

SHORT COMMUNICATION

**First instance of non-sexual cannibalism
in *Plexippus paykulli* (Audouin) (Araneae: Salticidae) in India**

ARAJUSH PAYRA¹*, NIKHIL KUNI¹ & PANKAJ KOPARDE¹

*Department of Environmental Studies, Dr Vishwanath Karad MIT World Peace University,
Pune, Maharashtra, India*

**Corresponding author: arapayra@gmail.com*

Spiders are predominantly obligate carnivores, feeding primarily on insects and often on other arachnids. A few larger species are also known to feed on small vertebrates such as birds, amphibians and reptiles. Earlier, intraspecific predation or cannibalism was thought to be rare in spiders; however, in recent decades such behaviour has been found to be relatively common and widespread across different families (Elgar & Crespi 1992). In nature, several forms of cannibalism have been documented in spiders. These include: (1) sexual cannibalism (females consume males before, during, or immediately after copulation) (Arnqvist & Henriksson 1997; Segoli *et al.* 2008; Boisseau *et al.* 2017); (2) reversed sexual cannibalism (males consume females) (Aisenberg & González 2011; Sentenská & Pekár 2013); (3) matrophagy or gerontophagy (newly hatched juveniles consume their own mother) (Tripathi *et al.* 2020); (4) filial cannibalism (females consume their own eggs or young) (Wise 2006); (5) sibling cannibalism (siblings cannibalise one another) (Wise 2006); (6) oophagy (consumption of eggs, often of conspecifics) (Wise 2006); (7) non-sexual cannibalism, where females devour conspecific females (Ahmed *et al.* 2019; Khalap 2022). Herein, we report an instance of non-sexual male cannibalism in *Plexippus paykulli* (Audouin, 1826).

Plexippus paykulli is a dimorphic salticid. Males possess median white stripes on a black carapace and abdomen, whereas females are brownish, with a white medial band on the thoracic region and a white median band accompanied by two subdorsal white spots on the posterior third of the abdomen (Nentwig *et al.* 2025). *Plexippus paykulli* is widely pantropical and usually inhabits bushes, shrubs and human settlements (WSC 2025). On 25 May 2021, near Bara Solemanpur Village (21.67210°N 87.57483°E) in Purba Medinipur District, West Bengal, India, the authors observed an unusual instance of cannibalism in which a male *P. paykulli* was seen consuming a conspecific male. The predator male was noticeably larger than the prey male (Fig. 1), and the event lasted for about five minutes.

Male–male competition is well documented in spiders, and it usually occurs as a means of gaining access to females for mating (Austad 1983; Leimar *et al.* 1991).



Fig. 1. An adult male of *Plexippus paykulli* feeding on a conspecific male, Purba Medinipur District, West Bengal, India. (Photo: A. Payra)

Male–male fights are highly ritualized and exhibit distinct behavioural patterns during combat, ranging from visual, vibratory, acoustic and tactile to chemical signals (Schmitt *et al.* 1992). Usually, larger males expel smaller males from the web or mating territory, and the combat may result in injuries or even the death of rivals (Austad 1983). Non-sexual cannibalism may occur due to limited food resources or unavailability of prey. However, the present case is based solely on an opportunistic observation, and therefore it is difficult to determine what actually triggered the male spider to prey on a conspecific male. To date, cases of males cannibalising other conspecific males appear to be very scarce, particularly in *Plexippus paykulli* (Jetty 2021).

REFERENCES

- AHMED, J., KHALAP, R., KUMBHAR, S., HILL, D.E., PEARCE, R.J. & MOHAN, K. 2019. Field notes on the jumping spider *Telamonia dimidiata* in Maharashtra (Araneae: Salticidae: Plexippina). *Peckhamia* **181** (1): 1–6.
<https://doi.org/10.5281/zenodo.7169300>

- AISENBERG, A., COSTA, F.G. & GONZALEZ, M. 2011. Male sexual cannibalism in a sand-dwelling wolf spider with sex role reversal. *Biological Journal of the Linnean Society* **103** (1): 68–75.
<https://doi.org/10.1111/j.1095-8312.2011.01631.x>
- ARNQVIST, G.O. & HENRIKSSON, S. 1997. Sexual cannibalism in the fishing spider and a model for the evolution of sexual cannibalism based on genetic constraints. *Evolutionary Ecology* **11**: 255–273.
<https://doi.org/10.1023/A:1018412302621>
- AUSTAD, S.N. 1983. A game theoretical interpretation of male combat in the bowl and doily spider (*Frontinella pyramitela*). *Animal Behaviour* **31** (1): 59–73.
[https://doi.org/10.1016/S0003-3472\(83\)80173-0](https://doi.org/10.1016/S0003-3472(83)80173-0)
- BOISSEAU, R.P., WILDER, S.M. & BARRY, K.L. 2017. Sexual and nonsexual cannibalism have different effects on offspring performance in redback spiders. *Behavioral Ecology* **28** (1): 294–303.
<https://doi.org/10.1093/beheco/aww159>
- ELGAR, M.A. & CRESPI, B.J. (Eds) 1992. *Cannibalism. Ecology and evolution among diverse taxa*. Oxford University Press, Oxford. viii+361 pp.
- JETTY, R. 2021. Eating friends? *Facebook: The World Wide Web of Spiders*.
<https://www.facebook.com/groups/1849866391941530/posts/2891510777777081>
- KHALAP, R. 2022. Nonsexual cannibalism by a female *Hyllus semicupreus* (Araneae: Salticidae: Plexippina). *Peckhamia* **260** (1): 1–2.
<https://doi.org/10.5281/zenodo.6360597>
- LEIMAR, O., AUSTAD, S. & ENQUIST, M. 1991. A test of the sequential assessment game: fighting in the bowl and doily spider *Frontinella pyramitela*. *Evolution* **45** (4): 862–874.
<https://doi.org/10.1111/j.1558-5646.1991.tb04355.x>
- NENTWIG, W., BLICK, T., BOSMANS, R., HÄNGGI, A., KROPP, C. & STÄUBLI, A. 2025. *Spiders of Europe*. Ver. 08.2025. <https://doi.org/10.24436/1>
- SCHMITT, A., SCHUSTER, M. & BARTH, F.G. 1992. Male competition in a wandering spider (*Cupiennius getazi*, Ctenidae). *Ethology* **90** (4): 293–306.
<https://doi.org/10.1111/j.1439-0310.1992.tb00840.x>
- SEGOLI, M., ARIELI, R., SIERWALD, P., HARARI, A.R. & LUBIN, Y. 2008. Sexual cannibalism in the brown widow spider (*Latrodectus geometricus*). *Ethology* **114** (3): 279–286.
<https://doi.org/10.1111/j.1439-0310.2007.01462.x>
- SENTENSKÁ, L. & PEKÁR, S. 2014. Eat or not to eat: reversed sexual cannibalism as a male foraging strategy in the spider *Micaria sociabilis* (Araneae: Gnaphosidae). *Ethology* **120** (5): 511–518.
<https://doi.org/10.1111/eth.12225>
- TRIPATHI, R., JANGID, A.K., SILI WAL, M. & DUTTA, S. 2020. The first report of matriphagy in *Stegodyphus pacificus* Pocock 1900. *Acta Arachnologica* **69** (1): 17–21.
<https://doi.org/10.2476/asjaa.69.17>
- WISE, D.H. 2006. Cannibalism, food limitation, intraspecific competition and the regulation of spider populations. *Annual Review of Entomology* **51**: 441–465.
<https://doi.org/10.1146/annurev.ento.51.110104.150947>
- WSC [WORLD SPIDER CATALOG]. 2025. *World Spider Catalog*. Ver. 26. Natural History Museum Bern. <https://doi.org/10.24436/2> (accessed 30.08.2025)