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## THREE NEW RECORDS OF AMPHIBIANS FROM WEST BENGAL

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### INTRODUCTION

The amphibian fauna of West Bengal was known to consist of 39 species (Sarkar *et al.*, 1992). Thereafter, two species were reported from southern West Bengal, viz., *Ramanella variegata* (Deuti, 1998) and *Chirixalus simus* (Deuti, Biswas, Ahmed & Dutta, 2000). Recently two more species were reported from the plains of northern West Bengal, viz., *Kalophrynus orangensis* (Paul, Biswas & Deuti, 2007a) and *Kaloula assamensis* (Paul, Biswas & Deuti, 2007b). An amphibian survey was conducted in the Darjeeling hills of northern West Bengal in 2006-2007 and we hereby report three more new records from West Bengal.

### METHODOLOGY

An extensive survey for amphibians was conducted in different areas of the hills in Darjeeling district of West Bengal in 2006 and 2007. Amphibian species were collected, killed with chloroform and first preserved in 4% solution of formaldehyde, later transferred to 70% alcohol. GPS readings indicating latitude, longitude and altitude were taken at each collection locality.

### RESULTS

15 species were collected from different areas of the Darjeeling hills, which include three species not previously known to occur in West Bengal :

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1. *Xenophrys glandulosa* (Boulenger, 1890)

(Fig. 1)

*Material examined* : Two females (ZSI A 10398 & ZSI A 10399) collected from the edge of a hill-stream at Latpancher (26°54'340"N, 88°23'538"E, altitude 1109 meters above msl) on 29.08.2006. SVL 78.45 mm and 78.65 mm respectively.

*Diagnostic characters* : Moderate-sized stream-dwelling frogs (males SVL 70-75 mm, females SVL 74-82 mm). Dorsal skin smooth with fine ridges, laterally numerous glandular warts or tubercles which are half black and half yellow. A posteriorly thickened supra-tympanic fold. Inter-orbital space concave, broader than upper eyelid. Tympanum distinct about half the diameter of eye. Tips of fingers and toes rounded with feebly swollen tips, no webbing on fingers but rudimentary webbing on toes. No subarticular and metacarpal tubercles. Metatarsal tubercle flat and indistinct. Dorsal colour brown or grey-brown, a brownish-black triangular marking between the eyes. Upper lip margin with a light coloured stripe, a dark vertical bar below the eye. Black spots on both sides of throat. Posterior belly and ventral thighs with many dark coloured spots. Hind limbs with indistinct dark cross bars.

*Known distribution* : India (Nagaland) and China (Yunnan).

*Remarks* : Forest-floor dwelling species, found on the edge of streams among bushes and shrubs. First record from West Bengal.

2. *Amolops marmoratus* (Blyth, 1855)

(Fig. 2)

*Material examined* : One male (ZSI A 10668) and one female (ZSI A 10669) collected from boulders beside a fast-flowing hill-stream at Kalikhola (26°55'233"N, 88°23'554"E, altitude 497 meters above msl) on 01.09.2006. SVL 46.23 mm (male) and 65.42 mm (female).

*Diagnostic characters* : Moderate-sized stream-dwelling frogs (males SVL 57-63 mm, females SVL 62-83 mm). Dorsal skin smooth with granules on the flanks. Tympanum distinct, more than half the diameter of eye. Tips of fingers and toes with discs, rudimentary webbing on fingers but complete webbing on toes. Dorsal colour greenish (in life) with brown spots, legs with distinct cross-bands, ventral colour pearly white. Dark vertical bars on upper and lower lips.

*Known Distribution* : India (Sikkim, Arunachal Pradesh and Nagaland) Nepal, China, Thailand.

*Remarks* : Adapted to living in torrents, in fast-flowing hill-streams with rocky bottom and boulders. First record from West Bengal.

### 3. *Fejervarya teraiensis* (Dubois, 1984)

(Fig. 3)

*Material examined* : One male (ZSI A 10670) and one female (ZSI A 10671) collected from a meadow beside Sukhiapokhri Boys High School at Sukhiapokhri (26°59'503"N, 88°09'596"E, altitude 2130 meters above msl) on 02.07.2007. SVL 44.32 mm (male) and 52.64 mm (female).

*Diagnostic characters* : Small-sized frogs (males SVL 43-51 mm, females SVL 49-56 mm). Head longer than broad. Dorsal skin with fine glandular folds, presence of Fejervaryan lines on both sides of belly. Rictal gland absent. Tips of fingers and toes pointed, webbing moderate. Inner metatarsal tubercle cylindrical but external metatarsal tubercle absent. Tarsal ridge faint and short. Dorsal colour grayish with darker shoulder spots and a mid-dorsal line or band. Upper lip with vertical brown bars. Vocal sacs in males marked by darker colouration and also by longitudinal folds on sides of throat. Nuptial pads in males present on first finger but humeral glands are absent in males.

*Known Distribution* : India (Uttaranchal), Nepal.

*Remarks* : Widely distributed upto 2300 meters. Terrestrial, breeding in small pools and ditches. First record from West Bengal.

## DISCUSSION

Till recently, the amphibian fauna of West Bengal was known to consist of 43 species. However, one of the species, *Rana senchalensis* Chanda, 1986 described as a new species from West Bengal was synonymised (Dubois, 2000). With these three new records, the amphibian species list of West Bengal tentatively increases to atleast 45 species.

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