



Neochlonocoris sepicus n. gen., n. sp., a Striking New Apterous Mezirinae (Hemiptera: Aradidae) from Papua New Guinea

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Abstract

The fauna of Aradidae or flat bugs of New Guinea Island is still insufficiently explored and studied. The Mezirinae, the largest subfamily of tropical Aradidae, has 25 genera recorded to date from New Guinea Island, and only one species *Artabanellus mcnamarai* Kormilev, 1967 is apterous. Now a striking new specimen of apterous Mezirinae has come to light, its habitus resembling species of the Madagascan genus *Chlonocoris*. However, because it cannot be placed in any extant genus of Aradidae, *Neochlonocoris sepicus* new genus and new species are described.

Key words: Heteroptera, Flat Bugs, Karawari, Lowland rainforest, new species, New Guinea

Introduction

The large island of New Guinea (786,000 km²) and its rich tropical flora and fauna is home to numerous endemic plants- and animals from several families, and their habitats face significant threats from logging and agricultural expansion.

New Guinea belongs to two states; the western part comprises the Indonesian provinces Barat Papua and Papua whereas the eastern part belongs to the state of Papua New Guinea. The insect fauna has the greatest richness in the tropical rainforest areas. The flat bug subfamily Mezirinae is represented in New Guinea Island by 25 genera (Usinger and Matsuda 1959, Monteith 1982), all known from macropterous, brachypterous or micropterous specimens, with the exception of only one apterous species, *Artabanellus mcnamarai* Kormilev, 1967. This species was described from Mt. Lamington in NE Papua New Guinea based on a single female (4.56 mm), which lacks spine-like lateral expansions and is not similar to *Neochlonocoris* n. gen.

The record of a large conspicuous apterus specimen of Mezirinae is unique among the Oriental -Indo-Australian Aradidae fauna. Its bizarre outline and body structures resemble only the endemic genus *Chlonocoris* Usinger and Matsuda, 1959 from Madagascar, of which three species are described so far: *Chlonocoris multispinosus* Usinger and Matsuda, 1959, *C. bifurcatus* Heiss, 2006, and *C. dolinorum* Heiss, 2012 (Usinger and Matsuda 1959; Heiss 2006, 2012). As this peculiar specimen cannot be placed in any extant genus of Aradidae, a new genus and species are proposed, which are described and illustrated herein.

Material and Methods

The specimen studied is deposited in the Aradid collection of the first author at the Tiroler Landesmuseum, Innsbruck, Austria (CEHI), which later will be transferred to the Bavarian State Collection of Zoology in Munich, Germany.

As apterous Aradid specimens are usually covered by incrustation and debris obscuring the body structures, the specimen was cleaned and remounted for examination.

Measurements were taken with a micrometer eyepiece and are given in millimetres.

In the Holotype data, a slash (/) separates lines in a label. and two slashes (//) different labels. Photos were captured with an Olympus OM-5 camera, and Helicon Focus 8, along with Adobe Photoshop 25 software, were utilized for image composition.

Abbreviations used: deltg = dorsal external laterotergite (connexivum), mtg = mediotergite, ptg = paratergite.

Taxonomy

Neochlonocoris Heiss and Eckelt, new genus

<http://zoobank.org/urn:lsid:zoobank.org:act:6B4AFCFF-E237-4512-9C29-232174621353>

Type species: *Neochlonocoris sepicus* Heiss and Eckelt, n. sp.

Diagnosis. The general habitus and the presence of bifurcate and single finger-like lateral expansions on thorax and abdomen are only shared by the Madagascan endemic genus *Chlonocoris* (Figs. 4–5, 7). *Neochlonocoris* differs and is distinguished from *Chlonocoris* by the following morphological characters.

	<i>Chlonocoris</i>	<i>Neochlonocoris</i>
Genae	very long, reaching 1/2 of antennal segment II, contiguous in front of enclosed clypeus	very short, spine like apices cleft, shortly exceeding free clypeus
Antenniferous lobes	long and curved anterolaterally exceeding outer margin of eyes	basal part subparallel with short spine-like apical projections not exceeding outer margin of eyes
Eyes	globular, laterally protruding	placed at apex of long laterally produced cylindrical stalks
Postocular lobes	shorter, sinuate or with a tubercle	longer, straightly converging posteriorly
Thorax	mtg I+II medially fused into an oval smooth plate, longer than scutellum	mtg I+II fused into a transverse plate, mtg I with a distinct median furrow, shorter than scutellum
Abdomen	deltg II–VII with a bifurcate lateral expansion	deltg II–VII with long finger-like lateral expansions

Description. Apterous, body length 14.5 mm. Body flat, elongate oval and of dark brown colouration; body and appendages with stiff erect setae or bristles, which are more dense and longer on antennae and lateral expansions, its apices acute and curved.

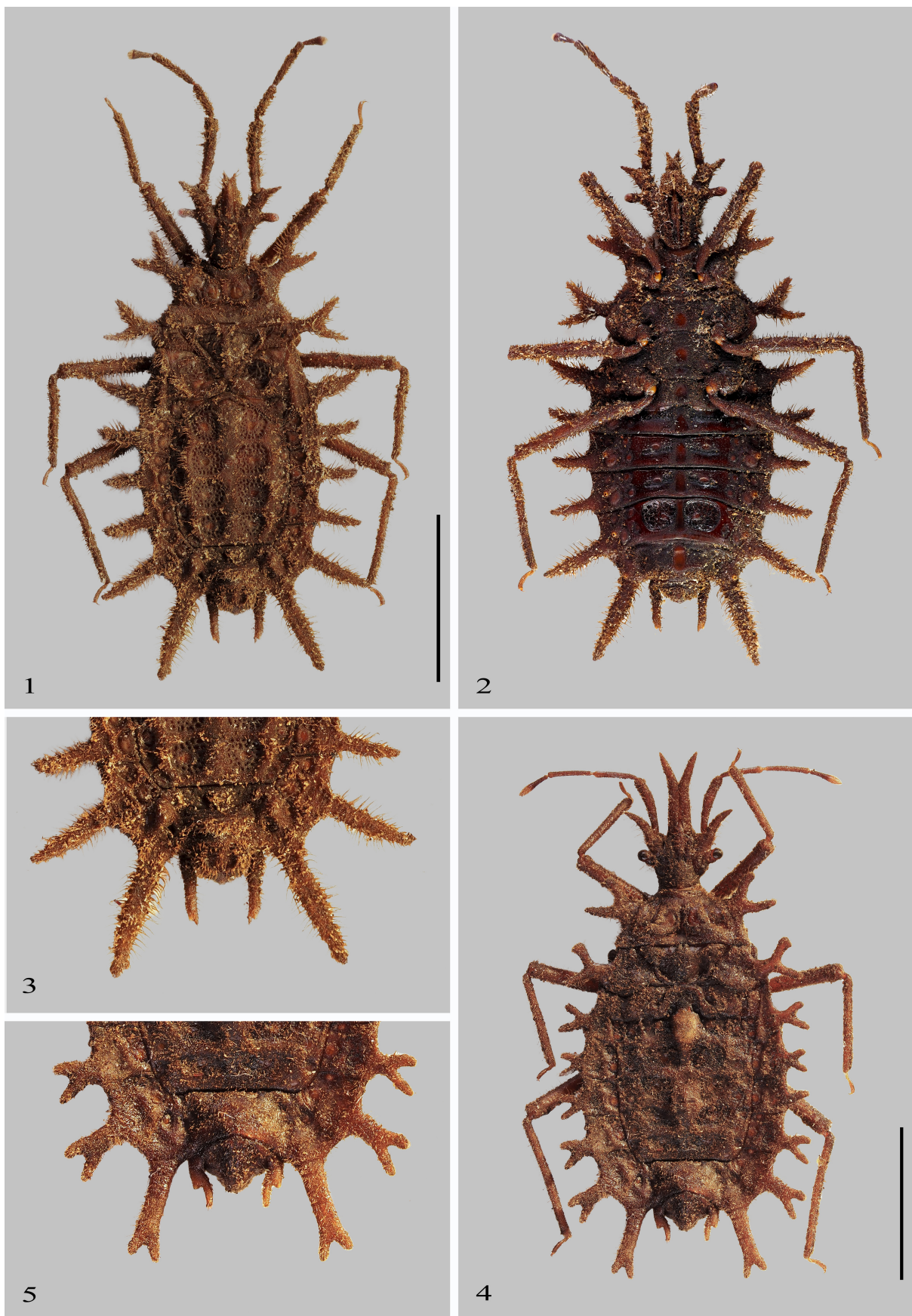
Head. Slightly wider across stylate eyes than long; genae short with acute apices leaving a cleft in front of clypeus; antenniferous lobes directed anterolaterally, wider at base, apices pointed; antennae 1.84 times as long as width of head, segment I longest, II shorter than III, IV shortest; eyes placed at apex of long, laterally produced stylets; postocular lobes straightly converging posteriorly to constricted neck; vertex marked by deep lateral furrows. Rostrum arising from a slit-like atrium, as long as head.

Thorax. *Pronotum:* Twice as wide as long; disk with anterolaterally directed bifurcate spine-like expansions and two blunt tubercles lateral of ring-like collar; surface with two shiny callosities, depressed posteriorly.

Scutellum. Triangular, with carinate margins, elevated along midline.

Mesonotum. Formed by transverse sclerites lateral of scutellum bearing long bifurcate lateral expansions as pronotum.

Metanotum. Consisting of two trapezoidal elevations lateral of scutellum, fused to mtg I+II, which are separated by a transverse furrow; mtg I depressed at middle; suture between mtg I+II and tergal plate sinuate.



FIGURES 1–5. 1–3. *Neochlonocoris sepicus* n. sp., holotype. 1, Dorsal habitus. 2, Ventral habitus. 3, Dorsal terminal segments. 4–5, *Chlonocoris dolinorum*, holotype. 4, Dorsal habitus. 5, Dorsal terminal segments. Scale 5 mm.

Legs. Unarmed, femora and tibiae cylindrical, claws without arolia.

Abdomen. Tergal plate consisting of mtg III–VI flat with large round apodemal depressions, their surface deeply punctured; deltg II–VII with finger like lateral expansions increasing in length on deltg VI and VII; deltg II triangular, produced anteriorly reaching mesonotum; tergite VII with two subbasal tubercles, medially raised for



FIGURES 6–10. 6, *Neochlonocoris sepicus* n. sp., holotype, head and pronotum, dorsal. 7, *Chlonocoris dolinorum* holotype, head and pronotum, dorsal. 8–10, *Neochlonocoris sepicus* n. sp., holotype. 8, Abdomen, ventral habitus. 9, Terminal segments VII–VII, ventral view. 10, Left metathoracic scent-gland opening, ventral view.

the globular pygophore, which is triangularly depressed at middle; ptg VIII thin finger like directed posteriorly with subapical spiracles VIII.

Venter: Prosternum slightly raised between fore coxae; meso- and metasternum fused to sternites I and II, marked by transverse sutures; surface flat with median oval shiny spots; median part of sternites II–V smooth, the inner apodemal depressions are elongate oval covering the anterior part, separated by a shiny oval spot; sternite VII larger than the preceding ones with large round apodemal impressions, with their surface reticulate; sternite VIII inflated for the pygophore; spiracles II–VII ventral; metathoracic scent gland canal inflated, slit-like reaching bifurcate expansion of mesonotum.

Etymology. Refers to the similar Madagascan flat bug genus *Chlonocoris* and Greek “neo” close to.

Distribution. So far only recorded from the type locality in NE Papua, New Guinea.

***Neochlonocoris sepicus* Heiss and Eckelt, new species**

<http://zoobank.org/urn:lsid:zoobank.org:act:EB5390E1-3153-4AB3-BC04-09EC0A7A72B3>

(Figs. 1–3, 6, 8–10)

Description. As the generic description is based on the holotype of *N. sepikus* **n. sp.** and no other specimen is recorded to date, the morphological characters are not repeated.

Measurements. Holotype male. Length including posterior expansions of deltg VII 14.5; head width / length 2.95/2.80; ratio length of antennae / width of head 1.84; length of antennal segments I/II/III/IV 2.15/1.10/1.45/0.75; scutellum length / width 1.60/1.40; mesonotum width across expansions 7.20; tergal plate length/width 4.50/3.50; width of abdomen across expansions of deltg VI 7.80.

Etymology. Named after the river Sepik, the main and longest river of New Guinea, which is flanked by dense rainforest along its 1100 km river system, where the single specimen was collected from a decaying tree trunk infested by fungi.

Type material. Holotype ♂: PAPUA NEW GUINEA / Sepik, Karawari Lodge / Lowland rainforest / 20.VIII. 2004 E. Heiss // (CEHI).

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