



Remarks on *Doryphoribius flavus* (Iharos, 1966), and description of three new species (Tardigrada, Hypsibiidae)

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Abstract

The author examined paratypes of *Doryphoribius flavus* (Iharos, 1966) (formerly *Hypsibius* (*Isohypsibius*) *flavus* Iharos, 1966), and the holotype and paratypes of *D. citrinus* (Maucci, 1972) (which is considered a junior synonym of *D. flavus*), furnishing new details, both qualitative and metric, to the description of the species, and providing a discussion on the synonymy. Specimens, previously attributed to these species, from Amazonia, South Africa, and Bali, were also examined and proved to belong to three species new to science: *Doryphoribius amazonicus* **sp. nov.**, *Doryphoribius bindae* **sp. nov.**, and *Doryphoribius solidunguis* **sp. nov.**

Doryphoribius amazonicus **sp. nov.** has a reticular cuticular ornamentation with ridges forming a tubercle at each crossing; legs lacking cuticular ornamentation; buccal tube slightly longer than in *D. flavus* with respect to the body length, stylet supports inserted on the buccal tube in a slightly more caudal position; peribuccal papulae present; teeth and ridges appear to be absent in the buccal cavity; pharyngeal bulb with apophyses and two macroplacoids; claws slightly shorter and stouter than in *D. flavus*. Accessory points and smooth lunules present. No other cuticular thickening present on the legs.

Doryphoribius bindae **sp. nov.** has a delicate reticular cuticular ornamentation formed by narrow ridges with a tiny tubercle at each crossing; a fine reticular design present on the legs; peribuccal papulae present, buccal armature with only one dorsal tooth near the medial margin of each stylet sheath. Pharyngeal bulb with apophyses and two macroplacoids. Accessory points and small lunules present. No other cuticular thickening present on the legs.

Doryphoribius solidunguis **sp. nov.** has a very obvious reticular cuticular ornamentation with an irregular shape and size mesh (usually large) delimited by thick, sometimes protruding ridges that may form tubercles at crossings; cuticle of the legs smooth; peribuccal papulae present and two pairs of dorsal teeth lying along the anterior margins of the stylets sheaths. Pharyngeal bulb with apophyses and two macroplacoids. The claws are large and stout with very small accessory points; lunules present, those of the inner claws more evident than in similar species; a cuticular bar is present on the first three pairs of legs.

Doryphoribius flavus was considered widespread, but this work exposing cryptic species indicates that the geographic distribution is more restricted.

Key words: Eutardigrada, *D. amazonicus* **sp. nov.**, *D. bindae* **sp. nov.**, *D. solidunguis* **sp. nov.**

Introduction

Hypsibius flavus Iharos, 1966, was first described from Hungary (Iharos, 1966), and was moved to the subgenus *Isohypsibius*, which was later re-elevated to generic level (Pilato, 1969). A second species *Doryphoribius citrinus* (Maucci, 1972) (formerly *Hypsibius* (*Doryphoribius*) *citrinus*), from Istria, was attributed to the subgenus *Doryphoribius* (taxon instituted as a genus by Pilato in 1969) based on claw structure and presence of ventral lamina on the buccal tube. Maucci initially described his new species as very similar to *H. (I.) flavus*, but after reviewing paratypes of “*Hypsibius flavus*” reported an absence of the ventral lamina leaving the species in *Isohypsibius* (Maucci and Ramazzotti, 1983). Schuster & Toftner (1982) compared examples from the Dominican Republic, which possessed the ventral lamina, to the type series of *I. flavus* and paratypes of *D. citrinus* reporting they were, “found to resemble both, except for minor differences that could result from preparation”. They moved *Hypsibius*