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Two new species of the emesine assassin bug genus *Ploiaria* (Hemiptera: Heteroptera: Reduviidae) from Indonesia

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Abstract. Two new species of the emesine reduviid genus *Ploiaria* Scopoli, 1786, *P. stysi* sp. nov. and *P. paveli* sp. nov., are described from Bali and Flores, Indonesia. *Ploiaria stysi* sp. nov. differs from *P. maai* Wygodzinsky, 1966, by the male antennal segments I and II lacking long setae, the procoxa 1.3 times as long as the pronotum, the anteroventral series of the profemur beginning with two basal spine-like setae distinctly placed from other spine-like setae, the parameres not overlapping each other in rest, etc. *Ploiaria paveli* sp. nov. is distinguished from *P. halosydne* Wygodzinsky & Usinger, 1960, by the body length more than 12 mm, the anteroventral series of the profemur beginning with one basal spine-like seta distinctly placed from other spine-like setae, the metafemur pale in apical part, etc.

Key words. Heteroptera, Reduviidae, Emesinae, Leistarchini, *Ploiaria*, new species, Indonesia, Bali, Flores

Introduction

With more than 120 species the worldwide genus *Ploiaria* Scopoli, 1786 (Reduviidae: Emesinae) is the morphologically most diverse and most speciose genus within the tribe Leistarchini (cf. Maldonado Capriles 1990). This genus is characterized among related genera by the following combination of characters: head ventrally lacking spine-like setae, medially emarginated posterior margin of the prosternum, posterior pronotal lobe covering only the extreme base of the mesonotum, non-spined scutellum and metanotum, profemora lacking a process with several spine-like setae, and three-segmented protarsi. Wing polymorphism is common within the genus and macropterous, brachypterous and apterous forms are found not only between species but also in individuals belonging to the same species.

By 1966, eight species of *Ploiaria* had been described or recorded from Sumatra, Java, Borneo, Sulawesi, and New Guinea (Wygodzinsky 1966, Maldonado Capriles 1990). However,

nothing has been published on *Ploiaria* in Indonesia after 1966 and *Ploiaria* is unknown from Bali and Flores. This lack of recent published data is also true for other countries and areas of East and Southeast Asia and applies to *Ploiaria* as well as other genera of Emesinae.

Within the past eight years, many species of Emesinae including *Ploiaria* have been newly described and recorded from East Asia such as Japan (Ishikawa 2000, 2001, 2002, 2005; Ishikawa et al. 2005; Ishikawa & Takai 2003; Ishikawa & Tomokuni 2002; Ishikawa & Yasunaga 2004a,b) and from Southeast Asia such as Vietnam (Ishikawa & Okajima 2004), Thailand (Ishikawa & Okajima 2006) and Malaysia (Rédei 2008). These facts indicate that these regions are still poorly investigated even though there are several historical studies on Reduviidae.

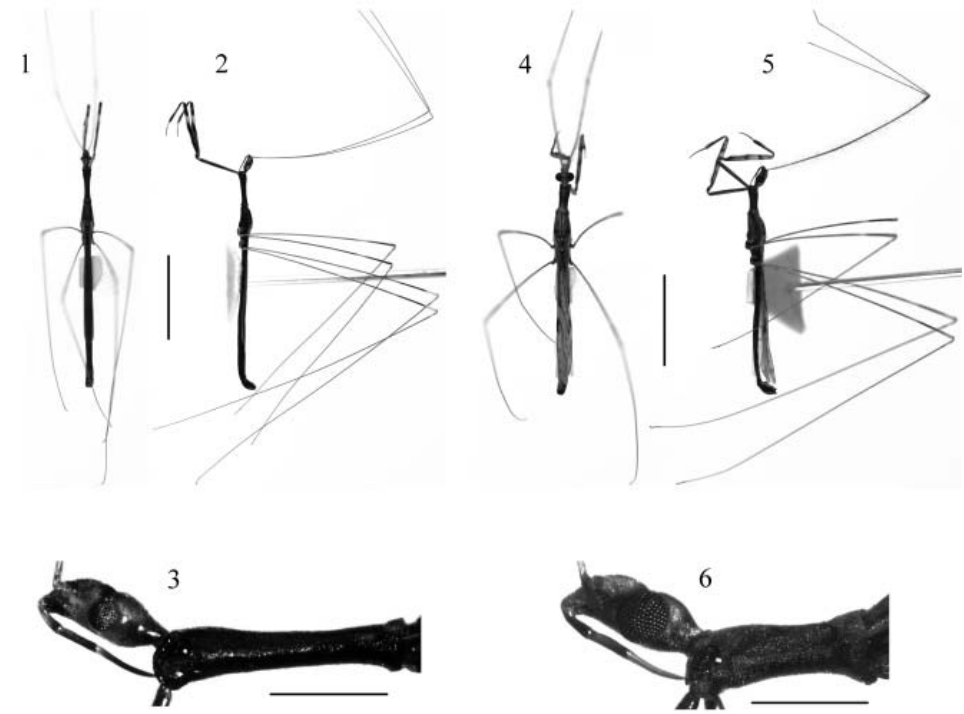
Very recently, several species of Emesinae have been added to the Indonesian fauna (Ishikawa et al. 2007a,b). These new findings may reveal the inadequacy of survey in Indonesia, but provide valuable knowledge not only in reviewing the fauna but also in improving the systematics of Emesinae.

In the course of extensive faunal studies of the Indonesian Reduviidae conducted with Indonesian researchers of Udayana University for about three years in undersampled areas such as Bali and Flores, we collected specimens of the genus belonging to two species, together with a number of other reduviids. After careful examination and comparison to literature, both of them were recognized to be undescribed.

In this paper, we describe the two new species of *Ploiaria* from Bali and Flores. Also provided are illustrations including male and female genitalia, external structures and habitus photos.

Materials and methods

Specimens used in this study were collected by net-sweeping from 14 sites on Bali (seven sites) and Flores (seven sites), Indonesia, killed with ethyl acetate just after collecting, and dried. Male and female genitalia were removed from the abdomen and soaked in hot 10% KOH solution for about five minutes. Observations were made under a stereoscopic microscope (Olympus SZH10) and a compound microscope (Olympus CH2). Measurements were taken from dried specimens using the stereoscopic microscope with an eyepiece micrometer. Illustrations were made using the stereoscopic microscope for Figs. 19-22 and 32-35, and the compound microscope for Figs. 23-31 and 36-44, each with the aid of a drawing tube. Afterwards, the genitalia were preserved in small glass tubes with glycerin and mounted on pins with the specimens. Photographs were taken with a digital camera (Nikon CF-D200) for Figs. 1-4 and using a stereoscopic microscope (Olympus SZX9) equipped with a Color CMOS Camera system (Artray Artcam-200MT) for Figs. 5-18. Terminology mainly follows Wygodzinsky (1966) for general morphology and Davis (1966) for male and female genitalia. For the rostrum, the numbers of the visible rostral segments I, II and III are used for 'true' labial segments II, III and IV, respectively. The material is preserved in the Department of Plant Protection, Faculty of Agriculture, Udayana University, Denpasar, Bali, Indonesia (UU) and the Laboratory of Entomology, Faculty of Agriculture, Tokyo University of Agriculture, Atsugi, Kanagawa, Japan (TUA).



Figs. 1-6. 1-3 – *Ploiaria stysi* sp. nov., male (holotype). 1-2 – habitus: 1 – dorsal view, 2 – lateral view; 3 – head and pronotum, lateral view. 4-6 – *P. paveli* sp. nov., male (holotype). 4-5 – habitus: 4 – dorsal view, 5 – lateral view; 6 – head and pronotum, lateral view. Scale bars = 5.0 mm for 1-2, 4-5; 1.0 mm for 3, 6.

In 'Type material' section mentioned below, labels are quoted verbatim between single quotations (''), with slashes (/) for separating lines on the same labels for holotypes. Lowercase letters between parentheses following the localities correspond with those shown in Figure 8, indicating the placement of the collecting sites. Collectors 'Ishikawa et al.' comprise W. Susila, K. Sumiartha, their students (UU), S. Okajima, T. Ishizaki, K. Watanabe and T. Ishikawa (TUA), or combinations of only some of these individuals.

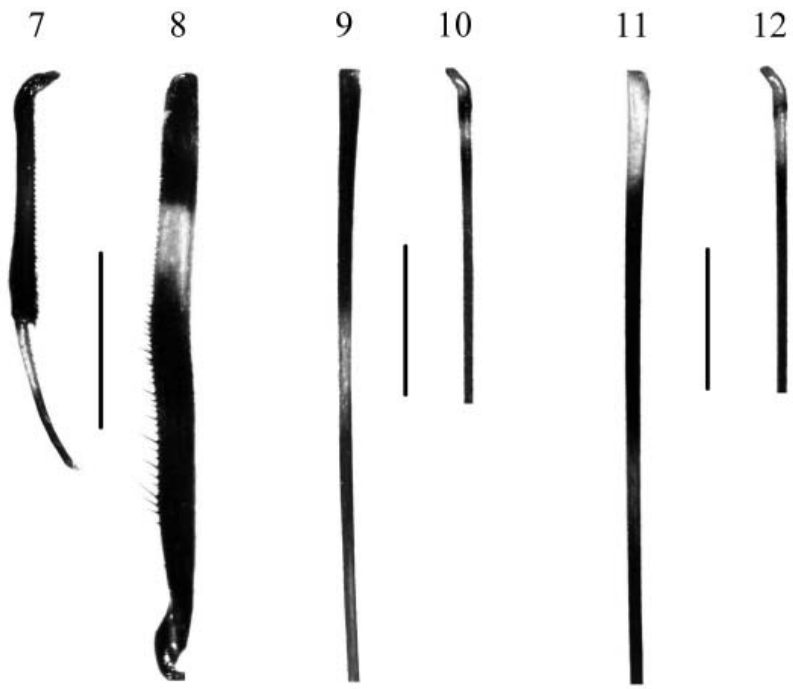
Taxonomy

Ploiaria stysi Ishikawa & Okajima, sp. nov.

(Figs. 1-3, 7-12, 19-31)

Type locality. Indonesia, Bali, Tabanan, near Wangaya, Pura Jero Sasah.

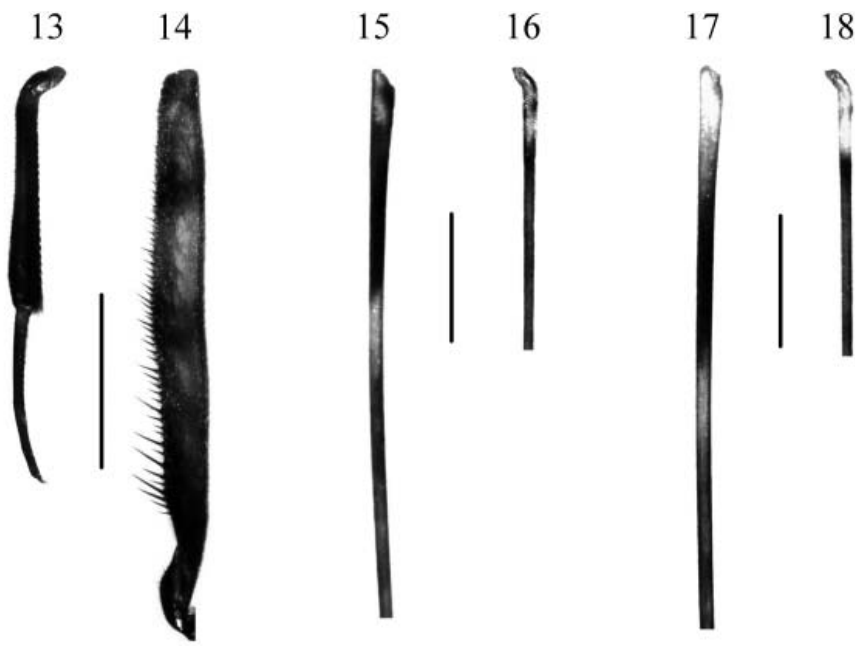
Type material. Holotype: ♂ (Figs. 1-3, 7-12, 19-22), '[INDONESIA] / Pura Jero Sasah, near / Wangaya, Tabanan, Bali, / 8°22′09″S, 115°06′25″E, / ca 900m alt., / 4.IX.2005, T. Ishizaki' (e) (TUA). Paratypes: **INDONESIA: Bali:** 1 ♂, Buleleng, Desa Melanting (a), ca 137 m alt., 30.viii.2005, T. Ishikawa (TUA); 4 ♂♂, Tabanan, Mayunganlet (b), ca 1,110 m alt., 11.viii.2006, T. Ishikawa (TUA); 14 ♂♂ 6 ♀♀, Tabanan, Soka (c), ca 730 m alt., 13.viii.2005,



Figs. 7-12. *Ploiaria stysi* sp. nov., male (holotype). 7 – protibia and protarsus; 8 – profemur; 9 – apical part of mesofemur; 10 – basal part of mesotibiae; 11 – apical part of metafemur; 12 – basal part of metatibia. Scale bars = 1.0 mm.

T. Ishikawa et al. (TUA, a pair in UU); 8 ♂♂ 4 ♀♀, Tabanan, Soka (Batu Lumbang Temple) (c), ca 730 m alt., 14.iii.2005, T. Ishikawa & S. Okajima (TUA); 1 ♂ 2 ♀♀, Tabanan, Jatiluwih (d), 920 m alt., 2.ix.2006, T. Ishikawa et al. (TUA); 2 ♂♂, Tabanan, Jatiluwih (Peteri Temple) (d), ca 890 m alt., 13.viii.2005, T. Ishikawa (TUA); 16 ♂♂ 5 ♀♀, Tabanan, near Wangaya, Pura Jero Sasah (e), ca 900 m alt., 4.ix.2005, T. Ishikawa (TUA, a pair in UU); 2 ♂♂ 3 ♀♀, Tabanan, near Wangaya, Pura Jero Sasah (e), 930 m alt., 12.viii.2006, T. Ishikawa et al. (TUA); 3 ♂♂ 2 ♀♀, Tabanan, Muncak Sari, Pura Luhur (f), ca 780 m alt., 2.ix.2005, T. Ishikawa (TUA); 7 ♂♂, Tabanan, Muncak Sari, Pura Luhur (f), 755 m alt., 11.viii.2006, T. Ishikawa et al. (TUA); 2 ♂♂, Tabanan, Muncak Sari, Pura Luhur (f), 760 m alt., 3.ix.2006, T. Ishikawa et al. (TUA); 1 ♂ 2 ♀♀, Tabanan, Muncak Sari, Pura Luhur (f), ca 780 m alt., 4.ix.2005, T. Ishikawa (TUA); 19 ♂♂ 8 ♀♀, Tabanan, Mt. Batukau, Pura Luhur Batukau (f), 13.xi.2004, K. Okajima (TUA); 6 ♂♂ 2 ♀♀, Tabanan, Bengkel, Salahan (g), ca 790 m alt., 3.ix.2005, T. Ishikawa & T. Ishizaki (TUA); 4 ♂♂ 3 ♀♀, Tabanan, Bengkel, Pura Batu Salahan (g), 680 m alt., 12.viii.2006, T. Ishikawa et al. (TUA). **Flores:** 1 ♂ 1 ♀, Manggarai, Mano (h), 1,270 m alt., 26.viii.2006, T. Ishikawa et al. (TUA); 1 ♀, Ngada, Aimere (j), 200 m alt., 27.viii.2006, T. Ishikawa et al. (TUA); 1 ♂, Ngada, Wolobobo (k), 1,440 m alt., 28.viii.2006, T. Ishikawa et al. (TUA); 1 ♀, Ende, Kamandaru (l), 250 m alt., 23.viii.2006, T. Ishikawa et al. (TUA); 12 ♂♂ 1 ♀, Ende, Nuabosi (m), 550 m alt., 23.viii.2006, T. Ishikawa et al. (TUA); 10 ♂♂ 8 ♀♀, Ende, Nuabosi (m), 550 m alt., 30.viii.2006, T. Ishikawa et al. (TUA, a pair in UU); 2 ♂♂ 1 ♀, Ende, Wolosoko (n), 660 m alt., 22.viii.2006, T. Ishikawa et al. (TUA). All specimens are macropterous.

Description. Measurements (mm, ♂ / ♀, holotype in parentheses). Body length – 12.5-14.7 / 14.0-16.0 (14.1). Head length – 1.10-12.3 / 1.19-1.24 (1.12), width across eyes – 0.66-0.74



Figs. 13-18 – *Ploiaria paveli* sp. nov., male (holotype). 13 – protibia and protarsus; 14 – profemur; 15 – apical part of mesofemur; 16 – basal part of mesotibia; 17 – apical part of metafemur; 18 – basal part of metatibia. Scale bars = 1.0 mm.

/ 0.67-0.70 (0.69); interocular space – 0.37-0.39 / 0.36-0.40 (0.38); length of anteoculus – 0.42-0.44 / 0.42-0.47 (0.44), of postoculus – 0.44-0.54 / 0.52-0.54 (0.44); antenna length – 21.30-25.10 / 22.00-22.50 (24.70), lengths of antennal segments I – 9.85-11.35 / 10.25-10.35 (11.17), II – 7.80-9.40 / 8.15-8.30 (9.33), III – 1.95-2.32 / 1.98-2.03 (2.23) and IV – 1.70-2.00 / 1.67-1.73 (1.97); rostrum length – 1.15-1.28 / 1.17-1.31 (1.22), lengths of visible rostral segments I – 0.28-0.31 / 0.28-0.35 (0.29), II – 0.36-0.41 / 0.37-0.40 (0.39) and III – 0.51-0.56 / 0.52-0.56 (0.54). Length of pronotum – 1.80-2.03 / 1.99-2.17 (1.97); of mesonotum (including scutellum) – 1.36-1.51 / 1.52-1.65 (1.46); of metanotum – 0.38-0.48 / 0.43-0.45(0.42); width across humeri – 0.58-0.68 / 0.64-0.70 (0.63). Hemelytron length – 6.70-7.50 / 7.30-7.70 (7.20). Lengths of fore leg femur – 2.98-3.49 / 3.26-3.37 (3.40), tibia – 1.29-1.51 / 1.37-1.42 (1.47) and tarsus – 0.79-0.93 / 0.77-0.88 (0.91); of middle leg femur – 8.75-9.80 / 9.35-9.55 (9.40), tibia – 13.15-13.45 / 12.85-13.15 (13.40) and tarsus – 0.38-0.45 / 0.38-0.42 (0.44); of hind leg femur – 11.40-12.20 / 12.60-12.70 (12.00), tibia – 16.30-18.80 / 17.20-17.70 (18.00) and tarsus – 0.40-0.42 / 0.38-0.46 (0.42). Abdomen length – 7.55-9.20 / 8.90-9.50 (8.80).

Male (holotype, macropterous). Coloration. Body dark brown to blackish (Figs. 1-2). Head (Fig. 3) brownish yellow, darkened apically and basally, with irregular brownish markings on dorsum. Antenna brown to dark brown; segment I with black annulation adjacent to narrow whitish apex; segment IV pale apically. Visible rostral segments I and II (Fig. 3) yellowish

brown, darkened in apical third; visible segment III (Fig. 3) dark brown, pale in basal and apical parts. Scutellum and metanotum pale in apical halves. Hemelytra obscure, basally brownish yellow. Fore leg dark brown; femur (Fig. 8) dark brown, with pale wide annulation at apical third and obscure pale incomplete annulation at apical tenth; tibia (Fig. 7) somewhat pale around middle; tarsal segment I (Fig. 7) pale in basal two-thirds. Middle leg brownish yellow to yellowish brown; femur (Fig. 9) blackish in apical sixth, with brownish annulation at apical third; tibia (Fig. 10) with 2 narrow blackish annulations subbasally. Hind leg brownish yellow to yellowish brown; femur (Fig. 11) pale in apical thirteenth, subapically blackish from apical thirteenth to apical fifth, and brownish from apical fourth to apical third; tibia (Fig. 12) basally pale, with irregular narrow annulation at middle of basal pale part. Dorsum of abdomen a little paler than remaining parts of abdomen.

Structure. Body covered with short, suberect and decumbent setae. Head (Figs. 19-20) about 1.6 times as long as width across eyes; anteoculus (Fig. 20) as long as postoculus, 1.8 times as long as length of eye in lateral view. Eyes about 0.4 times as wide as interocular space in dorsal view (Fig. 19). Antenna covered with short, decumbent setae; approximate proportion of segments I to IV 5.7 : 4.7 : 1.2 : 1. Rostrum sparsely covered with short, erect setae; approximate proportion of visible segments I to III 1 : 1.3 : 1.9.

Pronotum (Figs. 19-20) 3.8 times as long as humeral width, divided vaguely into anterior and posterior lobes at posterior tenth, roundly tumid on each anterolateral angle, with weakly concave posterior margin; posterior lobe (Fig. 19) weakly rugose transversely. Mesonotum (excluding scutellum) 0.6 times as long as pronotum, 1.9 times as long as its maximum width. Hemelytra slightly exceeding anterior margin of abdominal tergite VI; venation as in Fig. 23.

Fore leg (Figs. 21-22) covered with short, suberect setae, and with long suberect setae on dorsum of tibia medially; coxa 1.3 times as long as pronotum; trochanter with simple setae, lacking spine-like seta; femur 1.3 times as long as coxa, with anteroventral and posteroventral series of spine-like setae inserted on low tubercles; former and latter series composed of about 50 and 60 spine-like setae, respectively; former series beginning with 2 basal spine-like setae distinctly placed from other spine-like setae (Fig. 22); spine-like setae of both series uniform in shape, various in length but shorter than maximum width of femur; tibia 0.4 times as long as femur, with 1 ventral row of short, curved spine-like setae; ventral row composed of about 35 spine-like setae, extending over entire length of tibia; tarsus 0.6 times as long as tibia, with 2 ventral rows of fine spine-like setae; outer row composed of about 25 suberect or deflexed spine-like setae, extending over length of tarsus, and inner row of about 15 deflexed spine-like setae in apical three-fifths; approximate proportion of tarsal segments I to III 2.7 : 1 : 1; claws curved; outer claw half as long as inner one. Middle and hind legs slender, covered with fine, suberect and decumbent setae.

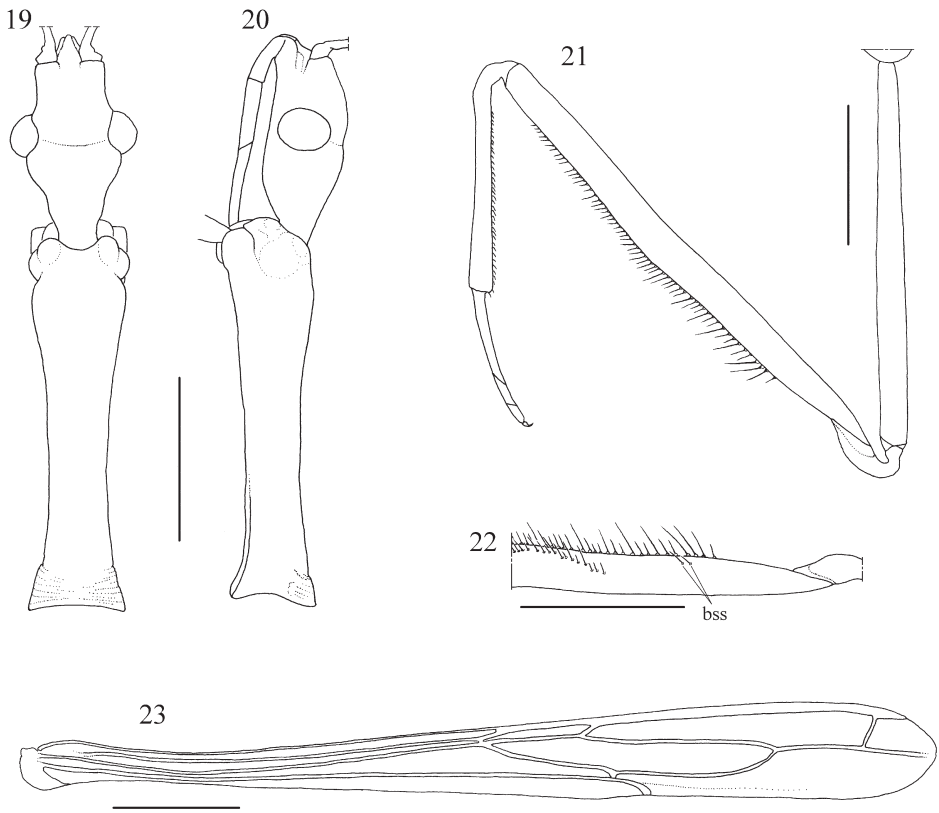
Abdomen (Fig. 2) slender, nearly parallel-sided in dorsal view; apical segments VIII to IX upturned in at least dried specimens.

Genitalia (paratypes). Pygophore (Figs. 24-25) with laterally sclerotized posterior process, and with pair of foliaceous projections at base of posterior process; foliaceous projection roundly extended at outer angle and spinously extended at inner angle. Paramere (Figs. 26-

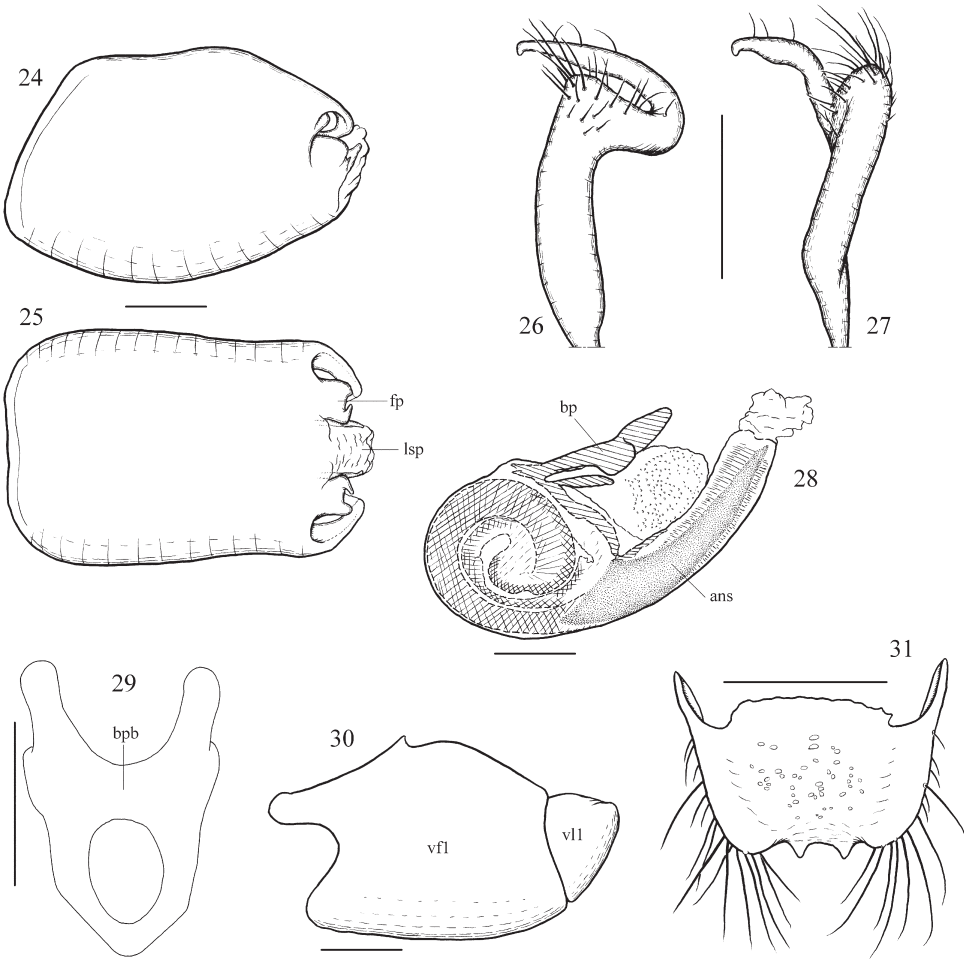
27) strongly curved in apical half, bent inwards near apex, subacute at apex, covered with short to long setae in apical half; apices of parameres close to each other in rest, not overlapping. Phallus (Fig. 28) expanded in basal half, narrowed and cylindrical in apical half, with apically narrowed, sclerotized area laterally; basal plate (Fig. 29) subacute proximally, with wide basal plate bridge.

Female (macropterous). Almost the same as male. Body length 14.5 to 15.5 mm. Valvifer I (Fig. 30) with weakly concave posterior margin; valvula I (Fig. 30) rounded at apex. Styloids (Fig. 31) depressed discally, covered with short to long setae along lateral margins; posterior margin weakly concave, with pair of triangular projections at middle.

Differential diagnosis. In general appearance, *Ploiaria stysi* sp. nov. resembles *P. maai* Wygodzinsky, 1966, described from the Bismarck Islands; for distinguishing characters see Table 1.



Figs. 19-23. *Ploiaria stysi* sp. nov.; setae omitted except for spine-like setae in 21 and 22. 19-20 – head and pronotum: 19 – dorsal view, 20 – lateral view; 21 – left fore leg; 22 – basal part of profemur, ventrolateral view; 23 – right hemelytron. Abbreviation: bss = basal spine-like seta. Scale bars = 1.0 mm.



Figs. 24-31. *Ploiaria stysi* sp. nov.; setae omitted in 24, 25 and 30. 24-25 – pygophore: 24 – lateral view, 25 – ventral view; 26-27 – left paramere: 26 – lateral view, 27 – dorsal view; 28 – phallus, lateral view; 29 – basal plate of phallus, dorsal view; 30 – left valvifer I and valvula I, lateral view; 31 – styloids, dorsal view. Abbreviations. ans = apically narrowed sclerotized area; bp = basal plate; bpb = basal plate bridge; fp = foliaceous projection; lsp = laterally sclerotized posterior process; vf1 = valvifer I; vl1 = valvula I. Scale bars = 0.2 mm.

Etymology. This species name is dedicated to Prof. Pavel Štys to celebrate his 75th birthday.
Biology. *Ploiaria stysi* sp. nov. was collected from ferns growing along forest passes by net-sweeping. It was often observed to fly actively in order to escape out of a sweep net. Although the life cycle has not been surveyed, adults and nymphs of this species were abundant at all collecting sites on both Bali and Flores in March, August, September and November.
Distribution. *Ploiaria stysi* sp. nov. is known from Bali and Flores, Indonesia.

Table 1. Differential diagnosis of *Ploiaria stysi* sp. nov. and *P. maai* Wygodzinsky, 1966.

	***Ploiaria stysi* sp. nov.**	***Ploiaria maai* Wygodzinsky, 1966**
eye	0.4 times as wide as interocular space	0.8 times as wide as interocular space
male antennal segments I and II	without long setae	with numerous long setae
procoxa	1.3 times as long as pronotum	slightly shorter than pronotum
anteroventral series of profemur	beginning with 2 basal spine-like setae distinctly placed from other spine-like setae	beginning with 1 basal spine-like seta distinctly placed from other spine-like setae
parameres	not overlapping each other in rest	transversely overlapping each other in rest
valvula I	rounded at apex	acute at apex

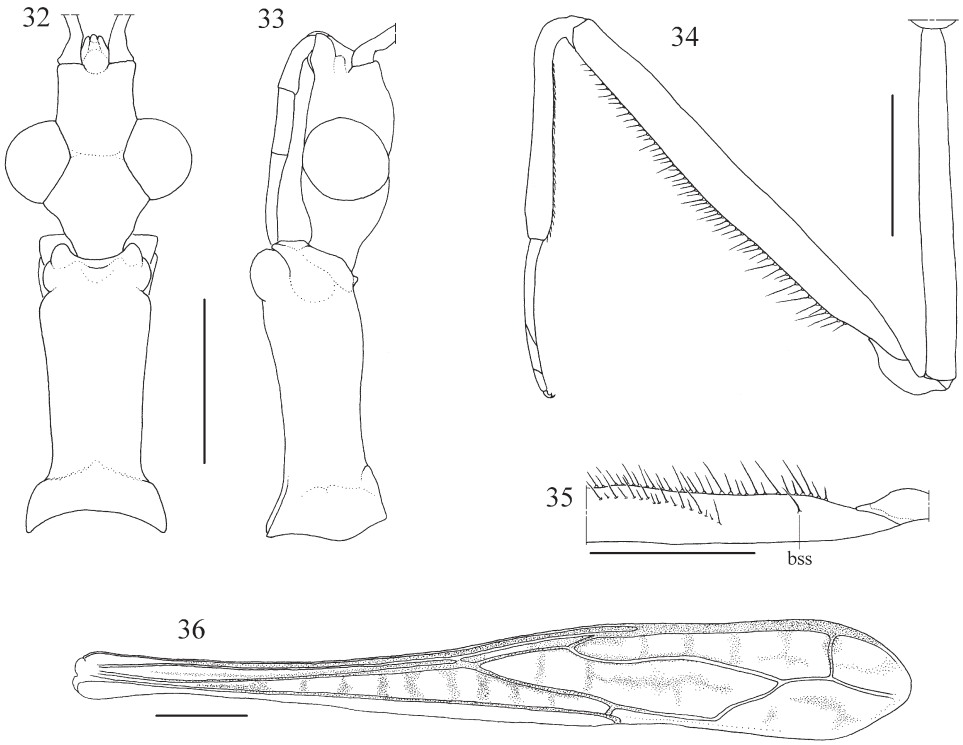
Ploiaria paveli Ishikawa & Okajima, sp. nov.

(Figs. 4-6, 13-18, 32-44)

Type locality. Indonesia, Bali, Tabanan, near Wangaya, Pura Jero Sasah.

Type material. Holotype: ♂ (Figs. 4-6, 13-18, 32-35), '[INDONESIA] / Pura Jero Sasah, / near Wangaya, / Tabanan, Bali, / 8°22′01″S, 115°06′23″E, / 930m alt., 12.VIII.2006, / T. Ishikawa et al.' (e) (TUA). The holotype is mounted on a triangular point, slightly damaged; right antennal segments III and IV and tibia and tarsus of right middle leg missing. Paratypes: **INDONESIA: Bali:** 1 ♀, Tabanan, Muncak Sari, Pura Luhur (f), 760 m alt., 3.ix.2006, T. Ishikawa et al. (UU); 1 ♀, Tabanan, Mt. Batukau, Pura Luhur Batukau (f), 13.xi.2004, K. Okajima (TUA). **Flores:** 1 ♂, Manggarai, Gololoni (i), 1,230 m alt., 25.viii.2006, T. Ishikawa et al. (TUA). All specimens are macropterous.

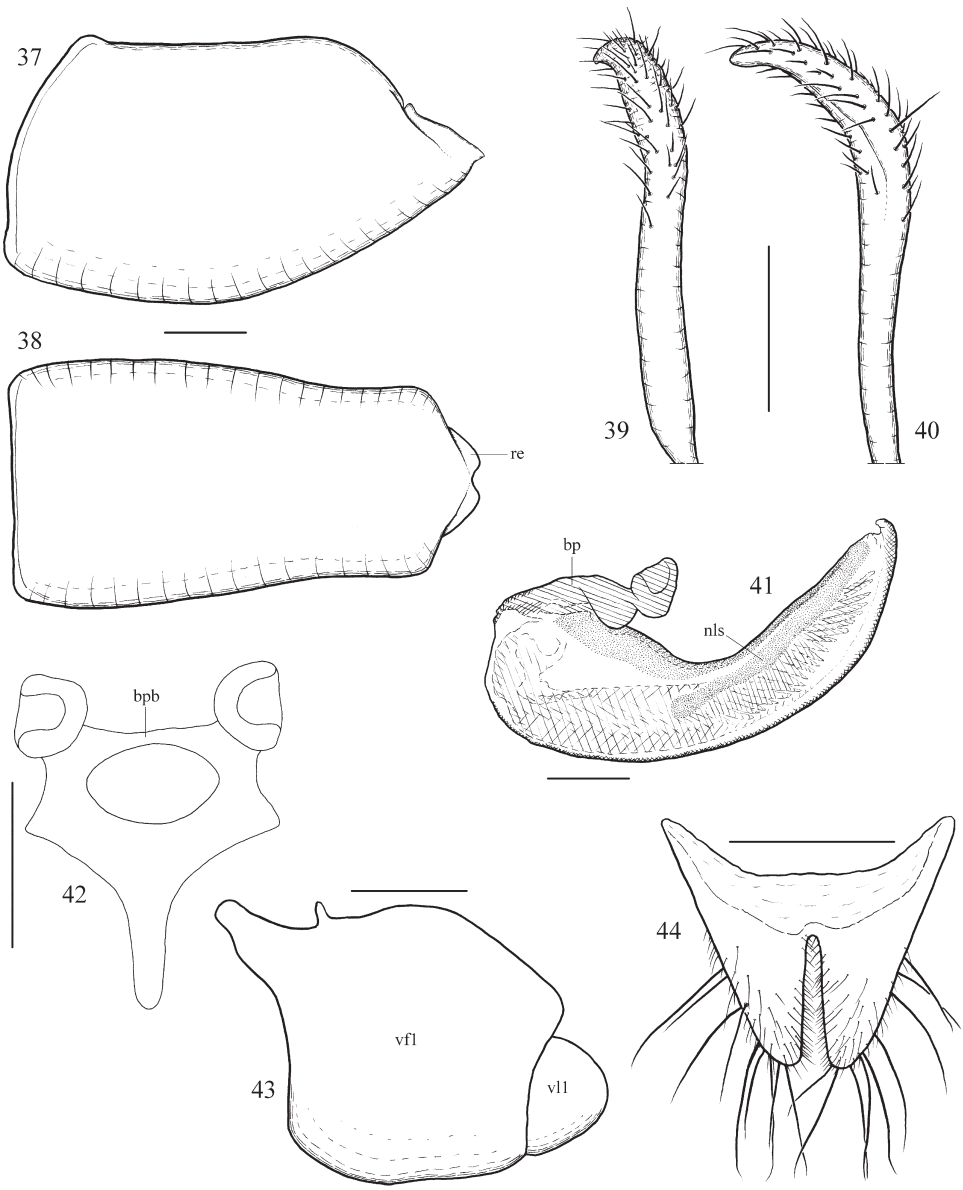
Description. Measurements (mm, ♂ / ♀, holotype in parentheses). Body length – 12.4-13.8 / 12.5-13.0 (12.4). Head length – 1.26-1.30 / 1.28-1.35 (1.26), width across eyes – 1.01-1.02 / 0.89-0.92 (1.02); interocular space – 0.28-0.32 / 0.31-0.33 (0.28); length of anteoculus – 0.49-0.58 / 0.56-0.58 (0.49), of postoculus – 0.28-0.35 / 0.31-0.39 (0.28); antenna length – 21.50-21.55 / 20.50-21.90 (21.50), lengths of antennal segments I – 9.67-9.70 / 9.20-9.70 (9.67), II – 7.33-7.60 / 6.90-7.65 (7.33), III – 2.47-2.54 / 2.57-2.61 (2.54) and IV – 1.77-1.96 / 1.77-1.97 (1.96); rostrum length – 1.27-1.37 / 1.38-1.39 (1.27), lengths of visible rostral segments I – 0.35-0.38 / 0.37-0.38 (0.35), II – 0.39-0.43 / 0.41-0.43 (0.39) and III – 0.53-0.56 / 0.58-0.60 (0.53). Length of pronotum – 1.37-1.38 / 1.48-1.59 (1.37); of mesonotum (including scutellum) – 1.61-1.87 / 1.63-1.80 (1.61); of metanotum 0.49-0.53 / 0.49-0.53 (0.49); width across humeri – 0.76-1.04 / 0.98-1.01 (0.76). Hemelytron length – 8.00-9.25 / 8.50-8.75 (8.00). Lengths of fore leg femur – 3.07-3.32 / 3.28-3.49 (3.07), tibia – 1.40-1.55 / 1.54-1.61 (1.40) and tarsus – 0.98-1.02 / 1.01-1.10 (0.98); of middle leg femur – 8.40-8.95 / 8.60-8.85 (8.40), tibia – 11.80-13.25 / 11.75-12.85 (11.80) and tarsus – 0.35-0.36 / 0.35-0.39 (0.36); of hind



Figs. 32-36. *Ploiaria paveli* sp. nov.; setae omitted except for spine-like setae in 34 and 35. 32-33 – head and pronotum: 32 – dorsal view, 33 – lateral view; 34 – left fore leg; 35 – basal part of profemur, ventrolateral view; 36 – right hemelytron. Abbreviation: bss = basal spine-like seta. Scale bars = 1.0 mm.

leg femur – 12.00-12.35 / 11.70-12.50 (12.00), tibia – 17.00-19.00 / 16.50-18.20 (17.00) and tarsus – 0.36-0.42 / 0.37-0.41 (0.36). Abdomen length – 7.75-8.75 / 7.25-7.85 (7.75).

Male (holotype, macropterous). Coloration. Body dark brown to blackish (Figs. 4-5). Dorsum of head brownish yellow, with pair of dark longitudinal stripes on anterior and posterior lobes. Antennal segment I yellowish brown, blackish in apical twentieth, with narrow dark annulation subbasally; segment II brown, darkened in apical and basal parts, with extreme apex pale; segments III and IV dark brown. Visible rostral segment I (Fig. 6) dark brown, with base yellowish brown; visible segment II (Fig. 6) brownish yellow in basal half and dark brown in apical half; visible segment III (Fig. 6) brownish yellow. Dorsum of pronotum brownish yellow to brown. Scutellum and metanotum pale in apical halves. Hemelytra yellowish, with dark markings (Fig. 36). Fore leg dark brown; femur (Fig. 14) brownish yellow, darkened in basal fourth, with dark incomplete annulations at middle and apical fourth, and with irregular dark markings; tibia (Fig. 13) pale subapically; tarsus (Fig. 13) pale at base. Coxae and trochanters of middle and hind legs dark brown. Middle leg brownish yellow to yellowish brown; femur



Figs. 37-44. *Ploiaria paveli* sp. nov.; setae omitted in 37, 38 and 43. 37-38 – pygophore: 37 – lateral view, 38 – ventral view; 39-40 – left paramere: 39 – lateral view, 40 – dorsal view; 41 – phallus, lateral view; 42 – basal plate of phallus, dorsal view; 43 – left valvifer I and valvula I, lateral view; 44 – styloids, dorsal view. Abbreviations: bp = basal plate; bpb = basal plate bridge; nls = narrow longitudinal sclerotized area; re = rounded extension; vfl = valvifer I; vll = valvula I. Scale bars = 0.2 mm.

Table 2. Differential diagnosis of *Ploiaria paveli* sp. nov. and *P. halosydne* Wygodzinsky & Usinger, 1960.

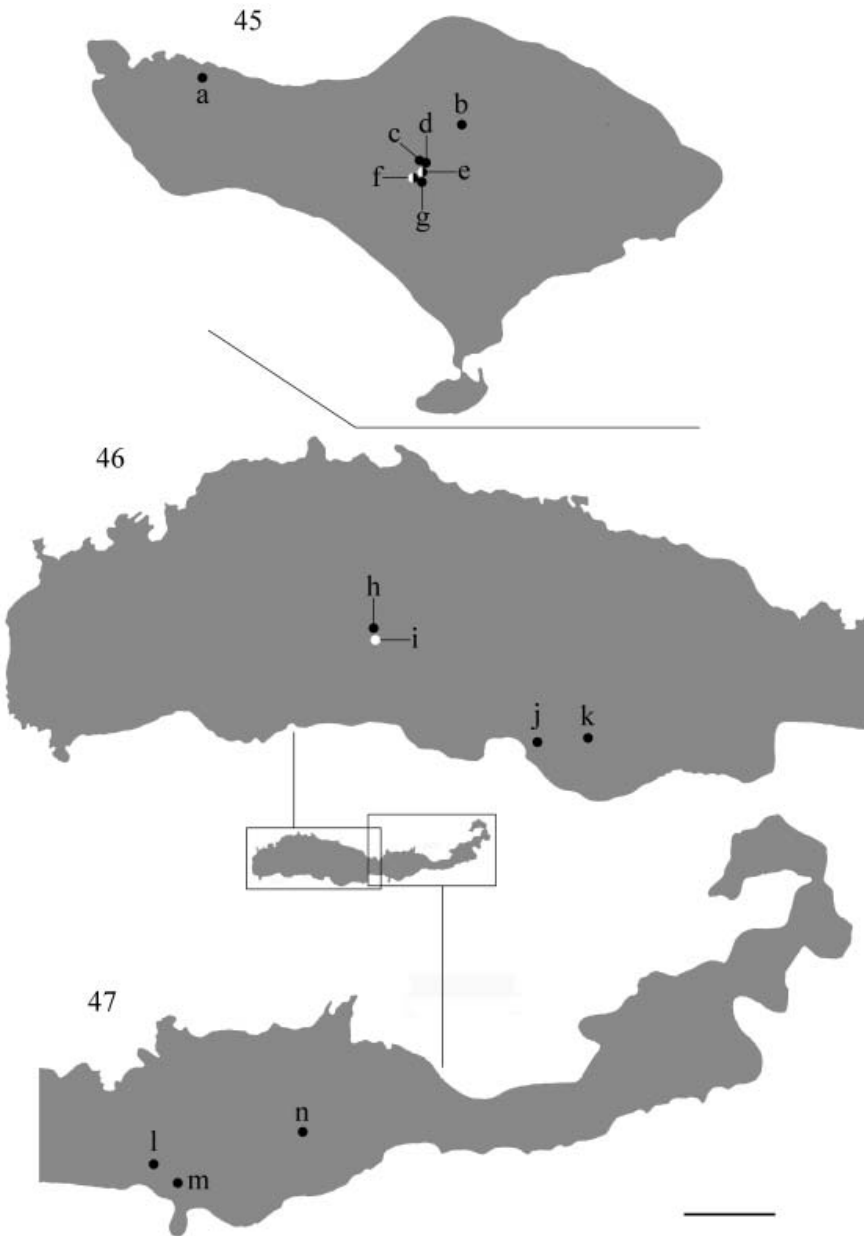
	***Ploiaria paveli* sp. nov.**	***Ploiaria halosydne* Wygodzinsky & Usinger, 1960**
body length	more than 12 mm	around 10 mm
anteroventral series of profemur	beginning with 1 basal spine-like seta distinctly placed from other spine-like setae	beginning with more than 2 basal spine-like setae distinctly placed from other spine-like setae
metafemur	pale in apical part	dark in apical part
pygophore	with medially concave, rounded extension posteriorly	with triangular process
paramere	gently curved in apical part	rectangularly bent apically

(Fig. 15) with wide dark brown annulation adjacent to pale apical part, and with wide pale annulation at apical fifth; tibia (Fig. 16) with 2 narrow brownish annulations subbasally. Hind leg brownish yellow to yellowish brown; femur (Fig. 17) pale in apical tenth, blackish from apical tenth to apical ninth, with wide pale annulation adjacent to subapical blackish part; tibia (Fig. 18) basally pale. Pygophore dorsally brownish yellow.

Structure. Body densely covered with short, suberect and decumbent setae. Head (Figs. 32-33) about 1.2 times as long as width across eyes; anteoculus (Fig. 33) 1.75 times as long as postoculus, 1.1 times as long as length of eye in lateral view. Eyes about 1.3 times as wide as interocular space in dorsal view, just reaching level of ventral margin of head in lateral view (Fig. 33). Antennal segments I and II covered with long, erect setae; longest setae about 6.5 times as long as maximum width of segment I; segments III and IV covered with short, decumbent setae; approximate proportion of segments I to IV 5 : 3.7 : 1.3 : 1. Rostrum sparsely covered with short, erect setae; approximate proportion of visible segments I to III 1 : 1.1 : 1.5.

Pronotum (Figs. 32-33) 1.8 times as long as humeral width, divided into anterior and posterior lobes at posterior fifth, roundly tumid on each anterolateral angle, with weakly concave posterior margin. Mesonotum (excluding scutellum) 0.9 times as long as pronotum, 1.5 times as long as its maximum width. Hemelytra reaching middle of pygophore.

Fore leg (Figs. 34-35) covered with short, suberect setae; coxa 1.6 times as long as pronotum; trochanter covered with simple setae only, lacking spine-like setae; femur 1.4 times as long as coxa, with anteroventral and posteroventral series of spine-like setae inserted on low tubercles; former and latter series composed of about 40 and 55 spine-like setae, respectively; former series beginning with 1 basal spine-like seta distinctly placed from other spine-like setae (Fig. 35); spine-like setae of both series uniform in shape, various in length but shorter than maximum width of femur; tibia 0.45 times as long as femur, with 1 ventral row of short, deflexed spine-like setae; ventral row composed of about 30 spine-like setae, extending over entire length of tibia; tarsus 0.7 times as long as tibia, with 2 ventral rows of fine spine-like setae; outer row composed of about 22 deflexed spine-like setae, extending



Figs. 45-47. Collecting sites of *Ploiaria stysi* sp. nov. and *P. paveli* sp. nov. in Bali and Flores; white circle = site of *P. stysi*, black circle = site of *P. paveli*, white and black circle = site of both species; lowercase letters correspond with locality names shown in Type material section, see also Material and methods section. 45 – Bali; 46-47 – Flores: 46 – the west, 47 – the east. Scale bar = 20 km.

over entire length of tarsus, and inner row of about 15 deflexed spine-like setae in apical three-fifths; appropriate proportion of tarsal segments I to III 3.2 : 1.5 : 1; claws curved; outer claw two-thirds as long as inner one. Middle and hind legs slender, covered with fine, suberect and decumbent setae.

Abdomen (Fig. 5) slender, nearly parallel-sided in dorsal view; apical segments VIII to IX upturned.

Genitalia (paratypes). Pygophore (Figs. 37-38) roundly extended posteriad at distal end; rounded extension concave medially. Paramere (Figs. 39-40) rod-shaped, gently curved inwards in apical half, obtuse at apex, covered with erect setae in apical half. Phallus (Fig. 41) weakly expanded in basal half, sclerotized dorsally and ventrally, with narrow, longitudinal sclerotized area on each side of apical half; basal plate (Fig. 42) extended proximally, projected laterally, with narrow basal plate bridge.

Female (macropterous). Almost the same as male. Body length 12.5 to 13.0 mm. Eyes as wide as interocular space in dorsal view, not reaching level of ventral margin of head in lateral view. Antennal segments I and II covered with fine, decumbent and suberect setae. Valvifer I (Fig. 43) wide, with weakly concave posterior margin; valvula I (Fig. 43) rounded entirely. Styloids (Fig. 44) triangular, deeply incised at middle, proximally membranous, covered with long setae along lateral margins, and with dense, fine setae.

Differential diagnosis. *Ploiaria paveli* sp. nov. is similar in general appearance to *P. halosydne* Wygodzinsky & Usinger, 1960, described from the Palau Islands; it is separable from the latter by the following combination of characters summarized in Table 2.

Etymology. This species name is dedicated to Prof. Pavel Štys on the occasion of his 75th birthday.

Biology. *Ploiaria paveli* sp. nov. was collected from trees in secondary forests by sweeping foliage. No other information on its biology is available.

Distribution. *Ploiaria paveli* sp. nov. is known from Bali and Flores, Indonesia.

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