



First Report for Painted Globular Frog *Uperodon taprobanicus* in North Bastar Kanker District of Chhattisgarh, (India)

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The North Bastar Kanker is full of natural wealth where different types of species are found every year, out of which new species are found the Painted Globular Frog (*Uperodon taprobanicus*) has been seen for the first time, according to the current study. One year of observation throughout the village badgaon near Khandi Rivershowed this species to be present in this microhabitat. The species' taxonomic validity in the area was aided by morphological and photographsanalysis that validated its identification. The known distribution range of *U. taprobanicus*, which was previously primarily reported in South India and Sri Lanka, is expanded by this finding. In order to shed light on the state of the species' conservation in this area, ecological characteristics like habitat choice, microhabitat usage and potential threats were also evaluated. The exploration underscores the importance of continued monitoring and conservation efforts to safeguard the diversity of

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amphibians in Chhattisgarh and highlights the need for further research to elucidate the ecological requirements and population dynamics of *U. taprobanicus* in its newly identified habitat. This species has been marked in the IUCN data and its conservation is very important in time. If we cannot conserve it, then we will eliminate this species from our ecosystem and we may see natural calamity and loss in the near future.

Keywords: Amphibian; conservation; dynamics; ecological; Khandi River; morphological; microhabitat.

1. INTRODUCTION

The Painted Globular Frog (*Uperodon taprobanicus*) is a small-sized amphibian species belonging to the family Microhylidae, widely distributed across the Indian subcontinent and Sri Lanka [1]. Known for its distinctive coloration and unique morphological features, this species has primarily been documented in southern regions of India and the island nation of Sri Lanka [2]. However, despite its taxonomic recognition and ecological significance, comprehensive studies regarding its distribution and habitat preferences remain limited, particularly in central India [3]. In recent years, efforts to document the amphibian diversity in India have gained momentum, revealing previously undocumented species occurrences and expanding the known distribution ranges of several taxa [4]. Such endeavors are crucial for understanding the biogeography and conservation status of amphibians, which face escalating threats from habitat destruction [5], climate change, and emerging infectious diseases [6]. Here, we present the first report of the Painted Globular Frog (*Uperodon taprobanicus*) in the Village Badgaon, North Bastar Kanker District of Chhattisgarh, India near Khandi river [7]. This finding emerges from comprehensive surveys conducted over a one year period, aimed at documenting the amphibian fauna of the region [8]. Through morphological and taxonomical examinations, we confirm the presence of *U. taprobanicus* in diverse habitats within the district, marking a significant extension of its known distribution range [9]. This report not only contributes to the taxonomic validation of *U. taprobanicus* in central India but also underscores the importance of continued research efforts to elucidate the ecological requirements and population dynamics of this species in its newly identified habitat [10]. Furthermore, the documentation of *U. taprobanicus* in Chhattisgarh highlights the need for enhanced conservation measures to safeguard the biodiversity of amphibians in the region [11]. In this study, we provide a detailed

account of the findings, including morphological descriptions, habitat preferences, and potential threats to the species. By shedding light on the presence of *U. taprobanicus* in Chhattisgarh, our findings contribute to the broader understanding of amphibian distribution patterns in India and emphasize the urgency of conservation initiatives to ensure the long-term survival of this unique species [12]. Amphibians are important ecological players because they contribute to the functioning of ecosystems and serve as markers of environmental health [13]. Of these, the Painted Globular Frog (*Uperodon taprobanicus*) is distinguished by its distinct physical characteristics and restricted range in the Indian subcontinent and Sri Lanka [14]. Even though it is recognized taxonomically, there are few thorough researches on its range and preferred habitats, especially in central India [15]. Through the discovery of previously undiscovered occurrences and the expansion of the known distribution ranges of diverse taxa, recent efforts to catalog amphibian diversity in India have shed information on the ecological requirements and conservation needs of these species [16]. In this regard, our study reports the first known observation of *U. taprobanicus* in the Indian state of Chhattisgarh's Village Badgaon, North Bastar Kanker District [12]. Our conclusions are based on in-depth research done over a period of One year with the goal of cataloging the local amphibian species [17]. By means of morphological inspections, we verify that *U. taprobanicus* is present in a variety of habitats throughout the district, signifying a noteworthy expansion of its previously recognized area of distribution. This article highlights the significance of ongoing research efforts to understand the ecological requirements and population dynamics of *U. taprobanicus* in its newly found habitat [3], in addition to contributing to the taxonomic validation of the species in central India [18]. In addition, the discovery of *U. taprobanicus* in Chhattisgarh highlights how urgent it is to implement conservation measures in order to preserve the amphibian biodiversity in the area [19]. Our research offers a thorough

explanation of the finding, complete with morphological details, preferred habitats, and possible dangers to the species [20]. Our results provide light on *U. taprobanicus*'s existence in Chhattisgarh, which advances knowledge of frog distribution patterns in India and emphasizes the necessity of coordinated conservation efforts to preserve this rare species [21].

1.1 Study Area

We select and identify for study three spot, which is Village Badgaon, North Bastar Kanker District of Chhattisgarh, India near Khandi river longitude 20.141086° North and latitude 80.764915 °. In this area we watch and identify the Globular Painted Frog [22]. The height from sea level of the study area is 300 to 600 meter, annual rainfall is 1492mm, temperature variation is 10 C° to 39.5 C°, Humidity fluctuation from 35% to 95% and the total forest cover is approximate 158kha. Due to deforestation the natural forest of the area had lost about 28% of its land area [23]. The area of the district under study is 6432 square kilometers and the population is approximately 08 lakhs in which seven sections, 1005 villages and 06 municipal corporations have been established [24].

Morphometric details of *U. taprobanicus* - The species was first described as a subspecies of *Kaloula pulchra*, ssp. *taprobanica* [25]. It can grow to an adult length of up to 75 millimeters (7.5 cm) long from snout to vent. The colour of the dorsal surface is greyish-black with a symmetrical pattern of reddish-brown patches on either side including a band of colour stretching

from the back of the eye to the base of the arm [26]. During the breeding season, males develop a dark throat patch [27]. The report describes the discovery of the species in the Village Badgaon, North Bastar Kanker District of Chhattisgarh, India near Khandi River, which is a new distribution record for the species. The report also provides information on the habitat, ecology, and conservation status of the species [28].

Habitat and Ecology: Amphibians found in tropical regions usually live in areas with temperatures of 24 to 27°C and they require 85 to 90% humidity [29]. Painted Globular Frog *Uperodon taprobanicus* is a fossorial species, spending the day buried in the leaf litter, in loose soil or under fallen logs, but can also climb into the branches of trees [30]. It is native to Sri Lanka, India, Bangladesh and Nepal, and is most common in southern India and Sri Lanka. *Uperodon taprobanicus* and *Kaloula assamensis* are distributed to the west and north of the Brahmaputra River Stuart, [31], respectively, while *Kaloula pulchra* is located to the east and south of it, since the Brahmaputra River serves as a barrier to dispersal [32]. This species has an isolated pocket distribution in parts of Gujarat and Rajasthan. In India, it is found in the states of West Bengal, Odisha, Assam, Karnataka, Kerala, Telangana, Tamil Nadu, and Andhra Pradesh, and is most common in the southern areas of the Western and Eastern Ghats. It is most common in Sri Lanka [33], where it is dispersed across the island at elevations from sea level to up to 1300 meters [34].

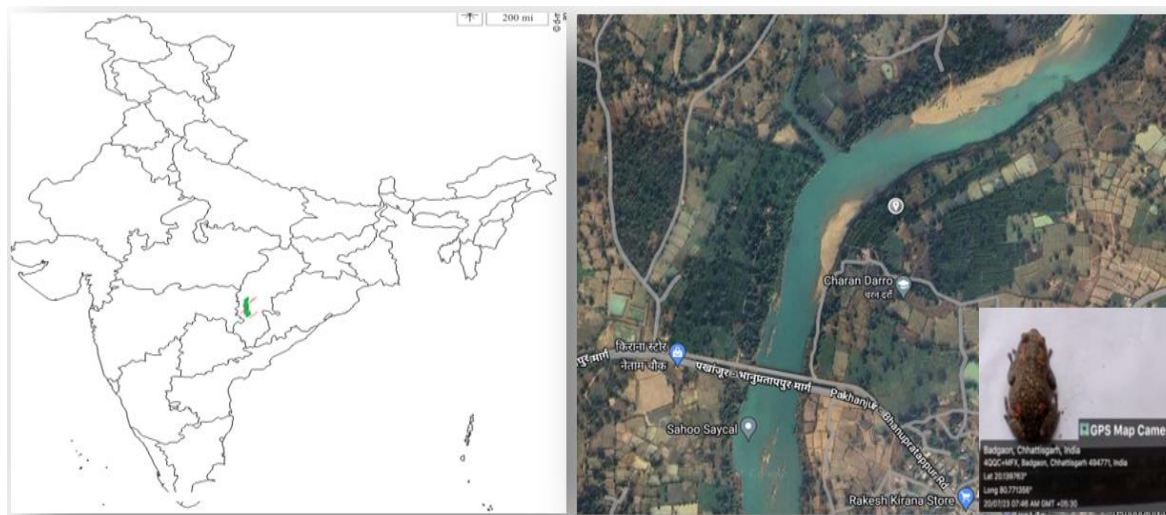


Fig. 1. This map showing the location of reported area



Fig. 2. Painted globular frog *Uperodon taprobanicus*

Table 1. Morphological Character of Painted Frog

S. No.	Parts of Body	Measurement(mm)
01	Eye Diameter	2-5mm
02	Weight	10-13gm
03	Body Length (Snout-vent)	60-65mm
04	Distance between eye	9-12mm
05	Distance between two ends of the jaws	10-12mm
06	Distance between snout and eye	4-6mm
07	Forelimb length	23-26mm
08	Tribial length	19-22mm
09	Femur length	18-20mm

Table 2. Environmental condition

Parameter	Study Area (Village Badgaon)	Status of Major Hotspot of Animal Diversity
Annual Rainfall (mm)	1492	2000
Temperature Variation (°C)	10 - 39.5	15 - 35
Humidity Fluctuation (%)	35 - 95	40 - 80
Forest Cover (kha)	158	500

1.2 Conservation Status

The IUCN lists Painted Globular Frog *Uperodon taprobanicus* being of "Least Concern" [28]. However, the species is threatened by habitat loss and degradation due to deforestation, agricultural expansion, and urbanization [35]. The species is also threatened

by the collection of individuals for the pet trade [36]. The authors of the report on the first record of the species in North Bastar Kanker District Chhattisgarh suggest that further studies are needed to determine the distribution and population status of the species in the region, and to develop conservation strategies to protect the species [37].

2. RESULTS AND DISCUSSION

This species is found in three stages, which are small, medium and large in size. Out of which the small one is just born and tries to keep itself alive and the second medium one is struggling to live, the large frogs carry forward their lineage, meanwhile they carry out their daily life according to time [38]. We found in our study that the number of small frogs is less in villages but their number is more in cities but they die due to

pollution in that area, but the number of medium sized frogs is more in villages but less in experiences, due to which their number seems to be increasing in villages [39]. The large sized frogs are more as per the district but their number is seen in villages, cities and experiences, then their number has gone from less to very less, in some places it is on the verge of extinction, which is due to unnecessary development, urbanization, resettlement and being far away or ignoring nature [40-43].

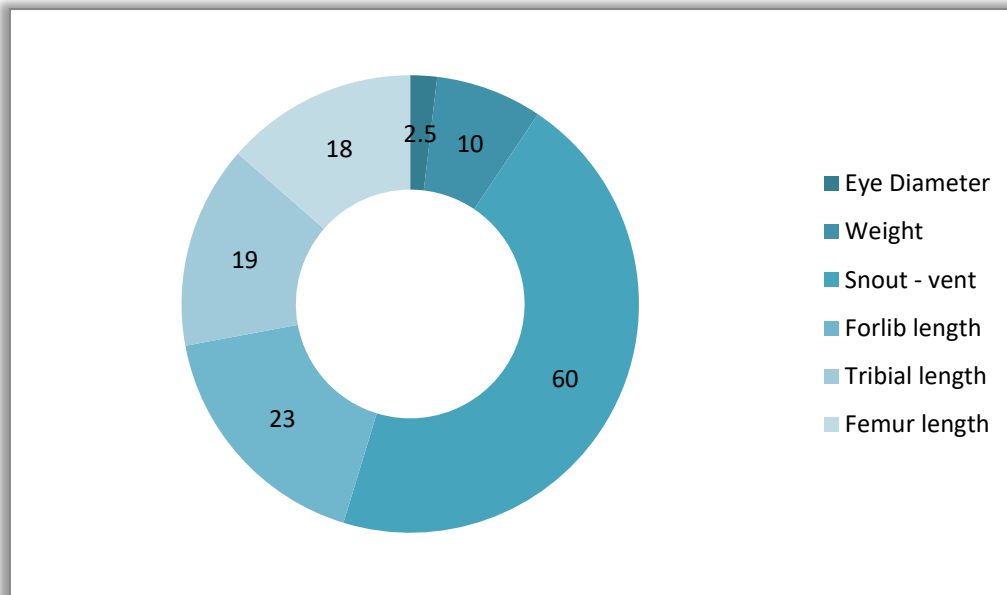


Fig. 3. Morphological character of painted frog

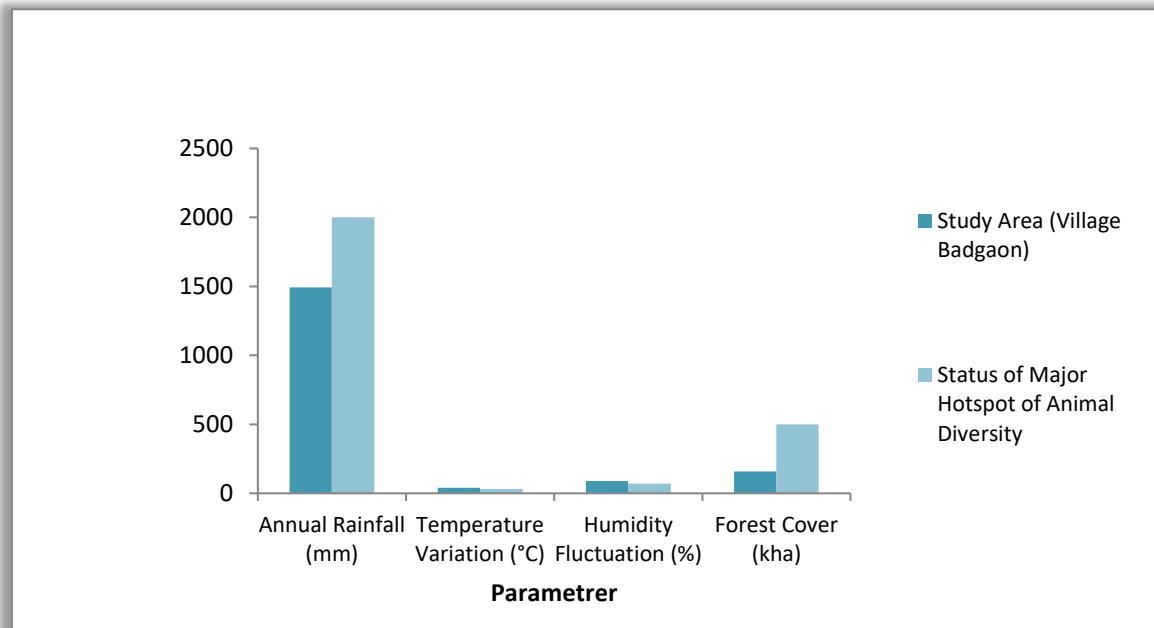


Fig. 4. About study area and their animal heterogeneti

3. CONCLUSION

Painted Globular Frog *Uperodon taprobanicus* a species of narrow-mouthed frog found in Nepal, Bangladesh, southern and eastern India, and Sri Lanka up to an altitude of about 1300 meters. The report describes the occurrence of the species in the North Bastar Kanker District of Chhattisgarh, India, which is a new distribution record for the species. The report also provides information on the habitat, ecology, and conservation status of the species. The authors of the report suggest that further studies are needed to determine the distribution and population status of the species in the region, and to develop conservation strategies to protect the species.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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