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Two New Australian Silverfish (Zygentoma: Lepismatidae: Ctenolepismatinae and Nicoletiidae: Subnicoletiinae)

Graeme B. Smith[1], Andrew Mitchell[1], and Thomas Mesaglio[2]

[1] Australian Museum Research Institute,
Australian Museum, 1 William Street, Sydney NSW 2010, Australia

[2] Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences,
University of New South Wales, Sydney NSW 2052, Australia

Abstract. *Hemitelsella luismendesi* sp. nov. is described from material collected in leaf litter near Marla in South Australia and *Subtrinemura epigea* sp. nov. is described from a specimen collected at Chester Hill in New South Wales. Molecular data (28S and COI) are presented for both species and the position of *H. luismendesi* within the genus is discussed.

Introduction

Silverfish represent one of the oldest insect orders, with limited molecular data suggesting an origin some 400 MY (Misof *et al.*, 2014). There are about 650 described extant species placed into 148 genera, arranged in five families and 16 subfamilies, one of which is divided into five tribes. There is however little molecular data that can be used to test the proposed relationships, partly due to the need for gathering fresh material of correctly identified species. Most Zygentoma material has been stored either in 70% ethanol or mounted onto slides, making it impractical to obtain quality DNA sequences from museum collections. The authors are currently involved in gathering suitable samples from a wide variety of silverfish taxa in order to further work on the molecular phylogeny of the order. Here we describe two new taxa that are to be included in the broader molecular work.

Australian silverfish fauna is largely endemic with 91% of described species and 52% of genera (Smith, 2018) known only from Australia. A key to the genera can be found in Smith (2017). Four species of the genus *Hemitelsella* Smith, 2016 have been described, all with quite dramatic colour patterns; at least three of which mimic velvet ants [Hymenoptera: Mutillidae] (Smith & Mitchell, 2021). A further species was collected in deep leaf litter north of Marla in South Australia. It is smaller than the other species and does not show the same striking colour pattern. It is the first record of the genus from South Australia. We also describe an additional species of the subterranean nicoletiid genus *Subtrinemura* Smith, 1998 from the Sydney suburb of Chester Hill, bringing the total number of species in the genus to five, all restricted to south-eastern Australia and Norfolk Island.

Materials and methods

The holotype and allotype are deposited in the entomological collections of the South Australian Museum in Adelaide and Australian Museum in Sydney as shown in the material examined.

Specimens were initially collected and stored in 100% ethanol until a leg was removed for DNA extraction. The specimens were then transferred to 75–80% ethanol and some later dissected and slide mounted.

Measurement data of whole specimens in alcohol and dissection methods used are as described in Smith (2013). Specimens were dissected and each mounted on two slides using Tendeiro medium (Molero-Baltanás *et al*., 2000), with

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ZooBank registration: urn:lsid:zoobank.org:pub:B7E8BAB7-5473-441A-8F78-B1391A8676CF
ORCID: Graeme B. Smith, 0000-0003-1083-444X; Andrew Mitchell, 0000-0001-5022-5898; Thomas Mesaglio, 0000-0002-1096-6066
Corresponding author: Graeme B. Smith le_gbsmith@optusnet.com.au
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