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# Spinneret anomalies in a theraphosid spider in the Muséum National d'Histoire Naturelle, Paris (Araneae: Theraphosidae)

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**Abstract:** A morphological anomaly in the posterior lateral spinneret and absence of one of the anterior lateral spinnerets in a theraphosine spider, housed in the collections of the Muséum National d'Histoire Naturelle, Paris, France, is presented and illustrated.
**Key words:** Araneae, Theraphosidae, Theraphosinae, anomalies, spinnerets, Ecuador.

**Anomalías en las hileras de una araña terafósida del Muséum National d'Histoire Naturelle de París (Araneae: Theraphosidae)**
**Resumen:** Se presenta e ilustra una anomalías morfológica en la hilera lateral posterior y ausencia de una de las hileras laterales anteriores de una araña terafosina de la colección del Muséum National d'Histoire Naturelle, París, Francia.
**Palabras clave:** Araneae, Theraphosidae, Theraphosinae, anomalías, hileras, Ecuador.

## Introduction

Spinneret morphology in spiders is typically stable, with their numbering and position consistent enough to often aide in taxonomic determination to family level (e.g. Jocqué & Dippenaar-Schoeman, 2006). Nonetheless, anomalies have been reported, predominately in the study of embryogenesis (Jacuński, Templin & Napiórkowska, 2002; Napiórkowska, Jacuński & Templin, 2006; Templin, Jacuński & Napiórkowska, 2009) and the study of spigots during systematic work (Lopardo & Hormiga, 2015; Townley & Harms, 2017). Kaston (1963) reported spinneret anomaly in two preserved adult spiders, in one specimen this was the only anomaly whereas in the second specimen, it was accompanied by an epigynal teratology. Whilst it is demonstrable that spinneret anomalies have been reported in araneomorph spiders we are unaware of any detailed reports of spinneret anomalies in mygalomorph taxa. In this work, we detail and illustrate two spinneret anomalies in a theraphosine specimen housed in the collections of the Museum National d'Histoire Naturelle (MNHN) thereby providing the first detailed report of such anomalies within a theraphosid spider.

## Materials and methods

Photographs were made using a Canon EOS 6D Mark II attached to a Leica MZ12.5 with images stacked using Helicon Focus software. Abbreviations: MNHN = Museum National d'Histoire Naturelle, Paris, France; MRAC = Musée Royal de l'Afrique Centrale, Tervuren, Belgium; NHMUK = Natural History Museum, London, United Kingdom.

## Results

**Theraphosinae sp. undet.**

MATERIAL EXAMINED: 2 ♂♂, 2 ♀♀ MNHN AR-4637, Quito, 4527.

REMARKS: Whilst examining historical material from the Eugène Simon collection in the MHNH the authors came across a jar containing four theraphosine specimens from Quito, Ecuador which had been previously determined to be *Cyclosternum schmardae* Ausserer, 1871. These specimens were subsequently loaned for further examination. It is not possible to say with certainty these specimens are conspecific to *C. schmardae* [syntypes (all female) in Naturhistorisches Museum Wien, examined] at present as ongoing revisionary work of *Cyclosternum* Ausserer, 1871 has revealed many misidentifications and misplaced species which require modern redescription (Gabriel & Sherwood in prep). Nonetheless, during closer examination of these specimens it was noticed that one female specimen had asymmetrical posterior lateral spinnerets, the left hand spinneret being typical but the right hand spinneret being more than half the size, in both length and width, to the left hand spinneret (Fig. 1-3). Additionally, the right hand side anterior spinneret was missing, but the left hand side spinneret was present and appeared normal in morphology. Both pairs of spinnerets in the other three specimens present in the same jar were typical and displayed no apparent anomalies. We could find no evidence of additional morphological anomalies in the atypical female (e.g. spermathecae, eyes). Indeed, all other aspects of morphology were congruent with the similar anatomy and morphometrics of the typical female also present in the same jar. The left and right spinnerets of the typical specimens all varied <0.3 mm on their opposing sides whereas the anomalous right spinneret of the atypical female was 1.4 mm shorter in total compared to the typical left spinneret.

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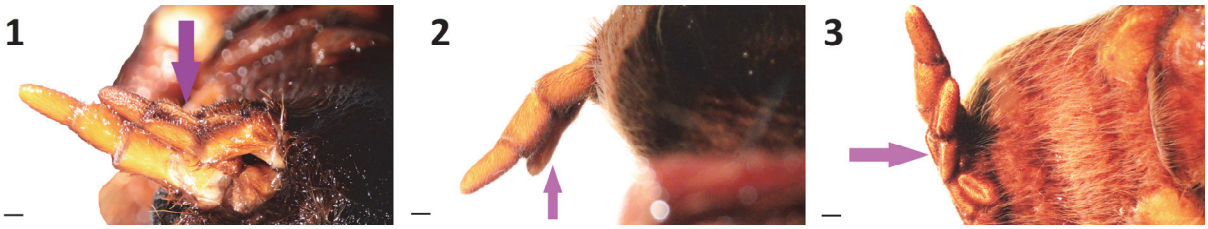



**Fig. 1-3.** Theraphosinae sp. undet. non-type female (MNHN AR-4637), atypical specimen with spinnerets showing asymmetry and anomaly, **1** apical view, **2** lateral view (right hand side), **3** ventral view, purple arrows indicate anomalous spinneret. Scale lines = 1mm.

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