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***Singhalaptera froeschneri* gen. n., sp. n., from Sri Lanka (Heteroptera: Aradidae)**

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Abstract

An apterous flat bug of the subfamily Carventinae from Sri Lanka, *Singhalaptera froeschneri* gen. n., sp. n. is described and figured. Due to its dorsal humps it resembles the habitus of *Signocoris kaszabi* HOBERLANDT, 1958, described from India. However, the structure of head and the conspicuous ventral grooves for the reception of legs at rest are unique among all genera of Oriental Carventinae known to date.

Key words : Heteroptera, Aradidae, Carventinae, new genus, new species, Oriental Region, Sri Lanka.

Introduction

The flat bug family Aradidae occurring in the Indian subcontinent is still not sufficiently known. Of the subfamily Carventinae, seven genera with apterous species are recorded to date (*Acanthaptera* USINGER & MATSUDA 1959 (2 spp.); *Chelysosoma* KORMILEV 1956 (1 sp.); *Indiaradus* DRAKE 1957 (2 spp. of 3); *Libiocoris* KORMILEV 1957 (1 sp. of 6); *Morphocoris* KORMILEV 1980 (1 sp. of 3); *Signocoris* HOBERLANDT 1958 (1 sp.); *Zoroaptera* DRAKE 1957 (1 sp. of 3)). However, only *Acanthaptera* was found and described from Sri Lanka (formerly Ceylon). A single specimen presented to the author by R. C. Froeschner, who recognized it as a flat bug in spite of the unusual body structures, proved to represent a new genus and species, which are described below.

Material and methods

The single specimen was collected from leaf duff with a Berlese apparatus. For the study of its body structures the whitish incrustation was partly removed. It belongs to and is deposited in the Smithsonian Institution, National Museum of Natural History, Washington, D.C. (USNM).

Measurements were taken with a micrometer eyepiece, 40 units equal to 1 mm, unless otherwise stated.

***Singhalaptera* gen. n.** (Figs. 1-4)

D i a g n o s i s : *Singhalaptera* is a very distinctive genus within the whole subfamily Carventinae and resembles only *Signocoris* HOBERLANDT from India. However it can be easily distinguished from the latter and all other apterous Oriental Carventinae by its head

structure, the unique deep ventral grooves to accommodate the legs at rest and by different fusion, shape and elevation of abdominal plates.

Description: Body oval with submat finely shagreened surface beneath incrustation. Thorax and mediotergites (Mtg) I + II divided into plates of different size and shape, strongly raised medially.

Head: Subtriangular, distinctly wider than long; clypeus flanked by 2 (1+1) longitudinal ridges; genae slightly exceeding apex of clypeus. Lateral portion of head deeply excavated between vertex and lateral rim, the latter bearing subrectangular eyes. Antennae short and slender, antennal segment I thickest and curved. Rostrum arising from an open atrium, shorter than head, rostral groove closed posteriorly and elevated, ending at the tip of a triangular elevation at base of head.

Thorax: Pronotum formed mainly by a subtrapezoidal flat median and L-shaped lateral sclerites, which are raised laterally. Pronotum fused to metanotum along a distinct transverse suture.

Mesonotum consists of a strongly transverse plate which is roundedly elevated at middle, laterally likewise expanded into L-shaped sclerites, the median hump is sloped posteriorly towards and overlaps the metanotum. Fusion line of mesonotum - metanotum marked by a deep transverse suture lateral of median elevated structures of mesonotum.

Metanotum formed by 4 (2+2) ovate sclerites which are elevated along the fusion suture metanotum - Mtg I and sloping anteriorly.

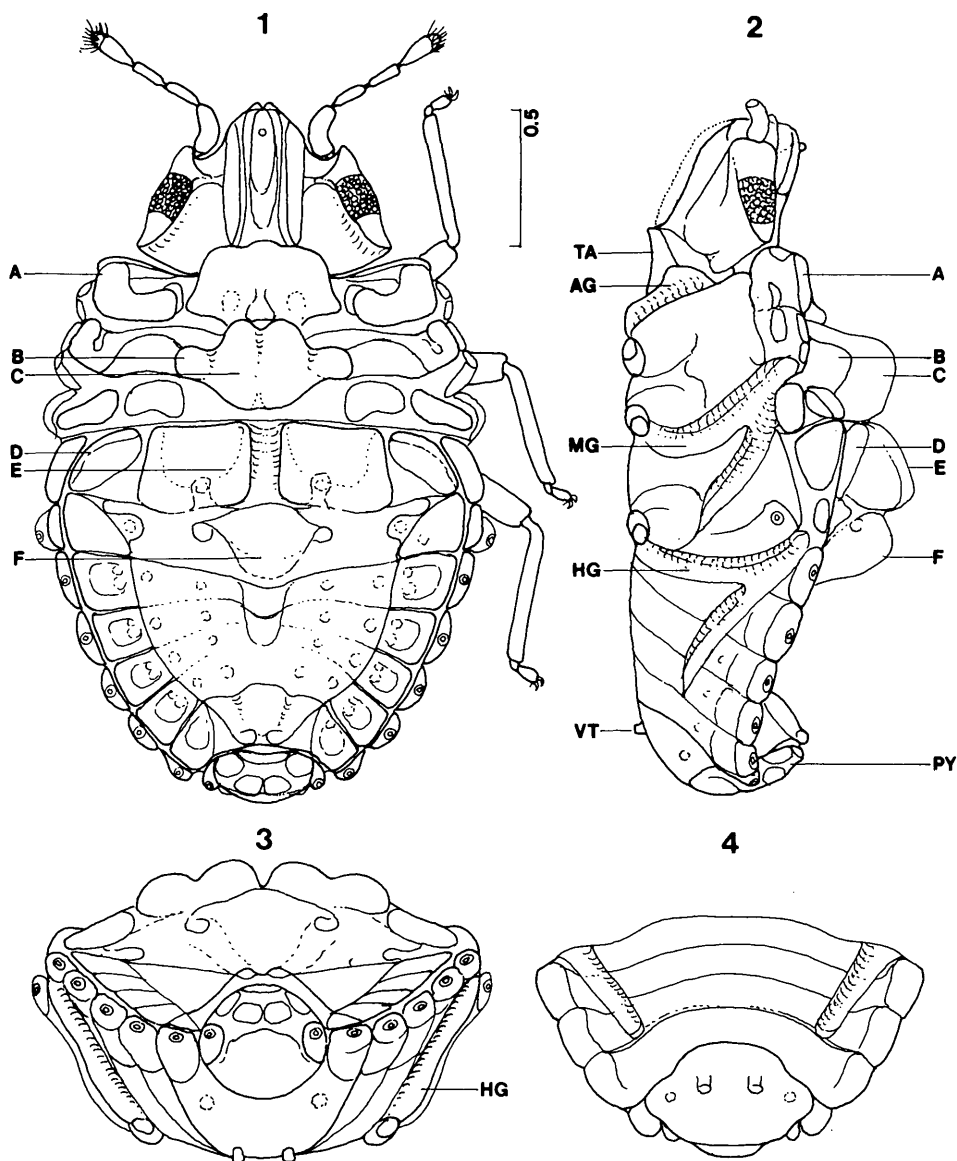
Abdomen: Mtg I is composed of 2 (1+1) subrectangular, posteriorly elevated plates separated by a deep longitudinal groove and 2 (1+1) ovate lateral sclerites, sloping from lateral towards inner margin. Mtg I is fused to Mtg II without a distinct suture. Mtg II is visible as a single transverse plate, which is humped medially and posteriorly sloping towards the suture of tergal plate. Dorsal external laterotergites (Deltg) II exposed, triangular. Tergal plate shorter than Mtg I+II, sloped from lateral margin towards midline, with a slight elevation on Mtg III - V medially.

Deltg III-VI subrectangular, VII triangular, raised along lateral margin. Surface with a shallow median depression. Reflexed ventral external laterotergites (Veltg) III-VII laterally visible, bearing spiracles III-VII. Mtg VII raised medially, highest along posterior margin and sloping towards connexival suture and tergal plate.

Venter: Strongly convex. Pro- meso- and metasternum fused, flat and smooth medially, with a small pit at middle of meso- and metasternum. Deep grooves to accommodate the legs at rest are excavated along anterior margin of propleura, posterior margin of mesopleura and posterior to metacoxae on sternites II and III-V respectively. Mediosternites (Mst) III-VI separated by transverse sulci, Veltg III-VII reflexed and visible from above. Sternite VII large with 2 (1+1) prominent tubercles and 2 (1+1) pits laterad of them. Spiracles II placed on a prominent lateral sclerite, III-VII on reflexed Veltg, VIII terminal, all visible from above.

Genitalic structures: Male pygophore globose, dorsal portion anteriorly with a transverse, posteriorly with 4 rounded, slightly elevated plates.

Legs: Slender, with distinct trochanters, femora and tibiae unarmed. Tarsi two-segmented with curved pseudopulvilli. Preapical comb on protibia present.



Figs. 1 - 4. *Singhalaptera froeschneri* gen. n., sp. n., holotype male. 1 - dorsal view; 2 - lateral view; 3 - caudal view; 4 - ventral view of terminal segments.

Abbreviations: A - lateral L-shaped plate of pronotum; B - lateral lower lobe of median elevation; C - highest part of elevated median lobe; D - lateral ovate plate of Mtg I; E - highest part of subrectangular plates; F - rounded hump of Mtg II; AG - anterior groove (fore leg); HG - hind groove (hind leg); MG - median groove (middle leg); PY - Pygophore; TA - triangular ventral plate of head; VT - ventral tubercles of sternite VII. Scale 0.5 mm.

Type species: *Singhalaptera froeschneri* sp. n..

Etymology: Named after the Singhalese population of Sri Lanka and the apterous condition of the type species.

Distribution: Known only by the type specimen from Sri Lanka (Ceylon).

***Singhalaptera froeschneri* sp. n. (Figs. 1-4)**

Holotype: Male, (glued on triangular card), left middle leg, tibia of hind leg and right fore and hind legs are missing. Labelled "Sri Lanka: Col. Dist. / Labugana 400 feet / 24 VIII 1973 / Ginter Ekis" (printed, white); "Berlese / leaf duff" (printed, white); USNM.

Diagnosis: Being the only species included to date, it can be recognized by the characters given in the generic diagnosis.

Description: Male, apterous. Colour of cleaned body structures black, legs and antennae yellowish brown. Incrustation of sutures and depressions stramineous.

Head: Subtriangular in outline, posterolaterally expanded, distinctly wider than long (37 / 25 (maximum) / 20 (middle), genae slightly exceeding clypeus, which bears a subapical tubercle and reaches apex of antennal segment I. Antennae short, with segment I thickest, banana-shaped, II + III thinner and of subequal length, IV fusiform, as long as I, with pilose apex. Relative length of I / II / III / IV = 7 / 5.5 / 6 / 7. Eyes of subrectangular outline, surface convex, placed on the thickened lateral rim of head. Antenniferous tubercles acute, excavated on inner side where the antennae are inserted. Postocular portion triangular. Vertex with 2 (1+1) longitudinal ridges embracing the clypeus, deeply excavated laterad. Neck concealed by the anteriorly projecting median plate of pronotum. Rostrum arising from an open atrium, rostral groove deep and closed posteriorly.

Thorax: Pronotum strongly transverse, median plate subtrapezoidal, anteriorly projecting over neck of head, its surface flat, a triangular elevation on posterior margin meets with the elevated structure of mesonotum. Lateral plates L-shaped, their surfaces at a higher level than median plate.

Mesonotum composed of a long transverse plate with a flat L-shaped lateral portion, which is connected anteriorly by a ridge to the median bilobate elevation. This rounded elevation is overlapping the metanotum and slopes towards the latter. Surface between L-shaped lateral portion and lower rounded lobe deeply depressed.

Metanotum with 4 (2+2) ovate plates which are higher than the surrounding incrustation, raised towards the suture to Mtg I.

Abdomen: Mtg I consisting of 2 (1+1) median, strongly raised subrectangular and 2 (1+1) lateral ovate plates, which slope towards the inner margin. Mtg I fused to Mtg II with an indistinct suture. Mtg II with distinct triangular Deltg II and a transverse median plate, which is humped anteromedially.

Tergal plate with a slight elevation on Mtg II-V, sloping towards midline elsewhere. Deltg III-VI subrectangular, VII triangular, raised towards lateral margin. Veltg III-VII reflexed and visible from above, Mtg VII medially raised to posterior margin.

Venter: Strongly convex with deep grooves to accommodate the legs at rest. Sternite VII in male with 2 prominent tubercles. Spiracles II lateral on a prominent plate, III-VII dorsolateral on reflexed Veltg III-VII, VIII terminal, all visible from above.

Genitalic structures of male: Pygophore globose, dorsal surface showing flat rounded sclerites. The single type-specimen available was not dissected for study of parameres.

Female: Unknown.

Measurements: Holotype male. Length 5.525 mm; head width / length 37 / 25 (maximum); width of pronotum 56, of mesonotum 63, of metanotum 62 and of abdomen across plate of spiracles II 66; ratio length of antennae / width of head $25.5 / 37 = 0.69$.

Etymology: Named in honour of my dear friend Dr. R. C. Froeschner, who recognized the family placement of this curious species.

Ecology: Collected by sieving forest litter which may be an indication, that due to its aptery and therefore very limited dispersal potential, this species is endemic to a limited area.

Discussion: The only apterous Carventinae described to date from the Indian subcontinent resembling *Singhalaptera froeschneri* is *Signocoris kaszabi* from India, known only from the female holotype. However the latter is larger (4.1 mm), shows a "normal" head without lateral expansions, round eyes and a different pattern of fusion and elevation of abdominal structures. Furthermore the presence of deep ventral grooves for the reception of legs is unique to all Oriental Carventinae and has been reported so far only from the Neotropical genus *Reeceicus* DRAKE 1956.

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