

A report of Herpetofauna in the collection of Chaiduar College, Gohpur

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ABSTRACT

In recent years, awareness is being created all over the world for the conservation of biodiversity so that these vitally important phenomena receive further study immediately. Research on biodiversity, identity, distribution, conservation and monitoring in local level in North East Region including Assam are very limited. It is due to the fact that most of the biodiversity rich area are still unexplored or under explored. It is necessary to obtain current and accurate information regarding floral and faunal species in order to conserve and manage them holistically. The present work attempt to describe the collected and recorded species of amphibian and reptiles in Chaiduar College, Gohpur . Assam. The present study suggested the need of involvement of higher education sector in taxonomic studies for conservation of local biodiversity.

INTRODUCTION

Chaiduar College is one of the oldest colleges situated in the Biswanath district of Assam. It is affiliated to Gauhati University having 16 numbers of departments and a number of skill development and value added courses. **Accredited 2.82 CGPA by NAAC in 2017**, the college is preparing for celebration of Golden Jubilee, having sufficient research facilities including **Advanced Biotech Hub** and **Star College** Programmes. A great number of major and minor research projects have been successfully completed by different departments till date. The college has an approximately 5 Hectares of open land and several ponds. The department of Zoology was established in 1987 and since then, the department has maintained good academic and research tradition. The Zoology department has to its credit a well equipped AC

room having different types of digital Microscopes, Digital P^H meter, microtome, Digital balance, Incubator, spectrophotometer, PCR, Gel documentation system, Elisa reader, Deep refrigerator, Distillation unit, Hot air oven, autoclave, centrifuge, lux meter, hygrometer, gel del unit, different aquatic and plankton nets, etc. A rich library, museum with over 4000 specimens and an animal house are attached to the department.

The author conducted several taxonomic research projects and maintain animal collections. A work on database on the collected specimen is in progress which is supposed to help in research community. The growing collection document the place and time of collection along with relevant data for biosystematics study. The paper highlights the amphibian and reptilian species diversity based on field collection and recorded species.

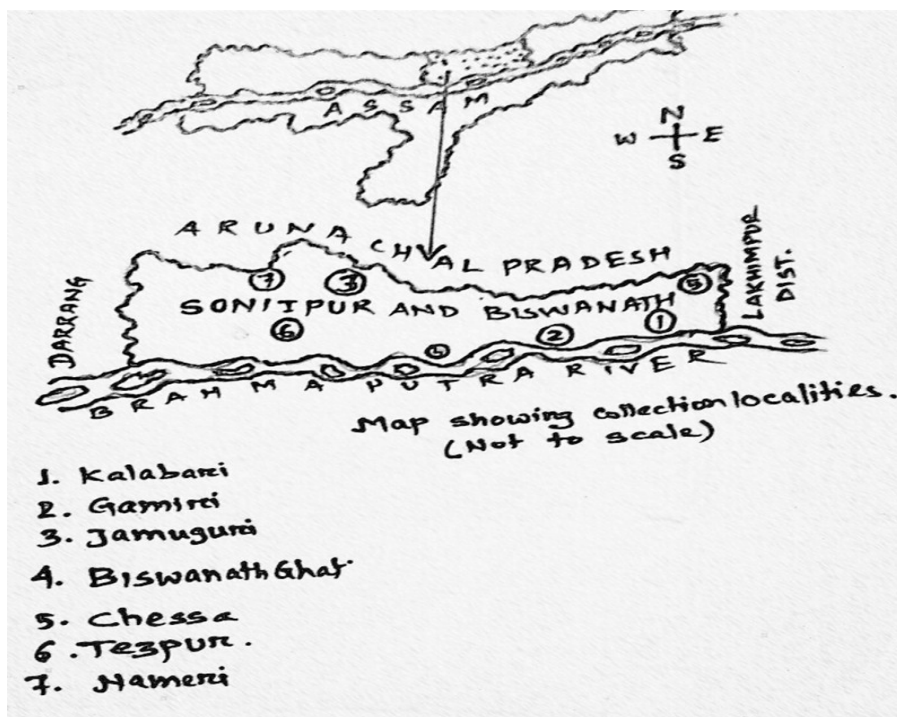


Fig 1. Map showing collection localities

Amphibian collection:

Earliest report on record on amphibian fauna of north east region dates back to Annandale (1912) who published zoological results of Abor expedition. Other important workers who worked on amphibian fauna of this region are Boulenger (1890-1920), Smith (1921) and Sarkar and Sanyal (1985) who studied the amphibians of Namdapha National Park of Arunachal Pradesh. They reported 14 species belonging to 5 genera distributed in 3 families. Chanda (1994) reported 23 species from Arunachal Pradesh based on his own collection and earlier reports. Bordoloi and Borah (1999) reported *Hoplobatrachus crassus* from north east region of Assam and Arunachal Pradesh. Few works on amphibian of this region are: Borah, (2000), Sinha, Chakravorty, Borah and Bordoloi, (2000),

Bordoloi, Borah, Sarma and Kalita (2000), Borah and Bordoloi (2001), Bordoloi, Borah, Chakravorty and Sinha. (2001), Borah and Bordoloi (2001), Borah, Bordoloi and Borkotoky (2001), Chakravarty, Borah and Bordoloi (2002) : Bordoloi, Borah, Sarmah and Sarmah (2002), Borah and Bordoloi (2003), Borah (2004) : Borah and Borkotoki (2008): Borah and Kakati (2010), Borah (2010,11,12) Kakati and Borah (2013), Borah (2013,16,17).

COLLECTION METHODS

Collections were made from different habitats such as agricultural fields, human habitation sites (urban and rural), natural forests, wetlands, tea gardens, seasonal pools, river banks, swamps etc. during day light and early

night hours.

Besides hand collection, aquatic nets, fishing nets and plankton nets were used for collection of specimens. Tadpoles and eggs were collected during day time from various water bodies and whenever possible few samples were brought to the laboratory for completion of life cycle. While collecting specimen guidelines of Declining Amphibian Task Force (DAPTF) of the world conservation union (IUCN), Species Survival Commission (SSC) were strictly followed.

The amphibian fauna identified belonging to 7 families, 18 genera and 31 species. The family Bufonidae is represented by 3 species, followed by Dicroglossidae 8 species, 3 species of Megophriidae, 2 species of Microhylidae, 1 species of Occidozyginae, 6 species of Ranidae and 8 species of Rhacophoridae. Collected specimens have been well preserved along with of morphometric record. Following are the list of species collected and recorded by the author-

Class : Amphibia

Order : Anura

I. Family : Bufonidae

1. *Duttaphrynus himalayanus* (Gunther, 183).
2. *Duttaphrynus melanostictus* (Schneider, 1799)
3. *Duttaphrynus stomaticus* (Lutken, 1862)

II. Family : Dicroglossidae

4. *Euphlyctis cyanophlyctis* (Schneider, 1799)
5. *Euphlyctis hexadactylus* (Lesson, 1834)
6. *Fejervarya nepalensis* (Dubois, 1975)
7. *Fejervarya syhadrensis* (Annandale, 1919)
8. *Fejervarya teraiensis* (Dubois, 1984)
9. *Hoplobatrachus crassus* (Jerdon, 1854)
10. *Hoplobatrachus tigerinus* (Daudin, 1802)
11. *Limnonectes leticeps* (Boulenger, 1882)

III. Family : Megophryidae

12. *Xenophrys major* (Boulenger, 1908)
13. *Xenophrys parva* (Boulenger, 1893)
14. *Xenophrys robusta* (Boulenger, 1908)

IV. Family : Microhylidae

15. *Microhyla ornata* (Dumeril & Bibron, 1841)
16. *Uperodon globulosus* (Gunther, 1864)

V. Family : Ranidae

18. *Amolops formosus* (Gunther, 1875)
19. *Clinotarsus alticola* (Boulenger, 1882)
20. *Humerana humeralis* (Boulenger, 1887)
21. *Hylarana taiphensis* (Van Denburgh, 1909)
22. *Hylarana tyleri* Theobald, 1868
23. *Pterorana spp.*

VII. Family : Rhacophoridae

24. *Chiromantis spp.*
25. *Chiromantis vittatus* (Boulenger, 1887)
26. *Philautus spp.*
27. *Polypedates megacephalus*
28. *Polypedates taeniatus* (Boulenger, 1906)
29. *Rhacophorus spp.*
30. *Rhacophorus maximus*, Gunther, 1858

Collection of Reptilian Fauna:

Explorations of both amphibian and reptilian species have been carried out simultaneously during the field surveys conducted. For reptiles, active searching in vegetations, turning of rocks, logs, bricks, digging through leaf litter, excavating burrows and termite mounds have been done depending on diverse habitat condition of the species. Whenever needed, help of local people and other field worker, expert snake catcher were hired for this purpose.

The equipments like stout canvass bags of different sizes were used for capturing specimen. Snake catching sticks with an iron hoop at one end have been made locally and were used for handling snakes. Likewise geology picks made of iron are used for turning rocks, removal of barks, splitting open old logs and bamboo, tearing up rodent burrows, termite mounds while searching reptilian species. Large funnel traps, fish nets and hooks were also used during collection of specimen. Some collections were obtained from local markets, road killed and killed by local inhabitants. Following are the list of species collected and recorded by the author-

Class : Reptile**Order: Testudine (Tortoises & Turtles)****I. Family :Geomydidae**

1.*Cuora amboiensis*, Daudin,1802. 2.*Cuora mouhotii*, Gray,1831 3.*Cyclemys gemeli*, Fritz,et al,2008 4.*Pangchura smithi*, (Gray,1831) 5.*Pangchura sylhetensis*, Jerdon,1870 6.*Pangchura tecta*, Gray,1831

II. Family :Testudinidae

7. *Manouria emys*, (Schlegel & Mouller, 1844)

III. Family :Trionychidae

8. *Lissemys punctata*, (Lacepede,1788)
9. *Nilssonia gangaticus*,(Cuvier,1825)
10. *Nilssonia hurum*, (Gray, 1831)11. *Nilssonia nigricans* (Anderson,1875)

Order: Order: Squamata (Lizards and Snakes)**Sub-Order : Sauria****IV. Family :Agamidae**

12. *Draco blanfordii* Blanford,1878
13. *Ptyctolaemus gularis*(Peters, 1864)
14. *Japalura Andersoniana* Annodale,1905
15. *Calotes versicolor*, (Daudin,1802)
16. *Calotes jerdoni* Gunthur, 1870

V. Family :Anguidae

17. *Ophisaurus gracillis* (Gray, 1845)

VI. Family :Gekkonidae

18. *Cyrtodactylus khasiensis* (Jerdon,1870)
19. *Hemidactylus frenatus* ,Dumeril & Bibron, 1836
20. *Hemidactylus garnotii*,Dumeril & Bibron, 1836 21. *Hemidactylus platyurus* (Schneider,1792)
22. *Gekko gecko*(Linnaeus ,1758)

VII. Family :Scincidae

23. *Eutropis dissimilis* (Hallowell,1857)
24. *Eutropis macularia*, Blyth, 1853
25. *Eutropis carinata* (Schneider, 1801)

26. *Eutropis multifasciata* (Kuhl, 1820)

27. *Sphenomorphus indicum* (Gray, 1853)

28. *Sphenomorphus maculatus* (Blyth, 1853)

VIII. Family :Varanidae

29. *Varanus bengalensis* (Daudin, 1802)

30. *Varanus flavescens*(Hardwicke & Gray,1827)

Order: Squamata(Snakes)Sub-Order: Ophidia(Serpentes)**IX. Family :Boidae**

31. *Python molurus bivittatus*, Kuhl, 1820

X. Family :Columbridae

32. *Rhadinophis frenatum*, (Gray, 1853)

33. *Coelognathus radiatus*, (Schlegel, 1837)

34. *Pythas korros*, (Schegel,1837)35. *Oligodon albocinctus*, (Cantor, 1839)

36. *Oligodon cinereus*, Gunther, 1864

37. *Dendrolaphis pictus*, (Gmelin, 1789)

38. *Dendrolaphis gorei*, (Wall, 1910)

39. *Amphiesma stolatum*, (Linnaeus, 1758)

40. *Amphiesma platyceps*, (Blyth, 1854)

41. *Xenochrophis piscator*, (Schneider,1799)

42. *Rhadrophis himalayanus*, (Gunther, 186)

43. *Rhadrophis subminiatus*, (Schlegel,1837)

44. *Blythia reticulate*,(Blyth, 1854) 45. *Boiga gokool*, (Gray,1835)

46. *Boiga quincunciatus*, (Wall,1908) 47. *Boiga cyanea*,(Dumeril,Bibron & Dumeril,1854)

48. *Ahaetulla prasina* , (Boie, 1827)

49. *Enhydris enhydris*, (Schneider, 1799)

XI. Family :Elapidae

50. *Bangurus fasciatus*, (Schneider, 1801)

51. *Ophiophagus hannah*, (Cantor, 1836)

52. *Naja kaouthia*,Lesson,1831

XII. Family :Typhlopidae

53. *Rhamphotyphlops brahminus*,(Daudin,1803)

54. *Typhlops jerdoni*, Boulenger, 1890

55. *Typhlops diardi*, Schlegel, 1839

XIII. Family : Viperidae

56. *Cryptelytrops albolabris*, (Gray, 1842)

Pressure and threats on amphibian and reptile species:

During the present survey following threats have been come to the notice –

1. The Chaiduar reserve forest of Gohpur sub division is under critical threat of habitat alteration, deforestation and agricultural expansion.
2. Gohpur township has been upgraded to a sub division and there has been a steady influx of population subject to urbanization and utilization of large area of wet lands.
3. Expansion of four lane highway and gradual developmental activities are one of the potential threats which will in long run destroy herpetofaunal habitat.
4. The shifting cultivation practices along the northern boundary of the study site is not considered environmental friendly as reduction of p^H of amphibian breeding habitat could have detrimental effect (Bordoloi and Borah 2009).

Some other identified stresses are natural stresses and human induced stresses.

Natural stresses:

Among the natural stresses land slide and seismicity play important role as the earth of this region is extremely unstable and falls under the highly seismic zone.

Human induced stresses:

In course of the exploration it has been reveal that there are large scale killing of *Hoplobatrachus tigerinus*, *H. crassus* and *Euphlyctis cyanophlyctis* during breeding season in different study localities. Indiscriminate hunting and poaching of monitor lizard, turtles, python and even other snakes for food and medicinal use in certain localities which have been known during survey period.

CONCLUSION

The north east region is a wonder land with regard to richness of biodiversity in general and the herpetofauna in particular. The Zoology teachers of colleges and universities can identify some species of animals. They may encourage few students to take projects on taxonomic work for the description of common local species. A network of biodiversity information among the institution of higher education would be appreciable as well as necessary for the gaps in our knowledge.

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