

NEW AND LITTLE-KNOWN THREAD-LEGGED ASSASSIN
BUGS FROM AUSTRALIA AND NEW GUINEA
(HETEROPTERA: REDUVIIDAE: EMESINAE)

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Ploiaria metapterina sp. n. is described from SE Australia. The new species has unique fore leg armature and seems to be related to the Australian *P. guttata* WYGODZINSKY, 1956 and *P. musgravei* WYGODZINSKY, 1956. The apterous female of the New Guinean species *P. biroi* WYGODZINSKY, 1966, previously known only from a macropterous male, is described first. The type depository of *P. biroi*, erroneously given with the original description of the species, is the Hungarian Natural History Museum, Budapest. *Bargylia longispina* sp. n. is described from NE Australia. It differs rather sharply from all previously described species and many characters connect it to the African genus *Bobba*. The relationships between *Bargylia* and *Bobba* are discussed.

Key words: Heteroptera, Reduviidae, Emesinae, Australia, New Guinea, new species, pterygopolymorphism

INTRODUCTION

Comprising approximately 90 genera and more than 900 described species, thread-legged assassin bugs or Emesinae is a relatively species-rich subfamily among Reduviidae (MALDONADO CAPRILES 1990). The most important contributions to the Indo-Pacific and Australian fauna were presented by MCATEE and MALLOCH (1926) (Malaysia and the Philippines), WYGODZINSKY (1956) (Australia) and WYGODZINSKY and USINGER (1960) (Micronesia). A modern comprehensive survey of the subfamily on worldwide basis was presented by WYGODZINSKY (1966). Published data on the Australian fauna were surveyed in the recent catalogue of the Australian Cimicomorpha (CASSIS & GROSS 1995). However, despite the extensive research and excellent monographic treatments, our knowledge on the real diversity of the subfamily is obviously far from satisfactory. A number of undescribed species are expected from the area, and also many known taxa still require further systematic study.

Fourteen genera of Emesinae occur in the Papuan subregion (New Guinea and adjacent islands), out of which two (*Bironiola* HORVÁTH, 1914 and *Mafu-*

lemesa WYGODZINSKY, 1966) are endemic. WYGODZINSKY (1966) showed that the composition of the New Guinean emesine fauna suggests close relationship to the Oriental Region; however, besides Oriental elements, also two genera shared with Australia occur in the subregion (*Stenolemimus* WYGODZINSKY, 1966 and *Mesosepis* WYGODZINSKY, 1966, latter genus currently with one species in New Guinea and only undescribed species in Australia).

Compared with the other major zoogeographical regions, the emesine fauna of mainland Australia and territorial islands is moderately diverse, composed of 19 genera and 45 species (CASSIS & GROSS 1995); two further species are added in the present study. The fauna is highly autochthonous: about 37% of genera (6 of 19, furthermore one genus occurring only on Lord Howe Island) and 81% of species (38 of 47, including the species described in the present paper) are endemic.

The Australian fauna was monographed with a number of new descriptions and keys to genera and species by WYGODZINSKY (1956). Later, some additional new genera and species as well as new records were presented by the same author (WYGODZINSKY 1966). Since then, only a single species (*Pseudobargylia alata*) has been described (WYGODZINSKY 1974). The two comprehensive works mentioned above can therefore still be used for identifying the Australian emesine species.

Earlier and recent field investigations by Hungarian entomologists in Australia and New Guinea (see e.g. PAPP 2005) also yielded a number of assassin bugs, which are deposited in the Hungarian Natural History Museum, Budapest. Among them, a few specimens belonging to the subfamily Emesinae have been found. Two species are described as new in this paper, furthermore, description of a hitherto unknown alary morph of a previously described species is presented.

MATERIALS AND METHODS

External structures were examined using a stereoscopic microscope (Opton 47 50 52–9901). Drawings were made using a camera lucida. Measurements were taken using a micrometer eyepiece. Male genitalia were studied with an optical microscope (XSZ-N107) after short boiling in 10% KOH solution.

Abbreviations for institutions and collections: ANIC: Australian National Insect Collection, Canberra, Australia; BPBM: Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.; HNHM: Hungarian Natural History Museum, Budapest, Hungary. Type specimens of previously described species examined by the author are marked with '!'.

TAXONOMIC PART

Ploiaria SCOPOLI, 1786

Ploiaria SCOPOLI, 1786: 60. Type species by monotypy: *Ploiaria domestica* SCOPOLI, 1786.

For the numerous synonyms of the genus see WYGODZINSKY (1966: 158), MALDONADO CAPRILES (1990: 108), PUTSHKOV and PUTSHKOV (1996: 158) and CASSIS and GROSS (1995: 292).

Ploiaria is one of the four cosmopolitan genera of thread-legged assassin bugs or Emesinae with native species in all zoogeographical regions. WYGODZINSKY (1966) keyed and surveyed 99 species described before 1965 and described seven new species. In the next decades, a few new species have been described. MALDONADO CAPRILES (1990) lists 122 valid species in his World catalogue. Since then, six new species were described, therefore, the current species number of the genus attains to 128.

WYGODZINSKY (1956) revised the Australian fauna of *Ploiaria* and recognized ten species, seven of which he described as new. Since then, no further species have been described or reported from the continent (CASSIS & GROSS 1995). An additional twelve species occur in the adjacent areas usually considered to belong to the Australian Region (New Guinea, New Zealand and the oceanic islands of the eastern Pacific to the Philippines).

A new species from SE Australia as well as the hitherto unknown apterous female of the New Guinea species *P. biroi* WYGODZINSKY, 1966 are described below.

***Ploiaria metapterina* sp. n.**

(Figs 1–7)

Type material. Holotype (♀): “AUSTRALIA, N.S.W. \ Sydney, Ingleside \ Katandra Bushland \ Sanctuary, 159 m” [printed]; “33°40’4”S; 151°16’8”E \ 19–21. XI. 2000. \ leg. A. Podlussány, \ G. Hangay & I. Rozner” [printed]; “Holotypus \ *Ploiaria metapterina* sp. n. \ det. Rédei, 2005” [type label with red borders, handwritten+printed]; deposited in the ANIC.

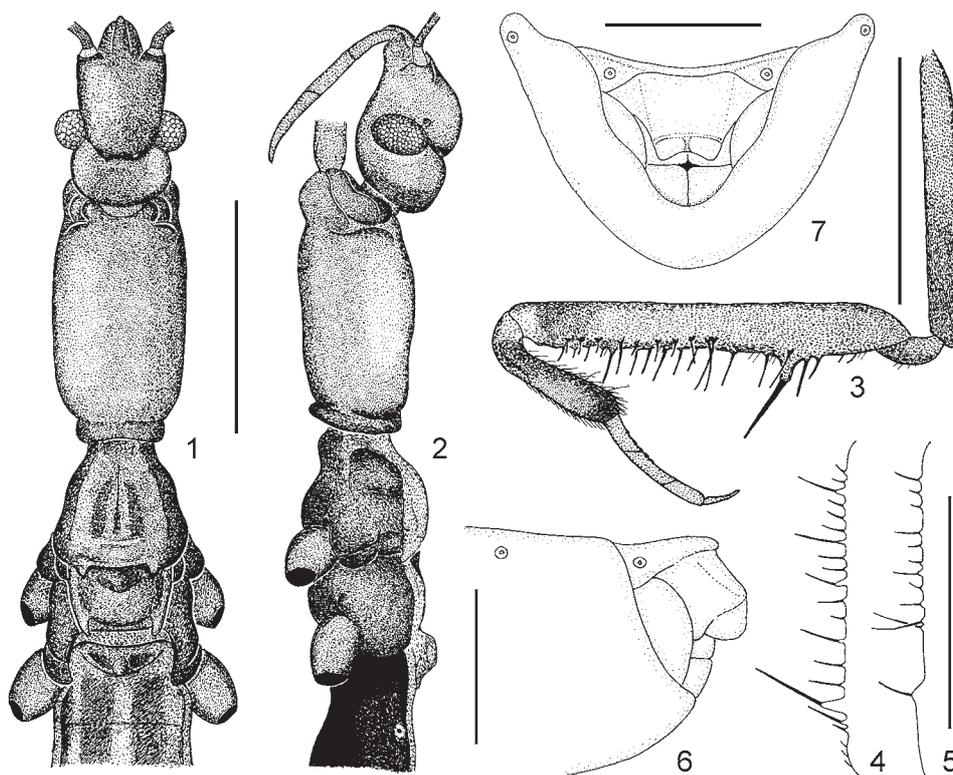
Description. Apterous female.

Colour. General body colour dark brown. Head dark brown, laterally lighter posterior to eyes; labium dark brown, segment III somewhat lightened apically; antennae rather uniformly light brown. Pronotum dark brown, distinctly darker ventrally; meso- and metathoracic pleura dark blackish brown, meso- and metanota light brown. General colour of fore legs dark brown, apex of coxa distinctly darkened, femur with a rather distinct dark subapical annulus, tibia darkened apically, tarsus light brown. Mid and hind legs rather uniformly light yellowish brown except coxa and trochanter which are dark brown. Abdominal venter uniformly black, spiracles with narrow but distinct yellow-

ish brown margin; abdominal tergites (mediotergites) dark brown, with a very narrow, hardly perceptible medial line as well as a pair of indistinct lateral spots on tergites II–V, furthermore a pair of more or less distinct spots at posterolateral angles of tergites II–VII (larger and more apparent on tergites VI–VII) lighter.

Structure. Body relatively stout, rather dull, smooth, only with few, very short, hard to observe hairs.

Head as shown in Figs 1 and 2, rather short, about 1.45 times longer than diatone, with deep interocular furrow. Preocular part about 1.85 times longer than postocular in dorsal aspect, strongly elevated before eyes, declivent anteriorly, its lateral outline very slightly diverging anteriorly in dorsal aspect; antenniferous tubercles situated distinctly closer to apex of head than to eyes; postocular part short, its lateral outline widely rounded in dorsal aspect, about 1.3 times wider than width of preocular part, dorsal outline conspicuously declivous posteriorly in lateral aspect, forming distinct angle with neck; a pair of small but distinct, rounded tubercles present anterior to eyes and another pair within interocular furrow. Eyes small, laterally prominent, far remote from ventral and dorsal outlines of head in lateral aspect; diatone about twice as wide as interocular distance. Antenna



Figs 1–7. *Ploiaria metapterina* sp. n., apterous female: 1 = head, thorax and base of abdomen, dorsal view, 2 = same, lateral view, 3 = right fore leg, anterior view, 4 = posteroventral and 5 = anteroventral series of fore femur, 6 = apex of female abdomen, lateral view, 7 = same, posterior view. Hairs omitted in Figs 6 and 7. Scales = 1.0 mm to Figs 1–5, 0.5 mm to Figs 6–7.

gracile, segment I longest, about 1.6 times longer than segment II, distinctly bent; segment III short, its length about 1/3 of segment II. Labium rather straight and narrow, segment I only very slightly shorter than segment II, reaching about level of antenniferous tubercles; segment II distinctly surpassing level of anterior border of eye; segment III longer than previous segments, projecting between bases of fore coxae. Thorax: Pronotum as shown in Figs 1 and 2, rather short and stout, about 1.6 times longer than its greatest width, subdivided into fore and hind lobes; hind lobe extremely short, collar-like, about 0.7 times as wide as fore lobe in dorsal aspect; meso- and metathorax short, mesonotum about 0.6 times, metanotum about 0.25 times as long as pronotum, both with a pair of short lateral projections. Legs: Fore leg as in Fig. 3, rather stout; coxa cylindrical, about 8.8 times longer than its greatest width; trochanter simple, nearly glabrous, only with few simple hairs; femur elongate, about 8.6 times longer than its greatest width (near its base), about 1.4 times longer than coxa, ventral surface armed with two rows of spiniferous processes. Posteroventral series (Fig. 4) composed of about 5–6 long spines inserted on distinctly elongate basal processes (one of them at base of femur as well as its basal process particularly long, this spine without basal process about 1.6 times longer than width of femur), and about 12–13 more or less shorter spines inserted on very short, almost wart-like basal processes; anteroventral series (Fig. 5) composed of 6 long and about 6 somewhat shorter spines inserted on very short, almost wart-like basal processes; series interrupted at base, a single long spine basad of interruption, two long spines with extremely closely situated, almost connected basal processes apicad of interruption. Tibia very short, stout, about 4.7 times longer than wide, its length about 1/3 of femur, its ventral surface with few small denticles; tarsus heavily sclerotized, nearly bare, rather narrow, slightly more than 0.9 times as long as tibia, with about 7–8 peg-like spines on its ventral surface, three-segmented, intersegmental articulations hardly perceptible, segments I and III subequal in length, segment II somewhat longer. Pretarsus with two claws of unequal shape and size: anterior (inner) one very long, slender, nearly straight, only very slightly arched, apically not curved; posterior (outer) one very short and stout, less than half as long as anterior claw. Mid and hind legs elongate and delicate, tibiae about 1.4 times longer than respective femora; hind tibiae somewhat longer than body length; tarsi minute. Abdomen of female elliptical, about three times as long as wide; apex with external female genitalia as in Figs 6 and 7, tergite IX strongly declivent, apically widely excised, gonocoxites greatly exposed.

Measurements (in mm): Body length 5.7. Length of head 0.81, of preocular part 0.39, of postocular part 0.21; width across eyes 0.56, interocular distance 0.28, greatest width of preocular part 0.35, of postocular part 0.46; length of labial segments I : II : III = 0.22 : 0.24 : 0.38; length of antennal segments I : II : III : IV = 2.65 : 1.70 : 0.55 : ~0.8(?) (segment IV strongly deformed, probably incomplete in holotype). Medial length of pronotum 0.91, of fore lobe 0.84, of hind lobe 0.07; greatest width of fore lobe 0.56, of hind lobe 0.39; length of mesonotum 0.56, of metanotum 0.21. Length of fore coxa 1.23, femur 1.69, tibia 0.59, tarsus (without claw) 0.55; mid femur 2.88, tibia 4.08, tarsus 0.43, hind femur 4.20, tibia 5.85, tarsus 0.21. Length of abdomen 3.2, greatest width 1.1.

Etymology – The specific epithet, *metapterina*, refers to the subbasal tubercle of the posteroventral series of fore femur, which is, just like its spine, much larger than any other armature elements on the segment, endowing the fore leg an appearance superficially resembling of the tribe *Metapterini*.

Comparative notes. As frequently the case, only a single adult, unfortunately a female, is available of *Ploiaria metapterina* sp. n. However, it differs very sharply in important external characters from all of its known congeners. It can easily be distinguished from nearly all other Australian species by its glabrous fore

trochanters, which entirely lack protuberances and spiniferous processes. Among the ten Australian species of *Ploiaria* listed by CASSIS and GROSS (1995), only *P. guttata* WYGODZINSKY, 1956 and *P. musgravei* WYGODZINSKY, 1956 share this character with the new species. Both *P. guttata* and *P. musgravei* have, however, a conspicuous, contrasting dark and light pattern: the former species can easily be recognized by its whitish pronotum and dark mesonotum, the latter by its distinctly annulate fore legs.

The fore leg of *Ploiaria metapterina* sp. n. is very characteristic. The combination of the following features is unique within the genus: (1) trochanter nearly glabrous, having only few simple hairs; (2) femur with very few spiniferous processes and with a particularly long spiniferous process, which is much longer than width of femur, at the base of the posteroventral series; (3) tibia very short, its length only about 1/3 of femur.

Because no *Ploiaria* species have been described or reported from Australia since WYGODZINSKY (1956), there is no need for preparing a new key to the Australian species. *Ploiaria metapterina* sp. n. will run to couplet 3 in WYGODZINSKY's (1956: 163) key. The following modification to couplet 3 will allow the recognition of the new species.

- | | | |
|----|---|------------------------------|
| 3 | Fore trochanter on ventral surface with at least one distinct spinelike bristle | 4 |
| – | Fore trochanter without any distinct spinelike bristles | 3a |
| 3a | Head and pronotum with complex dark and light pattern. Anteroventral series of fore femur composed of about 23 spines apicad to basal interruption. Fore femur about 1.2 times as long as fore tibia and tarsus (without claws) taken together; fore tibia slightly less than half as long as fore femur. Only macropterous morph known | <i>P. musgravei</i> |
| – | Head and pronotum uniformly dark brown. Anteroventral series of fore femur composed of about 11–12 spines apicad to basal interruption. Fore femur about 1.4 times as long as fore tibia and tarsus (without claws) taken together; fore tibia extremely short, about 0.35 times as long as fore femur. Only apterous morph known | P. metapterina sp. n. |

The Australian *Ploiaria metapterina* sp. n., *P. guttata* and *P. musgravei* may form a monophyletic group within *Ploiaria* characterized by the combination of the following characters: (1) trochanter nearly glabrous, without spiniferous processes or strong setae; (2) fore leg relatively short and stout; (3) fore femur with relatively few spiniferous processes; (4) tibia short. All of these characters are also

found occasionally elsewhere in the genus, however, their unique combination in these three species makes acquisition from a common ancestor rather probable. Also, the geographic distribution of the species seems to support this hypothesis. The fore leg structure of the new species, including the very characteristic, strongly asymmetrical claws of the fore tarsus, resembles the one of *P. guttata* and the two species appear closely related.

Habitat notes. The holotype was collected in a wet and closed sclerophyll forest on sandy loam soil (A. PODLUSSÁNY, *pers. comm.*).

Ploiaria biroi WYGODZINSKY, 1966 apterous female
(Figs 8–13)

Ploiaria biroi WYGODZINSKY, 1966: 171 (*Ploiaria*) [New Guinea: Stephansort, Astrolabe Bay; holotype (♂) HNHM! (see remark below)]

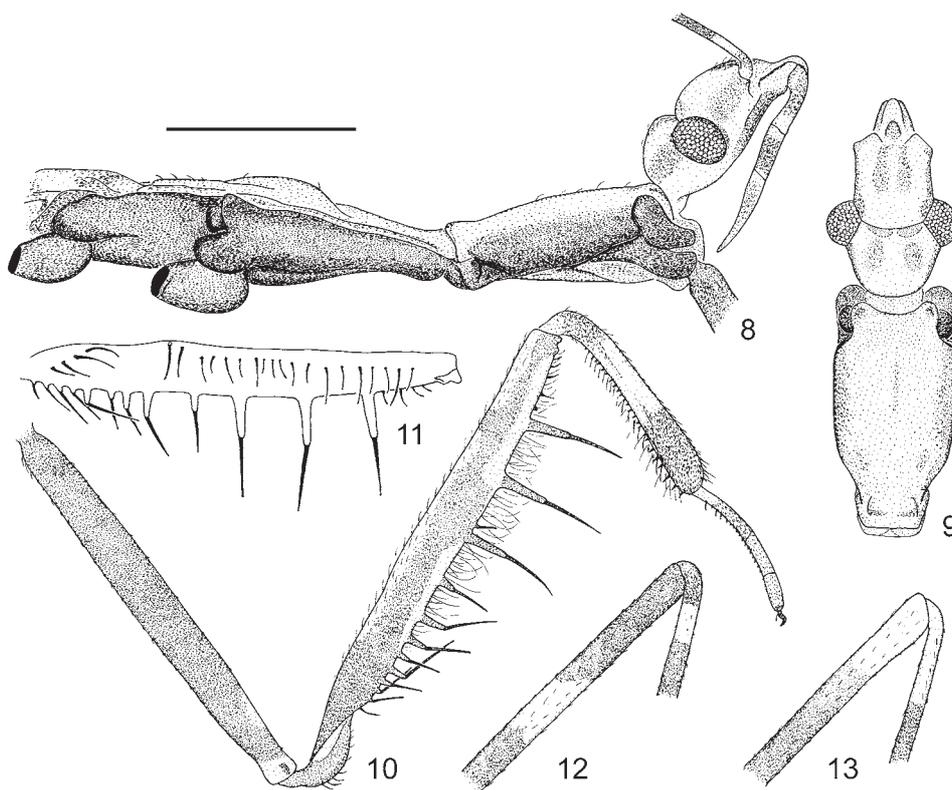
Material examined. NEW GUINEA: Leuvomba Plant, 8 miles S of Lae, 11. IV. 1965, Nr. 26, leg. J. BALOGH & J. J. H. SZENT-IVÁNY (1 apterous ♀); deposited in the HNHM.

Description of apterous female. Colour. Head stramineous; clypeus, a pair of dorsal longitudinal spots posterior to antenniferous tubercles, a pair of dorsal longitudinal spots posterior to interocular furrow, a pair of lateral longitudinal stripes between antenniferous tubercles and base of head (narrowly interrupted before eye), and ventral surface of head anteriorly light castaneous. Labium castaneous, with stramineous colouration at intersegmental articulations. Antennal segment I castaneous, distinctly darkened towards its apex, with a basal and a subapical annulus light stramineous. Pronotum stramineous dorsally, castaneous laterally; meso- and metathoracic terga stramineous, pleura dark castaneous. Abdomen dorsally stramineous with castaneous pattern, ventrally dark brown. Fore coxa rather uniformly castaneous except a narrow apical stramineous annulus; trochanter castaneous; femur castaneous with distinct stramineous pattern as in Fig. 10; basal 1/5 and apical 2/5 of tibia castaneous, remaining part stramineous; tarsus castaneous with a narrow basal stramineous annulus. Mid and hind legs castaneous, mid femur with a rather wide subapical and tibia with a narrower subbasal whitish annulus (Fig. 12), femurotibial articulation of hind leg widely whitish (Fig. 13).

Structure. Body elongate, rather smooth, only with few, very short, hard to observe hairs (with the exception of appendages). Head as in Figs 8 and 9, elongate, preocular part about twice as long as postocular, diatone about 2.15 times greater than interocular distance. Labium: Segment I attaining about middle of preocular part of head, segment II shortest, distinctly surpassing anterior margin of eye, segment III longest, surpassing base of head, projecting between anterior acetabula. Thorax: Pronotum as in Figs 8 and 9, rather short and stout, about 1.8 times longer than its width; lateral outline of fore lobe subparallel, strongly converging posteriorly in its posterior fourth in dorsal aspect; hind lobe very short and narrow, distinctly narrowing posteriorly. Mesothorax rather elongate, metathorax much shorter; mesonotum about 2.6 times longer than metanotum. Legs: Fore leg as in Fig. 10, elongate, rather slender; coxa subcylindrical, elongate; trochanter without spiniferous processes, only with a few bristles; femur long and slender, about 1.1 times longer than coxa, with short, semi-erect pilosity as well as with a large number of long, fine hairs between the two series of

spiniferous processes; posteroventral series with 12 very long spiniferous processes, length of the basal processes of the apical three spines subequal to the width of fore femur; anteroventral series interrupted subbasally, composed of about 23 long spines inserted on very short basal processes (Figs 10 and 11); tibia about 0.47 times as long as femur, its ventral surface with a single row of short, erect spines and a row of long, rather strong spinelike setae; tarsus about 0.65 times as long as tibia, ventral surface with a row of small spines. Mid and hind legs long and slender, with short, adpressed pubescence. Abdomen elongate, narrow, rather parallel-sided. Collapsed in the single examined specimen (apparently the specimen was mounted on card from alcohol) and not allowing proper examination and description of female genitalia.

Measurements (in mm). Body length 9.8. Length of head 1.05, preocular length 0.52, postocular length 0.28, diatone 0.69, interocular distance 0.32. Length of labial segments I : II : III = 0.38 : 0.28 : 0.45. Length of antennal segments I : II : III = 5.70 : 3.95 : 1.95 (segment IV incomplete in examined specimen). Medial length of pronotum 1.12, width of fore lobe 0.63; medial length of mesonotum 1.12, of metanotum 0.42. Length of fore coxa 2.38, femur 2.57, tibia 1.22, tarsus 0.81; length of mid femur 5.75; length of hind femur 8.05.



Figs 8–13. *Ploiaria biroi* Wygodzinsky, apterous female: 8 = head and thorax, lateral view, 9 = head and pronotum, dorsal view, 10 = right fore leg, posterior surface, 11 = left fore femur, anterior surface, 12 = femurotibial articulation of mid leg, 13 = same of hind leg. Scale = 1.0 mm to all figures.

Remarks. *Ploiaria biroi* was described from a single macropterous male from New Guinea and its female remained unknown until now. The apterous female, reported herein for the first time, differs in several aspects from the male holotype of *P. biroi*. Some of the differences, such as the differently structured thorax, can be attributed to pterygopolymorphism, others are commonly encountered sexual differences (e.g. the larger eyes of male). Nevertheless, the difference of some characters, most notably some of the colour patterns (dorsally stramineous pronotum, whitish annuli on mid and hind legs in female), is rather curious and suggests that there is the slight possibility that the examined female represents an undescribed species closely related to *P. biroi*. The similarity of the highly characteristic fore legs, however, suggests that the specimen described above is the apterous female of *P. biroi*.

Only the macropterous male can be identified by using the identification key presented by WYGODZINSKY (1966: 163). The following modification on WYGODZINSKY's key will allow the additional recognition of the apterous female of this species.

- 27 Posteroventral series of fore femur composed of 10–11 very long processes, each bearing a single long spiniform seta apically, some of these combined with their base several times longer than diameter of fore femur *P. biroi*
- Posteroventral series of fore femur composed of much shorter processes and setae, none of these longer than diameter of fore femur 27a
- 27a First and second segments of fore tarsus elongate, of about identical length, third very short (fig. 44D, F) *P. antipoda*
- First segment of fore tarsus elongate, second and third short (Figs 52C; 53F) 28

It may be noted that the holotype of *P. biroi* is deposited in the HNHM and not in the BPBM as stated in the original description by WYGODZINSKY (1966: 173). However, since it was collected by L. BÍRÓ, who deposited nearly all of his material at the HNHM, WYGODZINSKY's record on the type depository is most probably simply a lapsus calami.

Habitat notes. According to the records of J. BALOGH, the examined specimen was collected on the ground in a coffee plantation.

Bargylia STÅL, 1866

Bargylia STÅL, 1866: 163. Type species by subsequent designation (WYGODZINSKY 1951: 611, 616): *Emesa iuncea* ERICHSON, 1842 sensu STÅL, 1874 (misidentification; = *Bargylia stali* WYGODZINSKY, 1951).

Bargylia currently comprises four endemic Australian species (MALDONADO CAPRILES 1990, CASSIS & GROSS 1995). An additional species is described below.

***Bargylia longispina* sp. n.**

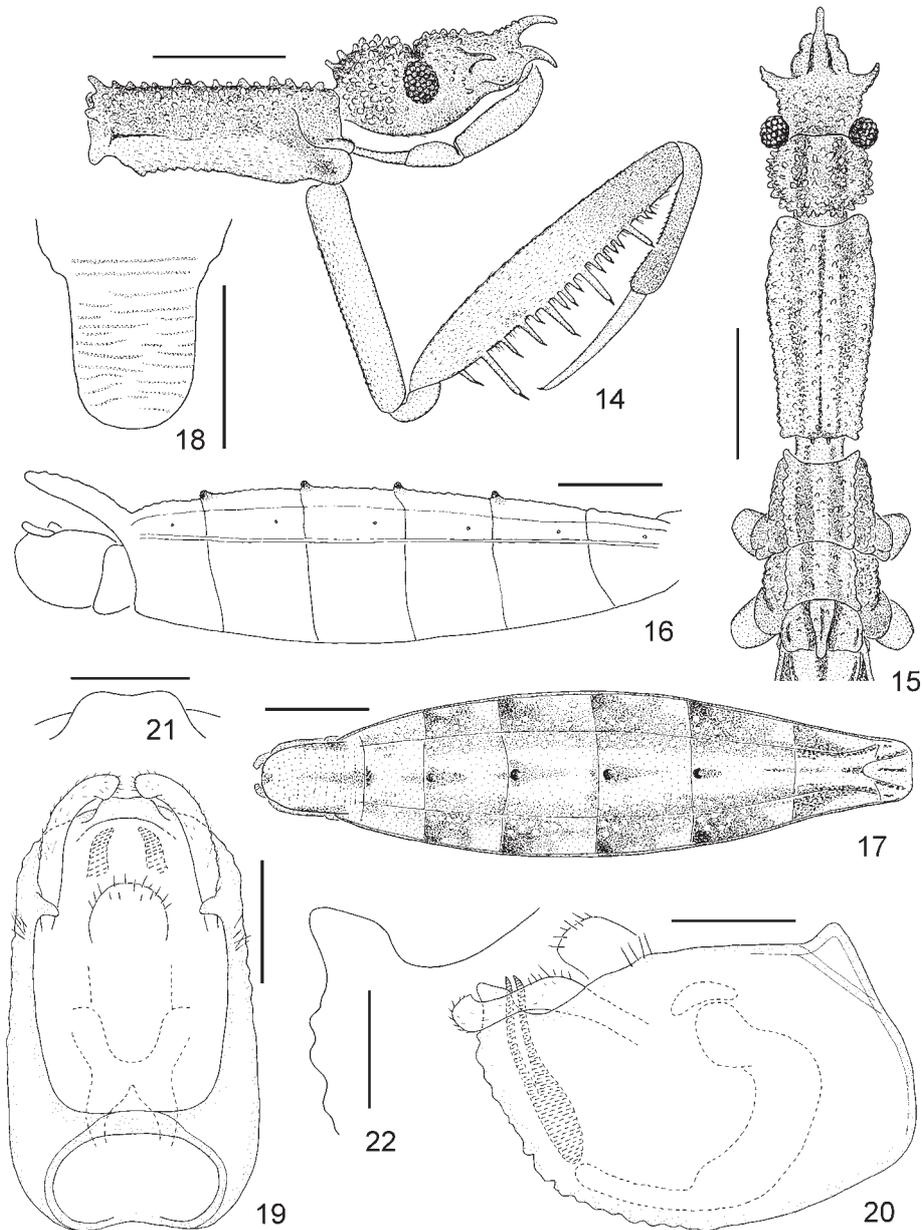
(Figs 14–28)

Type material. Holotype (♂): “AUSTRALIA \ Queensland \ Ingham” [printed]; “22–28.III. 1965. \ at light \ leg. J. Balogh” [printed]; “Holotypus \ *Bargylia* \ *longispina* sp. n. \ det. Rédei, 2006” [type label with red borders, handwritten+printed]; deposited in the HNHM.

Description. Apterous male.

Colour. General colour light yellowish brown, tubercles densely covering dorsal body surface slightly lighter. Head as general body colour, its lateral sides as well as a pair of two elongate spots on the dorsal surface of its postocular part brown; clypeal spine and spines of antenniferous tubercles darkened laterally. Rostrum rather uniformly light yellowish; antennal segment I light yellowish basally, gradually darkening toward its apex, segments II–IV light brown. Prothorax as general body colour, uniformly yellowish ventrally, bearing distinct brown pattern composed of a pair of longitudinal stripes and some larger spots dorsally. Meso- and metanota as general body colour, each with a pair of wide, longitudinal, brown stripes. Abdomen as general body colour; tergites with an obscure, disrupted medial and a pair of lateral brownish stripes, medial tubercle at posterior margin of tergites III–VI dark brown; dorsal laterotergites II–VI yellowish, their posterior half brown, posteriolateral angle dark brown; ventral laterotergites yellowish, their posterior angles brown; sternites yellowish, each with a pair of ventrolateral spots near the posterior margin, and some more laterad brown suffusion. Fore coxa yellowish, slightly suffused with brown apically; fore trochanter as apex of coxa; fore femur yellowish, with brownish suffusion at its lateral surface towards apex; fore tibia and tarsus yellowish with some brownish suffusion. Mid and hind femora yellowish, mid femur with wide apical, hind femur with wide subapical, brown, indistinctly delimited annuli; mid and hind tibiae and tarsi light yellowish brown.

Structure. Body elongate, surface of head, thorax and abdomen densely covered with large, conspicuous tubercles; body covered only with very short, adpressed, hard to observe pilosity. Head as shown in Figs 14 and 15, about 1.5 times longer than diatone (length measured without clypeal spine!), porrect, with a deep interocular furrow; preocular part distinctly longer than postocular, postocular part globular, about 1.15 times wider than preocular. Clypeus, labrum and antenniferous tubercles each with a long, gracile, curved spine (spines of antenniferous tubercles slightly asymmetrical in holotype). Eye small, globular, laterally prominent, far remote from dorsal and ventral outlines of head in lateral aspect, composed of relatively few facets; diatone slightly less than twice as wide as interocular distance. Antenna gracile, segment I longest, about 1.7 times longer than segment II; segment III very short, about 0.15 times as long as segment II; segment IV slightly shorter than half of segment II. Labium: segment I rather stout, approaching anterior margin of eye, segment II



Figs 14–22. *Bargylia longispina* sp. n., apterous male: 14 = head, pronotum and fore leg, lateral view, 15 = head, thorax and base of abdomen, dorsal view, 16 = abdomen, lateral view, 17 = same, dorsal view, 18 = apex of abdominal tergite VII, dorsal view, 19 = male genital capsule, dorsal view, 20 = same, lateral view, 21 = superoposterior plate of male genital capsule, dorsal view, 22 = same, lateral view. Scale = 0.5 mm to Figs 14–18, 0.2 mm to Figs 19–20, 0.1 mm to Figs 21–22.

very short, thick, segment III gracile, gradually narrowing apically. Thorax: Pronotum as shown in Figs 14 and 15, relatively short and stout, about 1.9 times longer than its greatest width (in its anterior half), hind lobe indistinct, hardly developed. Meso- and metathorax short, mesonotum about 0.4 times, metanotum about 0.25 times as long as pronotum, mesonotum with a pair of lateral finger-like projections anteriorly. Legs: Fore leg as in Fig. 14, rather stout; coxa cylindrical, about 5.5 times longer than its greatest width; trochanter simple, unarmed; femur rather stout, about 6.3 times longer than its greatest width (in its basal third), about 1.43 times longer than coxa, ventral surface armed with two rows of spiniferous processes. Posteroventral series (Fig. 14) composed of short spines inserted on distinctly elongate basal processes, 4 of them very long, about 4–5 somewhat shorter and about 14–15 short; shorter processes situated somewhat more anteriorly than longer ones. First process is relatively short, situated close to basis of ventral surface of femur, its length subequal to its distance from base of fore femur. Anteroventral series composed of about 16–17 short spines inserted on elongate but relatively short basal processes. Fore tibia short, about 1.45 times as long as femur, with a row of small denticles; fore tarsus not segmented, elongate, narrow, about 0.83 times as long as tibia. Mid and hind legs elongate and delicate but relatively short, all tibiae much shorter than body length; tibiae about 1.25 (mid) and 1.3 (hind) times longer than respective femora; tarsi minute. Abdomen of male elongate elliptical (Figs 16 and 17), about 3.7 times longer than wide, tergites III–VI each with a distinct blackish medial tubercle at its posterior border. Tergite VII projecting posteriorly, U-shaped, apically rounded (Fig. 18), nearly completely covering genital capsule. Tergite VIII rather widely exposed in lateral aspect (Fig. 16). Male genital capsule (Figs 19 and 20) tuberculate posteriorly, ventrally and laterally, elongate, genital aperture occupying almost completely its dorsal surface, superoposterior border with a wide, transverse, flattened, posteriorly widely excised plate (Figs 21 and 22). Parameres (Figs 23 and 24) symmetrical, simple, elongate, slightly curved, apically slightly widened, with a distinct tooth in about dorsomedial position. Phallus as in Figs 25–28, basal plates fused near their middle, struts running along ventral surface of phallobase, apically separated forming two long rod-like structures, strongly sclerotized, widely diverging; phallosoma with about 17 large, stout, strongly sclerotized spines on its dorsal surface; endosoma with a large, elongated ring-like sclerotized structure composed of a large number of minute spines near the bases of the separated parts of the struts, furthermore a small, rounded sclerite situated somewhat basad of it in inverted position.

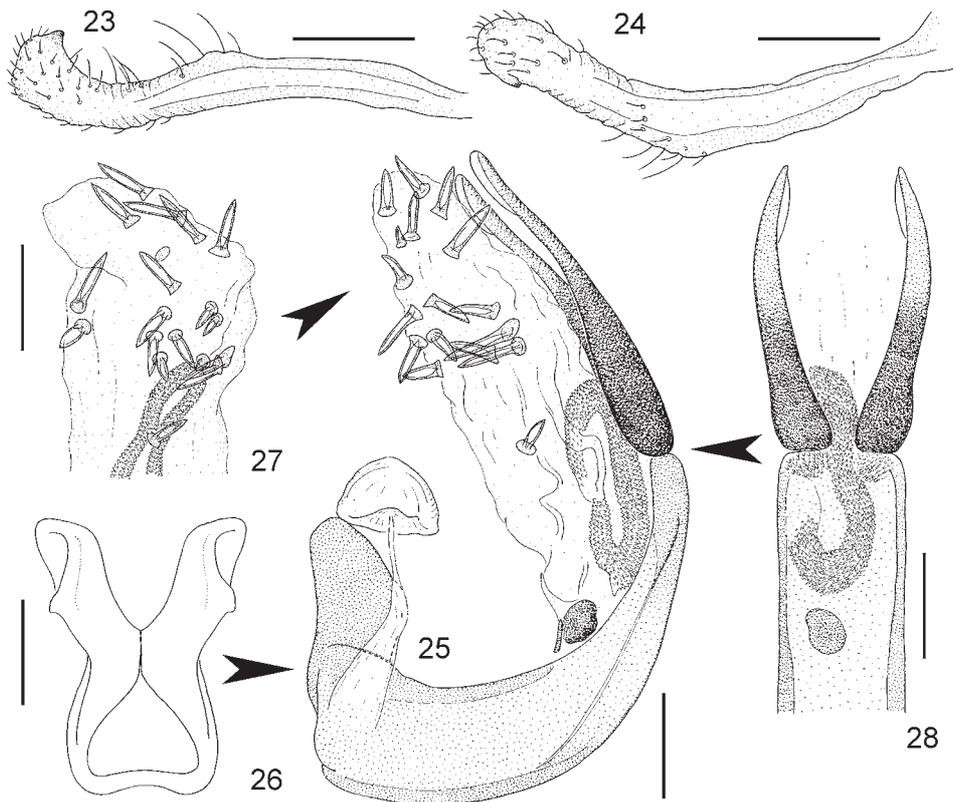
Measurements (in mm). Body length 5.1. Length of head from base to apices of maxillary plates 0.69, width of preocular part 0.34, of postocular part (tubercles not considered!) 0.39, diatone 0.47, interocular distance 0.24. Length of labial segments I : II : III = 0.43 : 0.18 : 0.26. Length of antennal segments I : II : III : IV = 2.01 : 1.20 : 0.19 : 0.56. Length of pronotum 0.81, greatest width 0.43; length of mesonotum 0.32, greatest width 0.30; length of metanotum 0.21, greatest width 0.29. Length of fore coxa 0.83, greatest width 0.15; length of fore trochanter 0.22; length of fore femur 1.19, greatest width 0.19; length of fore tibia 0.54; length of fore tarsus 0.45. Length of mid femur 2.10, of mid tibia 2.62, of mid tarsus 0.15, of hind femur 2.89, of hind tibia 3.77, of hind tarsus 0.15. Length of abdomen 3.0, greatest width 0.81.

Etymology. The specific name, *longispina* (from Latin *longus*, long and *spina*, a spine) refers to the very long spine of the antenniferous tubercle which differentiates the new species from all other species of the genus.

Comparative notes. Within the genus *Bargyilia*, *B. longispina* sp. n. seems to be more closely related to *B. stali* and *B. grossi* than the remaining two species. However, the new species can be very easily recognized by its antenniferous tuber-

cle having a very long spine; in the two related species, the antenniferous tubercle is unarmed or bears only a minute and insignificant tubercle. It also differs from all known species of *Bargylia* by its fore leg armature: the first spiniferous process of the posteroventral series of the fore femur is relatively short, the second process much longer, but some of the other long processes are of similar size. In other *Bargylia* species, the first spiniferous process is much longer than any of the remaining processes.

Natural subgroups within *Bargylia*. The genus *Bargylia* can apparently be subdivided into two very distinct, most probably monophyletic species groups. The first group (“*stali*-group”, comprising the type species *B. stali* WYGODZINSKY, 1951 and *B. grossi* WYGODZINSKY, 1956) is characterized by the dis-



Figs 23–28. *Bargylia longispina* sp. n., male genitalia: 23, 24 = left paramere, two different aspects, 25 = phallus, lateral view (the arrows show the aspects of Figs 26–28), 26 = articulatory apparatus, 27 = phallosoma, 28 = ventral view of phallus, apical half of phallosoma omitted. Scale = 0.1 mm to all

tinctly tuberculate body, relatively short thoracic segments, stout fore femora with relatively long spiniferous processes, and the presence of a distinct clypeal spine. The second group (“*longinota*-group”, comprising *B. babinda* WYGODZINSKY, 1956 and *B. longinota* WYGODZINSKY, 1956) is recognized by the rather smooth or inconspicuously tuberculate body, elongated thoracic segments, gracile fore femora with relatively short spiniferous processes, and the absence of a clypeal spine. The combination of characters described above seems enough to warrant the subgeneric separation of the two groups. Nevertheless, a careful examination of all species should be carried out for the proper examination of their relationship. *Bargyilia longispina* sp. n., which is placed with some doubt in *Bargyilia*, cannot be placed to any of the above groups, but seems to be more closely related to the “*stali*-group”.

The key presented below will allow the differentiation of the new species from the species groups of *Bargyilia*. For species-level identification of the previously described species of *Bargyilia*, the work by WYGODZINSKY (1966) can be consulted.

Key to the species groups of *Bargyilia*

- 1 Antenniferous tubercles with long spine. First spiniferous process of posteroventral series of fore femur relatively short, the second process much longer but some of the other long processes of similar size. Abdomen of male distinctly widened, elongate elliptical in dorsal aspect **B. longispina** sp. n.
- Antenniferous tubercles unarmed or only with a minute and insignificant tubercle. First spiniferous process of posteroventral series of fore femur much larger than any of the remaining processes. Abdomen nearly parallel-sided 2
- 2 Body distinctly tuberculate; clypeus with distinct spine; thoracic segments relatively short; fore femora stout with relatively long spiniferous processes (*stali* WYGODZINSKY, *grossi* WYGODZINSKY) “*stali*-group”
- Body rather smooth; clypeus without distinct spine; thoracic segments elongated; fore femora narrow with relatively short spiniferous processes (*babinda* WYGODZINSKY, *longinota* WYGODZINSKY) “*longinota*-group”

The relationships of *Bargyilia*. The genus *Bargyilia*, and especially the species in the “*stali*-group” as defined above, is extremely similar externally to the Ethiopian genus *Bobba* BERGROTH, 1914. WYGODZINSKY (1958) synonymized *Bobba* with *Bargyilia*, but later resurrected *Bargyilia* (WYGODZINSKY 1966), apparently

Table 1. Differences between *Bargylia* and *Bobba* as given by WYGODZINSKY (1966). Character states marked with “*” are found in *Bargylia longispina* sp. n.

<i>Bargylia</i> STÅL, 1866	<i>Bobba</i> BERGROTH, 1914
1. abdomen linear, parallel-sided	*abdomen fusiform
2. body surface smooth or only slightly tuberculate	*body surface coarsely granulated
3. *eighth sternite of male relatively wide	eighth sternite of male very narrow
4. basal plates of phallus short, fused	*basal plates of phallus separated
5. *struts running along ventral surface of phallobase, fused either for the basal two-thirds or at middle	struts continuing in endosoma, not fused
6. *endosoma long, sac- or tube-shaped, its surface with tiny regularly arranged spiculae	endosoma much shorter, with paired sclerites of various numbers and shapes

also upon zoogeographical considerations. The differences between the Australian (*Bargylia*) and the Afrotropical (*Bobba*) species, according to WYGODZINSKY (1966), are summarized in Table 1.

The discovery of the new Australian species described below renders the separation of these two genera rather hard. The new species – placed with some doubt in *Bargylia* – *B. longispina* sp. n., bears important distinctive characteristics of *Bobba*: its abdomen is distinctly fusiform and the body is coarsely granulated. [In his generic key to the Metapterini of the World, WYGODZINSKY (1966: 434) differentiated the two genera only by the different shape of the abdomen, consequently, using his key for the generic accommodation of the new species, it runs to *Bobba*!] The eighth sternite of the new species is rather wide similar to the condition in *Bargylia*. The considerable variation of this character in other groups of Emesinae, e.g. *Ghilianella* SPINOLA, 1850, weakens this character. The male genitalia of *B. longispina* are undoubtedly closer to those of the Australian (*Bargylia*) species, with the elongate struts running along the ventral surface of the phallobase and being apically separated – quite similar to the condition found in *B. grossi* –, and the endosoma without paired sclerites. However, the structure of the basal plates, which are not fused in their entire length, are more similar to *Bobba*. Summarizing this comparison, it seems justified to assign the new species to the genus *Bargylia*.

It can be concluded that the external characters that are used to separate *Bargylia* and *Bobba* contradict some of the genitalic characters. They cannot be used for the proper generic placement of *Bargylia longispina* sp. n. However, also male genitalic characters seem to be of obscure value for separation of the two genera. The main reason for maintaining *Bargylia* and *Bobba* as different genera seems to be their zoogeographical distribution. Consequently, a critical re-exami-

nation of all described species might disprove the current classification and support the inclusion of *B. longispina* sp. n. in *Bobba* or even the synonymy of the two genera.

It should also be noted that *Bargylia* in the current sense, despite of the small number of species, is very heterogeneous: *B. longispina* sp. n., on one hand, is externally rather similar to members of the African genus *Bobba* and the “*longinota*-group”, on the other hand, differs conspicuously from the remaining species in this taxon.

*

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REFERENCES

- CASSIS, G. & GROSS, G. F. (1995) Hemiptera: Heteroptera (Coleorrhyncha to Cimicomorpha). In HOUSTON, W. W. K. & MAYNARD, G. V. (eds): *Zoological Catalogue of Australia*. Vol. 27.3A. CSIRO Australia, Melbourne, i–xv, 1–506.
- MCATEE, W. L. & MALLOCH, J. R. (1926) Philippine and Malayan Ploiariinae (Hemiptera, Reduviidae). *Philippine Journal of Science* 30 [1925]: 117–152.
- MALDONADO CAPRILES, J. (1990) Systematic Catalogue of the Reduviidae of the World (Insecta: Heteroptera). *Caribbean Journal of Sciences, Special Edition*, i–x, 1–694.
- PAPP, J. (2005) Five new Mesocentrus Szépliget species from the Australian region (Hymenoptera: Braconidae: Betylobraconinae). *Acta Zoologica Academiae Scientiarum Hungaricae* 51: 97–111.
- PUTSHKOV, P. V. & PUTSHKOV, V. G. (1996) Family Reduviidae Latreille, 1807 – assassin-bugs. Pp. 390–538. In AUKEMA, B. & RIEGER, Chr. (eds): *Catalogue of the Heteroptera of the Palaearctic Region, vol. 2*. The Netherlands Entomological Society, Amsterdam.
- SCOPLI, J. A. (1786) *Deliciae faunae et florae insubricae, seu novae aut minus cognitae species plantarum et animalium quas in Insubria austriaca tum spontaceas quum exoticas vidit descripsit et aeri incindi curavit*, 1: i–ix, 1–85. Salvator, Ticini.
- WYGODZINSKY, P. W. (1951) On *Bargylia* Stål, 1865, *Pseudobargylia*, gen. nov. and *Leistarches serripes* Dohrn, 1860 (Emesinae, Reduviidae, Hemiptera). *Annals and Magazine of Natural History* 12(4): 609–617.

- WYGODZINSKY, P. W. (1956) Synopsis of the Australian Emesinae (Hemiptera: Reduviidae). *University of California Publications in Entomology* **11**(4): 193–246.
- WYGODZINSKY, P. W. (1966) A monograph of the Emesinae (Reduviidae, Hemiptera). *Bulletin of the American Museum of Natural History* **133**: 1–614.
- WYGODZINSKY, P. W. (1974) Description of the first winged species of Pseudobargyia (Emesinae, Reduviidae, Hemiptera). *Memoirs of the National Museum of Victoria* **35**: 111–113.
- WYGODZINSKY, P. W. & USINGER, R. L. (1960) Heteroptera: Reduviidae. *Insects of Micronesia* **7**(5): 231–283. Bernice P. Bishop Museum, Honolulu, Hawaii.

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