

HERPETOFAUNA OF THE CHILKA LAGOON, ORISSA, INDIA

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SUMMARY

Seventeen species of reptiles and six species of amphibians are reported from the Chilka lagoon, Orissa, India. Brief comments on the habitat and behaviour of the animals in the field where possible are given.

INTRODUCTION

No research has been reported on the herpetofauna of the Chilka lagoon since the pioneering investigations by Annandale (1915) probably because the Indian herpetologists thus far paid little attention to the estuaries. Availing myself of the upsurge of renewed interest in the fauna of the lagoon generated by the multidisciplinary Chilka Lagoon Expedition taken up by the Estuarine Biological Station, Berhampore, I carried out extensive investigations in the waters of the lake at all depths, in the hills, and on the several islands dotting the lake, with herpetology as my primary objective.

Lake Chilka (Fig. 1) is a unique and well known brackish water body on the east coast of India, covering an area of 1165 sq. km. of Puri and Ganjam Districts of the State of Orissa. The pear-shaped lake is connected to the Bay of Bengal at its northeast and is subjected to tidal fluctuations. It receives water from the river Daya, one of the branches of the river Mahanadi, and also from several small local streams. The south and west portions of the lake bounded by hills. There are a number of islands covered with semi-deciduous tropical plants and scattered bushes. The depth of water ranges from 0.5m to 3 m and the salinity also varies in different portions of the lake.

Since a definitive herpetology of the Chilka lagoon must await more complete zoological exploration, the present paper, which comprises the results achieved so far, is aimed at updating our knowledge and providing a tentative inventory of the reptiles that I encountered and collected in the area.

METHODS AND LOCALITIES

The areas of the lagoon I visited were covered from bases in three camps viz. Rambha, Barkul, and Satpara, which are ideally located on the edge of the lake and where there are facilities for accommodation and cruising the lake by motor or country boats. I collected especially from four biotypes: the lake, the shoreline, the hills and islands. Furthermore I covered the major islands on foot for rare and interesting species. Local fishermen greatly helped me in augmenting the collections especially the ophidians, including the venomous varieties.

SPECIES ACCOUNTS

Included herein are seventeen species of reptiles and six species of amphibians. Of the reptiles, 3 species belong to *Gekkonidae*, 3 to *Agamidae*, 1 to *Scincidae*, 2 to *Varanidae*, 1 to *Typhlopidae*, 1 to *Acrochordidae*, 4 to *Colubridae*, and 2 to *Hydrophiidae*. As to the amphibians 4 species belong to *Ranidae* and one each to *Bufo* and *Rhacophoridae*.

Amphibia Anura Ranidae

Rana cyanophlyctis Schneider 1799
Skittering Frog

Found in the mid waters of the lake and also in the muddy pools on the edge. This frog is well known for its tolerance of salinity and has even been observed to breed in brackish water. Both juveniles and adults were taken from swamps and marshy areas.

Rana limnocharis Gravenhorst 1829
Southeast Asian Paddy Field Frog

Fairly common on the edge of the lake but far away from the water. Mostly juveniles were taken from the cultivated fields.

Rana breviceps Schneider 1799
Indian Burrowing Frog

A large frog, shy and solitary in habits. Found only among thick bushes. Probably introduced recently by human agency. Two adult specimens were taken from a well on the shore of the lake near Rambha.

Rana breviceps Schneider 1799
Indian Burrowing Frog

A burrowing frog with a toad-like body and an enlarged inner metatarsal tubercle which is used as a "shovel" for digging. One juvenile was picked up from a rain-soaked paddy field on the shore at Chatnagarh village near Barkul. A rare species.

Bufonidae

Bufo melanostictus Schneider 1799

Found in the cool, shady culvert alongside the Samal Island, off Rambha. One adult male was captured at night from the foreground of Pantha Nivas, Rambha.

Rhacophoridae

Rhacophorus leucomystax Gravenhorst 1841
Common Tree Frog

One specimen found crawling on the wall of the dining hall in the premises of Pantha Nivas, Barkul was collected.

Reptilia Sauria Gekkonidae

Hemidactylus brooki Gray 1845
Spotted Indian House Gecko

Found under stones on the edge of the lake near Barkul. The commonest house-gecko found living in the buildings located on the edge of the lake.

Hemidactylus frenatus Schlegel 1836

South Asian Waif Gecko

Although it is a domestic gecko living in association with the preceding species, I collected it from a coconut tree adjoining the shoreline at Barkul.

Hemidactylus leschenaulti Dumeril & Bibron 1836
Bark Gecko

Despite its common name this gecko is found at home both in the areas inhabited by humans and outskirts. A fairly large individual was picked up from the open space near a lake at Barkul.

Agamidae

Sitana ponticeriana Cuvier 1844
Fan-throated Lizard

The only Indian lizard with four toes. Several juveniles were seen running on the ground near Kavutakuda on way to Satpara. They became very agile and alert on approach. A couple of specimens were, however, captured but not before giving them a hot chase.

Calotes versicolor (Daudin) 1802
Indian Garden Lizard

Occurs in fairly large numbers. A diurnal, arboreal lizard commonly seen among bushes of the islands and along the shoreline.

Psammodromus blanfordianus (Stoliczka) 1871
Dwarf Rock-Lizard

A typical lizard of the hills of peninsular India. Recorded for the first time from the Ghantasila Hill and Bird Island of the lagoon. The specimens I saw were basking in the midday sun at 13 hrs and were very alert and quickly escaped into rock crevices on approach. Some of the adults which were recognised easily as breeding males because of their swollen and blood-red cheeks were captured after chasing them in their habitat - the barren boulders of the Bird Island.

Scincidae

Mabuya carinata (Schneider) 1801
Common Skink

A diurnal lizard and a ground-dweller. Found both in the populated and forested areas. One large individual was seen on the steps of the Pantha Nivas, Barkul but it escaped quickly into the leafy litter in the adjoining garden.

Varanidae

Varanus bengalensis (Daudin) 1802
Common Indian Monitor

Not uncommon among the bushes on the shoreline and on the stony beaches of the islands. A baby monitor was picked up from a rocky outcrop in the Samal Island. Quite surprisingly the lizard offered no resistance while captured, probably because it was in a state of torpor. One large individual was found crossing the path in its leisurely gait near a swamp but unfortunately escaped into the dense vegetation on the Naupada Island.

Varanus salvator (Laurenti) 1768
Water Monitor

The largest lizard of India and a strictly protected animal. An adult was seen quietly surveying the scene of the lake from a huge boulder near the INS Chilka. The lizard became very alert and quickly retreated down amongst the rocks soon after our boat turned in its direction. This is the first report of the lizard's occurrence in the lagoon.

Serpentes Typhlophidae

Typhlops acutus (Dumeril & Bibron) 1844
Beaked Blind Snake

One specimen was picked up as it crawled on the ground at midday at Kalijugeswar Hill near Balugan. An interesting addition to the ophiofauna of the lagoon.

Acrochordidae

Chersydrus granulatus (Schneider) 1799
Indian Wart Snake

Incredibly numerous in the lake and can be expected with each haul of the fishing nets. Fishermen brought us several examples daily at every camp. Rarely seen during the day except when it rises to the surface to breathe. The snake is mainly a fish-eater and is inoffensive. On one occasion I saw a seabird, the White-bellied Sea Eagle (*Haliaeetus leucogaster*) preying upon the Wart Snake, probably picked up from the lake near Maltikuda Island.

Colubridae

Dendrelaphis tristis (Daudin) 1803
Common Indian Bronzeback

Identified on the basis of the sloughed skin of the snake which was intact with details of scalation. Rediscovered after a lapse of nearly seventy years.

Xenochrophis piscator (Schneider) 1799
Checkered Keelback

The common water snake of India. Found in the lake and along the shore. I saw several individuals in the deep portions of the lake also.

Ehydris enhydris (Schneider) 1799
Smooth Water Snake

One example was picked up from the muddy edge of the lake at Ghodadowda village. A thoroughly aquatic snake frequenting rivers, estuaries, lakes, marshes and probably rain-soaked fields, but seems to be rare. An interesting addition to the ophiofauna of the lake and also the first documented record of its occurrence from the study area.

Cerberus rhynchops (Schneider) 1799
Dog-Faced Water Snake

Very common in the lake and along the muddy shoreline. Particularly abundant in the swamps and in portions of the lake which are heavily fished. Smith (1943) considered such an abundant species as 'rare on the coasts of India'. Whitaker (1969) and Murthy (1970) have commented on the widespread prevalence of this snake on the coasts of India. Both juveniles and adults were collected for comparative study.

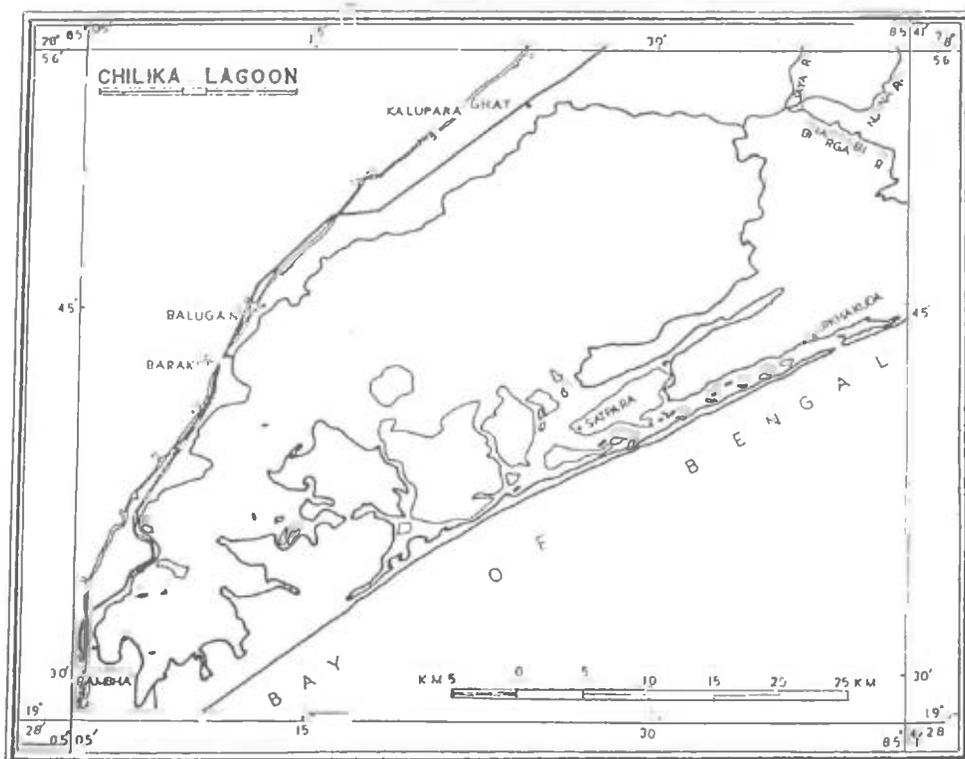


Fig. 1. Map of the Chilika Lagoon

Hydrophiidae

Enhydrina schistosa (Daudin) 1803
Beaked Sea Snake

Two specimens – one juvenile and one adult – were picked up from the fishing nets operated at Rambha Bay and Barkul. This is a common sea snake which enters the estuaries freely but Annandale (loc. cit.) failed to secure one. Smith (loc. cit.) made no mention of the likelihood of the snake's occurrence in the estuaries. However, Murthy (1977) recorded it from various estuaries. It is the snake much feared by fishermen who call it 'Dusta sarpa' in Oriya which means a very bad snake, and they are apparently justified.

Hydrophis obscurus Daudin 1803
Estuarine Sea Snake

Fairly common. Specimens caught and examined are devoid of encrustations of hydroids and barnacles which are so characteristic of other marine snakes. Annandale (loc. cit.) rightly described this sea snake as 'mainly, if not exclusively, an estuarine form'. Fishermen appear to have no apparent fear of this sea snake because of its mild disposition, despite the toxicity of the venom.

DISCUSSION

The only species that is most unlikely to be met with is the crocodile *Crocodylus palustris*. This limbless skink *Barkudia insularis* which was first collected from the Barkuda Island to be described as new to science seems to have become extremely rare in the type-locality, if not extinct. Among the other saurians found in the lagoon, a special and note-worthy record is of the Dwarf Rock-Lizard *Psammophilus blanfordanus*. The mud turtle *Lissemys punctate* is reported from the lake but I failed to secure a specimen, although some fishermen tried to convince me of their occasionally trapping it.

Snakes, however, are a conspicuous and major component of the vertebrate fauna throughout the breadth and length of the lake and their sheer abundance cannot fail to delight any herpetologist. I had assembled enough evidence to convince me that the Little File Snake *Chersydrus granulatus* is the most dominant species followed by the Sea Snake *Hydrophis obscurus*, the Dog-Faced Water Snake *Cerberus rhynchops*, and the Checkered Keelback *Xenochrophis piscator*, in that order. The sea snake *Enhydrina schistosa* is not frequently found while the Smooth Water Snake *Enhydris enhydris* seems to be rare.

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