THE AMPHIBIANS OF CHOTA NAGPUR (BIHAR), INDIA

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INTRODUCTION

Chota Nagpur hills in the State of Bihar are not very high in altitude (614-1366 m.) but are noted for their natural beauty, thick evergreen and moist deciduous forests. These hills are situated between latitudes 22° - 25° N and longitudes 83° 30' - 87°E. The area comprises eight administrative districts namely, Ranchi, Gumla, Lohardaga, Singhbhum, Hazaribagh, Giridih, Palamau and Dhanbad. Rivers Koel (a large branch of the River ‘Son’), Subarnarekha, Sankh, Barakar, etc. traverse the area. The mean annual rainfall of Ranchi and its surroundings is about 1513 mm., and its daily mean temperature is about 23° 7 C. The area is also important for its rich resources like coal, iron, bauxite and mica. Hazaribagh National Park, Palamau Tiger Reserve, Netarhat touring spot, Hundru and Zohna Water-falls, Maithon and Tilaiya Water-Reservoirs fall within this area.

Boulenger (1890 & 1920), Annandale and Rao (1918), Daniel (1963 & 1975) and Parker (1934) have recorded amphibians from different parts of India and adjoining Countries, but there is no mention of any amphibian from Chota Nagpur Hills in these works. Venkateswarlu and Murthy (1972) have published a list of amphibians occurring in Bihar, but they also do not mention of any species from this area.

This is the first account of the amphibians of Chota Nagpur (Bihar), and is based on 2000 examples available in the Zoological Survey of India and collections made by author during a field trip to Ranchi district in November-December, 1967. Eleven species belonging to seven genera and four families of Order Anura have been determined and reported for the first time from the area. Tadpoles of three species namely, *Rana cyanophlyctis*, *Rana limnocharis* and *Microhyla ornata* have also been recorded from the area. The Order Apoda and Caudata are not reported in these collections.

Where the collections are large, only localities with dates are given under “Material”

SYSTEMATIC ACCOUNT

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1. Upper jaw toothless
   2

Upper jaw toothed
   3
2. Skin rough with spiny warts, parotoids present  
   BUFONIDAE
Skin more or less smooth, parotoids absent  
   MICROHYLIDAE
3. No intercalary cartilage between the distal and penultimate phalanges  
   RANIDAE
An intercalary cartilage present between the distal and penultimate phalanges  
   RHACOPHORIDAE

Family 1. BUFONIDAE

This family is represented in Chota Nagpur by two species of the genus Bufo which can be distinguished by the following key.

Genus 1. Bufo Laurenti

Head with bony ridges  
   melanostictus
Head without bony ridges  
   stomaticus

1. Bufo melanostictus Schneider
(Common Indian Toad)

1799. Bufo melanostictus Schneider, Hist. Amph., 1:216

Material: Total 54 examples (toads). Dhanbad-district: Maithon Dam site, 15.xi.1948 (under stone); Kalyaneshwari, 16.xi.1948; Maithon pahar, 16.xi.1948;

**Measurements**: Length (snout to vent) 19-133 mm.

**Distribution**: Chota Nagpur: As above. It is common throughout the plains of India; Sri Lanka; Burma, and extends to Southern China, Malay Peninsula and Archipelago.

**Remarks**: It is nocturnal in habit and has been collected from inside burrows and dark corners of dwellings during the day. Barring the winter months they are commonly seen in the area and can be used for dissection in educational institutions.

2. **Bufo stomaticus** Lutken

(Marbled Toad)


**Measurements**: Length (snout to vent) 27-79 mm.

**Distribution**: Chota Nagpur: As above. Elsewhere: Assam, West Bengal, Uttar Pradesh, Himachal Pradesh, Andhra Pradesh, Rajasthan, Gujarat and Maharashtra in India. Also Nepal, Sri Lanka, Pakistan, and Arabia. This species is also fairly common.

**Family II. MICROHYLIDAE**

This family is represented by two genera, each represented by a single species.

**Key to the genera**:

1. Two normal metatarsal tubercles present
2. Two large, shovel-shaped metatarsal tubercles (inner larger) present

   **Uperodon**

2. Tips of fingers with triangular dilatations
   1. Tips of fingers without dilatations
      **Ramanella**
      **Microhyla**

3. **Uperodon globulosus** (Gunther)
   (Balloon Frog)


*Measurements*: Length (snout to vent) 68 mm.


*Remarks*: This is a rare microhylid found in the area. It leads a secretive subterranean life and surfaces only during breeding season (Monsoon months).


4. **Ramanella variegata** (Stoliczka)


*Measurements*: Length (snout to vent) 14 mm.

*Distribution*: Chota Nagpur: As above. *Elsewhere*: Assam, West Bengal, Orissa, Madhya Pradesh, Maharashtra, Gujarat and Karnataka in India.

Genus 4. *Microhyla* Tschudi

5. **Microhyla ornata** (Dumeril & Bibron)
   (Ornate Microhylid)


*Measurements*: Length (Snout to vent) 13-21 mm.
**Distribution**: Chota Nagpur: As above. **Elsewhere**: It is a widely distributed species found all over the plains of India up to an altitude of 1524 meters. Also Nepal, Sri Lanka, Bangladesh, Burma, South China, South-east Asia and Taiwan.

**Remarks**: This is an active toad-like tiny frog mostly found in grass and under dry leaves in moist soil. In contrast to its tiny size, it can cover considerable distance by jumping. It is attracted to night light and occasionally enters houses during monsoon days.

Family, III. **RANIDAE**

This family is represented in Chota Nagpur by four species of genus *Rana*, and one of genus *Tomopterna*.

Key to the genera of family Ranidae

Outer metatarsals separated by web at least in the distal half

*Rana*

Outer metatarsals united or separated only in their distal extremity

*Tomopterna*

Genus 5. **Rana** Linnaeus

Key to the species of genus *Rana*

1. Toes webbed up to the tips, inner metatarsal tubercle digitiform (toe-like) *cyanophlyctis*

Toes not webbed up to the tips, inner metatarsal tubercle not digitiform

2

2. Both inner and outer oval-shaped metatarsal tubercles present *limnocharis*

Inner metatarsal tubercle present, outer metatarsal tubercle absent

3

3. Inner metatarsal tubercle blunt and not shovel-shaped *tigerina*

Inner metatarsal tubercle crescentic and shovel-shaped *crassa*

6. **Rana cyanophlyctis** Schneider

(Skipping Frog)

1799. *Rana cyanophlyctis* Schneider, Hist. Amph. 1: 137

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7. Rana limnocharis Wiegmann

(Indian Cricket frog)


Measurements : Length (Snout to Vent) 26-71 mm.

Distribution : Chota Nagpur : As above. Elsewhere : Throughout the plains of India, upto 1846 m. in the Himalayas. Also Pakistan, Afghanistan, Iran, South Arabia, Nepal, Thailand and Sri Lanka.

Remarks : It is a very common species and are found to float in ponds, ditches, canals and rivers.

7. Rana limnocharis Wiegmann

(Indian Cricket frog)


Measurements : Length (Snout to Vent) 13-61 mm.

Distribution : Chota Nagpur : As above. The species is recorded for the first time from the area. Elsewhere : It is a widely distributed species in India, found in almost all biotopes. Also Eastern Asia from Pakistan, Nepal, Sri Lanka and China to Japan.

Remarks : This is also a common species mostly found on bunds in paddy-
fields, burrows on moist soil, and under stones near water. It is terrestrial in habit and jumps into water when disturbed only to return to the bank soon being a poor swimmer. In Ranchi district these frogs are frequently seen inside the bushes grown on the banks of rivers like Subarnarekha, Hinoo, Tikoo, Mukri, South Koel etc.

8. **Rana tigerina** Daudin
   (Indian Bull Frog)


*Measurements*: Length (Snout to Vent) 89-137 mm.

*Distribution*: Chota Nagpur: As above. The species is recorded for the first time from the area. *Elsewhere*: It is common throughout India, from the base of the Himalaya to South India. Also Nepal, Sri Lanka, Burma, Thailand, South China and Taiwan.

*Remarks*: Bhattacharya (1936) reports its tadpoles feeding on mosquito larvae. The frogs have been collected from Ranchi district only.

9. **Rana crassa** Jerdon
   (Jerdon’s Bull Frog)


*Measurements*: Length (Snout to Vent) 57-73 mm.

*Distribution*: Chota Nagpur: As above. The species is recorded for the first time from the area. *Elsewhere*: Uttar Pradesh, Bihar, Orissa, West Bengal, Tamil Nadu and Kerela in India. Also Sri Lanka.

*Remarks*: This is an uncommon form and has been collected only from Dhanbad district from burrows on the elevated banks of ponds and ditches. The species is allied to *Rana tigerina* and can be distinguished by its toad-like form and the shovel-shaped metatarsal tubercles.

Genus 6. **Tomopterna** Dumeril and Bibron

10. **Tomopterna breviceps** (Schneider)
    (Burrowing Frog)


Measurements: Length (Snout to Vent) 34-41 mm.

Distribution: Chota Nagpur: As above. The species is recorded for the first time from the area. Elsewhere: Himachal Pradesh, Uttar Pradesh, Gujarat, Rajasthan, Maharashtra, Madhya Pradesh, Orissa, West Bengal, Andhra Pradesh, Karnataka, Tamil Nadu and Kerala. Also Sri Lanka, Nepal and upper Burma.

Remarks: This frog is rarely seen. The tibiotarsal tubercle seen by Bhaduri and Kripalani (1954) has not been observed in the present examples.

Family IV RHACOPHORIDAE

This family is represented in Chota Nagpur by one species of the genus *Polypedates*.

Genus 7. *Polypedates* Tschudi

11. *Polypedates maculatus* (Gray) (Tree Frog)

1832. *Hyla maculata* Gray, *Ill. Indian Zool.*, 1, pl. 82, Fig. 1


Measurements: Length (Snout to Vent) 11-62 mm.

Distribution: Chota Nagpur: As above. The species is more or less common in the area. Elsewhere: South India and Plains of North India in general. Also Sri Lanka.

Remarks: It is the only species of tree-frog found in the area. It is nocturnal in habit. During day-time frogs are collected from holes on tree-trunks, burrows on the walls of old houses and roofs of thatched village huts.

SUMMARY

This paper deals with the amphibians collected from Chota Nagpur (Bihar). Eleven species of Anura (frogs and toads) belonging to four families and seven genera are recorded for the first time from the area with notes wherever available. Keys for determination of the species, and a map showing localities of collection have also been provided.

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REFERENCES


