REPTILES & AMPHIBIANS

Predation on a Juvenile Terciopelo (*Bothrops asper*) by a Tarantula (*Stichoplastoris denticulatus*) in Tirimbina Biological Reserve, Costa Rica

Sergio Villegas[1], Charlyn Elizondo Montano[2], and Justin Rodríguez Castro[2]

[1]Escuela de Biología, Universidad de Costa Rica, San Pedro de Montes de Oca, 11501-2060 San José, Costa Rica (sergio.eco102@gmail.com [corresponding author])
[2]Reserva Biológica Tirimbina, Puerto Viejo de Sarapiquí, Heredia, Costa Rica, 777-1000 San José, Costa Rica
(melanyelizondom@gmail.com; justinrodriguezcastro@gmail.com)

The Terciopelo (*Bothrops asper*) is a mostly nocturnal and terrestrial species that inhabits lowland and foothill rainforests and altered habitats (e.g., agricultural areas, pastures, and human settlements) from northern Mexico to the Pacific lowlands of Colombia and Ecuador at elevations of 0–1,500 m asl (Leenders 2016; Savage 2002). Few predators are known to target adults but raptors (e.g., Laughing Falcons, *Herpetotheres cacchinans*; Swallow-tailed Kites, *Elanoides forficatus*; and Crane Hawks, *Geranospiza caerulescens*) and snakes (e.g., Mussuranas, *Clelia clelia*, and possibly Central American Indigo Snakes, *Drymarchon melanurus*) might prey on them (Sasa et al. 2009). Predators of juveniles and neonates are more numerous and these include birds (e.g., Roadside Hawks, *Buteo magnirostris*, and Domestic Chickens, *Gallus gallus*), mammals (e.g., Western Hog-nosed Skunks, *Conepatus mesoleucus*; Coatis, *Nasua nasua*; and presumably

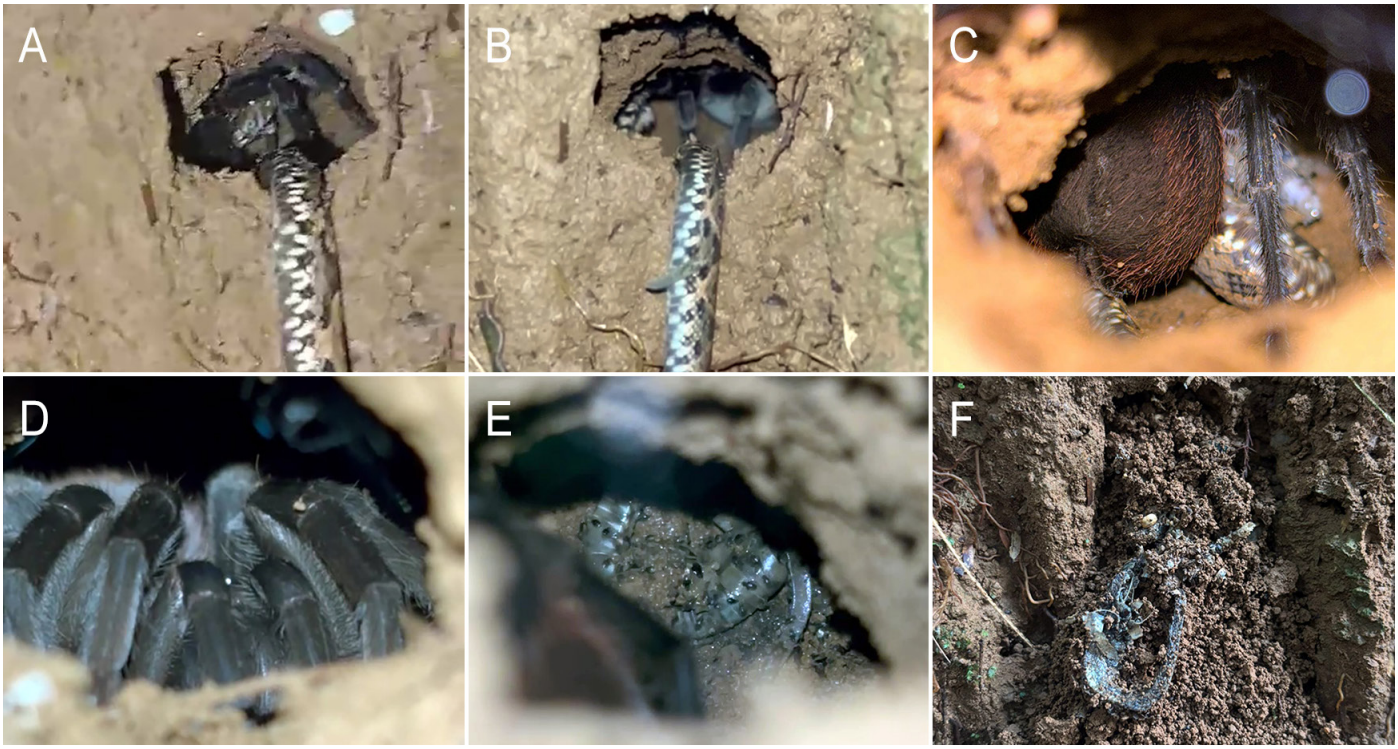

Figure 1. A tarantula (*Stichoplastoris denticulatus*) preying on a juvenile Terciopelo (*Bothrops asper*) in Tirimbina Biological Reserve, Costa Rica, on 16 January (A), 17 January (B), 18 January (C), 19 January (D), 20 January (E), and 21 January 2025 (F). Photographs by Justin Rodríguez Castro (A) and Charlyn Elizondo Montano (B–F).

Reptiles & Amphibians ISSN 2332-4961
https://doi.org/10.17161/randa.v32i1.23400

N. narica and *Nasuella* spp.; Racoons, *Procyon lotor*; and possibly other species), and invertebrates, such as the spider, *Phoneutria* sp., and the tarantula, *Brachypelma* sp. (Sasa et al. 2009; Lopez and Sherwood 2019).

The tarantula, *Stichoplastoris denticulatus* (no standard common name), inhabits rainforests and is only known from Costa Rica (Valerio 1980; Smith 1987). Little is known about this species (Valerio 1980; Smith 1987; Rudloff 1997; World Spider Catalog 2025); however, most tarantulas (Theraphosidae) are nocturnal, live in burrows, and prey on a wide variety of animals, including arthropods, arachnids, and small vertebrates (Lapinski 2020; Guerra-Serrudo et al. 2023). Tarantulas are the second most frequently documented arachnid predator of snakes (Nyffeler and Gibbons 2021). However, reports of predation on viperids are rare (Nuñez-Escalante and Moreno-Chinchilla 2021; Nyffeler and Gibbons 2021; Cunha et al. 2024) and only two are documented predations on *B. asper*, one in Mexico by a *Brachypelma* sp. (Lopez and Sherwood 2019) and another in Costa Rica by a *Sericopelma immensum* (Nuñez-Escalante and Moreno-Chinchilla 2021). We herein document the predation of *B. asper* by *S. denticulatus* in Costa Rica.

At 1930 h on 16 January 2025, along the Theobroma Trail in Tirimbina Biological Reserve, La Virgen, Sarapiquí, Heredia, Costa Rica (10.41369, -84.12114; elev. 174 m asl), JRC observed an adult *S. denticulatus* preying on a juvenile *B. asper* at the tarantula's burrow (although about three-fourths of the snake's body was exposed). The snake was opening and closing its mouth, apparently in pain (Fig. 1A). JRC and CEM monitored this predation event for six days. At 1700 h on 17 January (day 2), the snake's body was mostly inside the tarantula's burrow (only about a quarter of the snake's body remained exposed), the tarantula continued to feed on it, and ants and other insects were evident (Fig. 1B). At 1000 h on 18 January (day 3), the snake's body was entirely inside the tarantula's burrow, the tarantula continued to feed on it, and the abdomen of the spider appeared distended (Fig. 1C; Appendix 1). At 1720 h on 19 January (day 4), only the tarantula was evident very close to the entrance of the burrow and it was no longer feeding (Fig. 1D). At 0850 h on 20 January (day 5), the tarantula was still close to the entrance of the burrow and the snake was evident in the burrow in an advanced state of decomposition (Fig. 1E). At 1545 h on 21 January (day 6), the entrance of the burrow was closed and the remains of the snake had been expelled (Fig. 1F). The tarantula likely closed the entrance to its burrow because it had satisfied its hunger; also, tarantulas are known for being fastidious and typically remove remains of their prey once they have finished feeding (J.P. Hernandez Vásquez, pers. comm., 22 January 2025).To the best of our knowledge, this is the first documented case of *S. denticulatus* preying upon *B. asper*.

Predation is most likely when predators and prey share habitats and activity periods (Curio 2012; Villegas 2020; Villegas and Fernández Sánchez 2024). In this case, both *B. asper* and *S. denticulatus* (like most tarantulas) occur largely in rainforests and are mostly nocturnal and terrestrial (Leenders 2016; Lapinski 2020). Therefore, we suggest that opportunistic encounters between these two species could be relatively common, and that predation by tarantulas on especially nocturnally active snakes likely occurs more frequently than records would indicate.

Acknowledgements

We thank Jose Pablo Hernandez Vásquez for helping us identify the tarantula and for providing additional information.

Literature Cited

Cunha, F.A., A.D. Brescovit, and C.E. Costa-Campos. 2024. Predation of the Common Lancehead, *Bothrops atrox* (Linnaeus, 1758), by the tarantula *Acanthoscurria geniculata* in the Brazilian Amazon. *Herpetology Notes* 17: 141–143.

Curio, E. 2012. *The Ethology of Predation*. Springer Science and Business Media, New York, New York, USA.

Guerra-Serrudo, J.F., E. Aliaga-Rossel, and N. Herrera-Salazar. 2023. Tarántulas (Araneae: Theraphosidae) de Bolivia y su conservación. Tarantulas (Araneae: Theraphosidae) from Bolivia and their conservation. *Ecología en Bolivia: Revista del Instituto de Ecología* 58: 37–60.

Lapinski, W. 2020. Tarantulas and their habitats, pp. 191–236. In: F. Pérez-Miles (ed.), *New World Tarantulas. Taxonomy, Biogeography and Evolutionary Biology of Theraphosidae*. Zoological Monographs Volume 6. Springer Nature Switzerland AG, Cham, Switzerland. https://doi.org/10.1007/978-3-030-48644-0_7.

Leenders, T. 2016. *Amphibians of Costa Rica: A Field Guide*. Cornell University Press, Ithaca, New York, USA.

Lopez, S. and D. Sherwood. 2019. Un registro de *Bothrops asper* (Serpentes: Viperidae) como presa de *Brachypelma* sp. (Araneae: Theraphosidae) en México. *Boletın de la Asociación Herpetológica Española* 30: 41–43.

Nuñez-Escalante, R. and J. Moreno-Chinchilla. 2021. Predation by a tarantula (*Sericoplma immensum*) on a Terciopelo (*Bothrops asper*) in Sierpe de Osa, Costa Rica. *Reptiles & Amphibians* 28: 490–491. https://doi.org/10.17161/randa.v28i3.15808.

Nyffeler, M. and J.W. Gibbons. 2021. Spiders (Arachnida: Araneae) feeding on snakes (Reptilia: Squamata). *The Journal of Arachnology* 49: 1–27. https://doi.org/10.1636/JoA-S-20-050.

Rudloff, J.P. 1997. Revision der Gattung *Holothele* Karsch, 1879 nebst Aufstellung einer neuen Gattung *Stichoplastoris* gen. nov. (Araneae, Theraphosidae) und Wiedereinsetzung einiger weiterer Gattungen der Mygalomorphae. *Arachnologisches Magazin* 5: 1–19.

Sasa, M., D.K. Wasko, and W.W. Lamar. 2009. Natural history of the terciopelo *Bothrops asper* (Serpentes: Viperidae) in Costa Rica. *Toxicon* 54: 904–922. https://doi.org/10.1016/j.toxicon.2009.06.024.

Savage, J.M. 2002. *The Amphibians and Reptiles of Costa Rica A Herpetofauna between Two Continents, between Two Seas*. The University of Chicago Press, Chicago, Illinois, USA.

Smith, A.M. 1987. *The Tarantula: Classification and Identification Guide*. Second edition. Dennis Fitzgerald Publishing, London, UK.

Valerio, C.E. 1980. Arañas terafósidas de Costa Rica (Araneae: Theraphosidae). III. *Sphaerobothria*, *Aphonopelma*, *Pterinopelma*, *Citharacanthus*, *Crypsidromus* y *Stichoplastus*. *Revista de Biologia Tropical* 28: 271–296.

Villegas, S. 2020. First record of a Semiplumbeous Hawk (*Leucopternis semiplumbeus*) preying on a Redthroated Ant-Tanager (*Habia fuscicauda*) in Tirimbina Biological Reserve, Costa Rica. *El Hornero* 35: 127–150. https://doi.org/10.56178/eh.v35i2.443.

Villegas, S. and L. Fernández Sanchéz. 2024. Predation of the Green Iguana *Iguana rhinolopha* (Squamata: Iguanidae) by the Rufous Motmot *Baryphthengus martii* (Coraciiformes: Momotidae), Costa Rica. Depredación de la iguana verde

Iguana rhinolopha (Squamata: Iguanidae) por el momoto canelo *Baryphthengus martii* (Coraciiformes: Momotidae), Costa Rica. *Revista Latinoamericana de Herpetología* 7: 30–34. https://doi.org/10.22201/fc.25942158e.2024.4.1069.

World Spider Catalog. 2025. *Stichoplastoris denticulatus* (Valerio, 1980). *World Spider Catalog*. Version 26. Natural History Museum Bern, Bern, Switzerlandhttps://doi.org/10.24436/2. <https://wsc.nmbe.ch/species/37936/Stichoplastoris_denticulatus>.

Appendix 1. A tarantula (*Stichoplastoris denticulatus*) preying on a juvenile Terciopelo (*Bothrops asper*) in Tirimbina Biological Reserve, Costa Rica, on 18 January 2025. Video by Justin Rodríguez Castro. Available at https://youtu.be/fRb-6vgZRSs.