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Descriptions of four kleptoparasitic spiders of the genus *Mysmenopsis* (Araneae, Mysmenidae) and their potential host spider species in the genus *Linothele* (Araneae, Dipluridae) from Ecuador

NADINE DUPÉRRÉ[1] & ELICIO TAPIA[2]

[1]*Research Associate, Fundación OTONGA, Calle Rither y Bolivia, Quito, Ecuador. Research Associate, American Museum of Natural History, New York, NY, USA. E-mail: nadineduperre@gmail.com*

[2]*Researcher, Centro Jambatu de Investigación y Conservación de Anfibios, Geovanny Farina 566, San Rafael, Ecuador. E-mail: eliciotapia@hotmail.com*

Abstract

Four new species of the genus *Mysmenopsis* are described: *M. onorei* **n. sp.**, *M. otonga* **n. sp.**, *M. fernandoi* **n. sp.** and *M. chiquita* **n. sp.** All species were collected in diplurid webs and are therefore assumed to be kleptoparasitic. Five potential host species of the genus *Linothele* (Dipluridae) that were collected with the symbionts are also described: *Linothele yanachanka* **n. sp.,** *L. pukachumpi* **n. sp.,** *L. zaia* **n. sp.**, *L. tsachilas* **n. sp.** and *L. quori* **n. sp.**

Key words: Spider, Symbionts, Kleptoparasitism, Natural History

Introduction

Worldwide, the family Mysmenidae comprises 134 species distributed in 23 genera. In the Americas, 56 species in 10 genera are known (World Spider Catalog 2014). However, a new delimitation of the family proposed by Lopardo & Hormiga (2015) indicates that Mysmenidae includes 130 species in 12 genera. The biodiversity of Mysmenidae is clearly understudied, most likely due to their small size and cryptic life style (Lopardo *et al.* 2011). As a matter of fact, only two species of Mysmenidae are reported from Ecuador: *Calomyspoena santacruzi* Baert & Maelfait, 1983 from the Galápagos Islands and *Mysmenopsis penai* Platnick & Shadab, 1978 from the northeastern part of the country, but we know that at least ten additional species in three different genera occur in Ecuador (Dupérré unpubl. data). The genus *Mysmenopsis* is quite diverse, comprising 27 species that occur from the south of the USA to Peru. *Mysmenopsis* are considerably large Mysmenidae (>0.8mm) often reported in the webs of other spiders, often diplurids, and the genus has notoriously kleptoparasitic species. The genus was revised by Platnick and Shadab (1978), and of the 18 species included in their revision, they reported five species as kleptoparasites living in the web of unknown species of *Diplura* or *Ischnothele*. Coyle and Meigs (1989) described and reported two kleptoparasitic species (*M. monticola, M. furtiva*) from Jamaica, and Baert (1990) described six species from Peru; however, only two species (*M. pachacutec, M. huascar*) were reported as kleptoparasites from diplurid webs. He also mentioned that one species, *M. capac*, was found in a web of the orbweaver *Cyrtophora.* Eberhard *et al.* (1993) reported the case of *Mysmenopsis tengellacompa* Platnick, 1993 from the web of *Tengella radiata* (Kulczyński, 1909) (Tengellidae) in Costa Rica. The behavior of *M. tengellacompa* was studied in detail, and the authors observed the spider feeding on small prey or leftovers from the host, mating and the female carrying the egg sac in the host's web. *M. tengellacompa* was also collected in an unidentified agelenid web, and *M. dipluramigo* Platnick and Shadab, 1978 has been found in webs of *Tengella*, unidentified pisaurids, ctenids and diplurids. Griswold (1985) described a new genus, (*Isela* Griswold, 1985) of kleptoparasitc Mysmenidae from Africa and proposed a sister-group relationship between the two kleptoparasitic mysmenid genera *Isela* and *Mymenopsis*. The evolution of kleptoparasitism in Mysmenidae was studied by Lopardo *et al.* (2011), they confirmed that two genera *Isela* and *Mysmenopsis* belong to the same monophyletic group in the subfamily

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