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## Opiliones are no longer the same—on suprafamilial groups in harvestmen (Arthropoda: Arachnida)

ADRIANO B. KURY

*Departamento de Invertebrados, Museu Nacional/UFRJ, Quinta da Boa Vista, São Cristóvão, 20.940-040, Rio de Janeiro - RJ - BRAZIL. E-mail: adrianok@gmail.com*

### Abstract

A review of the names used in the arachnid order Opiliones above superfamily level is presented. Many historical branching patterns of Opiliones (for five terminals), of Laniatores (for six terminals), and of Cyphophthalmi (for six terminals) are extrapolated, compared and graphically displayed. For the first time a historical review is made of the circumscriptions of those names and comparisons are drawn to current usage. Critical clades are used as terminals and represented by the oldest valid generic name of each. Comments are made on the variant usage for 25 suprafamilial names from the literature. Cladistic definitions are provided for these names under relevant hypotheses of phylogeny. It is noted that virtually all important suprafamilial names in Opiliones changed concept over time, and the purpose of this project is to clarify the original usage compared to current, and to add historical perspective. Two options are considered for higher-level nomenclature in Opiliones: (1) a circumscriptional option, sticking to the original inclusion of the names; (2) an inertial option, where no name has priority, and follows recent use in the literature. As there is no priority for names not regulated by ICZN, option 2 prevails, because it entails massive momentum. The following new names are introduced as unranked taxa to define clades under different hypotheses of phylogeny: Tricospilata (= Triaenonychidae + Grassatores), Lomaniatores (Laniatores in the restricted sense used by Loman/Pocock), and Eulaniatores (Laniatores excluding the bizarre Synthetonychiidae). Some of the hypotheses implied by these names are conflicting and mutually exclusive, but the state of knowledge of harvestman taxonomy is quickly changing, and no hypothesis that clearly supersedes the others can be detected.

**Key words:** Laniatores, Eupnoi, Dyspnoi, Cyphophthalmi, taxonomy, systematics, nomenclature, typification

### Introduction

The names of larger groups in the arachnid order Opiliones have been confused throughout history and used in shifting concepts, including the name Opiliones itself. As the International Code of Zoological Nomenclature (ICZN) does not rule over names above superfamily rank (ICZN, 1999), ordinal and subordinal names are subject to tradition, subjective preference, and inertial usage. The increase in phylogenetic studies on the order is solidifying our knowledge of the relationships of major groups, which inexorably leads to a reevaluation of old classifications and, more than ever, names.

Cladistic hypotheses for subtaxa of Opiliones are starting to pile up. The first non-numeric cladistic morphological analysis of all Opiliones was conducted by Martens (1980) using morphological characters. The first numerical cladistic analysis was done by Shultz (1998) also using abundant morphological information. The first combined published morphological-molecular analysis was conducted by Giribet *et al.* (1999), and was derived from an analysis in an unpublished thesis (Giribet 1997).

In this paper, a review is presented of the suprafamilial names in Opiliones (meaning all names above superfamily rank), comparing original and current usage. Following the development of this work, the difference between typified and circumscriptional nomenclatures is discussed, and the use of typified names for suprafamilial taxa is discouraged (part 2). Additionally, generic names are used to stand for more inclusive taxa (parts 3 to 4), the hypotheses of relationship among them are shown (part 5), and original circumscription, current usage, and

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