

Ocular and appendage anomalies in a *Thomisus* from India (Araneae: Thomisidae)

Rishikesh Tripathi¹, Danniella Sherwood^{2,3,*} & Ambalaparambil Vasu Sudhikumar^{1,*}

¹ Centre for Animal Taxonomy and Ecology, Department of Zoology, Christ College, Irinjalakuda, Thrissur, Kerala 680 125, India; e-mail: rishikesh.tripathi14@gmail.com

² Arachnology Research Association, 124 City Road, London, EC1V 2NX, United Kingdom

³ Fundación Ariguanabo; 4111; Calle 58; e/ ave. 41 y ave.43; San Antonio de los Baños; Provincia Artemisa c.p. 18100, Cuba

* Corresponding authors: danni.sherwood@hotmail.com and spidersudhi@gmail.com

Abstract : Anomalies in the right-hand eyes and left-hand legs of a subadult female of the genus *Thomisus* Walckenaer, 1805 collected from the Thar Desert, India are detailed, along with photomicrographs.

Key words: teratology, morphology, eyes, legs, crab spider

Anomalías oculares y de apéndices en un *Thomisus* de la India (Araneae: Thomisidae)

Resumen: Se detallan las anomalías en el ojo derecho y la pata izquierda de una hembra subadulta del género *Thomisus* Walckenaer, 1805 recolectadas en el desierto de Thar, India, junto con microfotografías.

Palabras clave: teratología, morfología, ojos, patas, araña cangrejo

The genus *Thomisus* Walckenaer, 1805 currently contains 143 valid species (World Spider Catalog, 2024) and is the type genus of the family Thomisidae Sundevall, 1833, better known as crab spiders. In India (inclusive of the mainland and all islands), *Thomisus* is presently recorded on the basis of 48 species, two of which may or may not occur in present-day India, being taxa from the enigmatic Yarkand Expedition (see Simmons & Marusik, 2022). Despite this reasonably large number of species, the Indian crab spiders are very poorly taxonomically known, with most species not being recorded since their historical descriptions, which often lack crucial detail.

Ocular anomalies are the most common form of teratology in spiders (e.g. Kaston, 1968; Wozny, 1976; Kaston, 1982; Chamé-Vázquez, & Jiménez, 2020) and has been recorded at least once before in the thomisids. An immature specimen of *Misumenops* sp. was reported from the United States by Jennings (1971) with a disproportionately small anterior median eye on the right side of the ocular tubercle. Similar to eye anomalies, leg deformities rank as the second most frequently reported abnormalities in spiders (e.g. Napiórkowska *et al.*, 2015). Numerous scientific experiments have been conducted to investigate the various factors contributing to the occurrence of leg anomalies in spiders (Napiórkowska *et al.*, 2023).

Recently, whilst examining spider samples from the Thar Desert, India, we observed an anomalous subadult female of the genus *Thomisus*. Given the taxonomic chaos in Indian Thomisidae, and the immaturity of the specimen, it is not possible to identify it below the genus level. The specimen is deposited in the National Centre for Biological Sciences (NCBS), Bangalore, India (Curator: Tarun Karmakar) and full label data for the specimen is as follows: INDIA: Rajasthan, Jaisalmer, Thar Desert, Sam area (26°49'59.1"N, 70°30'50.7"E), 242 m a.s.l., found on wall, 28/08/2021, leg. R. Tripathi. The anomalies found – in both the eyes and the legs – are detailed below.

The right-hand projection of the ocular tubercle is reduced in comparison to the non-anomalous left-hand side (Fig. 1A-H); also on the right-hand side, the anterior lateral eye, and both the posterior median and lateral eyes are missing. Furthermore, on the left-hand side of the specimen legs I–II are reduced in size and aspinose (Figs. 1A-C), in direct contrast to the non-anomalous right-hand legs I–II.

In natural habitats, numerous deformities have been observed in arthropods, yet the underlying causes remain largely unidentified. Various factors could contribute to these deformities, some of which have been explored through experimental embryological studies (see

above). These factors may include exposure to chemical reagents, fluctuations in humidity, radiation, extreme temperatures, and mechanical disturbances (see Napiórkowska, *et al.*, 2023). Regardless of the origin in this specimen, we are able to provide yet another case of teratology in thomisids, the first for which coexist both ocular and appendicular anomalies.

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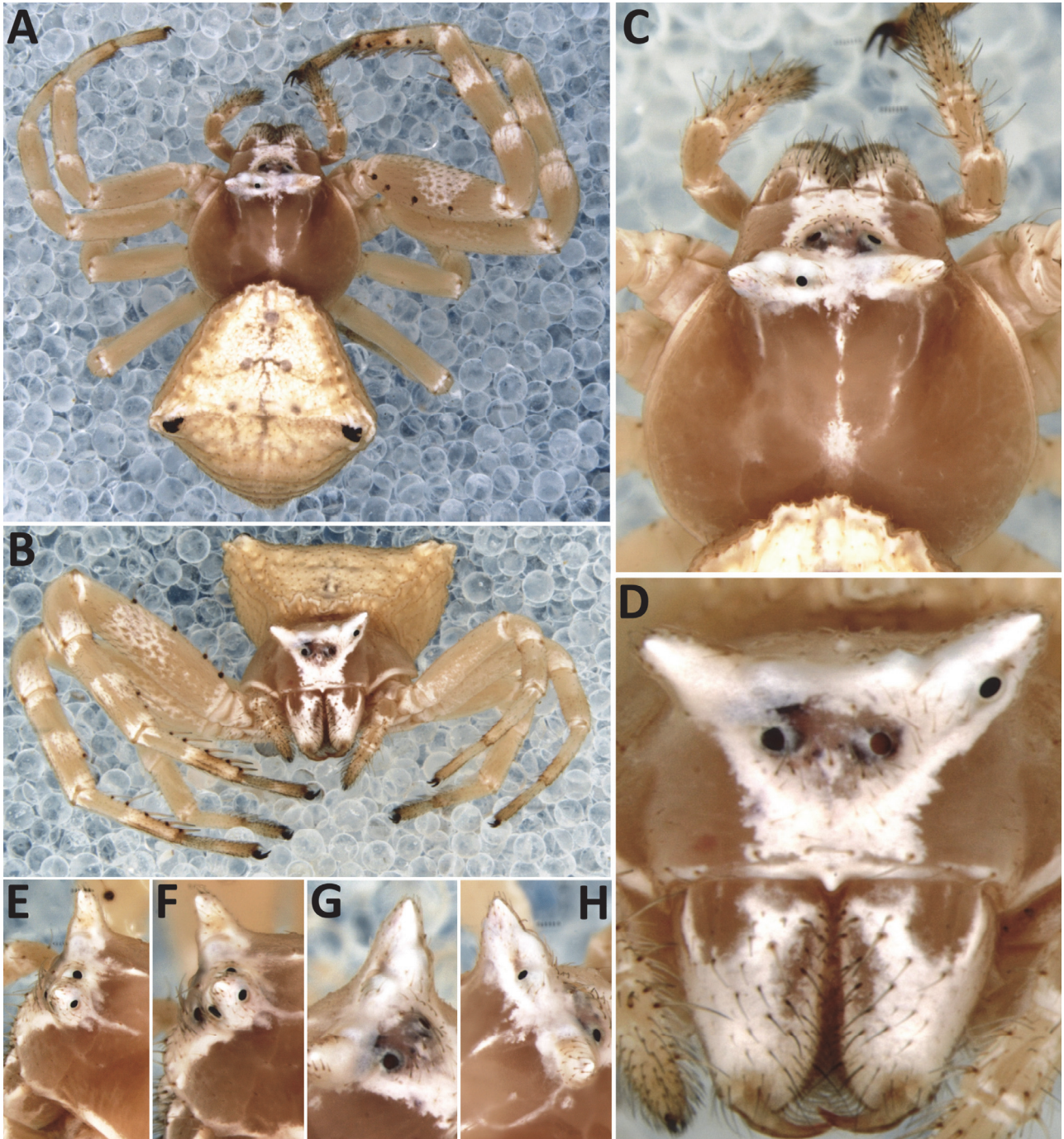


Fig. 1: Subadult female of *Thomisus* sp. from India with ocular and appendage teratology. **A.** habitus, dorsal view. **B.** habitus, frontal view. **C.** carapace, dorsal view. **D.** ocular tubercle and chelicerae, frontal view. **E.** ocular tubercle, lateral view (left-hand side). **F.** *ibid*, at slightly different angle. **G.** ocular tubercle, lateral view (right-hand side). **H.** *ibid*, at slightly different angle.