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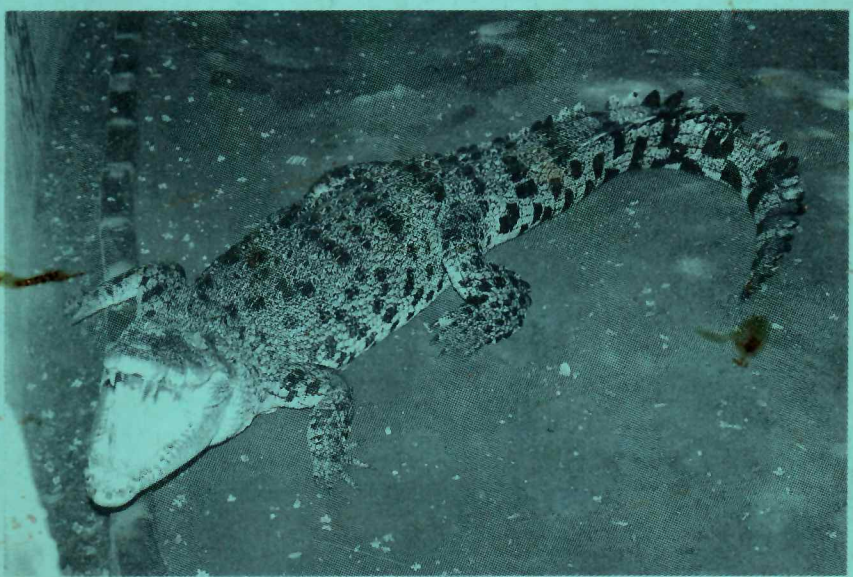

CHENNAI SNAKE PARK TRUST

Quarterly Newsletter of the Chennai Snake Park Trust

Cover

Saltwater crocodile *(Crocodylus porosus)*

This is the largest species of crocodile in the world known to reach lengths of 7m and above. It is found in the estuaries and seas in the Indo-Pacific. It is one of the few crocodile species known to attack humans.

Photo : **R.J. Ranjit Daniels**

"The fate of animals is of greater importance to me than the fear of appearing ridiculous ; it is indissolubly connected with the fate of man ."

-Emile Zola (1840 - 1902)

With this issue of *Cobra*, we are sending our regular subscribers a complimentary copy of our recent publication *Snakes and other Reptiles*.

Cobra

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Editorial

As often said, when it comes to snakes, there are still a number of misconceived notions prevailing in India particularly amongst the rural masses. This is more so when it comes to poisonous snakes. While I have heard from the rural people several accounts of poisonous snakes and their bites, herein I discuss an interesting account of a possible krait bite in Bikaner, Rajasthan. The details were published in Hindi on September 14, 2000 in a Rajasthani local newspaper 'Rajasthan Patrika'. I obtained the paper cutting from a friend in Bangalore who had received it along with a letter written by a graduate in zoology in English.

The letter from the Bikaner zoologist reads thus: "I am sending you a newspaper cutting indicating an endangered and unknown (ie., without well record) snake species. Medical science does not believe in the existence of this snake known as 'Pivana'. Local people believe that this snake spread a volatile poison from its mouth that is inhaled by the person. Mostly it is found during night hours".

The newspaper cutting displays a beautiful picture of a freshly killed common krait (*Bungarus caeruleus*) the length of which has been given as 3¾ feet and girth as 3 inches. Indeed the picture also suggests that the specimen was quite a big one. Apparently this was found and killed in the night when it disturbed two sleeping villagers. However, neither of them really knew if one was bitten by the snake. One of the villagers experienced an unusual swelling behind his knee which gave him a burning sensation. When the local doctor came, he found the swelling rather peculiar since there was no fang mark. The doctor then decided to use a needle to extract the fluid that he suspected was within the swelling and was surprised by what came out! There are no more details on this except that the patient was sent to the nearest laboratory for 'analysis'. The short article also says that the snake spreads its venom as a volatile substance! The notion of a "volatile" poison that spreads and kills those who inhale it is rather unique!

(For a good report on krait bite by a victim who survived it, see *Cobra* 2000, Volume 40)

Editor

A PRELIMINARY REPORT ON THE HERPETOFAUNA OF NAHARGARH WILDLIFE SANCTUARY, JAIPUR DISTRICT, RAJASTHAN

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Nahargarh Wildlife Sanctuary is situated in the northern outskirts of Jaipur city between N.H. 11(Jaipur-Sikar Highway) and N.H.8 (Jaipur-Delhi Highway). It is a small sanctuary, confined to the northern Aravallis. The sanctuary stretches between 26° 15′ N to 28° 38′ N latitudes and 75° 45′E to 77° 05′ E longitudes with an area of 5240 ha (52.40 sq km). Data on this sanctuary are as follows :-

Average temperature	:	25°C
Mean maximum temperature	:	33.14°C
Mean minimum temperature	:	14.72°C
Highest maximum temperature	:	45°C
Lowest minimum temperature	:	0°C
Average rainfall	:	630 mm
Relative humidity (maximum)	:	100% (August)
Relative humidity (minimum)	:	4% (May)
Monsoon period	:	July – September
Highest Point	:	648m ASL (Radar centre)
Forest type	:	Subsidiary edaphic type of dry tropical
forests	:	*Anogesissus pendula* and tropical thorn forest.

There are three main water bodies in this sanctuary viz., Kukas Dam, Ram Sagar Dam and Akeda Dam. The spill over of Akeda Dam comes to Ram Sagar through Akeda Canal and Ram Sagar's spill over goes to Kukas Dam by Ram Sagar canal.

Nahargarh Wildlife Sanctuary is one of the least studied sanctuaries of Rajasthan. Though flora of the sanctuary has been well studied by Sharma and Tiagi (1973). Studies on fauna are a few. The first detailed survey of the fauna was made by Sharma (1999). Details of the herpetofauna are presented in Table I.

Acknowledgments:

I am grateful to Sh. R.G. Soni, Sh. U.M. Sahai and Sh. M.R. Punia for encouragement. I also thank Sh. Sohan Lal Saini for providing help in field surveys.

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Table I : Herpetofauna of Nahargarh Wildlife Sanctuary, Jaipur.

Taxa	Species	Local Name	Status	Localities where sighted
AMPHIBIANS				
Ranidae	*Hoplobatrachus tigerinus*	Bhuj	Uncommon	Ponds near rescue centre, well near Hodi.
	Limnonectes limnocharis	Mendhak, Mindako	Rare	Crevices of drying mud in Kukas dam (at the end of monsoon)
	Euphlyctis cyanophlyctis	Mendhak, Mindako	Very common	Mine pits of 'Mithi Khan' all the anicuts, Kukas dam, Akeda Dam, Ram Sagar Dam and Myla Bagh.
	Tomopterna breviceps	Mendhak, Mindako	Common	All the anicuts; more visible during the ascending monsoon period.
Bufonidae	*Bufo melanostictus*	Mendhak, Mindako	Uncommon	Myla Bagh
	Bufo andersonii	Mendhak, Mindako	Uncommon	Near N.H. 8
Microhylidae	*Microhyla ornata*	Mendhak, Mindako	Uncommon	Near Gopal-Vilas Hodi (Shikar tower)
	Uperodon systoma	Mendhak, Mindako	Rare	Water tank near Rescue centre.

REPTILES				
Emydidae	*Kachuga tecta*	Kachhua	Very rare	Akeda Dam.
Trionychidae	*Trionyx gangeticus*	Paatal	Rare	Akeda Dam, Ram Sagar Dam, Kukas Dam, Akeda canal, Ram Sagar canal (one was seen suffering from cloacal prolops during summers of 1999).
	Lissemys punctata	Kachhua	Rare	Akeda Dam
Testudinidae	*Gelochelone elegans*	Bhumi- Kachhua	Very Rare	Near Kukas village.
Gekkonidae	*Hemidactylus flaviviridis*	Chhipkauli	Very common	NBP* office buildings, Kuntalgarh Fort, Amber Fort, Jaigarh Fort Nahargarh Fort and Myla Bagh.
	H. triedrus	Chhipakauli	Rare	Vertical walls of floating valve chamber of ungulate enclosure of NBP*.
	H. brooki	Chhipakauli	Uncommon	Sura-Ki-Baori
	Eublepharis macularius	Chhipakauli	Rare	Crocodile enclosure of NBP*.
Agamidae	*Calotes versicolor*	Kirkantia, Kilkantia	Very common	On *Anogeissus pendula* & *Prosopis cineraria* trees.

Chamaeleonidae	*Chamaeleo zeylanicus*	Hingangora, Hinganghoda	Rare	On *Anogeissus pendula* trees near Ram Sagar Dam.
Scincidae	*Mabuya carinata*	Samp-ki-Bamni	Common	Forest floor.
	M. dissimilis	Samp-ki-Bamni	Very rare	Sandy tracts near wolf enclosure of NBP*.
	M. macularia	Samp-ki-Bamni	Common	Near Rescue centre.
	Riopa punctata	Samp-ki-Bamni	Common	Forest floor, near office buildings.
Lacertidae	*Ophisops jerdoni*	Samp-ki-Bamni	Common	Rescue centre, Bhutesar Mahadeo.
Varanidae	*Varanus bengalensis*	Gohra, Patagoh	Common	Foot hills, also seen on trees feeding on chicks of many hole-nesting birds.
Typhlopidae	*Typhlops bramina*	Mitti-ka-samp	Rare	Maji-ki-Baori.
Boidae	*Eryx johnii*	Dumuhi, Chakland	Common	Sandy tracts near wolf enclosure.
	Python molurus	Ajgar, Ijgar	Very rare	Seen once near Myla Bagh.
Dispadinae	*Lycodon aulicus*		Rare	Khurad village.
Natricidae	*Xenochrophis piscator*	Paneta	Uncommon	Sluice gates of Akeda, Ram Sagar and Kukas Dams.
Colubridae	*Elaphe helena*	-	Rare	A trampled specimen found on N.H.8 near Kunda village.

	Argyrogena ventrimaculata	-	Rare	Near Barood – Ghar.
	Spalerosophis diadema	Ghorapachhad	Common	Heavy casualties are seen on N.H. 8 & 11 during monsoon period.
Homalopsidae	*Boiga trigonata*	-	Rare	Near NBP* office buldings.
Elaphidae	*Naja naja*	Kala nag	Common	Children Park of NBP*, wolf enclosure and Khurad village.
Viperidae	*Echis carinatus*	Pounia	Rare	Wolf enclosure.

* Nahargarh Biological Park.

RECORD OF FRESH WATER TURTLE *LISSEMYS PUNCTATA* (LACEPEDE) REPTILIA, CHELONIA. TRIONYCHIDAE FROM TADOBA ANDHARI TIGER RESERVE, MAHARSHTRA

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The Tadoba Andhari Tiger Reserve, as it is known today comprises Tadoba National Park (116 sq km) and Andhari Sanctuary (509 sq km) in Chandrapur District of Maharashtra State. Faunistic survey of Tadoba Andhari was conducted by the Western Regional Station, Pune of Zoological Survey of India. The survey was part of a long term intensive survey project for this protected area to explore existing biodiversity and inventorise the faunal wealth. On 16th September 1998, the survey party reached Telia dam, a man-made freshwater reservoir about 2-5 km deep in the forest from Moharli Tadoba main road. This dam holds a perennial water body and being away from human habitation provides an excellent source of drinking water for a variety of wildlife.

While collecting water samples for analytical work and for estimation of plankton species from Telia dam, a freshwater turtle of moderate size was netted. This turtle was photographed, measured and then released in the same tank. This turtle belonged to the species *Lissemys punctata*. The turtle is characterised by a pair of hinged skin flaps covering its hind limbs. The carapace length reached 250 mm, and was greyish black in colour with faint yellow spots. The specimen showed distinct brownish colour on the plastron. The animal, when touched lay motionless for a couple of minutes and then suddenly started crawling. When inverted and put upside down on the floor, it could not turn over easily.

The available literature viz. Daniel, 1983, Murthy and Pillai, 1986, Murthy and Ravichandran, 1998 and Tikader and Sharma, 1985 indicate no earlier record of *Lissemys punctata* (Lacepede) from Andhari Wildlife Santuary of Tadoba Andhari Wildlife Tiger Reserve in Chandrapur district (Maharashtra State). The present record reports its occurrence in this region for the first time.

Acknowledgments:

The authors are grateful to Dr. M.S. Pradhan, Scientist-SE & Officer-in-charge, Zoological Survey of India, Western Regional Station, Pune for identifying the turtle and facilities for survey. Thanks are due to the Director, Zoological Survey of India, Calcutta for facilities for work. The help from the officials of Forest Department, Tadoba Andhari Tiger Reserve and specially to Shri. Vinayak Pendor who accompanied the survey team.

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OCCURRENCE OF BLACK TORRENT TOAD *ANSONIA ORNATA* IN SUGANDHAGIRI HILLS, WAYANAD, KERALA

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Wayanad is one of the biodiversity hotspots of the Western Ghats. This territory is biogeographically a valuable area with significant landscape complexity and biological diversity. Wayanad district lies between 11° 27′ and 15° 58′ north and 75° 47′ and 70° 27′ east bounded by the Nilgiris district of Tamil Nadu and Mysore district of Karnataka and by Malappuram, Kozhikode and Kannur districts of Kerala. The altitude of Wayanad varies from 700 to 2,100 m above sea level. The heterogenous landscape of Wayanad includes woodlands, fallow fields, wetlands, hedgerows, tree groves, coffee, tea and cardamom plantations, streams and ravines. The recent shift to high intensive cash crop agriculture has simplified the heterogenous landscape to a large extent resulting in the destruction of its flora and fauna.

I made a field visit to Sugandhagiri Hills on 1st September, 2000 to study the reptile and amphibian diversity. At an altitude of 810m, a stream was flowing and along the sides of this stream there were slippery rocks. I came across some tadpoles, which on closer examination, started to scatter jumping and hopping along the slippery rocks where the water flow was minimal. To my surprise there were hundreds of them and when I caught one for examination, it looked like a sucker fish.* On searching along the edges of the stream, I caught a small toad, black in colour with yellow and orange blotches on its ventral side. I collected this live specimen. On my return to Chennai on 5th September I took the live specimen to Chennai Snake Park and met Hon. Secretary Dr. R.J.Ranjit Daniels for the purpose of identification. He identified the specimen as Malabar or Black torrent toad (*Ansonia ornata)*. It is the first time this species is being reported from the Wayanad district of Kerala. An earlier literature states that *Ansonia ornata*

is endemic to Brahmagiri Hills of Kodagu district and Neria in Dakshina Kannada district in Karnataka (Daniels,1991). This record extends the distribution range of the species upto Wayanad.

About the species: A fully grown adult is of small size, black in colour, underparts with bright yellow-orange blotches. Tadpoles are black and stocky with well developed sucker-like mouth. They cling to rocks in torrential water and are capable of scaling slimy rocks. Cranial ridges and parotoid glands are absent. Tympanum ½ diameter of eye. Toes fully webbed. Rests motionless and is well camouflaged on rocks beside streams. Ocassionaly found on litter. Active during the October rains. Found in evergreen and secondary forests in humid, wet zones and perennial streams. Species endemic to Brahmagiri Hills of Kodagu district and Neria in Dakshina Kannada district in Karnataka. Located at an altitude of 600 – 700 m ASL (Daniels 1991and 1997).

Acknowledgements:

Financial support for undertaking fieldwork in Wayanad was received from Royal Netherlands Embassy, New Delhi.

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*Note: The tadpoles could be of *Rana beddomi* – Editor.

EGG LAYING IN THE BRONZE SKINK (*MABUYA MACULARIA*)

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Four small skinks locally obtained by the Chennai Snake Park in June 2000, turned out to be adults of the bronze skink (*Mabuya macularia*). Two of these were males in full nuptial colours – scarlet patches on throat and flanks. The other two were females and obviously gravid. These were hence housed in a glass aquarium that had a capacity of 90 litres. The aquarium was provided with river sand as a substrate and furnished with rocks, pieces of wood and live plants. On 21st June 2000, the females were observed laying. The behaviour of the skinks was rather peculiar and as follows.

The larger male and one of the females were together when the eggs were laid. However, what was visible was only the tail of a female with the cloaca at the surface of the sand. The rest of it was buried. The eggs were close to the surface – two together and one singly. When disturbed, the female came out. Surprisingly, the male who was completely buried in the same place also popped out and ran. The other female was a little distance away. Since it showed signs of laying (the belly had shrunk), and one of the eggs was solitary and smaller, I suspect that it belonged to this female.

The dimensions of the 3 eggs varied between 10.0 and 12.0 mm in length and 6.0-7.0 mm in diameter. Interestingly, they were like miniature crocodile eggs in shape and the shell was hard and brittle! The eggs however, did not hatch. Soon after the eggs were laid, the larger male killed the smaller. Why it stayed buried with the laying female/females needs further study.

UNUSUAL COLOUR PATTERN IN THE COMMON SKINK (*MABUYA CARINATA*)

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Recently, in the month of October, I noticed a full grown common skink within my residence in Velachery, Chennai. Common skinks often take shelter in the clothes that we dry on the fence and enter the house. I have also seen them spend the nights within folds of clothes hung out to dry. The one that I am discussing, fell out of a rag that I picked up to wipe the floor. Since it was trying to hide under the same rag, I managed to catch it without much trouble. The skink was an adult and in fine condition sporting a yellow hue along the sides. What was unusual was that it had a bright scarlet oval patch on the rear side of both thighs. The patches were of the same size and configuration and were very close to the base of the tail.

Later during the week I looked up Smith's *Fauna*. While it said that breeding males develop scarlet colouration along the flanks, there is no mention of such localised colouration in the common skink on the limbs.

RANDOM HARVEST

Snake bite deaths

A brief item in the *Time* of Sept. 18, 2000 says that 50,000 fatalities from snake-bite are caused annually worldwide of which 30,000 occur in India. The basis for these figures has not been mentioned. Vastly varying figures of snake bite deaths in India have appeared off and on in different publications.

Quoting the National Crime Record Bureau, Ministry of Home Affairs, Govt. of India, the *Statistical Abstract India – 1998* published by the Central Statistical Organisation gives a figure of 18,907 for deaths from 'poisoning' in India in 1998. In this, snake-bite cases are included along with bites from other animals, food poisoning, consumption of spurious liquor, intake of poison gas and so on. If, therefore, the official figures are to be believed, *Time's* estimate of 30,000 snake-bite deaths in India is certainly wide of the mark.

The official publication also gives deaths from traffic accidents in India in 1998 as 84,775. Which goes to show that snakes deserve to be viewed with far less apprehension than fast-moving vehicles!

Incidentally, according to another report in the *Time* (Oct. 2, 2000), 22,00,000 persons died worldwide in 1998 from contaminated food and water. That again should put the matter in perspective!

Lizard fossil goes on the block

A 200 million-year-old fossil of a lizard was sold for $ 167,000 in an auction in San Francisco in Aug. 2000. The fossil, a seven-inch lizard with a ten-inch wing span, called *Icarosaurus siefkeri* is the oldest air-borne vertebrate known to scientists. This is proof that vertebrates attempted flight ten million years earlier than previously believed.

(Source: *The New Indian Express,* 29, Aug. 2000)

Dinosaur fossils in Kutch

A Mumbai-based team from the Oil and Natural Gases Commission of India unearthed fossil remains of one of the oldest-known dinosaurs in India at Kaur Bet in the Kutch region of Gujarat. This is believed to have belonged to the middle jurassic period around 17 million years ago.

(Source: *The New Indian Express* 29, Aug. 2000)

The Chameleon's tongue

Writing in the *Journal of Experimental Biology,* Anthony Herrel of the University of Antwerp, Belgium, questions the conventional wisdom that it is the stickiness of the end of it's tongue that enables the chameleon to capture it's prey by shooting out it's long tongue. Stickiness of the tongue-tip cannot explain how the chameleon's tongue-tip gets a firm grip on birds and lizards weighing even ten per cent of the chameleon's body mass or gets a hold on very smooth surfaces like the head of a locust. The research carried out by Herrel and his team shows that the tongue-tip uses suction to catch the prey though stickiness also plays a role. Using anatomical dissection and high-speed X-ray cinematography, Herrel's group has worked out the course of events during the eye-blink in which the chameleon catches it's prey.

"When the tongue is fired at the prey, the tongue-tip is convex. During travel, and particularly just before impact, a pair of muscles called the pouch retractors inside the tongue contract turning the tip of the tongue into a concave suction cup. At impact the tip does not splay out. Instead, the 'lips' formed by the contraction of the pouch retractors fasten around the prey item, producing a suction effect".

(Source: *The Hindu* 26, Oct. 2000)

No snakes? Not for long!

Boswell speaks of Johnson as having 'boasted' that he could quote from memory the entire chapter titled *Concering Snakes* from the *Natural History of Iceland* by Horrebow. But, then, the whole chapter had just one sentence: "There are no snakes to be met with throughout the whole island".

New Zealand is another country which has enjoyed a legendary snake-free status. But how long will it be so? The neighbouring Australia has as many as 130 terrestrial snake species.

A news item in the *Hindu Business Line* of Sept.7,2000 reports the discovery of a venomous snake near Wellington, New Zealand, which had, perhaps, travelled by ship from Australia. The snake was promptly killed. The Royal Forest and Bird Protection Society of New Zealand expresses concern that " a snake invasion of New Zealand seems inevitable" and this will pose a serious threat to native birds like the flightless Kiwi which had evolved in the absence of predators.

- B.Vijayaraghavan

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CHENNAI SNAKE PARK TRUST

i) To maintain and display a captive collection of snakes and other reptiles as a means of education of the public.

ii) To undertake captive breeding of vulnerable species of snakes and other reptiles.

iii) To promote knowledge on snakes, and other reptiles and amphibians and dispel the erroneous beliefs about them.

iv) To aid and assist research on reptiles and amphibians.

v) To provide facilities for the identification and classification of snakes and other reptiles and amphibians and, for this purpose, maintain a museum of study collections.

vi) To maintain a library of books and other literature on reptiles and amphibians

vii) To publish scientific and semi- scientific literature on snakes and other reptiles and amphibians.

viii) To undertake survey on the distribution and status of snakes and other reptiles and amphibians.

ix) To provide consultancy services on snakes and other reptiles.

x) To provide a common forum for interaction among amateur scientists and friends of reptiles and amphibians.