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New psallopinous plant bugs (Hemiptera: Heteroptera, Miridae, Psallopinae) from the New Hebrides and Nigeria

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Abstract

The paper presents descriptions and illustrations of two new species from the genus *Psallops*: *P. schmitzi* from New Hebridae and *P. webbi* from Nigeria. Photographs and line drawings general habitus and male genitalia are provided. A short review of the subfamily Psallopinae and two other related subfamilies Isometopinae and Cylapinae is given.

Key words: Heteroptera, Miridae, Psallopinae, new species

Introduction

The Psallopinae is one of the smallest mirid subfamilies containing two modern genera: *Psallops* Usinger and *Isometocoris* Carvalho & Sailer, which are essentially distributed in tropical and subtropical regions. Usinger (1946) established the genus *Psallops* by describing the then-new species: *Psallops oculus*. He placed it in the subfamily Phylinae. In 1956, after analyzing the morphology of that species, Carvalho (1956) noted that it possessed features resembling representatives of the subfamily Isometopinae, even though it did not share the taxon's synapomorphy of absent ocelli. In spite of this, the genus *Psallops* was moved by Eyles (1972) to the subfamily Isometopinae. A study by Schuh published four years later (1976) established a new subfamily within the Miridae—Psallopinae. Among its characters the author listed: head rounded in frontal view, anterior margin of the pronotum slightly bent inwards, 2-segmented tarsi, presence of 9 metafemoral trichobothria, bristle-like parempodia and the subapical tooth on the tarsal claw, simple form of vesica, and phallosome fused with the phallobase. Other characters included a simple vesica without spicules, except Japanese *P. myiocephalus* Yasunaga and *P. nakatanii* Yasunaga whose endosoma are with sclerotized spicules (Yasunaga, 1999). In our view, one of the basic characters of the Psallopinae is the presence of enlarged eyes that are exceptionally well-developed dorso-ventrally and almost touching each other and reach the pharynx (Herczek & Popov, 2010, 2013). Many authors also list the presence of one or two closed cells on the membrane as a character. It has been observed that the smallest cell on the membrane is often very strongly reduced and only slightly visible, so that it can be easily overlooked. The presence of the subapical tooth on the tarsal claws and bristle-like parempodia observed in the Psallopinae are also characteristic for the Isometopinae and the Cylapinae. The structure of the copulatory apparatus (Konstantinov, 2003), the classification proposed by Cheng-Shing Lin & Chung-Tu Yang (2005), based on the external structure of the copulatory apparatus in the Miridae, and kinship relationships within the Miridae proposed by Sunghoon Jung & Seunghwan Lee (2011), based on molecular characteristics (unfortunately, the Psallopinae were not discussed in their study) indicate once more that the Isometopinae is a sister group to the Psallopinae and the Cylapinae.

A tendency for the reduction of ocelli can be observed in some fossil species of the Isometopinae (e.g. *Electroisops ritzkowskii* Herczek, Popov 1997) led to the suggestion that ocelli were reduced twice in the Cylapinae and the Psallopina (Schuh & Schwartz, 1984). Other features that the Psallopinae and the Isometopinae (especially the tribe Myiommatini) have in common, such as considerably enlarged eyes, one or two closed cells on

TABLE 1. Proportions of selected body parts.

| | <i>Psallops schmitzi</i> (♂) | <i>Psallops webbi</i> (♂) |
|--|------------------------------|---------------------------|
| Body length/width | 2,53 | 2,74 |
| Width of head/length | 2,17 | 2,55 |
| Dorsal width of eye/ width of vertex | 0,89 | 0,89 |
| Head width/vertex width | 2,78 | 2,79 |
| Pronotum width/ head width | 1,58 | 1,62 |
| Pronotum length/head length | 1,26 | 1,58 |
| Antennal segments | missing | II,III,IV missing |
| Rostral segments II : I | 1,16 | 1,50 |
| Rostral segments IV : III | 0,90 | 0,70 |
| Pronotum post. length/ant. length | 1,88 | 2,00 |
| Pronotum width/ length | 2,72 | 2,87 |
| Mesoscutum + scutellum length/ pronotum length | 1,38 | 1,37 |
| Scutellum/mesoscutum | 3,0 | 3,1 |
| Comm.clav/mesoscutum+ scutellum | 0,90 | 0,88 |
| Pronotum length/claval commissura length | 0,81 | 0,83 |
| Hind femur length/ width | 3,15 | 3,0 |
| Hind tibia length/ femur length | tibia broken | 1,47 |
| Hind tibia length/pronotum width | - | 1,33 |
| Tibia length/tarsus length | - | 4,60 |
| Hind tarsus I:II | tarsus missing | 0,53 |
| Hind tarsus II: I | - | 1,90 |
| Corium length/ cuneus length | 3,23 | 3,17 |

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