LESCHENAULT'S SNAKE-EYE LIZARD

Ecology of *Ophisops leschenaultii* in Pakkam Hills, Gingee, Eastern Ghats, Southern India

Ecological studies are lacking for many Indian lizards (Venugopal 2010), particularly the presumed, widespread, non-endemic species. One such poorly studied lizard is the Leschenault's Snake-eye Lizard *Ophisops leschenaultii*. This species is found in southeastern India and in Sri Lanka (Das 2002; Das & DeSilva 2005; Venugopal 2010; Ganesh & Chandramouli 2017). Recent studies have provided some information on the current distribution of *Ophisops leschenaultii*, and some studies have also dealt with phylogeny and ontogenetic colouration (Agarwal et al. 2017; Ganesh & Chandramouli 2017; Kumar et al. 2017). In the present short note, we enumerate our field observations on the ecology of *Ophisops leschenaultii* with special reference to the local conditions and environmental parameters.

IUCN Red List:
Not Evaluated

We used Diurnal Time-Constrained Search Method (DTCS, after Ribiero-Junior et al. 2008) in Gingee hills (12.23333^{0}N & 79.38333^{0}E), which was divided into five sub clusters (Siruvadi hills, Muttakaadu hills, Paadipallam hills, Karai hills, and Pakkam hills), from December 2015 to February 2016 besides 80 hours sampling with two man efforts. The Pakkam hills are unique (in terms of less disturbance) among these clusters and consist of sparse vegetation with a rocky terrain (Kalaimani 2011). During our herpetofaunal surveys, we obtained several sightings of *Ophisops leschenaultii* in the Pakkam hills, whereas the hills Siruvaadi, Muttakadu and Karai did not yield a single sighting with an exception of Paadipallam. During this study we evaluated the following variables: number of individuals, temperature, humidity, elevation, microhabitats and species activity.

Reptilia
[Class of Reptiles]

Squamata
[Order of Scaled reptiles]

Lacertidae
[Family of true lizards]

Ophisops leschenaultii
[Leschenault's Snake-eye Lizard]

Species described by Milne-Edwards in 1829

In total, we obtained 69 sightings in the Pakkam hills. The minimum and maximum average temperatures were 28^{0}C and 35^{0}C, respectively, and the minimum and maximum average humidity were 40% and 70%, respectively (Table 1). We compared

Table 1: Field Observations

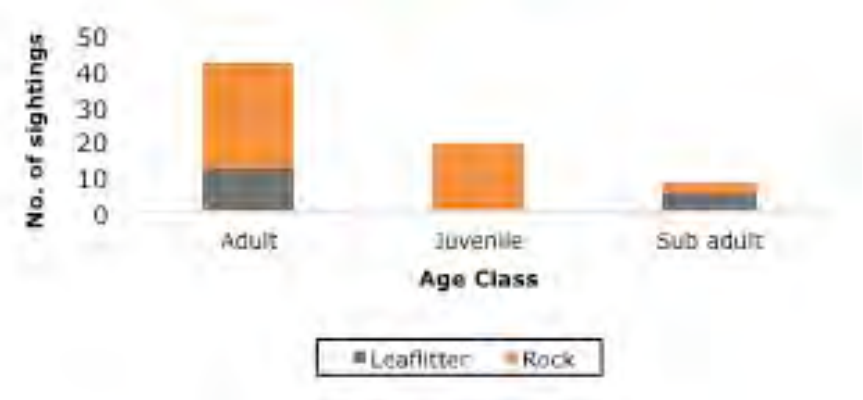
Age Class	No. of sightings	Encounter rate	Temperature ^{0}C			Humidity %	
			28-31	31-33	33-35	40-60	60-70
Adult	42	2.30	11	16	15	31	11
Juvenile	19	1.03	5	12	2	19	0
Sub adult	8	0.43	2	6	0	6	2
Syntopic lizards (competitors) 1.5 < *Calotes versicolor* 1.0 > *Sitana ponticeriana* 0.5 > *Psammophilus cf.dorsalis*							

Table 2. Comparison of human activities and *Ophisops* sighting probability in Gingee hills

Gingee Forest	No. of sightings	% of anthropogenic pressure
Siruvaadi hills (Ranikottai)	0	23.3
Muttakadu hills (Rajakottai)	0	22.1
Pakkam hills	69	16.1
Karai hills	0	20.3
Paadipallam hills	7	18.2

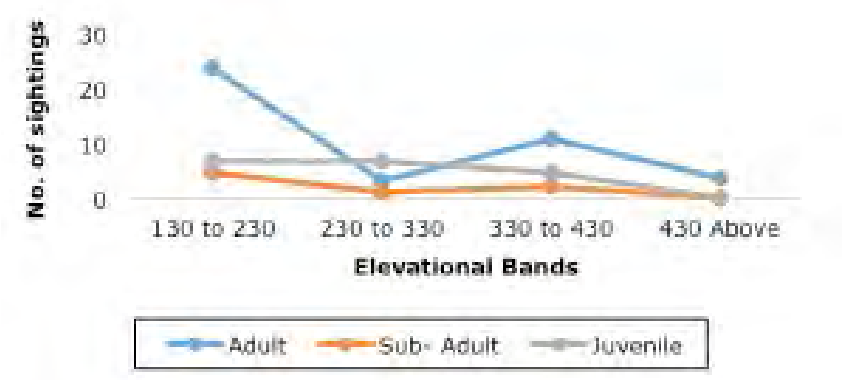
Global Distribution: Endemic to India and eastern Sri Lanka

the altitudinal data at the time of species encounter and found that the average elevation was between 130–459 m. Here, we observed altitude is an influencing factor because the Pakkam hills have a significant gradient compared with the other sub clusters of the Gingee hills. According to Kumar et al. (2017), of six sightings, five were recorded at an elevation of >200 m asl; this confines this species was observed in elevated regions and not plains. We also hypothesize that *Ophisops leschenaultii* strongly prefers an elevated plateaus and rocky outcrops because maximum sighting was observed between 200–459 m in the Pakkam hills. Human disturbance may also have influenced the sighting probability of *Ophisops* sp. However, the Gingee hills is frequently visited by people; therefore, we consider that anthropogenic pressure is one of the factors that influences the distribution of *Ophisops leschenaultii* (Table 2). Gingee rocky hills provide sufficient

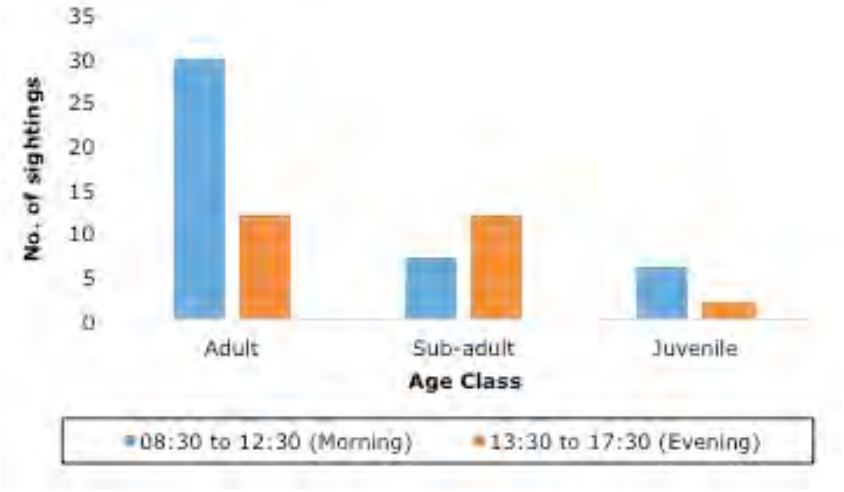


Micro-habitat utilized by *Ophisops leschenaultii* in Pakkam, Gingee hills

Activity of *Ophisops leschenaultii* at the time of sighting



Elevational distribution of *Ophisops leschenaultii*



DTCS sampling (After Ribiero-Junior et al. 2008)

shelter to *Ophisops leschenaultii*, and most of the individuals were sighted in rocky habitats. Because the Eastern Ghats comprise almost an undulated rocky mountain chain and hillocks (Kalaimani 2011), they have abundant species richness and endemicity. However, these Ghats receive very little attention from the research community compared with the well-known Western Ghats (Kumar et al. 2017).

Habitat and Conservation

Habitat loss is the most important cause of species extinction. Extinctions from habitat loss are often delayed rather than immediate because many species that tend to linger in the habitat fragments do not have viable populations and are doomed to eventual local extinction (Newmark et al. 2017). *Ophisops leschenaultii* highly prefers open biomes, such as grassy and rocky habitats (Agarwal et al. 2017), and this species is mainly diurnal in its habit. The present study highlights rock (75.4% of individuals), followed by leaf litter (24.6% of individuals), as the species' highly preferred microhabitat. In addition, 52% of individuals were spotted while they were moving, whereas 49% of individuals were spotted while they were basking in their respective microhabitats. The main threats for this species

include anthropogenic pressure, stone quarrying, and forest fires, which degrade or destroy the grassy, leaf litter, and rocky microhabitats and result in considerable mortality and population decline (Srinivauslu et al. 2014; Kumar et al. 2017). Further longterm study is required to address the foraging behaviour of *Ophisops leschenaultii* and conservation effort to enhance the population viability in Gingee Hills.

References

Agarwal, I. & U. Ramakrishnan (2017). A phylogeny of open-habitat lizards (Squamata: Lacertidae: Ophisops) supports the antiquity of Indian grassy biomes. *Journal of Biogeography* 44(9): 2021–2032.
Das, I. (2002). *Photographic Guide to Snakes and Other Reptiles of India*. R. Curtis Books, UK, 144pp.
Das, I. & A. de Silva (2005). Photographic Guide to Snakes and Other Reptiles of Sri Lanka. New Holland, UK, 144pp.
Ganesh, S.R. & S.R. Chandramouli (2017). Identification of Leschenault's Snake-eyed Lizard, *Ophisops leschenaultii* (MiLneedwards, 1829), with notes on its ontogenetic colour change. *Sauria (Berlin)* 39(2): 68–72.
Newmark, W.D., C.N. Jenkins, S.L. Pimm, P.B. Mcneally & J.M. Halley (2017). Targeted habitat restoration can reduce extinction rates in fragmented forests. *PNAS* 114(36): 9635–9640.
Kumar, G.C., C. Srinivasulu & K.K. Prasad (2017). New Locality Records of Leschenault's Snake Eye, *Ophisops leschenaultii* (Sauria: Lacertidae) (Milne-Edwards, 1829) from Telangana State, with Notes on the Species' Natural History. *IRCF Reptiles & Amphibians* 24(1): 51–54.
Kalaimani, A. (2011). Birds of Gingee range, Villupuram District, Tamil Nadu, South India. *Newsletter for Bird Watchers* 51: 2.
Srinivasulu, C., B. Srinivasulu & S. Molur (2014). The Status and Distribution of Reptile's in the Western Ghats, India. Conservation Assessment and Management Plan (CAMP). Wildlife Information Laision Development Society, Coimbatore, Tamil Nadu, 141pp.
Ribeiro-Junior, M.A., T.A. Gardner & T.C.S. Avila-Pires (2008). Evaluating the effectiveness of herpetofaunal sampling techniques across a gradient of habitat change in a tropical forest landscape. *Journal of Herpetology* 42(4): 733–749.
Venugopal, P.D. (2010). An updated and annotated list of Indian lizards based on a review of distribution records and checklists of Indian reptiles. *Journal of Threatened Taxa* 2(3): 725–738; http://doi.org/10.11609/JoTT.o2083.725-38

Acknowledgements: We thank to AVC College and Vilupuram forest division for granting permission for this study. We also thank S.R. Ganesh for his kind support and motivation. PK & AK thanks to our colleagues Sridhar Halali and Deepika Karmaker for earlier comments. Finally we thanks to anonymous reviewer for giving valuable suggestion and comments.

Pandi Karthik[1], Rathinalingam Nagarajan[2] & Ayuthavel Kalaimani[3]
[1-3] Department of Zoology & Wildlife Biology, A.V.C. College (Autonomous), Mannampandal, Mayiladuthurai, Tamil Nadu 609305, India.
Email: [1]karthikwildlifebiology@gmail.com (Corresponding author)

Citation: Karthik, P., R. Nagarajan & A. Kalaimani (2018). Leschenault's snake-eye lizard: Ecology of *Ophisops leschenaultii* in Pakkam Hills, Gingee, Eastern Ghats, Southern India. Reptile Rap #186. In: *Zoo's Print* 33(7): 06-09