

## AMPHIBIAN RESEARCH IN INDIA

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Amongst the tropical and Third World countries, India is certainly the most privileged when we consider the state of natural history studies. The long history of biodiversity inventorying in the country has yielded a remarkable amount of data in the form of published literature, museum collections and currently in a variety of electronic media too. While the quality of such forms of data is not equally good across the wide spectrum of India's biodiversity, information available on Indian amphibians is reasonably complete.

Subject to authors' opinion, the amphibian fauna of India consists of 200-205 species. These include one salamander (Caudata), about 20 caecilians (Gymnophiona) and a little over 180 species of frogs and toads (Anura). General consensus is that there are more species in peninsular India - many being endemic to the Western Ghats. It is also widely felt that more intensive surveys conducted in the northeast Indian states and the Andaman and Nicobar Islands would add a handful of species to the country's list.

Amphibian studies in India have traditionally focussed on surveys and taxonomy. In the past many European and Indian naturalists, chief amongst them being, G.A. Boulenger, Charles McCann, C.R.N. Rao and B.R. Sesachar and the Bombay Natural History Society contributed immensely to amphibian survey and taxonomy. However, after Independence, such studies were more or less the sole concern of the Zoological Survey of India.

Widely read Indian journals that carried articles on amphibians during the past were the *Journal of Bombay Natural History Society (JBNHS)*, *Current Science*, *Proceedings of the Indian Academy of Sciences*, *Science and Culture* and the periodicals of the Zoological Survey of India. While most of these journals continue to dedicate some of their pages to reporting amphibian research in India rather regularly, other journals/newsletters such as *Hamadryad*, *Cobra*, *Zoos' Print*, *Frogleg*, *Herpeton* and *Herpetile* have emerged in the scene during the last 20 years. Further, there are a number of popular magazines (*Hornbill*, *Sanctuary*, *Environ*, to name a few) that carry articles on amphibians from time to time. All these periodicals have together

added considerably to our knowledge of amphibian distribution, taxonomy, food, breeding and metamorphosis, ecology (to a limited extent) and vocalization.

Despite all the blessings, amphibian research in India is still in its infancy. This is my personal feeling. And what I am about to discuss in an attempt to highlight this is also largely my personal impressions without prejudice for any person or institution that has been pursuing amphibian studies.

Amphibian research in India is limping primarily due to the lack of appropriate and reliable reference books that cover all the known species. Such guides, despite the number of excellent photographs we now have of even rare species, have not been produced since we do not have sufficient specimens of all the described species anywhere in the country. The lack of correctly identified and well maintained specimens have offered little scope for even a serious student of amphibian studies to attempt preparing a field guide to any part of India.

In the early 60's J.C. Daniel attempted, for the first time, commendably, a field guide to the amphibians of western India. This was published in parts in the *JBNHS*. Shortcomings and criticisms apart, this is the only material available as a ready reference for the region to many researchers even today. During 1997, I published (in three parts) a field guide to the frogs and toads of the Western Ghats in *Cobra*. Despite *Cobra* not being a periodical that is as widely read as the *JBNHS*, a number of amphibian researchers have obtained copies of this material for field use.

Many other site-specific studies providing keys to local species of amphibians have appeared in Indian literature (largely in the form of Master's or Doctoral degree thesis). Such material have generally been of less help in the field as they generally do not step out of libraries!

A very fine attempt at bringing out a popular reference book on amphibians is that of Kaushik Deuti and B.C. Bharati Goswamy - *Amphibians of West Bengal Plains*, published by WWF-India in 1995. Although this pertains to a small geographical area and covers only the most common species, it is well illustrated and

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appealing to the lay reader. What we need today is a similarly illustrated yet more comprehensive reference book for the country as a whole. However, it does not seem to me that we are moving in this direction right now.

A country that made a good beginning and still has the potential to do better in amphibian research than most other developing countries has unfortunately adopted a state of complacency. I have no hesitation in saying this since it is rather obvious that the effort that goes into amphibian studies is not anywhere equal to that of birds or larger mammals. Amphibian studies have also not found a place in the mainstream 'wildlife' research in India. I say this considering the meager allocation of manpower and resources in most Indian universities and research institutions for amphibian research. For that matter even premier institutions like the Zoological Survey of India are unable to recruit more taxonomists for amphibian research.

While this is a regrettable situation, what is of more concern is the segregated approach to the study of amphibians that we have currently adopted. In 1992, when the first conference of south Asian experts in herpetology was held in Bhubaneswar, it was felt that there should be more interactions amongst amphibian experts not only within the country but also across our political limits. A few years later, this suggestion was reiterated at the conference in Sri Lanka (which I unfortunately could not attend). However, little progress has been made in this regard.

The handful of serious amphibian researchers spread over the country seldom come together (May be we do not wish to!). There is often little communication on the type of study each person is carrying out. New discoveries, revised taxonomy, etc take a long time and effort before they get into the public domain. Such a system can only prevail when there is little mutual trust

between the researchers. And unless this is overcome, there can be little progress in the study of amphibians in India.

A sense of togetherness and trust is the need of the day if we were serious about amphibian research. (It may seem like I am saying all these since I do not pursue any serious study of amphibians currently). Most suspicion amongst amphibian researchers in India prevails when it comes to the identification of species. There is also little consensus on nomenclature, especially in renaming species, resurrecting old scientific names and synonyms. To cite an example, I quote from an article on amphibians of Kerala that is included in the most recent issue of *Cobra* (Vol. 33, 1998). The authors of the paper have specifically stated that recent changes in nomenclature of Indian amphibians have not been taken into consideration while compiling the list, as there is no justification provided for the recommended changes. Taxonomy being the key to all amphibian studies, should we not strive to build wider consensus? How do we do this?

There are many ways of building consensus amongst a group that has a common concern. Our concern is conservation of amphibians in India through scientific research. Consensus on anything proposed is possible through wider communication and sharing. To this end a couple of years ago the periodical *Frogleg* was launched. I feel that we should use this better as a forum for sharing of information and opinion. More effort should be put into announcing new discoveries of species and changes in nomenclature promptly through *Frogleg*. As a further step, *Frogleg* can be on the internet (unless it is already there?). Many more people have access to computers and the internet today than five years ago. Conferences and workshops, although important, are more expensive and do not seem to attract many participants. We may do well therefore by relying on print and electronic media. The biggest question still is can we work together for a better future of Indian amphibians?

