



<http://dx.doi.org/10.11646/zootaxa.3691.3.1>

<http://zoobank.org/urn:lsid:zoobank.org:pub:88298B5D-2941-4A52-8C47-0330168EA240>

A new genus and family of sejine mites (Acari, Parasitiformes, Mesostigmata, Sejoidea) based on new species from Lord Howe Island and Brazil, and a redescription of *Sejus americanus* (Banks, 1902)

DAVID EVANS WALTER

University of Alberta and Royal Alberta Museum 12845 102 Ave., Edmonton, AB, T5N 0M6, Canada. E-mail david.walter@gov.ab.ca
Present address, University of the Sunshine Coast, Maroochydore DC, Queensland 4558, Australia

Abstract

The Sejoidea currently contains three families (Sejidae, Ichthyostomatogasteridae, Uropodellidae) of enigmatic mesostigmatic mites with a mixture of characters of general distribution in the Parasitiformes (e.g. hypertrichy, tarsus IV with an intercalary sclerite bearing a pair of ventral setae, archispermous mating system) and derived character states both unique (e.g. distinctive female sterno-genital region; first hypostomal setae adjacent and more or less membranous) and apparently convergent with other Mesostigmata (e.g. 2-tined palpal apotele, reduced dorsal sclerotisation in the adult, phoretic deutonymph). In this paper, I review the characters defining the Sejoidea; propose a new genus, *Reginacharlottia* **gen. nov.** based on two new species: one from Lord Howe Island, New South Wales, Australia (*R. lordhowensis* **sp. nov.**) and one from Bahia State, Brazil (*R. braziliensis* **sp. nov.**) and erect a new family, Reginacharlottiidae **fam. nov.** to accommodate them. These new species share a number of unusual characters not otherwise known in the Sejida, including a plumose interdigital cheliceral excrescence, a highly reduced female genital shield, and a highly modified anal region covered by a pair of hypertrophied pre-anal setae; the postanal seta is absent. Adult female *R. lordhowensis* carry up to a dozen eggs that enclose fully developed larvae; the larvae also lack the postanal seta, but have a unique pygidial tubercle that may act as an egg burster. In addition, the female of *Sejus americanus* (Banks, 1902) is redescribed and the male described for the first time. *Sejus* species tend to be more typical of the warmer parts of the world, but *S. americanus* extends well into the boreal forest of Alberta, Canada (56°N). A key to separate the families of Sejoidea is provided.

Key words: Sejidae, *Reginacharlottia* **n. g.**, Sejida, Sejina

Introduction

The Mesostigmata currently contains about 11,500 described species arranged in three traditional suborders (Beaulieu *et al.* 2012). The Suborder Trigynaspida has been generally supported by molecular analyses, but the other two suborders, Monogynaspida (Uropodina in the broad sense plus Gamasina) and Sejida (= Sejina) are not yet fully resolved (Krantz & Walter 2009). The best evidence to date indicates that the Sejida is monophyletic when it includes the Heterozetacoidea, two highly autapomorphous families of mites associated with centipedes, millipedes and reptiles (Klompen *et al.* 2007). The remainder of the Sejida are placed in the Sejoidea, with three families (Sejidae, Ichthyostomatogasteridae, Uropodellidae), nine genera and over 60 described species of mites generally associated with woody substrates, and often with deutonymphs that are phoretic on insects (Krantz & Walter 2009, Beaulieu *et al.* 2012).

Sejoidea are atypical Mesostigmata. Most adult Gamasina and Trigynaspida have the dorsal idiosoma protected by one large shield that is often entire but is sometimes divided into podonotal and opisthonotal shields, and rarely fragmented. In the Sejoidea, however, an entire dorsal shield is found only in some species of *Asternolaelaps* (Ichthyostomatogasteridae). Other members of the superfamily have adults with a variety of plates surrounded by extensive areas of soft cuticle (sometimes with secondary sclerotisation) with numerous setae and often complex ornamentation (Figs 36–37). Adult female Mesostigmata generally have an intact sternal shield bearing 2–4 pairs of setae, but in the Sejoidea the sternal region has a variety of small platelets and the sternal setae