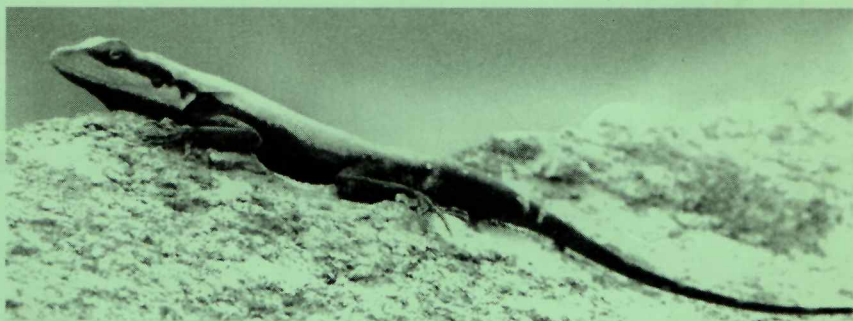


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Volume - 52

April - June 2003



Quarterly Newsletter
Of the Chennai Snake Park Trust

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Cover

Forest/Matheran Olive Brown Calotes/Forest Blood Sucker (*Calotes rouxi* Dum.& Bib.) This lizard is found in western coastal areas from Bombay to Kerala. Feeds on insects. Diurnal, terrestrial and arboreal. Photographed at Bannerghatta National Park, Karnataka. (The nuchal crest is not visible in the photograph).

Photo : **G.Sankaran**
Zoological Survey of India,
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"A conservation ethic is that which aims to pass on to future generations the best part of the non-human world. To know this world is to gain a proprietary attachment to it. To know it well is to love and take responsibility for it".

-Edward O. Wilson
in Span Sept./Oct. 2003

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ECOLOGICAL ASPECTS OF THE INDIAN MONITOR LIZARD *VARANUS BENGALENSIS* (DAUDIN) IN MAYILADUTHURAI AREA, NAGAI DISTRICT, TAMILNADU, SOUTH INDIA

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Abstract

The ecological aspects of *Varanus bengalensis* were studied in the Mayiladuthurai area, Tamilnadu, south India. Maximum population of the monitor lizard was found in agricultural areas, a moderate population in groves and a very low population in human habitations. The monitors showed strong bimodal peaks in their activity pattern. Burrows and tree holes were utilized for shelter. A significant difference was observed between active and inactive holes.

KEY WORDS: *Varanus bengalensis*; ecology; Mannamandal; South India.

Introduction

About 42 species and sub species of the genus *Varanus* Merrem, occur in a wide variety of habitats ranging from rain forests to deserts and are found almost in all niches (Auffenberg, 1988). The genus includes large predatory lizards that are important components of most old-world tropical and subtropical ecosystems (Das, 1988 a). It is well represented in the African, Asian and Australian regions (Smith, 1935; Murthy, 1985; Auffenberg, 1986). The four Indian species are the common monitor *V. bengalensis*, water monitor *V. salvator* (Laurenti), desert monitor *V. griseus* (Daudin) and yellow monitor *V. flavescens* (Gray).



Varanus bengalensis, the common monitor lizard, is widely distributed in India but ecological information on this species in India is limited. It is diurnal in habit, preys upon smaller mammals, birds, reptiles, amphibians, molluscs and insects (Smith, 1935; Daniel, 1983). The Indian monitor lizard *V. bengalensis* is mainly killed for skin and flesh for trade and medicinal purposes (Akond *et al.* 1982; Chakraborty and Chakraborty, 1987; Murthy, 1987; Das, 1988 b, Auffenberg, 1989; Gupta *et al.* 1993).

Monitor lizard activity depends on seasons and prey density in appropriate habitats (Auffenberg, 1994). Burrows and natural tree holes generally provide excellent insulation from the cold and offer better protection to the individuals, eggs and young. *V. bengalensis* may dig its own burrow (Mahendra, 1931; D' Abreau, 1932; Smith, 1932; Deraniyagala, 1957; Misra, 1960; Daniel, 1983; Auffenberg, 1994) or enlarge pre-existing rodent burrows or natural cavities (Auffenberg, 1983).

In the Mayiladuthurai area *Varanus bengalensis* is mostly unstudied. To obtain an understanding of the general aspects of this species, a study was undertaken with the following objectives:

To determine population size of monitor lizards and structural components of different habitats; to observe behavioural and activity patterns; to determine the characteristics of burrows, trees and other sites providing shelter and to determine the utilization and poaching of monitor lizards.

Study Area

The present study was carried out in Mayiladuthurai with an area of 132 km² (11° 18' N and 79° 90' E) in the Nagai district, Tamilnadu, south India. This semi-urban area (altitude 13.11 m. mean sea level) is about 25 km away from the eastern shore of the Bay of Bengal with a human population of 3,25,987. A tribal population called 'Nari Korava' live in and around the study area. This area has different types of habitats such as natural groves, agricultural lands and human settlements. *Varanus*



bengalensis is the only monitor that occurs in this area. Mango (*Mangifera indica*), tamarind (*Tamarindus indica*) and coconut (*Cocos nucifera*) are the main commercial crops. Paddy, sugarcane, plaintain, groundnut, pulses and cereals are also cultivated here.

Materials and Methods

Population:

The size of the population of *Varanus bengalensis* in the study area was estimated using the monitor flushing technique and based on the frequency and distance of adults seen within 10 m on either side of 100 m transect randomly selected through appropriate study areas (Auffenberg, 1994). Transect length, frequency of flushes and distance from observer to original point of each flushed monitor were recorded. Forty transects in each habitat such as natural groves, agricultural area and human habitations were selected. Density was calculated by Burnham estimator (1980) formula.

Activity pattern:

The activity pattern of selected individuals was observed by the focal animal sampling method (Altman, 1974). Activities were categorized as resting, basking, foraging and others.

Burrow and tree hole characters:

All the active burrows and tree holes were carefully examined and the measurements were taken as described by Auffenberg (1983) and Traeholt (1995). Active burrows and tree holes were confirmed by observing the animal at the hole or spoor marks made by the monitor lizards. In order to evaluate the factors determining the shelter site selection by monitors, variables such as length of burrow, depth of burrow,

circumference, diameter, temperature, light intensity, tree height, DBH, hole height, tree diameter at hole height, depth of hole and diameter of hole were measured.

Poaching Information:

Information on poaching and commercial use of monitors in and around the Mayiladuthurai area was also collected.

Nari Korava tribe

A tribal population of 400, called "Nari korava", lives in and around the study area in different settlements. The state government has provided housing and other facilities to them. Their main occupation is selling of cheap ornaments made of beads etc. They hunt and sell fruit bats, rats, jungle cats, jackals, monitor lizards and tortoises. Country made guns which cost Rs 2000-5000 are used for hunting. They hunt the monitor lizard by digging and using a noose or a cloth. First they chase the animal. Once the chased animal enters the burrow, they close the burrow entrance with a piece of cloth. Then they dig a nearby area and disturb the animal. The disturbed animal tries to escape through the burrow mouth and gets entangled in the cloth. Sometimes they also use a noose with bait (usually animal flesh).

Results of study

Population:

The maximum population density of 25.7 animals/km² in agricultural areas and a minimum density of 10.2 animals/km² in human habitations were observed. The groves had a moderate population of 17.7 animals/km². The agricultural areas support a higher population, probably because of better availability of prey and ease of concealment.

Time activity budget:

Two peaks of activity period were observed between 0700-0900 hours and 1600-1800 hours. The monitors spent most time in resting. In the daily activity pattern, adults, sub adults and young ones spent more time on resting (48%, 56%, 69%). A single peak in resting usually occurred between 1200 - 1500 hours. Animals spent short periods of basking during morning hours. They were observed basking on palm or coconut trees. While basking, the monitor lizard changed the position also up and down. The monitor lizards feed throughout the day. However, feeding activity was greatest during forenoon and evening hours. The adult and sub-adult spent almost equal time on feeding (14% and 15%) and the young one spent less time on feeding (7%). The animals walked or moved for a shorter period in a day.

Shelter sites:

V. bengalensis prefers to take shelter in its own burrows or pre-existing rodent burrows and also in tree holes.

Characteristics of burrow and tree hole:

V. bengalensis mostly preferred the burrows in the ground for shelter purposes. During the present study eleven active burrows in different habitats such as natural groves (6), human habitation (3) and agricultural area (2) occupied by monitors were observed. Apart from this, ten inactive burrows were also utilized by the monitors.

Each active burrow has a single oval-shaped entrance, without any nest material. All active and inactive burrow characters were recorded (Table.1) and tested by students 't' test.

The monitors were observed singly or in twos in tree holes. Young ones and adults occupied natural holes in trees for shelter purposes. In the present study, nine shelter sites were located in eight trees which include

Table 1: Burrow characteristics of Indian monitor lizard *Varanus bengalensis* in Mayiladuthurai area.

Variable	Active burrow (N=11)		Inactive burrow (N=10)		't'	P
	$\bar{X} \pm SD$	Range	$\bar{X} \pm SD$	Range		
Length of burrow (cm)	88.3±16.30	60 - 110	66.7±24.19	12 - 92	2.29	P<0.005
Depth of burrow (cm)	75.4±25.25	38 - 118	56.5±24.58	10 - 88	1.64	P<0.10
Circumference (cm)	37.0±05.42	25 - 42	30.7±07.75	15 - 42	-2.06	P<0.005
Diameter (cm)	11.4±01.91	8 - 15	14.9±04.88	8 - 52	2.05	P<0.005
Temperature (° c)	26.6±01.18	25 - 27	26.6±01.32	25 - 30	1.26	NS*
Light intensity (inner)	10.3±04.41	3 - 15	26.5±10.87	8 - 42	-4.33	P<0.005
Light intensity (environment)	63.8±04.64	52 - 70	51.7±19.12	18 - 72	1.94	P<0.10

*NS: Not significant ; N=Number, cm= centimeter

Significant differences were observed between active and inactive burrow length (t=2.29, p<0.005), depth (t=1.64, p<0.10), diameter (t= -2.05, p<0.005) and light intensity (t= -4.33, p<0.005).

two in *Tamarindus indica* four in *Maduca indica*, one in *Mangifera indica* and one in *Samanea saman*. The height at which the *V.bengalensis* preferred to take shelter ranged from 2.5 to 8.0 m. Significant differences were observed between height, depth and diameter of shelter holes and non-shelter holes (Table.2).

Poaching and Trade:

It was observed that during a year, the local residents caught a total of 219 monitor lizards (71.70% for food, 12.30% for trade and 16% for medicinal purposes) and the gypsies caught a total of 224 monitor lizards (55.80% for food, 29% for trade and 15.20% for medicinal purposes). The skin of this animal is used for the preparation of drum heads. It is captured by using noose, cloth, burrow digging and direct kill by using guns. To restrain the animal, poachers mutilate its limbs and tie the neck by its long tail. They sell the adult monitor for Rs. 40 to 100 each.

Discussion

The Mayiladuthurai area showed a marked variation of monitor population among the habitats (25.7 animals /km² in agricultural area, 17.7 animals /km² in groves and 10.2 animals /km² in human habitation). Auffenberg (1994) suggested that the variations in use of different habitats might be due to food availability, local disturbance and climatic factors. In the present study the higher population in the agricultural area might be due to favorable features like greater vegetation densities better availability of prey and suitable rodent burrows. He further observed that the densities of *V. bengalensis* in agricultural areas are higher with a population of 14.7 / ha in Sikandra and 31.1/ha in Dayal Bagh in India. Stanner and Mendelssohn (1987) reported a density of 4 individuals per km² for *V. salvator*. Auffenberg (1994) opined that the variation in a single method in a single area might occur due to localized predation pressure and probably also because of differing insect abundance. In the present investigation the least preference of human habitations by *V. bengalensis* might be due to the lesser food availability, lack of roost burrows and tree holes coupled with greater human disturbance.

Table 2: Shelter hole (utilized by Indian monitor lizard *V. bengalensis*) and non-shelter hole characteristics in the various trees in the study area.

Variable	Active Shelter hole (N=8)		Inactive Shelter hole (N=41)		't'	P
	$\bar{X} \pm SD$	Range	$\bar{X} \pm SD$	Range		
Tree height (m)	014.1±00.71	12 - 17	14.1±00.71	12 - 17	-	-
DBH (cm)	254.0±30.02	178 - 423	254.0±30.02	178 - 423	-	-
Hole height (m)	005.8±01.73	3 - 8	8.0±03.28	3 - 16	1.96	P<0.05
Tree diameter at hole height (DHH) (cm)	120.7±77.93	64 - 312	49.2±35.08	12 - 210	4.03	P<0.005
Depth/length of hole (cm)	074.2±21.96	42 - 105	53.8±45.65	8 - 221	9.67	P<0.001
Diameter of hole (cm)	062.6±19.85	42 - 104	2505±16.30	6 - 78	5.47	P<0.001
Light intensity (inner)	026.5±05.26	15 - 31	27.8±07.78	7 - 40	0.43	NS*
Light intensity (environment)	059.5±09.05	40 - 75	59.6±10.78	28 - 74	2.72	P<0.005

*NS: Not significant ; N=Number, cm= centimeter. DBH=Diameter at Breast Height, M=meter, DHH=Diameter at Hole Height.

The activity pattern of *V. bengalensis* varied from time to time. The monitors were found to active in the morning and evening hours. The daily movement pattern is strongly bimodal. Resting reached a peak during afternoon hours whereas, basking was higher during morning hours. Similar observations were made by Auffenberg (1994) and Daniel (1983). The midday temperature may become uncomfortable for the monitor (Auffenberg 1994). Hence, during the hot hours the animals spent a major part of their time resting.

The burrows are useful for thermoregulation, resting, protection from predators and are also used for egg laying. In the present investigation the monitor lizards were seen to dig oval shaped, elongated burrows and also occupy rodent burrows for shelter. Auffenberg (1983) noted that the Indian monitor lizard digs burrows in soil or enlarge the pre-existing rodent burrows or natural holes. Ephemeral burrow occupation also occurs because it is a fugitive species. Auffenberg (1994) reported that *V. bengalensis* uses rodent burrows and termite holes for short-term escape from predators and for retreat from adverse climatic conditions. He further reported that there is no significant difference between the burrow length in different habitat types. But in the present investigation significant difference was observed between burrow length, depth, diameter and light intensity of active and inactive burrows. Burrow selection may be depending on soil type and temperature and breeding period. Traeholt (1995) stated that the *V. salvator* burrow depth ranged between 1.2m to 2.4 m in relation to soil type. He further emphasized that the water monitors had an average burrow temperature of 26.48±0.62° c - 27.83±1.15° c with a higher temperature during February and lower during November.

Traeholt (1995) reported that natural holes in fallen trees were sometimes occupied by *V. salvator*, *V. bengalensis* and *V. komodoensis*. Auffenberg (1981) and Smith (1931, 1935) also reported that the monitors use cavities and holes in trees as shelter. Some tree holes are known to be utilized for 3-5 years (Auffenberg 1994).



V.bengalensis are killed for various purposes in Mayiladuthurai area. The flesh of this species is used as food and the skin is used as a drum head. The poaching information for this species has been furnished by many workers from various parts of the country (Inskipp 1984, Murthy 1987, Das 1988 b, Auffenberg 1989, Sharma 1992, Gupta *et al.* 1993). The skin of monitor is widely used for making drum heads in India. In the present study the tribals hunted this species for food and trade and rarely for medicinal purposes. The 'Nari Kurava' tribe in Mayiladuthurai area trade this species for its flesh and skin. Burrow digging, trap hunting and direct killing of this species is a common occurrence. Auffenberg (1983) reported that the monitors are captured by burrow digging in Pakistan. In the present study area approximately 600 –1000 monitors are killed in a year. If this continues, the monitor population could be affected in Mayiladuthurai area.

Suggestions and Recommendations

Wood cutting and tree felling should be stopped in appropriate habitats. The wildlife protection laws should be strictly enforced to curb the trade in the meat and skin of the monitor. Public awareness campaigns on the importance and need for conservation of monitor lizards should be organized in and around the Mayiladuthurai area. Educational materials such as posters, calendars, booklets, magazines, films, slides and paintings of monitor lizards should be prepared for awareness programs. Captive breeding centers may be established.

Acknowledgements

We thank the Principal and Head of the Zoology Department, A.V.C college, Mannampandal for extending research facilities. We express our gratitude to Whitaker, and Dr. Harry V. Andrews of the Center for Herpetology, Madras Crocodile Bank and Dr.V. Kalaiarasan, Director, Chennai Snake Park for their suggestions and also for providing library facilities.



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IS A WRONG RESCUE PRACTICE OF TESTUDIAN ANIMALS RESPONSIBLE FOR DIWINDLING OF THEIR NUMBERS IN RAJASTHAN?

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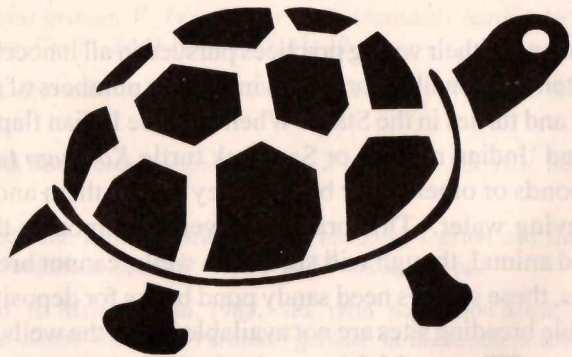
People of the State of Rajasthan are religious in nature. They love and respect Nature and wild animals in their different traditional ways practiced for centuries. A network of sacred trees and groves, holly hills and waters is there in the State, which speaks of the firm and harmonious relationship of the natives with Nature.

But one of their wrong practices pursued in all innocence is, perhaps, to some extent responsible for the dwindling in numbers of certain species of tortoises and turtles in the State. When they see Indian flapshell, *Lissemys punctata* and 'Indian roofed' or Sawback turtle *Kachuga tecta* on the bed of drying ponds or other water bodies, they rescue them and transfer them to wells having water. This practice is very common in the rural areas. The rescued animal, though will survive in wells, cannot breed there. Like other turtles, these species need sandy pond banks for depositing their eggs. Since suitable breeding sites are not available inside the wells, their breeding totally ceases. Till some 25-30 years back, the wells in many villages used to overflow during the rainy season and then the turtles in the wells could escape. This is no longer so since the wells have long stopped over-flowing because of repeated droughts in the State. The turtles in the wells are thus trapped for life and are unable to breed.



Similarly, sometimes, even Indian Starred Tortoise (*Geochelone elegans*) is re-located in wells or in other water-bodies. Though done with good intentions, this is the surest way to kill it since it is a terrestrial animal.

The tradition of rescued turtles and tortoises being deposited in wells is of wide occurrence in the State and hence the public have to be educated on the harm this does.



NEW RECORD OF OCELLATE SHIELD TAIL *UROPELTIS OCELLATA* (BEDDOME), (UROPELTIDAE) FROM PACHMARHI BIOSPHERE RESERVE, MADHYA PRADESH

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Pachmarhi Biosphere Reserve lies in the Satpura hill ranges of Madhya Pradesh between latitudes 20° 10' N to 22° 50' N and longitudes 77° 45' E to 78° 50' E. it derives its name from a tiny hill station Pachmarhi in Hoshangabad district. The total area of Pachmarhi Biosphere Reserve is 4926.20 sq. km. enveloping three wildlife conservation units, viz., the Bori Sanctuary (518.00 sq. km.), the Satpura National Park (524.37 sq. km.), and the Pachmarhi Sanctuary (461.85 sq. km.).

This area is rich in faunal diversity and 17 species of reptiles are so far known from the Biosphere Reserve. The Central Regional Station of Zoological Survey of India located at Jabalpur has conducted eight faunal surveys in Pachmarhi Biosphere Reserve from the year 2000 to 2003. During the course of this faunal study, specimens of some interesting species of reptiles were collected. One of these specimens was identified as belonging to the non-poisonous snake species *Uropeltis ocellata* (Beddome) commonly known as ocellate shield tail of the family Uropeltidae. This species is characterized by the presence of obliquely truncated tail with the terminal scute ending in two points, 17 costal (body scale) rows and ventral scale rows 185 to 234. A review of literature reveals that this species is known only from the forests of the Nilgiri, Anamalai and other hills in south



India between 1000 m. This species is being recorded herein for the first time from Pachmarhi Biosphere Reserve, Madhya Pradesh. The specimen was found buried under moist soil on the outskirts of Pachmarhi in Hoshangabad district on February 13, 2003 and subsequently preserved in 70% ethyl alcohol. After identification, it was deposited in the National Zoological Collection, Z.S.I., Jabalpur (Reg. No. V-3846). Smith (1943) and Daniel (2002) were referred for identification.

Beddome first described this harmless snake from south India in 1863.

It is a small inoffensive snake, which is found beneath the soil or under logs and stones and feeds almost exclusively on earthworms.

Acknowledgements

The authors are grateful to Dr. J.R.B. Alfred, Director, Zoological Survey of India for providing all the necessary facilities and encouragement.

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NEW RECORD OF PAINTED FROG *KALOULA TAPROBANICA* PARKER FROM SHAHDOL DISTRICT, MADHYA PRADESH

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Shahdol district is located in the eastern half of Madhya Pradesh. There is scant information on the amphibian fauna of Shahdol district. Das and Chanda (1997) described a new species of frog (*Philautus sanctisilvaticus*) from Amarkantak in Shahdol. In this communication, the presence of painted Frog *Kaloula taprobanica* in Shahdol is reported for the first time. The species was identified with the help of the handbook by Daniel (2002) and the collected material was deposited with Z.S.I., Jabalpur.

Family: Microhylidae

Genus *Kaloula* Gray

Kaloula taprobanica Parker

Painted Frog

Material examined: 1 ex.; Jhiriyatola village. Jaisinghnagar tehsil. Shahdol district, Madhya Pradesh; coll. R. Gupta; 26.vi.2003 (Reg. No. V-3843).

Distribution: India: Madhya Pradesh (Chinnindwara. Jabalpur. Seoni. Shahdol), Assam, Bihar, Karnataka, Orissa, Tamil Nadu, West Bengal, *Elsewhere:* Sri Lanka.

Acknowledgement

I am thankful to Dr.K.Chandra, Officer-in-charge, Z.S.I., Jabalpur for providing facilities.



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Rhacophoridae), A New Frog from the Sacred Groves of Amarkantak,
Central India. *Hamadryad* 22: 21- 27.



A NOTE ON THE INDIAN MARSH CROCODILE
CROCODYLUS PALUSTRIS, LESSON AT VAKKARAMARI
WATER WORKS, CHIDAMBARAM,
CUDDALORE DT., TAMILNADU

V.Kalaiarasan
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Chennai - 600 022
and
K.Thiyagesan
Division of Wildlife Biology
A.V.C.College
Mayiladuthurai - 609 305

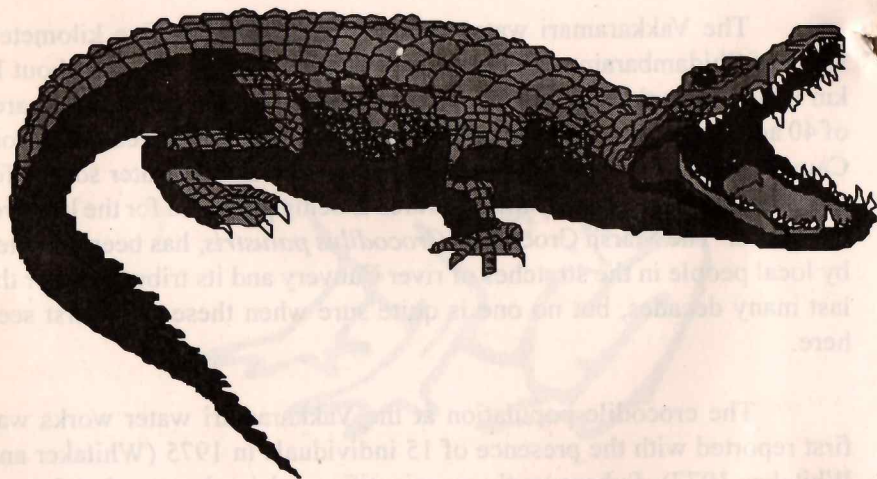
The Vakkaramari water works is located about five kilometers south of Chidambaram at Vakkaramari village in Tamilnadu. It is about 16 km inland from the Bay of Bengal. The water works spread over an area of 40 acres with two large tanks divided by a 30 feet bund, feed canal from Cauvery tributary and pumping stations. As a drinking water source for the Chidambaram Municipality, this area is being protected for the last over 100 years. The Marsh Crocodile, *Crocodylus palustris*, has been reported by local people in the stretches of river Cauvery and its tributaries for the last many decades, but no one is quite sure when these were first seen here.

The crocodile population at the Vakkaramari water works was first reported with the presence of 15 individuals in 1975 (Whitaker and Whitaker, 1977). Subsequently, no scientific work has been undertaken on this in spite of the major attention focused on crocodile conservation programmes in India. In a recent survey day and night census at the Vakkaramari water works, a total of 23 crocodiles were counted. The



presence of small ones indicated that breeding is taking place. This is a unique area since there seems to be no other natural population of marsh crocodiles along the eastern side of Tamilnadu.

The rehabilitation of crocodiles reared from eggs at captive breeding centres has had only limited success. The primary reason for this is opposition from various quarters to releasing crocodiles into reservoirs and also river stretches used by the local community for various purposes including as sources of fishery. The presence of a stable population of around 15 - 23 crocodiles at the Vakkaramari water works over a period of 25 years has to be viewed against this background. The question of increasing the stock level here could be considered.



RANDOM HARVEST

Small, slow, lovely and deadly

In the Sept. Oct, 2003 issue of *Span*, Edward O. Wilson, U.S. Zoologist, an authority on Ants and well-known for his works on biogeography, sociobiology and the evolution of behaviour, writes of the poison-dart frogs of Central and South America. Belonging to the genera *Dendrobates* and *Phyllobates* in the family Dendrobatidae, there are 40 known species of these frogs. They are tiny. They are beautifully coloured with various patterns of orange, red, yellow, green and black. They hop about slowly, unmindful of predators. Wilson writes: "For the trained naturalist, their lethargy triggers an alarm, in observance of the following rule of animal behaviour: If a small and otherwise unknown animal encountered in the wild is strikingly beautiful, it is probably poisonous, and if it is not only beautiful but also easy to catch, it is probably deadly!"

The dendrobatid frogs secrete a powerful toxin from glands on their backs. "A single individual of one (perfectly named) Colombian species *Phyllobates horribilis*, for example, carries enough of the substance to kill 10 men". Indian tribes in Colombia "rub their blowgun darts on the backs of the frogs very carefully, then release the little creatures unharmed so they can make more poison".

More on 'Poison-frogs'

While on the subject of 'poison frogs', a reference may be made to a report in the *New Indian Express* of 10th Apr. 2002. Till now it was believed that the toxic alkaloids secreted by the skins of 'poison frogs' was obtained by them from an insect food-source. But now John Daly, a biochemist of the National Institute of Health in Bethesda and lead investigator of a study group and this year's winner of the American Chemical Society's Ernest Guenther Award for outstanding achievements in natural products chemistry has reported a discovery in the 3rd Apr. 2003



web edition of the Society's journal. One class of alkaloids, found only in Australian frogs of the genus *Pseudophryne*, and named pseudophrynamines, has been identified by Daly's research group as generating its own poison alkaloids instead of getting it from food sources. This is the first documented case of a vertebrate that generates its own poison alkaloids, complex chemicals, instead of getting it from food sources. While snakes and some other vertebrates also can make their own poison, these consist of toxic proteins or other chemicals, not alkaloids.

Last Aid?

The New Indian Express of 25th Oct. 2002 reports about a 44-year old man from Kwamakuthia in South Africa having bitten off a chunk of his hand in a desperate bid to stop the spread of poison from a green mamba that had bitten him. The venom having spread to his mouth and stomach while tearing at his own flesh, he was fighting for his life in a South African Hospital when last heard of.

Snake skin trade

In spite of the ban on trade in snake skins ever since the Wildlife (Protection) Act came into force from 1972, the illicit trade goes on, judging from the news reports that appear off and on. In one such recent report, *The Hindu* of 17th Aug. 2002 refers to a seizure by the police of over 5000 snake skins smuggled to Chennai from Andhra Pradesh. A well-organised gang was suspected to be behind the racket, as is so often the case.

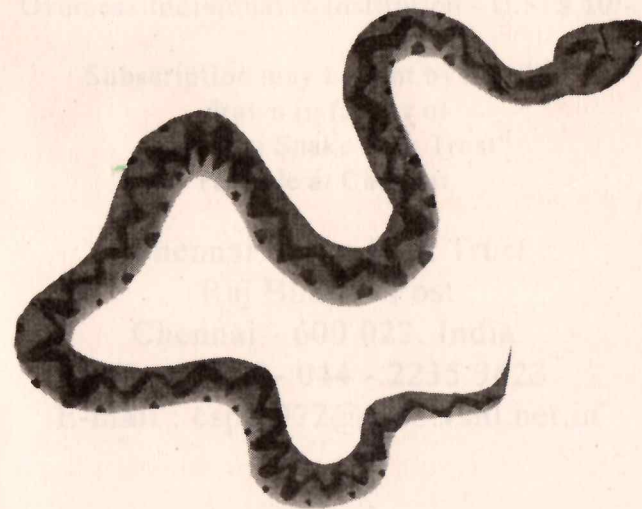
The Indian godzilla !

The Hindu Business Line of 15th Aug. 2003 reports the discovery by National Geographic explorer-in-residence and palaeontologist Paul Sereno of a new species of dinosaur on the basis of bones collected in India. The animal must have measured 30 feet in length and must have



been carnivorous. The new species has been named *Rajasaurus narmadensis* which means the regal reptile from the Narmada (*Saurus* in Greek actually means 'lizard'). The discovery was the result of a joint Indian - American research team from the Universities of Chicago, Michigan and the Punjab. According to palaeontologists, dinosaur fossils are rare in India partly because the terrain renders many of the key geological formations inaccessible to digging.

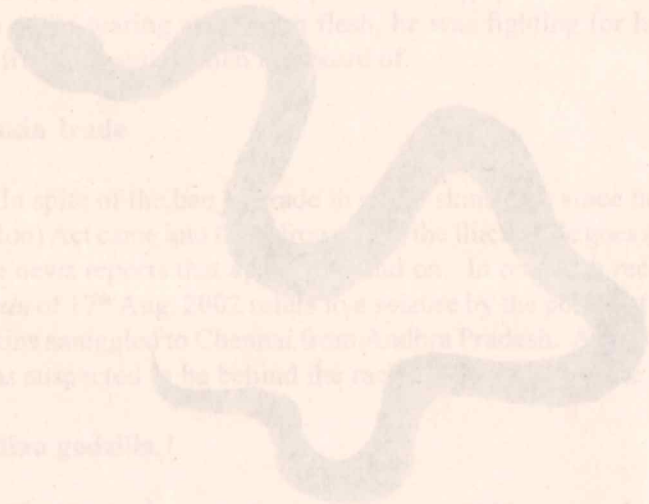
— B.Vijayaraghavan.



The new species has been named *...* in honor of the late Dr. ...

List 1997

The 1997 Annual Report of the ...



In spite of the ban on ...

The Indian cobra

The *Hindu Business Line* of 17 Aug 2003 reports the discovery of a new species of cobra ...

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- 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.
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