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Tenuipalpidae (Acari: Trombidiformes) from Casuarinaceae (Fagales)

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Abstract

The Tenuipalpidae associated with the Casuarinaceae are reviewed, including one new genus, *Palpipalpus* **gen. nov.**, twelve new species, and seven redescriptions. Two new generic records for Australia are established, *Pentamerismus* and *Philippipalpus*. The new species are: *Chaudhripalpus costacola* Beard and Seeman **sp. nov.**, *Crossipalpus gersoni* Beard and Seeman **sp. nov.**, *Crossipalpus raveni* Beard and Seeman **sp. nov.**, *Magdalenapalpus caperatus* Beard and Seeman **sp. nov.**, *Magdalenapalpus forsteri* Seeman and Beard **sp. nov.**, *Pentamerismus sititoris* Beard and Seeman **sp. nov.**, *Pentamerismus hicklingorum* Seeman and Beard **sp. nov.**, *Pentamerismus wardo* Seeman and Beard **sp. nov.**, *Palpipalpus hesperius* Beard and Seeman **sp. nov. gen. nov.**, *Philippipalpus flumaquercus* Beard and Seeman **sp. nov.**, *Philippipalpus belah* Beard and Seeman **sp. nov.**, and *Philippipalpus nigraquercus* Seeman and Beard **sp. nov.** *Meyeraepalpus delfinadae* Smiley *et al.*, is reinstated based on new material and an analysis of its phylogenetic relationships. *Crossipalpus muellerianae* Smiley *et al.*, *Crossipalpus verticillatae* Smiley *et al.*, and *Tegopalpus conicus* Womersley are redescribed and rediagnosed from the original type specimens and newly collected material; and *Chaudhripalpus creelae* (Smiley *et al.*), *Magdalenapalpus strandtmanni* (Smiley *et al.*) and *Philippipalpus agohoi* Corpuz-Raros are redescribed and rediagnosed from type material only. All flat mite species were host-specific. Up to three species of flat mite were collected from a single she-oak species. Leg setation and ontogeny are reviewed for the taxa studied. A key to Tenuipalpidae from Casuarinaceae is provided. A phylogeny of the subfamily Tegopalpinae found the following relationships: *Meyeraepalpus* (*Australopalpus*, *Crossipalpus*, *Palpipalpus* (*Magdalenapalpus* (*Philippipalpus* (*Chaudhripalpus* + *Tegopalpus*))))). Our preliminary analysis of the Tegopalpinae suggested the group is monophyletic and its sister group is *Phytoptipalpus*.

Key words: taxonomy, systematics, revision, new species, key, she-oak

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