

## First report of the lacertid lizard *Ophisops beddomei* (Jerdon, 1870) from central India

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The genus *Ophisops* Ménétries, 1832 belongs to the Subfamily Eremiadae, which is considered to be the most diverse group of the lizard family Lacertidae (Agarwal et al., 2017). These so-called Snake-eyed Lacertas are distributed across the Saharo-Arabian region and into South Asia, with eight species found in India, two in Sri Lanka, and three in Saharo-Arabia (Agarwal et al., 2018; Patel and Vyas, 2020; Uetz et al., 2022). These lizards are diurnal and terrestrial and found in open grasslands, scrublands, and on the fringes of deciduous forests. In the central Indian states of Madhya Pradesh and Chhattisgarh, four species are known: *Ophisops jerdonii* Blyth, 1853, *O. leschenaultii* (Milne-Edwards, 1829), *O. microlepis* Blanford, 1870, and *O. nictans* (Arnold, 1989) (see Chandra and Gajbe, 2005; Sur et al., 2007). In this paper, we report a fifth species, *O. beddomei*, from Madhya Pradesh based on a specimen studied by us from the fringe of Kanha Tiger Reserve in the Supkhar Range.

The specimen is registered in the collection of the Zoological Survey of India as ZSI-CZRC-6711 (Fig. 1). It is a male collected on 16 February 2019 in the Dudhaniya area near Kanha Tiger Reserve (22.1431°N, 80.8536°E, elevation 831 m) with the following morphological characters that correspond to the diagnostic characters of *O. beddomei*. Bilateral characters are given as left/right, all measurements are in mm: upper head shields strongly keeled and striated; canthus rostralis prominent; frontonasal divided into two unequal-sized scales; supraciliary scales 4/4; supraciliary

granules 8/8; supraocular scales 4/4; supralabials 9/9; infralabials 9/9; loreals 2/2; supratemporal scales 1/2; chin shields 6/6; 48 dorsal scales from occipital to above vent; 30 scales in transverse rows at mid-body, and 25 ventral scales (enlarged scales on belly from forelimb insertion to above femoral pores); femoral pores 10/10, with one scale between the pores. The subdigital lamellae including the one touching the claw from Finger 1 to Finger 5 are 6/5, 8/8, 11/11, 15/14, and 10/8; those of the toes are 6/6, 12/10, 14/12, 15/20, and 12/9. Morphometric characters are presented in Table 1.

In life (Fig. 1), the dorsum was dark brown with few scattered black spots; dorsolateral stripe faint and indistinct; a pair of white lateral stripe runs from the supralabials, extending through tympanum and above the forearm, terminating at the groin; the portion between the dorsolateral and lateral stripe heavily spotted with black forming a banded appearance; the flank below the lateral stripe marbled with greenish-yellow spots. Ventral side yellow, extending up to the base of the tail, infralabials and some of the supralabials are black-spotted on yellow; distal end of tail whitish; limbs darker than the body on the dorsal side and yellow on the ventral side. After preservation (in 70% ethanol) the yellow and green colour vanished completely and turned white, while body colour with dark markings was retained, the same as live colouration.

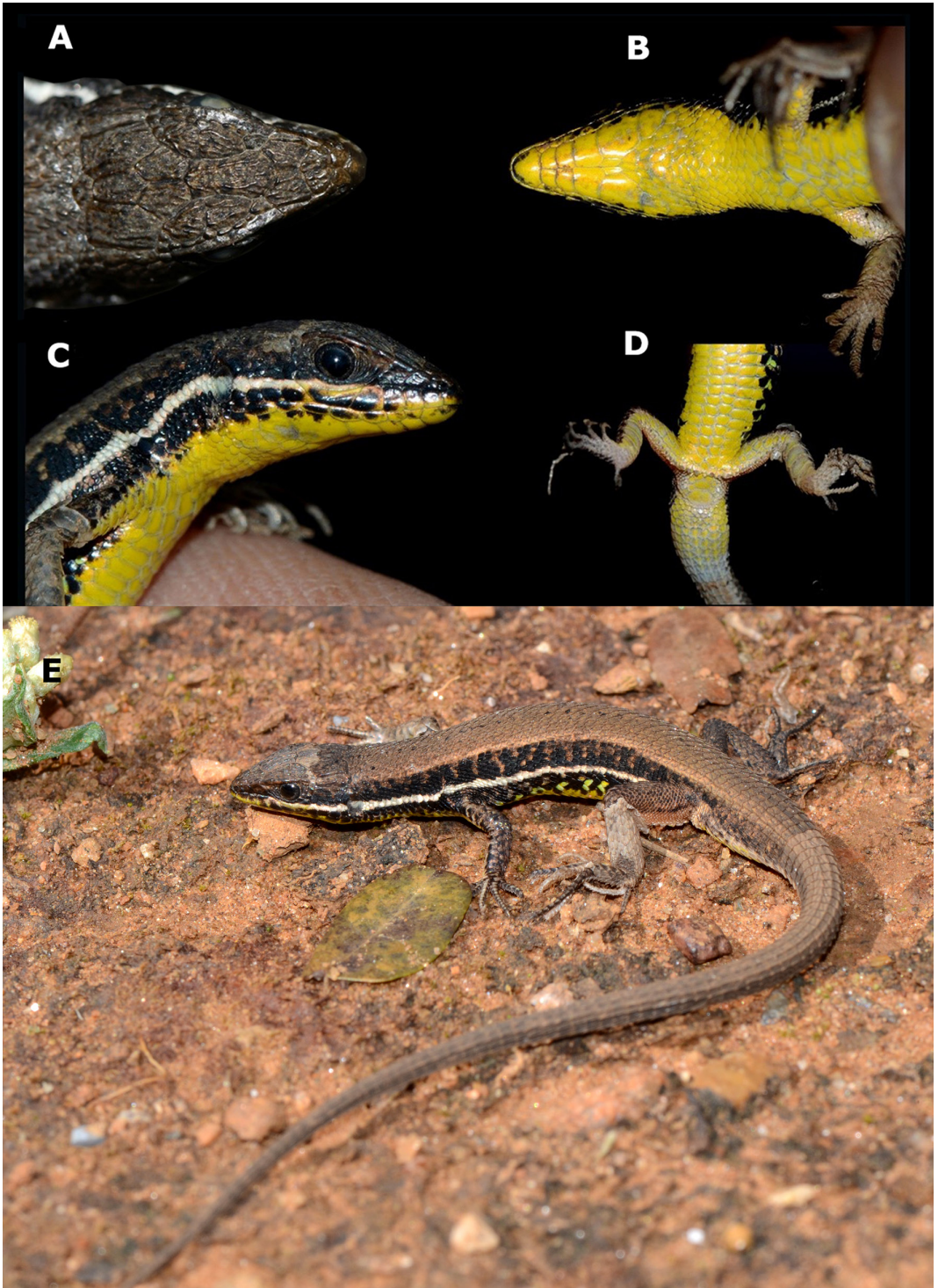
Our specimen differs from all other small-bodied Indian members of *Ophisops* by its small snout-to-vent length (< 45 mm), having two frontonasals, fewer than 35 scales across the mid-body, and fewer than 52 dorsal scales. The specimen is morphologically most similar to *O. agarwali* Patel & Vyas, 2020 and can be differentiated from that species (characters of *O. agarwali* in parentheses) by a mental scale barely reaching the second supralabials (vs. mental scale extending beyond second supralabials), six chin shields (vs. five), three supraciliaries (vs. four), and the presence of a distinct dorsolateral stripe from behind the eye to the tail (absent or indistinct).

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**Figure 1.** An individual of *Ophisops beddomei* from Madhya Pradesh in life, showing its colouration. (A) Dorsal, (B) ventral, and (C) lateral views of the head. (D) Ventral view of the posterior part of the body showing femoral pores. (E) Full body view.

**Table 1.** Morphometric characters of specimen of *Ophisops beddomei* from Madhya Pradesh in the collection of the Zoological Survey of India (accession number ZSI-CZRC-6711).

Characters	Measurements (mm)
Snout-to-vent length	34.7
Body width	7.1
Tail length	70.5
Tail width (maximum)	3.7
Trunk length	16.1
Head length	8.8
Head height	4.5
Head width	5.1
Forelimb length (from top of shoulder joint to tip of 4 <sup>th</sup> finger)	11.8
Hind limb length (from hip joint to tip of 4 <sup>th</sup> toe)	17.6
Forearm length (from elbow to distal end of wrist)	4.6
Femur length (from hip joint to top of knee)	6.1
Tibia length (from top of knee to beneath wrist)	6.0
Eye diameter (greatest horizontal diameter)	1.5
Eye-to-snout distance	4.1
Eye-to-nostril distance	3.8
Eye-to-ear distance	3.0
Neck length (distance between posterior edge of tympanum and shoulder joint)	5.4
Tympanum diameter (largest)	1.6
Internarial distance	1.4
Interorbital distance	4.3

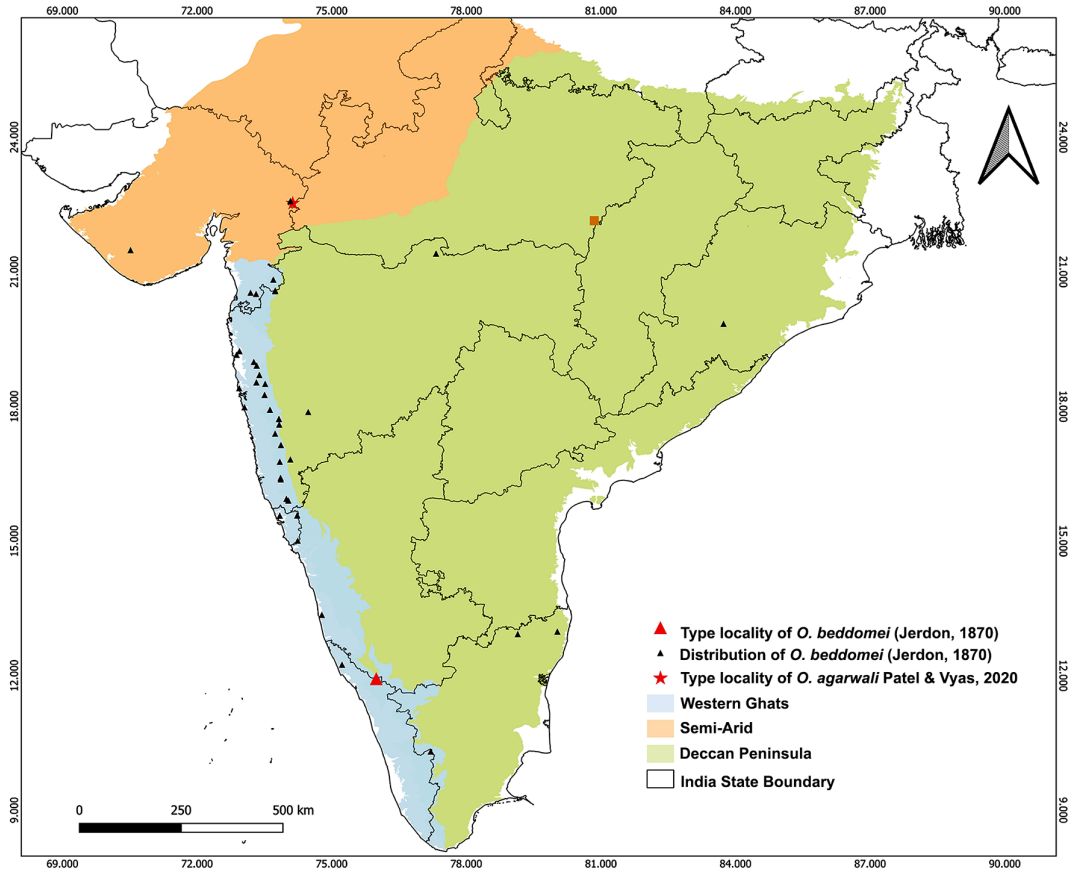
*Ophisops beddomei* is endemic to India with the type locality in the Brahmagiri Hills on the Karnataka-Kerala border (Jerdon, 1870). This species has been recorded mostly in the Western Ghats in Karnataka, Kerala, Maharashtra, Goa, and Gujarat States (Jerdon, 1870; Smith, 1935; Vyas, 2003; Patel and Vyas, 2019). Additional records from beyond the Western Ghats exist for Odisha (Sanyal, 1993), Tamil Nadu (Srinivasulu et al., 2014; Patel and Vyas, 2020), and from Gujarat (Vyas, 2003; Agarwal and Ramakrishnan, 2017; Patel et al., 2019; Patel and Vyas, 2020). Including this new record from Madhya Pradesh, specimens examined by Agarwal and Ramakrishnan (2017), Patel et al. (2019), and Patel and Vyas (2020) as well as reliable point coordinates from iNaturalist and indianreptiles.org we found a total of 38 localities for this species, which we integrated into an updated distribution map (Fig. 2). As per our current knowledge, *O. beddomei* is distributed in the following biogeographic provinces of India (Rodgers et al., 2000): Western Ghats (5A, 5B), Deccan Peninsula (6A, 6C, 6D, 6E), and Semi-Arid (4B).

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**Figure 2.** Updated distribution map for the Indian endemic lacertids *Ophisops beddomei* (triangles) and *O. agarwali* (star), showing localities in different biogeographic zones of India.

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**Appendix.** Documented localities of *Ophisops beddomei*.

No.	Location	Latitude	Longitude	Source
1	Chinnar Wildlife Sanctuary, Kerala	10.3068°N	77.2060°E	iNaturalist.org
2	Brahmagiri Hills, Karnataka-Kerala border	11.9306°N	75.9939°E	Jerdon, 1870
3	Munnikal Caves, Kodagu, Karnataka	11.9431°N	75.9719°E	Agarwal and Ramakrishnan, 2017
4	Cheemeni, Kasargod, Kerala	12.242°N	75.2300°E	Agarwal and Ramakrishnan, 2017
5	Chennai, Tamil Nadu	12.9804°N	80.0287°E	Patel and Vyas, 2020
6	Manipal, Udupi, Karnataka	13.3526°N	74.7804°E	Patel and Vyas, 2020
7	Verlem, South Goa, Goa	15.008°N	74.2421°E	Agarwal and Ramakrishnan, 2017
8	Aradi Socorro, Goa	15.5644°N	73.8430°E	iNaturalist.org
9	Mhadei Wildlife Sanctuary, Goa	15.5686°N	74.2297°E	iNaturalist.org
10	Khamja Plateau, Sindhudurg, Maharashtra	15.9035°N	74.0331°E	indianreptiles.org
11	Near Amboli, Sindhudurg, Maharashtra	15.9377°N	73.9904°E	Agarwal and Ramakrishnan, 2017
12	Ugwai temple, Kolhapur, Maharashtra	16.3738°N	73.8633°E	Agarwal and Ramakrishnan, 2017
13	Near Dajipur, Kolhapur, Maharashtra	16.4069°N	73.8605°E	Agarwal and Ramakrishnan, 2017
14	Barki, Kolhapur, Maharashtra	16.7656°N	73.8428°E	Agarwal and Ramakrishnan, 2017
15	Kolhapur, Maharashtra	16.8176°N	74.0785°E	iNaturalist.org
16	Near Chandoli, Sangli, Maharashtra	17.1392°N	73.8684°E	Agarwal and Ramakrishnan, 2017
17	Koynanagar, Satara, Maharashtra	17.3931°N	73.7390°E	Patel and Vyas, 2020
18	Chalkewadi, Satara, Maharashtra	17.597°N	73.8304°E	Agarwal and Ramakrishnan, 2017
19	Kaas, Satara, Maharashtra	17.7221°N	73.8240°E	Agarwal and Ramakrishnan, 2017; indianreptiles.org
20	Dhuelwadi, Satara, Maharashtra	17.876°N	74.4762°E	Agarwal and Ramakrishnan, 2017
21	Mahabaleshwar, Satara, Maharashtra	17.9254°N	73.6241°E	Agarwal and Ramakrishnan, 2017
22	Valmiki, Ratnagiri, Maharashtra	17.9808°N	73.0559°E	Agarwal and Ramakrishnan, 2017; Patel and Vyas, 2020
23	West of Rai-Ling Plateau, Raigar, Maharashtra	18.2561°N	73.5042°E	iNaturalist.org
24	Murud, Raigad, Roha, Maharashtra	18.4049°N	72.938°E	iNaturalist.org
25	Mulshi, Pune, Maharashtra	18.5034°N	73.5173°E	Agarwal and Ramakrishnan, 2017
26	Pali Sudhagad, Avandhe, Maharashtra	18.5373°N	73.3214°E	iNaturalist.org
27	Kurvande, Maharashtra	18.7012°N	73.3886°E	iNaturalist.org
28	Karjat, Maharashtra	18.9102°N	73.3283°E	iNaturalist.org
29	Matheran, Raigad, Maharashtra	18.9917°N	73.2636°E	indianreptiles.org
30	Aarey Milk Colony, Mumbai, Maharashtra	19.1508°N	72.8795°E	indianreptiles.org
31	Yeoor Hills, Thane West, Maharashtra	19.2338°N	72.9446°E	iNaturalist.org
32	Near Piprol, Valsad, Gujarat	20.5073°N	73.3144°E	Agarwal and Ramakrishnan, 2017
33	Near Dharampur, Valsad, Gujarat	20.535°N	73.1909°E	Patel and Vyas, 2020
34	Dangs, Saputara, Gujarat	20.569°N	73.7400°E	Agarwal and Ramakrishnan, 2017; Patel and Vyas, 2020
35	Near Mahal, Dang, Gujarat	20.8269°N	73.6987°E	Patel and Vyas, 2020
36	Chikhaldhara, Amaravathi, Maharashtra	21.4084°N	77.3255°E	Agarwal and Ramakrishnan, 2017
37	Datar hill, Mount Girnar, Gujarat	21.4843°N	70.5172°E	Patel <i>et al.</i> , 2019
38	Bhuvero, Ratanmahal, Dahod, Gujarat	22.5792°N	74.0792°E	Patel and Vyas, 2020