



## Molecular and morphological characterisation of new species in the trapdoor spider genus *Aname* (Araneae: Mygalomorphae: Nemesiidae) from the Pilbara bioregion of Western Australia

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### Abstract

A study of selected species in the nemesiid spider genus *Aname* L. Koch, 1873 from the Pilbara bioregion of Western Australia was undertaken using molecular and morphological techniques. Bayesian and parsimony analyses of mitochondrial sequence data from the Cytochrome c Oxidase subunit I (*COI*) gene found evidence for four species, confirming our initial morphological examination of adult male specimens. These four species are here described as *A. mellosa* n. sp., *A. aragog* n. sp., *A. ellenae* n. sp. and *A. marae* n. sp. Only the female of *A. mellosa* n. sp. is described.

**Key words:** taxonomy, systematics, barcoding, *COI*, Anamini, Teylini, *Teyl*, *Pseudoteyl*

### Introduction

Trapdoor spiders of the family Nemesiidae Simon, 1889 are a dominant component of the Australian ground-dwelling spider fauna, with 13 genera currently recognised: *Aname* L. Koch, 1873, *Chenistonina* Hogg, 1901, *Ixamatatus* Simon, 1887, *Kwonkan* Main, 1983, *Merredinia* Main, 1983, *Namea* Raven, 1984, *Pseudoteyl* Main, 1985, *Stanwellia* Rainbow and Pulleine, 1918, *Swolnpes* Main and Framenau, 2009, *Teyl* Main, 1975, *Teyloides* Main, 1985, *Xamiatus* Raven, 1981 and *Yilgarnia* Main, 1986 (Platnick 2012). The most speciose of these genera, *Aname*, is found across most of Australia and currently contains 33 named species (Platnick 2012), although many more species have been collected and await description (VWF, unpubl. data; B.Y. Main and R.J. Raven, pers. comm.). They can occur in reasonable densities in both mesic and arid habitats, and males are regularly caught in pitfall traps after they emerge from their burrows and wander in search of females during their mating season. Juveniles and adults construct burrows within soil and, whilst many have open holes, some, such as *Aname turrigera* Main, 1994, from the Nullarbor region of southern Australia, build long silken tubes through *Triodia spinifex* bushes (Main 1994).

Few species of *Aname* have been described from Western Australia, and all named species are from the southern half of the state. These include *Aname armigera* Rainbow and Pulleine, 1918, *A. cuspidata* (Main, 1954), *A. fuscocincta* Rainbow and Pulleine, 1918, *A. mainae* Raven, 2000, *A. tepperi* (Hogg, 1901), *A. turrigera* Main, 1994 and *A. villosa* (Rainbow and Pulleine, 1918) (Hogg 1901; Main 1954, 1985, 1994; Rainbow & Pulleine 1918; Raven 2000). The status and taxonomic position of some of these species are still unresolved, due largely to lack of modern revisionary taxonomic studies and a lack of adult males for many species (which typically display the best