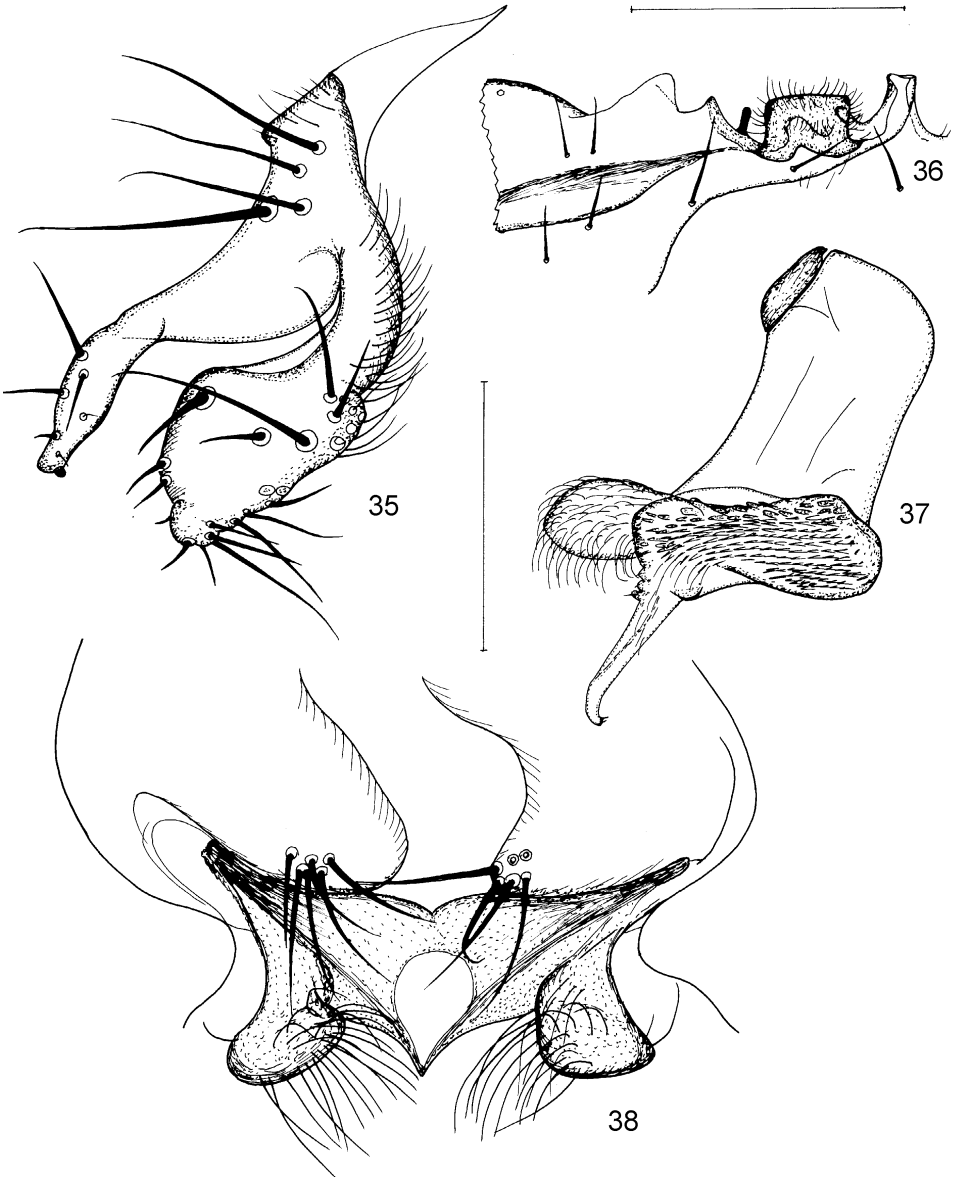
Frons reddish brown, orbitalia, interfrontal lines silvery. Facial plate reddish yellow. Two pairs of subequal orbital setae and three pairs of medium long *ifr*. Genal bristle reduced, not distinguishable from peristomal hairs. Scape lighter brown, pedicel and first flagellomere reddish, latter somewhat shorter than pedicel and scape combined (0.112 vs. 0.125 mm). Flagellomere with long (0.025 mm) cilia)

Wings without vein appendage on R_{2+3} subapically. Second costal section somewhat shorter than (subequal to) third section (on holotype 40 mm vs. 0.50 mm). A brown diffuse spot around humeral vein, between R_1 and Rs fork, around upcurving section of R_{2+3}, around apical part of R_{4+5} and a lighter brown patch from R-M cross-vein down to Cu. Costal hairs short and less dense. Costa overruns apex of R_{4+5} by a distance of the length of dM-Cu cross-vein.

Fore tarsomeres, except fore basitarsus, clear white. Legs dark brown, apices of femora light. All tibiae with broad medial and apical light rings. Male mid tibia with a short curved ventroapical spur (much shorter than tibial *diameter* subapically) but otherwise ventral hairs not long (shorter than tibial diameter). No mid ventral or anterior seta on mid tibia. Mid and hind tarsi brown with yellow apices, hind 3rd tarsomere clear yellow.

Male sternite 6 (Fig. 36) of an intricate form with a dark digitiform process medially on the left side. Sternite 5&6 complex with a separated medial quadrate hairy process. Epandrium comparatively large with medium long setae. Cerci peculiar, with a number of long and thick setae ventrally (Fig. 38). Subepandrial sclerite (Fig. 38) with a pair of characteristic ventral process which bear long hairs. Male surstylus (Fig. 35) with two long, deeply separated lobes, medial lobe long digitiform but blunt. Postgonite (Fig. 37) rather long with a long apical process, which bear short thornlets only. Anterior lobe of postgonite hairy, medial part with adpressed scales i.e. not hairs.

Female terminalia not studied.



Figs 35–38. *Poecilosomella paraciculata* sp. n., paratype male, genitalia. 35 = surstylus in widest extension, i.e. in subcaudal view, 36 = sternite 6, ventral view, 37 = postgonite, lateral view, 38 = subepandrial sclerite, caudal view. Scales: 0.2 mm for Fig. 38, 0.1 mm for Figs 35–36, 38

Distribution: Sumatra (Indonesia)

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

Poecilosomella paracryptica sp. n.
(Figs 39–41)

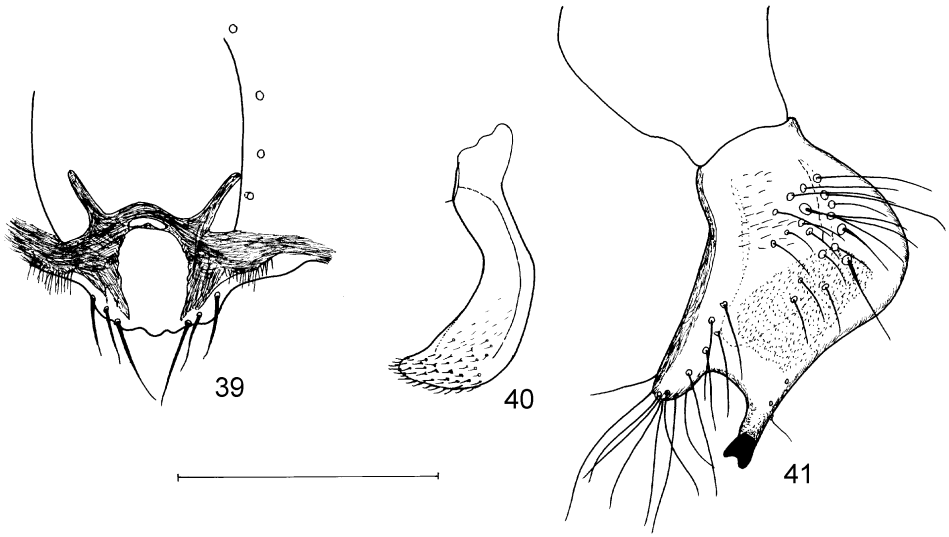
Holotype male (NMNH): MALAYSIA: Sabah, Kinabalu National Park, Headquarters Area, el. 1560m, 13 Sept. 1983, G. F. Hevel & W. E. Steiner.

Paratypes (NMNH, HNHM): 7 males, 2 females: same data as holotype (3 males in HNHM, abdomen with genitalia of one of them in a plastic microvial with glycerine); 1 male (NMNH): ibid., Poring, el. 570 m, 8 Sept. 1983.

Measurements in mm: body length 2.05 (holotype), 2.05–2.56 (paratype males), 2.05–2.18 (paratype females), wing length 2.10 (holotype), 2.05–2.41 (paratypes), wing width 1.02 (holotype), and 0.90–1.10 (paratypes).

Mesonotum, scutellum, pleurae and abdomen black, mesonotal spots silvery grey. Body characteristics largely same as in *P. varians*.

Posterior half of frons rather dark, even anterior reddish half darker than in the related species. A strong upcurving genal bristle present. Arista short, 0.465–0.48 mm, while antenna 0.28–0.29 mm, with short cilia (0.03–0.035 mm) only. Two or three pairs of short *ifr*. Proboscis large, semiglobular.



Figs 39–41. *Poecilosomella paracryptica* sp. n., paratype male, postabdomen and genitalia. 39 = subepandrial sclerite, caudal view, 40 = postgonite, lateral view, 41 = surstylus, lateral view. Scale: 0.2 mm for all

Scutellum 0.48 mm broad, 0.34 mm long, apical scutellars 0.59 mm long (holotype). Katepisternals subequal, 0.155 and 0.205 mm (holotype), 0.20 and 0.26 mm (paratype male).

No parts of fore tarsomeres white, although they are at least partly yellow. A yellow ring also on the middle of fore tibia. Male fore tibia and basitarsus (plus other two tarsomeres) ventrally to posteriorly, with long hairs (longer than their diameter at bases of hairs). Male mid tibia ventrally without long hairs, ventroapical seta more or less strong. Mid tibial armature: anterodorsals: a shorter at 13/64, long setae at 10/32 and 26/32, a very long, more anterior at 23/32; posterodorsals: a medium long at 12/40, thick and long setae at 16/40, 22/40, a very thick and even longer at 33/40.

Wings without vein appendage on R_{2+3}, dark spots as in *P. cryptica*. Apex of R_{2+3} upcurving to costa along a wide arc (i.e. not angularly bent, though it ends perpendicularly), this vein parallel with costa on a rather long medial section. Vein R_{4+5} more strongly bent towards the costa. Second costal section shorter than third section (0.52 vs. 0.645 mm on holotype). Cross-vein dM-Cu is longer than intercrossvein section of M (0.155 mm vs. 0.138 mm).

Male tergite 5 normal with the usual marginal bristles. Subepandrial sclerite (Fig. 39) without any large ventral projection but with 3 pairs of setae, sclerotization characteristic for the species. Surstylus (Fig. 41) bilobed, both lobes longer than in *P. cryptica*, posteromedial process apically with a short bidentate thorn, anterior lobe with numerous, rather long bristles. Postgonite (Fig. 40) comparatively short, broad, curved along a wide arcus, apical part with apically directed small spinules. Distiphallus with the usual apical threadlike process.

Female terminalia not studied. Paratype females assigned on the basis of association with holotype male.

Distribution: known from Sabah (Malaysia) only, but is probably more widely distributed.

P. paracryptica sp. n. is a member of the *P. varians* species group. That is, one can identify it by the male genital characteristics only, though it is easy to do so in the case of this species.

Poecilosomella peniculifera sp. n.

Holotype male (ROM): INDONESIA, Sumatra, W. Sumatra: Kerinci-Seblat Nat. Pk., trial to L. Tujuh, 14 SEP 1989. B Hubley, DC Darling, ROM 893074 – 1° rainforest, 1640 m, screen sweep, 1°42'N, 101°19'E.

Paratypes: 3 females (ROM, 1 female in HNHM): same data as holotype.

Measurements in mm: body length 1.90 (holotype), 2.12–2.20 (paratype females), wing length 1.72 (holotype), 1.90–1.95 (paratypes), wing width 0.82 (holotype), 0.85–0.88 (paratypes).

Frons dull reddish brown (except for orbitalia), facial plate shiny reddish yellow, cheeks and genae greyish red, genal seta only 0.08 mm long. Antennae reddish yellow, scape brown, first flagellomere slightly conical towards upper apex, 0.112 mm, scape and pedicel (combined) 0.125 mm. Arista with short cilia only, cilia on flagellomere about as long. Three pairs of medium long but thin *ifr* (right side on holotype 5, 4 on left on one of the paratypes).

Mesonotum blackish brown, subshiny, with 4 sagittal, 5 pairs of dorsocentral and 5 pairs of lateral silvery spots (incl. postpronotal stripes). Anterior katepisternal more than half as long as posterior seta. Scutellum slightly shorter than basal width, with 5 silvery spots, lateral basal ones rather large.

Wing normal in size, light brown, veins yellow but brown on the area of spots on wing. A brown diffuse spot around humeral vein, between R_1 and Rs fork, around upcurving section of R_{2+3}, and a lighter brown patch from R-M cross-vein down to Cu, and also an area around apical part of R_{4+5} darker than the rest of the alar plane. Costal hairs longer and denser than in its congeners, second costal section thickened (0.03 mm thick medially). Second costal section only slightly shorter than third section (0.463 vs. 0.50 mm on holotype). Vein R_{2+3} without a vein appendage subapically. Vein R_{2+3} bent along a wide arc to costa. Costa overruns apex of vein R_{4+5} by a length equalling three time its diameter, vein R_{4+5} more strongly bent towards the costa, i.e. apical part not straight, consequently medial part less curved (basal par almost straight).

Legs lighter brown. Male fore tibia strongly thickened, fore tarsus flattened. No parts of fore tarsomeres white, basal half of basitarsi and all 4th and 5th tarsomeres dark, whole 2nd and 3rd tarsomeres light yellow (on all the three legs) or proximal part of 2nd tarsomere of mid and hind tarsi dark. Apical part of femora and bases of tibiae lighter, tibiae with medial and apical broad light rings, medial rings on fore and hind tibia occupy almost 1/3 of tibia. Male fore tibia and basitarsus without long hairs, but fore basitarsus shortened with dense short hairs ventrally. Male mid tibia apically not curved inwards and not flattened dorso-ventrally, ventrally without long hairs, ventroapical seta not distinguishable, much shorter than basitarsal diameter. Male mid basitarsus with anteroventral and posteroventral rows of long black setulae. Female fore basitarsus, as well as hind 2nd tarsomere with short but very dense hairs; setulae on the ventral surface of mid basitarsus also denser than usual. Mid tibial armature (male) peculiar: no mid ventral but a strong anterior at 27/40 (short) and 3/4 (strong), anterodorsals at 1/8, 1/5 (short), 3/10 (large), and 4/5 (very large), posterodorsals at 2/5, 19/40 (thin and short), 3/4 (strong).

Male genitalia not studied. Pregenital sclerites, particularly S8 large. Epandrium normal with a pair of long dorsal setae. Cerci high, without any modification or longer hairs.

Female terminalia characteristic with dull quadrate epiproct, which bears a pair of 0.113 mm long hairs and with 2 pairs of 0.125 mm long curved hairs on cerci.

Distribution: Indonesia (Sumatra)

Etymology: The name is “brush carrier”, peniculus + fero, referring to its peculiar mid basitarsus.

P. peniculifera sp. n. is an easily recognisable species by the basitarsal structures both in male and female. Its closer relationship in the genus, is at present obscure.

Poecilosomella pilimana sp. n.
(Figs 42–45)

Holotype male (ROM): INDONESIA: Sumatra, Aceh, Gunung Leuser Nat. Pk., Ketambe Res. Sta., 9–21 SEP 1989, DC Darling, ROM 893087 – 1° rainforest. Young forest, Terrace 3, closed canopy, 350 m, 3°41’N, 97°39’E, Malaise trap head.

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

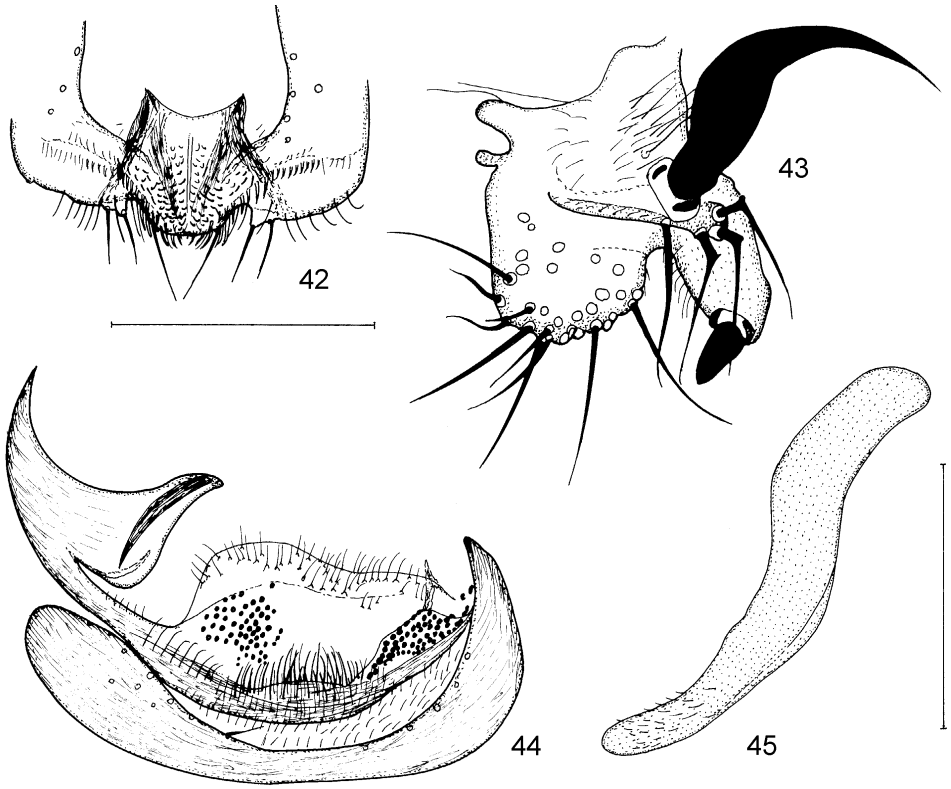
Measurements in mm: body length 2.20 (holotype), 2.51 (paratype), wing length 1.90, 1.95, wing width 0.90, 0.93.

Orbits, vertex and ocellar triangle dark, interfrontal stripe and other parts of frons red, face reddish yellow, genae dirty (greyish) yellow. Antennae yellow (pedicel and scape of paratype reddish). Longest aristal cilia 0.025 mm, cilia on apex of flagellomere slightly shorter. Two pairs of comparatively thick orbitals and two (on paratype female 3) pairs of short *ifr*. Genal seta only 0.10 mm.

Mesonotum with the usual pattern, anterior katepisternal seta longer than half length of posterior one. Scutellum basallyas wide as long.

Wings light brownish, dark brown spots at R_{2-5} fork to R_1, around apices of R_1, R_{2+3}, also a small dark spot on apex of R_{4+5}; base of wing over vein H dark brown, in cell h subbasally a light spot present. Costa just overruns vein R_{4+5}, yellow, brown on area of spots, other veins yellow. No vein appendage on R_{2+3}. Second costal section 0.463 mm, third section 0.60 mm, ratio 0.77. Intercrossvein section of M/dMCu 0.20/0.143 mm, ratio 1.40 (holotype male). Halteres waxy yellow, knob greyish yellow.

Male fore femur ventrally with long hairs, fore tibia as well as three basal tarsomeres ventrally and anteriorly with extremely long fine hairs (longest hairs on tibia 0.225mm, on basitarsus 0.22mm).



Figs 42–45. *Poecilosomella pilimana* sp. n., paratype male, postabdomen and genitalia. 42 = subepandrial sclerite, caudal view, 43 = surstylus, lateral view, 44 = sternites 5 and 6, subventral view, 45 = postgonite, lateral view. Scale: 0.2 mm for Figs 42, 44, 0.1 mm for Figs 43, 45

Armature of mid tibia: anterodorsals: at 13/40 (strong), smaller anterodorsal proximad and at 5/6 (long and thick), posterodorsals: 12, 14, 17/40, a large at 3/4 and a dorsal at 3/4, no true anterior seta. Male mid tibia with fine (i.e. not thick and stiff) hairs longer than tibial diameter ventrally, no ventroapical seta, but ventroapical part of male mid tibia with a patch of ca. 10 short black setulae.

Epandrium dorsally with 1 pair of very long setae and elsewhere with several medium long setae. Sternite 5 (Fig. 44) strongly asymmetrical, broadly emarginated medially. Emargination not sclerotized, but with fine hairs. Sternite 6 (Fig. 44) with a narrow (short) medial sclerotized part. Sagittal part of sternite 6 with longer hairs, the less sclerotized broad medial parts with flat black scales and caudally with fine hairs. Medial part of subepandrial sclerite (Fig. 42) separated, with short black pegs but with a limited number of longer setae. Surstylus (Fig. 43) bilobed, anterior lobe broad with long setae, posterior lobe more narrow but rounded apically, there with a thick black tooth. Posterior lobe laterally with an extremely long curved, posteriorly directed spine (process), whose base bordered by 3 peculiar, angularly bent setae. Postgonite (Fig. 45) S-shaped, curved, with minute hairs only, apex rounded but narrow.

Female genitalia: epiproct shiny, pentangular with almost straight caudal margin and with a pair of 0.13mm (i.e. very long) hairs. Cerci dark brown with a pair of medial (0.13mm), 1 pair of long (0.163mm) apical and 3 pairs of shorter lateral hairs.

Distribution: Indonesia (Sumatra).

Etymology: It is named on the very long hairs of male fore tibia and tarsus.

P. pilimana sp. n. is a member of the *P. punctipennis* species-group. The male of this species exhibits the longest fore tibial and tarsal hairs, ventral hairs of mid tibia are fine and definitely longer than tibial diameter. The lateral, extremely long, curved process of the male surstylus makes it easily recognisable.

Poecilosomella pilipino sp. n.
(Figs 46–49)

Holotype male (ROM): PHILIPPINES, Negros, Oriental: Cuernos de Negros, 7 km W. Valencia, 29 JUN – 8 JUL 1987. DC Darling, E. Mayordo. ROM 873061 – 1° rainforest edge, 700 m, Malaise w/pans.

Paratypes: 1 male (HNHM): same as for holotype; 1 male (ROM): ibid., 8–15 JUL 1987, ROM 873062.

Measurements in mm: body length 2.36 (holotype), 2.33 (both paratype males), wing length 2.05 (holotype), 1.95, 2.23 (paratypes), wing width 0.86 (holotype), 0.90 and not measurable (paratypes).

Mesonotum and abdominal tergites dark grey dusted.

Facial plate reddish yellow, occiput and orbitalia dark brown, most parts of frons dirty reddish, except for the silvery spots. Two closely placed fronto-orbital pairs. Antenna reddish, first flagellomere infuscated. Arista long with rather long aristal cilia. Three pairs of rather thin *ifr*.

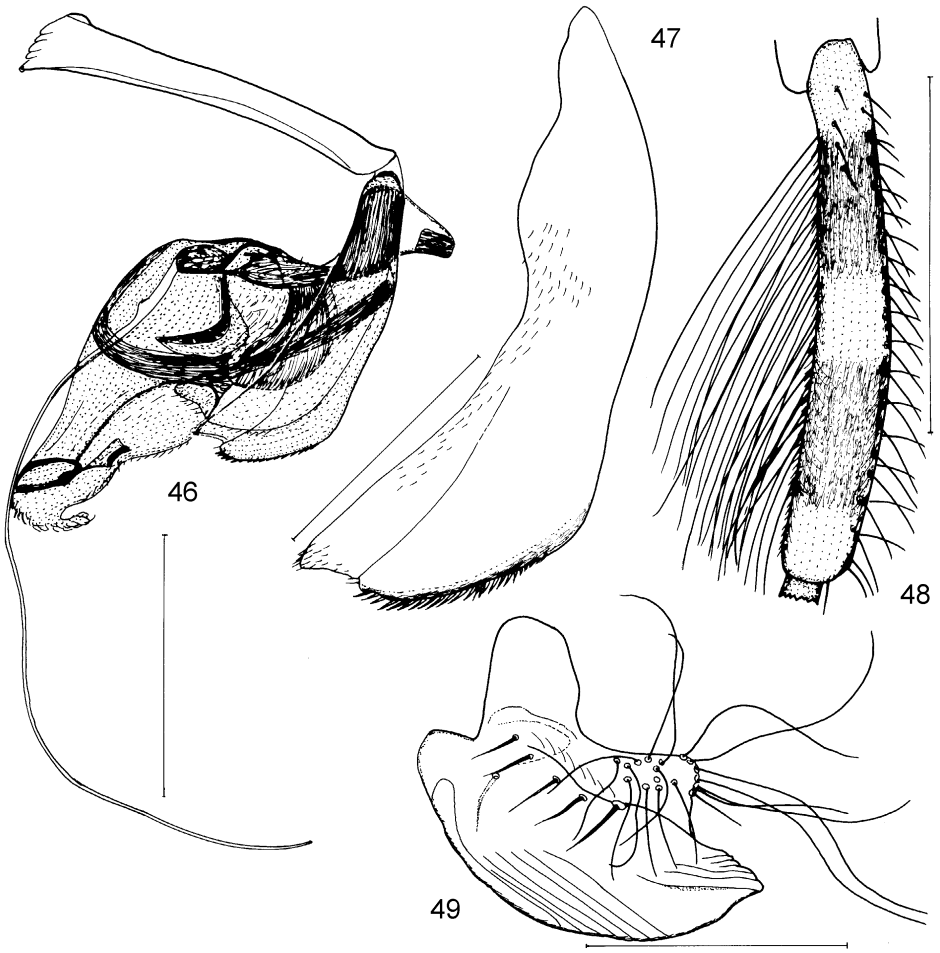
Scutellum longer than broad. Two pairs of almost equally long katepisternals.

Male fore tibia (Fig. 48) medially (ventrally) with extremely long hairs in its whole length: longest hairs on male fore tibia as long as 2/3 length of tibia. Also fore femora with long hairs ven-

trally. Fore tarsomeres dorsally with setulae longer than diameter of tarsomeres. Mid tibia ventrally with long hairs (as long as diameter of tibia), i.e. like *P. pectiniterga* (cf. HAYASHI 1997: fig. 8). No ventroapical seta on mid tibia but with 3 curved, hair-like setae instead.

Wings without vein appendage on R_{2+3}, dark spots as in *P. insularis* HAYASHI, 1997. Second and third costal sections 0.585 mm vs. 0.57 mm (holotype), ratio 1.03. Intercrossvein section of vein M 0.145 mm, dM-Cu cross-vein 0.155 mm long.

Epandrium with a limited number of rather thin setae. Cerci weakly sclerotized. Subepandrial sclerite without pecularities. Anterior lobe of surstylus with very long hairs (Fig. 49), posterior lobe larger than in *P. pectiniterga.* Postgonite (Figs 46–47) slightly bent in its basal 3/4, distal part curved



Figs 46–49. *Poecilosomella pilipino* sp. n., paratype male. 46 = genital complex with postgonite, lateral view, 47 = postgonite in higher magnification, lateral view, 48 = fore tibia, anterior view, 49 = surstylus, lateral view. Scales: 0.5 mm for Fig. 48, 0.2 mm for Figs 46, 49, 0.1 mm for Fig. 47

and broad, apical part more membraneous. Phallus rather large compared to the phallapodeme (Fig. 46). Distiphallus narrowing, apical part slightly downcurved, apical threadlike process about twice as long as phallus (Fig. 46).

Female unknown.

Distribution. Known from the Philippines only.

Etymology. The name (noun) means a male from the Philippines.

P. pilipino sp. n. is a member of the *P. pectiniterga* species group. The very long hairs along the whole length of male fore tibia are very characteristic, and the details of the male genitalia provide reliable characters for its identification. As stressed in the introductory part, all the identifications (published or not) made between 1964 and 1997 must be checked.

Poecilosomella ronkayi sp. n.

Holotype male (HNHM): TAIWAN: Ilan Hsien, Fu-Shan LTER Site, Sep 26, 2000, leg. L. PAPP, No. 7 – lake shore vegetation and along a brook bed.

Measurements in mm: body length ca. 2.31 (not precisely measurable on holotype, abdomen downcurved, ca. 2.50 mm when alive), wing length 2.46, wing width 1.10.

Scape plus pedicel 0.155 mm, first flagellomere 0.21 mm long. Genal bristle 0.12 mm long, gena below eye 0.17 mm broad. Genal bristle weak, shorter than genal diameter below eye.

Scutellum 0.46 mm long, 0.53 mm broad, apical scutellar seta 0.67 mm. Posterior katepisternal seta 0.22 mm long, anterior one only 0.085 mm.

Wing evenly brown, without diffuse brown spots in middle of the r_{4+5} radial and medial cells. Second costal section much shorter than third: 0.535 mm, third section 0.895 mm, ratio 0.60. Vein R_{2+3} with a distinct vein appendage (stump vein) subapically, i.e. at the turning point of curvature to costa. Apical part of vein R_{2+3} 0.155 mm, appendage 0.12 mm long. Intercrossvein section of M/cross-vein dM-Cu 0.19mm/0.16mm, ratio 1.19.

Male fore tibia and basal tarsomeres without long dense hairs. Male mid tibia and basitarsus without long cilia. No mid ventral seta on mid tibia. Mid tibia with a distinct ventroapical seta, which is much longer than diameter of tibia subapically.

Distribution: hitherto known only from Taiwan.

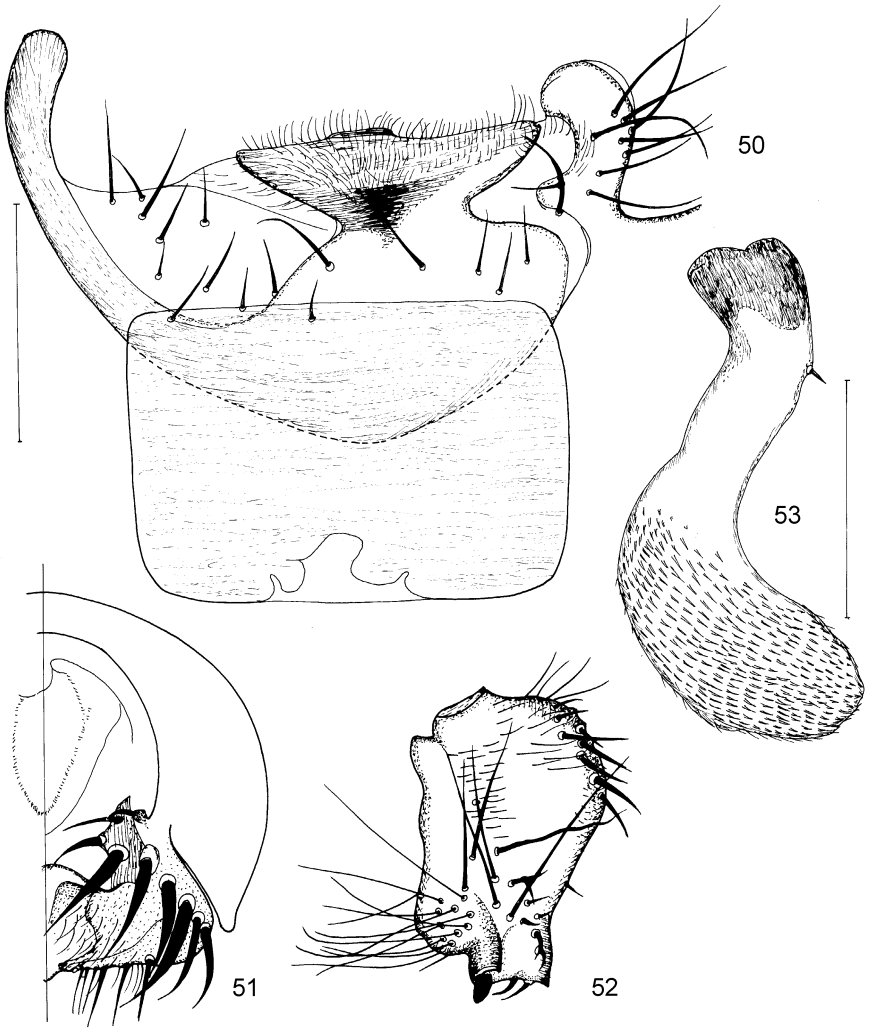
Etymology. I name this new species in honour of my dear colleague, Dr. László Ronkay (Lepidoptera Collection, Department of Zoology, HNHM), for his mental and material support, and for sharing his collections in Taiwan in 2000.

P. ronkayi sp. n. is the sister-species of *P. meijerei* (DUDA, 1925); see remarks under *P. meijerei* above.

Poecilosomella sabahi sp. n.
(Figs 50–53)

Holotype male (NMNH): MALAYSIA: Sabah, Kinabalu National Park, Poring, el. 570m, 8 Sept. 1983, G. F. Hevel & W. E. Steiner.

Paratype male (HNHM): same as for the holotype (damaged, wings wrinkled, right tarsomeres 2–5 of mid and hind tarsi lost; abdomen with genitalia in a plastic microvial with glycerine).



Figs 50–53. *Poecilosomella sabahi* sp. n., paratype male, postabdomen and genitalia. 50 = sternites 5 and 6, ventral view (S5 setae omitted), 51 = right half of subepandrial sclerite, caudal view, 52 = surstylus, lateral view, 53 = postgonite, lateral view. Scales: 0.2 mm for Figs 50–52, 0.1 mm for Fig. 53

Measurements in mm: body length ca. 2.55 (holotype, abdomen downcurved, i.e. not precisely measurable), 2.55 (paratype), wing length 2.18 (holotype), ca. 2.05 (paratype), wing width 1.00 (holotype), ca. 0.90 (paratype).

Orbits and ocellar triangle dark, interfrontal stripe silvery, other parts of frons red, face reddish yellow, genae dirty (greyish) yellow. Aristal cilia are 0.035 mm, cilia on apex of flagellomere as long. Three pairs of very short *ifr*. Genal bristle almost as long as first flagellomere.

Male fore tibia as well as three basal tarsomeres with long fine hairs (definitely longer than tibial/tarsal diameter at bases). Armature of mid tibia: anterodorsals: very strong and long seta at 11/32 and 21/34 each, shorter at 8/34 and 18/34; a very long dorsal at 27/34; posterodorsals: a very small at 5/34, a small at 13/34 and at 19/34, a long seta at 26/34; no true anterior seta. Mid tibia ventroapically without a distinct seta, but with rather long, fine hairs. Scutellum distinctly wider than long.

Wings light brownish, dark brown spots at R_{2-5} fork, at apices of R_1, R_{2+3}, and a small dark spot on apex of R_{4+5}; base of wing over vein H dark brown. Costa brown, other veins yellow. No vein appendage on R_{2+3}. Second costal section 0.55 mm, third section 0.59 mm, ratio 0.94. Intercrossvein section of M/dMCu 0.20/0.15 mm, ratio 1.33 (holotype male). Halteres mostly dark, basal half of stalk dirty yellow.

Sternite 5 normal, sternite 6 with a membraneous lobe on the left side, medially with a reverse trapezoid, hairy process (Fig. 50). Subepandrial sclerite (Fig. 51) unique with 6–7 extremely thick black, ventrally directed thorns. Male surstylus (Fig. 52) peculiar, apical lobes extremely short, medial one with a comparatively short tooth; anterior lobe with numerous very long setae; basal (caudal) part of surstylus with thick thorn-like setae. Postgonite (Fig. 53) not strongly sclerotized, peculiarly strongly curved and very broad at the same time, apical half with short but not thin, adpressed scales (rather than hairs).

Female unknown, or rather, cannot be segregated from females of other species from the material available. Indeed, I have not found characteristics to identify females of these closely related species.

Distribution: North Borneo (Malaysia, Sabah).

P. sabahi sp. n. is a peculiar species, actually distinctly different from all the species in *P. varians* species-group, by a number of characteristics in male genitalia (also, see key).

Poecilosomella spinicauda sp. n.
(Figs 54–57)

Holotype male (ROM): PHILIPPINES, Negros, Oriental: Cuernos de Negros, 7 km W. Valencia, 29 JUN – 8 JUL 1987. DC Darling, E. Mayordo. ROM 873061 – 1° rainforest edge, 700 m, Malaise w/pans.

Paratypes: 1 male, 6 females (1 male, 2 females in HNHM): same as for holotype; 1 male, 2 females (ROM, 1 female HNHM): ibid., 15–21 JUL 1987, ROM 873063 – 09° 17'N x 123° 15'E; 1 male, 1 female (ROM): ibid., 700 m, 5–13 MAY 1988, ROM 873102, DC Darling – Malaise w/pans, 1° forest edge; 1 male, 2 females (NMNH, HNHM): TONGA: Vavau, Neiafu, 0–100 m., III–74, N.L.H. Krauss; 1 male (NMNH): "Society Is., Tahiti, Paea, Robinson's Place, K.M. 26, March 27, 1261".

Measurements in mm: body length 1.80 (holotype), 1.80–2.12 (paratype males), 1.84–2.20 (paratype females), wing length 1.72 (holotype), 1.72 – 2.13 (paratypes), wing width 0.89 (holotype), 0.88 – 1.07 (paratypes).

Facial plate more convex. At least face or frons reddish or even lighter. Two pairs of long and thick orbital setae. Apical part of first flagellomere markedly lighter than rest of flagellomere, also in females. Arista rather short, only 0.55 mm on holotype. Arista with medium long cilia only (ca. 0.022mm), cilia on flagellomere shorter. Two or three pairs of medium long *ifr*. Genal seta rather long, 0.17mm on holotype.

Scutellum normal, i.e. slightly shorter than broad: 0.41 mm long, 0.60 mm broad basally, apical scutellar 0.67 mm (Tahiti paratype male). Katepisternals both large, subequal in size.

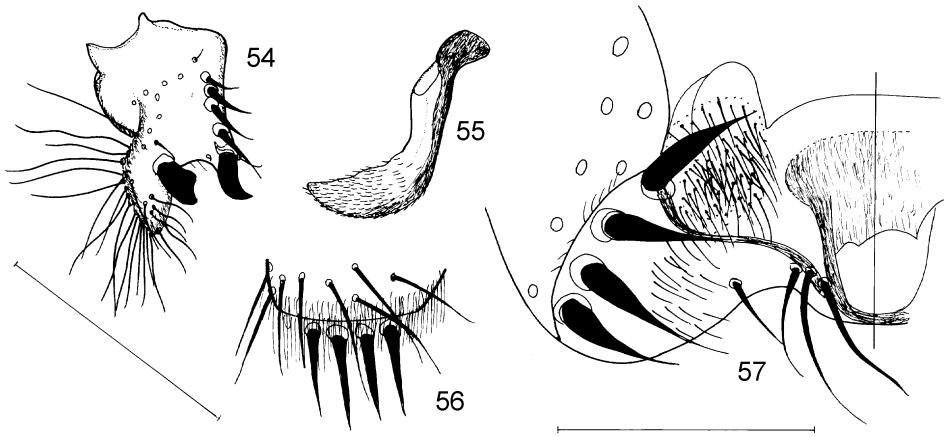
Wings broad, only about twice longer than wide, without vein appendage on R_{2+3}. Costal hairs shorter. Second costal section 0.55 mm, third section 0.57 mm (Tahiti paratype). Vein R_{4+5} more strongly bent towards the costa, i.e. apical part not straight, consequently medial part less curved (basal half slightly S-shaped).

Male fore tibia and basitarsus (possibly other tarsomeres) posteriorly, or ventrally to posteriorly, with long hairs (longer than their diameter at bases of hairs). Male mid tibia not curved inwards and not flattened. Male mid tibia ventrally without long hairs, ventroapical seta more or less strong. Fore tarsomeres at least partly yellow, but not white. A yellow ring present on the middle of fore tibia.

Male tergite 5 normal, with the usual marginal bristles. Epandrium with long setae. Lateral part of subepandrial sclerite (Figs 56–57) with 4 pairs of thick black slightly inclinate setae, more medially a patch of medially directed, thicker, almost straight, hairs. Surstylus (Fig. 54) medially with a thick but acute thorn and several strong setae, lateral lobe rather broad, its medial base with a large black dentiform (slightly bidentate) thorn (process). Postgonite (Fig. 55) comparatively short, strongly curved, rather broad medially, apical half bears dense short hairs.

Female terminalia not studied.

Distribution: Philippines, Tonga, Tahiti; probably widespread in the Pacific Oceanian region.



Figs 54–57. *Poecilosomella spinicauda* sp. n., paratype male, genitalia. 54 = surstylus, outer widest (subcaudal) view, 55 = postgonite, lateral view, 56 = ventral part of epandrium, lateral view (as if thorns on subepandrial sclerite were on epandrium), 57 = left half of subepandrial sclerite, subventral view. Scales: 0.2 mm for Figs 54–56, 0.1 mm for Fig. 57

The relationships of *P. spinicauda* sp. n. are unclear to me at present. It is possible that it is not far from the *P. varians* species group. The thick setae of subepandrial sclerite do not seem to be homologous with those of *P. sabahi*. For instance, their bases are so close to epandrium (Fig. 56) that in some views the thick setae seem to emerge from the apex of the epandrium itself. Apical part of first flagellomere markedly lighter than rest of flagellomere, in both males and females, and this character can be used to reliably identify females of this species.

Poecilosomella spinipes sp. n.
(Figs 58–64)

Holotype male (ROM): INDONESIA: Sumatra, Aceh, Gunung Leuser Nat. Pk., Ketambe Res. Sta., 9–21 SEP 1989, DC Darling, ROM 893087 – 1° rainforest. Young forest, Terrace 3, closed canopy, 350 m, 3° 41'N, 97° 39'E, Malaise trap head.

Paratypes: 4 males, 3 females (ROM, 2 males, 1 female in HNHM): same data as for the holotype.

Measurements in mm: body length 1.95 (holotype), 1.65–1.90 (paratype males), 1.85–2.24 (paratype females), wing length 1.55 (holotype), 1.25–1.95 (paratypes), wing width 0.76 (holotype), 0.66–1.00 (paratypes).

Frons dull red (except for orbitalia), facial plate shiny yellow, cheeks and genae greyish red, genal seta only 0.08 mm long. Antennae reddish yellow, first flagellomere slightly conical towards upper apex, 0.10 mm, scape and pedicel (combined) 0.112 mm. Arista with short cilia only, cilia on flagellomere about as long. Two pairs of medium long but thin *ifr*.

Mesonotum blackish brown, subshiny, with 4 sagittal, 5 pairs of dorsocentral and 5 pairs of lateral silvery spots (incl. postpronotal stripes). Scutellum slightly shorter than basal width, with 5 silvery spots, lateral basal ones rather large.

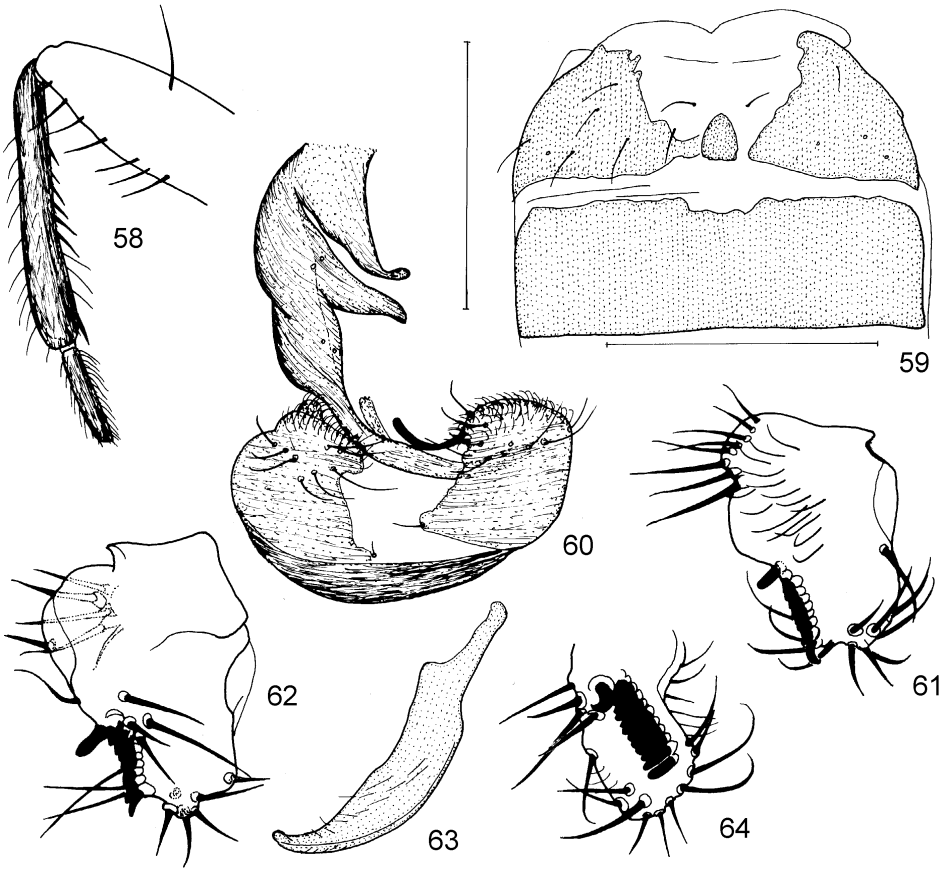
Wing rather short, light brown, veins yellow but brown on the area of spots on wing. A brown diffuse spot around humeral vein, between R_1 and Rs fork, around upcurving section of R_{2+3}, and a lighter brown patch from R-M cross-vein down to Cu. Costal hairs short and less dense. Second costal section shorter than third section (0.275 vs. 0.375 mm on one male paratype). Vein R_{2+3} without a vein appendage subapically. Vein R_{4+5} more strongly bent towards the costa, i.e. apical part not straight, consequently medial part less curved (basal half slightly S-shaped).

Legs lighter brown. No parts of fore tarsomeres white, basal half of basitarsi and 2nd tarsomeres and all 4th tarsomeres dark, apical halves and whole 3rd tarsomere light yellow (on all the three legs). Apical part of femora lighter, tibiae with medial and apical broad light rings. Male mid tibia apically not curved inwards and not flattened dorso-ventrally, ventrally without long hairs, ventroapical seta rather short, shorter than basitarsal diameter. Male fore tibia and basitarsus without long hairs, but fore tibia with a row of thick medium-long black spines ventrally (Fig. 58). Female mid tibia with two short ventroapicals, which are much shorter than tibial diameter subapically. Mid tibial armature: anterodorsals at 3/10, 7/15, 7/10, and 9/10 (all medium long), posterodorsals at 2/15 (short), 8/15, 5/6 (very strong).

Abdominal tergite 2 (Fig. 59) desclerotized medially but a small sclerotized plate present in the sagittal line. Male tergite 5 (Fig. 60) membraneous medially, with finely sclerotized hairy lobe

laterally. Sternite 6 with a fine lath medially (black on Fig. 60); in all, medial complex of sternite 5 & 6 rather simple. Epandrium short, rather small, with medium long setae. Subepandrial sclerite sagittally longer than submedially (i.e. with a small sagittal process), laterally with a hairy spot each. Male surstylus (Fig. 61) blunt, not separated into lobes, basally with a number of caudal setae, posteromedially with the usual blunt tooth, but posteral apical part with a pecten of 11 prensisetae (Figs 62, 64). Postgonite (Fig. 63) of medium width, with a couple of fine hairs only (those mainly on medial surface), its apical 1/5 curved, apex blunt.

Female terminalia characteristic with shiny epiproct, and with 2 pairs of 0.20 mm long downcurved hairs on cerci.



Figs 58–64. *Poecilosomella spinipes* sp. n., paratype male. 58 = fore tibia with basitarsus, lateral view, 59 = basal abdominal tergites, dorsal view, 60 = sternite 5 (medially torn asunder) with pregenital sternites (moved with the right half of S5), ventral view, 61 = surstylus, lateral (outer) view, 62 = same, inner view, 63 = postgonite, lateral view, 64 = apex of surstylus in dorsal view of pecten. Scales: 0.4 mm for Fig. 59, 0.2 mm for Fig. 60, 0.1 mm for Figs 61–64 (for Fig. 58 same as for Fig. 48)

Etymology: It is named on the ventral row of black spines on male fore tibia.
Distribution: Indonesia (Sumatra).

P. spinipes sp. n. is an easily recognisable species. The ventral row of thick, medium long black spines on male fore tibia seems unique among the species of the genus. Also the male genitalia show characteristic features in separating it from the other species of the *P. varians-nigra* species group. The two pairs of very long female cercal hairs are also very characteristic.

Poecilosomella subpilimana sp. n.
(Figs 65–68)

Holotype male (ROM): INDONESIA, Sumatra, W. Sumatra: Kerinci-Seblat Nat. Pk., trial to L. Tujuh, 14 SEP 1989. B Hubley, DC Darling, ROM 893074 – 1° rainforest, 1640 m, screen sweep, 1°42'N, 101°19'E.

Paratype male (HNHM): same data as for the holotype.

Measurements in mm: body length 2.65 (holotype), 2.45 (paratype male), wing length 2.48 (holotype), 2.42 (paratype), wing width 1.24 (holotype), and 1.16 (paratype).

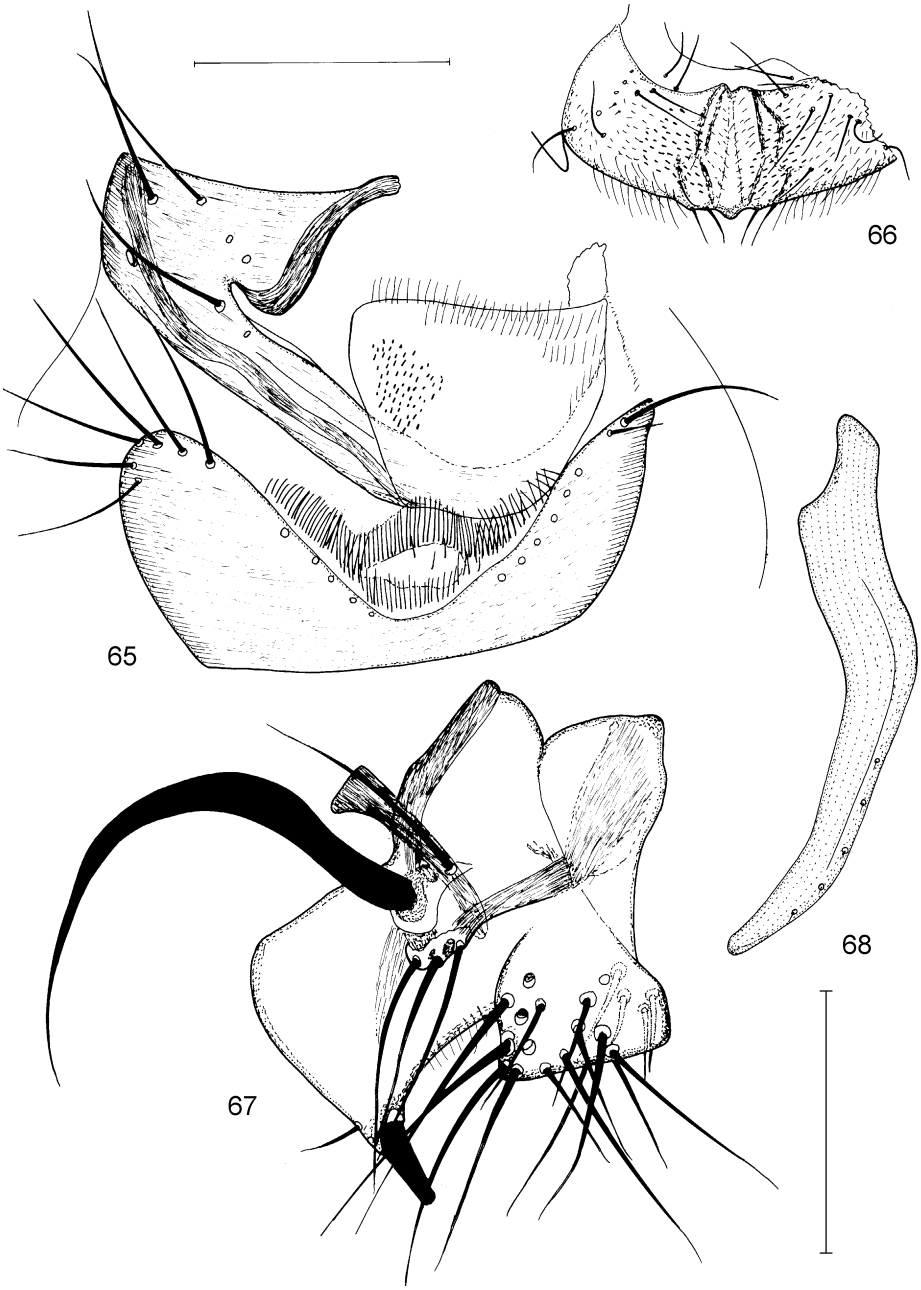
Frons dull greyish red, facial plate shiny, face, cheeks and genae reddish. Two pairs of strong orbital setae close to each other. Two pairs of short but not thin *ifr*. Genal seta only 0.125 mm long. Scape brown, pedicel yellow, first flagellomere reddish grey, covered with very dense white cilia. Pedicel is somewhat longer than first flagellomere (0.16 mm vs. 0.15 mm). Arista with short cilia only.

Mesonotum dull black with 4 sagittal, 4 pairs of dorsocentral and 3 pairs of lateral silvery spots. Anterior katepisternal thin and short. Scutellum as long as wide basally, concolorous with the mesonotum, with 6 silvery spots: 2 sagittal (basal and medial), 2 larger spots basolaterally including the bases of lateral scutellar setae and a pair of smaller spots on bases of apical scutellars.

Wing almost unicolorous light brown, veins yellow, only cross-veins lighter, one brown spot subapically on R_1, which also covers Rs fork, another spot on costa and wing plane proximally on second costal section and a third one around the upcurving section of R_{2+3}. Costal hairs short and less dense than in the *borboroides* group. Second costal section as long as third section. Vein R_{2+3} without a vein appendage subapically. Apical half of vein R_{4+5} straight, medial part more strongly curved.

All the femora and tibiae slightly thickened. Legs mainly dark brown but apical half of femora dorsally lighter (maybe the type specimens were kept in alcohol before pinning), tibiae with broad light ring medially and subapically. No parts of fore tarsomeres white but apical part of basitarsus and of the 2nd tarsomere light yellow, 3rd tarsomere wholly light yellow on all three tarsi. Male fore tibia and basitarsus with hairs much longer than diameter of tibia/basitarsus at their bases. Male mid tibia not curved inwards and not flattened, ventrally with shorter hairs (only some posterior hairs longer than tibial diameter). Mid tibia without a true ventroapical but with three, short, thick black setae instead. Mid tibial setae: no strong anterior or ventral seta, anterodorsals at 1/5 (short), at 3/10 (longer) at 11/15 (short) and at 5/6 (strong), posterodorsals (all strong) at 3/10, 3/5 and 5/6.

Male abdominal sternite 5 (Fig. 65) asymmetrical, medial part broadly emarginate, area between sternite 5 & 6 with long fine hairs arranged in 2 rows. Sternite 6 with a weakly sclerotized medial plate, which bears, asymmetrically, fine hairs as well as minute thornlets. Epandrium short with



Figs 65–68. *Poecilosomella subpilimana* sp. n., paratype male, postabdomen and genitalia. 65 = sternites 5 and 6, ventral view, 66 = subepandrial sclerite, caudal view, 67 = surstylus, lateral view, 68 = postgonite, lateral view. Scales: 0.2 mm for Fig. 65–66, 0.1 mm for Figs 67–68

short setae. Cerci normal. Subepandrial sclerite (Fig. 66) rather simple with a sagittal furrow, covered partly by black thornlets and with some medium long setae not only marginally. Male surstylus (Fig. 67) bilobed: anterior lobe incised apically, with numerous long setae, posterior lobe enlarged caudally with a strong apical tooth and subbasally with an extremely long flat thorn-like process. This process is curved mediocaudally, following the curvature of surstyli and epandrium, and is bordered by long, but slightly curved, setae. Postgonite (Fig. 68) rather simple: twice curved but medial part almost straight, with blunt apex and with a limited number of minute posterior hairlets.

Female unknown.

Distribution: Indonesia (Sumatra).

P. subpilimana sp. n. is not an easily recognisable species by body characteristics. It is hypothesized that this species is not a member of the species-group of *P. himalayensis, P. annulitibia* and *P. nepalensis*, centred in distribution in the Himalayas (see DEEMING 1969), although it keys with *himalayensis* on account of its similar wing venation and male mid tibial structures. The only reliable characters for its identification are in the male genitalia; in this respect it is similar to *P. pilimana* sp. n., particularly because of the extremely long black process (spine) on its surstylus.

A KEY TO THE ORIENTAL SPECIES OF POECILOSOMELLA
(based on PAPP 1991*a*)

1 (14) Vein R_{2+3} with a distinct vein appendage (stump vein) subapically, i.e. at the turning point of curvature to costa.

2 (9) Second costal section much shorter than third. Male mid tibia and basitarsus without long cilia. No mid ventral seta on mid tibia.

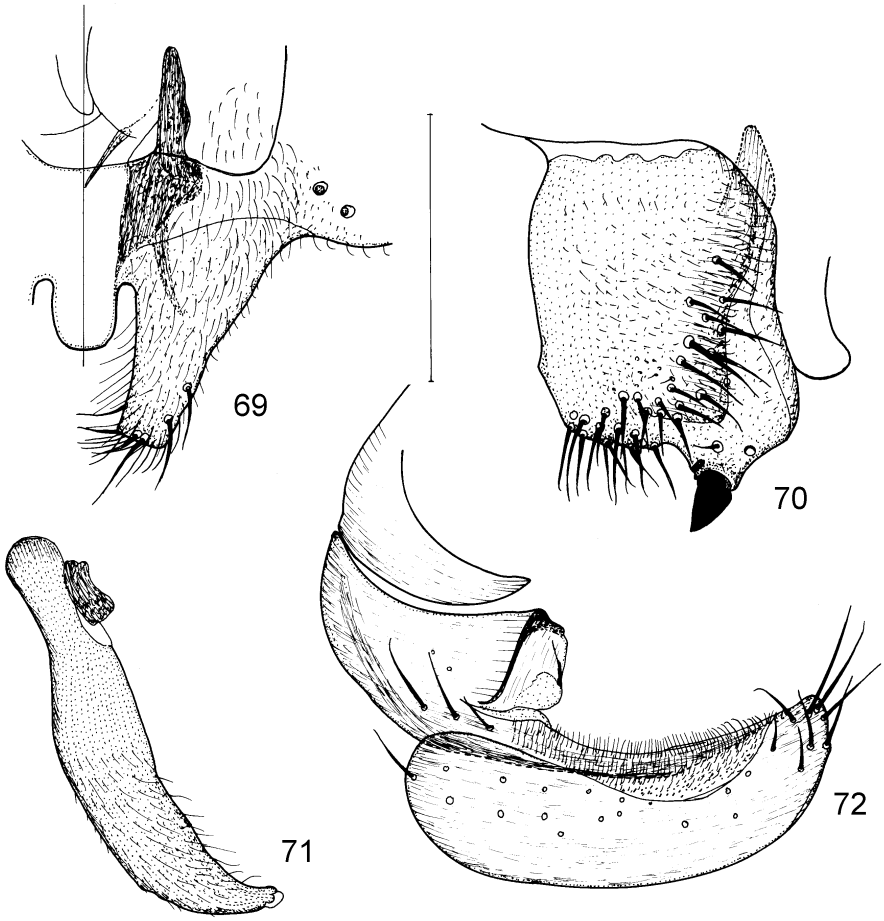
3 (4) No ventroapical on mid tibia, 3 thick, short setae instead. A long upcurved genal bristle present. Male fore tibia and 2 basal tarsomeres with long dense hairs on whole of ventral half. Surstylus very characteristic (PAPP 1991*a*: fig. 18), laterally with a long, curved, blade-like thorn. Postgonite (PAPP 1991*a*: fig. 20) much curved apically. Taiwan, Viet Nam
P. furcata (DUDA, 1925)

4 (3) Mid tibia with a distinct ventro-apical seta.

5 (6) Wing with a diffuse dark brown spot on both sides of vein R_{4+5}, i.e. in middle of the r_{4+5} radial and medial cells. A long upcurved genal bristle present, much longer than genal diameter below eye, present. Male fore tibia and 2 basal tarsomeres with long dense hairs on whole of ventral half. Sabah **P. conspicua** sp. n.

6 (5) Wing evenly brown, without diffuse brown spots in middle of the r_{4+5} radial and medial cells. Genal bristle weak, shorter than genal diameter below eye. Male fore tibia and basal tarsomeres without long dense hairs.

7 (8) Ventroapical seta on mid tibia slightly curved and shorter than diameter of tibia subapically. Male surstylus (Fig. 14), postgonite (Fig. 15). Java, Sumatra *P. meijerei* (DUDA, 1925)



Figs 69–72. *Poecilosomella picturata* (MALLOCH), holotype male. 69 = right half of subepandrial sclerite, caudal view, 70 = surstylus, true lateral view, 71 = postgonite, lateral view, 72 = sternites 5 and 6, ventral view. Scale: 0.2 mm for Fig. 72, 0.1 mm for Figs 69–71

8 (7) Ventroapical seta of mid tibia much longer than diameter of tibia subapically. Taiwan **P. ronkayi** sp. n.

9 (2) Second costal section about as long as third. Male mid tibia and basitarsus with or without long cilia. Mid tibia with or without mid ventral seta. No strong upcurving genal bristle.

10 (11) Mid tibia without an anterior seta, or a small anterior close to the distal anterodorsal. Male mid tibia with a very long ventral spur (half as long as basitarsus). Female first flagellomere enlarged (much longer than scape and pedicel combined), with long cilia apically. Taiwan **P. longicalcar** sp. n., pro parte

11 (10) Mid tibia with a strong anterior seta. Male mid tibia with a short ventroapical seta, or ventroapical indiscernible. Female first flagellomere normal.

12 (13) Anterior bristle of mid tibia equidistant between the two strong anterodorsals. Male subepandrial sclerite with a blunt shovel-formed appendage. Postgonites arcuately curved and pointed. Nepal, Taiwan *P. annulitibia* (DEEMING, 1969)

13 (12) Anterior bristle of mid tibia much nearer to proximal anterodorsal than to long distal anterodorsal. Male subepandrial sclerite with a long medial process. Postgonites slightly curved and blunt apically. Nepal, India, Pakistan *P. nepalensis* (DEEMING, 1969)

14 (1) Vein R_{2+3} without a vein appendage subapically.

15 (24) Fore tarsomeres, and sometimes fore basitarsus partly, clear white. Second costal section much shorter than third.

16 (21) Costa terminates at vein R_{4+5}. Wings completely dark. Arista with long cilia (similar to that of *borboroides* and *ornata*) or genal bristle very small.

17 (18) Hind tibia all dark, without any light ring. Mid tibia with a long ventroapical seta (much longer than tibial diameter subapically). Genal seta very small. No ventral seta on the middle of mid tibia. Philippines, Sri Lanka *P. albipes* (DUDA, 1925)

18 (17) Hind tibia with one yellow ring medially and one apically. No ventroapical on mid tibia or ventroapical seta much shorter than tibial diameter subapically. Genal seta normal.

19 (20) Two pairs of thin but subequal orbital setae. No mid ventral seta on mid tibia. Second costal section only slightly longer than half third section. Vein R_{2+3} meets costa at an acute angle. Fore tarsomeres 2–5, mid and hind tarsomeres 3–5 clear white. Philippines **P. hayashii** sp. n.

20 (19) Anterior orbital seta reduced to a minute hair (just discernible), posterior orbital setae long and thick. Mid tibia with a strong mid ventral seta. Second costal section about 3/5 length of third section. Vein R_{2+3} meets costa perpendicularly. Fore tarsomere 5, as well as mid and hind tarsomeres 4–5 all dark. Sumatra **P. brevisecunda** sp. n.

21 (16) Costa terminates distinctly beyond tip of vein R_{4+5}. Wings lighter with dark spots (distinct pattern). No ventroapical on mid tibia or ventroapical seta much shorter than tibial diameter subapically.

22 (23) Costa terminates not far from apex of R_{4+5}. Male mid tibia with very long hairs and with straight stiff setae (DEEMING 1969: fig. 3). Nepal, India, Sri Lanka, Indonesia (W. Flores, Lombok) *P. aciculata* (DEEMING, 1969)

23 (22) Costa overruns apex of R_{4+5} by a distance of the length of dM-Cu crossvein. Male mid tibia ventrally with a short ventro-apical but with short hairs only (shorter than tibial diameter). Sumatra **P. paraciculata** sp. n.

24 (15) No parts of fore tarsomeres white, although they are at least partly yellow.

25 (34) Arista with very long cilia. Costal hairs rather long. Second costal section much shorter than third. Male mid tibia and basitarsus ventrally without long hairs, or tibia with a limited number of long hairs.

26 (29) Mid tibia with a strong (antero)ventral bristle at apical 3/5 to 2/3 but no ventro-apical seta on mid tibia.

27 (28) Male surstylus (Fig. 12) with a large tooth and with a process caudally to it. Male subepandrial sclerite thinner digitiform without thicker setae (Fig. 11). Wing without a diffuse dark spot distally to apex of R_{2+3}. Widespread *P. ornata* (DE MEIJERE, 1908), sp. restit.

28 (27) Male surstylus with a small tooth and no process behind it (Fig. 70). Male subepandrial sclerite not curved, edged, broader with some thicker setae (Fig. 69). Wing with a diffuse dark spot distally to apex of R_{2+3}. Philippines *P. picturata* (MALLOCH, 1913), sp. restit.

29 (26) No ventral or anteroventral setae on mid tibia, except for the ventral seta at the apex.

30 (31) Antennae blackish. Wing with a diffuse dark spot distally to apex of R_{2+3}, male surstylus (Fig. 21) with a single tooth, i.e. without a row of thick black teeth. Taiwan **P. formosana** sp. n.

31 (30) Antennae reddish or yellowish. Wing without a diffuse dark spot distally to apex of R_{2+3}, male surstylus (Figs 4–5, 7) with a row of 4 or 6 thick black teeth.

32 (33) Male surstylus with 6 thick black teeth, ventral process of subepandrial sclerite (Figs 4–5) very broad, postgonite (Fig. 3) less broad. Widespread *P. borboroides* (WALKER, 1860)

33 (32) Male surstylus with 4 thick black teeth, ventral process of the subepandrial sclerite (Fig. 7) less broad, postgonite (Fig. 8) very broad. Philippines **P. borborus** sp. n.

34 (25) Arista with short cilia only. Costal hairs shorter. Second costal section usually as long as, or longer than third section.

35 (38) Scutellum very long, as long as apical scutellar setae or nearly so. Costal ratio *mg*2/*mg*3 about 1.5 or even more. All posterodorsals on mid tibia short, i.e. no long paired setae on dorsal half of mid tibia. Male mid tibia with some short curved/inclinate ventroapical spurs.

36 (37) Body reddish, i.e. frons, face and genae red or reddish ochre, at least pleurae partly red. Four (rarely 3) pairs of short and thin *ifr*. Genae very broad, wings long. No upcurved genal bristle. Female cerci with 2 pairs of very long bent hairs. Nepal, India, Burma, China, Taiwan *P. longinervis* (DUDA, 1925)

37 (36) Body dark, e.g. mesonotum blackish brown. Only 2 or 3 pairs of short and thin *ifr*. Genae narrower than in *longinervis*, wings comparatively shorter. An upcurved genal bristle present. Female cerci with 1 short and 1 moderately long pairs of bristles only. India, Indonesia, Taiwan, Philippines *P. multipunctata* (DUDA, 1925)

38 (35) Scutellum normal. Second costal section variable but usually shorter. Mid tibia with at least 1 long posterodorsal seta, i.e. mid tibia with long paired setae. Male mid tibia with or without long ventroapical spur.

39 (42) Ventroapical seta (spur) of mid tibia very long, ca. half as long as mid basitarsus. Tibiae without light rings, at most apices lighter.

40 (41) Male mid tibia ventrally without long hairs. Surstylus long with an additional black lateral thorn on caudal lobe (DEEMING 1969: fig. 19). India
P. brunettii (DEEMING, 1969)

41 (40) Male mid tibia with extremely long upright hairs. Surstylus (Fig. 25) shorter with several thick setae on caudal lobe. Taiwan
P. longicalcar sp. n., pro parte

Aberrant males without an appendage on R_{2+3} run here.

42 (39) Mid tibia with or without long ventroapical spur; if present, much shorter than half length of mid basitarsus.

43 (50) Male tergite 5 broadened on right side with 9–13 extremely long thick marginal bristles. Posterior lobe of surstylus without apical tooth (Fig. 49). Vein R_{4+5} slightly bent towards costa.

44 (45) Male fore tibia without long hairs anteroventrally (hairs shorter than tibial diameter). Male mid tibia with medium-long hairs ventrally. Sri Lanka and Malaysia *P. pappi* HAYASHI, 1997

45 (44) Male fore tibia with extremely long hairs (some of the hairs longer than 1/3 length of fore tibia).

46 (47) Male fore tibia with extremely long hairs restricted to basal third of tibia. Male mid tibia ventrally with short (but thicker, stiff) hairs only. Biak I. and Papua New Guinea *P. insularis* HAYASHI, 1997

47 (46) Male fore tibia with extremely long hairs along its entire length (Fig. 48). Male mid tibia ventrally with long hairs (longer than tibial diameter).

48 (49) Hairs on male fore tibia at most slightly longer than 1/3 length of tibia (see fig. 5 of HAYASHI 1997). Anterior lobe of surstylus with shorter hairs (HAYASHI 1997: fig. 11), posterior lobe comparatively smaller. Christmas Island *P. pectiniterga* (DEEMING, 1964)

49 (48) Longest hairs on male fore tibia as long as 2/3 length of tibia (Fig. 48). Anterior lobe of surstylus with very long hairs (Fig. 49), posterior lobe larger than in *P. pectiniterga.* Philippines **P. pilipino** sp. n.

50 (43) Male tergite 5 normal, with the usual marginal bristles.

51 (52) Male mid tibia apically curved inwards and dorsoventrally flattened, ventrally with medium-long hairs. Male mid tibia apically without *va* seta but with a patch of short black spinules. Male fore tibia ventrally and posteriorly, as well as all fore tarsomeres with extremely long hairs. Large species, wing length 3.15 mm. Taiwan **P. curvipes** sp. n.

52 (51) Male mid tibia not curved inwards and not flattened. Usually smaller species.

53 (56) Apical half of vein R_{4+5} straight, medial part more strongly curved.

54 (55) Male mid tibia ventrally with very long hairs in distal 1/3 (DEEMING 1969: fig. 4); some of the ventral hairs thicker than adjacent ones. Male fore tibia and basitarsus posteriorly and posteroventrally with hairs shorter than diameter of basitarsus. Posterior lobe (ventromedial process) of male surstylus with a very long droplet-shaped apical tooth (DEEMING 1969: fig. 16). Nepal *P. himalayensis* (DEEMING, 1969)

55 (54) Male mid tibia ventrally with shorter hairs (only some posterior hairs longer than tibial diameter). Male fore tibia and basitarsus with hairs much longer than diameter of tibia/basitarsus at their bases. Posterior lobe (ventromedial process) of male surstylus (Fig. 67) with an extremely long, strap-like black spine. Sumatra **P. subpilimana** sp. n.

56 (53) Vein R_{4+5} more strongly bent towards the costa, i.e. apical part not straight, consequently medial part less curved (basal half slightly S-shaped).

57 (66) Male mid tibia ventrally with long hairs, no distinct, strong ventroapical seta but ventroapically at most with a transverse row of more or less curved, longer hairs instead. Male fore tibia ventrally and anteriorly, as well as fore basitarsus, or even other tarsomeres, with long hairs.

58 (59) Subepandrial sclerite ventrally with 6–7 long thick thorns (Fig. 51). Surstylar lobes very short, surstylus basally (caudally) with numerous short thick setae (Fig. 52). Sabah **P. sabahi** sp. n.

59 (58) Subepandrial sclerite normal, i.e. without long thick thorns ventrally. Surstylus otherwise shaped.

60 (63) Male mid tibia with ventral hairs strong, straight (stiff) but not longer than tibial diameter (at most some longer hairs subapically), some of the hairs blunt and thicker than adjacent hairs. Usually 4 short posterodorsals plus a longer preapical posterodorsal seta.

61 (62) Male ventral sclerites posterior to sternite 5 form two pairs of hairy processes (PAPP 1991*a*: fig. 26). Male surstylus (PAPP 1991*a*: fig. 30). Widespread *P. punctipennis* (WIEDEMANN, 1824)

62 (61) Male postabdomen with a single medial T or wide Y-shaped process (HAYASHI 2002). Male surstylus (HAYASHI 2002). Widespread *P. affinis* HAYASHI, 2002

63 (60) Male mid tibia with thinner but longer hairs, numerous hairs longer than tibial diameter; dorsal armature may be different.

64 (65) Male mid tibia ventroapically with a transverse row of 4–5 curved black thornlets. Surstylus without a large lateral process. Taiwan, Sumatra *P. amputata* (DUDA, 1925)

65 (64) Ventroapical part of male mid tibia with a patch of ca. 10 short black setulae. Epandrium dorsally with a pair of very long bristles. Surstylus (Fig. 43) laterally with an extremely long curved, posteriorly directed spine. Sumatra **P. pilimana** sp. n.

66 (57) Male mid tibia ventrally without long hairs, ventroapical seta more or less strong or mid basitarsus modified.

67 (72) Male fore tibia and basitarsus without long hairs. Female mid tibia with two short ventroapicals, which are much shorter than tibial diameter subapically.

68 (69) Male fore tibia ventrally with a row of black spines (Fig. 58). Surstylus (Figs 61–62, 64) with a pecten of 11 teeth. Sumatra **P. spinipes** sp. n.

69 (68) Male fore tibia ventrally without black spines.

70 (71) Male and female basitarsi normal. Vein R_{2+3} apically angularly bent to costa. Costa terminates at tip of vein R_{4+5}. Sumatra, Java, Taiwan, ?Burma *P. rectinervis* (DUDA, 1925)

71 (70) Male mid basitarsus with dense black setulae on its whole ventral surface. Female fore basitarsus, as well as hind 2nd tarsomere with short but very dense hairs; setulae on ventral surface of mid basitarsus also denser than usual. Vein R_{2+3} bent along a wide arc to costa. Costa overruns tip of vein R_{4+5} by a length equalling three times its diameter. Sumatra **P. peniculifera** sp. n.

72 (67) Male fore tibia and basitarsus (possibly other tarsomeres) posteriorly, or ventrally to posteriorly, with long hairs (longer than their diameter at bases of hairs).

73 (74) No yellow ring on middle of fore tibia. Facial plate not much protruding. Face, frons and genae dark brown. Hairs on male fore tibia and tarsomeres very long (some hairs more than twice longer than tibial diameter). Taiwan *P. nigrotibiata* (DUDA, 1925)

74 (73) A yellow ring on middle of fore tibia. Facial plate more convex. At least face or frons reddish or even lighter.

75 (76) Subepandrial sclerite laterally with (3-)4 long thick thorns (Figs 56–57). Surstylus (Fig. 54) medially with a thick but acute thorn and several strong setae. Postgonite (Fig. 55) strongly curved and rather broad. Apical part of first flagellomere markedly lighter than rest of flagellomere, also in females. Philippines, Tonga and Society Is. **P. spinicauda** sp. n.

76 (75) Subepandrial sclerite without thick thorns. Surstylus different.

77 (80) Male subepandrial sclerite with a pair of peculiar processes (Fig. 32). Surstylus trilobed with several thick thorns.

78 (79) Male subepandrial sclerite with a pair of large, broad, upcurved processes (PAPP 1991*a*: figs 33, 35). Postgonite (PAPP 1991*a*: fig. 34) geniculately bent, apical part not very broad. Widespread *P. varians* (DUDA, 1925)

79 (78) Male subepandrial sclerite with a pair of acutely pointed straight processes (Fig. 32). Postgonite (Fig. 31) bisinuate with broader, partly membraneous, apical part. Sri Lanka, Taiwan, probably widespread **P. nigra** sp. n.

80 (77) Male subepandrial sclerite simple (Fig. 39). Surstylus (Fig. 41) bilobed.

81 (82) Medial part of R_{2+3} slightly concave, i.e. no section parallel with costa. Posteromedial lobe of surstylus shorter and broader with a laterally placed thorn (PAPP 1991*a*: fig. 13). Postgonite (PAPP 1991*a*: fig. 15) less broad, caudal margin angulate. Subepandrial sclerite (PAPP 1991*a*: fig. 11). Taiwan *P. cryptica* L. PAPP, 1991

82 (81) A rather long medial part of R_{2+3} parallel to costa, apical part bent along a wide arc (i.e. not angulately) into costa. Posteromedial lobe of surstylus longer, apically with a bidentate thorn (Fig. 41). Postgonite (Fig. 40) very broad, caudal margin arcuately bent. Subepandrial sclerite (Fig. 39). Sabah **P. paracryptica** sp. n.

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