



A new genus of flower-dwelling melicharid mites (Acari: Mesostigmata: Ascoidea) phoretic on bats and insects in Costa Rica and Brazil

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Abstract

The genus *Spadiseius* **gen. nov.** of the ascoid family Melicharidae is described, based on all instars of two newly described species in Costa Rica and adults of four undescribed species in Costa Rica and Brazil. These mites undergo their life histories quickly in spike or spadix inflorescences of their plant hosts in lowland tropical rainforests, where they apparently feed on nectar or pollen. One inflorescence may bear hundreds of the developing mites in all instars. Pollen is found on all instars of these mites, which may act as miniature pollinators of their plant hosts. Adult males are strongly sexually dimorphic, with bizarrely modified setae peripherally on the body dorsum and on dorsal surfaces of the legs. These structures are thought to be used competitively for mates, in much the same way as in males of the related hummingbird flower mite genera *Rhinoseius* and *Tropicoseius*. *Spadiseius calyptrogynae* **sp. nov.** lives in inflorescences of a palm, *Calyptrogynne ghiesbreghtiana*, and has a phoretic association both with perching bats of the genus *Artibeus*, which are major pollinators of this plant, and scarab beetles of the genus *Lagochile*, which feed destructively on flowers of this plant. *Spadiseius spathiphyllae* **sp. nov.** lives in inflorescences of an aroid, *Spathiphyllum friedrichsthalli*, and is phoretic on meliponine bees of the genus *Trigona* that pollinate this plant. Polymorphism among adult males occurs in both species. In male *S. calyptrogynae* a “warty” ornamentation of the dorsal shield seems to be correlated with extreme elongation of certain body and leg setae, while in male *S. spathiphyllae* such disproportionate setal elongation seems correlated with more robust individuals of greater body and leg dimensions. Several newly recognized morphological attributes are noted among species of *Spadiseius*, including apically forked salivary styli.

Key words: Melicharidae, Ascoidea, flower mites, polymorphism, phoresy, bats, insects