

## A catalogue of amphibians and reptiles in the collection of Jahangirnagar University, Dhaka, Bangladesh

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**ABSTRACT.**– We present here details of a collection of herpetofauna from Bangladesh, held at the Jahangirnagar University Herpetological Group, Dhaka. This collection is comprised of at least 58 species, six are tentatively identified to their nearest described species which themselves are recognised to consist of more than one cryptic species. Four species could not be accurately identified to species level. It is likely that some of these ten “species” represent cryptic species and possibly undescribed taxa. Several of the localities presented here provide the first confirmed localities for species previously listed as present in Bangladesh, but were not confirmed with locality or specimen data. Other species in the collection represent previously unknown localities, e.g., *Euphlyctis hexadactylus*, *Uperodon globulosus* and *Cyrtodactylus* sp. *Eutropis multifasciata*, and *Hylarana* cf. *nigrovittata*, are here recorded from Bangladesh for the first time based on our collections and *Takydromus khasiensis* is also reported for the first time from Bangladesh based on apparently unpublished specimens in the collection of the California Academy of Science.

**KEY WORDS.**– Reptiles, Amphibians, Bangladesh, Jahangirnagar University, new country records.

### INTRODUCTION

The herpetofauna of Bangladesh is poorly known compared to the neighbouring countries, such as India and Myanmar. Various checklists (Khan, 1986; Choudhury, 1996; Ahsan, 1998; IUCN, 2000; Asmat et al., 2003; Khan, 2004) have been published in the past listing up to 163 extant species (Ahsan, 1998), there are very few recently confirmed localities or available specimens in museum collections for many of the species that are reported as present. Collections made prior to 1947 form the basis for the majority of our current knowledge on the distributions of herpetofauna, however the locality data for many of these specimens were given as from “Bengal” with no further details. Bengal is now split into West Bengal (India) and Bangladesh, thus for

several species, it is difficult, or sometimes impossible to determine from which country the specimens were originally collected. Adding to this problem is that Bangladesh of the pre-1950’s was a different place, compared to the current Bangladesh, whereby the once large expanses of natural habitat that would have harboured those species of historic collections are reduced to a few relatively small fragments of anthropogenically disturbed habitats. Bangladesh currently has no scientifically maintained natural history museum or other recognised national repository for biological specimens, further adding difficulty when trying to confirm the presence or absence of presumed extant species.

In recent years, there has been a revival of interest in the herpetofauna of Bangladesh, with

several publications emerging, such as those of Khan (1997, 2001), Khan (2007), Hasan et al. (2007), Mahony and Ali Reza (2007a–d), Ali Reza and Mahony (2007), Ali Reza (2007, 2008a–b) and Kabir et al. (2008). Some of these publications, however, contain errors such as misidentifications of species or overlooked historic literature records, some of which will be addressed in the discussion.

Jahangirnagar University was established in 1970, making it one of the oldest public universities in Bangladesh. In the past, members of the Zoology Department sporadically collected herpetofaunal specimens primarily while carrying out research on other faunal groups or regional fauna in general. Since 2007, with the formation of the Jahangirnagar University Herpetological Group (JUHG), more focused and intensive collections have been made at several localities in Bangladesh. A greater emphasis is now put on the documentation and cataloguing of specimens with the aim to provide a well maintained national repository for herpetofaunal collections. To achieve this goal, the authors have collaborated on this effort to catalogue all specimens currently within the collection to aid in a better understanding of the country's extant herpetofauna.

### Materials and methods

All specimens prior to 2007 were collected from localities, primarily by authors 2, 3 and 4, while carrying out research projects on other faunal groups. At that time, some collection dates and GPS coordinates of collection sites were not recorded, thus the dates provided here are restricted to the month and year when known with certainty and when the month is in doubt, it is not included. For specimens included here which were not collected by the authors, these collectors are listed in the acknowledgements. Specimens previously discussed in Mahony and Ali Reza (2007a–d), Ali Reza and Mahony (2007) and Ali Reza (2007) are not included in this paper. In 2007 specific herpetofaunal surveys were carried out at the following localities (attending authors in brackets); at Rangamati District (1–5), Bandarban District (1 & 4), Coxes Bazar District (1, 2 & 4) and Dhaka District (1–4). Most specimens collected were eutha-

nized within 24 hours of collection, with the exception of several snakes which were kept alive in captivity for up to three weeks for captive feeding/behavioural observations and education purposes. After euthanasia, specimens were fixed in 4% formalin for between 12 hours and 3 days (while in the field) and later stored in either 4% formalin or 70% EtOH. Specimen numbers followed by "(D)" refer to dry (skinned and stuffed) specimens. All specimens are stored at the JUHG laboratory, Zoology Department, Jahangirnagar University. Four locality records are included here that are not represented by specimens at the JUHG, but are photo-vouchers deposited at the Zoological Reference Collection (collection of images), Raffles Museum of Biodiversity Research ZRC(IMG). G.P.S. coordinates and altitude were primarily taken with a Garmin GPS 48 and Explorist. Abbreviations used in locality information are National Park (N.P.), Wildlife Sanctuary (W.S.), Forest Office (F.O.), Forest Department Training Center (F.D.T.C), Range Office (R.O.), Hillside Resort (H.R.), Jahangirnagar University campus (J.U.), Bangladesh Livestock Research Institute (B.L.R.I.), and for species collected from elevated positions, metres above ground level (m a.g.l.).

Specimens were identified by comparison with museum collections at the Zoological Survey of India, Kolkata (ZSI), the Natural History Museum, London (BMNH) and Arya Vidyapeeth College, Assam (AVC), or with the aid of the following literature; Bossuyt and Dubois (2001), Boulenger (1882), Dubois (1975), Dutta and Manamendra-Arachchi (1996), Matsui et al. (1986, 1999), McGuire and Kiew (2001), Rösler (2001), Schleich and Kästle (2002), Smith (1935, 1943), Whitaker and Captain (2004) and Zug et al. (2006, 2007). Nomenclature for Amphibia follows Frost et al. (2006), except where modified by Che et al. (2007) regarding *Hylarana* and Stuart (2008) regarding *Clinotarsus*, and for Reptilia, Uetz, 2007 (accessed 30 April 2008) is followed. Species proven by other authors to represent currently unresolved species complexes, or require further research for a definitive identification, are referred to here as "cf." pending comparisons with appropriate type material.

## Results

### Bufoanidae

*Duttaphrynus melanostictus* (Schneider, 1799)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0118–0119 adults (22°30'N, 92°12'E), collected at night, under a light at the F.D.T.C. rest house, 1–2 September 2007.

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0260 adult (23°52'N, 90°16'E), collected from a student's dorm at night under a light, 2002, ~1930 h.

### Ranidae

*Clinotarsus alticola* (Boulenger, 1882)

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0016 metamorph (24°19'N, 91°47'E), from a bank next to stagnant water, 9 October 2006, 1920 h.

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0110 adult (22°30'N, 92°12'E), 1 September 2007.

**Remarks.**— Metamorph specimens of many ranids can be notoriously difficult to identify accurately when relying on morphological data alone. This individual retains the characteristic ocelli on the base of its tail.

*Hylarana leptoglossa* (Cope, 1868)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0107–0109 adults (22°30'N, 92°12'E), 1–2 September 2007.

DHAKA DIVISION, Tangail District, Rasulpur, Madhupur N.P.: JUHG 0012 adult (24°41'N, 90°08'E), collected from long grass, 7 December 2007, 2030 h.

BARISAL DIVISION, Barisal District, Ujjirpur: JUHG 0018 male (22°49'N, 90°15'E), collected from amongst leaves near a stagnant pool, 6 April 2007, 1020 h.

**Remarks.**— This species has been previously recorded from Mymensingh District (Romer, 1949, Mahony and Ali Reza, 2007c) and from the Chittagong Division, but without specific locality data (Asmat et al., 2003).

*Hylarana cf. nigrovittata* (Blyth, 1856)

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0006 and 0104 females (22°28'N, 92°13'E), Kaptaimukh Beat, one found in a tree hole at 0.6 m a.g.l., 8–10 m from Karnaphuli River (naturally slow moving river), the second collected at night from grass, near a stagnant water body, 3 September 2007 and 18 October 2007, 1710 h. JUHG 0071 female (22°30'N, 92°12'E), at the edge of Kaptai Village on a trail in a small disturbed patch of semi-evergreen forest near a narrow slow moving stream, 19 October 2007, 1900 h.

Bandarban District, Bandarban, Milonchari: JUHG 0174–0176 males, 0191, 0192 females (22°10'N, 92°13'E, 150 m asl) near H.R. at the edge of a pool of a small slow moving roadside stream next to a bushy area of natural vegetation, 13–16 November 2007, 1830–2100 h.

**Remarks.**— This species is a member of the problematic *Hylarana nigrovittata* complex. The specific identity of this species will be discussed elsewhere.

*Hylarana tytleri* (Theobald, 1868)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0007, 0019–0020, 0241 (23°52'N, 90°16'E), collected from a patch of Sun grass (grows to a height of ca. 1.5 m) near a lake, July 2005, 1130 h.

**Remarks.**— This species was originally described based on specimens collected from “Dacca” (= Dhaka, Bangladesh) (Theobald, 1868). The holotype currently in the collection of ZSI is greatly decomposed (Ohler and Mallick, 2002), thus this topotypic material provides an important addition to the JUHG collection. Not clearly addressed by Ohler and Mallick (2002) but perhaps worth mentioning here is the taxonomic placement of the name *Rana bilineata* (Pillai and Chanda, 1981), provided the nomen novum *Rana albolineata* by Dubois (1987) and later referred to the synonymy of *Rana taipehensis* by Dubois (1992). Ohler and Mallick (2002) list the specimens described by Pillai and Chanda, 1981 to represent *Rana tytleri*, therefore, removing *Rana bilineata* (Pillai and Chanda, 1981) and *Rana albolineata* (Dubois, 1987) from the synonymy of *H. taipehensis*, to become junior subjective synonyms of *Hylarana tytleri* (Theobald, 1868).

## Dicroglossidae

*Euphlyctis cyanophlyctis* (Schneider, 1799)

CHITTAGONG DIVISION, Cox's Bazar District, Chokoria, Malumghat: JUHG 0043, 0090–0092, near Faishakhali R.O. in a mature Teak, Jam and *Acacia* plantation in a temporary rainwater puddle, 21 October 2007, 1100 h and 1900 h.

Bandarban District, Bandarban, Milonchari: JUHG 0149 female (22°10'N, 92°13'E) from within a concrete reservoir at the edge of the H.R., 11 November 2007, 1930 h.

DHAKA DIVISION, Dhaka District, Savar, B.L.R.I.: JUHG 0226 female, collected from a road side ditch, 6 October 2007.

*Euphlyctis hexadactylus* (Lesson, 1834)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0005 adult (23°52'N, 90°16'E), collected from a lake within the Wildlife Rescue Center, 5 October 2006.

KHULNA DIVISION, Bagherhat District, Sundarban N.P.: JUHG 0244 adult, 1996.

**Remarks.**— Khan (2004) provided a single Bangladesh locality from the Sundarbans. The authors could find no further documentation of this species from elsewhere in Bangladesh thus this record from the Dhaka Division would represent an eastern range extension for the species in Bangladesh.

*Fejervarya* sp.

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0035–0036, 0075–0076, 0080–0081, 0102–0103 (22°28'N, 92°13'E), Kaptaimukh Beat, mostly collected from within 2 m from a small slow moving stream in a cleared forested habitat, with bushy secondary growth, 3 September 2007 and 18 October 2007, ~1930 h. JUHG 0082–0084, 0094–0100 (22°30'N, 92°12'E), mostly collected from the lawn of the F.D.T.C. Officers Hall on the outskirts of Kaptai Village, 1–2 September 2007 and 17 October 2007, 1800–2300 h.

Cox's Bazar District, Chokoria, Malumghat: JUHG 0022, 0045–0049, 0087–0089, collected at and near Faishakhali R.O. within a small mature Jarul and Jam plantation, 20 October 2007, 1530–1900 h.

Bandarban District, Bandarban, Milonchari: JUHG 0145–0148, 0150–0151, 0178, 0188 (22°10'N, 92°13'E), all collected from two localities, two specimens were collected from a grassy area within the H.R., 11 and 14 November 2007, 1930 h and 1030 h., the remaining specimens were collected from the bank of a stream in the Sangu River valley below the H.R., 16 November 2007, 1200 h.

DHAKA DIVISION, Tangail District, Rasulpur, Madhupur N.P.: JUHG 0213 (24°41'N, 90°08'E), on the deciduous forest floor, amongst leaf litter and grasses, 7 December 2007.

Dhaka District, Savar, B.L.R.I.: JUHG 0225 male, collected from a grassy roadside verge, October 2007.

**Remarks.**— This collection of *Fejervarya* includes specimens of two or possibly three cryptic species. An attempt to identify these specimens could not be confidently made as bioacoustic data could not be obtained outside of the breeding season. Furthermore, the collection contains insufficient numbers of adult specimens from each locality, to attempt to accurately compare these populations morphometrically using principal component analysis.

*Hoplobatrachus tigerinus* (Daudin, 1803)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0259 adult (23°52'N, 90°16'E), 1994.

CHITTAGONG DIVISION, Cox's Bazar District, Chokoria, Dulahazara: JUHG 0137 adult, collected from the bank of a pond next to Dulahazara Safari Park Forestry Guest House, 20 October 2007, ~2100 h.

*Occidozyga* cf. *borealis* (Annandale, 1912)

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0072–0074 (22°30'N, 92°12'E), from the bank of a small slow moving portion of a stream within a patch of disturbed semi-evergreen forest at the edge of Kaptai Village, 19 October 2007, 1200 h and 1900 h.

Bandarban District, Bandarban, Milonchari: JUHG 0154–0155, 0160, 0179, 0181–0186, 0189–0190 (22°10'N, 92°13'E) from the edges of a narrow, rocky cascading stream at the outer edge of the H.R. This stream is bordered by a narrow strip of natural semi-evergreen forest vegetation surrounded by jhum cultivation. One

specimen was collected amongst long grass bordering the strip of natural vegetation; all others were collected from banks of streams, 13–15 November 2007, 1030–1930 h.

**Remarks.**— This species is morphologically similar to *Occidozyga borealis* which is suspected to consist of a complex of cryptic species. Further, comparative material will be examined before confirming its identification. Previously *O. borealis* has been reported from the Rangamati hilly area by Asmat (2005) and later by Ali Reza (2008a) from Bandarban District.

#### Microhylidae

##### *Kaloula pulchra* (Gray, 1831).

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0013, 0227–0228 adults (24°19'N, 91°47'E), 6 October 2004.

Hobiganj District, Chunarughat, Rema Kalenga W.S.: JUHG 0243 adult, from amongst aquatic grasses in a temporary stagnant water body within the forest, 11 May 2007.

CHITTAGONG DIVISION, Cox's Bazar District, Chokoria, Malumghat: JUHG 0073 subadult, collected at Faishakhali R.O., where it was emerging from a wood pile within a small mature Teak, Jam and *Acacia* plantation, 20 October 2007, 1900 h.

##### *Microhyla berdmorei* (Blyth, 1856)

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0077–0079, 0114–0116 adults (22°28'N, 92°13'E), from Kaptaimukh Beat, ~2m from small slow moving stream in a cleared forest habitat, with bushy vegetation, 3 September 2007 and 18 October 2007, 1930 h. JUHG 0085–0086, 0101, 0112, 0117 adults (22°30'N, 92°12'E), from the lawn of F.D.T.C. Officers Hall on the outskirts of Kaptai Village within several meters from the edge of a patch of mature tropical semi-evergreen forest, 1–2 September 2007 and 17 October 2007, 1930 h.

Bandarban District, Bandarban, Milonchari: JUHG 0152, 0159, 0172–0173 adults (22°10'N, 92°13'E), collected from within and around a concrete reservoir near the border of the H.R. The reservoir is bordered by a small jhum field and the same stream described above for *Occidozyga* cf. *borealis*. One male was collected

while calling from a narrow, slow-moving stream bordering the road outside the H.R., 11–15 November 2007, 1030–2030 h.

DHAKA DIVISION, Tangail District, Rasulpur, Madhupur N.P.: JUHG 0211 (24°41'N, 90°08'E), from a roadside verge, 7 December 2007, 1750 h.

##### *Microhyla ornata* (Duméril and Bibron, 1841)

CHITTAGONG DIVISION, Cox's Bazar District, Chokoria: JUHG 0038–0039, 0042 adults, from the Faishakhali F.O. at Malumghat, collected on soil surrounding wood piles within a mature Teak, Jam and *Acacia* plantation, 20 October 2007, 1900 h. Eidgaon, Bomarighona F.O.: JUHG 0040–0041 adults, from within grass surrounded wood piles in a mature mixed Teak and *Acacia* plantation, 21 October 2007, 1330 h.

Rangamati District, Kaptai, Kaptai Village: JUHG 0111, 0114 adults (22°30'N, 92°12'E), 1 September 2007

Bandarban District, Bandarban, Milonchari: JUHG 0153 adult (22°10'N, 92°13'E), collected from grass next to a small man made pond in a jhum field on the outer edge of the H.R., 14 November 2007, 1100 h.

SYLHET DIVISION, Hobiganj District, Chunarughat, Rema Kalenga W.S.: JUHG 0242 adult, 11 May 2007.

Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0014 adult (24°19'N, 91°47'E), from leaf litter, 19 May 2007, 1830 h.

DHAKA DIVISION, Tangail District, Rasulpur, Madhupur N.P.: JUHG 0212 adult (24°41'N, 90°08'E), from amongst leaf litter, 12 July 2007, 1755 h.

Dhaka District, Savar, J.U.: JUHG 0008 adult (23°52' N, 90°16' E), from a roadside grassy verge, 17 June 2007, 1910 h.

##### *Uperodon globulosus* (Günther, 1864)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0009, 0257 males (23°52'N, 90°16'E), 1994.

Tangail District, Rasulpur, Madhupur N.P.: JUHG 0215–0216 juveniles (24°41'N, 90°08'E), from a forest edge, beside an existing forest trail, 13 July 2007, 1840 h.

**Remarks.**— Previously reported from Madhupur, Mymensingh District in 1980 (Khan, 2004).

## Rhacophoridae

*Chiromantis vittatus* (Boulenger, 1887)

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0011 refer to Kabir et al. (in press) for a detailed description of this specimen.

*Philautus* sp.

CHITTAGONG DIVISION, Bandarban District, Bandarban, Milonchari: JUHG 0187 (22°10'N, 92°13'E), collected from a stem of a plant (1 m a.g.l.), overhanging a small slow moving roadside stream next to a bushy area of natural vegetation, 13 November 2007, 2100 h.

**Remarks.**— The taxonomic identity of this individual is currently unclear, however it does show some similarity to *P. parvulus*.

*Polypedates leucomystax* (Gravenhorst, 1829)

CHITTAGONG DIVISION, Cox's Bazar District, Chokoria, Malumghat: JUHG 0044 subadult, on the grounds of the Faishakhali F.O., on a low-lying plant near wood piles in a mature Teak, Jam and *Acacia* plantation, 20 October 2007, 1900 h.

Bandarban District, Bandarban, Milonchari: JUHG 0156–158 adults (22°10'N, 92°13'E), all three specimens collected from within the H.R. Two were found active on banana trees at ~3 m a.g.l. bordering a narrow stream and one was collected at ~2.3 m a.g.l., on a tree in a disturbed habitat, 14–15 November 2007, 1930–2015 h.

Rangamati District, Kaptai, Kaptai Village: JUHG 0105–0106 adults (22°30'N, 92°12'E), 1 September 2007.

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0261–0263 adults (23°52'N, 90°16'E), 2004.

## Megophryidae

*Leptobrachium smithi* Matsui, Nabhitabhata & Panha, 1999

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0015 (24°19'N, 91°48'E), from beside a chara (small spring), 18 May 2007, 2015 h.

## Gekkonidae

*Cyrtodactylus* sp.

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0010 adult (22°28'N, 92°13'E), from Kaptaimukh Beat, ~1 m from a slow moving stream on a tree trunk at 1 m a.g.l., 18 October 2007, 1830 h. JUHG 0059–0061, 0125–127 adults (22°30'N, 92°12'E), two found on the vertical mud bank of a small slow moving stream in a selectively felled and disturbed mixed semi-evergreen and Teak forest patch at the edge of Kaptai Village, the third found on a vertical mud ditch, 1 m a.g.l., at the edge of an immature secondary mixed forest patch with dense undergrowth, 1–2 September 2007 and 18 October 2007, 2300–2330 h.

Bandarban District, Bandarban, Milonchari: JUHG 0161–0162, 0195–197 adults (22°10'N, 92°13'E), all except one individual were collected within 1 m from the edge of streams, perched on the stems of small plants and bamboo to up to 1 m a.g.l. One specimen was collected ~200 m from the nearest stream, on the base of a concrete support pillar of a guest room of the H.R. 13–17 November 2007, 1830–2100 h.

**Remarks.**— Previously reported from Bandarban by Mahony and Ali Reza (2007a) based on a single specimen and commented to be similar in general appearance to *C. ayeyarwadyensis* Bauer, 2003. Further work is being carried out on our recent larger collection of this species to determine its specific identity.

*Gekko gekko azhari* Mertens, 1955

CHITTAGONG DIVISION, Cox's Bazar District, Chokoria, Malumghat: JUHG 0051–0070 juveniles, from the compound of the Faishakhali R.O., on the trunk of a sapling 30 cm a.g.l., within a mature Teak, Jam and *Acacia* plantation, 20 October 2007, 1900 h.

Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0138 juvenile (22°10'N, 92°13'E), on an outside wall of one of the guest rooms, in a part of the resort where several of the original semi-evergreen tree species remain, 11 November 2007, 2000 h.

Rangamati District, Kaptai: JUHG 0128 adult (22°28'N, 92°13'E), from Kaptaimukh Beat, 3 September 2007. JUHG 0129 adult (22°30'N,

92°12' E), from Kaptai Village, 1 September 2007.

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0270 adult (23°52'N, 90°16'E), 1992.

*Hemidactylus cf. bowringii* (Gray, 1845)

CHITTAGONG DIVISION, Rangamati District, Kaptai, Kaptai Village: JUHG 0027–0028, 0062, 0069 juveniles to adult (22°30'N, 92°12'E), all collected from the boundary wall of the F.D.T.C. Student Hall situated at the edge of the village, 17–18 October 2007, 2200–2330 h.

Cox's Bazar District, Chokoria, Malumghat: JUHG 0023, 0056–0058 subadults and adults, from the compound of the Faishakhali R.O., three collected from log piles within a mature Teak, Jam and *Acacia* plantation and one from the external smooth white wall of an office building, 20 October 2007, 1845–1900 h. JUHG 0054–0055 adults, collected from the wooden veranda of the Dulahazara Safari Park Forestry Guest House, 20 October 2007, 2300 h.

**Remarks.**— This species is a representative of the *Hemidactylus bowringii* complex and may prove conspecific with one of the recently described Myanmar species (McMahan and Zug, 2007). Our collections here consist of primarily immature individuals, thus a larger collection of adults will be required to determine its affinities with the Myanmar species.

*Hemidactylus cf. brookii* Gray, 1845

DHAKA DIVISION, Dhaka District, Savar: JUHG 0200 female (23°52'N, 90°16'E), from an inner wall on the second floor of the Teacher Student Center building in J.U., 18 November 2007, 2200 h. JUHG 0219–0224 juveniles to adults, from the external walls of buildings within the BLRI compound, October 2007.

**Remarks.**— *Hemidactylus brookii* is yet another complex of cryptic species (Carranza and Arnold, 2006; and Mahony, unpubl. data) thus the specific identity of our Bangladesh collection remains obscure pending further clarification of the *brookii* complex.

*Hemidactylus frenatus* Schlegel, 1836

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0029–0034, 0068,

0131–0135 adults (22°30'N, 92°12'E), all collected from the boundary walls of the F.D.T.C. Student Hall and from the building itself, on the outskirts of Kaptai Village, 1–2 September 2007 and 17 October 2007, after 1600 h. JUHG 0130 adult (22°28'N, 92°13'E), from Kaptaimukh Beat, 3 September 2007.

Cox's Bazar District, Chokoria, Malumghat: JUHG 0024, from the compound of the Faishakhali R.O., collected from a log pile within a mature Teak, Jarul and *Acacia* plantation, 20 October 2007, 1845 h.

Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0169–0170, 0180 adults (22°10'N, 92°13'E), all collected from the outer walls of the dorm building, around lights, 15 November 2007, 1730 h.

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0201, 0218 adults (23°52'N, 90°16'E), collected from an external wall on the second story of the Teacher Student Center building, 18 November 2007, 2200 h.

Tangail District, Rasulpur, Madhupur N.P.: JUHG 0210 male (24°41'N, 90°08'E), from a wall of the forest rest house, under a light bulb, 15 July 2007, 2230 h.

*Hemidactylus garnotii* Duméril and Bibron, 1836

CHITTAGONG DIVISION, Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0198 female (22°10'N, 92°13'E), collected from the outer wall of the dorm building, next to a banana tree, 11 November 2007, 1730 h.

**Remarks.**— This species was first reported in Bangladesh based on a photo-voucher from Bandarban, Mahony and Ali Reza (2007a).

*Hemidactylus cf. platyurus* (Schneider, 1792)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0026, 0124 adults (22°30'N, 92°12'E), collected from a light on the boundary wall of the F.D.T.C. Officers Hall, 2 September 2007 and 17 October 2007, 2200 h.

Cox's Bazar District, Chokoria, Malumghat: JUHG 0024 adult, from near the Faishakhali R.O. compound, on the trunk of a tree at 1.8 m a.g.l., within a mature Teak, Jam and *Acacia* plantation, 20 October 2007, 2000 h.

Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0163–0168, 0199 adults (22°10'N,

92°13'E), all collected from the outer walls of the dorm building, 12–16 November 2007, after 1730 h.

DHAKA DIVISION, Tangail District, Rasulpur, Madhupur N.P.: JUHG 0208–0209 adults (24°41' N, 90°08' E), under the bark of a Sal tree, 15 July 2007, 1020 h.

**Remarks.**— These specimens conform with the general description of *Hemidactylus platyurus* in the literature, however, this species is recognised as a complex of genetically distinct cryptic species (Bauer, 2000; Carranza and Arnold, 2006).

## Scincidae

### *Eutropis macularia* (Blyth, 1853)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0025, 0067, 0123 subadult and adults (22°30'N, 92°12'E), all collected from outside the boundary wall of the F.D.T.C. Students Hall, on a roadside verge with patches of dense bushy vegetation, 1 September 2007 and 17 October 2007, 2215 h.

Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0139, 0171 adults (22°10'N, 92°13'E), from the outer boundary of the resort, in an area dominated by grass/weeds alongside a jhum field, 11 & 14 November 2007, 1930 h and 1030 h, respectively.

SYLHET DIVISION, Maulvibazar District, Sreemangal, Kalachara (West Bhanugach Forest Reserve): JUHG 0204 subadult (24°23' N, 91°48' E), from a hole in the ground, 19 May 2007, 1420 h.

DHAKA DIVISION, Tangail District, Rasulpur, Madhupur N.P.: JUHG 0214 juvenile (24°41' N, 90°08' E), amongst leaf litter on the forest floor, 15 July 2007, 1240 h.

### *Eutropis multifasciata* (Kuhl, 1820)

CHITTAGONG DIVISION, Cox's Bazar District, Eidgaon, Bomarighona F.O.: JUHG 0066 adult, in grass near log piles within a mature mixed plantation of Teak and *Acacia*, 21 October 2007, 1400 h.

Bandarban District, Bandarban, Milonchari: JUHG 0279 adults (ca. 2 km east of 22°10'N, 92°13'E), collected from the bank of a narrow slow-moving stream, surrounded by rice paddy

in the Sangu River valley below the H.R., 16 November 2007, 1200 h.

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: ZRC(IMG) 2.96 subadult (24°19'N, 91°47'E), collected by M.A., photographed by S.M., July 2006.

DHAKA DIVISION, Dhaka District: JUHG 0267, 0268 adults (23°52'N, 90°16'E), collected from the J.U. campus, Savar, 1994 and 2004. JUHG 0269 adult, collected from Dakhinkhan, Uttara, 2003.

**Remarks.**— The authors can find no previous records of *E. multifasciata* from Bangladesh, however, it is well documented from north-east India (Smith, 1935; Das, 2008).

### *Sphenomorphus maculatus* (Blyth, 1853)

CHITTAGONG DIVISION, Rangamati District, Kaptai: JUHG 0052 adult (22°30'N, 92°12'E), on grassy area of a forest clearing next to a small, slow-moving stream, near the F.D.T.C. Officers Hall, on the outskirts of Kaptai Village, 18 October 2007, 1300 h. JUHG 0053 subadult, collected 10 km from Kaptaimukh Beat (22°28'N, 92°13'E), from the bottom of a log pile, next to a disused mud road surrounded by undisturbed semi evergreen forest, 18 October 2007, 1100 h.

Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0143–0144 subadult and juvenile (22°10'N, 92°13'E), from the bank of a narrow, cascading stream bordered by a narrow strip of natural semi-evergreen forest vegetation, 14 November 2007, 1230–1300 h.

## Agamidae

### *Calotes emma* Gray, 1845

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0207, 0239 juvenile and adult (24°19'N, 91°47'E), collected from a bush and a tree, 8 April 2008 and 21 May 2007, 1020 h and 1325 h.

### *Calotes cf. versicolor* (Daudin, 1802)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0063–0064, 0112 subadults and adult (22°30'N, 92°12'E), collected from the roadside within grassy area, surrounded by dense bushes and several trees, 2 September 2007 and 18 October 2007, 1030 h.



Cox's Bazar District, Chokoria, Malumghat: JUHG 0050, 0065 subadults, from a bushy area by the roadside, bordering a mature Teak, Jam and *Acacia* plantation, 20–21 October 2007, 1130 h and 1500 h.

Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0140–0142, 0177 subadult and adults (22°10'N, 92°13'E), two were caught next to paths amongst grass and low weeds, 13–14 November 2007, 0930 and 1300 h. Two specimens were collected ca. 1 km uphill from the H.R., on the way to Tiger Hill, one from next to a path with dead vegetation surrounded by bushes and the other from the edge of a banana plantation bordering a Teak plantation, 15 November 2007, 1400 h.

SYLHET DIVISION, Maulvibazar District, Sreemangal: JUHG 0206 adult (24°19'N, 91°46'E), collected from the edge of a forest trail in Lawachara N.P., 21 May 2007, 1410 h. JUHG 0237–0238 males (24°15'N, 91°46'E), collected from M. R. Khan Forest, 29 March 2008, 1140–1150 h.

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0230 subadult (23°52'N, 90°16'E), from behind the Al-Beruni (student) Hall, December 2007. JUHG 0274–0275 adults, 2003 and 2004.

**Remarks.**— Our collection appears to represent possibly two distinct species from the *Calotes versicolor* complex, however, further collections from Bangladesh are required to determine the species boundaries and have a better understanding of morphological variation within and between these populations.

*Draco maculatus* (Gray, 1845)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0121 subadult (22°30'N, 92°12'E), collected from a tree at ca. 10 m a.g.l., 3 September 2007.

**Remarks.**— This specimen conforms in overall morphology to a syntype (BMNH 1946.8.27.5) examined by S.M.

*Ptyctolaemus gularis* (Peters, 1864)

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0240 (24°19'N, 91°47'E), collected from a bush, 30 March 2008, 1522 h.

## Varanidae

*Varanus bengalensis* (Daudin, 1802)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0277 (D) adult (23°52'N, 90°16'E), 1989.

*Varanus flavescens* (Hardwicke & Gray, 1827)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0236 juvenile (23°52'N, 90°16'E), from beside the Bangabandhu Student's Hall, on grass, beside a permanent water body and paddy field, 23 March 2008, 1020 h. JUHG 0278 (D) adult, from a lake in JU campus, 1998.

*Varanus salvator* Laurenti, 1768.

BARISAL DIVISION, Barisal District, Ujjirpur: ZRC(IMG) 2.94 adult (22°49'N, 90°15'E), photographed at a betel cultivation field, on the bank of a big river, 4 June 2007, 1257 h.

KHULNA DIVISION, Bagherhat District, Sundarbans, Karamjal: ZRC(IMG) 2.95 adult (22°25.457'N, 89°35.647'E), from mangrove forest, resting on a tree at about 12 m a.g.l., 6 September 2007, 0825 h.

## Colubridae

*Ahaetulla nasuta* (Lacépède, 1789)

CHITTAGONG DIVISION, Chittagong District, Sitakunda, Chandranath Hill: JUHG 0255 adult, found killed by locals, February 2004, ~1045 h.

*Amphiesma stolata* (Linnaeus, 1758)

CHITTAGONG DIVISION, Bandarban District: JUHG 0249 adult, no exact locality or habitat data available, 1990.

*Boiga ochracea walli* Smith, 1943

CHITTAGONG DIVISION, Bandarban District, Bandarban, Milonchari: JUHG 0193 subadult (22°10'N, 92°13'E), actively foraging on top of a small tree at ~4 m a.g.l. which was overhanging a small concrete reservoir, within the compound of the H.R., 15 November 2007, 1800 h. JUHG 0234 juvenile, collected from an exposed leaf of a felled banana tree, in a banana plantation near Tiger Hill, ca. 2 km from H.R., 16 November 2007, 1300 h.

Rangamati District, Kaptai, Kaptai Village: JUHG 0233 subadult (22°30'N, 92°12'E), at 3 m a.g.l. climbing a tree trunk on the roadside near the F.D.T.C., 17 October 2007, 2300 h.

**Remarks.**— When collected, the juvenile JUHG 0234, had a single dead red weaver ant (*Oecophylla smaragdina*) attached by its mandible to the snake's back. The area surrounding the bite site was discoloured grey when collected. This individual was kept in captivity for 3 weeks to observe if the snake suffered any further ill effects of the bite. By the fourth day it began feeding readily on a juvenile *Hemidactylus*, and after two sheds, the grey patch decreased in size significantly.

*Chrysopelea ornata* (Shaw, 1802)

JUHG 0250 adult, this individual was bought from a snake charmer at the Snake Charmers Village, Savar, Dhaka, 1989. The actual collection locality is unknown. Snakes displayed at this snake charmers village are collected from throughout Bangladesh and many others are smuggled into Bangladesh from India.

*Enhydris enhydris* (Schneider, 1799)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0194 subadult (23°52'N, 90°16'E), collected from beside the old Zoology Department building, on a path ca. 20 m from a lake, 20 November 2007, 1130 h.

*Lycodon aulicus* (Linnaeus, 1758)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0217 adult (23°52'N, 90°16'E), one was collected from inside a student dorm, December 2007. JUHG 0235 adult, found inside the field laboratory of the Wildlife Rescue Center of J.U., 26 October 2007, 1240. JUHG 0254 adult, exact locality not recorded, 1990.

*Oligodon taeniolatus* (Jerdon, 1853)

SYLHET DIVISION, Maulvibazar District, Kamalganj, Adampur: JUHG 0245 adult (24°15'N, 91°53'E), collected from under a tree, June 2002, 1140 h.

*Ptyas mucosa* (Linnaeus, 1758)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0253 adult (23°52'N, 90°16'E), specimen was killed on campus by a gardener,

2007, 1020 h. JUHG 0265–0266 adult, no locality data available, apart from being within J.U. campus, 1994 and 2003.

*Rhabdophis subminiatus* (Schlegel, 1837)

CHITTAGONG DIVISION, Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0232 subadult (22°10'N, 92°13'E), from the bank of a narrow, cascading stream bordered by a narrow strip of natural semi-evergreen forest vegetation, 15 November 2007, 1300 h.

CHITTAGONG DIVISION, Cox's Bazar District, Teknaf, Teknaf (town): JUHG 0252 adult (20°53'N, 92°18'E), found killed by locals on the roadside next to a paddy field, 2004, 1310 h.

*Rhabdophis* sp.

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0205 adult (24°19'N, 91°47'E), emerged from water and entered a grassy area beside a railway line, 23 May 2007, 1140 h.

**Remarks.**— The specific identity of this specimen could not be verified and must be compared to several little known species from the genus which it may in future prove conspecific, or perhaps represent a currently undescribed species. This specimen appears similar to an individual photographed in Das (2008) as *Rhabdophis* sp. from near Barail Hills in southern Assam.

*Xenochrophis piscator* (Schneider, 1799)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0236 adult female (23°52'N, 90°16'E), collected from inside the field laboratory of the Wildlife Rescue Center, 2005, 2230 h.

Elapidae

*Bungarus fasciatus* (Schneider, 1801)

CHITTAGONG DIVISION, Bandarban District, Bandarban, Milonchari, H.R.: JUHG 0202 adult (22°10'N, 92°13'E), from the base of a bamboo thicket, on the bank of a narrow, cascading stream bordered by a narrow strip of natural semi-evergreen forest vegetation, 15 November 2007, 1930 h.

*Naja kaouthia* Lesson, 1831

KHULNA DIVISION, Bagherhat District, Sundarban N.P., Kachikhali: JUHG 0136 juve-

nile (21°52'N, 89°50'E), from amongst grasses next to an estuarine river during low tide, February 2004.

*Naja naja* (Linnaeus, 1758)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0264 adult (23°52'N, 90°16'E), killed at night by local people, next to their house, 1994.

#### Hydrophiidae

*Enhydrina schistosa* (Daudin, 1803)

KHULNA DIVISION, Bagherhat District, Sundarban N.P., Dublarchar: JUHG 0246 adult (21°43'N, 89°36'E), from an estuarine river bank, during low tide, 1996.

*Hydrophis cyanocinctus* Daudin, 1803

KHULNA DIVISION, Bagherhat District, Sundarban N.P., Dublarchar: JUHG 0251, 0280 adults (21°43'N, 89°36'E), on the mud of an estuarine river bank, during low tide, December 1991 and 1996.

*Pelamis platura* (Linnaeus, 1766)

“Bangladesh, coastal area”: JUHG 0248 adult, collected from fishermen while landing fish at a harbour, 1988.

#### Crotalidae

*Cryptelytrops erythrurus* (Cantor, 1839)

CHITTAGONG DIVISION, Rangamati District, Kaptai Village: JUHG 0231 male (22°30'N, 92°12'E), from the edge of a trail in a moderately disturbed patch of tropical semi-evergreen forest, on the outskirts of Kaptai Village, 18 October 2007, 1900 h.

#### Typhlopidae

*Ramphotyphlops braminus* (Daudin, 1803)

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0203, 0229, 0272 adults (23°52'N, 90°16'E), from the flower garden at the Fajilatunnessa Student's Hall, 2006 and April, 2007.

SYLHET DIVISION, Maulvibazar District, Sreemangal, Lawachara N.P.: JUHG 0256 adult (24°19'N, 91°47'E), found dead on the road, 2002, 0700 h.

*Typhlops diardii* Schlegel, 1839

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0276 adult (23°52'N, 90°16'E), found on a grass area bordering a road, 23 March 2008, 0130 h.

#### Boidae

*Gongylophis conicus conicus* (Schneider, 1801)

DHAKA DIVISION, Dhaka District, Savar: JUHG 0271 adult, bought from a snake charmer at the Snake Charmers Village, in the suburbs of Savar, original collection site unknown, 1987.

#### Trionychidae

*Lissemys punctata andersoni* Webb, 1980

DHAKA DIVISION, Dhaka District, Savar, J.U.: JUHG 0273 adult (23°52'N, 90°16'E), from a lake on campus, 1990.

#### Testudinidae

*Indotestudo elongata* Blyth, 1854

CHITTAGONG DIVISION, Cox's Bazar District, Inani Forest: ZRC(IMG) 2.97 adult (21°12'N, 92°04'E), the individual photographed was collected by local people and is currently kept at the Dulahazara Safari Park, collected June 2006.

### Discussion

The collection is presented here for the purpose of providing species specific localities and collection habitats for many species previously only reported from Bangladesh in country checklists with often vague or no locality data and rarely based on collections of specimens. This understandably leads to confusion as such anecdotal records of species can not be later verified for the identifications made by these authors. This is often essential especially as wide ranging species complexes continue to be split into recognisable distinct species. In this circumstance, it is usually necessary to have a comprehensive collection of referable material to verify which of the newly evaluated species is extant from each country, or each part of a country. In the case of Bangladesh, even a basic collection of the most common species is not available internationally in specimen repositories. Though

many of the species presented here are assumed to be “common” or “widespread” throughout Bangladesh and surrounding countries, until now most of these species are actually verified in literature from perhaps only one or two specific localities in Bangladesh. Accurate conservation assessments for such species if or when necessary in the future can not be carried out based on anecdotal records or assumptions of species distribution in a country, therefore adding further importance to verifying localities for species even within generally “assumed” natural ranges. In this respect, it should be considered that the vast majority of the original habitat in Bangladesh has been completely cleared and, or at least, considerably altered by human activities, thus sweeping statements of species distributions are in most cases gross overestimates of the current distribution and should be avoided by future researchers.

Here we would like to take the opportunity to comment on previous literature where sufficient information was provided, to allow corrections to be made. Corrections to Khan (2007) were addressed in Mahony and Ali Reza (2007a). Mahony and Ali Reza (2007c) and Ali Reza and Mahony (2007) reported *Kaloula taprobanica* and *Sylvirana (Hylarana) leptoglossa* as new locality records for Mymensingh District. We have, since, come across an older record of both species from Mymensingh, “Bengal” (Romer, 1949). The *Kaloula taprobanica* (as *Kaloula pulchra taprobanica*) specimens from “(?Jogandranagar)” were originally reported to be deposited at the BMNH. The repository of the *Hylarana leptoglossa* collection was not mentioned in that paper, but is also represented in the BMNH by a single specimen (BMNH 1947.1.1.71). Ali Reza (2007, 2008a–b) had several errors, e.g., providing first country records of *Occidozyga borealis*, *Scincella reevesii*, *Ptyctolaemus gularis*, *Sphenomorphus maculatus*, and possibly *S. indicus*. *Occidozyga borealis* was previously recorded from the Rangamati area by Asmat (2005). The record (and photograph) of *Scincella reevesii* is of a breeding male *Sphenomorphus maculatus* from Milonchari, Bandarban (Mahony and Ali Reza, 2007a). *Ptyctolaemus gularis* was previously recorded from “Nainimukh, Chittagong Hill Tracts” based on a specimen deposited at the ZSI (Hora, 1926).

*Sphenomorphus maculatus* is listed by Ahsan (1998: as *Lygosoma*), Khan (2004) and Khan (2007) also provide a brief comment and photograph. The record of *S. indicus* from the Tipperah Hills, Comilla, is likely based on the single specimen collected in the presence of the first and fifth authors (this report). It was provisionally referred to as *S. indicus* in the field, but is instead referable to a female *S. maculatus*, with a clearly concave rostral scale. Until specimens of verified identification of *Scincella reevesii* and *Sphenomorphus indicus* are discovered, both species should not be considered extant in Bangladesh.

Because many important literature records of Bangladesh herpetofauna are sporadically distributed throughout often little known publications, the need for correcting published errors of the past and present is essential when attempting to understand the current status of the country’s herpetofauna and preventing future researchers from duplicating these errors in their own work. A typical circumstance of taxonomic confusion can be explained with the example of the species *Rana (Hylarana) erythraea* (Ahsan, 1998; Khan, 2001, 2004), *R. (Hylarana) taipehensis* (Romer, 1951; Khan, 2004) and *Hylarana tytleri* (Ahsan, 1998; Choudhury, 1996; Ohler and Mallick, 2002; Asmat et al., 2003) all of which have been considered to be present in Bangladesh. Romer (1951) clarified his previous record of *R. erythraea* from Mymensingh to be *R. taipehensis*, later Ohler and Mallick (2002) reviewed this problematic group and restricted all Indian and Bangladesh populations to *Hylarana tytleri*, thus *H. erythraea* and *H. taipehensis* should no longer be considered present in Bangladesh until specimens of verified identity are clearly diagnosed. A species apparently not included in any previous checklist from Bangladesh is *Takydromus khasiensis* represented by three specimens in the collection of the California Academy of Science (CAS 94297–94299) that were collected from Lawachara N. P. in Sylhet Division by E. S. Ross and D. Cavagnaro in 1961 (CAS, 2007—online reference).

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