PECKHAMIA 217.1, 3 August 2020, 1—5 ISSN 2161—8526 (print)
LSID urn:lsid:zoobank.org:pub:402D224E-DE5E-44F3-9067-D59D07616C3A (registered 02 AUG 2020) ISSN 1944—8120 (online)

Conspecific oophagy by the jumping spider *Brettus cingulatus* (Araneae: Salticidae: Spartaeini) in Karnataka, India

Harshith J. V. [1] and David E. Hill [2]

[1] S/o Vijay J., Seminary 2nd Cross, Jeppu, Valencia, Mangalore - 575002, India, *email* hjv1986@gmail.com
[2] 213 Wild Horse Creek Drive, Simpsonville, SC 29680-6513, USA, *email* platycryptus@yahoo.com

Brooding by female *Brettus cingulatus* Thorell 1895, including occupation of a single nest site by a series of different females, has been documented previously (Ahmed et al. 2017, 2018; Abhijith & Hill 2019). Although males of this species may cohabit with a penultimate female prior to mating (Pai & Hill 2020), they may also mate with previously mated females as these females guard their eggs on the nest (Abhijith & Hill 2019). Mating with a nesting female has also been documented for the related species *Neobrettus tibialis* (Prószyński 1978) in India (Banerjee et al. 2019).

On 2 AUG 2018, 13:00-14:30 IST, the senior author (HJV) photographed a handicapped female *Brettus cingulatus* at his home in Mangalore, Karnataka. This female was missing legs I and II on the left side as she occupied her nest, guarding her egg cluster (Figure 1). When observed intermittently during the next two days (3-4 AUG), she was still in this position.

However, on the fourth day (5 AUG, ~08:30 IST), a different, intact adult female *B. cingulatus* occupied the nest, and the handicapped female was moving slowly on a lower branch of the same plant. Initially, the egg cluster was still intact, but observation later in the day (5 AUG, ~15:30 IST) revealed that the new female had devoured several of the eggs (Figure 2:1-4). This was evident from the damage to the cluster, and the enlarged abdomen of this female. Near dusk (5 AUG, ~18:00 IST) more eggs had been eaten and the abdomen of this female was even larger (Figure 2:5-10). Two hours later (5 AUG, ~20:00 IST) almost all of the eggs had been eaten.

This behaviour, alternately termed *conspecific oophagy* or *egg cannibalism*, has been described in a number of beetle species, to include the chrysomelid *Disonycha* and the coccinellid *Menochilus* (Morrison et al. 2020; Singh et al. 2020). The same beetles may also engage in *heterospecific oophagy*. Conspecific oophagy may play an important role in the population regulation or intraspecific competition of these species when normal prey was scarce. In their review of oophagy by amphibians, Denoël & Demars (2008) also suggested that this was facultative (an adaptation to scarcity of normal prey), but also that it provided a valuable food resource to the predator.

Indranil Banerjee has observed that females of the related spartaeine *Neobrettus tibialis* engage in both *conspecific oophagy* and *filial oophagy*, the latter a reference to the fact that they will feed on their own eggs (Ahmed et al. 2018; Banerjee et al. 2019). One of these spiders was also observed as it stalked the nest of a *Brettus*.

Figure 1. Handicapped (missing left legs I and II) female *Brettus cingulatus* guarding her nest.

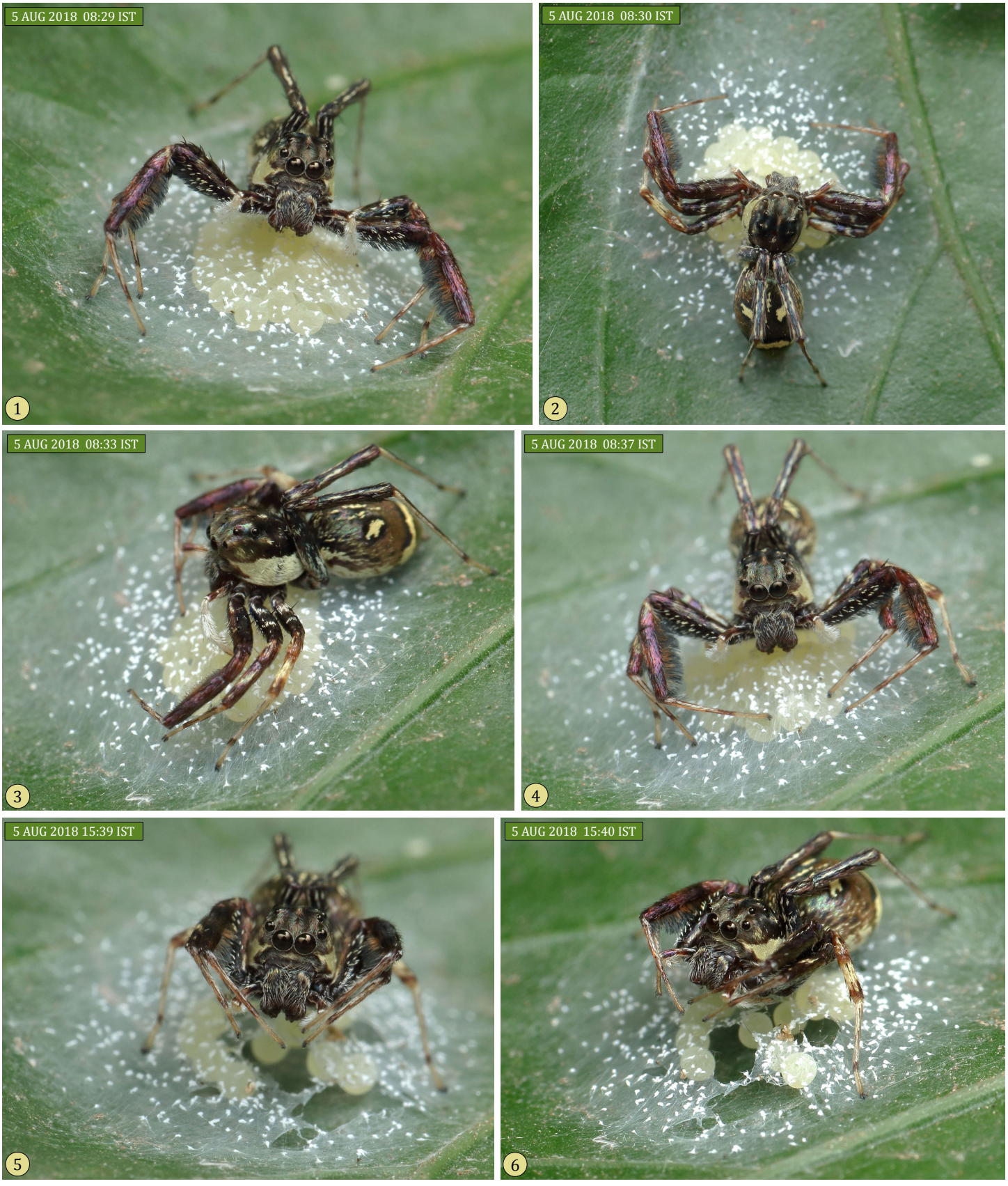

Figure 2 (continued on next page). Intact female *Brettus cingulatus* occupying the nest (1-4) and later feeding on the eggs of its previous inhabitant (5-10).

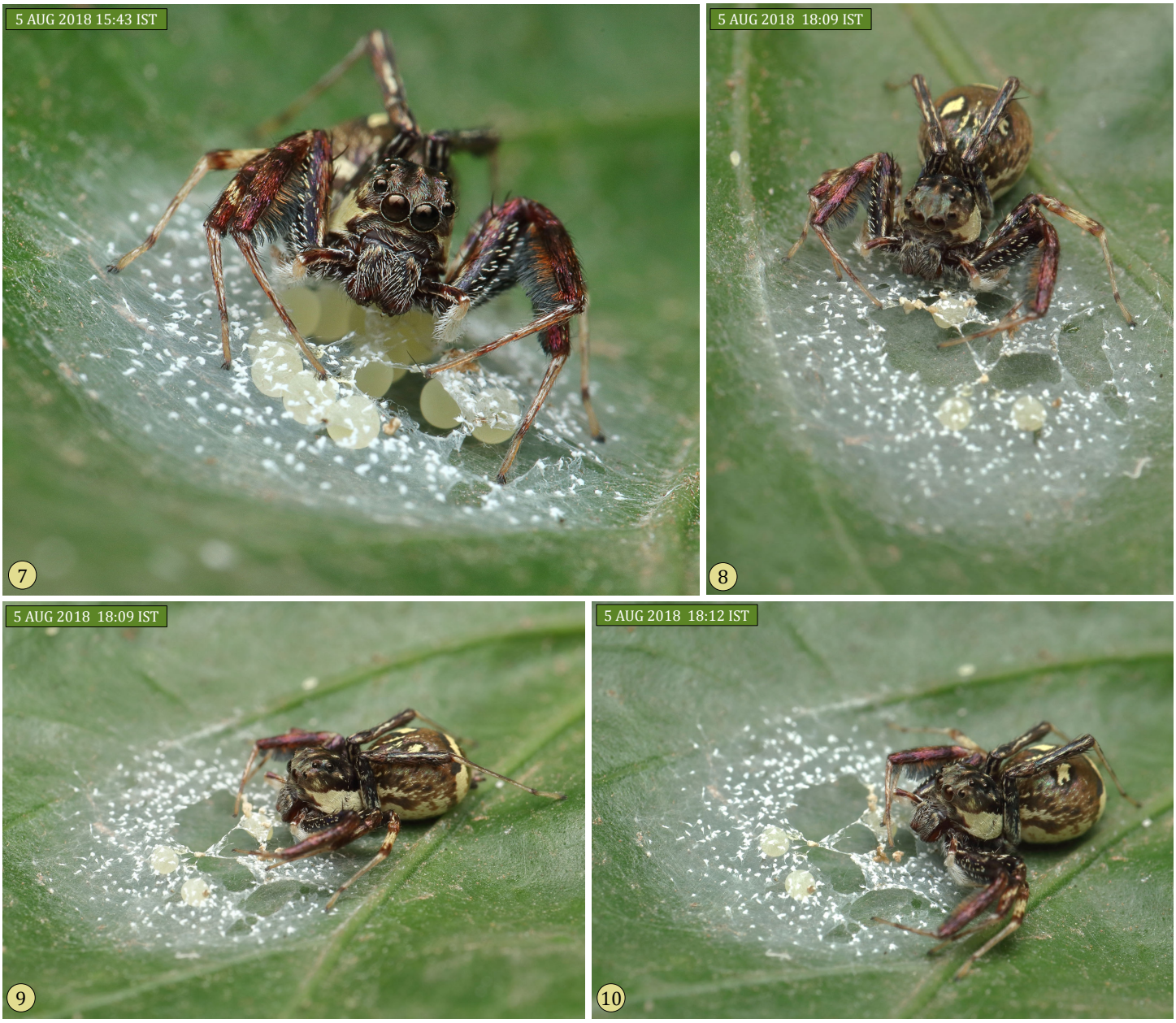

Figure 2 (continued from previous page). Intact female *Brettus cingulatus* occupying the nest (1-4) and later feeding on the eggs of its previous inhabitant (5-10). **8-10,** At dusk few eggs remained. Note the engorged abdomen of this spider.

References

Abhijith A. P. C. and D. E. Hill. 2019. Notes on the jumping spider *Brettus cingulatus* in Karnataka (Araneae: Salticidae: Spartaeini). Peckhamia 186.1: 1-14.

Ahmed, J., D. E. Hill, I. Banerjee, R. Khalap, R. J. Pearce and K. Mohan. 2018. First record of the genus *Neobrettus* Wanless 1984 from India, with some natural history notes (Araneae: Salticidae: Spartaeina). Peckhamia 166.1: 1-13.

Ahmed, J., R. Khalap, D. E. Hill, Sumukha J. N. and K. Mohan. 2017. First record of *Brettus cingulatus* from India, with a review of Brettus in South and Southeast Asia (Araneae: Salticidae: Spartaeinae). Peckhamia 151.1: 1-13.

Banerjee, I., J. T. D. Caleb and D. E. Hill. 2019. New observations of the jumping spider *Neobrettus tibialis* (Araneae: Salticidae: Spartaeini) in West Bengal, India. Peckhamia 198.1: 1-9.

Denoël, M. and B. Demars. 2008. The benefits of heterospecific oophagy in a top predator. Acta Oecologica 34: 74-79.

Morrison, C. R., W. Armstrong and L. Gilbert. 2020. Egg cannibalism by passion vine specialist *Disonycha* Chevrolet beetles. pp. 1-17, bioRxiv preprint doi: https://doi.org/10.1101/2020.04.15.005611

Pai, M. J. and D. E. Hill. 2020. Cohabitation and mating by *Brettus cingulatus* (Araneae: Salticidae: Spartaeini) in Karnataka. Peckhamia 210.1: 1-5.

Prószyński, J. 1978. Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museums in Basel. Araneae: Fam. Salticidae, Genera *Aelurillus*, *Langona*, *Phlegra* and *Cyrba*. Entomologica Basiliensis 3: 7-21.

Simon, E. 1900. Etudes arachnologiques. 30e Mémoire. XLVII. Descriptions d'espèces nouvelles de la famille des Attidae. Annales de la Société Entomologique de France 69: 27-61.

Singh, S., M. Geetanjali and Omkar. 2020. Ladybird, *Menochilus sexmaculatus* (Fabricius) can survive on oophagy but with altered fitness than aphidophagy. Current Science 118 (10): 1602-1608.

Thorell, T. 1895. Descriptive catalogue of the spiders of Burma. London. 1-406.