

OPHIDIAN AND AGAMID FAUNA OF PARAMBIKULAM WILDLIFE SANCTUARY

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Information on diversity of herpetofauna in protected areas of Kerala are very few. The only available literature in this unexplored field is the *Fauna of British India* series by Malcolm Smith (1943). Murthy (1981) made an initial attempt to record the reptiles of Silent Valley and New Amarambalam area. Das and Whitaker (1990) conducted studies in Vanjikadavu and Nadukani forests of Chalakudy Division. Apart from these short term studies, no attempts have been made to study the population/status of the little known species from protected areas of Kerala.

Study area

Location

Parambikulam Wildlife Sanctuary in Palghat district is located between 10°20'N and 10°26'N latitude and 76°35'E and 76°50'E longitude. The total area is about 285 sq. km. The sanctuary is bordered on the eastern side by Indira Gandhi Wildlife Sanctuary, Tamil Nadu and the other three sides by reserve forests of Sholayar, Vazhachal, Nelliampathy and Kollengode ranges. There are three reservoirs of Parambikulam-Aliyar Project. The area surrounding the reservoirs harbour diverse fauna and flora.

Faunal diversity

The sanctuary is one of the well known nature reserves in Kerala. The faunal diversity is rich and varied. Almost all peninsular mammals are recorded from this sanctuary. A recent survey lists about 200 species of birds from this area (Nameer, pers. common.).

Vegetation

The Vegetation consists of both natural forests (i.e. evergreen, semi-evergreen, moist-deciduous forests, grass lands, marshy areas or vayals) and teak plantations.

Materials and Methods

The sanctuary is stratified according to habitat types such as evergreen, moist deciduous, forests, marsh lands/vayals, plantations and water bodies.

Two methods were followed during the study.

Manual method

This method is relatively expensive, requiring time and manual power.

The team members, tilted rocks, dead logs and fallen tree trunks on the ground, leaf litter and debris on the forest floor is thoroughly searched. It is ensured that all possible habitats including the micro-habitats were examined.

Pitfall trapping

Pitfall trapping is a valid technique for sampling the forest floor vertebrate fauna. Various researchers (Bury and Corn, 1987; Gibbons and Selmitsch, 1982; Vogt, 1987) used this method to assess the herpetofauna in the field with varying degree of success.

In the present study, the pitfall trap was deployed in desired trap sites, considering the herp behaviour and habitat use. The traps were examined twice daily to ensure the trapped animals.

The pitfall traps were made of aluminium sheets which are flexible, durable and light weight. These sheets were used to make a trap of 65 cm x 25 cm in size and it is then buried in trap sites inside the sanctuary. In this study three formations were used for twenty days each. (See Figures on next page.)

Snakes

The collected snakes are examined for confirmation of identity. The snout vent length and tail length, were taken. Counts of head shields, labials, dorsal and ventral scales were also recorded. These were compared with those of Smith (1943) to confirm the identity of the species.

Results

Thirty one species of snakes belonging to six families were recorded from the sanctuary.

Ramphotyphlops braminus the only typhlopidae and common shield tail *Urotyphlops arcticeps* and Perrotet's shield tail from *Uropeltidae* family are recorded. The two former species are uncommon and later mentioned species is rare. Out of the sixteen species of colubrids, the rat snake, striped keelback, kukri snakes, wolf snakes, checkered keelbacks and green whip snake were seen in a variety of habitats and their presence may be defined as common. Comparatively sightings of other colubrids are few and are uncommon.

The Elapidae constitutes the highly endangered King Cobra along with the widely distributed spectacled cobra. The Krait and Coral snake are found only occasionally.

From the sub-family Crotalinae, two species were seen at almost all parts of the sanctuary (*H. hypnale* and *T. malabaricus*) sightings of Horse shoe pit viper is rare. From the Viperidae family Russel's viper was also recorded.

List of Species

I. Family Typhlopidae

1. Common Blind Snake *Ramphotyphlops braminus* (Daudin, 1803)

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II. Family Uropeltidae

2. Rough Tail/Shield Tail *Uropeltis arcticeps* (Gunther, 1875)
3. Perrotet's Shield Tail *Plectrurus perroteti* (Dumeril and Bibron, 1854)

III. Family Boidae

4. Indian Rock Python *Python molurus* (Linnaeus, 1758)
5. Common/Russel's Sandboa *Eryx conica* (Schneider, 1801)

V. Family Colubridae

6. Striped Keelback *Amphiesma beddomei* (Gunther, 1866)
7. Trinket Snake *Elaphe helena* (Daudin, 1803)
8. Rat Snake *Coluber mucosus* (Linnaeus, 1758)
9. Russel's Kukri Snake *Oligodon taeniolata* (Jerdon, 1853)
10. Jerdon's Kukri Snake *Oligodon venustum* (Jerdon, 1853)
11. Bronzeback Snake *Dendrelaphis tristis* (Daudin, 1803)
12. Golden Tree Snake/'Flying' Snake *Chrysopelea ornata* (Shaw, 1802)
13. Common Wolf Snake *Lycodon aulicus* (Linnaeus, 1758)
14. Travancore Wolf Snake *Lycodon travancoricus* (Beddome, 1870)
15. Black-headed Snake *Sibynophis subpunctatus* (Dumeril and Bibron, 1854)
16. Green Keelback *Macropisthodon plumbicolor* (Cantor, 1839)
17. Checkered Keelback *Xenochrophis piscator* (Schneider, 1799)
18. Olivaceous Keelback *Atretium schistosm* (Daudin, 1803)
19. Forsten's Cat Snake *Boiga forsteni* (Dumeril, Bibron and Dumeril, 1854)
20. Common Cat Snake *Boiga trigonatus* (Schneider, 1802)
21. Green whip Snake *Ahaetulla nautus* (Lacepede, 1789)

V. Family Elapidae

22. Common Krait *Bungarus caerulea* (Schneider, 1801)
23. Slender Coral Snake *Calliophis melanurus* (Shaw, 1802)
24. Spectacled Cobra *Naja naja* (Linnaeus, 1758)
25. King Cobra *Ophiophagus hannah* (Cantor, 1830)

VI. Family Viperidae

26. Russel's Viper *Daboia russelii* (Shaw, 1797)
27. Hump-nosed Pit Viper *Hypnale hypnale* (Merrem, 1820)
28. Malabar Pit Viper *Trimeresurus malabaricus* (Jerdon, 1854)
29. Horse Shoe Pit Viper *Trimeresurus strigatus* (Gray, 1842)
30. Bamboo Pit Viper *Trimeresurus gramineus* (Shaw, 1802)
31. Saw-scaled Viper *Echis carinata* (Schneider, 1801)

The *Echis carinata* and *Trimeresurus gramineus* are not seen during the present study, but were recorded by Unniyal (1987).

Discussion

The present study revealed the extent of diversity in the ophidian population of the Parambikulam Wildlife Sanctuary and thirty one species have been placed on records.

The ophidian fauna of Parambikulam Wildlife Sanctuary can be compared with that of any other area in the Western Ghats.

The presence of rich and diverse species of snakes clearly shows the healthy nature of this unique ecosystem.

Most of the species were obtained from in and around areas of Anappady, Peruvapallam, Thunakkadavu, Thellikkal and Parambikulam areas. It is assumed that accessibility of water around these areas provide food species for the herpets. Future management practices should include provision for water hole management in other areas of the sanctuary. Stringent measures should be taken to control forest fires which can wipe out the ophidian fauna of any area. The special mention in this regard is needed in the bordering areas of Kerala-Tamil Nadu. Specific management practices be done to protect the bamboo forests of the sanctuary which is well preferred by the endangered King Cobra for nesting.

LIZARDS

Introduction

The colorful and fascinating lizards are remnants of a certain ancestral group of reptiles. They are widely distributed in diverse ecological conditions in protected areas and plantations in Kerala.

The same methodology followed for snakes described earlier was followed for lizards.

There are very few studies on reptiles in general and lizards in particular of Kerala. The only authentic work was that of Malcolm Smith (1935). Murthy (1981) reported reptiles of Silent Valley. Apart from these, no studies were undertaken to assess the lizard fauna of Kerala in general and protected areas in particular. The present study, conducted during June 1994 to July 1995 was the first long term systematic study to formulate a management plan for these little known species.

The measurement of all collected lizards were recorded. Snout vent length (SVL) and tail length (TL) were taken. The labials, mentals and post-mentals, lamellae under first and fourth toes, pre anal and femoral pores were also recorded to identify the species. These were compared with those of Smith (1935). Total Body Length (TBL).

Result

The present study recorded fifteen species of lizards from six families.

The termite hill gecko (*H. triedrus*) was collected from two areas, Thunakkadavu and Parambikulam dam area. This gecko was earlier reported from Trivandrum area and the present sighting to further North of the state extends its range.

The only lacertid encountered during the survey, the Punjab snake-eyed lacerta is recorded for the first time from Kerala.

Out of the fifteen species, Brook's gecko (*H. brooki*), Common garden lizard (*C. versicolor*), Forest calotes (*C. rouxi*), Brahminy skink (*M. carinata*), Little skink (*M. macularius*), Common dotted skink (*S. punctatus*) and Monitor lizard (*V.*

bengalensis) occurs throughout the sanctuary and were seen frequently.

Description of species

Order : Squamata
Sub-order : Sauria

I. Family Gekkonidae

1. Brook's Gecko (*Hemidactylus brookii*) (Gray, 1848)
Size : TBL 70 mm.
Locality : Parambikulam, Thellikal, Kuriarkutty, Kachithode, Anappady, Thunakkadavu.
Status : Common
2. South Indian Forest Ground Gecko (*Hemiphyllodactylus typus auranticus*) Beddome, 1870
Size : TBL 69 mm.
Locality : Vengoli-Shettivara, Parambikulam Road side
Status : Rare
3. Termite Hill Gecko/Blotched Gecko (*Hemidactylus triedrus*) Daudin, 1802
Size : TBL 150 mm.
Locality : Thunakkadavu, Parambikulam dam
Status : Uncommon

This is the first record of *Hemidactylus triedrus* from this part of the state.

II. Family Agamidae

4. Common Garden Lizard (*Calotes versicolor*) Daudin, 1802
Size : TBL 430 mm.
Locality : Throughout the sanctuary
Status : Common
5. Forest (*Calotes rouxii*) Dumeril & Bibron, 1837
Size : TBL 230 mm.
Locality : Rock pont, Vengoli, Kuriarkutty, Elathodu Kannimara, Thunakkadavu
Status : Common
6. Southern Green Calotes (*Calotes calotes*) Linnaeus, 1758
Size : TBL 650 mm
Locality : Thunakkadavu, Thekkady
Status : Uncommon
7. Draco/'Flying Lizard' (*Draco dussumieri*) Dumeril and Bibron, 1837
Size : 220 mm.
Locality : Anappady, Peruvurippallam
Status : Rare

III. Family Chamaeleonidae

8. Indian Chamaeleon (*Chamaeleo zeylanicus*) Laurenti, 1768
Size : TBL 400 mm.
Locality : Karian shola, No. 1 plantation
Status : Rare

IV. Family Scincidae

9. Common/Brahminy Skink (*Mabuya carinata*) Schneider, 1801
Size : TBL 276 mm.

Locality : Thunakkadavu, Anappady, Sungam, Parambikulam
Status : Common

10. Little Skink (*Mabuya macularius*) Blyth, 1853
Size : TBL 53 mm.
Locality : Vengoli, Padipara, Elathode, Kochithode, Thellikal, Parambikulam
Status : Common

11. Beddome's South India Skink (*Mabuya beddomei*) Jerdon, 1870
Size : TBL 158 mm.
Locality : Parambikulam, Thunakkadavu
Status : Rare

12. Olive Brown Skink (*Mabuya bibronii*) Gray, 1838
Size : TBL 102 mm.
Locality : Thellikal
Status : Uncommon

13. Common Dotted Skink (*Sepsophis punctatus*) Beddome, 1870
Size : TBL 152 mm
Locality : Thellikal, Parambikulam dam
Status : Common

V. Family Lacertidae

14. Punjab Snake-eyed Lacerta (*Ophisops jerdoni*) Blyth, 1853
Size : TBL 138 mm.
Locality : Anappady
Status : Rare

This is the first record of *Ophisops jerdoni* from Kerala.

VI. Family Varanidae

15. Common Monitor Lizard (*Varanus bengalensis*) Daudin, 1802
Size : 2.5 feet
Locality : Thunakkadavu, Parambikulam, Anappady, Padipara
Status : Common

Discussion

The Saurian Fauna of Parambikulam Wildlife Sanctuary is comparable to that of any other areas in Western Ghats. The present study revealed the presence of Punjab snake-eyed lacerta, the first record from Kerala. Also the presence of Termite hill Gecko (*H. triedrus*) from this part of Kerala which is recorded only from the Southern most part of Kerala earlier.

Most of the lizards are confined to certain areas of the sanctuary. The grass lands and water bodies provide sufficient prey species for the lizards. Special efforts to be bestowed to protect these areas within the sanctuary. The conservation of forests around the lake, marshy areas, grass lands and other water holes inside the sanctuary are crucial to the saurians and other vertebrate species in the sanctuary. The Kuriarkutty, Kachithode, Thellikal, Sungam and Parambikulam areas need extra protection. The sum up of all these will have value as a biodiversity conservation area. Considering the size, location and faunal diversity, Parambikulam Wildlife Sanctuary will have a larger potential for being a biological conservation area.

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