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***Bruneiptera tarmanni* nov.gen., nov.sp., a new apterous  
Carventinae from Brunei Darussalam  
(Hemiptera: Heteroptera: Aradidae)**

E. HEISS

**A b s t r a c t :** A new genus and species of the flat bug subfamily Carventinae, *Bruneiptera tarmanni* nov.gen., nov.sp. from Temburong District in Brunei Darussalam (N-Borneo) is described and figured.

**K e y w o r d s :** Hemiptera, Heteroptera, Aradidae, Carventinae, *Bruneiptera*, new genus, new species, apterous, Borneo, Brunei.

**Introduction**

In occasion of the Tropical Rainforest Conference Brunei in 1993, the author had the opportunity to visit the Kuala Belalong Field Studies Center (KBFSC), which is a rainforest research hot spot run by the University of Brunei Darussalam. This station was erected in the hinterland upstream the Kuala Belalong river and is surrounded by indigenous and still untouched mixed Dipterocarp forest. As the Aradid fauna of this country is still poorly investigated it was not surprising that even a small collection of Aradidae contained several new taxa. This is the second new genus of apterous Carventinae from this area after the description of the curious genus *Enkopicephalus* (HEISS 2010).

**Material and methods**

The type series was collected by sifting leaf litter beneath dead wood infested by fungi and is kept in the authors collection. The waxy incrustation which usually obscures the body structures was removed for the study of abdominal fusion lines.

Photos were taken with an Olympus SZX 10 camera and assembled with Helicon Fokus 4.30 software.

Measurements were taken with a micrometer eyepiece, 40 units equals 1mm.

Abbreviations used: deltg = dorsal external laterotergite (connexivum); mtg = mediotergite, vltg = ventral laterotergites.

## Taxonomy

### *Bruneiaptera* nov. gen.

Type species: *Bruneiaptera tarmanni* nov.sp.

**Diagnosis:** The new genus is easily distinguished from the other apterous Carventinae genera recorded from Borneo e.g. *Froeschnerissa* KORMILEV 1986, *Zoroaptera* DRAKE 1957, *Sandakaptera* VÁSÁRHELYI 1988 and *Enkopicephalus* HEISS 2010 by the fused bottle shaped smooth median plate of meso- and metanotum followed posteriorly by a smooth rectangular plate of fused mtg I+II. At a first view it resembles the monotypic genus *Ainocoris* (DRAKE 1957, 1958) described from Julu (Jolo) Island in the Philippines, however in *Ainocoris* the pentagonal smooth median plate is depressed and extends into the pronotum and its head is subquadrate and distinctly shorter (fig. 8).

**Description:** Apterous, body surface glabrous and shiny beneath incrustation, colour piceous.

**Head:** At least 1.32× as long as wide, genae produced over clypeus, apices triangular and diverging anteriorly; antennae about 2.1× as long as width of head, segment I thickest and longest, the following ones thinner and shorter, antenniferous lobes diverging anteriorly, apices acute; eyes oval inserted in head; postocular lobes with a distinct tubercle, sinuately converging to constricted collar; rostrum arising from a slit like atrium, shorter than head.

**Pronotum:** Collar ring like and smooth, separated from anterolateral angles of pronotum by deep incisures; disk of pronotum with a median longitudinal furrow; surface irregularly rugose, lateral margins straight and converging to blunt anterolateral angles; posterior margin sinuate, a deep furrow separates it from mesonotum.

**Mesonotum:** The median smooth bottle shaped plate is triangular on mesonotum, then widening posteriorly and subrectangular on metanotum; lateral sclerites with rugose surface, separated by sutures from each other and metanotum.

**Metanotum:** Consisting of the smooth median plate and ovate rugose lateral sclerites; the fusion line to mtg I+II is marked by a sinuate suture.

**Mediotergites I+II:** They are fused but separated from tergal plate by a deep sulcus; the median subrectangular smooth plate is at a lower level than the elevated posterior margin of the preceding median plate; lateral parts rugose anteriorly and smooth posteriorly.

**Abdomen:** Tergal plate with a slightly elevated median ridge, laterally with distinct apodemal impressions; deltg II+III fused, IV-VII separated by deep sulci; lateral margins of deltg II-VII showing the exposed rim of the dorsally reflexed vltg II-VII bearing the spiracles which are visible from above; spiracles VIII sublateral on paratergites VIII.

**Venter:** Surface smooth except lateral parts, sternites separated by deep sulci with the usual pattern of apodemal impressions.

**Legs:** Femora and tibiae straight and nearly cylindrical, surface with fine setigerous granules, tibial comb on fore legs present; claws with apically enlarged pseudopulvilli.

**Etymology:** Named after Brunei and the apterous condition.

***Bruneiaptera tarmanni* nov.sp. (Figs 1-7, photo 1-2)**

**Material examined:** Holotype ♂, Brunei Darussalam, Temburong, Kuala Belalong Field Studies Center, mixed Dipterocarp forest 60-300m, 16-20 IV 1993 lg. E. Heiss, paratypes 2♂♂ 3♀♀ collected with holotype, 1♀ from the same area 2-8 V 1995 lg. E. Heiss.

**Description:** Male, apterous, color of body piceous, legs and antennae of lighter colour; surface of body shiny, legs and antennae beset with fine setigerous tubercles.

**Head:** 1.33× as long as wide (32/24); genae produced over free clypeus with triangular anteriorly diverging apices leaving a median cleft; antenniferous lobes diverging anteriorly its apices acute; antennae 2.1× as long as head (50.5/24), segment I longest and thickest, II-IV thinner and shorter, II shortest, IV fusiform; length of antennal segments I/II/III/IV = 17.5/ 8/ 14/ 11; eyes oblong inserted in head; postocular lobes laterally with 1-2 acute tubercles then sinuately converging posteriorly to constricted collar; vertex with a median tuberculate ridge and lateral smooth ovate callosities, rostral groove deep with carinate margins, closed posteriorly.

**Pronotum:** About 2.6× as wide as long (42/16); collar ring like, smooth and glabrous, laterally separated from anterolateral lobes by deep incisures; disk with a median longitudinal sulcus and an anterior transverse triangular sclerite; lateral parts consisting of a smaller ovate and a larger polygonal sclerite with irregularly rugose surface; lateral margins straightly converging anteriorly, anterolateral lobes truncate; posterior margin sinuate and separated from mesonotum by a deep furrow.

**Mesonotum:** Median smooth plate of triangular shape, laterally with a smaller ovate and a wider subrectangular sclerite with rugose surface, these separated by deep sulci; lateral margins straight and converging anteriorly; metanotum separated by furrows laterally of median plate.

**Metanotum:** Fused median plate wide and raised toward posterior margin, its lateral margins slightly converging posteriorly; structure of lateral parts of disk as of mesonotum; posterior margin bisinuate, separated from fused transverse mtg I+II by a suture.

**Abdomen:** Tergal plate consisting of mtg III-VI about as wide as long with a slightly elevated median ridge, laterad with ovate callosities marking the apodemal impressions; lateral margins slightly convex; deltg II-VII with visible rim of dorsally reflexed vltg II-VII on which the spiracles II-VII are exposed and visible from above; spiracles VIII subterminal on paratergites VIII.

**Genitalic structures:** Pygophore pyriform, narrowing posteriorly, surface rugose (Fig. 6,7); parameres slender as Fig. 1-5.

**Female:** Generally as male but of slightly larger size, the reflexed rim of vltg VII is triangular and bears the spiracle VII, paratergites VIII subtriangular and shorter than truncate tergite IX.

**Measurements:** Holotype ♂: Length 3.9mm, width pronotum 1.05mm, mesonotum 1.4mm, metanotum 1.5mm, abdomen across tergite IV 1.8mm.

Female paratypes: Length 4.25mm, with / length of head 26/35, pronotum 48/18; width mesonotum 1.6mm, metanotum 1.7mm, abdomen across tergite IV 2.05mm; ratio length of antennae / width of head 2.08; length of antennal segments I/II/III/IV = 19/9/15/11.

**Etyymology:** This species is dedicated to my friend Dr.Gerhard Tarmann, curator

of the insect collections at the Tiroler Landesmuseum Ferdinandeum Innsbruck, in occasion of his 60<sup>th</sup> birthday, whose hospitality and the facilities made available at the museum for my work are very appreciated.

### Acknowledgments

My thanks are due to the staff of KBFSC, then supervised by Mrs. Dr. Abu Kamariah Salim, University of Brunei Darussalam, for their hospitality and services and to Stefan Heim, Tiroler Landesmuseum Ferdinandeum for the photos.

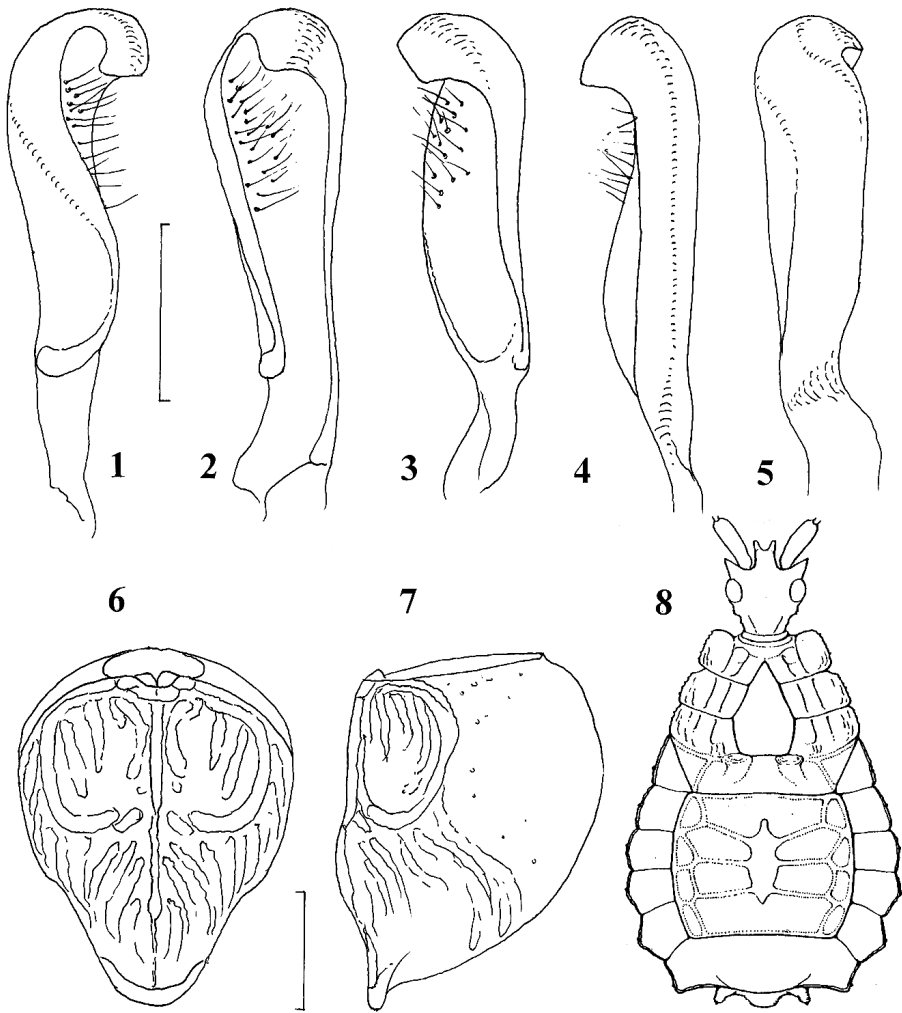
### Zusammenfassung

Im Rahmen der Rainforest Conference Brunei im Jahre 1993 war ein Besuch der universitären Forschungsstation Kuala Belalong Field Studies Center im Hinterland möglich. Nachdem die Aradidenfauna dieses Landes kaum bekannt ist, war die Aufsammlung von Belegen von besonderem Interesse und erbrachte auch neue Taxa. Ein erstes Ergebnis mit der Beschreibung einer neuen apteren Gattung der Unterfamilie Carventinae ist bereits publiziert (HEISS 2010). In der vorliegenden Arbeit wird eine weitere flügellose Gattung und Art dieser Unterfamilie: *Bruneiaptera tarmanni* nov.gen., nov.sp., beschrieben und abgebildet. Diese ist meinem Freund und hervorragenden Lepidopterologen Dr. Gerhard Tarmann vom Tiroler Landesmuseum Ferdinandeum zu seinem 60. Geburtstag herzlich gewidmet.

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Authors address: Prof. DI Dr. Ernst HEISS  
Research Entomologist  
Tiroler Landesmuseum Ferdinandeum  
Josef Schraffl Straße 2a  
A-6020 Innsbruck, Austria  
E-mail: [aradus@aon.at](mailto:aradus@aon.at)



**Figs 1-7:** *Bruneiaptera tarmanni* nov.sp. (1-5) paramere in different positions; (6) pygophore dorsal view; (7) ditto lateral view; (8) *Ainocoris dybasi* (DRAKE), paratype ♀, after DRAKE 1958 plate 44 (no scale given). Scales: 0.1mm for figs 1-5, 0.2mm for figs 6, 7.



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**Photo 1-2:** *Bruneiaptera tarmanni* nov.sp. (1) holotype ♂ dorsal view, incrustation removed; (2) ditto paratype female.

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Autor(en)/Author(s): Heiss Ernst

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