



Meeting the challenge of the Decadal Plan: the taxonomic documentation of the Australian arachnid fauna.

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The taxonomic documentation of Australia's major arthropod lineages remains the biggest challenge posed by the Decadal Plan. The 13 extant orders of Arachnida present in Australia include the spiders (Araneae), scorpions (Scorpiones), pseudoscorpions (Pseudoscorpiones), harvestmen (Opiliones), tailless whip scorpions (Schizomida), whip spiders (Amblypygi), palpigrades (Palpigradi), and six acarine orders of mites (Trombidiformes, Sarcoptiformes, Holothyrida, Ixodida, Mesostigmata and Opilioacarida). These orders range from species-poor groups with less than 10 species (e.g. Palpigradi and Opilioacarida), to mega- or hyper-diverse lineages with likely > 10,000 Australian species (e.g. Araneae, Trombidiformes and Sarcoptiformes). Here, we summarise the scale of the task at hand required to document the Australian arachnid fauna, in the context of the number of undescribed species and the current available workforce. By dividing the arachnid challenge into three conceptual parts (the spiders, mites, and other 'minor' orders), and using worked examples, we identify key existing barriers to progress, as well as a vision for the step-change required to describe this iconic fauna within a generation.

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