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Cover photo: Red-whiskered Bulbul *Pycnonotus jocosus*. © B. Ravichandran.

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#253
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New distribution record of Duméril's Black-headed Snake from northern Gujarat, India

The small diurnal non-venomous colubrid snake *Sibynophis subpunctatus* (Duméril, Bibron & Duméril, 1854) occurs in India and Sri Lanka (Smith 1943; Captain et al. 2004; Whitaker & Captain 2004). Originally the species described by Duméril et al. (1854), name *Oligodon subpunctatum* from "Malabar" in the Western Ghats (Smith 1943). In the Gujarat state the species reported from Saurashtra, Central Gujarat and South Gujarat (Patel & Vyas 2019).

Head of *Sibynophis subpunctatus* from Polo Forest, northern Gujarat. © Bhargav Parmar.

Sibynophis subpunctatus from Amreli, Gujarat. © Jaydeep Leuva.

On 21 October 2019, we found an adult *Sibynophis subpunctatus* from Polo Forest (23.9970 N & 73.2654 E), Abhapur, Vijaynagar Taluka, Sabarkantha District, Gujarat. The current report shows the occurrence of the species in northern Gujarat, the first report of the species from the Aravalis mountain range of Gujarat State. The specimen was found in day time, the snake was tried to prey on

Sibynophis subpunctatus from Pavagadh (near check post), Halol, Gujarat (Road Kill). © Bhargav Parmar.

Two new locations of *Simbynophis subpunctatus* from Gujarat State.

Riopa punctata (Linnaeus, 1758). The specimen identified with help of literature (Smith 1943; Captain et al. 2004; Whitaker & Captain 2004).

Morphology of the specimen: Small-sized slender snake (snout to vent length 230 mm); head black; posteriorly yellow-cream ring; nearby few black spots present; yellow- cream stout line from neck to edge of parietal; angulate downward to 9th supralabial with off-white color both side; head slightly broader than neck; yellowish-cream to off-white blotches create mask on front head; from rostral to supraocular; divert on frontal; make section; speckled on prefrontal disunite it; supralabials- 9; white to off-white blotched; lower edges brownish-yellow; 4–6 touching eye; 1st subtriangular; 9th largest; nostrils small; between nasals; 1st bigger; in contact with 1st supralabial ventrally; a small loreal; touching 2–3 supralabial ventrally; a preocular; towards dorsal apex; not touching frontal, frontal subhexagonal; supraocular in contact with prefrontal; postoculars- 2; subequal; both in contact with parietals; 1st reaching dorsal surface; from postocular to edge of parietal, irregular cream to yellow marking on both side; anterior temporals- 2; the upper touching 7th supralabial; the lower wedged in between 7–8 supralabial (not in contact with postocular); posterior temporals 2; elongated; rostral-broader than higher; large eye; larger than internasal; pupil

round; mental small; triangular; infralabial 10; 5th largest; bigger than mental; chin scales dark brownish-yellow with off-white blotches; chin shields elongated; subequal; 1–4 infralabials touching anterior chin shields; 4–5 infralabials touching anterior chin shields; body and tail brown dorsally; tiny black spots running on dorsal apex body from neck to tail; flanked grayish; separated by dorso-laterally dotted lines; dorsal smooth scale in row 17:17:17; ventrals 211; yellowish; single spot on edges; anal divided; tail damaged; single spot on edges of subcaudals.

Previously, *S. subpunctatus* was erroneously reported as *S. sagittarius* (Cantor, 1829) in Gujarat state (Vyas 2007). Here we are considering our specimen as *S. subpunctatus* on basis on supralabials- 9 (vs supralabials- 7 or 8 in *S. sagittarius*), 4–6 supralabials touching eye (vs 3–4 or 3–5 supralabials touching eye), anterior temporals- 2 and the lower wedged in between 7–8 supralabial (vs 1 large anterior temporal, wedged in between 6–7 supralabial) (Smith 1943). *S. sagittarius* found in Madhya Pradesh, central India (Sanyal & Sur 1995) and Himalayan range (Smith 1943; Saikia et al. 2007).

Previous observation of *S. subpunctatus* by Daniel & Shull (1963) from Dang district (Vyas 1993). The species found from Vadodara to Dang (Vyas 1993, 2004, 2007; Sharma 2000; Patel et al. 2018), Bhavnagar (Vyas 1987), Jamnagar (Vyas 1993), Barda Wildlife Sanctuary, Porbandar (Vyas 1987; Bhalodia et al. 2002), Rajkot (Ardesana et al. 2018), Junagadh (Vyas & Singh 1999; Patel et al. 2019).

Recently, *S. subpunctatus* observed in Kalyanpura, Mahesana district in the northern part of Gujarat (nearest city Viramgam, rescue and released). We found the species from Hingolgadh Nature Education Sanctuary (previously not reported; Vyas 2000) (nearest reported location: Khirasara Vidi in the same district- Rajkot), Mdhavpur Ghed (nearest reported location: Barda Wildlife Sanctuary and Gir protected area), Amreli (nearest reported location: Girnar, Junagadh), Manipur Village, Ahmedabad (nearest reported location: Vadodara), Anand (nearest reported location: Vadodara), Pavagadh (nearest reported location: Vadodara) and Model Farm Road, Dabhoi (nearest reported location: Vadodara). Recently *S. subpunctatus* was rescued by rescuers in Bhadakmora, Vapi district. All specimens are found during day time, nearby agricultural land (except Hingolgadh, Pavagadh.) and with nine supralabials, two anterior temporals, 2nd anterior temporals is wedged between 7–8 supralabial, ventrals count (India north of 18ºN) and sub-caudals count matches with literature (Smith 1943; Captain et al. 2004; Whitaker & Captain 2004).

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#254
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Green cover may predict persistence of garden lizards in city parks of Chennai Metropolis, India: insights from a preliminary study

Chennai (12.90–13.22°N 80.05–80.32°E) in southeastern India is a megacity where peripheral natural greenery has rapidly depleted over the decades (Amirtham et al. 2009; Sundaram 2011, 2020; Padmanabhan et al. 2017). Here, intentionally created recreational greenery or 'city parks' that still target human beneficiaries alone escape the cement. Chennai is reported to have 525 parks, the earliest of which was founded in 1769 (Sudhakar 2020, 2023). Among the most common and widespread reptiles of this city, is the garden lizard *Calotes versicolor* (Daudin, 1803) (Subramanean 2017), a synanthropic, diurnal, insectivorous, arboreal lizard (Asana 1931; McCann, 1937; read with Gowande et al. 2021). On account of its habitat use and diet, its presence indicates the well-being of live vegetation cover with insect pollinators (Kar 1987; Kalaiarasan & Rajarathinam 2005). In this study, we use *C. versicolor* as a model to examine the status of green covers within the urban sprawl of Chennai.

One of us (SG) visited these parks to scan the surroundings and note down every garden lizard seen. A total of 26 city parks in Chennai were selected such that they cover the spatial spread of the city and also represent many types of spatial extents. They were categorized as small (<1 ha), medium (1–2 ha), and large (>2 ha) parks based on land area. The smallest park was only 0.02 ha (Anbazhahan Park) whereas the largest park was 11.2 ha (Pallikaranai Park), over 500 times larger. So the field visit duration to a park differed as per the land area sizes. One particular site – the Egmore Museum is not a park although an urban green space and was visited on ticketed basis within the stipulated areas, days, and timings.

Periodical visits were made to the selected 26 parks, during mornings (7:30–10:30 am) and evenings (3:30–5:30 pm) and were as per park timings. As *C. versicolor* is the only arboreal agamid in the area (Subramanean 2017), no action was necessary after detection for data collection. Movements inside the park were

Map of Greater Chennai with the 26 city parks pin-marked and numbered, as follows (alphabetically): 1—Anbazhagan Park | 2—Anna Nagar Park | 3—Anna Robinson Park | 4—Ashok Nagar 5E Park | 5—Bougenvilla Park | 6—Egmore Museum | 7—Gill Nagar Park | 8—Jai Nagar Park | 9—Jeeva Park | 10—Kittu Park | 11—Kodambakkam Park | 12—Korattur Park | 13—May Day Park | 14—Mayor Sundar Rao Park | 15—Muthulakshmi Park | 16—Nageshwar Rao Park | 17—Natesan Park | 18—Padi Millenium Park | 19—Pallikaranai Park | 20—Panagal Park | 21—Semozhi Poonga | 22—Shenoy Nagar Park | 23—Shivan Park | 24—Tower Park | 25—Tree Park | 26—Valluvar Kottam Park | Map rendered from Google Earth.

always done honouring the prevailing etiquettes. Visits done in a park ranged from 1–3 times, especially for the larger parks. Time duration spent visiting a park ranged from 2.5–6.0 h. Overall 100 h were spent in these 26 parks. Time-honoured surveys (Ribeiro-Júnior et al. 2008) were chosen over distance-honoured methods as it was not practical for observer to lay line-transects inside the park or use existing (random, cursive) pathways for such purposes owing to the nature of this sampling method (Buckland & Turnrock 1992). Time-constrained surveys were also stated to be better choice than line-transects (Attiwilli et al. 2024). Visits were carried out over five months from October 2023 to February 2024 and were temporarily suspended during peak monsoon (December 2023), when most parks were closed to the public and when data collection was either impossible or incomparable.

From a 100-hour fieldwork done in 26 parks, a total of 237 sightings of the garden lizard (*Calotes versicolor*) were obtained. Among the 26 parks surveyed, no sightings were obtained in four parks. The number of lizard sightings obtained in one park overall, ranged between 1 and 31. Classified as per park area, it was 7–31 sightings within large parks, 9–17 within medium parks, and 1–25 within small parks. Lizards were sighted in all (6/6) the large parks, most (4/5) of the medium parks and many (3/15) of the small parks.

Our results (Table 1) show that there are minor mismatches in the survey input (survey duration honouring the park's area). Pallikaranai Park was the largest in area but had 5.6 h field visit duration. The maximum time of 6 h was spent in the somewhat smaller Semmozhi Poonga,

Table 1. Quantifications of survey inputs and outputs concerning garden lizards in city parks. Highest values within a column are in bold; while the lowest values appear in bold italics.

Name of the park	Area size category	Duration (in hours)	No. of sightings	Relative Abundance %	Encounter Rate	Hour / sighting
Egmore Museum	Large	4.6	17	7.1	3.70	0.27
Pallikaranai Park	Large	5.6	**31**	**12.9**	**5.54**	**0.18**
Semmozhi Poonga	Large	**6.0**	7	2.9	2.80	0.36
Shenoy Nagar Park	Large	4.0	8	3.3	2.00	0.50
Tower Park	Large	5.0	21	8.7	4.20	0.24
Valluvar Kottam Park	Large	3.3	15	6.2	4.55	0.22
Bougenvilla Park	Medium	3.0	10	4.1	3.33	0.30
Nageshwar Rao Park	Medium	3.3	0	0.0	0.00	0.00
Natesan Park	Medium	3.5	12	5.0	3.43	0.30
Shivan Park	Medium	5.0	17	7.1	3.40	0.29
Padi Millenium Park	Medium	4.0	9	3.7	2.25	0.44
Anna Nagar Park	Small	3.0	2	0.8	0.67	1.50
Anna Robinson Park	Small	4.0	12	5.0	3.00	0.33
Ashok Nagar 5E Park	Small	4.0	2	0.8	0.50	2.00
Jeeva Park	Small	2.5	11	4.6	4.40	0.23
Korattur Park	Small	3.0	4	1.6	1.33	0.75
May Day Park	Small	5.9	25	10.4	4.24	0.24
Panagal Park	Small	2.5	11	4.6	4.40	0.23
Tree Park	Small	3.0	11	4.6	3.67	0.27
Anbazhagan Park	Small	3.5	2	0.8	0.57	1.75
Gill Nagar Park	Small	5.6	2	0.8	0.36	2.83
Jai Nagar Park	Small	3.0	0	0.0	0.00	0.00
Kittu Park	Small	4.0	***1***	***0.4***	***0.25***	***4.00***
Kodambakkam Park	Small	***2.5***	0	0.0	0.00	0.00
Mayor Sundarao Park	Small	2.8	9	3.7	3.21	0.31
Muthulakshmi Park	Small	3.4	0	0.0	0.00	0.00

that is anyway a 'large' category site. Likewise the smallest of all, the Anbazhahan Park had a duration of 3.5 h, while the least duration was spent in a somewhat larger Kodambakkam Park, that is anyway a 'small' category site.

Semmozhi Poonga where survey duration was the highest yielded only seven sightings, far fewer than the highest frequency (31). Likewise, short duration of 2.5 h was spent in Panagal Pak and Jeeva Park (small parks), but they yielded 11 lizard sightings each. Also, Muthulakshmi Park and Jai Nagar Park where no sightings were obtained were surveyed for 3–3.4h. This highlights the role played by intrinsic floral and other features of the park that impacts and changes the default view that more time spent in visiting a park will fetch greater lizard sightings. Revealing such patterns was one of the most fundamental aims of this study.

Pallikaranai Park yielded the highest sighting frequency (31) and hence relative abundance (12.9%), had the highest encounter rate (5.54) and conversely the least time needed for a lizard sighting (0.18). Taken together, these features project the Pallikaranai park as perhaps the most important site to ensure continued survival of garden lizards in Chennai. On the other hand, Kittu Park, a small-sized park had the lowest sighting frequency (1), relative abundance (0.4), encounter rate (0.25), and conversely the highest time required (4.00) for a sighting. So among all the parks visited where the garden lizard was seen, it performed the lowest.

It is to be noted here that Pallikaranai Park, appraised as the best for the garden lizards is a large-sized park, whereas Kittu Park, appraised as the poorest park for the lizards is a small-sized park. This indicates the intrinsic value of size of the green cover area as a predominant factor in harbouring garden lizards. Another support to this hypothesis is that despite spending the same 5.6 h duration, Pallikaranai a large-sized park, fared far better (31 vs. 2 sightings) compared to the small-sized Gill Nagar Park. Secondly, despite spending almost equal time duration (5.9 vs. 6 h), the 0.4 ha May Day Park fared far better (25 vs. 0 sightings), compared to the tiny 0.03 ha Kodambakkam Park.

On the contrary we also observed that at least one medium-sized park (Nageshwar Rao Park) did not fetch any detections of the garden lizard despite surveys. Whereas, all the large-sized parks had sightings of the garden lizards.

Revisiting the importance of survey input, average survey time spent in a park ranged 3–4 hours sometimes depending on the park's area. The average sighting frequency of garden lizards in a park was around 9–10 sightings. This implies that apart from land area alone, other confounding factors like green cover density and human dominance may play a role in determining the lizard numbers present.

Several studies attest that *C. versicolor* is a rather dominant and resilient species (McCann 1937), at least in Chennai (e.g., Preston 2014; Subramanean 2017). In a taxonomic context, those few studies that apparently report on the population ecology of native Indian *C. versicolor* complex, actually do not refer to *C. versicolor* any more (Gowande et al. 2021). The study in Karachi of Pakistan by Khan & Mehmood (2004) now pertains to *C. farooqi* Auffenberg & Rehman, 1995. The study from Vadodara, Gujarat, western India by Adhikari et al. (2006) refers to *C. vultuosus* (Harlan, 1825). Chennai, parks have been considered as biodiversity refuges in urban spaces (Sudhakar 2020, 2023). In a regional context, such studies in Chennai parks have focussed only on 'appealing' and 'human-friendly' taxa like butterflies (Thangapandian et al. 2014) and birds (Gandy 2023). Against this backdrop, in both the contexts, our preliminary study on the lizard *C. versicolor* becomes noteworthy.

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Reptile Rapid
SARN
S. Asian Reptile Network
#255
21 July 2024

A study on herpetofaunal diversity and status in Savadatti, Belagavi District Karnataka, India

Sitana species found in Savadatti. © Akash Katti.

According to the Conservation Assessment and Management Plan (CAMP) report (Srinivasulu et al. 2014), there are about 157 species of endemic reptiles in the Western Ghats and peninsular India, of which about 14.64% are deemed to be at risk of extinction and 5.73% are considered to be 'Near Threatened'. Recently, in the Kushtagi taluk, Koppal district, Karnataka, 21 species of squamate reptiles have been identified by Hiremani et al. (2022). Despite these studies, little is known about the diversity of reptiles in different areas of Karnataka. As with any other animal fauna, the composition of reptilian fauna varies geographically, necessitating additional research in various regions.

Map of Karnataka showing Belgaum district (A), Savadatti taluk (B), and study area (C).

Savadatti is a religious town with semi-arid conditions and a wetland region, situated in the Belagavi district of Karnataka state between 15.6092–16.1563 N and 74.8027–75.3184 E. However, no herpetofauna records have been found in the area. Consequently, this research aims to record the current state of reptile variety in the area surrounding Savadatti town, Belagavi district, Karnataka state. The sampling was conducted throughout several ecological regions, including grasslands, bushlands, and rocky areas, comprising a total area of 3.04 km². Specifically, the sampling was conducted during the early morning hours, when sunlight intensity was relatively low and animals were actively engaged in basking behaviour. The research was carried out for a duration of 10 months from September 2021 to June 2022. The study mainly was conducted using the visual encounter methodology.

The identification of all observed reptiles with distinct markings was accomplished by consulting taxonomic literature sources (Daniels 2002; Das & Das 2018; Das 2020) to determine their specific species classification.
In the present study, 20 species of reptiles were found including 10 lizard species, seven snake species, two turtle species, and one tortoise species (Table 1).

Squamates dominated among them, making up 17 species followed by testudines, which had three species. With four species, the Colubridae family had the most Squamates (20%), followed by Agamidae with three (15%), Scincidae,

Table 1. Checklist of reptilian fauna in Savadatti, Belagavi District, Karnataka.

	Order	Family	Scientific name	Common/ Local name	IUCN Red List status
1	Squamata	Agamidae	*Calotes versicolor*	Oriental Garden Lizard	LC
2			*Sitana dharwarensis*	Dharwar Fan-throated Lizard	LC
3			*Sitana sp.*	Fan-throated Lizard	NE
4		Chameleonidae	*Chameleo zeylanicus*	Indian Chameleon	LC
5		Colubridae	*Coelognathus helena*	Common Trinket Snake	LC
6			*Fowlea piscator*	Checkered Keelback	LC
7			*Oligodon arnensis*	Banded Kukri	VU
8			*Ptyas mucosa*	Indian Rat Snake	LC
9		Elapidae	*Naja naja*	Indian Cobra	LC
10		Gekkonidae	*Hemidactylus frenatus*	Common House Gecko	LC
11			*Hemidactylus parvimaculatus*	Spotted House Gecko	LC
12		Lacertidae	*Ophisops elegans*	Snake-eyed Lizard	LC
13			*Ophisops microlepis*	Small-scaled Lacerta	LC
14		Scincidae	*Eutropis carinata*	Common Skink	LC
15			*Eutropis macularia*	Bronze Skink	LC
16		Viperidae	*Daboia russelii*	Russell's Viper	LC
17			*Echis carinatus*	Saw-scaled Viper	LC
18	Testudines	Testudinidae	*Geochelone elegans*	Indian Star Tortoise	VU
19		Trionychidae	*Lissemys punctata*	Indian Flapshell Turtle	VU
20		Geoemydidae	*Melanochelys trijuga*	Indian Black Turtle	LC

LC—Least concern | VU—Vulnerable | NE—Not Evaluated.

Gekkonoidae, Lacertidae, and Viperidae with two each (10%), and Chameleonidae and Elapidae with one each (5%). Three families, Testudinidae, Trionychidae, and Geoemydidae, each with one species (5%), comprised the Testudines, including turtles and tortoises.

Other gekkonoid lizard species were discovered in rocky places and trees, whereas species like *H. frenatus* and *H. parvimaculatus* were frequently found in urban areas. Typically, Fan-throated Lizards were observed in black soil and grassland regions. We were unable to identify the species of Fan-throated Lizard *Sitana*. The skinks were found in both rural and urban areas, and were frequently observed in residential gardens and bushes, whereas the lacertilians were restricted to rocky regions.

Other arboreal camouflage lizards, such as Chameleons, were only found in rocky regions and were infrequently observed. The Indian Star Tortoise was discovered in a grassland, while the Indian Flapshell Turtle and the Indian Black Turtle were spotted near a wetland and water body, respectively.

In the current study, out of 20 species of reptiles, 16 species are 'Least Concern', three are 'Vulnerable', and the one species of *Sitana* is 'Not Evaluated' by the IUCN Red List. While the study area is home to certain vulnerable reptile species like Banded Kukri, turtles, and tortoises, some snakes were discovered dead on roadways. These spotted road mortals raise the possibility that anthropogenic activities and urbanization pose a harm to the diversity of reptilian species. These findings necessitate the implementation of conservation measures in order to preserve the reptilian diversity in this region.

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First distribution record of the rare Anomalous Nawab from Jharkhand, India

Polyura agrarius **(Swinhoe, 1887), from Tagore Hills, Ranchi, Jharkhand, India.**
© Debasish Mahato.

The butterfly *Polyura agrarius* (Swinhoe, 1887) is commonly known as Anomalous Nawab. The name is based on its resemblance to the Common Nawab *Polyura athamas*, which was described before the discovery of this species. It belongs to the brush-footed butterflies of the subfamily Charaxinae under the family Nymphalidae. The genus Polyura contains 26 morphologically delineated species (Smile 1982), and is restricted to the Indo-Malayan and Australasian ecozones (Toussaint et al. 2015).

Polyura agrarius (Swinhoe, 1887) has been reported to have a localized distribution in India with records from southern to central, western (Gujarat) to northern (Uttarakhand, Punjab, and Himachal Pradesh), and northwestern (Rajasthan) to northeastern (Sikkim and Arunachal Pradesh) parts of the nation (Kehimkar 2016; Mehra et al. 2017; Smetacek 2017). This species shares same distribution and habitats with *Polyura athamas* (Smetacek 2017). The males of this fast-flying butterfly species are highly territorial and exhibit patrolling, fighting and hill-topping behaviour. They are attracted to faeces and carrion while both sexes are attracted to over-riped fruits and plant sap (Kehimkar 2016; Smiles 1982; Smetacek

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Distribution of Anomalous Nawab in the Indian subcontinent including the present report from Tagore Hill in Ranchi, Jharkhand (location icon in red). (Anonymous 2024).

2017). It is a rare species; nevertheless, its status has not been assessed by the IUCN Red List till date (Kehimkar 2016; Smetacek 2017).

One point of disagreement among lepidopterists has been *Polyura agrarius*'s ordered status. The species was first reported by Swinhoe (1887) from Mhow and Assirghur in Madhya Pradesh, India. This species was placed under the genus *Charaxes* by Swinhoe (1887). A few lepidopterists, including Evans (1932) and Wynter-Blyth (1957), addressed the species status of this specimen. *P. agrarius* was preferred to be considered a subspecies of *P. bharata* Felder, 1867 (then *P. athamas* Drury, 1773). The taxonomic puzzle of this enigmatic species continued for more than a century until recent molecular studies by Toussaint et al. (2015) confirmed the identity of *P. agrarius*. The present study reports a new distributional record for this species from Ranchi in Jharkhand, India, which expands its distribution range in the country.

On 25 March 2023, during a field study, one specimen of *P. agrarius* was recorded from Tagore Hill situated in the Ranchi District of Jharkhand, India. It was photographed using Canon EOS 77D with Canon 55–250 mm lens at 1121h.

The butterfly was perching on a leaf of an Indian Date Tree *Phoenix sylvestris*. The specimen was not collected. It was identified on the basis of two small pale-yellow dots present in the sub-apical region of the forewing. Width of pale green band across both wings is very variable.
The study area Tagore Hill also known as Morabadi Hill is

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situated in 23.4003 N & 85.3394 E in Morabadi, Ranchi, Jharkhand. It has an elevation range of 615–702 m, average elevation of 640 m. The area is rocky hill with moist deciduous forest, the temperature varies 0.6–43.4 °C & the average annual rainfall in the area is 1,316.1 mm with a range of 1,001–1,600 mm (Singh et al. 2011).

Polyura agrarius (Swinhoe, 1887) was hitherto not reported from Jharkhand (Verma 2009; Singh 2010; Patra et al. 2022). Although, it has been recorded earlier from the neighbouring states of West Bengal (Samanta et al. 2019), Chhattisgarh (Sisodia 2019) and other states of India like Madhya Pradesh (Mehra et al. 2017).

There is a significant difference between the habits and habitat of Ranchi (specifically, the Tagore Hills) and West Bengal. As a result, this record is also filling the distributional gap between Chhatisgarh and West Bengal. And it will expand the distributional range of *Polyura agrarius*. Based on the photographic evidence, we confirm the presence of *Polyura agrarius* in 'the land of forests', Jharkhand State.

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Leucistic Red-whiskered Bulbul observed in The Nilgiris, Tamil Nadu, India

The Red-whiskered Bulbul *Pycnonotus jocosus* is a passerine bird that comes under the family Pycnonotidae and is commonly known as bulbul. It is a resident frugivore bird found mainly in tropical Asia (Grimmett et al. 2011). It prefers dry scrub, open forest, plains and cultivated lands and its distribution is affected by the vegetation pattern due to its specific feeding ecology. The breeding season is spread out and it peaks from March to October in northern India and December to May in southern India. They nest usually on bushes, sunroof walls and small trees (Sacchi et al. 2002). Identifiable characteristics include its distinctive red ear patch and undertail coverts, a dark brown upper side, tan flanks, and white underside, a thin and notched beak, oval-shaped bristled nostrils and a black shoulder spur and blackhead with a pointed crest. The legs and toes are usually short and have little strength (Grimmett et al. 2011). Leucism is characterized by the absence of pigmentation which can either be partial or complete or have white patches in the feathers. Abnormally coloured birds have reduced chances of survival and mating success compared to normal-coloured birds (Guay et al. 2012).

Leucistic Red-whiskered Bulbul, The Nilgiris, Tamil Nadu, India. © Kishore, M.

The Red-whiskered bulbul was observed from The Nilgiris on 17 January 2022 at 1630 h. The locations of the observation were 11.4307 N & 76.7363 E with an elevation of 2,286.54 m. A partial white-crested bird was observed near a rural area, while it was feeding on *Rubus ellipticus* plant. Closer observation confirmed that as a Red-whiskered Bulbul with a leucistic character. The head crest, nape, breast and back of the individual were highly patchy with irregular white feathers, and the concentration of white coloured feathers was high. The beak, legs and eyes were in routine colouration

and the vent was also in normal red colour. The leucistic Red-whiskered Bulbul was recorded for the first time in the Nilgiris District.

Based on the literature of the previous record of leucistic Red-whiskered Bulbul observed from Ramanthali village from Kannur District Kerala on August 2016 and Kasserguppe village near the Bannerghatta National Park (Green Minute 2020); in Tamil Nadu, from Sathyamangalam Tiger Reserve (Saravanan 2017). Here we describe the observation of leucistic Red-Whiskered Bulbul in The Nilgiris, Tamil Nadu, India. And need to study its survival rate and breeding behaviour whether its plumage affects it in its life. Leucism can produce alterations in pigmentation due to nutritional alterations, heritable mutation, and external factors (Van Grouw 2013).

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Feathered success: Shikra breeding in Delhi's Aravalli Biodiversity Park, a restored habitat

The Aravalli Biodiversity Park (77.1311 E to 77.1803 E & 28.5742 N to 28.5736 N) in Delhi is a remarkable example of successful ecological restoration and conservation efforts. Its expansive area of approximately 280.45 ha. was once a barren wasteland ravaged by heavy mining and unchecked human activities (Arafat et al. 2015). However, the park has undergone a remarkable transformation into a flourishing ecosystem, encompassing a diverse range of habitats, including grasslands, wetlands, and forests. The park's commitment to creating a conducive habitat for avian creatures has resulted in the nesting and breeding of numerous bird species, including the Shikra *Accipiter badius*. The Shikra has established its habitat within the park and successfully reproduced and raised offspring, marking a significant milestone in the park's journey towards restoration and conservation. With its diverse array of prey species, including small mammals, birds, and reptiles, the park provides an ideal environment for the Shikra and other bird species to thrive. The Aravalli Biodiversity Park stands as a testament to the power of ecological restoration and conservation efforts in promoting biodiversity.

Female Shikra is incubating eggs on *Holoptelea integrifolia* tree at Aravalli Biodiversity Park, Delhi, India. ©Mohammad Rizwan Khan.

Grown up chicks have now become fledgelings. Female is bringing food for them. © Mohammad Rizwan Khan.

The breeding season for Shikras typically takes place between the months of

February to April, although some variations may be observed depending on the specific geographical location. First author had the opportunity to record the nesting behaviour of this bird from 9 April 2023, while adhering to wildlife ethics and ensuring minimal disturbance to the birds (Barve et al. 2020). The observations and photographs were taken from a distance of at least 20 m away from the tree, where the nest was found. This particular nest was located on an Indian Elm Tree *Holoptelea integrifolia*, standing at a height of approximately 15 m. The nest itself was positioned at a height of 10 m. The dimensions of the nest were estimated to be around 8–9 inches deep and 14–15 inches in diameter. It appeared to be an untidy structure made up of twigs. During the observation period, the female Shikra was frequently seen sitting in the nest, presumably incubating the eggs. However, the male Shikra was not observed in the vicinity. As the days passed, on the 17 April 2023, the male Shikra was spotted near the nest, diligently guarding it. However, it maintained a distance from the nest itself. Despite regular monitoring, the chicks were not sighted until the 6 May. It was on the 7 May 2023 that the female Shikra seemed occupied with something beneath her belly, possibly indicating the presence of hatchlings. The incubation period for Shikras typically lasts between 24–28 days. The exact number of eggs could not be determined during ground observations.

On the 10 May 2023, at 1530 h, three chicks were spotted within the confines of the nest. The female bird was diligently recorded as she tended to their needs, providing them with nourishment. Observations of the nest were conducted daily, spanning a duration of 30–45 minutes. These observations occurred at various hours throughout the day, providing a comprehensive understanding of the chicks' development. During these observations, it was noted that the female bird frequently shielded the chicks from the scorching heat. This act of protection demonstrated the maternal instincts and dedication of the female bird towards her offspring.

The female was recorded sitting away from the nest on the 16 May 2023, for a considerable period of time. This behaviour coincided with the fledglings reaching an age of approximately 11–12 days old. As the days passed, the fledglings continued to grow and develop. By the 25 May 2023, they had reached an age of 20–22 days old. The three chicks were standing in the nest, actively engaged in feeding on prey. It was deduced that the prey, most likely a rat, had been brought by the mother bird.

The physical characteristics of the fledglings were also noted during this observation. They possessed a dark brown coloration on their upper body, with an increased number of bars on their tail. The lower portion of their body displayed broad brown vertical streaks and spots. Despite these detailed observations, determining the sex of the chicks at this stage proved to be challenging. Sexual dimorphism, which would aid in identification, was not yet prominently visible.

The fledglings departed from their nest on the 27 of May when they reached an age of

approximately 25–30 days. At this stage, they had developed the ability to fly. Observations revealed that these young Shikras were engaging in a varied diet, which included feeding on lizards, birds, and rats. It is worth noting that occasional nest guarding behaviour was observed from the male Shikra; however, there was no recorded evidence of incubation or feeding by the male. It is important to mention that previous studies have indicated the involvement of male Shikras in these activities (Suryawanshi 2021).

In conclusion, the Aravalli Biodiversity Park's success in fostering the Shikra population highlights its dedication to ecological restoration. Future research should prioritize understanding Shikra nesting behaviour, site selection, and breeding success within the park. Additionally, exploring nest density can offer vital insights into the overall ecosystem health. These studies will enhance our comprehension of the Shikra's role in the park and contribute to ongoing conservation efforts, potentially guiding the restoration of biodiversity in other degraded environments.

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Note on the unusual feeding behavior of Wild Boar observed in Mudumalai Tiger Reserve, Tamil Nadu, India

The Indian Wild Boar *Sus scrofa* is one of the most widely distributed mammals in the World, with its native range extending from western Europe to southeastern Asia (Massei & Genov 2004). Wild Boars are opportunistic omnivores, consuming food of both plant and animal origin. Their diet generally includes plants such as crops, fruits, nuts, roots, and green plants, supplemented with bird eggs, carrion, small rodents, insects, and worms. This note presents the unusual feeding behavior of a Wild Boar in Mudumalai Tiger Reserve, Tamil Nadu, India.

On 30 March 2023, we recorded a pack of Dhole *Cuon alpinus* (n = 7) hunting a male Spotted Deer *Axis axis* in the Masinagudi area of Mudumalai Tiger Reserve. The pack of Dhole successfully captured the Spotted Deer and started eating it while it was still alive. An adult Wild Boar approached the Spotted Deer. Initially, the Wild Boar was driven away by the Dhole pack two to three times. However, the Wild Boar aggressively drove away the Dholes from the hunted Spotted Deer and surprisingly started feeding on the live Spotted Deer.

A similar observation was made in Royal Chitwan National Park, Nepal, where a large Wild Boar displaced an adult Leopard from its kill, a domestic buffalo calf, and partly consumed it (William Oliver pers. obs.). Park staff reported that this boar regularly commandeered such kills, although no other individual pigs had been observed exhibiting this behavior. This observation indicates strange behavior for Wild Boars in nature.

Wild Boars are omnivores and can be predators that opportunistically consume carrion (Wilson & Wolkovich 2011). However, the relative proportion of scavenged versus preyed-upon vertebrate foods in Wild Boar diets is often unknown (Taylor & Hellgren 1997) because it is frequently impossible to determine whether an animal was killed or ingested as carrion (Wood & Roark 1980). Wild Boar has occasionally been reported to predate larger vertebrates, such as deer fawns and (tethered) goats (Hoogerwerf 1970), although such incidents may involve only a few individuals in the population. Pauwels (1980) noted similar behaviour when referring to the predation of sea turtle nests by Wild Boars in Ujung Kulon. Wild Boars are also predators of ground-nesting birds (Giménez-Anaya et al. 2008) and amphibians (Carretero & Rosell 1999). Even though this is an opportunistic observation, considering its novelty, it should be scientifically documented.

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Mammals in urban forest: A checklist from Forestry Complex Hetauda, Makawanpur, Nepal

Forestry Complex (27.41 N & 85.02 E) is located in Hetauda Sub-Metropolitan city which is spread over an area of 97 ha consists of mixed forest, grassland, Karra River and open land. Based on field observation, the forest is dominated by *Shorea robusta*, *Schima wallichii*, *Trewia nudiflora* and planted forest of Eucalyptus species whereas *Imperata cylindrica* and *Saccharum spontaneum* are found on grassland. The complex supports 132 species of birds (Bajagain et al. 2020), two species of turtles (Luitel et al. 2021), and 11 species of serpents (Pradhan et al. 2020). However, the database of mammals in this area is inadequate for assessing conservation needs. Hence, we conducted the reconnaissance, indirect sign survey and camera trap survey to prepare the baseline data which provides the foundation for researchers to understand the interactions between different species and their environment. This information can be used to develop more targeted management strategies that

Indian Crested Porcupine.

Small Indian Civet near a dead Large Indian Civet.

Large Indian Civet.

Table 1. Camera trap station details.

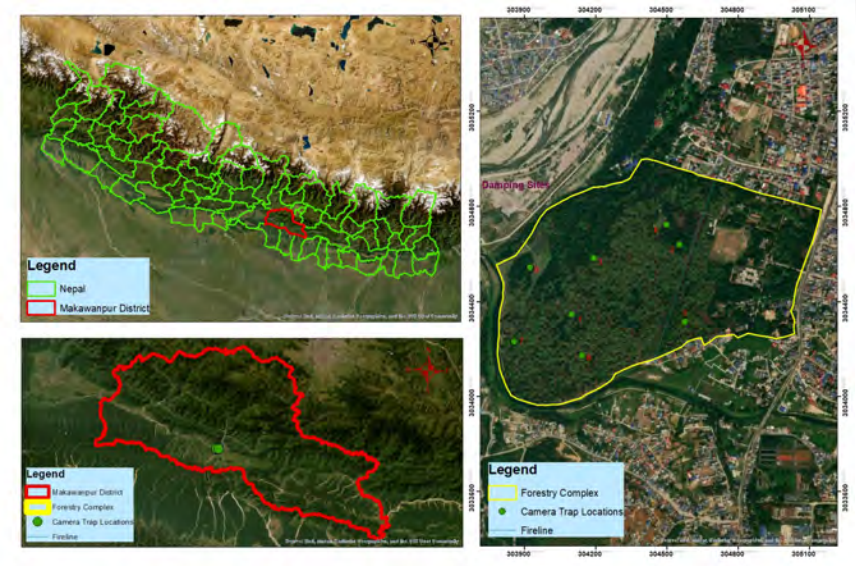
	Station name	Dominant vegetation	
		Local name	Scientific name
1	Station 1 (Near the den of Jackal)	Gutel	*Trewia nudiflora*
2	Station 2 (Waterhole)	Eucalyptus	*Eucalyptus* **spp.**
3	Station 3 (Kill Site, Dead Large Indian Civet)	Sal	*Shorea robusta*
4	Station 4	Chilaune	*Schima wallichii*
5	Station 5	Sal	*Shorea robusta*
6	Station 6 (Grassland)	Dubo	*Cynodon dactylon*
7	Station 7 (Near Community and Karra Khola)	Sal	*Shorea robusta*
8	Station 8 (Near Community Karra Khola)	Sal	*Shorea robusta*

Spotted Deer.

Rhesus Macaque. © Nikeet Pradhan.

address the specific needs of each species in the complex. The camera trap was set up in eight stations (Table 1) above 30–55 cm in height from ground level in February, March, April (2021–2022) (Burton et al. 2015; Molloy 2018). It is placed during the night to early morning (1900–0700 h) considering high anthropogenic disturbances during the day by students as well as nearby community. The camera was manually set to capture both photographs and videos “3 photographs and a video” at a single triggered event with a time interval 15 seconds. Our study revealed 13 mammalian species from the forestry complex located at the core area of the city. This represents 6.13% of mammals found within the country. Majority of the species recorded belonged

to family Viverridae followed by Cercopithecidae (Table 2). Among these recorded species, the Leopard Cat *Prionailurus bengalensis* is found dead in road kill in East-West Highway which is protected by the National Park and Wildlife Conservation Act, 2029 (1973). Similarly, Spotted Deer is the maximum photo captured species followed by Asian Palm Civet. Indian Hare *Lepus nigricollis* was recorded through evidence of rescue on campus. Mainly this species is hunted for food and captured by residential people nearby Forestry Complex. In the preliminary and camera trap surveys of the forest, visitors, firewood collectors and feral dogs are frequently seen in the forest.



Forestry Complex with camera trap stations.

Feral Dogs near waterhole.

Despite its limited area, the presence of 13 mammalian species indicates this urban forest provides a suitable habitat for mammalian species. There has been limited studies on mammals outside the protected areas inhabiting urban environments. A study of mammals in Banpale forest of Pokhara Metropolitan city revealed 19 species of mammals (Bist et al. 2017). Another study conducted by

Indian Grey Mongoose.

Road-killed Leopard Cat.

Golden Jackal.

Indian Hare.

Chaudhary (2018) found 28 species of mammals in the urban landscape of Bharatpur. Situated in urban areas, these forests play a crucial role in biodiversity conservation, serving as essential habitats for mammals (Gallo et al. 2017) urging us to take necessary interventions for the conservation of such areas. The observation of a dead Leopard Cat during our study holds significant conservation implications. This species is nationally categorized as Vulnerable and is listed under the National Parks and Wildlife Conservation Act, 2029 (1973) as a protected species of Nepal (Jnawali et al. 2011). The finding of a dead Leopard Cat within our study area aligns with the observations of (MoEF 2020), who noted that road infrastructure impedes the movement of mammals, leading to threats such as road accidents and habitat fragmentation. Even though the species was only recorded once and could possibly be a visitor, the roadkill incident raises the importance of habitat connectivity especially in the context of urban landscape.

This patch of forest has been long used by the locals to

Table 2. List of mammal species recorded in Forestry Complex, Hetauda.

	Common name	Scientific name	Nepali name	Family	Evidence	National status	Global Red List status
1	Indian Hare	*Lepus nigricollis*	खैरो खरायो	Leporidae	Photographs (Rescue)	Least Concern(LC)	LC
2	Five-striped Palm Squirrel	*Funambulus pennanti*	पाँचधर्के लोखर्के	Sciuridae	Sighted	LC	LC
3	Indian Crested Porcupine	*Hystrix indica*	जुरे दुम्सी	Hystricidae	Camera Trap (CT) Photographs	Data Deficient (DD)	LC
4	Small Indian Civet	*Viverricula indica*	सानो नीरबरिलो	Viverridae	CT Photographs	LC	LC
5	Masked Plam Civet	*Paguma larvata*	गाजले नीरबरिलो		Sighted (Pradhan et al. 2020)	LC	LC
6	Asian Palm Civet	*Paradoxurus hermaphroditus*	ताडी नीरबरिलो		CT Photographs	LC	LC
7	Leopard Cat	*Prionailurus bengalensis*	चरी बाघ	Felidae	Road Kill	Vulnerable (VU)	LC
8	Indian Grey Mongoose	*Herpestes edwardsii*	ठुलो न्याउरीमुसो	Herpestidae	Photographs	LC	LC
9	Golden Jackal	*Canis aureus*	स्याल	Canidae	CT Photographs	LC	LC
10	Yellow-throated Marten	*Martes flavigula*	मलसाँप्रो	Mustelidae	Sighted (Visitor)	LC	LC
11	Terai Grey Langur	*Semnopithecus hector*	तराई लंगुर	Cercopithecidae	Sighted (Visitor)	LC	Near Threatened (NT)
12	Rhesus Macaque	*Macaca mulatta*	रातो बादर		Photographs	LC	LC
13	Spotted Deer	*Axis axis*	चतित्रल/चतिरी	Cervidae	CT Photographs	VU	LC

collect dry leaves, fodder, firewood and mushrooms. It has several trails within the forest and a nearby open dumping site which attracts a lot of feral dogs. There have been several cases of direct killing of Spotted Deer by these feral dogs. Though the exact number of deaths of Spotted Deer by feral dogs is still unavailable, cases of these species being harassed, chased and killed by the feral dogs are evident. The unregulated open dumping site holds the potential to harbor diseases, for which wildlife may act as a vector therefore, a proper management of such spaces is a must. Moreover, the trails often used for morning walks and the grassland as picnic spots could disrupt wildlife behaviors and habitats. Therefore, effective management of this area becomes paramount for conserving both its ecological balance and the diverse species that inhabit it. Establishing a comprehensive conservation action plan is imperative, including

Firewood collector.

Spotted Deer killed by feral dogs.

strategies like controlling feral dogs, preventing human-induced fires and raising awareness in the local community about coexisting with wildlife is essential for the long-term sustainability of this urban ecosystem.

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