

## Two new Aradidae (Hemiptera: Heteroptera) from Indonesia

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### Abstract

Of the apterous monotypic Mezirinae genus *Cremastaptera* USINGER & MATSUDA, 1959 only the holotype of *C. tuberculata* USINGER & MATSUDA, 1959 from Borneo was known to date. In this paper a second species, *C. sumatrana* sp.n. is described from Sumatra. The micropterous Mezirinae genus *Baliemaptera* gen.n. from western New Guinea is erected for *B. riedeli* sp.n., which cannot be placed in one of the hitherto described flat bug genera from the Oriental and Indoaustralian Region.

Key words: Hemiptera, Heteroptera, Aradidae, Mezirinae, new genus, new species, apterous, micropterous, Sumatra, New Guinea

### Zusammenfassung

Von der apteren monotypischen Mezirinae Gattung *Cremastaptera* USINGER & MATSUDA, 1959 ist bisher nur der Holotypus von *C. tuberculata* USINGER & MATSUDA, 1959 bekannt geworden. In dieser Arbeit wird eine zweite Art, *C. sumatrana* sp.n. von Sumatra, beschrieben. Die mikroptere Gattung *Baliemaptera* gen.n. wird für *B. riedeli* sp.n. errichtet, welche keiner der beschriebenen Aradiden-Gattungen der Orientalischen und Indoaustralischen Region zuzuordnen ist.

### Introduction

The tropical forests of the Oriental Region are still one of the most proliferous habitats for new Aradidae taxa. The majority of described genera belong to the subfamily Mezirinae OSHANIN, 1908 of which several are apterous (e.g., *Aphyseteres* USINGER & MATSUDA, 1959, *Chelysocoris* USINGER & MATSUDA, 1959 both from Borneo, and *Chelonocoris* USINGER & MATSUDA, 1959 from western Malaysia), micropterous or brachypterous (e.g., *Axapisocoris* KORMILEV & HEISS, 1979 from Sri Lanka, *Lophocoris* USINGER & MATSUDA, 1959 from Sumatra or *Brachybarcinus* HEISS, 2010 from China and Vietnam), but the more common macropterous taxa are predominant.

Sifting forest leaf litter, expertedly adopted by Alexander Riedel during his entomological expeditions to Indonesia, brought to light new apterous flat bugs which are described and illustrated below. *Cremastaptera sumatrana* sp.n. from Sumatra is only the second species of this genus after the type species, *C. tuberculata* USINGER & MATSUDA, 1959 from Borneo. *Baliemaptera riedeli* gen.n., sp.n., was recorded from the remote Indonesian province of Papua (formerly Irian Jaya) in New Guinea representing a taxon without closer relationship to the known fauna.

## Material and methods

This study is based on material preserved in the collection of the author at the Tiroler Landesmuseum Ferdinandeum, Innsbruck. When citing the text on the labels of a pin attached to the specimens, / separates the lines and // different labels. Abbreviations used: deltg = dorsal external laterotergite (connexivum); mtg = mediotergite; mst = mediosternite; vltg = ventral laterotergite. Measurements were taken with a micrometer eyepiece; 40 units = 1 mm.

For the study of body structures the incrustated specimens were cleaned. Photos were taken through an Olympus SZX 10 binocular microscope with Olympus E 3 digital camera and processed with Helicon Focus 4.3 software and using Adobe Photoshop and Lightroom 2.3.

## Taxonomy

### *Cremastaptera sumatrana* sp.n. (Figs. 1, 3)

**Etymology:** The species epithet refers to the Indonesian island of Sumatra where this species was sifted from forest litter.

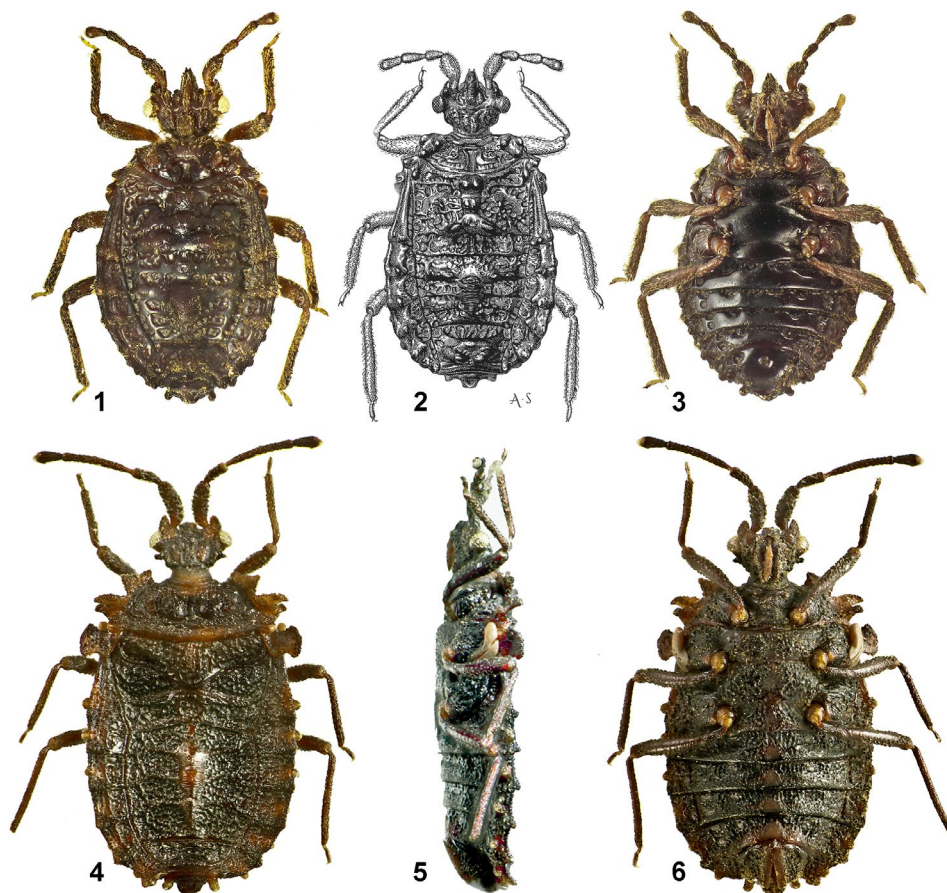
**Type material:** Holotype (apterous male) labelled: 7.8.1990 / Sumatra, Kabanjahe / Gn. Sinabung / leg. A. Riedel //. This specimen is designated as holotype and labelled accordingly. One paratype (apterous male) collected with holotype.

**Diagnosis:** Distinguished from *C. tuberculata* (Fig. 2) by the more oval, posteriorly narrowed habitus, a longer and posteriorly widely rounded pronotum, single large median tubercles of meso- and metanotum (both paired in *C. tuberculata*), and by the dense pilosity on postocular lobes and tubercles of pronotum and deltg II-VII.

**Description:** Head wider than long (50/42). Clypeus narrow, with thin genae extending beyond apex, contiguous in front, reaching about mid-length of antennal segment I. Antenniferous lobes cup-like, roundly narrowed apically. Antennae 1.26× as long as width of head (63/50); segment I longest and thickest, curved and thinner at base, barrel-shaped apically; II shortest, III and IV of subequal length, tapering at base; length of antennal segments I/II/III/IV = 22/12/15/14. Eyes large and granular, slightly stalked. Postocular lobes rounded. Vertex with large median elevation separated by deep furrows from lateral callosities. Rostrum arising from a slit-like atrium; rostral groove wide and deep with carinate lateral borders, open posteriorly.

Pronotum 2.67× as wide as long (64/24), with anterolateral angles rounded, with three pilose prominent tubercles on either side; anterior margin concave, with a fringe of yellowish setae; disk with deep longitudinal median depression and lateral rugosities; posterior margin rim-like and convex. Mesonotum consisting of a large round median tubercle and lateral deeply punctured sclerites which are widening toward lateral margin and ending in a laterally produced tubercle. Metanotum fused to mesonotum; strongly transverse with a median round tubercle; lateral sclerites sloping laterally, their surface deeply punctured and posterior margin sinuate.

Abdomen: mtg I+II fused to metanotum and tergal plate; mtg I forming an elevated transverse ridge separated from metanotum and mtg II by transverse deeply pitted impressions; mtg II slightly elevated at middle, posterior margin transversely impressed. Tergal plate fused to mtg II without a discernible fusion line; median round elevation highest on mtg III, then sloping posteriorly; lateral apodemal impressions deep; deltg II+III fused to a



Figs. 1 - 6: (1) *Cremastaptera sumatrana* sp.n., holotype male, dorsal view; (2) *Cremastaptera tuberculata*, holotype female, dorsal view (after USINGER & MATSUDA 1959); (3) *Cremastaptera sumatrana* sp.n., paratype male ventral view; (4 - 6) *Baliemaptera riedeli* gen.n., sp.n., holotype male: (4) dorsal view; (5) lateral view; (6) ventral view.

triangular plate reaching to mesonotum anteriorly, anterolaterally delimited by large dorsolaterally produced metathoracic scent gland evaporatoria which are visible from above; lateral margins of deltg II-VII raised and carinate with pairs of pilose tubercles on posterior margin of each segment; mtg VII deeply impressed at base, strongly raised posteriorly for the reception of the pygophore with a pilose transverse ridge. Pygophore sinuate posteriorly. Paratergites VIII short and truncate.

Venter smooth and glabrous at middle, lateral parts with sparse pilosity. Prosternum with a round pilose median elevation. Meso- and metasternum fused to each other and to mst I+II, marked by a transverse sulcus. Metathoracic scent gland evaporatoria prominent, straight and widely gaping, laterally visible from above. Anterior margin of mst III-VI deeply pit-

ted; mst VII with a prominent round tubercle at middle. Spiracles III-VII placed on vltg III-VIII of which V-VII are visible from above, spiracle VIII terminal on paratergites VIII.

Legs: Femora moderately incrassate, with trochanters separated. Tibiae straight; protibial comb present. Claws without pulvilli.

Measurements: Holotype: Length 4.6 mm; width of mesonotum 84; width of abdomen across tergite IV = 100. Paratype male: length 4.9 mm (pygophore gaping); head length/width 42/32; length of antennal segments I/II/III/IV = 22/12/16/14; length/width pronotum 42/52; width mesonotum 88; width of abdomen across tergite IV = 104.

### ***Baliemaptera* gen.n.**

Type species: *Baliemaptera riedeli* sp.n.

Etymology: This genus is named after the famous Baliem Valley in the Indonesian province Papua (formerly Irian Jaya), the place of its record and referring to the wingless condition.

Diagnosis: Micropterous, small-sized; body oval and flat, with dentiform expansions on pro- and mesonotum; surface punctured; metathoracic scent gland evaporatoria prominent and produced anterolaterally.

Description: Head wider than long. Clypeus shorter than antenniferous lobes. Antennae about twice as long as width of head; segment II longest. Rostrum arising from an open atrium, as long as head.

Pronotum trapezoidal; lateral margins with three dentiform expansions on either side; disk flat with two oval callosities. Mesonotum consisting of a wide median scutellum-like plate with sinuate posterior margin and lateral blade-like expansions indicating rudimentary wing pads. Metanotum strongly transverse, fused to mtg I+II; fusion lines indistinct; surface punctured and rugose.

Abdomen: Tergal plate of fused mtg III-VI separated from mtg I+II by an ill-defined suture; surface flat, with longitudinal median elevation on mtg IV-V; delgt II+III fused to a triangular sclerite reaching mesonotum; delgt III-VII separated by sutures.

Venter: Metathoracic scent gland evaporatoria prominent, curved and directed anterolaterally. Spiracles II-VII placed on prominent lateral tubercles which are visible from above.

Legs unarmed. Trochanters fused to femora but fusion suture distinct.

Comparative notes and discussion: The combination of characters, e.g., habitus, structure of head with open rostral atrium, pronotum and mesonotum with lateral expansions, the distinct shape of metathoracic evaporatoria, and the presence and position of spiracles II-VII differs from all micropterous Aradidae described to date from the Oriental and Indoaustralian Regions. Although only a single female specimen is available, it is not resembling any other flat bug, and these differences justify the description and introduction of a new genus.

### ***Baliemaptera riedeli* sp.n. (Figs. 4 - 6)**

Etymology: This interesting new species is dedicated to my friend Alexander Riedel, who successfully explored the insect fauna of western New Guinea on several expeditions and generously donated the Aradidae to me.

**Type material:** Holotype (micropterous female) labelled: 2.IX.1990, Irian Jaya / Baliem – Prov., Wamena / Jiwika, ca. 1700m / leg.A.Riedel //. This specimen is designated as holotype and labelled accordingly.

**Diagnosis:** Micropterous, body surface flat and deeply punctured; colour dark brown, with lighter lateral appendages of thorax, spiracle-bearing tubercles and coxae.

**Description:** Head distinctly wider than long (28/22). Clypeus shorter than antenniferous lobes; genae thin, as long as clypeus and contiguous in front. Antenniferous lobes converging anteriorly, apex rounded. Antennae beset with short stiff setae, 2.12× as long as width of head (59.5/28); segment I thickest, constricted and bent at base; II short and cylindrical, III longest and thinnest, IV shortest and fusiform; length of antennal segments I/II/III/IV = 16/10/24/9.5. Eyes oval slightly stalked anterolaterally. Postocular lobes with a distinct tubercle bearing a single seta at apex, roundly constricted posteriorly. Vertex granulate at middle, with ovate callosity on either side. Rostrum arising from an open atrium, as long as head; rostral groove with carinate lateral borders, open posteriorly.

**Pronotum:** Disk of trapezoidal shape; about 3× as wide across expansions as long at middle (64/20); lateral margins with three dentiform blade-like expansions on either side, anterior one largest, median one widest, with acute apex overlapping posterior one with blunt apex; surface flat, rugose, with two oval callosities; collar constricted, ring-like, posterior margin slightly convex. **Mesonotum:** Median scutellum-like plate roundly expanded posteriorly, its surface longitudinally rugose; lateral rudimentary wing pads forming blade-like expansions with granulate rounded lateral margin; metathoracic scent gland evaporatoria large and prominent, visible from above anteriorly to wing pads. **Metanotum** fused to mtg I+II without distinct suture; lateral oval plates deeply punctured; posterior margin concave.

**Abdomen:** Tergal plate flat, with a median longitudinal elevation on mtg III+IV bearing the scent gland scars; deltg II+III fused to a triangular sclerite reaching mesonotum; deltg III-VII separated by sutures, surface punctured; posterolateral angles of deltg II-VI angularly raised. Tergite VII with transverse ridge posteriorly, posterolateral angles triangularly expanded. Tergite VIII thin, with finger-like paratergites VIII. Tergite IX+X truncate.

**Venter:** Metathoracic scent gland evaporatoria prominent, curved and directed anterolaterally. Spiracles II-VII placed on prominent lateral tubercles of vltg II-VII which are visible from above. Spiracles VIII terminal on paratergites VIII.

Legs unarmed. Trochanters fused to femora, but fusion suture distinct.

Measurements: Holotype: Length 3.1 mm. Width of abdomen across tergite IV = 68.

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