Molecular phylogeny and diversity of Goblin spiders in Sri Lanka (Araniae: Oonopidae)

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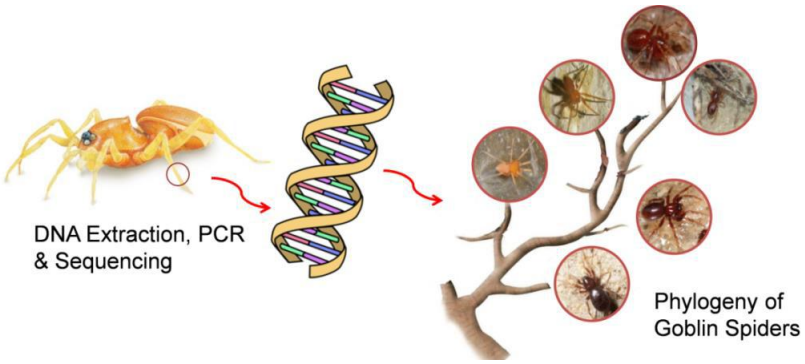

Abstract:

The Oonopidae or goblin spider is a midsize family (1644 species) of minute spiders that inhabit mainly in leaf litter. They have been grossly under-sampled due to their small size and cryptic habits. No specific extensive study of Oonopidae has been undertaken in Sri Lanka. The aim of this study is a taxonomic revision of the Oonopidae of Sri Lanka and their inclusion in a phylogenetic analysis.

The phylogenetic relationship of Oonopidae is investigated based on *18S* and *28S* DNA sequence data. The phylogenetic analysis included 152 taxa representing 40 genera (140 ingroup/12 outgroup). The monophyly of the family is recovered and the morphological definitions set out previously are reflected by the molecular analysis in a majority of genera. Most of soft-bodied taxa are placed more basal within Oonopidae, but a clear distinction between hard-bodied versus soft-bodied Oonopidae was not recovered.

Ten new species of three dominant genera, *Brignolia*, *Xestaspis* and *Aprusia* are described: [*B. carlmulleri*, *B. meemure*, *B. ondaatjei*, *B. shyami*, *X. nuwaraeliya*, *X. padaviya*, *X. pophami*] Ranasinghe and Benjamin, 2016; *Aprusia* sp. A., *Aprusia* sp. B.

and *Aprusia* sp. C.

The study revealed the presence of 43 Oonopidae species (38 endemics) belonging to twelve genera in Sri Lanka, highlighting the diversity of the family in forests of the island.

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