



## Phylogeny of *Pnyxiopalpus* Vilkamaa & Hippa, with the description of *P. persimplex* sp. n. (Diptera, Sciaridae)

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### Abstract

Phylogeny of the Oriental genus *Pnyxiopalpus* Vilkamaa & Hippa, 1999 was re-studied in the light of the recently described, putatively related genus *Vulagisciara* Evenhuis, 2007, from Fiji, and a new species of *Pnyxiopalpus*, *P. persimplex* sp. n. from Selangor, Malaysia. Characters of these taxa were added to a previously published data matrix. The parsimony analysis yields two most parsimonious cladograms. In the strict consensus cladogram, *Vulagisciara* appears as the sister group of a monophyletic *Pnyxiopalpus*. *Pnyxiopalpus persimplex* sp. n. is described. The new species shares the basic structure of *Pnyxiopalpus*, but lacks some of the unique morphological modifications present in congeneric species. *P. persimplex* appears as the sister species to *P. simplex*, these two species together appearing as the sister group to all other *Pnyxiopalpus*.

**Key words:** Diptera, Sciaridae, *Pnyxiopalpus persimplex*, new species, phylogeny, Oriental region

### Introduction

The original description of the genus *Pnyxiopalpus* Vilkamaa & Hippa, 1999 (type-species *P. raptor* Vilkamaa & Hippa) included sixteen species, all from the Oriental region. Regarding many morphological characters, the genus is exceptional among Sciaridae (Vilkamaa & Hippa 1999). The systematic position of the genus and the phylogenetic relationships among its species were postulated using parsimony analysis (Vilkamaa & Hippa 1999). Since the original description, no new species have been described or recorded for the genus. Here we describe a new species of *Pnyxiopalpus*, in many respects more plesiomorphic than the known species of the genus. Here we re-study the phylogenetic relationships among the species of *Pnyxiopalpus*, and the monophyly of the genus, in the light of the new species and the supposedly related *Vulagisciara* Evenhuis, 2007 (monotypic; type species *V. myrmecophila* Evenhuis).

### Material and methods

The material was selected from unsorted insect material and kept in ethanol. After dehydration in absolute ethanol, specimens were mounted on microscope slides in Euparal.

The hypopygium, wing, maxillary palpus, front femur, front tibia and apical part of the front tibia of the new species are illustrated. The illustrations were made with the help of a drawing tube attached to a Leitz Diaplan or Leitz Laborlux compound microscope. The terminology used follows mainly that of Hippa and Vilkaama (1991, 1994). The type material of the new species is deposited in The Swedish Museum of Natural History, Stockholm (SMNH) and The Finnish Museum of Natural History, Helsinki (MZH).

We studied the phylogenetic position of the new species using parsimony analysis with the computer program NONA version 2 (Goloboff 1999) together with the program WinClada version 1.0000 (Nixon 1999–2002), with