

A new species of *Chinemesa* Wygodzinsky, 1966 from Borneo (Heteroptera: Reduviidae: Emesinae)

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Chinemesa uniannulata sp. n. (Heteroptera: Reduviidae: Emesinae: Emesini) is described based on a macropterous male from Borneo. The new species can readily be recognized among the other species of the genus by its small size and unannulated mid and hind femora. A key for the identification of the species of *Chinemesa* is presented.

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Introduction

Wygodzinsky (1966) established the genus *Chinemesa* of the thread-legged assassin bug tribe Emesini for the accommodation of three new species: *C. poiana* (the type species of the genus), *C. feminata* and *C. murudiana*, all of them occurring in Borneo. The species have never been recorded so far since their original descriptions except for being listed in two world catalogues (Putshkov & Putshkov 1988, Maldonado Capriles 1990). Nothing is known about their biology such as life habit or ecological preference.

Among unidentified material deposited in the Nationaal Natuurhistorisch Museum Naturalis, Leiden, a male specimen representing an undescribed species of *Chinemesa* has been found. It is here described as new.

Material 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 examined after short boiling in 10% KOH solution.

Taxonomy

Genus *Chinemesa* Wygodzinsky

Chinemesa Wygodzinsky, 1966: 225. Type species by original designation: *Chinemesa poiana* Wygodzinsky, 1966.

Diagnosis

Recognized among the genera of the Emesini by a combination of the following characters: fore tarsi three-segmented; fore wing with a single pentagonal basal cell in addition to large discal cell, veins M and Cu extending basad from basal cell, vein M free-ending proximally; mesonotum bearing long and erect process. Macropterous and apterous morphs known.

Revised description

A part of the original description of this genus presented by Wygodzinsky (1966) should be modified to: body length about 8–17 mm; metanotum with or without a short spine.

Checklist of *Chinemesa*

- C. feminata* Wygodzinsky, 1966
- C. murudiana* Wygodzinsky, 1966
- C. poiana* Wygodzinsky, 1966
- C. uniannulata* sp. n.

Distribution

The genus is known exclusively from Borneo. All species are known only from the type localities: *Chinemesa feminata* from Central Borneo: Mt. Ti-bang, *C. murudiana* from Sarawak: Mt. Murud, and *C. poiana* from Sarawak: Mt. Poi.

Key to the species of *Chinemesa*

1. Mid and hind femora ferruginous, each with basal, submedial and apical stramineous annuli. Total length of body about 17 mm. (Only apterous morph known) *feminata*
- Mid and hind femora each with a single apical or subapical annulus or several alternating dark and light annuli. (Only macropterous morph known) 2
2. Anterior pronotal lobe slightly shorter than head. Fore wing with yellowish reticulate pattern. Connexiva distinctly bicolorous. Mid and hind femora each with about 15 alternating dark and light annuli. Phallosoma without 1+1 sclerites laterally. Total length of body about 14 mm *murudiana*
- Anterior pronotal lobe longer than head. Fore wing without reticulate pattern. Connexiva uniformly coloured. Mid and hind femora with less than 15 annuli. Phallosoma with 1+1 sclerites laterally 3
3. Total length of body about 16.5 mm. Fore femur with 4 ferruginous annuli, mid and hind femora each with about 9 ferruginous annuli and an apical whitish annulus ... *poiana*
- Total length of body about 7.8 mm. Fore femur with 2 whitish annuli, mid femur with a single subapical whitish annulus, hind femur with a single apical whitish annulus *uniannulata*

Chinemesa uniannulata sp. n.

Figs 1–19

Type material. Holotype male: “MALAYSIA-SE. SABAH nr / Danum Valley Field C. / c.150, W0, Mal.trap 5 / 13.IX.-4.X.1987 RMNH’87 / C. v. Achterberg & D. Kennedy”, deposited in the Nationaal Natuurhistorisch Museum Naturalis, Leiden. The specimen is mounted on a triangular card, pygophore and abdominal segment VIII are removed from the body and glued on the card separately, phallus is preserved in glycerol in a plastic microvial, pinned with the specimen.

Diagnosis

Readily recognized among the other species of

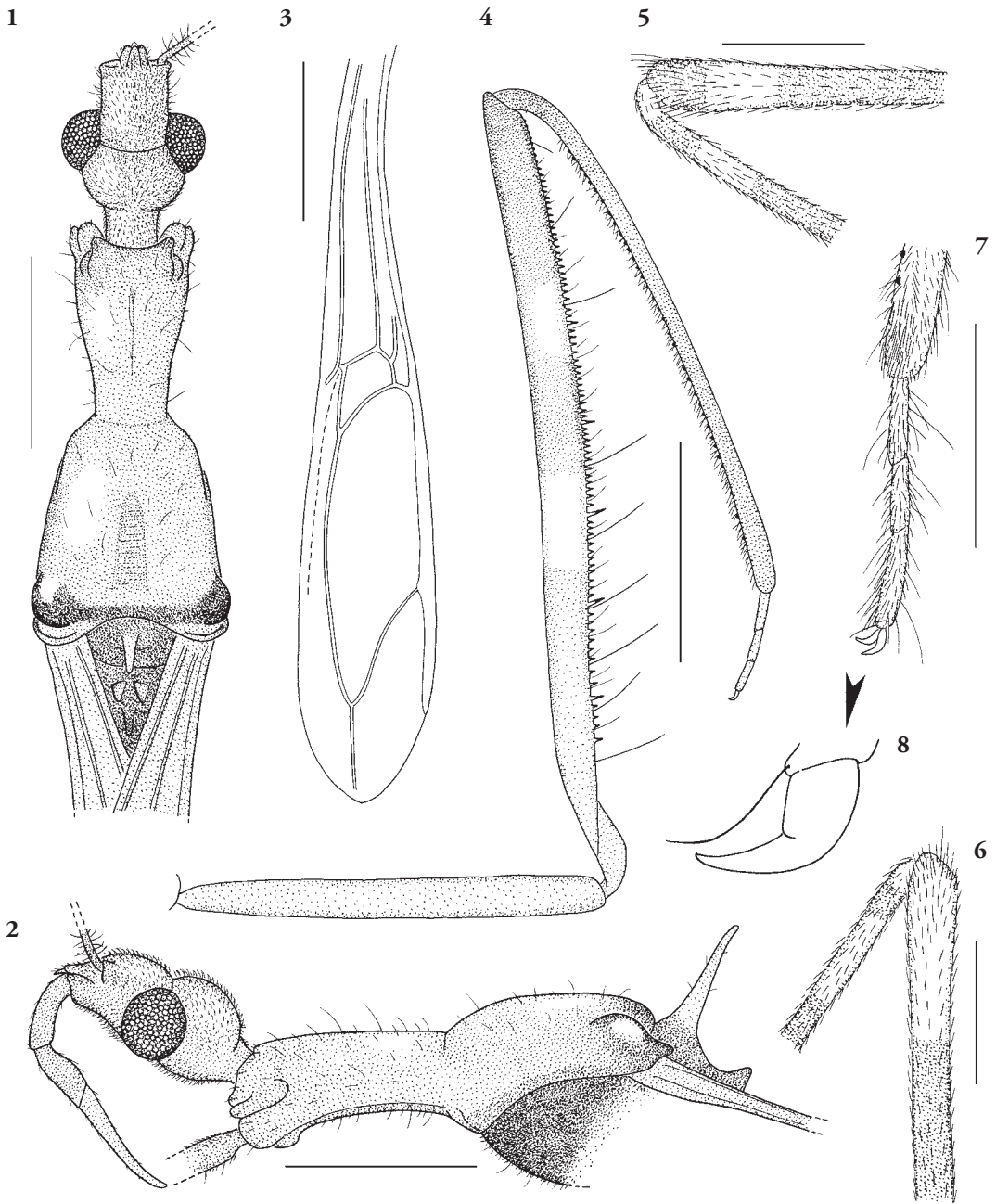
Chinemesa by its small size (about 8 mm) and the uniform coloration of the mid and hind femora with only one apical annulus and one subapical annulus, respectively.

Description

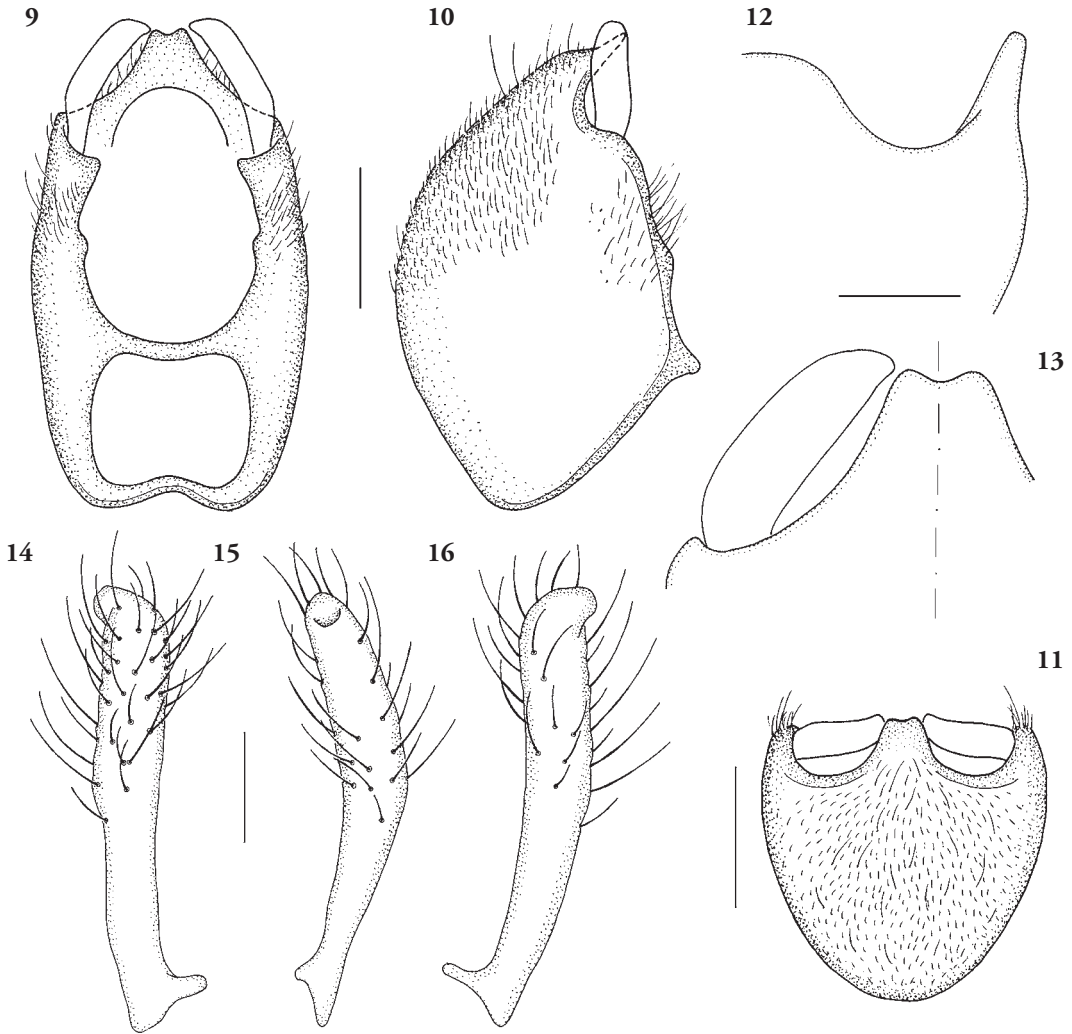
Macropterous male. Colour: General colour dark brown, slightly tinged with red on head, pronotum and fore leg. Antennal segments 1–3 dark brown (segment 4 missing); segment 1 slightly lightened towards base. Visible labial segments 1 and 2 slightly darker than head, visible segment 3 and extreme apex of visible segment 2 light brown. Pronotum piceous on humeral angles and posterior margin; meso- and metanota dark brown; mesonotal spine light yellowish brown; pleura and sterna of meso- and metathoraces dark brown. Abdomen distinctly lighter than pleura and sterna of meso- and metathoraces. **Fore wings dark brown; veins and pterostigma light brown.** Fore legs slightly lighter than head and pronotum; femur distinctly darkened towards apex, with a distinct whitish annulus between about 34 and 46% and with a more indistinct one between about 62 and 69% of its total length; tarsi yellowish brown. Mid and hind femora yellowish brown, distinctly darkened towards apex; mid femur with a narrow subapical whitish annulus (fig. 5); hind femur with a wide apical whitish annulus (fig. 6); mid and hind tibiae yellowish brown, distinctly darkened towards base, each with a distinct subbasal whitish annulus; mid and hind tarsi whitish yellow.

Structure. Body surface and pilosity: Body strongly polished. Head densely covered with short, semi-erect hairs on dorsum and short, adpressed, curved hairs on venter; labium with short, semi-erect hairs; antennal segment 1 covered with long, erect hairs about 3 times as long as diameter of segment; segments 2 and 3 densely covered with short, semi-erect hairs. Pronotum almost bare, with a few isolated, irregularly distributed, long, erect hairs; thoracic pleuron, sternum and abdomen densely covered with short, adpressed hairs, and with a few isolated, irregularly distributed, long, erect hairs. Coxa, trochanter, femur and tibia of fore legs with short, semi-erect pilosity; coxa and trochanter also with irregularly distributed long, erect hairs; femur ventrally with several long, strong bristles; tibia ventrally covered with strong, semi-erect setae, and with long, dense pilosity on area slightly basad to middle of dorsal surface; coxae and trochanters of mid and hind legs with short, adpressed and semi-erect pilosity together with isolated long hairs; femora and tibiae of mid and hind legs only with short, adpressed or semi-erect hairs.

Head (figs. 1–2) elongate oval; preocular part about 1.6 times as long as postocular part, declivent ante-



Figs 1–8. *Chinemesa uniannulata* sp. n., male. – 1, anterior part of body, dorsal view; 2, same, lateral view; 3, right fore wing; 4, right fore leg (fine pilosity omitted); 5, 6, femorotibial articulation of mid (5) and hind (6) legs; 7, fore tarsus; 8, inner (anterior) claw of left fore tarsus. Scales to figs. 1–4: 1.0 mm; to figs. 5–7: 0.5 mm.

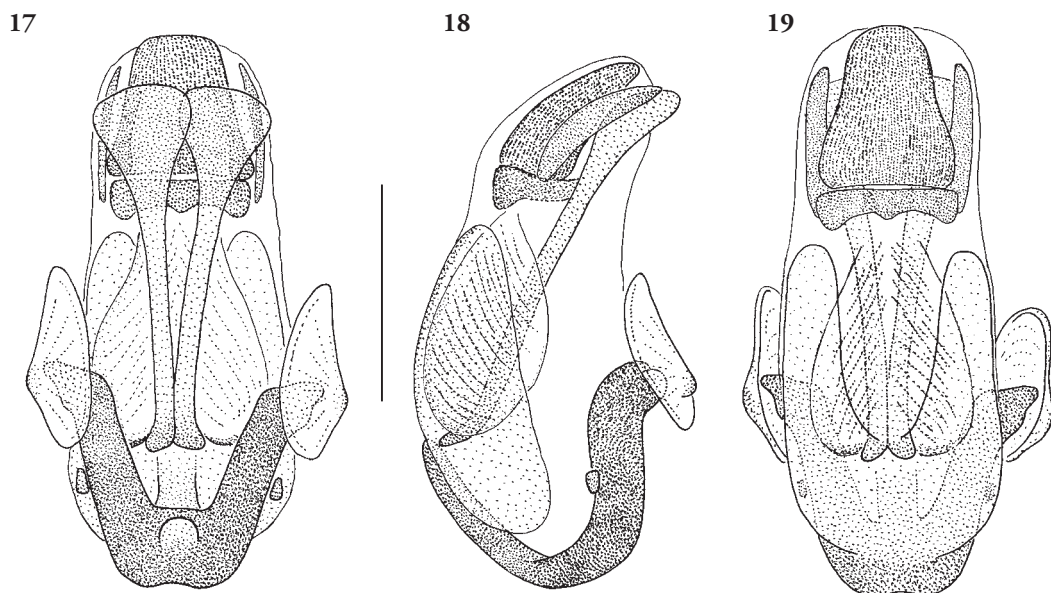


Figs 9–16. *Chinemesa uniannulata* sp. n., male (setae omitted in figs. 12–13). – 9, pygophore, dorsal view; 10, pygophore, lateral view; 11, pygophore, posterior view; 12, apical process of pygophore, lateral view; 13, apical process of pygophore, posterior view; 14–16, left paramere, three different orientations. Scales to figs. 9–11: 0.25 mm; to figs. 12–16: 0.1 mm.

riorly; postocular part globular, about 1.6 times as wide at posterior margin of eyes than ' part at anterior margin of eyes; head across eyes about twice as wide as interocular distance. Antenna delicate; segment 2 about 0.85 times as long as segment 1; segment 3 about 0.25 times as long as segment 1. Labium (fig. 2) long and narrow; visible segment 1 not reaching anterior border of eye; visible segment 2 surpassing anterior border of eye; visible segment 3 about 1.5 times as long as visible segment 1 and about 1.7 times as long as visible segment 2.

Pronotum (figs. 1–2) about 1.9 times as long as humeral width; anterior and posterior lobes subequal in length; anterior lobe with a narrow, indistinct furrow along meson; posterior lobe with wide, posteriorly widening impression indistinctly wrinkled transversely; humeral angles elevated, rounded; posterior margin deeply emarginated. Mesonotum armed with a long, erect, apically slightly curved spine; metanotum armed with a short spine.

Fore leg (fig. 4) long and slender. Coxa simple, cylindrical. Trochanter unarmed. Femur about 1.8 times



Figs 17–19. *Chinemesa uniannulata* sp. n., phallus. – 17, dorsal view; 18, lateral view; 19, ventral view. Scale: 0.25 mm.

as long as coxa, armed ventrally with two series of spines; posteroventral series composed of about 3–4 long and 75 shorter spines inserted on distinct basal processes, and of about 20 small, denticle-like spines apically; anteroventral series composed of about 45 small spines intermixed with about 12 long bristles. Tibia about 0.75 times as long as femur, with two irregular rows of small denticles intermixed with strong setae; outer (posterior) row composed of about 45 denticles, inner (anterior) row of about 15 denticles. Tarsal segments (fig. 7) subequal in length; claws distinctly curved; inner (anterior) claw with a ventral lamella (fig. 8). Mid and hind legs elongate and gracile.

Fore wing (fig. 3) attaining apex of tergite 7, costal margin distinctly concave in basal half; vein M basad of basal cell very short.

Abdomen elongate, widest near its apex; tergite 7 projecting posteriorly, leaving apical part of pygophore exposed, with posterior margin widely rounded. Pygophore (figs. 9–11) with a wide, flattened, apically emarginated apical projection (figs. 12–13). Parameres (figs. 14–16) with a short apical projection. Phallus (figs. 17–19) with long and narrow, apically widened and flattened struts; phallosoma with 1+1 lateral sclerites near apical widened part of struts.

Measurements (in mm). Body length from apex of head to apex of fore wings 7.8. Length of head

(without neck) 0.91, length of preocular part 0.35, of postocular part 0.22, width across eyes 0.76, interocular distance 0.37, width of preocular part at anterior margin of eyes 0.35, of postocular part at posterior margin of eyes 0.56. Lengths of antennal segments 1, 2 and 3 5.40, 4.60 and 1.25 (segment 4 missing). Lengths of labial visible segments 1, 2 and 3 0.42, 0.36 and 0.63. Length of pronotum along meson 2.02, length of anterior lobe 1.02, length of posterior lobe 0.99, humeral width 1.08. Medial length of abdomen from base to apex of tergite 7 4.2, greatest width 1.08. Lengths of coxa, femur, tibia and tarsus (segments 1, 2 and 3) of fore leg 1.86, 3.33, 2.48 and 0.49 (0.17, 0.18 and 0.21); lengths of femur, tibia and tarsus of mid leg 5.75, 8.50 and 0.28; lengths of femur, tibia and tarsus of hind leg 7.55, 11.60 and 0.29; greatest widths of fore coxa and femur 0.20 and 0.21.

Etymology

The specific epithet (Latin *uniannulatus* ‘having one annulus’) refers to the mid and hind femora each having only a single light annulus.

Comparative notes

Chinemesa uniannulata sp. n. is almost certainly not conspecific with *C. feminata*, known only from the female sex, because the new species bears strikingly different body size and colouration. The new species

is most similar to *C. poiana* in the shape of the pronotum and the structure of the phallus. However, it is distinguished from the latter by the much smaller size of the body, the different colour, the antennal segment 1 distinctly longer than the segment 2 (subequal to the segment 2 in *C. poiana*), the fore coxa about 1.8 times as long as the femur (almost twice as long in *C. poiana*), the vein M basad of basal cell very short, the fore claws strongly curved, the parameres less widened, the apical widened part of the struts shorter, and the lateral sclerites of the phallosoma situated more apicad.

Habitat notes

The single known specimen was collected in a Malaise trap which was set up for one year near a river bank and perpendicular to the forest edge in slightly disturbed secondary shrub vegetation (C. van Achterberg pers. comm.).

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References

- Maldonado Capriles, J., 1990. Systematic catalogue of the Reduviidae of the world (Insecta: Heteroptera). – Caribbean Journal of Science, special edition: i-x, 1–694.
- Putshkov, V. G. & P. V. Putshkov, 1988. A catalogue of the assassin bugs (Heteroptera, Reduviidae) of the world. V. Emesinae. – Typescript, deposited in VINITI, Moscow and Kiev (No. 3271-B88), 118 pp.
- Wygodzinsky, P. W., 1966. A monograph of the Emesinae (Reduviidae, Hemiptera). – Bulletin of the American Museum of Natural History 133: 1–614.

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