REPTILES & AMPHIBIANS

An Indian Desert Gerbil (*Meriones hurrianae*) and a Camel Spider (*Galeodes* sp.) as Prey of Sindh Saw-scaled Vipers, *Echis carinatus sochureki* Stemmler 1969, from Rajasthan, India

Sourish Kuttalam[1,2,3], John Benjamin Owens[1,2], Priyanka Chaudhary[4], Jhamku[4], Akhilesh Kumar[5], Maya Gopalakrishnan[5], and Anita Malhotra[1]

[1]Molecular Ecology and Evolution at Bangor (MEEB), School of Environmental and Natural Sciences, Bangor University, Environment Centre Wales, Bangor LL57 2UW, Wales, UK
[2]Captive & Field Herpetology Ltd, 13 Hirfron, Llaingoch, Holyhead, Anglesey LL65 1YU, Wales, UK
[3]Society for Nature Conservation, Research and Community Engagement (CONCERN), Nalikul, Hooghly, West Bengal 712407, India (bsu8d2@bangor.ac.uk)
[4]Rajasthan Forest Department, Leela Dhora Nursery, Ray Colony, Barmer, Rajasthan 344001, India
[5]Department of Medicine, All India Institute of Medical Sciences, Jodhpur 342001, India

Variation in snake venom has a variety of adaptive and non-adaptive processes that have contributed to its evolution (Casewell et al. 2013; Healy et al. 2019; Zancolli et al. 2019). Studies have shown that one of the processes that plays a key role is variation in diet (Arbuckle 2017; Davies and Arbuckle 2019). This is based on studies that have compared ontogenetic or geographic variation in venom composition that can be explained due to shifts in diet (Daltry et al. 1996; Creer et al. 2003; Gibbs et al. 2011; Davies and Arbuckle 2019; Smith et al. 2023). Saw-scaled Vipers (*Echis* spp.) are prime examples, with studies showing that species that are largely arthropod feeders are more toxic to naturally occurring prey (e.g., the Large-clawed Scorpion, *Scorpio maurus*) compared to other prey such as mice (Barlow et al. 2009; Richards et al. 2012). Knowledge of the natural diet, given that venom variation is especially significant in clinically important snakes, is crucial for understanding the composition of their venoms.

The Sindh Saw-scaled Viper (*Echis carinatus sochureki*), which occurs in the deserts of northwestern India and Middle Eastern Asia as far as the southeastern Arabian Peninsula, is one taxon about which little is known of its dietary diversity.

Figure 1. Dissected female Sinch Saw-scaled Vipers (*Echis carinatus sochureki*) with an Indian Desert Gerbil (*Meriones hurrianae*) (left) and Camel Spider (*Galeodes* sp.) (right) found in their guts. Photographs by Akhilesh Kumar.

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In India, some populations of this subspecies are medically significant with clinical data showing evidence that bites are unresponsive to the current Indian polyvalent antivenom (Gopalakrishnan et al. 2021). Daniels (2002) described the diet of *E. carinatus* as varied, comprising rodents, lizards, frogs, and a variety of arthropods, including scorpions, centipedes, and large insects. We herein provide new observations of two prey items of *E. c. sochureki* from western Rajasthan, India, confirmed by examining gastrointestinal contents of two fresh road-killed snakes found during a field survey in September 2023 and collected under a permit issued by the Rajasthan State Forest Department. Both snakes contained a prey item that had undergone only limited digestion. We recorded sex, snout-vent length (SVL), and tail length of the snakes, and measured body length from the snout to the base of the tail in mammals and from the oral cavity to the tip of the abdomen in other prey types.

The stomach of a female (SVL 32.5 cm, tail length 4 cm) collected in Jaisalmer District, Rajasthan, India (26.630705, 70.699939; elev. 250 m asl), contained a partially digested adult Indian Desert Gerbil or Jird (*Meriones hurrianae*) (body length 12.2 cm (Fig. 1). The stomach of another female (SVL 45.5 cm, tail length 5 cm) collected roughly 30 km north of the first specimen in Jaisalmer District (26.907717, 70.733168; elev. 222 m asl) contained a partially digested Camel Spider (*Galeodes* sp.) with a body length of 8.5 cm (Fig. 1). The species could not be determined due to the state of digestion. These first records of naturally occurring prey species of *E. c. sochureki* from the deserts of India suggest that these vipers take a large diversity of prey.

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