



Documentation of Ophiofauna of Mukundara Hills National Park, Kota, Rajasthan (India)

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ABSTRACT

Present studies are aimed to document the ophiofauna of Mukundara Hills National Park, Kota (Rajasthan). During the previous two years from 2011 to 2012, attempts have been made to document and observe the reptiles in various selected parts of Mukundara. 19 species of venomous and non-venomous snakes belonging to 6 families have so far been observed from the study area. These numbers are by no means exhaustive and future studies are expected to uncover new records. Different study techniques adopted for these observations Line transects, Field tracking and regular survey showed best results.

Key words: Reptile, Ophiofauna, Mukundara Hills National Park, Line transects, Rare.

INTRODUCTION

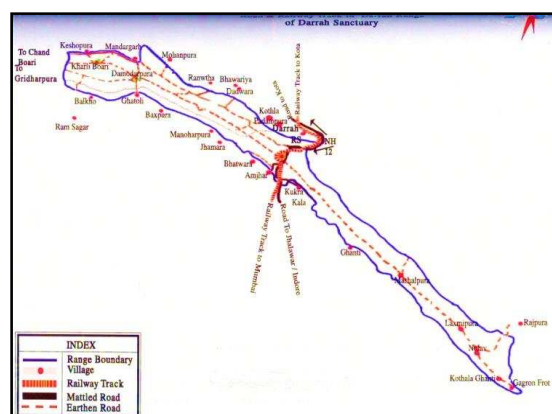
The fauna of Mukundara Hills National Park primarily comprises of various types of carnivores and herbivores. It harbours a variety of plant species of valuable medicinal properties. Mukundara is one of the best forests in Rajasthan as indicated by the presence of Mosses and Ferns which require sufficient moisture for their growth. This national park is very rich in avian biodiversity approximate more than 200 birds reported in the protected area.

Reptiles are cold-blooded animals almost found all parts of the world, except the very cold regions. In India, all the three living orders of reptiles have their representative – Crocodylia (crocodiles), Testudines (turtles & tortoises), Squamata (lizards & snakes). Fortunately Mukundara Hills National Park is taming closely very threatened herps from their entire representative.

Aim of the study was to assessment the actual Ophiofauna of the National Park. During study period some of rare reptiles and amphibians like Indian Rock Python (*Python molurus molurus*), Monitor Lizard (*Varanus benglensis*), Indian Crocodile (*Crocodylus palustris*), and Indian narrow-headed soft shell turtle (*Chitra indica*) etc. were encountered.

STUDY AREA

Kota is one of the eastern districts of Rajasthan, situated between 24.2° and 25.2° N and 75.37° and 77.26° S of south-east of Rajasthan. Mukundara series of Vindhyan hills represents its elevation. None of the part of this region is included in the category of desert.



Mukundara Hills National Park was formerly declared as **Darrah Wildlife Sanctuary** in 1955 with 5 regions of Rajasthan. In 1984-85 it was included in wild life reserves. It is situated 55 Km. far from Kota on Kota-Jabalpur NH-12 and it is attached with Delhi-Mumbai rail line at Darrah Satation. Darrah is named due to 80 km. long and 5-6 km. broad natural valley of parallel hills of height of 335-505 m. The four rivers

which form the boundary of this valley are Amzhar, Aahu, Kalisindh and Chambal. This National Park is now considered as 3rd Tiger Reserve of Rajasthan state of total 759.99 km.² area containing 417.17 km.² core and 342.82 km.² buffer zones. Delhi-Mumbai railway line at one side and river Chambal on the other side flank this forest.

There are eight to 10 villages inside the park, where mostly Gurjar community lives whose principle occupation is collecting firewood and animal husbandry.

Mukundara Hills National Park is widely distributed in following four ranges

1. Kolipura range
2. Laxmipura range
3. Mashalpura range
4. Darah range

The entire park was the part of our study area. We studied in three ranges of this park from Kolipura to Laxmipura range and Darah range. We tried to cover 38 kms of regular track of forest from Kolipura range to Darah range. Well in our 2 years from Jan. 2011-Dec. 2012 field study and surveys we observed some hot sites for wildlife and extreme biodiversity where we encountered few rich Ophiofauna and favorable habitats for all reptiles. We started our study and field work from Kolipura to Girdharpura, Borkui, Kanjar, Ambapani, Damodarpura, Laxmipura, Ranwtha and Darah range.

METHODOLOGY

To observe the Ophiofauna of this national Park few scientific methods were used. To record of snakes species we used high resolution cameras for photos GPS for assess the locality inch tape, magnifying glass, binoculars, field guides, snake sticks etc.

- Line transects laid to find out the snakes species on the base of direct and indirect evidences. In our 19 line transect we found total 81 evidences of snakes including of 11 direct sightings and 70 in indirect sightings (slough).
- Opportunistic survey was also being done. Visual encounter is always very important to assess the Ophiofauna in study area so it was also adopted on priority level. [1,2]

Other methods to observe snakes species were also applied like Field tracking and regular

survey of paths and tracks as some times we encountered snakes on the center of our path during the rainy season. [3,4] So it was important to track all the important and regular paths of forest in evening and early morning time because this is perfect time to observe some nocturnal snake's species like Common Krait (*Bungarus caeruleus* Schneider). 48 of specimens including 27 live sightings and 21 in dead form by accidently were reported. [5,6] For proper identification of snakes we used taxonomy and some field guide to clear identification of individual and for snake's old skin (slough) we used scalation (method of scales count) on the base of taxonomy. [7,8]

OBSERVATION

Ophiofauna of this National Park has never been studied before. In our 2 years intensive research period 19 species of Ophiofauna was reported in Mukundara Hills National Park. Most of the points were visited only during the day which biased documentation towards snakes. We spent equal time on these points at night we could have found many more snakes.

The checklist of Ophiofauna of Mukundara Hills NP is following in the table 1.

S.No.	Snake Species (common and Zoological name)	Family	Status in NP
1.	Brahminy Worm Snake (<i>Ramphotyphlops brahminus</i> Daudin)	<i>Typhlopidae</i>	Common
2.	Common Sand Boa (<i>Gongylophis conicus</i> Schneider)	<i>Boidae</i>	Common
3.	Red Sand Boa (<i>Eryx johnii</i> Russell)	<i>Boidae</i>	Common
4.	Spectacled Cobra (<i>Naja naja</i> Linnaeus) ##	<i>Elapidae</i>	Common
5.	Common Krait (<i>Bungarus caeruleus</i> Schneider) ##	<i>Elapidae</i>	Common
6.	Saw Scaled Viper (<i>Echiscarinatus</i> Schneider) ##	<i>Viperidae</i>	Less Common
7.	Russell's Viper (<i>Duboiaruselli</i> Shaw and Nodder) ##	<i>Viperidae</i>	Rare
8.	Indian Rock Python (<i>Python molurus molurus</i> Linnaeus)	<i>Pythonidae</i>	Less Common
9.	Common Trinket (<i>Coelognathus helena helena</i> Daudin)	<i>Colubridae</i>	Common
10.	Common Kukri Snake (<i>Oligodon arnensis</i> Shaw)	<i>Colubridae</i>	Common
11.	Russell's Kukri Snake (<i>Oligodon taeniolatus</i> Jerdon)	<i>Colubridae</i>	Very Rare

S.No.	Snake Species (common and Zoological name)	Family	Status in NP
12.	Common Bronzeback Tree Snake (<i>Dendrelaphis tristis</i> Daudin)	Colubridae	Less Common
13.	Common Wolf Snake (<i>Lycodonauilicus</i> Linnaeus)	Colubridae	Common
14.	Barred Wolf Snake (<i>Lycodon striatus</i> Shaw)	Colubridae	Common
15.	Checkered Keelback (<i>Xenocrophis piscator</i> Schneider)	Colubridae	Common
16.	Striped Kellback (<i>Amphiesma-stolatum</i> Linnaeus)	Colubridae	Less Common
17.	Common Cat Snake (<i>Boiga-trigonata</i> Daudin) [#]	Colubridae	Common
18.	Common Vine Snake (<i>Ahaetulla nasuta</i> Lacépède) [#]	Colubridae	Rare
19.	Rat Snake (<i>Ptyas mucosa</i> Linnaeus)	Colubridae	Common

(Smith, 1943; Whitaker and Ashok, 2008)

: Semi venomous
: Highly venomous
Rest all is non-venomous.

RESULT

Present study is very first list of ophiofauna found in this forest ecosystem.

Nineteen species of snakes belonging to 6 families have so far been reported from the study area. Most of the collected specimens belong to family colubridae of which *Ptyas mucosa*, *Coelognathus helena helana* and *Xenocrophis piscator* are found the most. Among the poisonous snakes *Naja naja* is the most common species of forest. Snakes are active and agile species of reptiles and frequent almost every habitat. They are mostly nocturnal and therefore come out of the burrows at night in search of food. Despite that approx. 70% of snakes are non-venomous they are generally considered enemies of mankind and are therefore mercifully less killed by the rural folk whenever encountered. A significant component of the snakes has been collected by the rural folk, which chase and kill them because of fear. This component has been considered as hand picking.

It is certain that the results reported herein area an underestimate of the herpetofaunal diversity and more species will be found on different parts of Rajasthan state. We expect snakes to be the most under represented group of our documentation efforts. This forest still requires much more intensive field research.

DISCUSSION

Snakes are represented by 19 species belonging to 6 families viz. *Typhlopidae*, *Boidae*, *Elapidae*, *Viperidae*, *Pythonidae* and *Colubridae*. Of these, *Ramphotyphlops brahminus*, *Gongylophis conicus*, *Eryxjohnii*, *Naja naja*, *Coelognathus helena helana*, *Oligodon arnensis*, *Lycodonauilicus*, *Lycodon striatus*, *Xenocrophis piscator*, *Boiga-trigonata*, and *Ptyas mucosa* are the most common species of the area. Maximum work on Ophiofauna has been done in Udaipur-Chittorgarh districts of Rajasthan state. [9,10,11,12,13,14] Though *Python molurus* is less common in this area but frequently found in World Famous Keoldeo National Park, Bharatpur, Rajasthan [15]

Indian Ophiofauna contains nearly [16] but Mukundara is a good representative for these mysterious reptiles.

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