## *Portia labiata* (Araneae: Salticidae: Spartaeini) as predator and prey of a synanthropic *Parasteatoda* sp. (Araneae: Theridiidae: Theridiinae)

Sanath R M<sup>1</sup>, Abhijith APC<sup>2</sup>, Vipin Baliga<sup>3</sup>, David E. Hill<sup>4</sup>

<sup>1</sup> Nature Conservation Foundation, Amritha, 1311, 12th Cross, Vijayanagara 1st Stage, Mysore 570017, India, email: sanath.rm89@gmail.com

<sup>2</sup> Indraprastha Organic Farm, Kalalwadi Village, Udboor Post, Mysuru-570008, Karnataka, India, *email*: abhiapc@gmail.com

<sup>3</sup> Aruna Nilaya, Aimangala Village & Post, Virajpet, Kodagu-571218, Karnataka, India, *email*: vipin.baliga@gmail.com

<sup>4</sup> 213 Wild Horse Creek Drive, Simpsonville, South Carolina 29680, *email*: platycryptus@yahoo.com

*Portia labiata* (Thorell 1887) is a widely distributed spartaeine jumping spider in south and southeast Asia, with a range that extends from India to the Philippines (WSC 2024). Like other species in the genus *Portia* Karsch 1878, *P. labiata* will enter webs to prey on a variety of different web spiders (Figure 1; Jackson & Li 1996; Li et al. 1997; Jackson & Nelsen 2011).



**Figure 1.** Sequential photos (1-3) showing a female *Portia labiata* feeding on a female *Parasteatoda* sp. that she has captured (Karnataka, 2 FEB 2021). Note the presence of a small kleptoparasitic spider (arrows). Photo credits: 1-3, Abhijith APC.

*Parasteatoda* Archer 1946 is a large theridiid genus comprised of 43 known species of *cobweb* or *house spiders*, mostly Asian (WSC 2024), and many synanthropic. One species, *P. tepidariorum* (C. L. Koch 1841), has been widely introduced and now has a cosmopolitan distribution. With their irregular webs of tangled silk, theridiids pose a particular hazard to other spiders, including jumping spiders (Ross 2009). Here (Figures 2-3), we document two instances where an adult *Portia labiata* has been captured by a female *Parasteatoda*.



**Figure 2.** Sequential photos (1-12) showing the capture of a female *Portia labiata* by a female *Parasteatodes* (Karnataka). The *Portia* approached this *Parasteatodes* from a distance but became entangled in her silk as the *Parasteatodes* wrapped her with more silk (1-3). Subsequently the *Portia* was bitten (4), then wrapped with more silk, and eaten (9, 11). Photo credits: 1-12, Vipin Baliga.



**Figure 3.** Sequential photos (1-3) showing a nesting female *Parasteatoda* sp. feeding on a male *Portia labiata* (Karnataka, 20 JUN 2022). Photo credits: 1-3, Sanath R M.

Male and female *Portia labiata* have distinctive field marks, but unfortunately we still have no reliable guides to the identification of *Portia* species in the field, and these have sometimes been confused with two other widespread Asian *Portia*, *P. albimana* (Simon 1900) (see Ahmed et al. 2015) and *P. fimbriata* (Doleschall 1859). For this reason we document the appearance of both male, female, and immature male *P. labiata* in Figure 4.



**Figure 4 (continued on next page).** Female (1-2) and male (3-8) *Portia labiata* from Karnataka. **1**, Female guarding her brood. **2**, Female feed on a captured spider. **3**, Adult male (missing leg L4). **4-5**, Adult male feeding on a nematoceran. Note the broad, white bands on the margins of the carapace, and the narrower, white median thoracic band. Photo credits: 1-8, Sanath R M.



**Figure 4 (continued from previous page). 6**, Male feeding on a captured spider. **7**, Penultimate male feeding on a captured spiderling. This male feed on a series of immatures from this brood. **8**, Frontal view of adult male. Note the prominent retrolateral tibial apophysis and basal cymbial apophysis of each pedipalp. Male and female *P. albimana* have a much more extensive cover of white setae on their face and pedipalps.

## Acknowledgements

The first author expresses sincere gratitude to Manu, Ranjith, Gowtham, and Vijay Kumar for their invaluable assistance during field observations. The first author also thanks Anand Osuri and Cariappa KM for enabling the work, and Cholamandalam Investments and Finance Company, Arvind Datar, and CS Rangavittal for funding support. We also thank the arachnologists who named and described these spiders (Figure 5).



**Figure 5.** Prominent arachnologists responsible for the naming of *Portia labiata*. **1**, Tord Tamberlan Teodor Thorell (1830-1901), Swedish arachnologist who first described a female *Portia labiata* (as *Linus labiatus*) from Burma in 1887. **2**, Ferdinand Anton Franz Karsch (1853-1936), German arachnologist who named the genus *Portia* in 1878. It was only much later (Wanless 1978) that *labiata* was recognized as a *Portia* by Fred Wanless (1940-2017).

## References

- Abhijith et al. 2021. Abhijith A. P. C., Pavan Ramachandra and David E. Hill. 1 DEC 2021. *Portia* cf. *labiata* (Araneae: Salticidae: Spartaeini) as predator and prey of cellar spiders (Araneae: Pholcidae: *Crossopriza*) in Karnataka, India. Peckhamia 251.1: 1-5.
- Ahmed et al. 2015. Javed Ahmed, Yogendra Satam, Rajashree Khalap and Krishna Mohan. 10 AUG 2015. First record of *Portia albimana* (Simon, 1900) from Maharashtra, Mumbai (Araneae: Salticidae: Spartaeinae). Peckhamia 129.1: 1-6.
- Archer 1946. Allan F. Archer. The Theridiidae or comb-footed spiders of Alabama. Museum Paper, Alabama Museum of Natural History 22: 1-67.
- **C. L. Koch 1841.** C. L. Koch. Die Arachniden. C. H. Zeh'sche Buchhandlung, Nürnberg, Achter Band: 41-131, pl. 265-288, fig. 621-694; Neunter Band: 1-56, pl. 289-306, fig. 695-726.
- **Doleschall 1859.** C. L. Doleschall. Tweede Bijdrage tot de kennis der Arachniden van den Indischen Archipel. Acta Societatis Scientiarum Indo-Neerlandicae 5 (5): 1-60, pl. 1-17.
- Jackson & Li 1996. Daiqin Li and Robert R. Jackson. JUL 1996. Prey preferences of *Portia fimbriata*, an araneophagic, webbuilding jumping spider (Araneae: Salticidae) from Queensland. Journal of Insect Behavior 9: 613–642.
- Jackson & Nelson 2011. Robert R. Jackson and Ximena J. Nelson. 8 JAN 2011. Reliance on trial and error signal derivation by *Portia africana*, an araneophagic jumping spider from East Africa. Journal of Ethology, 29 (2): 301–307.
- Karsch 1878. Exotisch-araneologisches. Zeitschrift für die Gesammten Naturwissenschaften 51: 322-333, 771-826.
- Li et al. 1997. Daiqin Li, Robert R. Jackson and Alberto Barrion. Prey preferences of *Portia labiata*, *P. africana*, and *P. schultzi*, araneophagic jumping spiders (Araneae: Salticidae) from the Philippines, Sri Lanka, Kenya and Uganda. New Zealand Journal of Zoology 24: 333–349.
- **Ross 2008.** Lucian K. Ross. 25 SEP 2008. Predation on *Platycryptus undatus* (De Geer 1778) by *Parasteatoda tepidariorum* (C. L. Koch 1841) (Araneae: Salticidae, Theridiidae). Peckhamia 72.1: 1.
- Simon 1900. Eugène Simon. Etudes arachnologiques. 30e Mémoire. XLVII. Descriptions d'espèces nouvelles de la famille des Attidae. Annales de la Société Entomologique de France 69: 27-61.
- **Thorell 1887.** T. Thorell. Viaggio di L. Fea in Birmania e regioni vicine. II. Primo saggio sui ragni birmani. Annali del Museo Civico di Storia Naturale di Genova 25: 5-417.
- Wanless 1978. F. R. Wanless. 21 DEC 1978. A revision of the spider genus *Portia* (Araneae: Salticidae). Bulletin of the British Museum of Natural History, Zoology 34: 83-124.
- WSC 2024. World Spider Catalog. Version 25.0. Natural History Museum Bern, online at http://wsc.nmbe.ch, accessed on 2 MAR 2024. doi: 10.24436/2