

Araneophagic behavior in *Plexippus petersi* (Karsch 1878) (Araneae: Salticidae: Plexippoida: Plexippinae)

Javed Ahmed¹, Krishna Mohan², Rajashree Khalap³ and David E. Hill⁴

¹ Panchavati Housing Society, Building No. A/3, Flat No. H/8, Opp. Police Camp, Vijay Nagar, Marol Maroshi Road, Andheri (East), Mumbai: 400059, *email* curiocritters@gmail.com

² Prabhu Hospital. Hospital Cross Road, Moodubidire - 574227, India, *email* drkrishi@gmail.com

³ 5 - A, Sagar Sangeet, 58 Shahid Bhagat Singh Marg, Colaba, Mumbai 400005, *email* rajashree.khalap@gmail.com

⁴ 213 Wild Horse Creek Drive, Simpsonville, SC 29680, USA, *email* platycryptus@yahoo.com

Key words: araneophagy, *Hersilia*, jumping spider, Karnataka, India, *Plexippus paykulli*, salticid

The genus *Plexippus* C. L. Koch 1846 is represented by six species in India: *P. paykulli* (Audouin 1826), *P. petersi* (Karsch 1878), *P. redimitus* Simon 1902, *P. calcutaensis* (Tikader 1974), *P. andamanensis* (Tikader 1977), and *P. gajbe* Karthikeyani & Kannan 2013 (Tikader 1987, WSC 2015). With the exception of *P. paykulli*, these spiders have had little study and their natural history, including behavior, biology, and distribution, is little known.

On 20 May, 2015, in Moodubidire, Karnataka, India, at about 11:30 am, a female *P. petersi* located on the ledge of a garage wall ventilator, eight feet from ground level, was spotted stalking a female *Hersilia* Audouin 1826 sp. cryptically positioned five inches below it. Approaching from the left posterior side, the salticid lunged and grabbed the prosoma of its prey from nearly two inches away. After a brief struggle, during which the *Hersilia* tried to envelope its predator and failed, the *P. petersi* captured and carried the captured *Hersilia* back up the wall and into a crevice, in a corner of the ventilator (Figures 1-6).



Figures 1-2. Female *Plexippus petersi* holding a *Hersilia* sp. that it has captured. Photos by K. Mohan.



Figures 3-6. More views of a female *Plexippus petersi* holding a *Hersila* sp., apparently feeding through one of the legs. Leg feeding by salticids was previously described by Hill (2011, 2012). Photos by K. Mohan.

Two additional records of predation on spiders by *Plexippus* are shown in Figures 7-8. While many species of salticids prey upon other spiders, this behaviour has been documented for relatively few species. These include members of the genera *Portia* (Li 1996, Li & Jackson 1997, Clark & Jackson 2000, Harland & Jackson 2000, Jackson et al. 2008) and *Thiodina* (or *Colonus* after Bustamante *et al.* 2015; Hill 2012) that specialize on spiders as prey. Araneophagy by larger salticids that appear to be feeding generalists has also been reported: *Phiale* (Robinson & Valerio 1977) and *Phidippus* (Jackson 1977; Edwards 1980). Although araneophagy via web invasion has been noted in *P. paykulli* (Jackson and Macnab 1989), it has not been reported previously for *P. petersi*.



Figures 7-8. Other examples of predation on spiders by *Plexippus*. **1,** Adult male *P. petersi* feeding on a smaller salticid in Cambodia (16 SEP 2013, photo by Nicky Bay, used with permission). **2,** Female *Plexippus* holding and apparently feeding from one leg of a pholcid spider in Dona Paula, Goa, India (urban, indoors, ~15° 27.500' N, 73° 48.190' E, 23 JUL 2015, photo by Abhishek Jamalabad, used with permission). This was reported to be a *P. paykulli*, but looks more like a *P. petersi*. Females of the two species may be frequently confused. A web that may have been inhabited by this *Pholcus* was located a few inches away from this feeding *Plexippus*.

Acknowledgments

The authors would like to express their heartfelt gratitude to Mr. Kiran Khalap, author and rock climber extraordinaire, and Mr. Sunjoy Monga, Honorary Wildlife Warden, Mumbai, exceptional naturalist and ornithologist par excellence, for taking a keen interest in our discoveries and for their kind help and unfailing support. Nicky Bay, avid naturalist and macro photography aficionado, is thanked for the many wonderful discussions held on the subject. We also thank Nicky Bay and Abhishek Jamalabad for allowing us to include their own photographic records of araneophagy by *Plexippus*.

References

- Audouin, V. 1826.** Explication sommaire des planches d'arachnides de l'Egypte et de la Syrie publiées ... in "Description de l'Egypte...". Histoire Naturelle 1(4): 1-339 (arachnids, pp. 99-186).
- Bustamente, A. A., W. P. Maddison and G. R. S. Ruiz. 2015.** The jumping spider genus *Thiodina* Simon, 1900 reinterpreted, and revalidation of *Colonus* F.O.P-Cambridge, 1901 and *Nilakantha* Peckham & Peckham, 1901 (Araneae: Salticidae: Amycoidea). Zootaxa 4012 (1): 181-190.
- Clark, R. J. and R. R. Jackson. 2000.** Web use during predatory encounters between *Portia fimbriata*, an araneophagic jumping spider, and its preferred prey, other jumping spiders. New Zealand Journal of Zoology 27 (2): 129-136.

- Edwards, G. B. 1980.** Taxonomy, ethology, and ecology of *Phidippus* (Araneae: Salticidae) in Eastern North America. Ph.D. dissertation. University of Florida. pages i-vii, 1-354.
- Harland, D. P. and R. R. Jackson. 2000.** Cues by which *Portia fimbriata*, an araneophagic jumping spider, distinguishes jumping-spider prey from other prey. *Journal of Experimental Biology* 203 (22): 3485-3494.
- Hill, D. E. 2011.** The jumping spider mouth (Araneae: Salticidae). *Peckhamia* 97.1: 1-17.
- Hill, D. E. 2012.** Notes on the jumping spiders *Thiodina puerpera* (Hentz 1846) and *Thiodina sylvana* (Hentz 1846) in the southeastern United States (Araneae: Salticidae). *Peckhamia* 99.1: 1-63.
- Jackson, R. R. 1977.** Prey of the jumping spider *Phidippus johnsoni* (Araneae: Salticidae). *The Journal of Arachnology* 5: 145-149.
- Jackson, R. R. and A. M. Macnab. 1989.** Display, mating, and predatory behaviour of the jumping spider *Plexippus paykulli* (Araneae, Salticidae). *New Zealand Journal of Zoology* 16: 151-168.
- Jackson, R. R., S. D. Pollard and K. Salm. 2008.** Observations of *Portia africana*, an araneophagic jumping spider, living together and sharing prey. *New Zealand Journal of Zoology* 35 (3): 237-247.
- Karsch, F. 1878.** Übersicht der von Peters in Mossambique gesammelten Arachniden. *Monatsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin* 1878: 314-338.
- Karthikeyani, R. and S. Kannan. 2013.** A new *Plexippus* spider from the western Ghats, Kumbakarai Falls, Theni District, Tamil Nadu, south India (Arachnida: Araneae: Salticidae). *Indian Journal of Arachnology* 2(2): 42-46.
- Koch, C. L. 1846.** Die Arachniden. Nürnberg, Dreizehnter Band, pp. 1-234, Vierzehnter Band, pp. 1-88.
- Li, D. 1996.** Prey preferences of specialized jumping spiders (Araneae: Salticidae). Ph.D. Thesis. University of Canterbury. pp. i-x, 1-241.
- Li, D. and R. R. Jackson. 1997.** Influence of diet on survivorship and growth in *Portia fimbriata*, an araneophagic jumping spider (Araneae: Salticidae). *Canadian Journal of Zoology* 75 (10): 1652-1658.
- Robinson, M. H. and C. E. Valerio. 1977.** Attacks on large or heavily defended prey by tropical salticid spiders. *Psyche* 84 (1): 1-10.
- Simon, E. 1902.** Etudes arachnologiques. 31e Mémoire. LI. Descriptions d'espèces nouvelles de la famille des Salticidae (suite). *Annales de la Société Entomologique de France* 71: 389-421.
- Tikader, B. K. 1974.** Studies on some jumping spiders of the genus *Marpissa* from India (family-Salticidae). *Proceedings of the Indian Academy of Science* 79(B): 204-215.
- Tikader, B. K. 1977.** Studies on spider fauna of Andaman and Nicobar islands, Indian Ocean. *Records of the Zoological Survey of India* 72: 153-212.
- Tikader, B. K. 1987.** Handbook of Indian Spiders. Zoological Survey of India, Calcutta, India.
- WSC. 2015.** World Spider Catalog. Natural History Museum Bern. *Online at:* <http://wsc.nmbe.ch>, version 16.5, accessed on 20 AUG 2015.