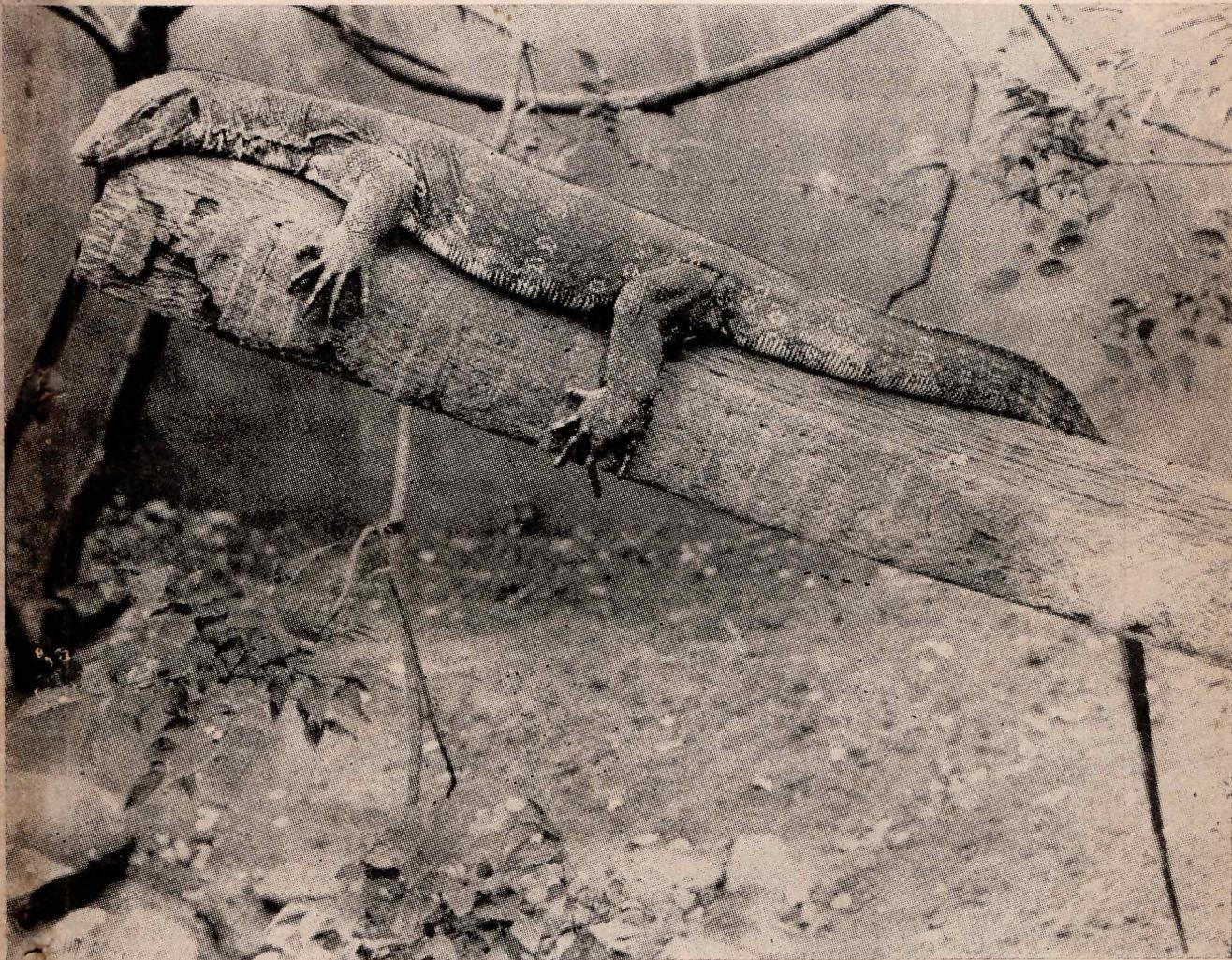


# Cobra

Number 3

Quarterly Newsletter

Jan.-Mar. 91



Water Monitor  
*Varanus salvator*

Photo : M. Krishnan, Founder Trustee M.S.P.T.

Madras Snake Park Trust  
Guindy National Park - Guindy  
Madras - 600 022. - India

STOOD

## WELCOME TO MADRAS SNAKE PARK TRUST



- \* The Madras Snake Park Trust was established in 1971 on a one-acre plot of forest land leased by the Govt. of Tamil Nadu at Guindy, Madras. Managed by a Trust, the MSPT is a centre for Education, Tourism, Conservation, Service and Research on Reptiles.
- \* A variety of live Reptiles, both Indigenous and Exotic are displayed which include Marsh Crocodile, Giant Tortoise, Reticulated Python, South American Iguana and other species of Snakes, Lizards and Turtles. Besides, a Snake Lore Centre and a Museum of Reptile specimens are maintained.
- \* The Park is open from 8.30 a.m. to 5.30 p.m. on all days of the year.
- \* **Entrance fee :** Adult Re. 1/- and Child Re. 0.50.
- \* Photography charges are—free for still cameras and Rs. 100/- for Video Cameras. For commercial Video contact office.
- \* Hourly Demonstration of a few kinds of live Reptiles with commentaries is conducted.
- \* Nearly 12 lakhs persons visit MSPT a year.

# COBRA

## Quarterly Newsletter of the Madras Snake Park Trust

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Annual Subscription for 4 issues  
of COBRA commencing from  
1—1—91

Rs. 75/- Inland  
US \$ 10/- Overseas  
(including postage)

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## MADRAS SNAKE PARK TRUST PROGRAMME FOR "INDIA TOURISM YEAR - 1991-1992"

1. Special pamphlets on common poisonous snakes and non-poisonous snakes with special legends about them are being issued at Rs. 3/- and Rs. 5/-.
2. The regular hourly reptiles demonstration now being conducted in Hindi / Tamil / English will also be extended with special tapes in several Indian languages like Kannada, Telugu, Malayalam, Bengali, Oriya, Marathi, Punjabi, Gujarati, Goanese, Urdu etc. and Foreign languages like Russian, Japanese, Spanish, German, French, Chinese, Italian etc.

Tourist groups could avail of these special demonstration at Rs. 50/- Indian and Rs. 100/- or US \$ 5 for Foreign languages.

Opening of the Exhibition Building displaying—

—Reptile lore around the world.

—Myth, Mythology, Worship and other interesting facets of Reptile-lore in our Indian Culture to commemorate the India Tourism year 1991 1992.

# CONSERVATION STRATEGIES OF REPTILES

By

D. P. SANYAL,

*Zoological Survey of India, Calcutta*

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Reptile skin is in much demand in the internal leather trade and industry as well as in foreign market. The skin of crocodile has been in regular use for a considerable period, but the industry in snake and lizard skins on a large scale is comparatively recent. Reptile skins were employed only for luxury articles, the chief use being for upper leather for high-priced shoes, wallets, hand-bags, belts etc.

The use of reptile skins was at one time considered only fashionable but the view is now strongly held by the leather trade and by technical experts in the industry that the skins are established as a raw material for leather production on as permanent a basis as goat, calf and sheep skins. Some of the advantages related to reptile skins are as follows: 1) Hard wearing qualities; they yield stronger leather than sheep, goat or even calf skins. 2) They offer a very large variety of pattern and design. 3) Reptile skins can be finished in any colour, whereas only the best grades of goat skins are suitable for colour work. It may also be observed that the variety of finish and colour of which reptile skins are capable provides wide scope for changes of fashion.

Poisonous snakes are also now exploited for extraction of poison and also for their skin. Destruction of forest, extension of agriculture, large scale use of fertilizers, establishment and extension of human settlement and indiscriminate killings for their skins are some of the immediate causes which have limited some commercially

important snake and lizard population generally in India but general psychological fear and abhorrence of human being is another important deterrant factor in restricting snake population. Common people are ignorant about the useful part played by reptiles in maintaining balance of nature.

There is considerable evidence to show that uncontrolled, indiscriminate slaughter of reptiles for their skins and other purposes is likely to produce a serious diminution of their numbers. Such a result is inherently undesirable, not only from a biological standpoint but as jeopardising the future of the skin industry itself. Attention must therefore be given to the conservation of resources by affording protection, officially enforced and to the possibilities of breeding reptiles on a commercial scale.

## **Protection :**

This has been found to be an effective remedy in other instances where over hunting or over fishing has endangered a species, and there is no apparent reason why it should not be equally effective for reptiles. The difficulty is to determine what measure of protection is necessary in each case and when it can be most advantageously applied; obviously no general measure can be equitable.

In India species-wise status survey of commercially important reptiles has not been carried out and we do not know the exact status of even the commonly exploited

monitor lizard, nonpoisonous and poisonous snakes. From our field experience we can definitely say that the most commonly exploited reptiles such as *Varanus*, *Python*, *Eryx*, *Ptyas* etc. are now much less common in some areas where they used to be very common just twentyfive years ago. Therefore, organisations and institutions should find out procedure, method, fund and facilities to carry out species-wise survey of reptiles, particularly those species which are at present most exploited before planning any real protective measure for their survival.

Reptile skin is now banned for export by the Indian Board of Wild Life but huge quantities of reptile skin are now illegally being exported. Recently illegal exports of such skins have been detected by the Calcutta customs. The West Bengal Directorate of Forests has a record of six million skins of reptiles under 'temporary seizure' They have only 12 men entrusted to battle against unscrupulous traders and poachers in Calcutta and Howrah. Killing of reptiles for their skin in the country will not stop even if killing is banned because of the demand in the international market. Reptile skins will go on piling in the godowns of leather merchants and they will go on putting pressure on Government for export licence or indulge in illegal trade practices.

#### **Conservation :**

Immediate conservation measures need to be enforced in the case of species which are becoming rare due to over exploitation or habitat destruction.

First of all particular areas of regions of Reserve Forests should be declared as sanctuaries for those particular species which still thrive there or used to thrive there, after a proper investigation of the causes of their deterioration. The Manibhadra pahad near Gonia in Puri Dist. and Chandaka Reserve in Cuttack Dist. of Orissa were well known for *varanus* and *python* but at present they are very rare in these forest areas. The pressure of exploitation of these species here is much more than any other areas in Orissa perhaps due to its proximity to the cities of Cuttack, Bhubaneswar and Puri with a high demand for lizard and snake skins to the cottage industry for manufacturing shoes, handbags, belts, purses etc., Orissa forests were once well known as *varanus* and *python* habitats.

By banning exploitation of a species or imposing restriction on skin trade or undertaking mass education programmes alone are not sufficient to save an economically and commercially important species in an underdeveloped or developing country. We have to satisfy the market demands by captive breeding or farming the species. If we forget this aspect of conservation poaching will undoubtedly increase.

Lastly, for purposes of framing proper conservation strategies for reptiles, a working group of herpetologists of India belonging to various institutions should be formed. The group should decide on the rare species needing protection, prepare detailed data sheets on them, investigate the reasons for their decline and suggest appropriate measures for their management.

# COMMON AILMENTS IN REPTILES

DR. P.D. JAGANATHAN

*Veterinarian, Madras Snake Park Trust*

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## Nematode Infections & their Treatment

Nematodes are commonly seen in reptiles and they occur in the most varied organs particularly—intestine and lungs. The more numerous they are, greater the seriousness to the host. Mainly it has been recorded that the following 7 genera occur commonly viz., *Ascaris*, *Opidascaris* (Filarid), *Polydelphis*, *Typhlophour* (in crocodiles), *Oxyuroides*, *Gnathostomes* and *Spirocerca*.

In a King Cobra at the Snake Park, Guindy, Madras, we found that they were having periodic constipation followed with diarrhoea. These were being fed once in two days with water snakes and investigations were carried out to prevent the transmission of the nematode. Water snakes were taken at random and were dissected to find out whether they were infested with round worms and out of 6 snakes we found that 4 were infested with *Tanqua* species. From then on, all the water snakes obtained for feeding were isolated and treated with 5 ml. of Mebandazole liquid (Mebandazole), the broad spectrum anthelmintic. They were kept for 7 days and then only fed to the King Cobra. By this, we were able to bring down the worm burden in snakes. Once in 6 months the King Cobras were regularly treated with 50ml. of Mebandazole or Anabeindazole liquid, to minimise the presence of any other species of nematodes.

## Anorexia in Snakes

We found that most of the snakes and the iguanas suffered from periodical anorexia due to lack of enough exercise leading to

liver torpidity. In these cases, 5 to 50 ml. of Tephroli liquid which is an extract of *Thulasi* (*Ocimum sanctum*) and *Eclipta alba* were given continuously for 3 days. This resulted in a marked improvement and they were restored back to normal health.

## Ectoparasites in Snakes

Generally speaking, snakes at large may not have many ectoparasites since the snakes go on different terrains, and the parasites lose their hold and fall down. In captivity, since the space is limited and the soil becomes infested with ticks, it is necessary to periodically detick them. Normally a tick lays about 2000 eggs out of which 50% may be male and the rest 50% female. Applying the law of multiple proportion you can imagine the blood loss from the haemocoel.

One percent Asuntol was prepared and was smeared on the snake right from the neck to the tail avoiding the eyes. They were kept in the sun for the Asuntol to dry. In the meantime, the soil inside the snake room was replaced. By this treatment, we found, that the tick infestation was brought down, by 90%. This treatment is effective for 6 months and must then be repeated.

## Vitamin Therapy

Since, most of the iguanas, tortoises and turtles are hand fed they may not get enough quantity of vitamins. Most of them will be found without much lustre, and activity. To cope up with this situation, the iguanas were individually given 5 to 15 ml. of multi-

vitamin liquid orally. In case of turtles and tortoises, since there is a practical difficulty in drawing the head out of the shell they are starved for a day and then the required multi-vitamin liquid was added to the feed to enable them to gobble it up. By this we found that they became active and their egg-laying capacity improved.

### **External Injuries in Reptiles**

Generally, in Reptiles, the external injuries occur due to fights while feeding. In these cases, we find that there are large aberrations which cannot be sutured. These were treated by application of tincture, gentian violet and Neosporin H ointment. Generally the wounds heal within a week's time.

### **Deworming Crocodiles**

The Crocodiles by their habit are lethargic creatures. Since they are always found in

muddy soil or water, their worm burden will always be high. To eradicate the worms, the Mebandazole liquid was poured into the cavities made in the beef chunk and were fed to them after starving them for a week or so. This treatment was able to bring about better health conditions.

### **Ecdysis**

To facilitate ecdysis or moulting—a mode of growth in reptilia, Ca is found to play an important role. When we find moulting is not proper, about 50 ml. of Ca supplement in the form of Ostocalcium B12 liquid is given orally, which helps in the process of moulting.

(Paper presented at All India Zoo Vet. Conference at Chandigarh, December 2& 3 1988)

## THE AMAZING WORLD OF SEA SNAKES

*(Interesting facts gleaned from the chapter "Adaptations of Sea Snakes" from the book "Sea Snakes" by Harold Heatwole, published by New South Wales University Press, Australia, 1987. Readers are welcome to contribute more on these fascinating creatures)*

A.N. JAGANNATHA RAO

*Hony Secretary,*

*Madras Snake Park Trust.*

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The sea is an unusual environment for reptiles. There are several challenges that the sea poses for animals with a basic reptilian life style and physiology.

### **Salt Problem**

There is the problem of living in an environment where salt is in excess and fresh water virtually non-existent. How do sea snakes get rid of excess salts or prevent entry of salts into their bodies? How do they obtain fresh water for their vital processes.

The salt and water balance in sea snakes is by the simple process of osmosis. Too much or too little of either results in the inability of an animal to function properly or eventually causes its death. There are various ways this could be achieved.

One way to get rid of excess salt without losing corresponding amount of water is to excrete very concentrated urine. Sea snakes have organs called salt glands, this is not found in any terrestrial or strictly freshwater snakes. The salt gland is a principal organ of salt excretion and clearly compensates for inability to excrete excess salt through kidney. It is one of the major adaptations of marine snakes to life in the sea.

The skin of sea snakes is remarkably resistant to the passage of water. They do

not drink sea water and thus a combination of behavioural traits and impermeability of the skin allows these snakes to survive in salty water even without salt glands.

### **Respiration**

Most sea snakes spend much of their time submerged. Under these circumstance how can air breathing animals obtain sufficient oxygen and get rid of carbondioxide?

The maximum diving capacity of sea snake is to a depth of about 100m. It is clearly an advantage for a deep diving snake to remain submerged as long as possible and to reduce the number of trips to surface. A sleeping or resting snake will remain longer than one that is actively foraging for food. How do sea snakes achieve such long times at the bottom? Part of the answer lies in the low metabolic rate of reptiles generally.

Since most sea snakes do not have anaerobic metabolism or depressed metabolic rates to increase time spent on the bottom perhaps they are able to prolong submergence by taking down a large store of oxygen with them. They could have a larger lung capacity than land snakes and thus carry a greater air supply with them. Another means would be to take a greater amount of oxygen carried in the blood. The lungs of sea snakes differ from that of land snakes in being larger. The lung adaptations of snakes for respiring during and

after swallowing large prey provided a ready made system that is available as an adaptation for prolonged submergence. The tracheal lung, unique to snake, provided an additional surface through which gas exchange could take place. The saccular lung serves as an air storage organ and so in buoyancy control.

Respiration through the skin is one of the main physiological adaptations of Sea snakes to the marine environment. Land snakes have a very low capacity for cutaneous respiration in comparison to many sea snake. There is a link between the permeability of the skin to gases and to salt and water. Skins that permit passage of gases easily also tend to allow salt to pass. Thus there needs to be a balance between the role of the skin in regulating salt and water and its function in exchanging respiratory gases. The permeability of the skin may be a compromise between these two conflicting needs.

### **Circulatory system**

In vertebrate air-breathing divers a number of coordinated events take place that together can be designated as the diving syndrome. When the animal dives its immediate use of oxygen is reduced by a starving of the less vital organs of oxygen by cutting off their blood supply. Use of cutaneous respiration has freed sea snakes from a number of restrictions imposed by submergence and they have adapted to the environment in quite different ways from diving mammals and birds. Some other reptiles especially those that use diving merely to escape predators seem to have the classical diving syndrome.

### **The bends**

When an air breather dives deeply the air in its lungs is compressed by pressure of the water. Such hydrostatic pressure

forces more gas into solution in the blood than would occur at surface pressures. Thus hydrostatic pressure assists the uptake of oxygen by blood. However large quantities of nitrogen, is also forced into the solution. When the animal surfaces and the pressure is released the nitrogen comes out of solution and forms bubbles in the bloodstream and can cause severe distress, crippling and even death. This malady is called the "bends" or caisson disease.

### **How do they avoid this problem ?**

One school of thought is that they have no special adaptations but are subject to the bends. They avoid the symptoms by remaining on the surface only long enough to catch a quick breath and submerge before there is time for nitrogen bubbles to form. At depth, whatever bubbles were beginning to form, would be driven back into solution.

Cutaneous respiration, by supplementing the oxygen supply, might make such a low perfusion of the lungs feasible. If blood flow through the lungs is slow, then less nitrogen would be picked up and the bends might be avoided.

A second possibility in regard to the bends is that the excess nitrogen dissolved in the blood is merely passed out through the skin into sea water.

Not every scientist agrees that sea snakes have adaptations preventing the bends and although several likely mechanisms have been suggested, they have not been demonstrated empirically, or their relative roles assessed. It is likely that they all act in concert.

### **Morphological adaptations :**

The most obvious adaptations of sea snakes to aquatic life are morphological.

All snakes, even terrestrial ones, can swim, and do so by lateral undulations of the body. The flattened, paddle-shaped tail increases the propulsive thrust, thereby making far more effective and rapid swimming. However, not all marine snakes have flattened tails. The homalopsines, natricines and acrochordids have tails very similar to those of land snakes. They usually occupy rather shallow water and seldom have to contend with such strong water currents as do laticaudids and hydrophids.

Valves that keep out sea water are an important morphological adaptation of marine snakes. The scales of the mouth are close fitting and when the mouth is closed it is watertight. The anal scales protrude backward, covering the cloaca sealing it and protecting it against abrasion.

#### **Buoyancy control**

A diving animal that is too buoyant will have to exert a lot of energy to get to the bottom and to stay in position once there.

The buoyancy of only one species of snake, the yellow-bellied sea snake (*Pelamis platurus*) has been studied. It dives with enough air still in its lung to keep itself

positively buoyant. However, as it moves deeper the hydrostatic pressure compresses the air in its lung and the overall density of the animal accordingly increases; the snake becomes negatively buoyant as long as it stays at that depth. As it uses up oxygen from the lung and passes carbon dioxide out through its skin, its specific gravity increases even more and it becomes negatively buoyant, even at the surface. Thus, during its initial dive it has to work against its tendency to float; later, when surfacing it has to counteract its tendency to sink. *Pelamis* is primarily a surface species and dives mainly to avoid choppy surface water or other unpleasant conditions. The buoyancy of bottom-dwelling species has not been investigated.

As in many other aspects, file snakes (*Acrochordus*) are unusual in their lung characteristics. In them, the lung is a central tube surrounded by series of self-contained compartments that do not communicate directly with each other. Instead each connects with the central tube through a hole in either side of the tube's lateral wall. This kind of lung is unique to file snakes; its special functional significance is unknown, although it seems likely that there would be less shifting of air within the lung during ascents or diving.

# BREEDING OF THE INDIAN PYTHON

(*Python molurus*)

V. KALAIARASAN and B. RATHINASABAPATHY

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Indian Python (*Python molurus*) is one of the most spectacular exhibits in any Zoological garden or reptile house. Inhabiting gallery forests, rocky ledges near marshes and streams and dense vegetation or caves or ruins, this threatened reptile has been successfully bred in captivity since long. The breeding in the wild usually occurs during the months of December, January and February (Daniel, 1983). There are a number of reports in literature on the captive breeding, gestation, clutch-size and incubation of the Indian Python and the Burmese Python (Vinegar, 1973; Acharjyo and Misra, 1976; Mierop and Barnard, 1976; 1978; Townson, 1980 and Paulraj and Thiruthalinathan, 1989). The present note contributes some more information to what is known.

A pair of Pythons maintained in the Madras Snake Park Trust since 1978 constitutes the subject of this paper. Records of their mating activities were maintained and the last mating was observed on 2nd May, 1989. On the morning of 8th June at 6 A.M. muscular contractions of the body were noticed and the gravid female was seen in a corner of the enclosure laying eggs which process was completed by 8.30 A.M. The gestation period was calculated to be 37 days commencing from the date of mating. The female coiled round the eggs which numbered 14. No food was offered to the brooding female. On 31st July, the female discontinued incubation and abandoning the eggs, she moulted and entered water in the trough. Most of the abandoned eggs were with embryos. The eggs were then transferred to a fibre glass box with a

layer of cotton wool spread at the bottom and wire mesh at the top. Temperature and relative humidity were maintained at 34° to 36°C and 80-90% respectively by using a 90 watt bulb and spraying water.

3 eggs hatched on 7th August and 4 eggs on the 10th. 4 eggs were found with dead embryos inside and 3 were unfertilised. The mean length and weight of the baby Pythons were 56 cm and 134 gm respectively. The babies were not aggressive in behaviour. The first moulting was on 19th and 20th of August and first feeding was done with small mice on 22nd August.

The mating of *Python molurus molurus* was noticed during the months of December, January and February by Daniel (1983). Same observations were made in captivity by Achariyo and Misra (1976) and Paulraj and Thiruthalinathan (1989). Mierop and Barnard (1976; 1978) also noticed it to be so in *Python molurus bivittatus*. In the present study, however, mating occurred during May.

Muscular contractions or twitching by the brooding female were noticed by earlier workers in different species of pythons. The frequency of this is variable and it was found to be 4 to 8 twitchings per minute in the present case. Aggressive behaviour by the mother was not observed at any time. However, aggressiveness is exhibited by several other species of pythons.

The body temperature of the breeding python was always 3—4°C higher than the

ambient temperature. This increase could be as a result of muscular contractions.

The period of gestation appears to be variable. This according to Acharjyo and Misra (1976) is 82 to 83 days. Daniel (1983) gives it as three to four months. In the Burmese Python it is almost four months. Paulraj and Thiruthalinathan (1989) reported it to be 46 days in Indian Python. The shorter period of gestation, viz 37 days in the present case may be attributed to the high ambient temperature at Madras in May.

The incubation period also is subject to variation; it is 55 to 60 days according to Acharjyo and Misra (1978) and Daniel (1983). It is 56 days in the Burmese Python. In the present study it is 61 days i.e. 53 days of incubation by the mother and 8 days of artificial incubation. Abandoning of the partially incubated eggs by the mother is puzzling though such cases of non-incubation of spoiled eggs are on record. It may be possible that the present discontinuance of developing eggs was prompted by the long starvation of the mother, since after moulting it drank profusely and swallowed a chicken immediately when offered on the same day. Normally it is known to feed a week after the completion of incubation.

The clutch size varied from 8—107 (Daniel, 1983; Acharjyo and Misra, 1978). The present python laid 10 eggs in 1987, 13 eggs in 1988 and 14 eggs in 1989. The number of eggs may be directly proportional to the size of the female as was seen in *Python reticulatus* (Kalaiarasan, 1990).

The size of babies at birth varied from 56 to 65 cm in length and 75 to 103 gm in weight. First moulting of babies was noticed 8 to 9 days after birth and the first feeding was on the second day after the initial moulting.

### Summary and Conclusions :

1. Breeding season of the Indian python is different in the wild and in captivity. It extends from May to August in captivity.
2. It is possible that ambient temperature influences gestation period. The hot month of May might have hastened egg laying.
3. Prolonged starvation could have prompted discontinuation of incubation.
4. Incubation by mother was noted to be 53 days and artificial incubation was resorted to for 8 days.
5. First moulting took place between 8 to 9 days after birth.
6. First feeding was 2 days after the first moulting.

Authors are grateful to Mr. A.N. Jagannatha Rao, Hony. Secretary, Dr. R.S. Pillai, Research Officer and Mr. R.V. Mohan Rao, Manager, Madras Snake Park Trust for their constant encouragement and help.

### References

- Acharjyo, L.N. and Misra, R, 1976. Aspects of reproduction and growth of the Indian Python (*Python molurus molurus*) in captivity. *British J. Herpet.*, 5 (7) : 562-565.
- Daniel, J.C. 1983. *The book of Indian Reptiles*. Bombay Natural History Society.
- Kalaiarasan, V. 1990. Captive breeding of the Reticulated python (*Python reticulatus*). *Cobra* No. 1, 9-11.
- Mierop L.H.S. and Barnards. S.M. 1976. Observation on the reproduction of

- Python molurus bivittatus* (Reptilia, Serpentes, Boidae) *J. Herpet.*, 10 (4), 333-340.
- Mierop, L.H.S. and Barnards, S.M. 1978. Further observations on thermoregulation in the breeding female *Python molurus bivittatus* (Serpentes, Boidae) *Copeia* 615-621.
- Paulraj, S. and Thiruthalinathan, R. 1989. Breeding behaviour of the Indian Python, Vol. 36 (3) *Zoo. Forum*, London pp. 12-15.
- Townson, S. 1980. Observations on the reproduction of the Indian Python in captivity, with special reference to the interbreeding of two subspecies, *Python molurus molurus* and *Python molurus bivittatus*. *The care and breeding of captive Reptiles*. pp. 69-80 IHS publications.
- Vinegar, A. 1973. The effect of temperature on the growth and development of embryo of the Indian Python, *Python molurus* (Reptilia, Serpents Boidae) *Copeia*: 171-173.
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## NEWS FROM MADRAS SNAKE PARK TRUST

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### Enhancement of Entrance Fee

The Madras Snake Park Trust obtained permission from the Govt. of Tamil Nadu for enhancement of the present entrance fee from 25 p. to 50 p. for children and 50 p. to 1 rupee for adults from 2nd January 1991.

### Trade Fair 1991

As in the past 11 years Madras Snake Park Trust participated in the Annual Trade Fair organised by the Tourism Department, Government of Tamil Nadu.

### Release of 'COBRA' Newsletter of Madras Snake Park Trust, held on 17th January 1991 at Madras Snake Park Trust.

The Chairman, Members of the Board of Trustees and Research Scholars of Madras Snake Park Trust organised a function for the release of the Newsletter 'Cobra' by Thiru S. Ramakrishnan, I.A.S. Secretary, Environment and Forests Govt. of Tamil Nadu. An Audio Tape in French to be used for Reptile Demonstration was also released by Tmt. Jayanthi I.A.S., Secretary, Information and Tourism.

### Platinum Jubilee of Zoological Survey of India

The Madras Snake Park Trust Staff participated in the Platinum Jubilee Celebration of the Zoological Survey of India, Southern Regional Station Madras which was organised on 22.1.91. Dr. M.S. Jairajpuri, Director, Z.S.I. Calcutta highlighted the role of the Survey, especially the Southern Regional Station and its achievements. Dr. T.N. Anantkrishnan Director Institute of Entomology, Loyola College, Madras Dr. A.G.K. Menon Dr. Jayaramakrishnan and Dr. R.S. Pillai Rtd. Joint Directors highlighted the need for faunal studies and conservation measures.

### Seminar-cum-Workshop on Environmental Conservation on 9th and 10th Feb. 1991 at Gudur A.P. conducted by Rotary Club.

The M.S.P.T. participated in the above seminar-cum-workshop and made a 30 minute video presentation on the behaviour of reptiles. Live snakes, turtles, tortoises and crocodiles were exhibited.

### Seminar on Mangroves

The Hon'y Secretary and Research Scholars of M.S.P.T. participated in a seminar on Mangroves held at C.P.R. Environmental Education Centre on 16.2.91. Dr. M.S. Swaminathan presided over the function.

### Visit of Physically handicapped Children to M.S.P.T. along with Prakrathi Voluntary Service on 17-2-91.

A team of physically handicapped children visited the M.S.P.T. on 17-2-91. Mr. A.N. Jagannatha Rao took them round and showed them the various exhibits along with detailed explanations. The children were delighted.

### Talk on Human Ecology

Prof. Madhav Gadgil, Chairman, Centre for Ecological studies, Indian Institute of Science, Bangalore delivered a talk on "Human Ecology" at Adyar on 21.2.91. The M.S.P.T. participated along with members of various non-Governmental, Governmental organization, naturalists and conservationists.

### Snake catching service at Thriveni Academy

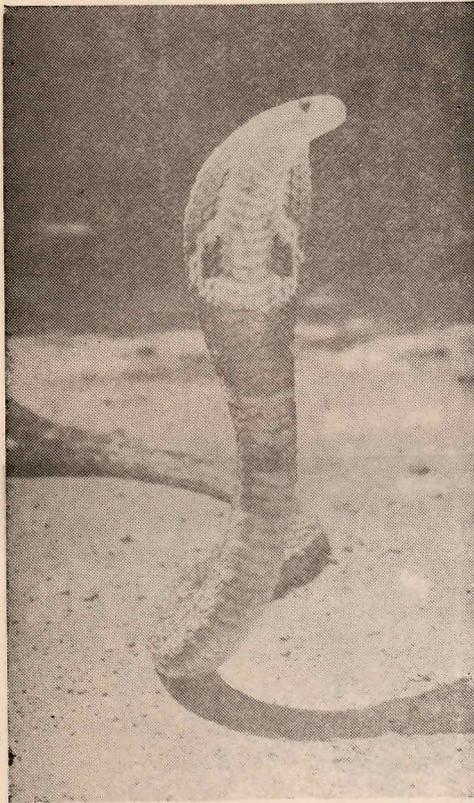
Mr. V. Kalaiarasan and Mr. B. Rathinasabapathy undertook a survey along with two snake catchers on 19-3-91 at Thriveni Academy on their request.

### Participation in Science Exhibition

Mr. V. Kalaiarasan and B. Ratinasabapathy, Research Scholars M.S.P.T. participated in a science exhibition held at A.V.C. College, Mayiladuthurai from 28th to 30th March '91. They exhibited a few young ones of Reptiles called "World of Reptilian Babies".

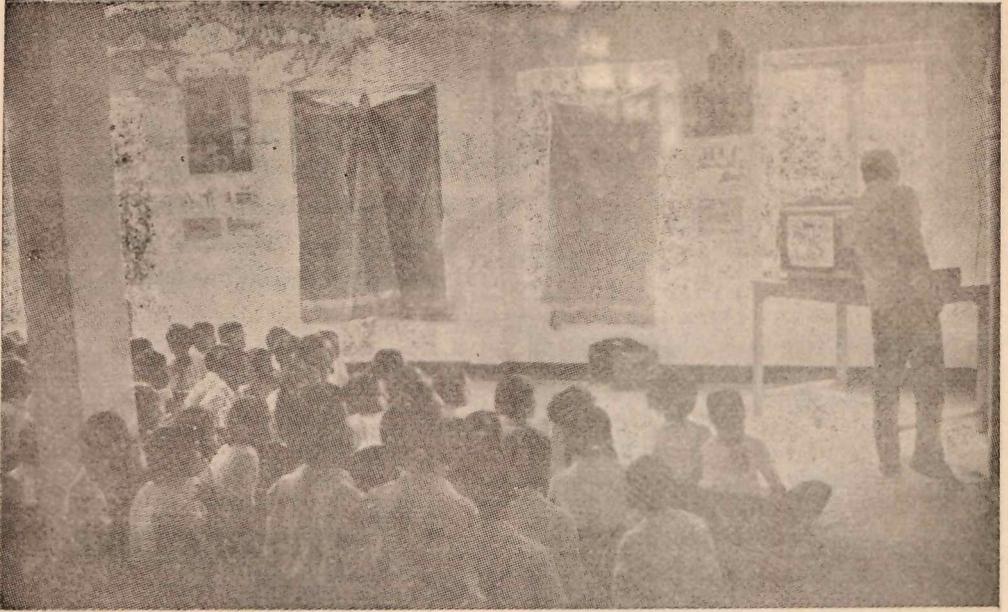
### Reptile Survey at Cochin Port Trust

The M.S.P.T. made a reptile survey between 18th and 20th Feb. 91 at the premises of the Port Trust, Cochin. The team consisted of Mr. A.N. Jagannatha Rao, Hony. Secretary, Dr. R.S. Pillai, Rtd. Joint Director Z.S.I. Madras, Trustee and Research Officer M.S.P.T., Mr. V. Kalaiarasan Research Scholar and Snake Catchers. Subbiah and Mani.



## REPTILE LORE

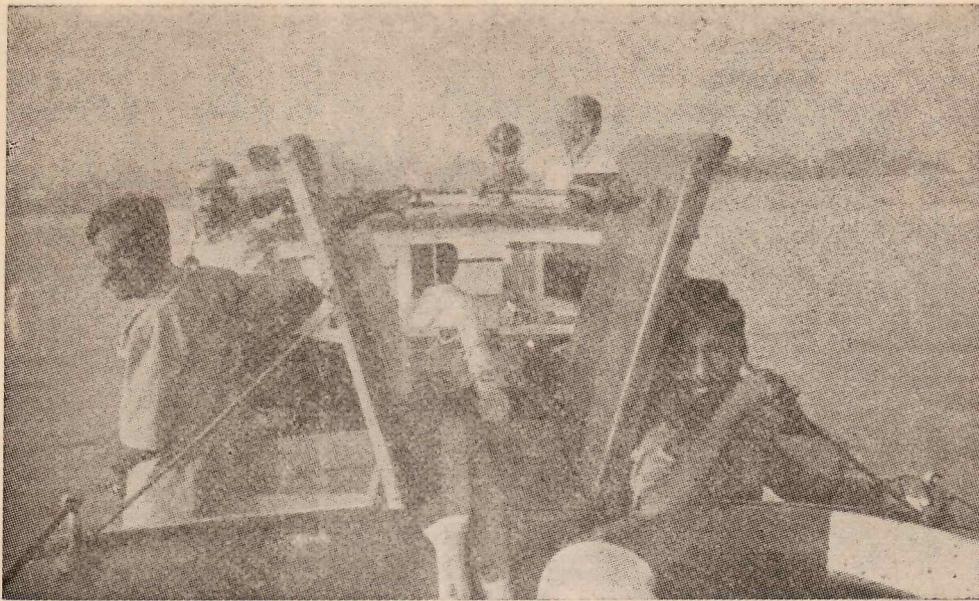
Gautama Buddha was once travelling through the forest. He slept on the ground to rest. The sun was beating on his face **S**o a Cobra shielded Buddha's head from the sun by raising its hood and guarding him. On waking up and seeing this act of compassion Gautama blessed the snake. His two fingers left their mark on the hood of the Cobra.



An audio visual talk on conservation of Reptiles by A.N. Jagnatha Rao at Cochin Port Trust School.



An Investigation on Snake Menace at Cochin Port Trust.



Cochin Port Trust Reptile Survey "Off to another Island" to study Snake  
Menace by MSPT Team.

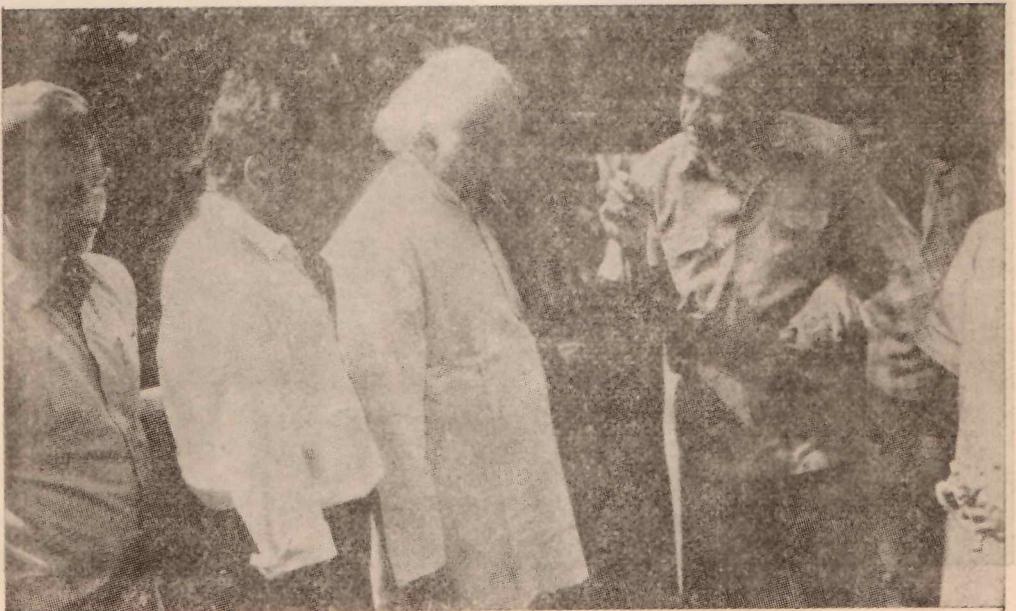


Reptile at Gudur !

The MSPT Participated in a mass educational Programme on conservation of  
Reptiles conducted by the Rotary Club of Gudur (A.P.). Picture shows the officers of  
Rotary Club of Gudur (A.P.) and MSPT Team



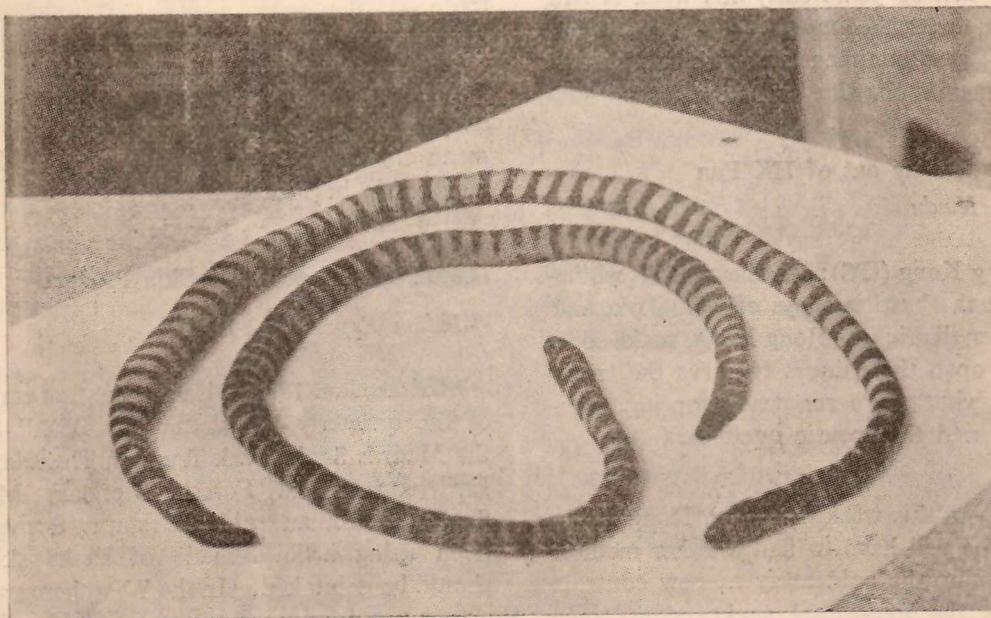
The MSPT Participated in a mass educational Programme on conservation of reptiles conducted by Rotary Club of Gudur (A.P.). The picture of shows the large number of School Children of Gudur.



Sri Shakeel ur Rehman Union Minister for Health and Family Welfare, New Delhi visited the MSPT. The hony. Secretary explains a few points on the turtle.



A Ph.D. Programme undertaken by MSPT for Mr. T. Raveendra Babu, on harmless snakes and control of rodents under Dr. Vivek Raja of Nandanam College. Picture shows burrow investigation



A Common Sea Snake, *Microcephalophis gracilis* found on the Madras Coast

## REPTILES IN THE NEWS

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### SNAKES SHIVER IN THE COLD

*The Hindu—Pune, Jan. 4.*

Reptiles at the snake park at nearby Katraj have sought the cover of woollen blanket and the shivering love birds (small African parrot.) in the Municipal Zoo are warming themselves in the stacks of hay placed in their cages by the authorities in view of cold wave in the city. Snakes in the Katraj Park are also being 'Warmed up' by rotation in a room heated with electric lights.

Lions, leopards, deer and monkeys have been provided wooden logs in addition to the heaped grass to save them from the cold discomfort of the cage floor.

Pune which experienced the coldest day in the last 55 years early this week is still reeling under the impact of the chill which has affected attendance in schools, theatres and cinemas for the last three days.

### Snakes, Safely out of HK Pan

—*The Hindu*

Hong Kong (IPS): As the chill of winter sets in the bustling alleys of Mongkok and Sai Wan districts in Hong Kong, snake soup shops open their doors to serve the traditional winter fare renowned for its "warming" and therapeutic qualities.

Starting this week, however, Hong Kong residents will have to find another method of keeping the cold away as new controls against the import of snakes come into force in the colony from Dec. 21.

Snake importers will need a licence to import Oriental rat snake—the main ingredient in snake soup—Asiatic Cobra and King Cobra. These reptiles were added last year to the protected species list of the Convention on International Trade in Endangered Species (CITES) necessitating certifications for both import and export.

Until October this year, Hong Kong imported 100,000 live snakes—more than 90 percent of them from China and the rest from Thailand—and some 95 tonnes of snakes meat.

It is a 30 million dollar business that has been around for over 4,000 years, according to the Hong Kong and Kowloon Live Snake Merchants Association, which fears that the new restrictions could endanger their ancient trade.

While the measure would not theoretically restrict the numbers imported, it will mean closer government monitoring of the local trade in snakes.

### Discourage use of Snake Skin Products

—*Indian Express, 22-1-1991.*

Madras, Jan. 18. Releasing the first copy of the quarterly Newsletter "COBRA" of the Madras Snake Park Trust on Thursday, Environment and Forests Secretary Mr. S. Ramakrishnan said the status derived from using articles made of snake skin should be debunked. In the West there was a concerted campaign against sable, he added.

Tourism and Information Secretary Tmt. Jayanthi, who received the first copy of the Newsletter said people should realise that "Snakes are co-inhabitants of our earth". She also released an audiotape in French on snakes and other reptiles.

M.S.P.T. Chairman Shri S. Meenakshisundaram, in his welcome address, said the Madras Snake Park Trust would be shifted to a bigger premises on the Mahabalipuram Road.

There were 12,00,000 visitors to the park every year. Of this 60 per cent were children and two percent foreigners.

### **A Snake in the Fridge :**

—*Indian Express*, 3-2-91

Madras, Feb. 2: Even as a recently released Tamil film is showing the greatness of serpent worship, a song from the film that has a snake adorning the heroine like a flower was part of Friday's song-dance sequences on TV—a housewife at the Kalpakkam Atomic Project quarters opened her fridge last Wednesday morning to see a snake curled up inside.

The terror-stricken woman, wife of a scientific officer, immediately snapped the door shut and locked it to boot. When she told her husband about it he would not believe her.

The presence of milkman, a villager, proved opportune, and the reptile, a venomous viper (*Kattu Viriyan*) was prised out of the egg stand in the fridge, and then from the fridge cover under which it tried to hide.

The milk man beat the snake to death, while the housewife remained puzzled on how it had got into the refrigerator.

She had opened it to put in the vegetables after seeing a TV film sequence (Thirai Thuli), the previous night, and the snake must have slipped in then—was the only explanation those who don't believe in the miraculous powers of snakes could give.

### **Youngsters Save Life of a Crocodile**

—*The Hindu* 19-2-1991—*Thanjavur*, Feb. 18

That Wildlife protection awareness has increased among the rural folk was proved on Saturday when a large number of youngsters and children saved a four foot crocodile from being beaten up by a few villagers in Maharajapuram village on the bank of the Coleroon.

Now that the water in the various stagnant pools on the river bed is fast drying up, the crocodile had come to the village and caught a dog. A few villagers who wanted to kill the crocodile were prevented from doing so by youngsters who saved it from the wrath of elders and then tied it to a tree.

### **Trawlers Seized**

—*Indian Express*—12-3-1991.

Madras, March 11: The Coast Guard on Saturday night seized nine mechanised fishing trawlers found catching the Olive Ridley Turtle species near the Gakrimata coast in Orissa.

The Coast Guard personnel on board the ship "Ramadevi" released 28 turtles and 36 crew members of the trawlers were detained. The vessels were handed over to the forest officials.

The Wildlife Department has been working in close co-ordination with the Coast Guard to protect the Olive Ridley Turtle.

## Squash : Drivers Don't Brake for Snakes

—Voice of the Turtle—November 1987

The policeman saw a snake on the shoulder of the road and swerved his car to run over it. He drove on a few yards, then stopped, backed up and ran over the snake again. Still not satisfied, he got out, pulled his revolver from the holster and aimed for the snake's head.

Just then, David Shephard, a biology professor at Southeastern Louisiana University in Hammond, emerged from the bushes. "There's no sense in shooting that rubber snake," he hollered. The policeman's reaction wasn't unusual, he said. Shephard illustrates the human aggression toward snakes in a paper he will present in Shreveport to the Louisiana Academy of Science, a professional organization composed mostly of university teachers and researchers.

The paper is based on three years of first-hand observations—22,000 of them Shephard says—along New Orleans area roadways. Using homemade rubber snakes, Shephard found that motorists will do anything to avoid running over a turtle. But they 'll go out of their way to squash a snake.

Witness these other incidents recorded by the professor in his reptilian research :

- A woman swerved to hit a snake, turned around and ran over it again. Five times.
- A male driver creamed a snake, backed up and carefully maneuvered his rear tyres over the rubber animal, then peeled rubber down the highway.
- Motorists, including tractor trailer drivers, will drive in the lane reserved for oncoming traffic just to do in a snake.

"The snake has always been the bad guy all the way back to Adam and Eve," Shephard said. "Snake definitely evoked more intentional kill behaviour."

Motorists were kinder to the lowly turtle. One woman near Madisonville pulled over to the side of the road when she spotted Shephard's turtle. As a truck approached from the opposite direction, the woman waved her arms frantically, signaling him to avoid the turtle. She later told Shephard that she planned to put the turtle off the road where it would be safe.

A man near Hammond also stopped for the turtle. When he discovered it was fake, he scratched his head, then put it a safe distance from the road anyway.

Shephard found that more than three times as many motorists will go put of their way to kill a snake than a turtle. With the snake, there were 11 incident of "Multiple kills" when motorists ran over it more than once, he said. There were no "multiple kills" with the turtle.

Shephard, who also does more serious research dealing with treatment of ulcers and cancer, got the idea for the reptile study when he stopped to pick up a turtle in a road and saw an 18-wheeler swerve to run over it. "I got to wondering how many people go out of their way to kill an animal," Shephard said.

Until his research, Shephard said. "I tended to believe most people would give an animal a sporting chance." But not if it's snake. Originally from *The Times Picayune*, 2/5/87, by Charlie Chapple.—

## **Turtle Egg Poacher Handed Stiff 2-Year Prison Sentence**

*Voice of the Turtle—October 1989*

In a ruling hailed by wildlife advocates, a Rivera Beach, Fla., man charged with turtle egg poaching received the stiffest sentence ever handed out for a violation of the Federal Endangered Species Act.

James E. Bivens, 37, was sentenced to two years in prison and three years probation after he pleaded guilty in June to stealing 818 eggs from the nests of endangered or threatened turtles on Jupiter Island in August 1988.

U.S. District Judge James C. Paine handed out the tough sentence after hearing testimony that Bivens pleaded guilty and received a \$108,800 fine and a 60-day jail term on State charges of poaching 1,088 turtle eggs on Singer Island in July 1988.

Bivens also was convicted on State charges of possession of turtle eggs in 1973 and has a lengthy criminal record.

From : Co News Service.

## **Endangered Tortoises Need Help**

*Voice of the Turtle—January 1990*

If you put a turtle in the center of a table, it will crawl to the edge and fall over, to its considerable harm. Put a desert tortoise on the same table and it will look over the edge. If it's too far, it will back off and find a safe way.

The desert tortoise is on an edge from which backing off may not save it—the edge of extinction. To prevent the tortoise from sliding into nothingness, Herculean efforts are required. Letterwriting activists are needed.

On August 4, 1989, the U.S. Fish and Wildlife Service listed the tortoise as endangered, thinking it would be a temporary move. Now, making the endangered designation permanent is being considered. Even the letters of non-experts and non-biologists are important.

## **Kids with Allergies Won't be Slow to Love Turtles as Pets**

*Voice of the Turtle—May 1990 by Lynne Langley*

Herbie the box turtle listens intently when Lois G. Barnette talks to her. She nestles her head on Ms. Barnette's shoulder and naps contently until it's time for a snack of cantaloupe. Then she has a combination bath/exercise session in a tub of warm water.

"She knows she is loved," says Ms. Barnette, who will celebrate eight years with Herbie this year. "Turtles make great pets."

In fact turtles are such wonderful pets that Ms. Barnette has founded "Turtles for Special Kids." She pairs friendly turtles, including orphans, with children who have asthma, allergies, cystic fibrosis or other illnesses that prevent their having furred and feathered pets.

To her knowledge, her non profit program is the first of its kind in the nation. The New York Turtle and Tortoise Society, to which she belongs, tells her this could spread nationwide.

Herbie wandered into Ms. Barnette's life at a time when her daughter Courtney, now 19, was suffering severe allergies and complications from diabetes. Courtney had wanted a turtle and her medical problems put dogs, cats and birds out of the question.

"A turtle is a very good pet for children with allergies," says Dr. Charles H. Banov of the Adult and Pediatric Allergy Center in Charleston. "Children may have reactions to feathers or to the dander dogs and cats carry in their fur," he says.

"Turtles are a good, clean alternative," adds veterinarian Dr. Terry Clekis of the Animal Hospital of North Charleston. "for a small investment in time and emotion' turtles give you a lot."

Just getting off the ground, Turtles for Special Kids is accepting donations of turtles and equipment and is looking for children whose medical problems demand an alternative pet.

Clekis gives each potential adoptee a thorough examination to check for intestinal parasites as well as cracked shell or other injury. Then Ms. Barnette keeps the turtle as least two weeks to get him accustomed to being handled and eating pet food.

Meanwhile, Ms. Barnette is matching turtle with children, ages eight or older. She will meet with parents and the child to provide information on turtle care.

"When we get to the point of putting turtles together with kids, we want to make it really special," There will be a ceremony, but contact will not stop there. She is just a telephone call away if questions arise.

Clekis will give follow-up exams to make certain the new pet is free of parasites, healthy and well cared for.

From: *New York Turtle and Tortoise Society March 1990* (Excepted from *The News and Courier*. Charleston, S.C., September 18, 1989).

### Attack Turtle

*Voice of the Turtle* — March 1991.

Where were the crime—fighting, pepperoni pizza munching teenage Mutant Ninja Turtles when Domino's delivery man Troy Brewer really needed them ?

After all, they may have known his hard-shelled attacker.

Brewer said he was at Balch Springs, Texas, pay phone when he was robbed by thieves armed with a snapping turtle.

"That sucker was going to bite me," said Brewer a college student.

The turtle didn't hip that flustered pizza delivery man, but those wielding the reptile got away with his money pouch containing \$50.

Balch springs Assistant Police Chief B.W. Smith said it was the first robbery at turtle-point he's ever heard of.

"I suppose if he said it happened, I guess it did. Personally, I just can't see somebody holding somebody up with a turtle," he said.

From: *The San Diego Union* 6-9-90

## COMMENTS BY SOME IMPORTANT VISITORS TO MADRAS SNAKE PARK TRUST DURING 1991

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It is an institute in itself, I was delighted to visit and meet snakes and Cobras. I admit that during my one hour stay here, I have learnt many things. It will not be out of place here that I had published a Research paper on the importance, mythology and aesthetic symbolism of snakes in our great country. We have a snake in use or snake instinct in us. So we have a basic snake outlook also. Snake has given us a very grand meaningful vision. I am of the opinion that this place should be improved with the assistance of the State and Central Govt. Better lessons should be given. An exhibition-cum-museum should also be developed.

The work culture is satisfactory. The collection of snakes is unique. We have to introduce scientific study of our dear snakes also. We must have a seat of learning here to study snakes from mythology to modern age. I wish every success.

Prof. SHAKEEL UR REHMAN,

*Union Minister for Health & Family,  
Welfare, Govt. of India, New Delhi.*

13-01-1991

The Snake Park is very well maintained and extremely informative. The Snake cassette for tourists, will be of invaluable use to French Tourists. The Snake Park deserves all encouragement in their endeavour.

MRS. JAYANTHI I.A.S.,

*Secretary, Information and Tourism Department,  
Govt. of Tamilnadu.*

17-1-1991

To combine research, conservation, education and popularisation of information such an exotic area is a unique achievement of this pioneering centre. This has been our spearhead in this effort and will be regarded always as such.

S. RAMAKRISHNAN,

*Secretary, Environment & Forest,  
Tamilnadu Government.*

18-1-1991

It was a great opportunity for myself, my wife and my brother to have had the chance of visiting the snake Park. I was impressed by the collection of snakes but especially pleased to learn not to be unduly frightened of snakes. While we do have a few poisonous snakes we have many which are harmless. It is the duty of mankind to preserve the snake species.

Best wishes to the Park

I am grateful to Sri Visweswaran, who arranged the visit for us.

A. PARASURAMAN

*Ministry of Education Arts & Culture  
Mauritius*

27-1-1991

It was a great pleasure to visit the Snake Farm. Such parks not only provide education about animal life but also inculcate a love for environment especially among the younger people. The Park is well managed and deserves all encouragement.

R.K. SHARMA,

*Secretary to Govt. of India,  
Dept. of Non-Conventional Energy  
New Delhi*

28-1-1991

I really appreciate and am delighted that such a variety of snakes etc. is being preserved well and it will be only way for our children to see Snake which may not be available in future due to carelessness of the human beings.

P.D. SANGMA,  
*Dy. Speaker, Meghalaya, 15-2-1991*

I am very much thankful to you Sir, for maintaining good and large number of Snake species. Mr. R. Aengals, your Research Assistant has given a very good information about the various kinds of snakes and about the Research activities going on in your Snake Park.

Best wishes to your staff.

Thanking you once again.

Dr. PAWSHE,

*Ex-Zoo Director, Nagpur Zoo and Ass  
Prof. of Veterinary Surgery,*

*University Post-Graduate Department of  
Surgery and Gynaecology, Punjabrao Krishna  
Vidyapeeth, Akola (Maharashtra) 18-2-91*

I am very much impressed by the Park  
I wish that this should grow up to its full  
possibilities.

D.K. SINHA,

*Advocate, Supreme Court,*

6.3.91

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## CURRENT AND PROPOSED RESEARCH PROJECTS AT MADRAS SNAKE PARK TRUST

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1, Status, distribution and Ecology of Reptiles pertaining to Tamil Nadu by Mr. V. Kalaiarasan M.Sc., M. Phil. for his Ph.D. Programme under the guidance of Dr. R. Kanakasabai, M.Sc., M.Phil, Ph.D. Prof. and Head, Dept. of Zoology A.V.C. College Mayiladuthurai and field guidance of Dr. M.V. Rajendran M.A. Ph.D.

This project is being co-ordinated by Mr. A.N. Jagannatha Rao, Hony. Secretary of Madras Snake Park Trust, and Dr. R.S. Pillai, Research Officer, MSPT.

2. Studies on chamaeleon by Mr.R. Acngals M.Sc., Mr. B. Rathinasabapathy M.Sc., M.Phil and Mr. P. Tamilarasan, M.Sc., Under the guidance of Dr. R.S. Pillai M.Sc., Ph.D., Dr.M.V. Rajendran M.A.Ph.D. Dr.

G. Durairaj, M.Sc., Ph.D., Dr. R. Kanakasabai M.Sc., Ph.D., Mr. M. Krishnan M.A., B.L., and Mr. P. Kannan M.Sc. Mr. A.N. Jagannatha Rao is the co-ordinator of the project.

3. A research project on "Rodent contro using harmless Reptiles" is being undertaken by Mr. T. Raveendra Babu M.Sc., M.Phil. B.Ed. at MSPT under the guidance of Dr. P. Vivek Raja M.Sc. Ph.D., Senior lecturer of Zoology Govt. Arts College, Madras-35 coordinated by Shri. A.N. Jagannatha Rao Hony. S.cretary and Dr. R.S. Pillai Research officer, MSPT.

4. Relationship between Morphology and Habits of Reptiles will be proposed soon, by Mrs. R. Chitra B.Sc.

# SURPLUS REPTILES AVAILABLE AT MADRAS SNAKE PARK TRUST IN EXCHANGE

(Subject to Approval by The Government)

## Lizard

1. South American Iguana (*Iguana iguana*)

## Snakes

2. Indian Python (*Python molurus*)  
(Babies and Sub-adults)
3. Reticulated Python (*Python reticulatus*)  
(Single specimen not pair)

## Turtles, tortoises and Crocodiles

4. Pond turtle (*Melanochelys trijuga*)
5. Star Tortoise (*Geochelone elegans*)
6. Marsh Crocodile (*Crocodylus palustris*)  
(4 year old)

## WANTED IN EXCHANGE

### Snakes

1. Black Cobra (*Naja naja oxiana*)
2. King Cobra (*Ophiophagus hannah*)
3. Banded Krait (*Bungarus fasciatus*)
4. The Indian Egg-Eating Snake  
(*Elachistodon westermanni*)

### Monitor Lizards

5. Desert Monitor (*Varanus griseus*)

6. Yellow Monitor (*Varanus flavescens*)

7. Water Monitor (*Varanus salvator*)

8. Common Indian Monitor (*Varanus bengalensis*)

## Turtle

9. River turtle (*Hardella thurgi*)  
and

Fresh water turtle—any species.

## Crocodile

10. Estuarine Crocodile (*Crocodylus porosus*)  
(Juveniles and sub adults)

11. Preserved specimens of 5 species of  
Sea turtles

a) Leather back turtle (*Dermochelys coriacea*)

b) Green turtle (*Chelonia mydas*).

c) Logger Head turtle (*Caretta caretta*)

d) Olive Ridley turtle  
(*Lepidochelys olivacea*)

e) Hawksbill (*Eretmochelys imbricata*)

# An Appeal

The Madras Snake Park Trust has obtained, with the help of the Govt. of Tamil Nadu, an extent of 2.5 acres of land on the old Mahabalipuram Road on the outskirts of the city of Madras to establish an elaborate Reptilium on modern scientific lines to promote Tourism, Conservation, Education, Service and Research on Reptiles.

The proposed Layout and Estimates of the various units are shown on the next page. The total cost of the project is estimated around Rs. 125 lakhs or 60,000 \$ (US).

The MSPT now seeks financial contributions from various organisations and individuals to fulfil this ambitious future programme unit/block-wise.

Grants and donations are exempted by the Income tax authorities under 80G vide Ref No. DITE/1146(34)/78 dated 1-4-89 to 31-3-92.

Generous contributions are solicited. Contributions may be sent to "The Madras Snake Park Trust" Guindy National Park—Guindy, Madras-600 022 India.

*Trustees of the Madras Snake Park Trust, Madras-600 022.*

## DETAILS OF COST OF CONSTRUCTION AND DISPLAY

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### **Building 1 and 2 (3 floor)**

Each floor has 40' × 40' area and will house Rooms, Mess, Recreational area for Research students, each building 12 students.

Cost per floor Rs. 4 lakhs or \$ 20000.  
Total cost of building 12 lakhs or \$ 60000.

### **Building No. 3 and 4 (3 floor)**

Each floor has 70' × 40' area and will house Research Division, i.e. Library, Laboratory etc.

Cost per floor Rs. 7 lakhs or \$ 35000.  
Total cost of each building Rs. 21 lakhs or \$ 105000.

### **Plt No. 5 and 6 (1000 sq.ft.)**

Specially designed, natural setting with pond etc., to house 3 species of Indian Crocodiles.

Cost Rs. 1,00,000 or \$ 5000.

### **Plt No. 7**

This will house exotic reptiles like Iguanas, etc., in 500 sq. ft. area.

Cost Rs. 50 000 or \$ 2,500.

### **Plt No. 8 and 9 (area 1000 sq. ft.)**

Skunks, Chamaeleons, Monitors etc., will be exhibited in these enclosures in specially designed habitats.

Cost Rs. 1,00,000 or \$ 5000.

### **Plt No. 10 and 11 (area 1000 sq. ft.)**

Specially landscaped to display land tortoises, marine turtles and fresh water terrapins.

Cost Rs. 1,00,000 or \$ 5000.

### **Plt No. 12 (Area 500 sq.ft.)**

Giant tortoise of Seychelles, Komodo dragon etc., will be procured and displayed.

Cost Rs. 50,000 or \$ 2500.

### **Building No. 13 and 14 (area 1000 sq.ft.)**

Different poisonous and non-poisonous snakes of India will be exhibited in specially designed habitats. King Cobra will find a special habitat cooled by air cooler.

Cost Rs. 1,00,000 or \$ 5000

### **Building No. 15 and 16.**

Indian snake lore and myths which are in plenty will be elegantly brought out and made interesting and attractive for tourists. Simple hall 40' × 40' with a sloping roof.

Cost Rs. 4 lakhs or \$ 20,000 — each building.

### **Building No. 17 (Demonstration shed—3000 sq.ft.)**

To educate the public on reptiles. Hourly display of live reptiles with commentaries in English, Tamil and Hindi. Tapes in 10 Indian languages and choice of 6 Foreign languages will be available for large groups for a special fee.

Cost Rs. 7,00,000 or \$ 35,000.

### **Building No. 18 and 19.**

40' × 40' to house preserved specimens of Indian and exotic reptiles for Research purposes. Sloping roof.

Cost Rs. 4 lakhs or \$ 20,000 each building.

**Building No. 20.**

This is a 3-storied building. The ground floor to be used by visitors as a Rest-shed. The second floor for the Administrative Office of the Madras Snake Park Trust. 3rd floor for Guest house.

Each floor is 70' × 40'. Cost Rs. 7 lakhs or \$ 35000. Total cost of the building would be 21 lakhs or \$ 105000.

**Building No. 21.**

3 floors each of 70' × 40'. To house an auditorium, a conference hall and a records room.

Each floor costs Rs. 7 lakhs or \$35000 and the total cost of building Rs. 21 lakhs or \$ 105000.

**Building No. 22 and 23.**

These are quarters for watchman, on either side with 300 sq. ft area.

Cost Rs. 75,000/- or \$ 3500. The 2 units cost Rs. 1,50,000 or \$ 7,000.

**Building No. 24 and 26**

Open wells of 6' diameter each costing Rs. 25,000/- or \$ 1250. Together they cost Rs. 50,000/- or \$ 2500.

**Building No. 25**

General store Room of 20' × 10'.  
Costing Rs. 50,000 or \$2500.

**Building No. 27 and 31**

Large underground storage tanks to hold water, each 15,000 litres capacity.

Cost Rs. 50,000/- or \$2500/ each. 2 sumps together would be Rs. 1,00,000 or \$5000.

**Building No. 28 and 30**

10' × 10' rooms for electric meters and water pumps, each room Rs. 25,000/- or \$1250.

Cost of 2 rooms Rs. 50,000 or \$2500.

**Building No. 29**

10' × 10' Security room. Cost Rs. 25,000/- or \$1250.

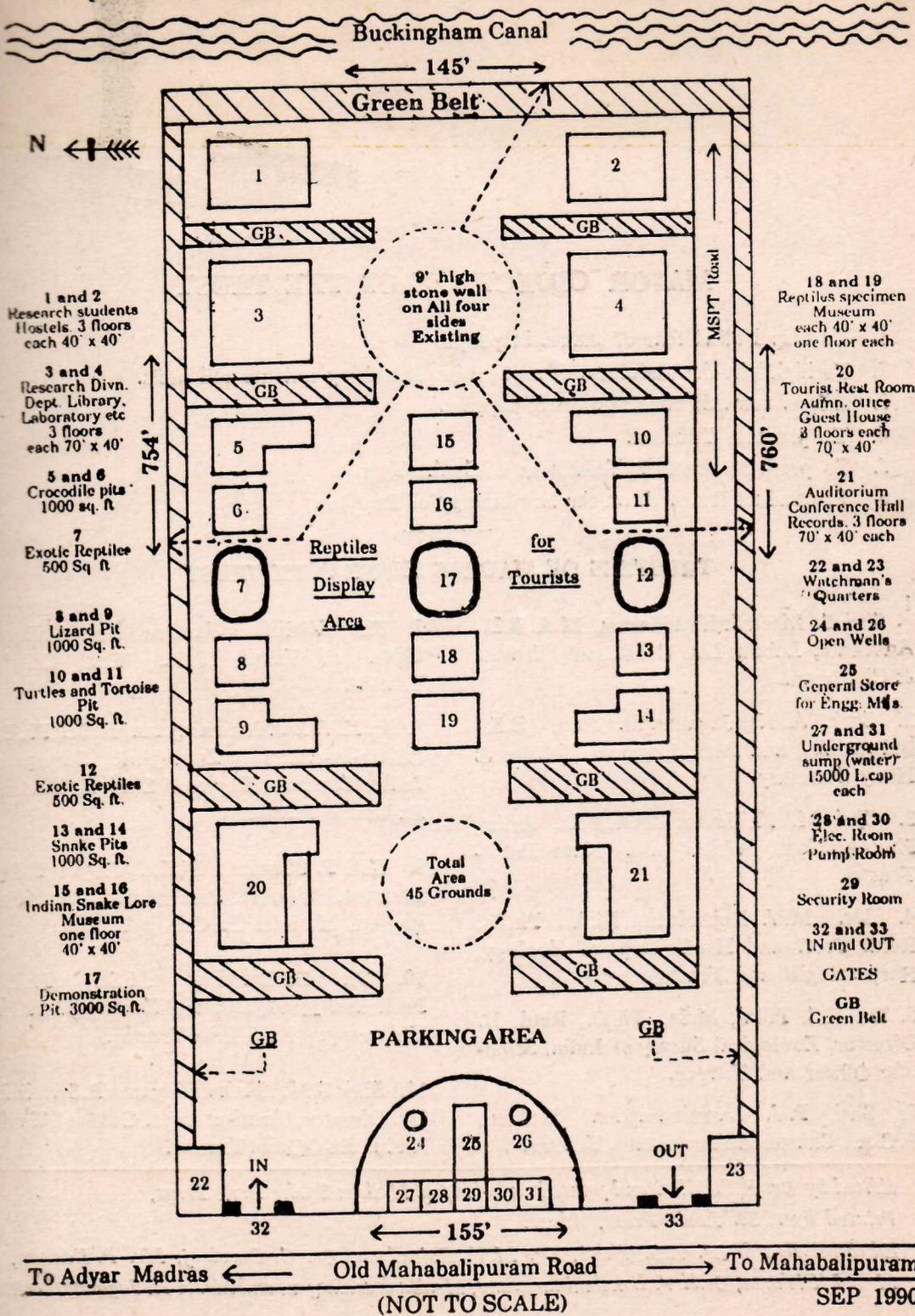
**No. 32 and 33**

IN and OUT gates Each cost Rs. 10,000/- or \$500. Cost of 2 gates Rs. 20,000/- or \$1,000.

All costs are worked out on present exchange rate of US \$ = 18.50 as on date 1.9.1990.

ALL GRANTS WILL BE DISPLAYED ON A MARBLE SLAB ON THE RESPECTIVE FLOOR/BUILDING.

# Proposed Layout of Madras Snake Park Trust at Kottivakkam, Madras



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## MAJOR OBJECTIVES OF THE TRUST

1. To dispel blind fear of snakes in people
2. To highlight the usefulness of reptiles in controlling rodents and pests.
3. Efforts towards conservation of reptiles.
4. To promote Tourism.
5. To promote scientific Treatment of Snake bites.
6. To conduct Research on the Eco-biology of Reptiles.

## TRUSTEES OF MADRAS SNAKE PARK TRUST

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