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#219
21 May 2022

Interaction of leeches with Mugger Crocodile in Vadodara, India.

Leeches (Phylum Annelida: Class Hirudinida) are some of the most well-known ectoparasites, notable for their blood-sucking behaviour (hematophagous). Leech species are widely distributed across all continents and habitats, whether land, seas or freshwaters, except regions of terrestrial Antarctica.



Leeches attached to the left eye of a juvenile Mugger Crocodile *Crocodylus palustris* from a small puddle in Madapur village, Padara, Vadodara District, Gujarat, India. © Rocky Arya.

They are commonly found in freshwater, estuarine, marine-aquatic, and moist terrestrial ecosystems (Phillips et al. 2020).

These hematophagous organisms extract blood from their hosts, whether terrestrial or aquatic animals -including reptiles, by simply latching onto their bodies



Leeches after removal from the eyelids of the Mugger *Crocodylus palustris*. © Rocky Arya



A large hirudidae leech attached to the posterior tail's scute of an adult Mugger Crocodile *Crocodylus palustris* from Kalali, Vadodara, Gujarat, India. © Rakesh Vadhvana

(ectoparasitic). Many crocodilian species face leech infestations; however, the observations have not been well documented, and most reports refer primarily to leeches (Tellez 2013).

There are only a few reports that address leech parasitism in crocodilians. Tellez (2013) is well-reviewed and has compiled several publications on the host-parasite interaction of world crocodiles.

Vyas (2017) enlists leech infestations in thirteen species of crocodiles belonging to three families,

including Marsh or Mugger Crocodile *Crocodylus palustris*. This note adds further observations on the interaction between muggers and leeches.

On 20 August 2021, a juvenile (total body length [tbl] 88.5cm) Mugger was rescued from a small puddle (22.188 N; 73.121 E) at Madapur Village, Padra, Vadodara District, Gujarat. The animal was found in a small puddle, surrounded by scrubland and agricultural fields. The animal was active and healthy, except for some unusual growth on its left eye. Upon careful examination of the eye growth, it was found that tiny leeches were latched on both the eyelids. We removed all the leeches one by one with the help of forceps; a total of nine leeches were removed from both eyelids. The lower eyelid had been infested with



The flocks of Black-headed Ibis *Threskiornis melanocephalus* foraging along with adult Muggers *Crocodylus palustris* basking at banks of Vishwamitri River, Vadodara, Gujarat, India. © Rakesh Vadhvana.

five leeches, and the upper was infested by four. All the leeches were different in size, about 3–18 mm long.

The leeches were collected and preserved for further species identification. This is the third of its kind occurrence from this area, whereby a leech-infested mugger was encountered.

Similar leech infestation has been previously recorded in Muggers of river Vishwamitri, Vadodara City (Vyas 2017). In addition, another unpublished observation mentions leech infestations on the posterior tail scutes region in an adult Mugger (tbl 270cm) from Kalali, Vadodara. Thus, the present observation marks the third incidence of leech infestation in the Mugger Crocodiles from this locality, i.e. noted from the river system of Vishwamitri.

The Mugger population of river Vishwamitri sets a unique example among the entire distribution range of the species (Vyas 2018). It is an immensely polluted river surrounded by contaminated habitats full of urban sewage (Vyas et al. 2020).

Such organic contamination provides favourable conditions to not only Muggers but other aquatic reptiles also, enabling them to survive and flourish, right in the middle of the growing metropolis city of Vadodara (Vyas 2018). Thus, these urban ecosystems become breeding grounds for pathogens and leeches. As per Luiselli et al. (2004), organic pollution of streams also sustains leeches; these cause anaemias, favour bacterial and

fungal infections, and the transmission of reptilian haemoparasites.

A study of the Nile Crocodile *Crocodylus niloticus* population from Okavango Delta, South Africa, found high leech infestations in eleven crocodiles (Leslie et al. 2011). Leeches were found on both the dorsal and ventral sides of crocodile bodies, including the tail, neck, belly, armpits, between the webbing of back legs, and other inconspicuous sites. However, there was no obvious pattern of leech distribution on the crocodiles (Leslie et al. 2011).

All these ectoparasites indicate potential vectors for blood parasites. However, little is known about the possible pathogenicity of various species, although leeches could play an active role in transmitting crocodile-specific viral/bacterial infections and as vectors of blood protozoans (Fermino et al. 2015). Primarily, *Placobdella spp* species of leeches has been widely reported to cause infestations in various crocodilian species (Frank 1981).

Furthermore, Glassman et al. (1979) studies show a higher eosinophilic count noted in leech-infected alligators than uninfected alligators. According to Diefenbach (1975), to some extent, leech infestation also affects thermal preferences and thermoregulation of crocodiles. Diefenbach (1975) further suggested that mouth gaping could possibly have the function of drying and killing ectoparasites. Therefore, the present occurrence of leech infestation, reported



as ectoparasitism in Mugger Crocodiles is further subject to veterinary research. Clinical findings can indicate the exact effects of leech infestation on a Mugger's health. Moreover, this suggests the need to deploy proper investigation and post-mortem procedures emphasising these possibilities, along with detailed histopathology profiles, especially when muggers face sudden mysterious deaths.

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#220
21 May 2022

Second sighting record of King Cobra in Kolhapur Western Ghats, India



The second sighting record of King Cobra in Kolhapur, Maharashtra, Western Ghats, India.

King Cobra *Ophiophagus hannah* is the longest venomous snake that measures up to 5.5 m (18 ft) in length (Wallach et al. 2014). This rare species belongs to the 'Vulnerable' category of the IUCN (Stuart et al. 2012). It is widely distributed in southern and southeastern Asia up to 2,000 m (Stuart et al. 2012). King Cobra inhabits a variety of habitats from degraded forests, mangrove swamps, agricultural fields, plantations, grasslands, wetlands, dense forests, primary

forests, and secondary forests nearby human habitats and streams (Daniel 2002; Stuart et al. 2012; Whitaker & Captain 2015). In the Indian subcontinent it occurs in dense forest and hilly areas of tea/coffee estates in the Western Ghats of southern India, the Himalayan slopes, parts of central and northeastern India, and the Andaman Islands (Sangha et al. 2011; Murthy & Murthy 2012; Chandra et al. 2014).



In the Western Ghats, King Cobra is reported up to Goa from Tamil Nadu, Kerala, and Karnataka (Whitaker & Captain 2015). Off late, many studies have been done on King Cobras in the Western Ghats (Bhaisare et al. 2010; Barve et al. 2013; Gowrishankar et al. 2013; Rao et al. 2013); yet, until recently, its presence in Maharashtra state was unknown. Yadav & Yankanchi (2015) reported it from Tillari forest in Kolhapur of southern Maharashtra. In this note, we report another sighting record of King Cobra from a nearby locality in Maharashtra.

We were visiting Kalanadigad (15.856 N 74.252 E; 316 m) in Chandgad taluk of Kolhapur district for bird watching field trip on 01 January 2020. The second author, SMH, sighted a King Cobra (Video 1) around 1520 h in dry grass. The snake was there for about five minutes before it slithered off into the nearby forest. It was a large, adult snake. The snake was confirmed as a King Cobra by referring the descriptions given in books by Daniel (2002) and Whitaker & Captain (2015). The present sighting record of King Cobra in Kalanadigad is located around 15 km east from Tillari Village.

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#221
21 May 2022

Presence of Indian Star Tortoise in Jambughoda Wildlife Sanctuary, Gujarat, India

On 26 September 2021, we were exploring the forests of Jambughoda Wildlife Sanctuary, Panchmahal, Gujarat, India, during one of our periodic visits. We came across a large specimen of Indian Star Tortoise *Geochelone elegans* while exploring the thickets around the Bhat region. We observed the tortoise's movement as it walked down hill (22.409 N; 73.623 E) and entered an agricultural field. Upon close examination, we discovered that it was an adult female and then recorded its body measurements and weight (Table 1). The tortoise's age was then assessed based on the number of growth rings marked on carapacial shields (Vyas 2011). We also



A large female Indian Star Tortoise *Geochelone elegans* from Bhat, Jambughoda Wildlife Sanctuary, Gujarat, India. © Mital R. Patel

noted that the Bhat forest is located on the eastern edge of the sanctuary, towards the reserved forest areas of Pavagadh Hills. The Indian Star Tortoise

(IST) is a medium-sized, herbivorous terrestrial diurnal tortoise widely distributed across the Indian subcontinent. The species is primarily found in dry



The western population of Indian Star Tortoise *Geochelone elegans* can be distinguished by its size and radial markings of the dorsal shell; the dorsal aspect (A), ventral aspect (B), and lateral aspect (C). © Mital R. Patel

deciduous scrub forests, grasslands, coastal scrub lands, and arid to semi-arid regions. The geographical distributional pattern of the species clearly illustrates that it is discretely distributed into three sub-populations, i.e., two separate populations on the mainland and the third endemic to the

island of Sri Lanka. The mainland population is further differentiated into two separate populations.

Tortoises found in the northern regions of the subcontinent are relatively larger in size and darker. Comparatively, the southern counterparts are smaller with an evitable contrast and sharper patterns (Frazier 1992). At the same time, the third sub-population from Sri Lanka features specimens that mostly resemble the southern “type” but are much bigger. They also show brighter yellowish radiating lines in their carapacial markings compared to the Indian variants (De Silva 2003; D’cruze et al. 2018).

The published literature suggests that IST’s northwestern population is confined between the western limit of Nagar Parkar,

Table 1. Morphometric measurements (cm), body weight (kg) and age of Indian Star Tortoise *Geochelone elegans* from Jambughoda Wildlife Sanctuary.

CL	SCW	CCL	CCW	PL	PW	SH	BW	G	Age (year)
21.5	18.8	37.5	34.5	22.5	19.2	17.5	9.500	Female	~17–20

SCL—Straight carapace length | SCW—Straight carapace width | CCL—Curved carapace length |
CCW—Curved carapace width | PL—Plastron Length | PW—Plastron width | SH—Shell height |
BW— Body Weight | G — Gender



Thar Desert, Pakistan, and the eastern limit of Sariska Wildlife Sanctuary, Rajasthan, India. The north of Pavagadh Hills, Panchmahal District, Gujarat (Vyas 2010) marks the southern limit of this population. There is only one published report of the species occurrence from Mandsapur District, Madhya Pradesh.

This habitat sits between the Chambal River and the adjoining state of Rajasthan (Vyas 2010). However, the northwestern population of IST has been recorded from a total of 31 protected areas (one in Sindh Province, Pakistan and 30 in three states of India (Rajasthan–14, Gujarat–15 and Madhya Pradesh–1)). All these PAs fall under the extent of the distribution range of the northwestern population of IST (Vyas 2010).

In terms of the legal status of the species in India, IST is legally protected under Schedule IV of the Wildlife Protection Act (1972; amended 2005), listed in the CITES Appendix I, and considered ‘Vulnerable’ (VU) in the IUCN Red List (Choudhury et al. 2020). Currently, the species faces various threats in most of its natural habitat (Vyas 2010, 2015).

The published literature indicates 29 reptilian species belonging to three orders currently inhabiting the Jambughoda Wildlife Sanctuary, including one species of crocodile, two species of turtles, 12 species of lizards, and 14 species of snakes (Vyas 2006). Thus, the Jambughoda Wildlife Sanctuary is one of the important protected areas in central Gujarat, located between

22.20–20.33 N and 73.35–73.45 E, in the Panchmahal and Vadodara districts of Gujarat State, India (Vyas 2006). The terrain is hilly and undulated, covered with forests and bordered by cultivated lands around villages in the valley. Pavagadh Hills are the southern-most extension of the Aravalli Hills, forming the Vindhya Mountains’ western fringe.

The sanctuary encompasses 130.38 km² of forest cover at altitudes ranging 230–354 m (Pandya & Oza 1998). This forest classifies as the ‘southern tropical dry deciduous type’, further classified into four sub-types, i.e., 5A/C 1b dry teak forest, 5A/C 2 southern dry mixed deciduous forest, 5/E 9 dry bamboo breaks, and 3B/C 2 southern moist mixed deciduous forest (Champion & Seth 1968).

Conclusively, none of the previous research findings (Pandya & Oza 1998; Vyas 2006) enlist and determine IST presence from the Jambughoda Wildlife Sanctuary. However, Vyas (2006) made a statement indicating the possibility of species occurrence from the sanctuary. The former statement was based on the shared habitat structure and an IST record from the reserved forest of Champaner, Panchmahal, situated 20 km away from the sanctuary (Vyas & Parasharya 2000; D’cruze et al. 2018).

Although the sanctuary is geographically connected with the Pavagadh Hills, further northwards by a region of reserved dry deciduous teak forest, implying that the entire region shares a similar habitat and



forest type. Therefore, the record of an adult *Geochelone elegans* female from Bhat forests becomes the first record from the Jambughoda Wildlife Sanctuary.

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#222
21 May 2022

Recent records of the Red-necked Keelback from northeastern India



The Red-necked Keelback *Rhabdophis subminiatus* at Rani, Assam.
©Sachin Ranade

The Red-necked Keelback *Rhabdophis subminiatus* (Schlegel, 1837) is a colubrid snake, distributed from Nepal in the west up to Borneo in the east. In the north, it is found in central China and in the south, up to Java, Indonesia (Wogan & Chan-Ard 2021).

The snake has colourful appearance such as a yellow band followed by red neck and rest of the body appears olive-green with

faint black & yellow markings. This snake could be distinguished from its look-alike species by scale counts. The species has eight supralabial scales; three to five scales touching the eye.

There are two subspecies known—*R. s. subminiatus* has a distinct oblique black bar below the eye, while *R. s. helleri* does not have a black line below the eye or it



is indistinct (Whitaker & Captain 2004). In this article, recent sightings of the species at three locations in northeastern India are documented.

Balpakram National Park, Meghalaya

This protected area is situated in Baghmara District of Meghalaya, where it shares the international border with Bangladesh. The area is part of Garo Hills and comprises of broad-leaved deciduous forest. On 2 June 2015, during the vulture survey, a transect was being carried out from Mahadeo (25.183 N, 90.916 E) to Sagunsaram in the morning. On the previous day, there was heavy rain and thunderstorm, and the weather was still humid but warm (about 30°C).

During the walk through the forested area, a snake crossed my path. Its flashing red-yellow-green colours attracted my attention and I was able to photograph the individual. The individual aggressively inflated its anterior body for a moment and then hurriedly vanished into the vegetation. Later on, referring to the 'Snakes of India: The Field Guide' by Whitaker & Captain 2004, I was able to identify the species as Red-necked Keelback *R. subminiatus*. Earlier, it was recorded from Nokrek Biosphere Reserve in Meghalaya (Mathew & Meetei 2013).

Buxa Tiger Reserve, West Bengal

With the sighting of this species in Balpakram National Park, I eagerly referred my photographic archive. Interestingly enough, I could find the same species photographed as a road-kill at Rajabhatkhawa (26.617 N,

90.916 E, altitude 298 m) in Buxa Tiger Reserve on 12 January 2010. This national park covers part of the foothills of Himalaya and the forest is categorised as broad-leaved deciduous forest. Here, January is the peak of winter season with the temperature dipping to around 5 °C with foggy weather conditions. On that particular day, the snake was killed at night on a road passing through the forested area. From the photographs, the scale pattern was compared and species was confirmed to be the Red-necked Keelback *R. subminiatus*. This confirms the continuous distribution of the species that was missing between the states of Sikkim and Assam in earlier studies (Whitaker & Captain 2004).

Jorasil Reserve Forest, Rani, Assam

Jorasil Reserve Forest is on the outskirts of Guwahati city, in Kamrup District of Assam. My field station, the Vulture Conservation Breeding Centre, is just outside the reserve in Belguri Village (26.002N, 91.548 E). The snake is a common visitor to office premises and was photographed for the first time on 8 December 2018 emerging from a rat hole. During the last couple of years, it was seen regularly, throughout the year. This snake species is recorded from Assam (Whitaker & Captain 2004; Sengupta et al. 2019), Tripura (Majumder et al. 2012), and Nagaland (Sen & Mathew 2008).

This snake species is known for its interesting behaviour of 'bufophagy' (Mohammadi & Hill 2012). It is known for predating on other anurans as well, on example Balloon Frog *Uperodon globulosus* in Bangladesh (Shihan



& Kabir 2015) and *Kaloula medilineata* (Mohammadi & Hill 2012). I was able to witness the snake feeding on *Duttaphrynus melanostictus* and *Fejervarya* sp.

My records of the species in Buxa Tiger Reserve in West Bengal, Balpakram National Park in Meghalaya and Jorasal Reserve Forest in Assam added new distributional data of this medically important venomous snake.

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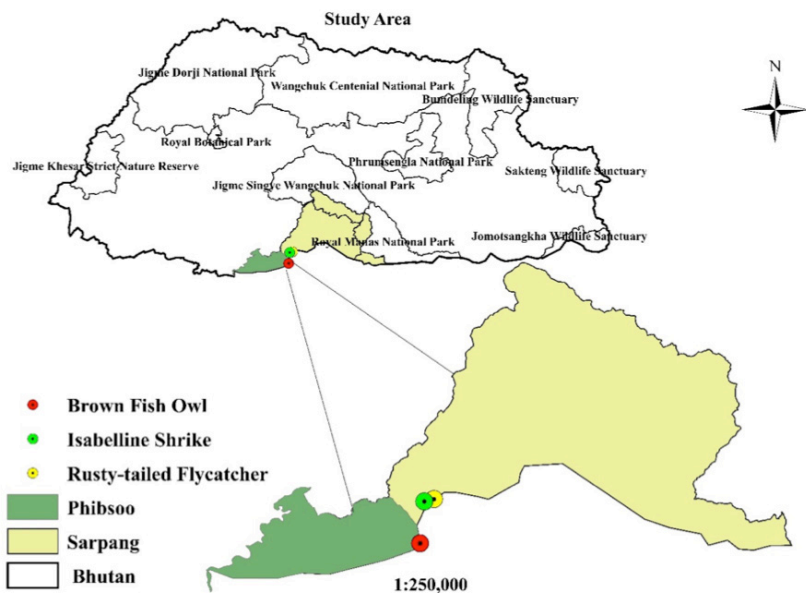
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New records to the birds of Bhutan from Sarpang & Phibsoo Wildlife Sanctuary

In this paper, we record the occurrence of Rusty-tailed Flycatcher *Ficedula ruficauda*, Isabelline Shrike *Lanius isabellinus* and Brown Fish-Owl *Ketupa zeylonensis* from Sarpang & Phibsoo Wildlife Sanctuary (PWS) as first records from Bhutan. For each of these records, we provide a digital photograph, geo-referenced locality data, and habitat information.



Observation sites of new birds.

Rusty-tailed Flycatcher: *Ficedula ruficauda* (Swainson, 1938) is a partially migratory and small passerine bird that breeds in central Asia and the western

Himalaya (Rasmussen & Anderton 2005; Taylor & Clement 2006). The bird had rufous upper tail-coverts and tail resulting in a redstart-like appearance,

flat forehead, and crown feathers slightly raised giving a slight crested appearance, plain face with only a faint supercilium and indistinct eye-ring. The bird also has orange bill and rather plain brown upperparts which are additional identification features for Rufous-tailed Flycatcher.



Rusty-tailed Flycatcher. © Namgay Dorji

According to BirdLife International (2021), the bird is common in northern and western India, Pakistan, and Nepal. It is a rare bird in eastern India, Uzbekistan, and Tajikistan. On 15



Isabelline Shrike. © Namgay Dorji

July 2018, a Rusty-tailed Flycatcher was observed for the first time in Bhutan by Namgyel Dorji from Singye Gewog (26.8488 N; 90.2144 E) at 0900 h at an elevation of 313 m.

The bird was observed perching on a wire in open forest with the main canopy comprising *Duabanga grandiflora*, *Bombax ceiba*, and *Tetrameles nudiflora* while the undergrowth consisted of *Chromolaena odorata*, *Mikania micrantha*, *Psilanthus bengalensis*, *Justicia adhatoda*, and bamboo species. The species has been assessed as Least Concern by BirdLife International (2021).

Isabelline Shrike *Lanius isabellinus* is known to breed from Iran through central Asia, the Russian Altai Mountains to northern China and Mongolia reaching the upper Amur River (Dementev & Gladkov 1968; Cramp &

Perrins 1993). It prefers to breed in hilly areas between 1,000 and 2,000 m (Ignatov et al. 2015). The taxonomy of Isabelline Shrike is known to be complex and has been the source of debate (Ignatov et al. 2015). Among shrikes, *Lanius isabellinus* has the highest potential for vagrancy in Europe based on its range and migratory habits. It was observed for the first time in Bhutan at Singye Gewog (26.8451 N, 90.1991 E) in Sarpang on 6 October 2018 at an elevation of 313 m at 0930 h by Mr. Namgyel Dorji.

The bird's habitat was covered by dense forest of *Terminalia tomentosa*,



Brown Fish-Owl. © Namgay Dorji

Duabanga grandiflora, *Gmelina arborea*, *Tetrameles nudiflora*, *Schima wallichii*, and *Bombax ceiba* with an undergrowth of invasive weeds such as *Chromolaena odorata*, *Sida acuta*, *Psilanthus bengalensis*, and *Tabernaemontana divaricata*. Expert advice from Dr. Sherub and Tim Inskipp was sought through the Bhutan Birdlife Organization which later confirmed the species as a first winter *Lanius isabellinus*, a new record for Bhutan. Furthermore, Grimmett et al. (2016) was used for identification. The bird had a typical structure of a shrike. The greyish bill had dark edges, the thin supercilium was white to creamy in color, a black mask ran from the forehead across the lores to the ear coverts, the upper parts were uniformly grey. The tail and rump were bright rufous with the rump paler than upper tail. The species is categorized as Least Concern by BirdLife International (2021).

Brown Fish-Owl *Ketupa zeylonensis* is a resident owl which occurs in the subcontinent south of the Himalaya from northwestern Pakistan, east to Assam, eastern Meghalaya, Bangladesh and Sri Lanka (Wadatkar et al. 2014). The bird occurs mostly in lowlands by streamsides, thickets, villages, groves, in open forests (Rasmussen & Anderton 2012), also in deciduous and semi-deciduous forests, and well-wooded areas up to 1,900 m (Ali & Ripley 1987; Rasmussen & Anderton 2005). Marks et al. (1999) reported that the species is generally uncommon even though the global population is not quantified. However, the species is listed as globally

Least Concern due to its extremely large range (BirdLife International 2021). The bird was sighted for the first time in Bhutan on 25 November 2019 by Mr. Namgyel Dorji at Phibsoo (26.7794 N, 90.1926 E) at an elevation of 315 m in 2019.

It was observed resting on a branch of *Tetrameles nudiflora*. The area was covered by dense forest of *Shorea robusta*, *Terminalia indica*, *Duabanga grandiflora*, *Michelia champaca*, *Schima wallichii*, with an undergrowth of invasive species such as *Chromolaena odorata*, *Psilanthus bengalensis*, *Tabernaemontana divaricata*, *Mikania micrantha*, and *Clerodendrum* species. The bird was identified using Grimmett et al. (2016), Grewal et al. (2017) and expert identification through the Bhutan Birdlife Organisation. The bird had fine cross-barring on the underparts especially on lower flanks with dark rufous brown upperparts. It also had heavily streaked darker underparts. The tail of the bird is short with white tips, yellow legs and unfeathered tarsi. The unfeathered tarsi eliminate the closely related Tawny Fish-Owl *Ketupa flavipes*.

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Migratory raptor diversity in West Midnapore, West Bengal

The presence of raptors in the wild serves as an indicator for ecological health. They play a crucial ecological role by keeping the balance. Six hundred species of raptors all over the world and 106 species can be found in India alone. There are primarily two kinds of raptors -diurnal (day flying) and nocturnal (night flying).

West Midnapore is located at 22.4080°N 87.3811°E at 23 m elevation. During our continuous morning survey from 2019 to 2021, we have photographed all migratory raptors (Table 1). We used a binocular (Olympus 10×50) along with Canon DSLR and Nikon P900 for photography. We consulted the literature for the proper identification of the birds (Naoroji 2006; Grimmett et al. 2016; Praveen et al. 2018). We had spotted the following raptors during our survey.

The Black Eagle (family Accipitridae) is the only member of the genus *Ictinaetus*. It soars over forests in the hilly regions of tropical and subtropical southern and southeastern Asia, as well as southeastern China. It is easily identified by its widely splayed and long primary 'fingers'.

The wings are just above the horizontal plane and held in a shallow V during flight. The bird was spotted in Salboni Forest, west Midnapore in the first week of December.

Osprey *Pandion haliaetus* is widely found in the lakes and rivers of West Bengal during winter. In Bengali it is popular as *Machmural* and in Hindi-as *Machlimar*.

Short-toed Snake-Eagle can be identified in field by its predominantly white underside and upper parts being grayish-brown. The tail has three or four bars. Owl-like rounded head, bright yellow eyes and lightly barred under wing are the other keys (Anon 2022).

Booted Eagle is buzzard-like raptor but definitely eagle-shaped, can be identified by long fingered primary flight feathers and a long square-shaped tail. It has distinctive feathered legs (boots) prominent when perched. Dark morph can be confused with Black Kites and Marsh Harriers.

The Indian Spotted Eagle is a small bird slightly larger than a kite but structurally similar to other large eagles, with six spread 'fingers' at the wingtip and a pale rump.

Hen, Pallid, Montagu's, Western Marsh and Pied are five species of harriers that come to spend the winter in India from central Asia and Russia (Verma 2007). We have documented Montagu's, Western Marsh and Pied Harrier from Midnapore. The Pied Harrier is a small bird of prey. A male and female Pied Harrier shows strong plumage colour differences. The male bird is pale

Table 1. Birds of prey from West Midnapore and their conservation status.

	Common name	Scientific name	IUCN Status	Sighting month
1	Black Eagle	<i>Ictinaetus malaiensis</i>	LC	December 2020
2	Indian Spotted Eagle	<i>Clanga hastata</i>	VU	December 2020
3	Himalayan Buzzard	<i>Buteo refectus</i>	LC	October 2020
4	Booted Eagle	<i>Hieraaetus pennatus</i>	LC	December 2020 and October 2021
5	Amur Falcon	<i>Falco amurensis</i>	LC	October 2021
6	Osprey	<i>Pandion haliaetus</i>	LC	December 2020
7	Pied Harrier	<i>Circus melanoleucos</i>	LC	October and December 2020
8	Western Marsh Harrier	<i>Circus aeruginosus</i>	LC	October 2020
9	Montagu's Harrier	<i>Circus pygargus</i>	LC	December 2019
10	Black-eared Kite	<i>Milvus migrans</i>	LC	November 2020
11	Peregrine Falcon	<i>Falco peregrinus</i>	LC	October 2020
12	Short-toed Snake-Eagle	<i>Circaetus gallicus</i>	LC	November 2021

grey with black head with mantled back, upper breast and tail coverts. We spotted the bird at grassland associated wetland. On 30 December 2019, we spotted Montagu's Harrier *Circus pygargus* in Kesiari Block. As this is the first report of the species from the state, it is difficult to conclude whether it is a passage migrant, or a vagrant in West Bengal (Pratihara & Mandal 2020).

Peregrine Falcons are the key falcon over most of the continent, with long, pointed wings and a long tail. Long primary feathers give the Peregrine a long-winged shape, males are smaller than females. We spotted the bird in town area of West Midnapore.

The Amur Falcon is a mesmerizing migratory raptor. Every year, the small birds make the daring expedition from breeding grounds in Russia and China to winter in southern Africa. We have spotted the bird in October 2021.

Common Kestrel occurs over a large range in Europe, Asia, and Africa. It is mostly found around the jungle of Western Ghats and Eastern Ghats of India. We spotted the bird in many places around the Kangsabati River.

This short note on diversity of raptors in west Midnapore District includes twelve species belonging to three families. One species (Indian Spotted Eagle) is Vulnerable as per the IUCN Red List (Table 1).

Common Kestrel



Booted Eagle



Osprey



Black Eagle



Himalayan Buzzard



Indian Spotted Eagle



Amur Falcon



Pied Harrier



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Sighting of albino Black Drongo in Mayiladuthurai District, Tamil Nadu

On 20 August 2021 around 10am, I was watching the birds active in the cropland where we were ploughing our paddy field using tractor.

There were bird species such as Black Drongo, Common Myna, House Crow, Bramini Kite, Black Kite, Small Green Bee-eater, etc were very active to catch their prey which were emerging out from the paddy field after ploughing. Some of the birds were sighted perching on a mango tree and making loud noise.

I saw a white coloured bird which was confirmed as an albino Black Drongo *Dicrurus macrocercus* perching on the same tree along with other companions. I could shoot the photograph of the bird with my Samsung android phone.

Similar observations were made at Amravaty District of Maharashtra by Wadatkar & Wagh (2013) and another case of partial leucism in



Black Drago was observed in a rice field at Agricultural University campus, Thrissur, Kerala (Prasad 2000)

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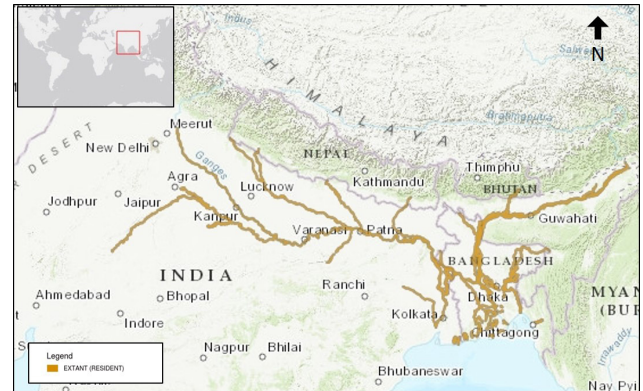
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Impact of the COVID-19 lockdown on the conservation of the Ganges River Dolphin in India

The Ganges River Dolphin *Platanista gangetica* is an endangered freshwater species distributed across the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems in India, Bangladesh, and Nepal. The dolphin lives in one of the world's most densely populated areas. It is threatened primarily by the water development projects, bycatch, poaching, and chemical pollution in the rivers (Braulik & Smith 2019). Despite surviving for 20–30 million years (Hamilton et al. 2001; de Muizon et al. 2018), now the distribution range and population of these dolphins have been declining significantly (Braulik & Smith 2019). The smaller subpopulations of the dolphin have already been extirpated from many of the smaller tributaries and upstream areas, resulting in a historical and



Existing range of distribution of the Ganges River Dolphin. Source of Map: Braulik & Smith (2019)

ongoing range decline (Braulik et al. 2021). The continuing decline in both range and abundance of this species is significant evidence of the continuing degradation of the rivers to meet the demand of the ever-increasing human population and the paucity of proper conservation management of this species.



The long-term survival of the Ganges River Dolphins depends on the symbiosis of the species with the fisher community, hence it needs to be conserved and promoted in post anthropause world.
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The anthropause (as termed by Rutz et al. 2020) caused due to COVID-19 lockdown halted the degradation of habitats by bringing a noticeable improvement in the quality of air, cleaner rivers, less noise pollution, and undisturbed natural habitats (Bulbulia et al. 2020; Rutz et al. 2020). Improved habitat quality and better connectivity among the habitat patches due to the least anthropogenic disturbances allow the wild animals to roam around and they start visiting the areas which were previously avoided by them due to anthropogenic disturbances. Similarly, the reports of dolphin sightings in the stretches of rivers where they were usually not present had started surfacing in the news and articles. Furthermore, a similar pattern of dolphin dispersion has also been observed in about 225 km stretch of Upper Ganga River in Hastinapur Wildlife Sanctuary and Narora Ramsar site. This great anthropause has given an opportunity to endangered species like the Ganges River Dolphin to increase their 'Darwinian Fitness' by exploiting the undisturbed new habitat patches for foraging, reproduction, and mating (Rutz et al. 2020).

Unfortunately, there was also a flip side of this anthropause. As the river watch by riparian communities, law enforcement, and patrolling by concerned government department declined during the lockdown, there was an increase in illegal killing of wildlife (Aditya et al. 2021).

The incidences of crime against the dolphins also increased the carcasses being found in river Ganga at Hastinapur Wildlife Sanctuary and Narora Ramsar Site (Uttar Pradesh), in the Barh subdivision of Patna (Bihar), at Hoogly and Rupnarayan River confluence (West Bengal), and in Govari River in Kendrapada (Odisha) (Rawat 2021). Further, the brutal killings of the dolphins by the goons in the Sharda minor canal in Pratapgarh District (Uttar Pradesh) and in Hooghly River between Kolkata and Burdwan (West Bengal) during lockdown have shown the lack of awareness and compassion among masses for the national aquatic animal of India (Rawat 2021). Therefore, sensitization of people to develop a sense of stewardship for the dolphins and other associated fauna is the need of the hour. Development of the citizen network for dolphin conservation is also needed, these citizens can be trained and linked to the concerned local forest departments. They can report the dolphin occurrence, changes in habitat and threats over time to the concerned forest departments.

The pandemic emphasized the interdependences of people and ecosystems (Smith et al. 2021). Humans cannot survive without a balanced ecosystem, so do the GRD, hence the GRD shares the risk and future with us. Furthermore, the overexploitation of its fisheries through unsustainable

and unethical fishing practices case the irreplaceable decline of prey base for GRDs and on the other hand, it also endangered the livelihood of the fisher community.

Also, the pollutant coming into the rivers through industries, agriculture, and sewage are degrading the rivers which are the lifelines for humans and the dolphins. The halt in anthropogenic disturbances during the lockdown has shown a light of hope and demonstrated the ecosystem we share with the Ganges River Dolphins still has its resilience and can bounce back and its creatures can flourish as of old times if we limit our unnecessary pressure on the ecosystem post anthropause also.

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First photographic report on occurrence of Madras Tree Shrew from Mangrove-entangled Indian Sundarbans

Sundarban is the only mangrove which possesses the charismatic Royal Bengal Tiger population. Tiger reserves are generally focused on their population and their demographic ecology, apart from that, prey-base and associated fauna are also important to sustain an ecosystem and wildlife management.

Recently, trap cameras were installed in 573 locations throughout the Sundarban Tiger Reserve during the All India Tiger Estimation 2022. A pair of trap cameras (Cuddeback C1 camera) was installed beside Bagmara Channel (locally called Khal).

A Madras Treeshrew a.k.a. Indian Treeshrew *Anathana ellioti* of the family Tupaiidae and order Scandentia was captured in one of the trap cameras in the east range on 18 December 2021 around 1129 h. Previous works on mammalian fauna of the Indian Sundarbans were well



Grid map location of Bagmara Channel. © Sundarban Tiger Reserve, West Bengal.



Zoomed picture of Madras Treeshrew. © Sundarban Tiger Reserve, West Bengal.



studied, but no such record of the tree shrew species is found from mangrove deltaic region till date (Mallick 2019).

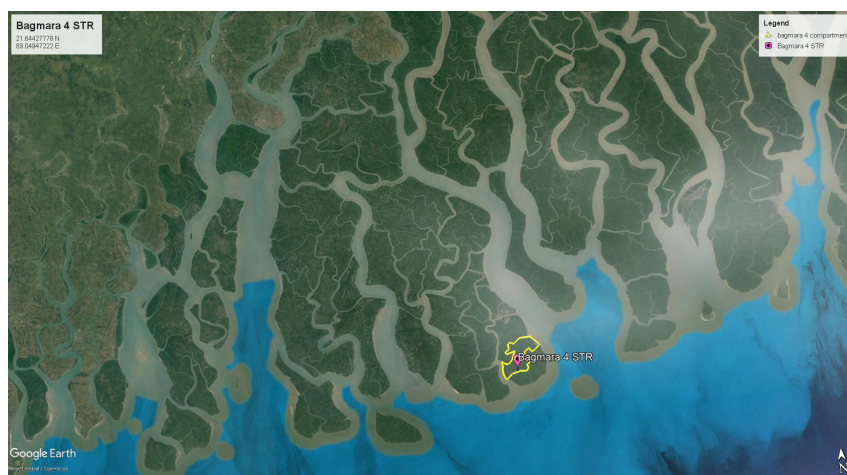
Literary survey on tree shrews supports the presence of *Anathana ellioti* in central India, southern India, Odisha, and Purulia District of West Bengal (Mallick 2019; Debata & Palei 2020) but not in the Sundarban landscape. This communication is presumably the first report of the occurrence of *Anathana ellioti* from mangrove delta.

The identified location is in close proximity to Indo-Bangladesh International border, separated by waterways. *Anathana ellioti* is listed under 'Least Concern' species as per the IUCN Red List (Molur 2016) and in Appendix II of CITES.

It generally feeds on seeds, fruits, insects, birds, and small mammals. The



***Anathana ellioti* found in trap camera © Sundarban Tiger Reserve, West Bengal.**



GPS location of the compartment of Sundarban Tiger Reserve. © Sundarban Tiger Reserve, West Bengal.

morphology and ethology of the species resembles a squirrel, hence it is difficult to identify the species (Tiple & Talmale 2013). This finding demonstrates that a strategically placed trap camera not only records a majestic apex predator and its prey but also lesser-known elusive wildlife which remain incognito.

Camera ID	Grid no.	Compartment / Location	Beat name	GPS coordinates	Associated flora
BG14A	2111	Bagmara 4 Compartment / Bagmara Khal	Bagmara	21.644 N 89.049 E	Sundari <i>Heritiera fomes</i> Gnewa <i>Exocoecaria agallocha</i> Pasur <i>Xylocarpus mekongensis</i> Garan <i>Ceriops decandra</i>



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Mallick, J.K. (2019). An updated checklist of the mammals of West Bengal. *Journal on New Biological Report* 8(2): 37–123.

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Tiple, A.D. & S.S. Talmale (2013). Occurrence of The Indian Tree Shrew *Anathana ellioti* (Waterhouse) (Mammalia: Scandentia) in central India. *Tigerpaper* 40(2): 14–18.

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A rare intergeneric mating between Pea Blue and Forget-me-not butterflies

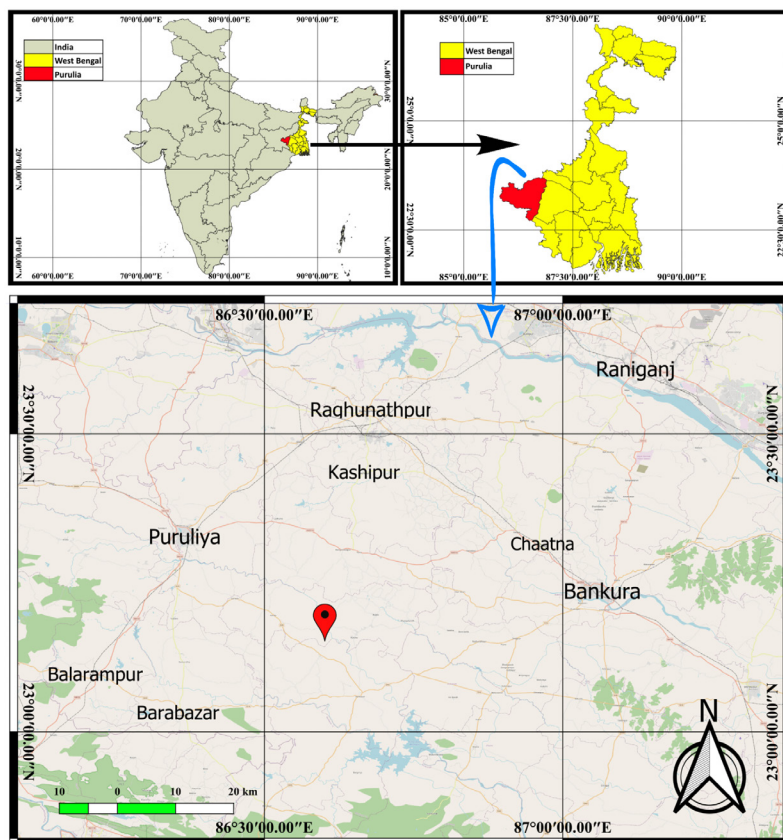


Intergeneric mating between Pea Blue *Lampides boeticus* (Linnaeus, 1767) and Forget-me-not *Catochrysops strabo* (Fabricius, 1793). © Supriya Mahato.

During a field visit in Delang village of district Puruliya, West Bengal on 13 February 2018 at 11:09 AM, the author found two butterflies flying above the ground. After some time this pair came down to ground level and sat on a dry branch. In the field, the author could not recognize the pair but it seemed unnatural, so he took some photos with his mobile camera.

For the next 5–8 min the pair seemed very calm and hardly moved, and suddenly the pair flew away. The images revealed that both

of the butterflies were from different genera, one was *Lampides boeticus* commonly known as Pea Blue and the other was *Catochrysops Strabo* commonly known as Forget-me-not (Bhakare 2021; Saji & Chhaya 2021). The place along river Kangsabati (23.186 N; 86.607 E) contains lots of host plants, and some small waterbodies nearby which makes the place a perfect habitat for butterflies. This place receives rainfall of 1,100–1,500 mm with the temperature varies between 2.8°C to 52°C and according to google earth the elevation



Location of the sighting of the intergeneric mating between Pea Blue and Forget-me-not.

K., S. Sondhi & P. Roy (eds.). *Butterflies of India*, v. 3.17. Indian Foundation for Butterflies. <http://www.ifoundbutterflies.org/sp/596/Lampides-boeticus> (Accessed on 7.xi.2021).

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of the study area is 172m (Samanta et al. 2017).

The study by Samanta et al. 2017 observed good species to genera ratio which indicating towards strong intra-generic competition. So from the present study it can be conclude that it is the same type of inter-generic competition between *Lampides boeticus* and *Catochrysops strabo*.

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The Bhutan True Scorpion in the Sikkim Himalaya

The Bhutan True Scorpion *Euscorpiops bhutanensis* of the family Euscorpiidae, was described from Bhutan in 1983. Recently, this species was found in the Himalayan region of Sikkim at Thangsing, forest fringe areas of Fambonglho Wildlife Sanctuary, East Sikkim, at an altitude of 1,677 m at 27.2750 N 88.4894 E.



Tikader and Bastawade (1983) describe it as a medium size male has entire body weakly granular. Its carapace broad and anterior margin deeply notched in the middle with chelicera smooth on basal segment. Its pedipalp thin, slender, elongated on femur, patella and manus where legs almost smooth on femur and patella. In addition to these, its pectines are weakly developed, mesosoma tergites weakly granular and last sternite furnished with

two pairs of weakly granular carinae. The metasoma is weak with elongated telson with an annular ring at the base. Body colour is variegated with dark brown to blackish. Interestingly, the finding of this species in the Sikkim Himalaya at the sub-temperate region is noteworthy as it was not reported earlier.

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Tikadar, B.K. & D.B. Bastawade (1983). Scorpionida (Arachnida), pp. 453-458. In: *Fauna of India: Scorpions, Vol. III*. Zoological Survey of India, Kolkata, 671pp.

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