

## Occurrence of Ornamented Pygmy Frog, *Microhyla ornata* (Duméril & Bibron) (Amphibia: Anura: Microhylidae) in Burdwan, West Bengal, India

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### Abstract

The ornamented pygmy frog or ornate narrow-mouthed frog, *Microhyla ornata* (Duméril & Bibron) is recorded first time from Burdwan University Campus, West Bengal, India. It is included in the subfamily Microhylinae of family Microhylidae under the order Anura of class Amphibia. The species is scheduled as “Least Concern” in IUCN Red List.

**Keywords:** Anura, Ornamented Pygmy Frog, *Microhyla ornata*, Microhylidae, Least Concern, Burdwan, West Bengal, India

### 1. Introduction

There are thus far 7,561 amphibian species worldwide, of which anurans are comprised of 6,670 species, urodels 686 and apodans 205<sup>[1]</sup>. Since 1990 attention has grown rapidly on amphibians in South Asia, particularly in India, Sri Lanka and Bangladesh. This reveals a regional boost in research into taxonomy, biodiversity census, conservation assessment and distributional range for which extensive field surveys are being carried out by several researchers to get a comprehensive picture of Amphibia<sup>[2]</sup>. Such field studies have resulted in the accumulation of huge data of amphibian diversity and conservation assessment from the different corners of the India and other parts of South Asia<sup>[3-18]</sup>. So far 342 amphibian species (306 anurans, 35 urodels and 01 apodan) are recorded in India<sup>[19]</sup>. South Asia is said to be rich in amphibian diversity with well-known predominant anuran families, Dicroglossidae and Microhylidae. The Family Microhylidae includes around 564 nominal species accounting approximate 8.5% of global frog diversity<sup>[20]</sup>. Furthermore, many new cryptic species are to be identified in this family as a result of extensive exploration of more and more areas in this region and involvement of molecular systematists for proper evaluation of taxonomic status<sup>[13]</sup>. The endemic Asian genus *Microhyla* Tschudi under the family Microhylidae comprises 39 known species including so far 10 species in South Asia<sup>[21]</sup>. The ornamented pygmy frog, *Microhyla ornata* (Duméril & Bibron), a widespread species in South Asia inhabits in a number of habitat types such as agricultural land, grassland, lowland forest, forest floor leaf litter, pastureland etc. The ornate narrow-mouthed frog is a subfossorial, nocturnal and insectivorous species but is also active at daytime during the monsoon period breeding in temporary rain pools and other lentic water bodies<sup>[21]</sup>.

The paper states first record of Ornamented Pygmy Frog, *Microhyla ornata* (Duméril & Bibron) from Burdwan University Campus, West Bengal, India.

### 2. Material and Methods

A very small anuran frog, *Microhyla ornata* (Duméril & Bibron) came to notice in the Golapbag Campus of the University of Burdwan (23°15'08.6"N, 87°50'48.9"E),

Burdwan, West Bengal on 11<sup>th</sup> July 2014 around 18.30 hours. The University Campus is located near the Ramnabagan Wildlife Sanctuary covering an area around 14.31 ha having deciduous forest. Within the Golapbag Campus of University an untouched patch of forest surrounded by wall (erstwhile Deer Park of the Maharaja of Burdwan) is located adjoining to Zoology Department. Possibly this protective undisturbed place is the safe habitat of this microhylid frog. The frog was kept in a transparent moist plastic container providing some grass blades and leaf litter covered with a net. However, in the next morning it was noticed that the microhylid frog was died. The specimen was preserved in 10% formalin and kept in the museum of Zoology department. Length of body and different body parts of the specimen were measured in mm scale (ruler). Body weight was measured on a Satorius make digital balance (0.1 g). Photographs were taken in Nikon Coolpix 500. Frog was identified following after<sup>[22-25]</sup>.

### 3. Results and Discussion

The frog was identified as ornamented pygmy frog, *Microhyla ornata* (Duméril & Bibron) (Figs. 1, 2, 3) belonging to the subfamily Microhylinae of family Microhylidae of order Anura. *M. ornata* has a small head and body having no teeth and discernible tympanum with an arrow-shaped mark on the dorsum (Fig. 1). The dorsad is mainly smooth with randomly distributed granules. A groove extends from the back of the eye to the base of the forelimb (Fig. 2). Fingers are short, free of webbing and tips are flattened; relative lengths of fingers, shortest to longest: 1 < 2 < 4 < 3 (Fig. 3). Toes are long, thin, tips swollen, webbing between toes weakly developed; relative lengths of toes, shortest to longest: 1 < 2 < 5 < 3 < 4 (Fig. 3). Necessary measurements of the specimen are given in table 1. The call of *M. ornata* is relatively untuned with rapid trills and very short notes<sup>[26]</sup>. The anuran amphibians are noticeable for their calling behaviour<sup>[27, 28]</sup>. Vocalizing behaviour is useful for delimitation of species of frogs and toads, especially when cryptic ones are involved<sup>[29-31]</sup>. During monsoon period, the males of this species make intense sound (breeding call) audible from quite a far distance. The pristine place adjoining to Zoology department may be considered as ideal for their shelter, propagation and sustenance and may be kept as such to

reach the goal of biodiversity conservation as initiated by the University for submission of the proposal for consideration to declare the University Campus, Golapbag, Burdwan as “Biodiversity Heritage Site” to West Bengal Biodiversity Board (WBBB). Another micohylid frog known as Sri Lankan Bullfrog, *Uperodon taprobanicus* (Parker) has been reported from the same place by [32], substantiating conservation priorities of this area.

*M. ornata* is a very widespread species but endemic to the South Asia (Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka) [2] recorded up to 2000m asl above sea. It is common in the plains of West Bengal including all the districts [23]. The species is listed as “Least Concern” under IUCN Red List [21] since it is widely distributed with adaptability of a wide range of habitats, supposed large stable population, and because it is unlikely to be declining rapidly to meet the criteria for listing in a more threatened category.



**Fig 1:** Ornamented pygmy frog, *Microhyla ornata* (Duméril & Bibron) with different attributes like colour pattern, granulations of integument, and forelimb without webbed fingers and with flattened finger tips (Dorso-lateral view).



**Fig 2:** Ornamented pygmy frog, *Microhyla ornata* (Duméril & Bibron) with a distinct groove extending from the back of the eye to the base of the forelimb, swollen tips of toes in hindlimb and pointed tip of the snout with prominent nostril (Dorso-lateral view).



**Fig 3:** Ornamented pygmy frog, *Microhyla ornata* (Duméril & Bibron) showing the integument with special emphasis on forelimb and hindlimb (Ventral view).

**Table 1:** Morphometric data of Ornamented Pygmy Frog, *Microhyla ornata* (Duméril & Bibron).

Sl. No.	Morphological characters	Measurement
1.	Body weight	0.51 g
2.	Body length (Snout-vent)	21.5 mm
3.	Eye-snout tip distance	2 mm
4.	Head length	4.8 mm
5.	Head width	6 mm
6.	Eye diameter	1 mm
7.	Eye-nostril distance	1.5 mm
8.	Distance between eyes	2.5 mm
9.	Fore limb length	6.5 mm
10.	Hind limb length	20 mm

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