

**RECORD OF *HUMERANA HUMERALIS* (BOULENGER 1887) FROM RANGPUR DISTRICT OF NORTH-WESTERN BANGLADESH**

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**Abstract:** A male Bhamo frog *Humerana humeralis* was first time collected from Rangpur, Bangladesh, outside its usually habitat. The dorsal surface was characteristically olive brown to bright green in colour and the ventral surface was whitish. Black spots were distributed between nostril and between eyes. The length of snout-vent, head, snout were found to be 43.25 mm, 14.50 mm and 7.5 mm, respectively. Some information of its natural history is also included in the paper.

**Key words:** *Humerana humeralis*, Distribution, Northwestern Bangladesh

**INTRODUCTION**

*Humerana humeralis* Boulenger, 1887 is known to be a rare anuran species (Family: Ranidae) in Bangladesh (Chakma 2009). Although the species is globally considered as Least Concern, the population of this species is however decreasing (Paul van Dijk *et al.* 2004). The species is known to occur in Myanmar (Boulenger 1887, 1890), Nepal (Schleich and Kästle 2002), Nagaland (Ao *et al.* 2003), Assam and Arunachal Pradesh (Hussain *et al.* 2007) of India. Description of collected samples of *H. humeralis* seems to be very necessary since there is no reliable published morphometric data for this species in Bangladesh. Khan (2008), Chakma (2009), Feeroz *et al.* (2011) and Feeroz (2013) recorded this species from Teknaf, Khagrachari and Rema-Kalenga wildlife sanctuary. Recently, Hasan *et al.* (2014), however, reported this species from Panchagarh district of Bangladesh.

Because of its dynamic geological history and partitioned insular geographical features (Hamilton 1979, Hall 1996), Southeast Asia is one of the most diverse and yet poorly understood amphibian fauna on the planet (Chowdury 1996). Only a very few studies have been published providing a check list of Bangladesh amphibians (Asmat 2007, Chowdury 1996, IUCN Bangladesh 2000; Kabir *et al.* 2009, Khan 1982, 2004, 2008 and Sarker and Sarker 1988). Several articles (Paul van Dijk *et al.* 2004, Asmat 2007, Chakma 2009, Feeroz *et al.* 2011 and Khan 2008) mentioned the presence of *H. humeralis* in eastern Bangladesh. Unfortunately, no morphological description (including measurements such as snout-vent length SVL) has been provided by them,

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although size can be a good indicator for classification and scientific validation of a species in frogs (Matsui *et al.* 2007).

### MATERIAL AND METHODS

Surveys on amphibians were undertaken during evening and night. Observations of the live specimens of this species were made in Rangpur city (25° 44' 19.76"N 89° 15' 13.50"E) during October 2013. Three individuals were observed and only a male specimen was collected on October 14, 2013 at 2100 hours. The specimen was captured using a small net and was preserved in 10% formalin. Specific identity was confirmed based on morpho-meristic data of the live specimen using the key and expanded description provided by Hussain *et al.* (2007). The species and the measurements were verified by Dr. Kaushik Deuti, Amphibia Section, Zoological Survey of India, 27 JL Nehru Road, Kolkata 700016, India. Measurements were recorded using a digital slide caliper with an accuracy of 0.2 mm.

*Morphometry:* Measurements were taken in mm. Morphometric characteristics included the following measurements: 1. Snout-vent length (SLV). 2. Head length (HL). 3. Head width (HW). 4. Snout length (SL). 5. Tympanum diameter (TYD). 6. Eye diameter (ED). 7. Distance between Nostrils (DN). 8. Relation of fingers length (RFL). 9. Relations of toe length (RTL) have taken on the basis of Hussain *et al.* (2007).



Plate 1. Dorsolateral view of *Humerana humeralis* male from Rangpur, Bangladesh

### RESULTS AND DISCUSSION

*Morphological characteristics:* The collected specimen was a medium sized male (Plate 1). Dorsal side is olive brown to bright green in colour while whitish in ventral parts. Black spots are distributed between nostrils and in between eyes. Skin is smooth dorsally; posterior part of the back is slightly granular. Lateral part of the body is greenish and the ventral side is smooth and whitish. Uniformly tuberculated dorsum has two golden brown folds from the eye to groin. White line continues from each side of flanks to upper jaw. Upper jaw bounded by a lining of white to bright yellow, which extended up to rectal gland. Humeral gland present on the base of the forelimb. Forelimbs are with small black spots and the base is light greenish. Hind limbs with black spots distributed on femur, tibia and tarsus; dorsolateral folds are bright yellow. Hind limbs have no cross bars.

Head is large, which is nearly equal in length and breadth. Snout obtusely pointed and projected beyond the mouth. Snout is obtusely pointed and projecting beyond the mouth. The nostril is closer to the tip of the snout than eye. The tympanum is rounding, distinct and is nearly 3/4 of the eye. The supratympanic fold starts from the anterior corner of the eye and ends with an elongated gland at the base of the back of mandible, which lies horizontally. Another elongated gland lies horizontally just above the base of the forelimb and separated by a very small distance from earlier. The humeral gland is present at the base of the forelimb. 1st finger is slightly longer than the 2nd finger. The relative length of the fingers is  $F2 < F1 < F4 < F3$ . Fingers are provided with distinct dermal border. The tips of the finger are dilated into discs which are longer than broad and triangular (Plate 2). Black spots are distributed on femur, tibia and tarsus. The relative length of the toes is  $T1 < T2 < T3 < T5 < T4$ . Outer metatarsal tubercle is absent. Tibia is long; foot length is greater than tibia length. The measurements of different body parts are given in Table 1.

**Table 1. Measurements (mm) of different morphological characteristics of *H. humeralis* (male) collected from Rangpur city.**

Character	Measurement (mm)
Snout-vent length (SVL)	43.25
Head length (HL)	14.50
Head width (HW)	13.35
Snout length (SL)	7.5
Tympanum diameter (TYD)	3.80
Eye diameter (ED)	4.85
Distance between Nostrils (DN)	4.65
Relation of fingers length (RFL)	$F2 < F1 < F4 < F3$
Relations of toe length (RTL)	$T1 < T2 < T3 < T5 < T4$



Plate 2. Forelimb of *H. humeralis* male.

*Natural history:* The frog was found at night on an Kochiri pana (*Eichhornia* sp.) plant in a small ditch one foot above the surface. Temperature was around 25°C and the weather was rainy. The plant was floating in an almost dry small water body, surrounded by *Colocasia esculenta*, *Cynodon dactylon* and *Enhydra fluetuans* vegetations. Habitat was very close to the locality, near a boundary wall of a house. It was only 50 meters away from the Dhaka-Rangpur highway. The distance from capture site to the known small river was near 10 km.

This is the most abundant species in flood-prone areas (Hussain *et al.*, 2007), although Rangpur city is neither a flood-prone area nor any large river or forest is present in this area. There is no published article with detailed morphometric discussion of this species from Bangladesh so far. Chakma (2009), however, echoed the discussion of Hussain *et al.* (2007) and in recent times, Hasan *et al.* (2014) have provided a short description with its distribution notes and morphometric feature including SVL and forelimb finger ratio. In this sense, it is the first record of this species from Bangladesh with detailed morphological data based on a collected specimen.

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