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A redescription of the Oriental genus *Teratofulvius* POPPIUS (Heteroptera: Miridae: Cylapinae)

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ABSTRACT. The genus *Teratofulvius* POPPIUS is redescribed, redescrptions of *Teratofulvius annulicornis* POPPIUS and *Teratofulvius metallicus* POPPIUS are also given. The structure of male genitalia of *T. annulicornis* and female genitalia of *T. metallicus* are presented for the first time. The key to the species is also provided.

Key words: entomology, taxonomy, Heteroptera, Miridae, Cylapinae, *Teratofulvius*, redescription, genital structures.

INTRODUCTION

The Oriental genus *Teratofulvius* had been established by POPPIUS (1914a) for a single species *Teratofulvius metallicus*, of which a single specimen had been collected in Java. In the same year he described also another species of the genus from Sumatra (POPPIUS 1914b). Since that time no other reports on the genus and on the species and their distribution have been published. They were only listed in the catalogues (CARVALHO 1957; SCHUH 1995) but according to the data given by POPPIUS. Also genital structures have never been presented.

During the stay of the junior author in the Zoological Museum in Helsinki she was able to borrow and examine the type material and additionally she found a male of *T. annulicornis*. On the basis of these specimens we analysed the genital structures of the species belonging to the genus. The redescrptions of the genus and the species are given below.

The categorization of the aedeagus structure was adopted according to KERZHNER & KONSTANTINOV (1999). The terms for the female genitalia mainly were used after SLATER (1950), DAVIS (1955) and CHÉROT (2002),

TAXONOMY

***Teratofulvius* POPPIUS**

Teratofulvius POPPIUS, 1914a: 143.

Teratofulvius: BERGROTH 1920: 74; CARVALHO 1952: 48, 1955: 20, 1957: 25; SCHUH 1995: 38; GORCZYCA 2000: 49.

Type species: *Teratofulvius metallicus* POPPIUS, 1914a (original designation)

DIAGNOSIS

The genus is closely related to the Oriental genus *Cylapofulvidius* CHÉROT & GORCZYCA (1999) but can be distinguished by the presence of pronotal collar, body and the second antennal segment covered with long, protruding setae and the structures of genitalia.

REDESCRIPTION

Body stout, relatively wide, deeply punctured, shining, covered with pale, long, protruding setae. Vertex punctured, flat, frons rugosae, antennae inserted on tubercles contiguous with margins of eyes. Rostrum long, almost reaching pygophor.

Pronotal collar distinct, pronotum wide, punctured, anterior lobe slightly separated. Mesoscutum not well exposed, partly covered by pronotum, scutellum slightly convex, punctured.

Hemelytra punctured, shining, embolium weakly distinguished, costal fracture absent. Membrane relatively large, two-celled, tarsi two-segmented, the first segment very short, the second divided, claws toothed subapically.

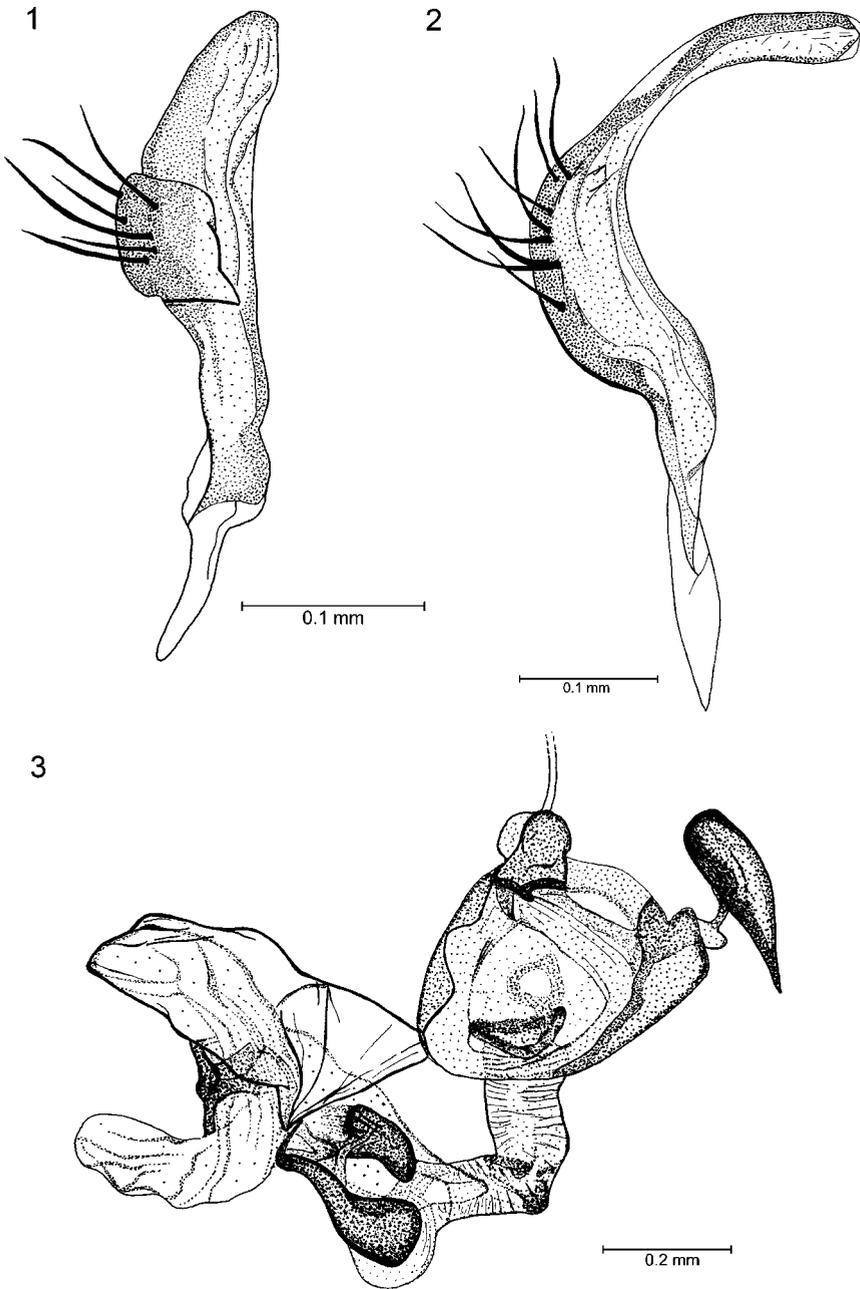
KEY TO THE SPECIES

1. Scutellum unicoloured, the posterior margin of pronotum without pale, longitudinal stripe in the middle *T. annulicornis* POPP.
- . Scutellum pale in the apex, the posterior margin of pronotum with pale, longitudinal stripe in the middle *T. metallicus* POPP.

***Teratofulvius annulicornis* POPPIUS**

Teratofulvius annulicornis POPPIUS, 1914b: 124.

Teratofulvius annulicornis: BERGROTH 1920: 74; CARVALHO 1957: 25; SCHUH 1995: 38.



1-3. *Teratofulvius annulicornis* POPPIUS, holotype, male genitalia: 1 - left paramere. 2 - right paramere. 3 - aedeagus

TYPE MATERIAL EXAMINED

Holotype (female?): Sumatra, Modigliani, 1890; *Teratofulvius annulicornis* n. sp. [old, handwritten label]; Holotypus [pink, recent label with the symbol of male]; Museo Civ., Genova; Mus. Zool. H: fors, Spec typ. No 10140, *Teratofulvius annulicornis* Popp. [handwritten]. Housed in Zoological Museum, University of Helsinki, Finland.

OTHER MATERIAL EXAMINED:

Male: Sumatra, S1 – Rambe, XII. 90 – III. 91, E. Modigliani; *Teratofulvius annulicornis* Poppius, G. Schmitz det., 1969; Museo Civ. Genova; Mus. Zool. H: fors, Spec typ. No 10141, *Teratofulvius annulicornis* Poppius [handwritten]. Housed in Zoological Museum, University of Helsinki, Finland.

REDESCRIPTION

Female?. Body brown, shining, length of the body 4.40 mm, width 2.10 mm. Vertex brown, covered with long, pale, protruding setae, frons brown at base then pale brown, clypeus brown, darker and tinged with red at apex. Mandibular plate pale, maxillary plate dark brown. Length of the head 0.60 mm, width 0.90 mm, diameter of eye 0.28 mm. The first antennal segment pale, brown at apex and with small brown patch in the middle, thin at base then thickened. The second segment thin, slightly thickened towards apex, pale at base and apex, dark brown in the middle, covered with long, dark, protruding setae. Third and fourth segments thin, dark brown, covered with long, dark, protruding setae. Length of the antennal segments in mm: 0.30: 1.0: 0.62 (fourth segment partly broken in the examined specimen). Rostrum brown, the length of the individual segments in mm: 0.50: 0.75: 0.87: 0.37.

Pronotum dark brown only humeral angles and sides of posterior margin paler. Length of pronotum 1.0 mm (excluding pronotal collar), length of the anterior margin 0.75 mm, lateral margins 0.87 mm, posterior margin 1.62 mm. Mesoscutum and scutellum unicoloured, dark brown.

Hemelytra dark brown, clavus pale at apex, there are also two small patches contiguous with apical part of clavus and large pale patches contiguous with minor cell. Membrane brown with a paler patch contiguous with pale patches on the distal parts of corium. Venation distinct, brown, minor cell slightly tinged with red.

Underside of the body brown to dark brown, femora brown, tibiae and tarsi paler, most legs mutilated in the examined specimen.

Male. Similar to the type but slightly smaller, length of the body 4.21 mm, width 1.35 mm, length of the head 0.56 mm, width 0.88 mm, diameter of eye 0.28 mm, clypeus brown, mandibular plate pale, maxillary plate brown. Length of the antennal segments in mm: 0.30: 0.90 (third and fourth segments broken). Rostrum brown, the second segment paler, length of individual segments not well visible in the examined specimen. Length of pronotum 0.87 mm, length of the anterior margin 0.62 mm, lateral margins 0.75 mm, posterior margin 1.55 mm.

Left paramere (Fig. 1) large, slender, curved, with a relatively well developed sensory lobe. Right paramere (Fig. 2) is distinctly smaller than left one, simple. The structure of aedeagus (Fig. 3) is probably closest to the Fulviini-type, vesica in Mirinae-type with inflatable membranous lobes and with two heavily sclerotized appendages.

DISTRIBUTION

Indonesia: Sumatra.

REMARKS

In the description of the species POPPIUS (1914b) described the type as a female. Later Guy SCHMITZ put the symbol of male on the label and dissected the abdomen of the species. Unfortunately we were not able to find the prepared genitalia in the collection and in fact we redescribed the holotype and male specimen.

Teratofulvius metallicus POPPIUS

Teratofulvius metallicus POPPIUS, 1914a: 145.

Teratofulvius metallicus: BERGROTH 1920; 74; CARVALHO 1952a: 48, 1957: 25; SCHUH 1995: 38.

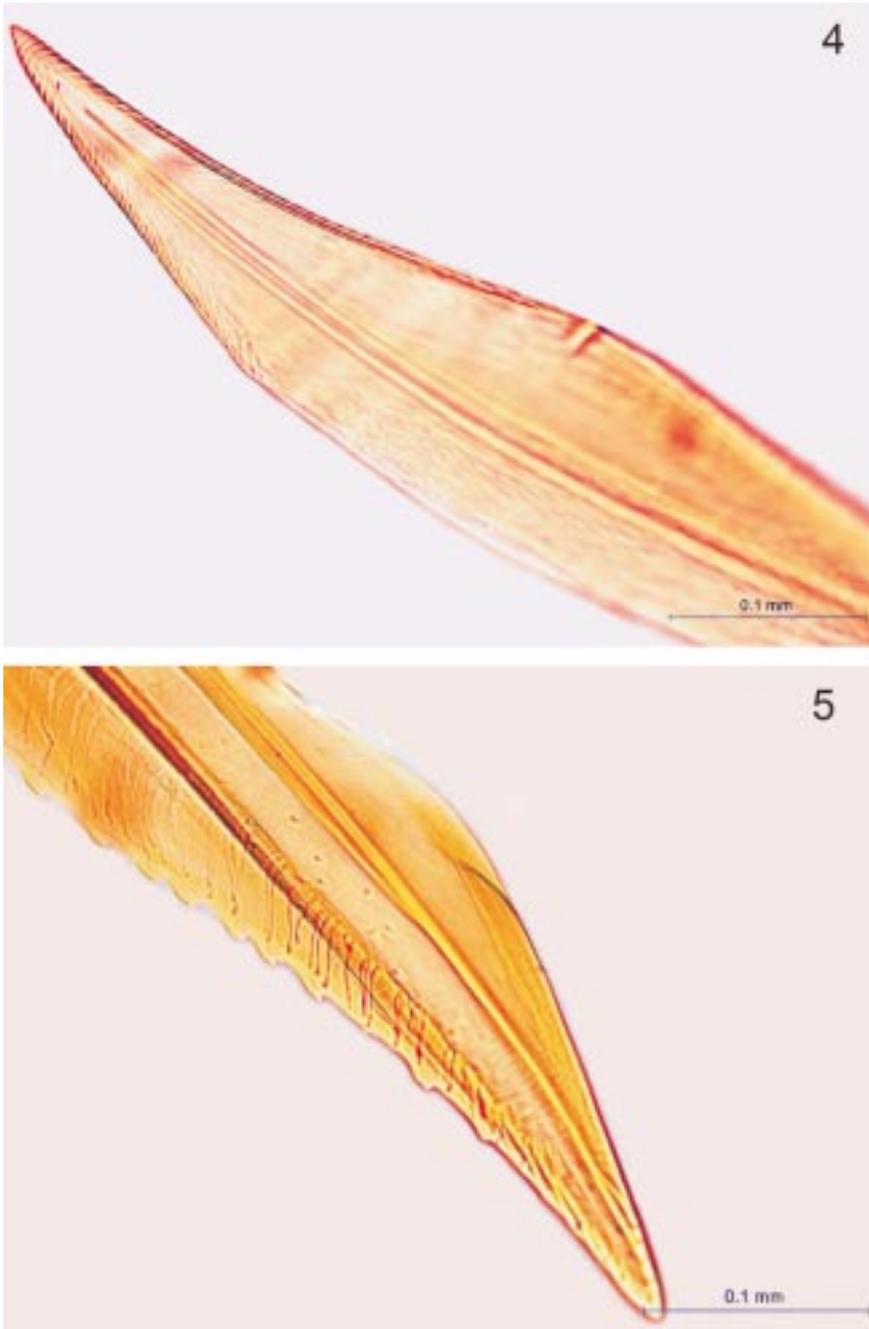
TYPE MATERIAL EXAMINED

Holotype (female): Tjnjiruan, W. Java, 1700 M, Malabar geb. [old, handwritten label]; *Teratofulvius metallicus* n. gen. Et sp. [handwritten old label]; B. Poppius det.; Mus. Zool. H: fors. Spec. Typ. No 10000, *Teratofulvius metallicus* Popp. [handwritten]; vid. Prep. Microscop., 695/161; Holotypus [pink, recent label]. Housed in Zoological Museum, University of Helsinki, Finland.

REDESCRIPTION

Female (male unknown). Body brown to dark brown, length of the body 4,20 mm, width 1.60 mm. Head dark brown, length of the head 0.48 mm, width 0.90 mm, diameter of eye 0.22 mm. Vertex and frons rugosae, clypeus distinct, convex, smooth, mandibular and maxillary plates, clypeus and buccula dark brown. Antennae broken in the examined specimen and according to POPPIUS (1914a) they were broken when he described the species. Rostrum brown, the first segment dark brown, thick, second segment paler, third dark brown, fourth segment of labium broken, labrum dark brown. Length of the rostral segments in mm: 0.60: 0.68: 0.80: 0.60 (the last segment of labium broken, it's the length of maxillary and mandibular stylets).

Pronotal collar dark brown, pronotum dark brown only the margin of humeral angles pale. There is also a short, pale longitudinal stripe in the middle of the posterior margin of pronotum. Length of pronotum 0.80 mm, length of the anterior margin 0.56 mm, lateral margins 0.88 mm, posterior margin 1,58 mm. Mesoscutum and scutellum dark brown, apex of scutellum pale.



4-5. *Teratofulvius metallicus* POPPIUS, holotype, female genitalia. 4 - apical part of valvula 1. 5 - apical part of valvula 2



6. *Teratofulvius metallicus* POPPIUS, holotype, female genitalia. 6a - vagina in dorsal view; Ap: parieto-vaginal rings, DLP: dorso-labiate plate, Ol: lateral oviduct (see description)

Hemelytra brown with a few pale patches, covered with pale setae. Clavus dark brown pale at base and apex, there is also a pale patch on the distal part of corium contiguous with distal part of claval suture and a pale patch in the external part of corium contiguous with the the distal part of embolium. Membrane grey, venation well visible partly tinged with red, major cell oval, minor cell triangular.

Underside of the body dark partly almost black (propleuron, mesepisternum, mesepimeron), coxae brown, partly tinged with red, forefemora brown, covered with long, dense, pale, protruding setae, foretibiae short, brown, darker in the middle, pale in the apical part. Ostiolar peritreme pale, tinged with red.

Apical parts of the first and second valvulae triangular with gently rounded apexes (Figs 4-5). Seminal sac or depository lacking glandular circumference, its connection to median part of vagina large. Parieto-vaginal rings very large (Ap, Figs 6A, 6B) elongated, slightly separated, their anterior margin gently convex, the posterior margin slightly concave to S-like, the inner margin curved, the outer margin practically straight. Dorso-labiate plate (DLP, Fig. 6A) large, these anterior and posterior margins reinforced. Dorsal wall slightly sclerotized. Vermiform gland (Gv) imperceptible. Lateral oviducts (Ol, Fig. 6A) conflating in a common dorsal sac. The structure of the posterior wall unknown.

DISTRIBUTION

Indonesia: Java.

ACKNOWLEDGEMENTS

We would like to express our sincere thanks to Dr. Larry HULDÉN (Zoological Museum, Helsinki University, Finland) for his help during the stay of the junior author in Helsinki and for loaning the type materials for the present study.

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Errata to fascicle 1/2006:

In the paper published in fascicle 1/2006: D. SKARZYŃSKI "*Ceratophysella multilobata*, a new species from Texas, USA (Collembola: Hypogastruridae)" pp. 1-4, chapter "material examined" should be corrected as follows:

Holotype: female on slide, District Park Cave (7324, Travis Co., Texas, USA), litter, 19. 01. 1991, leg. J. Reddell and M. Reyes (preserved at the collection of Grinnell College, Iowa).

Other material: reproductive female on slide, cave (7115, Travis Co.), litter, 20. 02. 1989; reproductive male on slide, New Comanche Trail Cave (7166, Travis Co.), litter, 6. 02. 1989; juvenile specimen on slide, Hideout Cave (7327, Travis Co.), litter, 31. 01. 1991; female on slide, Raccoon Cave (7289, Williamson Co.), litter, 16. 03. 1990; 2 juveniles on slide, Temples of Thor Cave (7355, Williamson Co.), litter, 31. 01. 1992; juvenile on slide, Garden of Sinks Cave (7279, Williamson Co.), litter, 13. 02. 1990; female on slide, Runoff Cave (7380, Coryell Co.), litter, 14. 03. 1992; female on slide, Charley's Cave (9128, Bexar Co.), on water, 6. 12. 1994 (all collected by J. Reddell and M. Reyes in Texas, USA and preserved at the collection of Grinnell College, Iowa).

Corrected version of the paper is available in PDF format on the "Genus" web page: www.biol.uni.wroc.pl/cassidae/genus.html