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## Aradidae from Vietnam III. *Trichosomaptera gibbosa* n.gen., n.sp., an apterous Carventinae (Hemiptera: Heteroptera: Aradidae)

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### Abstract

A new apterous flat bug genus of the subfamily Carventinae, *Trichosomaptera* n.gen., is described and illustrated to accommodate *gibbosa* n. sp. from Vietnam. The species could not be placed in any known genus.

**Key words:** Hemiptera, Heteroptera, Aradidae, Carventinae, *Trichosomaptera*, new genus, new species, apterous, Vietnam

### Introduction

This paper is a continuation of the series “Aradidae from Vietnam,” of which parts I and II have already been published (Heiss 2013, Pham *et al.* 2013). In the first two parts new taxa of the subfamily Mezirinae were treated; this new genus and new species described here belong to the subfamily Carventinae.

Only 6 genera of Carventinae are known to date from Vietnam: *Apteraradus* Drake 1957, *Carventus* Stål 1865, *Lissonotocoris* Usinger & Matsuda 1959, *Notoplocaptera* Usinger & Matsuda 1959, *Parataiwanaptera* Heiss 2010, and *Vietnamaptera* Zhang *et al.* 2010 (Pham *et al.* 2011). Of these, only *Apteraradus*, *Notoplocaptera*, and *Vietnamaptera* include apterous species; the others are micropterous (*Parataiwanaptera*) or macropterous (*Carventus*, *Lissonotocoris*).

### Material and methods

The specimens upon this study is based are preserved in the Entomological Museum of the China Agricultural University Beijing (CAU), the Entomological Museum of Inner Mongolia Normal University, Huhhot, China (EMIH), and the collection of the third author (CEHI).

For the study of body structures, the incrustate specimens were cleaned. Photos were taken through an Olympus SZX 7 binocular microscope with Olympus EOS 600D digital camera and processed with Helicon 5.3X64 software, using Adobe Photoshop. Male genitalia were soaked in hot 10% KOH solution for approximately 5 minutes to remove soft tissue, rinsed in distilled water, and dissected under a Motic binocular dissecting microscope.

Measurements were obtained using a calibrated micrometer. All measurements are given in millimeters.

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; ptg = paratergite, vltg = ventral laterotergite,

mm; eyes distinctly stylate; postocular lobes straightly converging posteriorly to constricted neck, lateral margins with erect setae; vertex with 2(1+1) longitudinal ridges beset with shorter erect setae with a deep groove between them.

**Pronotum.** Much wider than long, lateral sclerites raised with tufts of erect setae, their lateral margins rounded; median depression glabrous with a short longitudinal groove posteriorly, collar ring-like; posterior margin strongly convex at middle, separated from mesonotum by a deep groove.

**Mesonotum.** Strongly transverse with raised lateral sclerites beset with erect setae, lateral margins rounded; median sclerite depressed with 2(1+1) oval longitudinal ridges beset with long setae, a deep groove between them; this sclerite posteriorly protruding and fused to metanotum without a visible suture; posterior margins laterally of median sclerite arcuate and marked by deep grooves.

**Metanotum.** Much wider than long, structure of large oval lateral lobes of metanotum as of mesonotum; median glabrous and slightly concave sclerite fused to mesonotum and mtg I+II; these with 2(1+1) tufts of setae lateral of median plate, lateral parts glabrous punctate and sloping.

**Abdomen.** Anterior margin of tergal plate strongly convex at middle, lateral margins rounded, posterior margin slightly concave; mtg III raised into a distinct oval hump, its surface densely beset with long setae; median ridge like elevation of mtg IV–VI smooth, lateral parts glabrous with deep punctures; deltg II+III fused, III–VII separated by sutures; their surface with apodemal impressions laterally delimited by a longitudinal carina along lateral margin; mtg VII raised medially for reception of pygophore; lateral margins of deltg IV–VII with increasing angular projections on anterior half bearing spiracles IV–VII which are visible from above.

**Venter.** Spiracles II ventral, III–IV sublateral, V–VII lateral on distinct tubercles, all except II visible from above, VIII terminal on ptg VIII; pro-, meso, and metasternum fused to mst II+III forming a smooth glabrous polygonal plate (photo 3,6); mst IV–VI smooth at middle, rugose laterally; sternite VII with a longitudinal smooth ridge medially and with 2(1+1) tubercles on either side.

**Genitalic structures.** Pygophore (photo 7–9) conical with a dorsal posteriorly constricted conical ridge; ptg VIII short and clavate, parameres slender with hook-like apex (photo 10–13), phallus as photo 14–16.

**Female.** Generally as male but of larger size and posteriorly constricted abdomen; elevated hump of mtg III well developed as in male (photo 4,5); mst VII with convex anterior margin, ptg VIII shorter than posteriorly produced tricuspidate tergites IX+X.

**Measurements.** Holotype male: Length 4.6, width of abdomen 2.0; head length/width 1.1 / 0.8; pronotum l / w 0.6 / 1.4; Scutellum l / w 0.5 / 0.6; pygophore l / w 0.4 / 0.7. Paratypes ♂ (n=4), ♀ (n=4)]. Length ♂ 4.15–4.58, ♀ 5.42–5.44; width of abdomen ♂ 2.10–2.47, ♀ 2.81–2.93; head length ♂ 0.94–1.09, ♀ 1.12–1.18; width ♂ 1.04–1.14, ♀ 1.27–1.29; pronotum ♂ 0.47–0.54, ♀ 0.55–0.58; width ♂ 1.38–1.57, ♀ 1.74–1.74. Length of antennal segments I–IV: length ♂ 0.43–0.46, 0.31–0.34, 0.48–0.56, 0.36–0.41; ♀ 0.51–0.52, 0.36–0.37, 0.56–0.59, 0.42; pygophore length 0.41–0.51, width 0.64–0.72.

**Etymology.** Refers to the median gibbous hump of mtg III.

**Distribution.** The only known species was found in Lam Dong Province of Vietnam.

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