

First report of the brown widow spider, *Latrodectus geometricus* Koch, 1841 (Araneae, Theridiidae) from southern India

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ABSTRACT: *Latrodectus geometricus* (Koch, 1841) is a widow spider native to Africa and introduced in to several countries from both the Americas to Japan. Three adult female *L. geometricus* with three egg-sacs were observed in Nagercoil, Kanniyakumari district, Tamil Nadu. The present record extends its known distributional range to further south being the southernmost occurrence of the species in India.

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KEY WORDS: Spider, egg-sac, Tamil Nadu, occurrence, distributional range

The family Theridiidae includes 129 genera, with the genus *Latrodectus* (Walckenaer, 1805) represented by 35 species worldwide. The genus *Latrodectus* is known for its notorious behaviour of male feasting by females and the highly potent neurotoxin. In India, until 2007, only *L. hasselti* Thorell, 1870 was known from the genus (Pocock, 1900; Daniel and Soman, 1961; Tikader, 1987; Siliwal and Kumar, 2001; Hippargi *et al.*, 2012). Subsequently *L. geometricus* Koch, 1841 (Shukla and Broome, 2007), *L. elegans* Thorell, 1898 (Kananbala *et al.*, 2012) and *L. erythromelas* (Schmidt and Klaas, 1991; Srinivasulu *et al.*, 2013) were added to the list of widow spiders in India (World Spider Catalog, 2024).

In 1900, Pocock reported *L. geometricus* from Karachi (Pakistan) which was once in the British

India. And after that in 2007, *L. geometricus* was first reported from Pune, Maharashtra (Shukla and Broome, 2007). Later on, Satam (2015) redescribed the species and significantly the male was reported for the first time in India. In the same year the species was sighted in few other places within Gujarat (Vasava *et al.*, 2015). After that no further sightings of the species was reported from southern India. Thus, this is the first published record of occurrence of *L. geometricus* in Southern India.

On 19 May 2024, A mature female was observed on a web with three ruptured egg sacs under the seat of the scooter parked at a residential area in Nagercoil, Kanniyakumari district, Tamil Nadu (8.160773° N; 77.416273° E) (Fig. 2). While close examining; vehicle, we observed two other mature females moving along the web build within the rim

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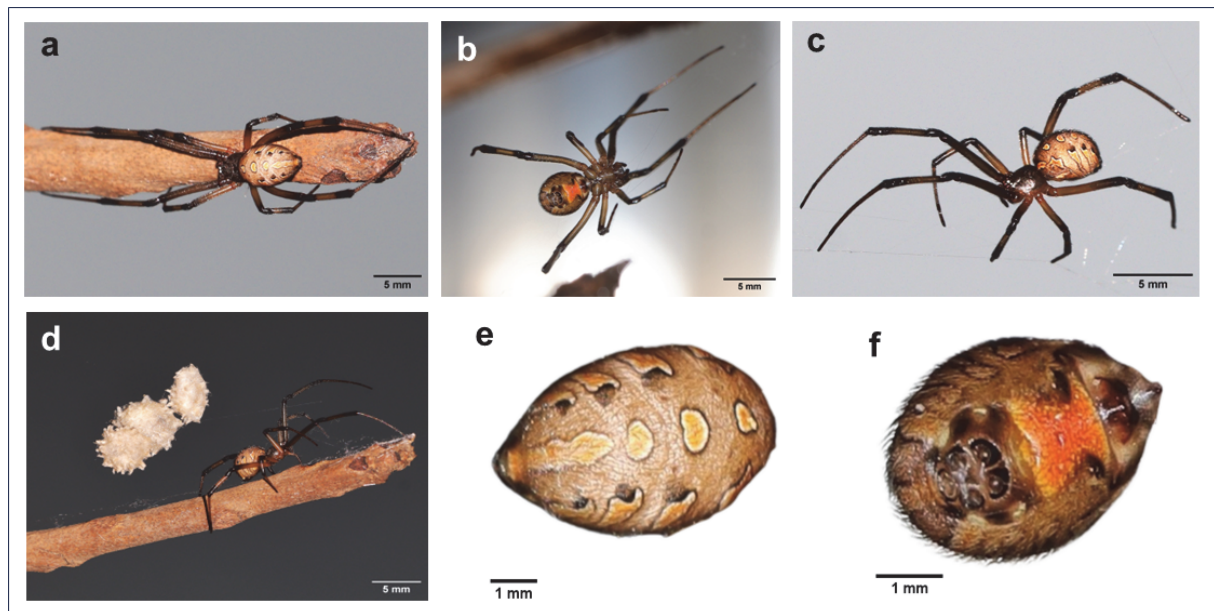


Fig. 1 *Latrodectus geometricus* (Koch, 1841) recorded in Nagercoil, Kanniyakumari district, Tamil Nadu. a-dorsal view of adult female; b- ventral view of adult female; c- lateral view of adult female; d- an adult female and typical egg-sacs with conical protuberances; e- dorsal view of abdomen pattern; f- Ventral view of abdomen with distinct hourglass marking and spinneret

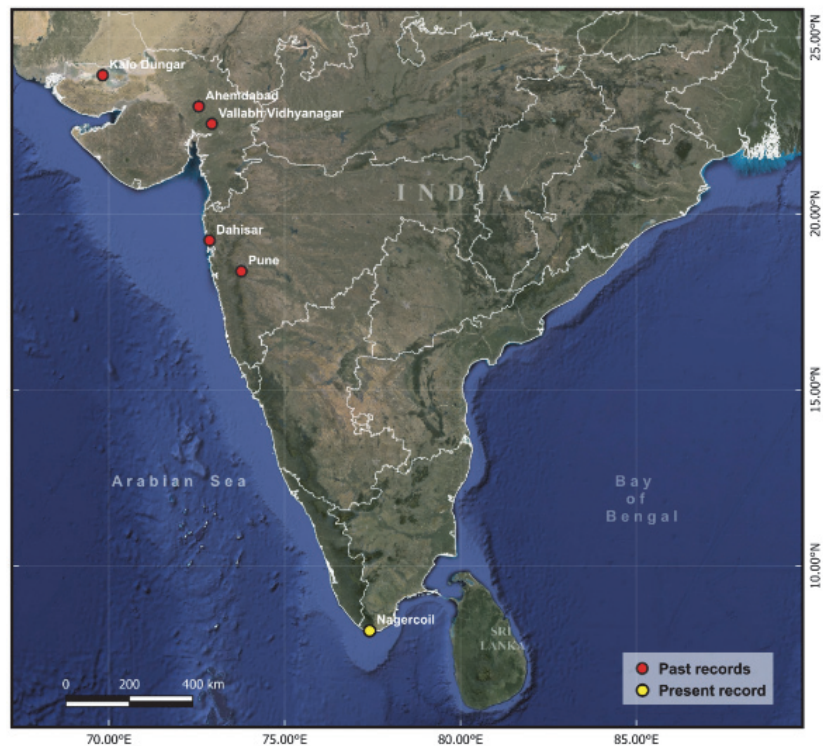


Fig. 2 Map illustrating the occurrence of *Latrodectus geometricus* in India with past records (red dots) and the present record (yellow dot) in Tamil Nadu (Source: Google Satellite Imagery modified using QGIS Desktop 3.34.8)

of the wheel. The vehicle was occasionally used and remained parked near the garden. Though it is a residential area with moderately busy roads, almost all the houses around that area had a small garden imparting a green environment.

Photographic documentation was done using DSLR Camera (Canon 200D ii). The specimen was identified up to species level by comparing the morphological characters of the specimen and egg-sac from the past literature (Fig. 1a-f) (Koch, 1841a; Smithers, 1944; Shukla and Broome, 2007; Satam, 2015). Typical and distinct bright orange hour glass marking on the ventral surface of abdomen is present (Fig. 1b, f) (Shukla and Broome, 2007). The conical protuberances on the egg-sac are the unique identification key for *L. geometricus* among other *Latrodectus* species (Fig. 1d) (Smithers, 1944; Abalos, 1962; Satam, 2015). The past and present records of the species in India was represented in the map using QGIS software (QGIS Desktop 3.34.8) (Fig. 2).

The present record from Nagercoil, Tamil Nadu is about 1,715km southward from Dahisar in Maharashtra, the recent record of the species in India. This is the first published report of *L. geometricus* in Southern India, along the southern Western ghats of Tamil Nadu. Man-made structures have provided ideal habitats for brown widows, facilitating their rapid range expansion and leading to their cosmopolitan distribution (Garb *et al.*, 2004). The recent southward expansion of the genus *Latrodectus* in India may have resulted from increased transportation networks associated with the country's major industrial corridors, facilitated by globalization and rapid development (Vasava *et al.*, 2015; Roopha *et al.*, 2021). The present record extends the known geographical distribution of this species to further south, being the southernmost occurrence of the species in Indian Subcontinent.

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