

Short Note

On the Occurrence of Madras Tree Shrew *Anathana ellioti* (Waterhouse) (Scandentia: Tupaiidae) from Gujarat State, India

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The Madras Tree Shrew *Anathana ellioti* (Waterhouse 1850) (Fig. 1A), also known as Indian Tree Shrew is a member of the Tupaiidae family; an Indian endemic small mammal widely distributed both in the dry and moist deciduous forests peninsular India^{1,2}, up to an altitude of 1400m ASL³. It is relatively a shy animal that gets disturbed by human presence. IUCN Red Data List has uplifted the species as Least Concern (LC) from Near Threaten (NT) because the species found locally common in appropriate habitat and widely distributed⁴. It has decline recently due to threats such as; habitat loss due to plantations, denudation for agriculture, small-scale logging, and clear-cutting, road kills, hunting and medicinal use by local tribes^{4,5}.

The species is reported from various locations in following states of India: Andhra Pradesh, Kerala, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh, Tamil Nadu and Karnataka^{5,6,7,8,9,10}. But majority of these workers didn't include Gujarat state in the range of *A. ellioti*, despite of the type locality of *A. ellioti wrightoni* race is Mandvi, Surat district

(see Table 1, Fig. 1B) which is in southern Gujarat. In addition to this, Chakraborty & Agarwal¹¹ reported this species from Kheda (Central Gujarat), Surendranagar and Junagadh (Saurashtra) based on some old grey literature¹¹. Eight direct sighting records of the species were also observed from Purna Wildlife Sanctuary during biodiversity survey in 2003¹². Herein, we are presenting recent records of the species from Surat-Dangs, which confirms its presence in the Gujarat state.

Dangs is situated in the northern most part of the Western Ghats and Surat forest is adjoining deciduous forest patch to Dangs district of Gujarat state. The Western Ghats have been identified as a global biodiversity hotspot and an Endemic Bird Area^{13,14}. This landscape has two protected areas namely: Purna Wildlife sanctuary (160km²) and Vansda National Park (24km²). The entire forest area of the Vansda National Park is the 3B/C2 Southern moist mixed deciduous forest, 5/E 9 dry bamboo brakes, 5/IS1 tropical riverine forest¹⁵.

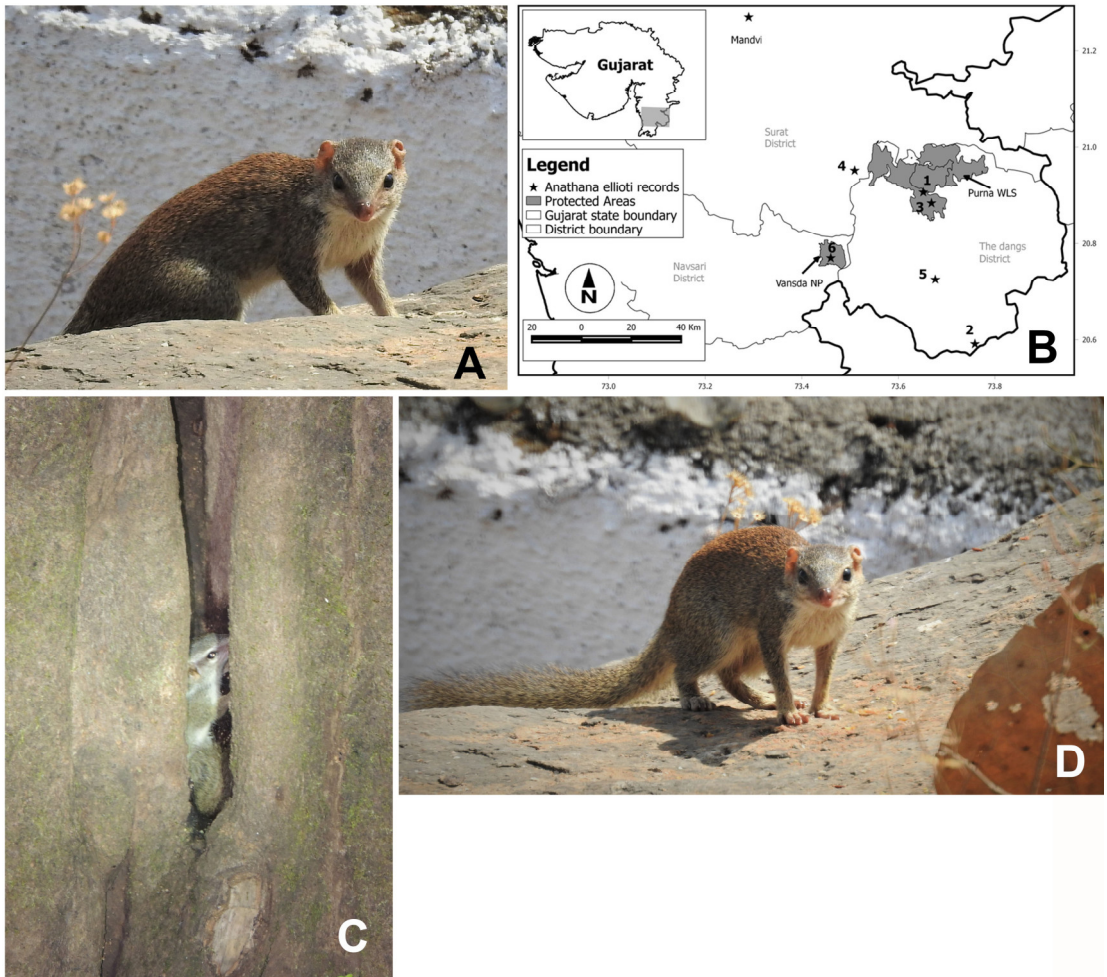


FIGURE 1. A. *Anathana ellioti* from Dangs district, Gujarat; B. Recent records of *A. ellioti* from Gujarat, India (black star) with numbers indicates the presence location recorded by authors; C. *A. ellioti* in tree cavity at Malegaon village, Dangs, Gujarat; D. *A. ellioti* from DCF bunglow at Ahwa, Dangs, Gujarat

The forest of Purna Wildlife Sanctuary categorized into two main categories south Indian moist deciduous forests and southern dry deciduous forest. Further classified under eight sub-types, i.e. 3B/C1a very moist teak forests, 3B/C1b moist teak forests, 3B/C1c slightly moist teak forest, 3B/C2 southern moist mixed deciduous forest, 5A/C1b dry teak forests, 5A/C3 dry mixed deciduous forests, 5E9 dry bamboo brakes, and 5/1S1 dry tropical reverie

forest¹⁵. Other than these protected areas, varieties of habitats are found in the Surat and Dang district, e.g. open deciduous forest, moist deciduous forest, agricultural field (both permanent and temporary), rocky uplands, upland grasslands¹⁵. Elevation height of Dang district is ~150 to 1000m als.

Note on sightings:

In afternoon at around 0230 on November 8, 2015, while returning from the Mahal campsite (N 20.90, E 73.65) at North

TABLE 1. Races of *Anathana ellioti* (J. R. Ellerman & T. C. S. Morrison-Scott 1951).

Sr No.	Race	Collection area/ Locality	Range	Reference
1	<i>A. e. ellioti</i> Waterhouse, 1850	Hills between Cuddapah and Nellore, Eastern Ghats, India.	Eastern Ghats and Shevaory hills, India.	1850. <i>Tupaia ellioti</i> Waterhouse, P. Z. S. 1849: 107, pl.Mamm.13.
2	<i>A. e. wroughtoni</i> Lyon, 1913	Mandvi, near Bombay, India.	Region of Satpura hills, and Dangs, near Bombay, Western India.	1913. <i>Anathana wroughtoni</i> Lyon, Proc. U. S. Nat. Mus. 45:123.
3	<i>A. e. pallida</i> Lyon, 1913	Munbhum, Bihar, India.	Raipur in Central Provinces north-eastwards as far as the Ganges, India.	1913. <i>Anathana wroughtoni</i> Lyon, Proc. U. S. Nat. Mus. 45:124.

Dangs, we found a small rodent-like animal crossing the road. On first encounter, it was confusing with a young mongoose or a squirrel without any stripe. It was our first encounter with Madras Tree shrew on the field and was for about 2 minutes in front of us. It was long snout, the rounded ears, body, limbs and bushy tail suggests a squirrel, and while in motion with a long body and the extended bushy tail, its behavior suggests that of a mongoose. The feet are like that of a squirrel and well fitted for climbing. There was an oblique pale shoulder stripe. We were unable to take any photographic evidence because we didn't have a camera with us. Later on, we confirmed the species with the help of the book of Indian animals¹.

On October 10, 2016, at around 0535 evening, we were on a trail near Malegaon village (N 20.59, E 73.75). While returning from the trail, we found an animal movement inside a tree trunk cavity at about 3 ft of height. By the close inspection, we found a small sized squirrel-like animal. An animal got disturbed by our presence and came out of the cavity, it immediately moved away into bamboo patches. We were able to capture a photograph of the animal (Fig. 1C) which was later identified as Madras Tree shrew.

In the afternoon of March 18, 2017, at around 1434 afternoon, this small mammal was sighted in the backyard of ACF bungalow (N 20.72, E 73.67) at Ahwa by one of us (AV). The bungalow is situated at the fringe of reserved forest compartment no RF-131. Initially, it appeared as if there is a mongoose, or stripe less squirrel but close observation of the animal with long snout indicated that it is a shrew. Later photographs were taken to confirm the identity of the animal (Fig. 1A, 1D). It was observed for few days that the animal was a frequent visitor to the house to drink water from the pots kept of birds in summer. After onset on monsoon the animal was not sighted around the bungalow. Further, the local forest staff and watchmen informed us that the Madras Tree Shrew is called as 'Dhongiya' in the local dialect and is sighted in forests of Dangs including Purna Wildlife Sanctuary¹².

On September 9, 2017, at around at 0927 morning, we were on a bird watching trip; only three of us were there on a Deer breeding center (N 20.88, E 73.66), Purna WLS. We were observing a mixed-species flock of Greater Racket-tailed Drongo *Dicrurus paradiseus*, Black-hooded Oriole *Oriolus xanthornus*, Lesser Goldenback *Dinopium benghalense*, Leaf Warbler *Phylloscopus* sp., Great Tit *Parus major*,

Large Cuckooshrike *Coracina macei*, Jungle Babbler *Turdoides striatus* with a Madras tree Shrew *A. ellioti* (*wroghtoni* probably). This could be the first observation of mixed species foraging association with Madras Tree Shrew and birds from mainland India. A similar observation was made of Andaman Tree Shrew *Tupaia nicobarica* with Greater Racket-tailed Drongo *Dicrurus paradiseus* and sparrowhawks *Accipiter* sp. on great Nicobar island, India¹⁶. We were unable to take any photographic evidence. We repeatedly visited the same location, but unable to make further observations.

On October 23, 2017, at around 0215 afternoon, on a forest trail near Ambapani village (N 20.95, E 73.50), we sighted an animal foraging on the ground in the dense forest patch near a stream. We also sighted this species from Vansda National Park, Navsari (N 20.75 E 73.48) on a couple of occasion while birding in February-April 2016.

Our sightings prove the existence of *A. ellioti* from southern Gujarat. However, the reports from central Gujarat and Saurashtra region needs further confirmation. Despite having two protected areas and good quality of deciduous forest in southern Gujarat, no systematic studies have been conducted to understand mammalian diversity and distribution in the landscape. Report of Blandford's rat or white tailed wood-rat *Madromys blanfordi* from Surat Dangs¹⁷ and recent records of Madras tree shrew *A. ellioti* suggests that there is lack of knowledge on small mammal diversity in the landscape. The landscape may have higher diversity of small mammals. Report of high diversity might be helpful to evaluate the conservation priority of the landscape.

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