Systematic review of Promitobates Roewer, 1913 and cladistic analysis of Mitobatinae Simon, 1879 (Arachnida: Opiliones: Gonyleptidae)

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Abstract

A cladistic analysis of the genera of Mitobatinae and species of Promitobates Roewer, is presented. Only one equally most parsimonious tree was obtained (L=273, CI=0.36; RI=0.73) from a data matrix of 77 equally weighted characters. Mitobatinae is recovered as a monophyletic group, with low Bremer support, sister to (“Pachylinae” + Bourguyiinae) parsimonious tree was obtained (L=273, CI=0.36; RI=0.73) from a data matrix of 77 equally weighted characters.

Key to males of Promitobates species

Key to females of Promitobates species

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and removed from the synonymy of P. ornatus (Mello-Leitão). The following synonyms are proposed: Leonardosia nitida Mello-Leitão = P. nigripes (Mello-Leitão), Ancistrotellus hauseri Šilhavý = P. viridigranulatus (Soares & Soares), P. margaritatus Roewer, 1931 = P. ornatus (Mello-Leitão, 1922) and P. mendax H. Soares, 1945 = P. hatschbachi H. Soares. Promitobates granulosissimus Mello-Leitão and P. hexacanthus Koch are considered species inquirendae. Four new species from Brazil are described: P. ale sp. n. (type locality: Ano Bom, Santa Catarina); P. trapista sp. n. (type locality: Reserva Morro Grande, São Paulo); P. weissbier sp. n. (type locality: Ribeirão Pires, São Paulo), and P. lager sp. n. (type locality: Jacarepaguá, Rio de Janeiro).

Key words: Atlantic Rain Forest, intraspecific variation, Neotropical Region, polymorphism

Introduction

The family Gonyleptidae, the largest of the suborder Laniatores, includes to date 16 subfamilies and 823 described species (Kury 2003), all Neotropical and mostly from the Brazilian Atlantic Rain Forest. Nine subfamilies are exclusive and two occur mainly in this region (Pinto-da-Rocha et al. 2005), including Mitobatinae.

Mitobatinae was described by Simon (1879), and characterized by the following combination of characters: pedipalps robust and longer than body, with thick, compressed and slightly dorsally curved femur; and dorsal scutum always longer than wide, slightly pyriform or almost rectangular. Simon included in the subfamily the following six genera: Mitobates Sundervall, Goniosoma Perty, Asarcus Koch, Phalangodus Gervais, Ampycus Simon, and Cranus Simon. Roewer (1913) transferred Ancistrotus Koch and Leptocnema Koch to Mitobatinae, and proposed four new genera: Promitobates Roewer, Metamitobates Roewer, Metasarcus Roewer, and Neomitobates Roewer. In the same monograph, Roewer (1913) stated that the most distinctive feature for this subfamily was the unarmed and very long male femur IV. However, this same feature was also used to define Bourguyiinae, described a few years later (Mello-Leitão 1923). Both subfamilies were distinguished only by the number of transverse grooves on dorsal scutum: five for Bourguyiinae and four (fusion of areas III and IV) for Mitobatinae. Nevertheless, this feature is variable and several taxa were placed in both subfamilies. Roewer included Bugabitia Roewer and in 1931, included more four genera: Mitoperna Roewer, Mitobatoides Roewer, Roerveria Roewer and Mitobatula Roewer. Only a few species were described before Roewer’s work and the revisionary studies of Kury (1989a; 1990b, 1990a; 1990b, 1991a; 1991b; 1991c, 1992a, 2003), in which many synonymies, new species, and transfers to other subfamilies were established. Kury (2003) proposed the genera Ischnotherus Kury and Encheiridium Kury, redescribed Longiperna Roewer (placed before in Bourguyiinae and recently revised by Pinto-da-Rocha & Bragagnolo 2010), transferred Iporangaia Mello-Leitão and Leptocnema Koch to Progogyleptoidellinae (Kury & Pinto-da-Rocha 1997 and Kury 1994a, respectively), Asarcus and Cnemoletes Mello-Leitão to Bourguyiinae (Kury 1994b and Kury 2000—the latter synonymized with Asarcus by Yamaguti & Pinto-da-Rocha, 2009), Bugabitia to Manosbiidae (Kury 1997), Metasarcus to Metasarcinae (Kury 1994b), Mitobatula Mello-Leitão to Cranaidae (Kury 2003), Mitoperna to Gonyleptinae (Kury 1995) and Roerveria to Pachylinae (Kury 2003). Thus, in the catalogue of New World Laniatores (Kury 2003), Mitobatinae was comprised by 11 genera and 45 species. After this publication, the only paper dealing with Mitobatinae systematics was the review of genus Longiperna, in which two new species were described and five new synonymies were proposed (Pinto-da-Rocha & Bragagnolo 2010).

The only cladistic hypothesis for genera of Mitobatinae is that of unpublished Adriano B. Kury’s M.Sc. dissertation (Kury 1991d). He proposed generic-level relationships with 16 species as terminal taxa, representing 10 genera of the subfamily, and polarized characters employing one unidentified species of Discocyrtus Holmberg (Pachylinae) + Despirus (called “Discocytinae” by Kury 1991d; group not published), and a hypothetical all-zero ancestor constructed based on the two above-mentioned out-groups plus Bourguyiinae. His analyses were performed using 26 qualitative and 31 quantitative characters and resulted in five equally most parsimonious trees (with equally weighted characters), and one tree with successive weighting. According to the latter hypothesis the phylogeny of the group was a pectinate tree with Discocyrtoides Mello-Leitão as the basal-most genus (Fig. 1). The genus Promitobates was proposed by Roewer (1913) to include Ancistrotus hexacanthus Koch, 1839, based on a single specimen deposited in the Imperial Collection of the Habsburgs, in Vienna. The monotypic genus Promitobatoides (Mello-Leitão, 1927) was established for Neomitobates ornatus. The same author established the genus Batomites (Mello-Leitão, 1934) for B. spitzi and B. difficilis. A year later, Mello-Leitão (1935a) described B.