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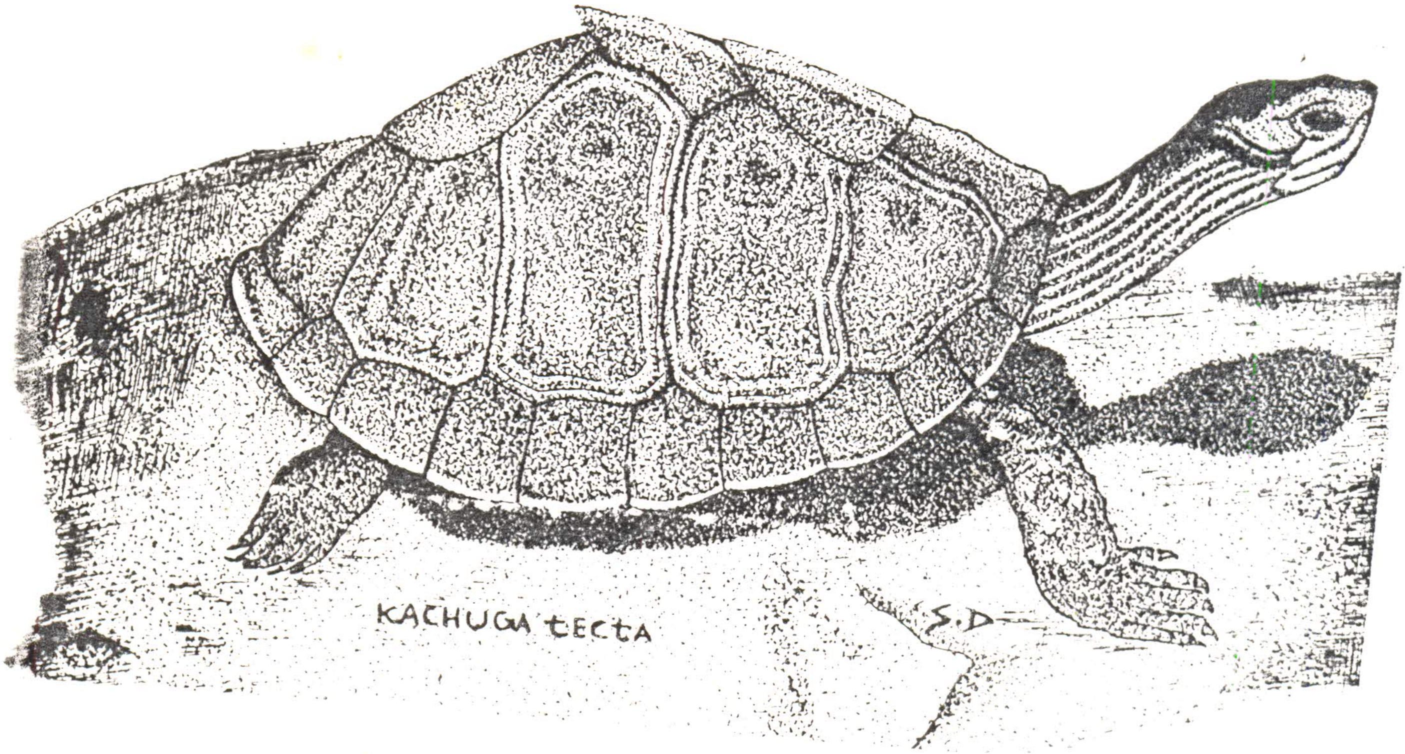
HAMADRYAD



HAMADRYAD : NEWSLETTER OF THE MADRAS SNAKE PARK TRUST

8 : No.2 May 1983

News from the MADRAS SNAKE PARK and
MADRAS CROCODILE BANK

The Snake Park received, on loan, a 12 ft male king cobra from the Mangalore Wildlife Trust in December. It was brought by Sunney Tharappan for treatment because it had not shed its eye-cap during the last 2-3 sloughings. In early March it was seen mating with one of the three females in the enclosure on several occasions.
(see page 8)

Heyward (a female American Alligator named before she was sexed) has finally found a mate-- though so far bride and bridegroom are in separate pens in the traditional Indian custom. Henry a wild caught alligator donated by Rockfeller Refuge arrived by Singapore Airlines, courtesy Jake Yelverton of the Louisiana Zoo Purchase. He is as yet not big enough to meet his match.

The severe, state-wide drought in Tamil Nadu this year necessitated the deepening of croc ponds as early as March. Ponds had to be deepened at considerable cost and the procedure may have to be repeated before the summer is over.

Eight gharials were added to the breeding group at Croc Bank making a total of 13, 3 of which are known males. These were received in exchange for mugger, caiman and iguanas.

The Director is away in Malaysia carrying out a C.porosus survey for the Wildlife Department. The survey is sponsored by WWF.

EVALUATING THE EFFICACY OF A HOMEOPATHIC SNAKEBITE REMEDY FROM INDIA

"Tirhakah anti-venom", a homeopathic preparation prepared and marketed by Roy-Pharma in Palghat, Kerala has been one of the chief 'remedies' against snakebite in India for a long time. Clinics, industrial companies and schools (including the one which the editor's son goes to) stock it in lieu of Haffkine antivenom serum. It seems, to be one of the more dangerous quack 'remedies' Read, for some quick (harmless) amusement, the instruction leaflet: "Give 10 drops of Tirhakah in a teaspoonful of cold water every 5 minutes till patient is well. At the same time, make an incision with a clean sharp knife or pin at the bite and rub into it 2 drops of pure Tirhakah every five minutes. At the same time, see if there are any fangs in the wound which must be removed. Should the patient be unconscious and unable to swallow, then a few drops of Tirhakah must be either poured, squirted or blown into the nose. Repeat every three minutes till the parient can swallow. Afterwards Tirhakah can be taken as directed above through the mouth.

The patient must on no account be allowed to lie down or sit still. He has to walk up and down and swing his arms vigorously. In case he cannot do so himself, two people have to move him about swining his arms as they go along. If a third person is available he should fan the patient" A sample of Tirhakah was sent for evaluation to the Venom Research Laboratory, Veteran's Administration Medical Centre, Utah. Below are the comments of Dr. J.L Glenn and Dr. R.C. Straight. The Venom Research Lab is internationally known for its work in snakebite and venom research.

Various experiments were performed to evaluate the effectiveness of this herbal snakebite remedy, "TIRHAKAH ANTIVENOM". The instruction pamphlet directs its use in "all cases of bites by poisonous snakes, scorpions, poisonous insects and poisonous vermin." Recommended administration is "repeated doses given orally, rubbing solution into incision over bite or if unconscious, poured, squirted or blown into the nose".

Summary of test results: The "Tirhakah anti-venom", a herbal non-physiological solution, acidic Ph.5.5, produces a strong linament-like odor. The solution was lethal to mice (18-22 g); intraperitoneal (IP) LD_{50} = 0.001 ml/gm mouse and subcutaneous (SC) LD_{50}= 0.01 ml/gm mouse. The intravenous (IV) lethality was not exactly determined but all mice died very quickly when injected (IV) with 0.001 ml/gm mouse. The solution was approximately 1/10th as lethal as some pit viper (Crotalidae) venoms.

The solution causes severe hemorrhagic activity when injected subcutabeously (beneath the skin) and intradermally (in the skin) in mice, rats and rabbits (0.05 ml induces as much hemorrhage as 0.025 mg of Russells viper venom. Also, when the Tirhakah solution is injected (SC) 10 minutes following Russells viper venom (injected SC), an approximate two-fold increase in hemorrhagic activity occurs. No neutralizing effect of lethality, signs of neurotoxicity or hemorrhagic activity, occured in mice against the venoms of the common krait (*Bungarus caeruleus*), monocled cobra (*Naja naja kaothia*), spectacled cobra (*Naja naja naja*) or Russells viper (*Vipera r. russellii*). Neutralization tests included: The Tirahakah solution was tubed orally every 5 minutes for 30-6- minutes (vs. common cobra, russells viper and common krait), repeatedly rubbed into a 3 mm incision over venom injected SC (vs. Ceylon cobra, Russells viper) and injected SC 10 minutes following and over SC injection of venom (Vs. Ceylon cobra, Russells Viper, Common Krait).

Conclusion: The use of the "Tirhakah antivenom" in envenomation therapy should be avoided, due to its toxic and harmful effects and its lack of neutralizing ability against venoms. The solution would also be extremely dangerous if mistakenly administered intravenously or intraperitoneally.

J.L. Glenn and
R.C. Straight
Venom Research Lanoratory
Veterans Administration Medical Centre
Salt Lake City
Utah 84148
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'SNAKE' COMMUNITIES IN INDIA

At the Snake Park we are compiling information on many diverse snake catching groups in the country. Some, like the Chakmas, use them for snake charmer displays; others, like the Mahrs of Ratnagiri sell them to laboratories for antivenom production. B.K. Saha visited a large colony of 40 families of snake catchers and charmers near Calcutta. These catchers mainly collect pythons, cobras, king cobras, banded and common kraits, rat snakes and flying snakes. Most of the collection is done in 24 Parganas, Midnapore, Purulia and Bankura Districts of West Bengal, some parts of North Bengal and also as far away as Orissa, Tamil Nadu and Bihar.

In a fascinating article about Jogis of Pakistan (Animal Kingdom, Feb/March 1983) Madge Rutherford Minton talks about these collectors- snake charmers who are looked upon as having supernatural powers. "Jogi culture centers around snakes. The men collect them by the boxful for scientists and shows. They also practice magic and folk medicine, dispensing secret remedies to the public in snakebite emergencies. Living in homogeneous communities, the children grow up abosrbing the Jogi skills."

NOTES ON THE DOG-FACED WATERSNAKE

While collecting reptiles in the Sunderbans area during the last year, I have found the dog-faced watersnake to be the most common large brackish water snake. Local people call it 'Nonabora' or Jal Kata Samp (the snake which cuts fishing nets. Mud trapped by mangrove trees supports large assemblages of these snakes. They are frequently seen hunting near the rivers at low tide. During the monsoon when paddy fields are flooded, local people make a tunnel through the bunds to the river bank, and place fish traps at the junction of these two habitats. Dog-faced watersnakes often enter these traps and take fish, which may be one of the reasons they are disliked.

B.K. Saha
c/o Dr. S.G. Saha
Raidighi Rural Hospital
P.O. Raidhghi-743383

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MORE ON THE DOG-FACE

V. Shyamsunder, a volunteer at the Snake Park has reported heavy predation on dog-faced watersnakes by raptors in the Adyar estuary. Here Cerberus is found in crab holes, usually where the water level is low and the substrate is black mud. Shyam is a bird watcher and spends several hours a month in the Adyar delta. He has seen brahminy kites (Haliastur indus), pariah kites (Milvus migrans) and the white-bellied sea-eagle (Halicetus leucogastor) hover, swoop down, pick up the snake (mostly with legs) and kill it during flight. The bird then lands on the bank and proceeds to feed.

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MORE ON COMMON AND BANDED KRAITS IN WEST BENGAL

Smith (1943), Deoras (1965) and Whitaker (1978) have reported that common kraits (Bungarus caeruleus) are uncommon in West Bengal, and banded kraits (B. fasciatus) are common. But after an informal survey of these two snakes in this state I find that both species have an almost equal distribution. While banded kraits are found in all of the fifteen districts, common kraits occur in at least eleven of these. B. caeruleus seems to favour the lower Sunderbans, Birbhum, Bankura and Purulia districts while B. fasciatus is more common in the northern Bengal, Nadia and Hoogly districts. Accurate snakebite data is available only for the 24 Parganas (see Hamadryad 7 No.2 May'82). Medical help is poorly organised and the rural population is justifiably terrified of both species of kraits. In non monsoon months people sleep outside and bites are common. It is believed that if a common krait bites there is no escape from death; a common proverb in Bankura and Purulia districts is "Jadi kate domna, Tabe dak bauna," which means if a krait bites call a priest. In northern Bengal people believe that if a banded krait bites, the patient's body should be painted black and yellow. However there is still no authentic data on banded krait bites.

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Raidighi 743 383

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SNAKE WORSHIP AND RAIN GODS

For the last hundred years, Nadia district of West Bengal has had the highest frequency of snakebite in the country and many poojas and offerings are made to appease the snake goddess. If a person finds a snake, he marks the spot accurately, then goes home to bathe and collect offerings of flowers, resin, etc. Then he returns to where the snake was and prays to the snake goddess. Frogs also come in for a bit of healthy worship (see Hamadryad 7:3, Sept. 1982) During the 1982 drought, frogs were used to 'invoke' rain in several areas, with marriages being arranged between male and female frogs, so that they can (legally) mate and the male can command the rain with his croak. There is much fanfare, with palanquins and feasting.

B.K. Saha

(with the present drought in Tamil Nadu promising to be the worst in history, the Snake Park might have to consider this proposition. At the moment we are buying water by truck-loads).

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PYTHONS PERFORM AGAIN

Python molurus continues to be hot stuff on the skin market; the risk of dealing in its skin is offset by the value. Also, the smallest zoo or animal collection is thought to be incomplete without at least one python, often acquired from a nearby forest area. In view of the endangered status of pythons, the Snake Park has been breeding pythons for the past four years and all it takes is careful planning and management. We have five adult females and two males and at the time of writing three females have mated. In December '82 all the specimens were weighed and otherwise assessed for breeding suitability. The sexes were then segregated to avoid captive stagnation, and re-introduced in the last week of January 1983. Although the matings took place at slightly different times of the day, temperatures at actual mating periods averaged 28.2°C, with a range of 25.5°-31.0°.

S. Dattatri
MSPT.

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MEMORIES OF A SNAKEBITE

A few notes on my C. Lepidus klamberi bite at Ramsey Canyon, Huachuga Mountains, Southern Arizona in April 1967. The snake was about 35 cms long (adult).

The bite occurred on a rockslide about 2 kms into the canyon from Dr. Hledsoe's place at about 10 AM. I heard the snake buzzing and tried to turn over the rocks as fast as possible to get it before it got down in too deep. As I lifted one rock I very clearly (almost in slow motion it seemed) saw the snake strike from its hidden position and connect with the inside forsal part of my left thumb, fangs straddling the distal joint. Immediate symptoms and general progression were very much like those of a previous year's bite from a small C.v. viridis in the area near Chihauhua in Mexico. I had become sensitized to horse serum with that bite and, I discovered was now sensitive to the venom (I had a A. piscivorous) bite 2 years earlier). Besides the immediate burning pain and rapid onset of swelling I felt faint for a few seconds and within a few minutes, as I started back down the canyon (I left the snake), I started sneezing at 30 second intervals, non-stop for most of the two kilometers which took me over ½ an hour to negociate. All the hairy parts of my body, crotch, armpits and head became intensely itchy and I laughed out loud in the forest at the image I presented. Staggering drunkenly along, non-stop sneezes jerking my body while moaning now and then from the pain and scratching like a tick ridden hound. I slept on and off in an apple orchard for most of the day, using aspirin to kill the pain. In the evening my hand was bad looking with bloody sera draining from the fang punctures but the swelling was not increasing and the pain was quite bearable. I ate a hearty meal at Nell Brown's house (the care taker) and she made me vacate my cot in the barn and put me in her nephew's room in the house. At about midnight I awoke to urinate, started toward the bathroom which was lit by a bulb, and very suddenly (a split second after getting on my feet), my sight faded to a black blindness. I stood still for some seconds then lost my balance and came down hard on my knees. The nephew woke up and inquired if anything was wrong and I answered that I couldn't see anything. Within another 30 seconds to a minute my vision came on gradually, much like a TV picture brightens up (2-3 minutes of blindness).

Nothing else special happened. I went to an Army clinic (I had just been discharged from the Army) in El Paso and they did a small bit of exoision of necrotic tissue. The wound was totally healed in about 2 months with no impairment except a numb thumb in cold weather or cold water.

R. Whitaker

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PROGRESS REPORT FROM THE IRULA SNAKE CATCHERS INDUSTRIAL COOPERATIVE SOCIETY

The Irula Cooperative was given permission by Government Order MS. No. 443 dated 12.4.1982 to begin it's venom extraction project. Though the G.O was dated April 1982, the project only went into operation in December. The G.O. gave the Cooperative permission to catch four venomous snakes (cobra, russells viper, saw scaled viper and krait) to extract their venom for sale and release the snakes after extraction. All this to be done under the close supervision of the Forest Department and 25% of the gross profit from the venom sales to be paid to the same department. The G.O also restricted the catching to 5000 snakes annually.

The Cooperative has now been working for four months. We have caught and extracted from approximately 600 snakes. This figure is on the low side due to the severe drought this area is undergoing. Briefly the project operates as follows: The Irulas catch the snakes and bring them to the Cooperative, which is at present located at the Madras Snake Park. The snakes are then bought, the rates vary according to the species. Data on each snake is recorded i.e it is weighed, measured and clipped with a number. This clipping is done so that if the snake is recaught after release we can ascertain the distance it has travelled and compare it with data already recorded. After the clipping the snake has it's venom extracted and is then housed in a mud pot for further extraction. The snake is force fed with glucose water during it's captivity to prevent dehydration. To start with, there was a minimal mortality rate mong the kraits but ever since we have found a way to keep water in their pots they are thriving. Each snake is extracted approximately 3 times, once a week or once every fortnight, it is then released outside Madras in protected forest areas.

The project is working inspite of the odds we are up against. Financially things are tight. Venom sales can only be made after sufficient stock is built up. As it takes 100 kraits to get 1 gm of venom, a lot of expenditure is incurred before a sale can be made. Also various equipment is necessary for the extraction and drying of the venom. Some equipment has been donated to us and the rest we borrow from the Madras Snake Park. The conditions we are working under are not the most ideal for such a project but we realise that it will take some time to get everything just right. The Cooperative plans to move its work site to the Crocodile Bank on the Mahabalipuram road, as more space is needed and we hope to be able to make some gate money from the public thereby ensuring a regular income. Due to the lack of funds we have no full time paid emoloyees at present. This move will take place when the new G.O is issued which we hope will be soon.

Besides the venom project the Cooperative is seriously investigating rodent control on a commercial basis. The Irulas are well known for their rodent trapping methods and we are making enquiries into the possibility of using these methods on farms and plantations to catch rats. There is tremendous scope for the project and we are planning to conduct some experiments around Madras by which we should be able to prove that our methods are more ecologically sound and more economical than the current use of pesticides.

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FOX EATS PYTHON

(from the Sunday Nauhind Times, 7.11.82):

... on the eve of Dassehra (festival), something... bizarre and unusual happened at the Janata Colony in the Bhole locality of Sadashivgad town. The residents had bought fowls to use the next day, and the squaks of these birds attracted a fox as well as an eleven foot long python. The fowls, sensing danger, set up such a cacophony that the people of the locality were woken up and came out to investigate. The fox had arrived at the scene before the python and hid from the humans at a convenient spot. The snake, not too far away, crept up to the fox and attacked it from the rear. Hearing the yelling of the fox, people rushed up and saw a bizarre sight indeed. A full grown fox in the coils of a ten inch thick and eleven foot long python. Soon someone arrived with a gun and the snake was shot.

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MALE KING COBRA GOES TO TOWN

We were able, finally, to find a mate for our three female king cobras, hatched from eggs found in the Andaman Islands in 1975. A 3.5 m, 6.5 kilo male was sent to the Snake Park on a breeding loan by the Mangalore Wildlife Trust. He was first introduced to one of the females, and when there were no signs of aggression the entire harem was thrown open to him. He had a good time.

Mating was first observed on 23 February, involving the smallest (app.3 m) female and lasted 45 minutes commencing at 7.45 am. Courtship lasted for five minutes, starting with the male moving on top of the female and positioning himslef for intromission. The female maintained a submissive, spread hood posture, anterior raised a foot off the ground. Intromission was affected at 10.05 am and lasted 67 minutes; through this period the female remained alert and excited while the male was passive. She laid 23 eggs on April 14 but all these were infertile.

Temperature in the king cobra enclosure is maintained at a constant 80°F . and an air cooler maintains a high humidity. There is little information on breeding of king cobras and information from zoos and individuals who have bred them would be welcome. Smith (1943) mentions two king cobras mating on January 31st in Palao, Burma, and finding nests containing eggs in April, May and June. Banchfield (1977) has given an account of this species mating at the Brownsville Zoo, USA, on three occasions (March 8, April 26, March 13).

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MYTHOLOGICAL SNAKES

(see also Snakes in Indian Mythology, Hamadryad 3 No.3, September 1978).

Snakes (nagas) are dominant characters in Indian mythology. The nagas are generally supposed to be crafty but some of them are sometimes good. They are believed to live in a magnificient world Patala which is situated in the Nether regions; the gloom of their habitat is brilliantly lighted up by the gems on the snakes' hoods. The Nagas are said to be the mortal enemies of their half-brothers, the Garuda. Because serpents shed their skins they are supposed to be immortal. It is said that when garuda was taking some ambrosia (nector) from heaven to Patala he carelessly dropped some on earth; and snakes came and greedily licked it up thereby becoming immortal. They however burnt their tongues which thus became forked. Some of the most famous serpents in Hindu mythology are Karkotakan, Takshaka, Kaliya and Vasuki.

Karkotakan:

When Nala and Damayanthi were in exile, Nala left Damayanthi and went away on his own. As he was walking he saw a fire with a snake perishing in it. The snake prayed to him for help and Nala carried the snake out of the fire. The snake then asked him to count till ten and Nala started counting. In Sanskrith "Dasha" means two things: the number ten and "bite". When Nala reached ten and said "dasha" the snake bit him. His appearence suddenly changed, he was no longer a tall handsome man but a short ugly one. Nala, understandably hurt said "Oh snake! I have saved your life and you repay me by biting and changing my appearence". The snake replied "Nala, I have done this to help you because when Damayanthi wakes up she will look for you and this way she will not find you." Then he gave Nala a robe. "When you want to become youself again just put this on" he said and disappeared.

[redacted]

King Parikchit was very fond of hunting. When he was out hunting one day he felt very thirsty. He came across an ashram and went in. There was nobody there but a sage deep in meditation. Parikchit was very angry that nobody was there to offer him water. He went outside into the forest and found the carcass of a snake and placed it on the sage's shoulders. He then left to go back to the place. When the sages son returned to the ashram he was horrified at the insult and then became very angry. In his anger he cursed the king"On the seventh day from today you will die from the poisonous snake Takshakas bite". The sage was upset and said "You should not have cursed him since he acted thoughtlessly. Now you has better go and warn him". After the sage's son's warning King Parikchit erected a palace on stilts which was well guarded so that he was protected from the curse. On the seventh day a few brahmins carrying baskets of fruit came to the palace saying that they were well-wishers of the king and wanted to present him with the fruit. The guards saw nothing wrong with this request and let them in. After being presented with the fruit King Parikchit noticed a tiny worm in one of the fruits. He gently picked it up and placed it on his shirt. The worm suddenly grew at an alarming rate and became the serpant Takshaka. The serpent coiled himself around King Parikchit and uttered a loud roar. The king fell down dead and the palace was wrapped in fire.

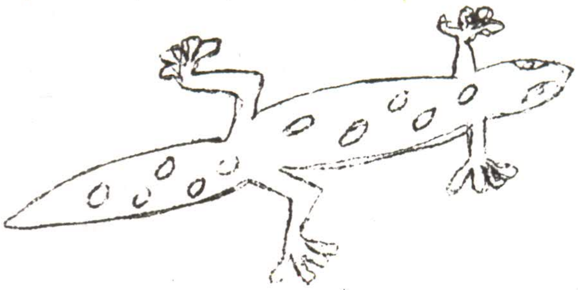
Kaliya:

When Krishna was still a boy the herdsmen of Madhyva came and asked for his help. The serpent Kaliya and his wives were inhabiting the river Kalindi and whenever their cows went to drink water they were instantly killed by the poison the snakes were giving out. Krishna dived into the river and he and Kaliya were locked in combat under the water. Finally they rose to the surface with Krishna victorious. Krishna then danced on Kaliyas head at the same time holding his tail. As he was about to kill him Kaliyas wives pleaded for his life so Krishna let him live on two conditions; that he go away and live elsewhere, and that he never harass anybody again.

Vasuki:

There was once a sage Durvasa who in a fit of anger cursed the gods. As a result of this curse the gods lost all their powers and were like ordinary mortals. The asuras decided that this was a good time to attack them. The gods went to Vishnu for help. Vishnu said that the only solution was to get the gods some ambrosia, the cream of the milk ocean. Since the gods were unable to get the nector by themselves they decided to form an agreement with the asuras saying that they would share the necter equally with them. The asuras agreed. Now they uprooted the mountain Mandhara and got the serpent Vasuki to act as a rope. The asuras pulled the head of Vasuki and the devas pulled the tail. When their grip tightened Vasuki started spitting poison and this resulted in a dense fog of poison which would have killed the whole world if the devas had not prayed to Shiva to help them. Shiva came and swallowed the poison. Because Shiva kept the poison in his throat he is called Neelakantha, which means blue-throated one.

Aparna Mukherji, Gilchrist Rd,
Madras.



THE UNKNOWN SOLDIER

(by N. Ramakrishna, Traveloid, November '82)

In the redoubtable successes that attended the foray of the Martha guerillas into the mughal empire, was there a little unknown soldier that played a big part? If tradition is to be believed it was indeed so, and the little 'soldier' was none other than a dark-greenish or rock grey coloured, lizard like creature the Veranus Monitor known variously as the Udumbu or Ghorpad or the Indian iguana.

It is said that whenever there was a high fortwall to be scaled, the Maratha soldiers never ventured without a few intrepid iguanas in readiness, the iguana being famous for its vice like grip.

A long rope was tied to the body of the creature and it was thrown up to the top of the wall, which held strongly. Then the soldier could easily climb up with the support of the rope. The creature could be removed only by releasing its claws with difficulty.

The legend about the monitor being used for scaling fort walls goes back to long before Shivaji and the Maratha Empire. It is said that about the middle of the 15th century a Maratha Chieftain named Karna Singh captured the full fort of Khelna- Vishalgad today- east of Ratnagiri by means of a strategem. Finding the fort wall unscalable by other means, he tied a light rope around a Udumbu and allowed it to climb the wall, and after it had found a secure foothold he climbed the wall after it, using the rope.

The foothold of a monitor is truly astonishing but I suppose that the lizard-held rope was not really used to sustain the full weight of the man, but only as a support, the climber using toe holds and finger grips on the uneven surface of the wall to ease the strain on the rope. I have been assured that given a rough enough surface, an agile and light man can climb a steep wall by this means, and that it has been demonstrated even in recent times.

To go back to the story Karan Singh lost his life in this adventure, but only after his ingenuity had resulted in the fort being captured. Their descendents have been known ever since by the name and title of "Ghorpade" the Marathi name for the monitor being "Ghorpad".

The Iguana belongs to the family of lizards and can be seen extensively in the Indian gardens, fields and groves scampering all over as fast as it can, It has rows of small teeth and a thick tongue. Its food consists of leaves fruits. The feet have long claws with sharp nails well adapted for climbing trees and the tail helps a great deal in swimming. It is fairly long- say about 2 to 3 feet. Eventhough it is very fast on its feet it can be caught easily. A cloth thrown in its way will do the miracle. Once its claws hold the cloth, it gets punctured and the nails get caught in the folds. The hunter then rolls it along with the Udambu.

Its flesh is said to be very delicious and sweet. Its outer skin bears fine scales like those of a crocodile and the Udumbu even resembles a crocodile to some extent. They are actually timid defenceless creatures and so can be caught easily. They do not harm human beings which can be seen from the photographs.

The Monitor eats mice, frogs and small insects. It is known to eat snakes on occasion and take vegetable food also. It is said to be the near relative of the extent Komodo Dragon, biggest and fiercest of all lizards and its kin are said to inhabit South Africa, Asia and Australia. When grown the Udumbu's colour is rocky grey.

The skin of Udumbu is also useful. It is used for making certain types of musical instruments especially small drums. It is noted for its elasticity and so can be drawn tight over a fairly big area of the circle- say a foot in diameter. One of the famous instruments used in Music concerts in South India- the Ganjira- is made out of Udumbu skin.

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THE SHOOTING OF CROCODILES

The commercial film industry in south India does not have time for originality. If one film has a running-along-the-seashore scene, the coastline is soon taken over by several film units putting in their own running-along-the-seashore scenes. Last year, happily for the Crocodile Bank, crocodiles came into fashion. A Malayali film included a shot of crocodiles thrashing about in the water (feeding time); this while the hero, in flashback, was going through a Terrible Mental Turmoil. (How subtle can you get). Anyway, over Christmas a Kannada film unit was at the Crocodile Bank and one morning I walked down to watch the fun. There were two villains, that day: one had to stand on the feeding platform in the mugger enclosure and throw meat to the crocs. The other, a fat, jolly villain with bright pink cheeks who was understandably sweating a good deal, had to walk below, close to a group of mugger, reading out from a newspaper with Gay Abandon. That look of g. abandon was a long time coming. And the meat throwing villain had his own problems. He had a tray of mutton pieces and was unhappily strewing them around with- yes! - a pair of tongs. After every couple of minutes he had to do a loud, evil chuckle. Well, he was getting into the swing of things when- "Cut! Cut! Rumba stylish-a sayde." The squeezy villain looked frightened. "Touch it with your hands", proceeded the unfeeling director. Villain looked stricken. Finally a pair of leather gloves was produced and the villain proceeded, with a slightly less confident evil laugh. I felt so sorry for him. The crowd of village children watching the show and splitting their sides laughing couldn't have made it easier

Z.W.

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DROUGHT

The current severe drought in the South is going to affect mugger populations considerably, as crocodiles trek out looking for coolness and water. The Van Ingan taxidermists in Mysore recently received a large mugger from Hassan (Karnataka) for stuffing. There were incidentally, several bangles and ornaments in its stomach.

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World Congress of Herpetology

By recent action of the officers and official representatives of the major national and international herpetological societies, an international committee has been established to plan the first World Congress of Herpetology. The congress will be held in 3-5 years at a site yet to be selected. The Planning Committee consits of:

Donald G. Broadley (Zimbabwe)
Harold G. Cogger (Australia)
J.C. Daniel (India)
Ilya S. Darevsky (U.S.S.R)
Marinus S. Hoogmoed (Netherlands)
Toshijiro Kawamura (Japan)
Michael R.H. Lambert (U.K)
Hubert Saint Girons (France)
P.E. Vanzolini (Brazil)
David B. Wake (U.S.A)
Kraig Adler (U.S.A) Secretary-General

The congress will be organized to include a wide range of topics, to appeal to all persons interested in the scientfic study of amphibians and reptiles. The committee currently is setting guidelines for operation, including the establishment of a larger and broadly representative International Herpetological Committee to provide a self-perpetuating mechanism for future congresses.

Address comments or questions to any member of the Planning Committee or to the Secretary/General: Professor Kraig Adler, Cornell University, Section of Neurobiology and Behavior, Seeley G. Mudd Hall, Ithaca, New York 14853, U.S.A.

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Symposium

A symposium, The structure, development and evolution of reptiles will be held in honour of Professor A.d'A.Bellairs at the Zoological Society of London during 26-27 May '83. The convenors are the Zoological Society of London, The Anatomical Society of Great Britain and the British HerpetO-logical Society. From our region, the gharial will be attending: Dr. H.R. Bustard will read a paper on breeding the gharial. This late announcement is like telling you to go somewhere yesterday but the symposium's publication (to be edited by M.W.J. Ferguson in the series 'Symposia of the Zoological Society of London') will be an important addition to libraries.

TURTLE SURVEY UPDATE (January to April 1983)

In the last issue of Hamadryad (January '83) J. Vijaya reported on the initial survey trips taken October through December to Kerala, Andhra Pradesh and Uttar Pradesh. Since this report our survey team (Moll, Vijaya and Satish Bhaskar) have visited Madhya Pradesh, Uttar Pradesh, Orissa and Bihar. Brief accounts of these trips follow.

Madhya Pradesh- Uttar Pradesh (Chambal River) survey: On our first trip to the Chambal River (January 15-31), we arrived at the end of the *Kachuga tentoria* nesting season and the beaches were strewn with egg shells from predated nests as well as shells of the turtles themsleves which are apparently also subject to considerable predation. *K.tentoria* were seen basking in large numbers along with a few *Lissemys punctata* and *Kachuga dhongoka* but large turtles of other species were conspicuously absent (possibly because of the cool weather).

In addition to the turtles, we were treated to a vast array of Chambal wildlife which abounds within the confines of the Gharial Sanctuary. Besides the gharial themselves, we saw flocks of flamingos, black and white ibis, sarus cranes, bar-headed geese, spotted ducks and brahminy natkas. Particularly exciting was the occasional appearance of river dolphins and otters

After spending a week with the Madhya Pradesh Forest Department (our host) we moved across the state line to visit with the Uttar Pradesh Forest Department at Etawah. Here they had just confiscated an illegal shipment of turtles destined for the Calcutta market. The shipment included 29 *Trionyx gangeticus*, 3 *Chitra indica* and 180 *Lissemys punctata*. Some of this group were in too bad a condition to save but we hired a truck and hauled them to Pinahat where we released them into the Chambal (their presumed origin). Hopefully the majority survived.

Before leaving Etawah, we were priveleged to watch a demonstration of a turtle catching technique by Kanjar tribals. Using long bamboo poles with iron spikes at one end, they waded into the Yamuna river probing the bottom. In two hours, they came up with a large number of *Kachuga tentoria*, one juvenile *Kachuga dhongoka*, a *Lissemys* and one juvenile *Trionyx gangeticus*.

Our most interesting find of this survey period was a *Kachuga kachuga* male. This has to be one of the gaudiest turtles extent. The turtle's head is blue-black with a bright red patch on top which joins with bright red stripes running the length of the neck. Needless to say we exposed considerable film in this animal's honour.

Our second trip to this region- March 29 to April 14, was made to survey nesting activity of the larger Kachugas (dhongoka and kachuga) and to initiate a hatchery for these species at the Deori, M.P headquarters of the National Chambal Sanctuary. Considerable nesting activity was taking place during our visit and while many nests were predated, several were found intact.

Four clutches (ca 100 eggs) were removed to Deori to officially initiate India's first state sponsored freshwater turtle hatchery. It is hoped this program will be expanded and become a regular part of the conservation activities conducted at the National Chambal Sanctuary.

Large Kachugas and Trionyx gangeticus were commonly seen basking along with the Kachuga tentoria on this trip. A very interesting side trip was made to Bateshwar, U.P (City of 101 temples). An optimum site to observe turtles here it at the Jain-Hindu Madeo temple on the banks of the Yamuna. At this site bodies are placed in the river and offerings of dough balls are often provided to the local turtles. Standing on the bank steps of the temple, one can see a couple dozen turtle heads at any one time. The species represented are Kachuga kachuga, K. dhongoka, K. tentoria, Lissemys punctata and Trionyx gangeticus.

Orissa Survey: In Orissa we departed from our freshwater turtle survey briefly to observe the Orissa government's sea turtle conservation program for the olive ridleys that nest along the Gahirmatha coast. Our arrival in Chandbali, Orissa was just too late to witness a mass nesting of almost 200,000 Ridleys. However, we did arrive just in time to participate with the Orissa Forest Department in releasing some 186 ridleys that they had confiscated from poachers in a large roundup operation. Using a navy cruizer, they has confiscated 10 country boats, 3 mechanized boats, and 66 poachers along with turtles. Approximately 30 turtles died before they could be released but 156 were returned to the brackish Baitaroni River at Chandbali.

At Gahirmatha we were shown around by Mr. Chandra Sekar Kar who has been studying the ridley population under Forest Department sponsorship. Kar pointed out that the beach at Gahirmatha is well patrolled by home guards- 15 men as well as 25 Forest Department personnel. The most serious problem is in the sea where besides the poaching a serious fishing problem also exists. Turtles are continually being caught and drowned in fishing nets and during our brief visit around 3000 carcasses littered the 10 km stretch of beach.

For the remainder of our stay in Orissa we joined forces with Mr. S. Biswas of the Zoological Survey of India. Bhaskar, Biswas and I surveyed turtle useage on the Mahanadi at Cuttack, Naraj and Tikerpada, while Vijaya went to the north to check on sea turtle exploitation at Digha, West Bengal. She found that the trade was now done more undercover but seemed to be flourishing as well as ever.

Our final stop was at Puri to see if we could locate a turtle temple where Annandale early in the century reported a large captive population of *Trionyx gangeticus*. We located the probable temple but were told that the *Trionyx* had died out some years previously. We only saw a couple of small *Kachuga tentoria* in the pond. Interestingly the faithful can still be seen visiting the site and throwing in a handful of puffed rice for the turtles. After waiting expectently a few minutes for the large *Trionyx* that no longer comes they depart.

Bihar Survey: Our first Bihar trip (March 3-18) was rather unproductive. A search of the Chaibassa region to obtain information on the status of *Melanochelys tricarinata* was unfruitful. We obtained a couple of shells of *Geochelone elongata* but no evidence of our target species. We did get some information on the exploitation of turtles on the Ganges between Khalgon and Rajmahal where based on shells collected, *Kachuga dhongoka* is being heavily exploited for food. Over all we hope our next trip to Northern Bihar in May will be more productive.

A final note of significance concerns a short survey of the Cauvery River drainage particularly the Moyar River and Amravathi Dam near the Tamil Nadu/Karnataka border. In response to reports of a large previously unreported *Trionyx* in these waters, we financed a survey of the area by Mr. Mark Davidar, Manager of the Madras Snake Park. Mark has fished this area frequently and thus had good familiarity with the region. Although he was unable to procure a live specimen he did get several shells which are tentatively identifiable as *Trionyx leithi*. He also came up with some impressively large *Lissemys*.

Edward O. Moll
c/o Madras Snake Park Trust

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AN IDLE BOAST?

With reference to our bombastic proclamation about *Heosemys silvatica* (Hamadryad 7:No.3), we plead guilty of [illegible] ignorance. "After a period of 67 years", we held forth, "the forest cane turtle has been found during a recent survey in the Kerala forests by the Madras Snake Park." But in a recent letter, Michael A. Ewert of the Indiana University writes, "Two specimens of what I believe to be *Heosemys silvatica* seem to have escaped general notice. The first of these was in posession of a private dealer who recognized it as unique and preserved it when it died around 1970. In 1975 Dr. John Legler purchased the specimen, and it now resides in the University of Utah (UU) collection Before 1973 I thought that this specimen was *Geomyda tricarinata* but I found a second, very similar specimen in the Florida State Museum (UF) collection labelled *Heosemys silvatica*, Calicut Hills, Kerala State, India."

Mike Ewert goes on to say that he has been breeding *Melanochelys trijuga* since 1977. "As adults I have 2 (originally 3) *coronata* females, 2 functional *coronata* males, 3 *thermalis* females and 1 (plus 1 nearly mature) *thermalis* male. From these collectively I have obtained nearly 160 eggs over the years with clutches per female varying from 1 to 6 annually (usually 3 clutches/year). Most of the egg production occurs from October to March which I understand corresponds to the natural season. One *thermalis* female, fresh from a habbiest in Dayton Ohio, produced 20 eggs (clutches of 3-5 eggs) in one season (34% of her body weight) and every one hatched. The first several clutches of *coronata* eggs were not fertilized, and subsequent viability of fertile eggs has been lower, but over half of the fertilized eggs have hatched. Incubation periods range from 77 days in *thermalis* eggs at constant 30C to 272 days in a *coronata* egg at constant 25 C. Hybrids (*coronata* male X *thermalis* female) would key out as *trijuga trijuga*; the head has creamy yellow to pale pinkish vermiculations. At present the laboratory contains assorted sizes of small and baby *trijuga*-- 33 *coronata*, 23 *thermalis* and 16 hybrids. There are 14 eggs incubating, and 3 females gravid.

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MARINE TURTLES IN ANDHRA PRADESH

Andhra Pradesh, the 277,000 km^2 state on the eastcoast bordering Orissa (north) and Tamil Nadu (south) has an approximately 970 km long coastline with a generally sandy bottom. Following recommendations made by the Government of India/FAO/UNDP project (FAO 1974, 1975), the Forest Department in Orissa initiated research and conservation programs for the pacific ridley (*Lepidochelys olivacea*) at the rookery at Gahirmatha in the Bhitarkanika Wildlife Sanctuary. Lazell (1980) reviewed developments regarding marine turtle work in India and mentions that "there is a burgeoning and extremely timely increase in research activity with respect to marine turtles in India and adjacent islands."

In Andhra Pradesh at present only very scattered and unconfirmed reports are available regarding nesting beaches and species occuring there. Apparently there is a proposal to survey the coastline in winter 1983 to determine the current status of sea turtles, and confirm fragmentary reports of nesting areas.

The common species, particularly in the northern half of the state, is the ridley (Kar and Bhaskar, 1982). While local fishermen using catamarans (tied log craft) catch ridleys incidentally during October to February, the proliferation of mechanised trawlers was probably responsible for the large catch in the '78-'79 season (Kar and Bhaskar, 1982). No substantial information is available on nesting records of leatherbacks (*Dermochelys coriacea*) but a female leatherback was killed during May 1979 near *Visakhapatnam* while attempting to nest (Dutt, 1979). The state owned Indira Gandhi Zoological Park at Visakhapatnam, Waltair, has been rearing stray specimens of green turtles (*Chelonia mydas*) and hawksbill turtles (*Eretmochelys imbricata*) collected from local fishermen, and has also hatched olive ridleys eggs.

In November ~~1979 Prof. S. Dutt of Andhra University~~ informed me that a female hawksbill brought by a fisherman was reared by the Marine Sciences department for a few days then released into the ocean. B.C.Choudhury is collecting information on nesting in the Godavari River mouth and the Krishna and Godavari deltas, and has confirmed that nesting occurs on the Orissa/Andhra border. There may be important arribada beaches particularly in the deltas which hold large mangrove tracts. This area, which comes within the Coringa Reserve Forest, was declared a sanctuary in July 1978, for the saltwater crocodile, *Crocodylus porosus* (Bustard and Choudhury, 1980).

The ridley nesting season in Andhra is from October to May. (Year round nesting of ridleys has been reported by Kar, 1980, 1982, and Kar and Bhaskar, 1982, from Gahirmatha in Orissa. Ridley nesting has been reported during June in the Gulf of Katch (Bhaskar, 1978); and from January to March on the Orissa coast (Annon, 1979); and at Visakhapatnam (Dutt, 1979).

In Telegu, sea turtle eggs are known as 'gullu' and the adults are called 'Samudram Thalbelu'; samudram turtle and is the general name for all species.

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RANGE EXTENSION FOR THE SPOTTED POND TURTLE Geoclemys hamiltoni.

On a visit to Assam last year, Stanley and Belinda Breedeen visited the Kaziranga National Park where they photographed a hardshell turtle caught moving in short grass not far from one of the numerous 'jheels' (ponds). These slides were sent to the Snake Park and were identified to be Geoclemys hamiltoni, the spotted pond turtle which has hitherto been unreported from this area This was further confirmed while examining specimens of this speci at the Zoological Survey of India in Calcutta (specimen no.18339) collected from Sonapur area in Kamrup district of Assam.

According to Smith (1931), the locality for this turtle is recorded as from Sind to Bengal in Northern India. Pritchard (1979) states that this species is known from the Ganges and Indus river systems in India and Pakistan.

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J.Vijaya
MCBT

VERNACULAR ORIGINS OF SPECIES NAMES

Prof E.O. Moll would like help with identifying the cource of turtle species names. Kachuga obviously comes from the Hindi 'kachugá' (turtle) but what about the following: thurgii, hurum, bealei, dhongoka, Batagur, Ocadia, Callagur, Hardella, Orlitia. These could have their origins in hindi, bengali or other north Indian languages. Any suggestions could be communicated to Prof E.O. Moll, c/o Madras Snake Park, Guindy Derr Park, Madras 600 022.

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ERRATA

I'd like to correct some inacurate observations in our previous issues.

a) Hamadryad 7:3 pg.14

'Kachuga tecta hatching at the Snake Park- the eggs were of Kachuga tentoria and not of Kachuga tecta. They were collected from the banks of the Rapti river in Uttar Pradesh. Kachuga tentoria were found to be common in the Ganges of Uttar Pradesh and Bihar.

b) Hamadryad 8:1 pg.22

The small male Hardella thurgi is 139 mm in carapace length and not 170 mm as mentioned.

c) Hamadryad 8:1 pg.23

In Moll and Legler (1970) the turtle mentioned is not Chrysemys picta but Pseudemys scripta. The juveniles hatch in their nest but remain within the nest chamber until the rains.

My thanks to Dr. Moll for bringing the last two errors to my notice and my regards to the readers.

J. Vijaya
MCBT

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Snake Scat Analysis

Since the Irula Co-operative started operations in December last, a few hundred cobras, kraits, Russels and saw scaled vipers have been housed with us for short periods. An important and most interesting result of this has been the collection of scats from wild caught snakes, the analysis of which will give us a greater insight into the feeding habits of these snakes and provide us with quantitative data to support our arguments about snakes being the best rodent controllers. A preliminary macroscopic investigation of 101 scat samples has so far been carried out with the help of an Irula tribal. Rodent remains are fairly easy to distinguish and identify, there being only about five species locally. Frog remains are often indistinguishable and hence any insect remains found in the scats of cobras, kraits or Russels vipers are assumed to have come from ingested frogs.

Snake	No. of scats analysed
A. Naja naja	34

Results:

Squirrel	- 2.9%
Bandicota bengalensis	47.0%
Tatera indica	20.5%
Amphiesma stolala	2.9%
Rattus meltada	- 8.8%
Frog/toad	- 5.8%
Unknown*	-2.9%
Frog/toad & R. meltada	- 2.9%

B. Vipera russelli — 4

Results:

T. indica	- 50%
B. bengalensis	- 25%
Unknown	- 25%

C. Bungarus caeruleus — 63

Results:

Snakes	- 34.8%
Mus booduga	- 4.7%
R. meltada	- 6.3%
B. bengalensis	- 3.1%
Frogs	- 1.5%
A. stolata & R. meltada	- 1.5%
Watersnake & - M. booduga	- 3.1%
R. meltada & M. booduga	- 1.5%
Watersnake & B. bengalensis	1.5%
Watersnake & bird	1.5%
A. stolata & M. booduga	1.5%
Watersnake & T. indica	1.5%
Frogs & Fish	1.5%
Unknown	34.9%

Summary

Consumption of rodents:

Cobra (Naja naja) - 80.6% (N 34)
Russels viper (V. russelli) - 75% (N 4)
Krait (B. caeruleus) - 15.6% (N 63)

* Require microscopic examination.

Rom Whitaker
&
Shekar Dattatri
ISCICS.

IUCN/SSC SNAKE GROUP

Newsletter No. 4

May 1983

Editors note: When you, gentle member of the Snake Specialist Group, get this, I will be in Malaysia kicking myself for not having put together a proper newsletter before leaving.

One of the things I must do on my return is to compile an index of snake work being done in India It will probably be all of three lines long. We will then make one for the world and if there are projects and persons you haven't written to me about, please do so.

I have written and am trying to get funds for a leaflet on pythons which would be distributed through nature clubs etc. We are also working out an ambitious King Cobra project- range, status, etc- and more on that soon.

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JAPAN

Letter from M. Toriba, Japan Snake Institute: As you stated in your letter of 14 Sept. 1982, a large amount of *Agkistrodon* is used for the wine industry and cooking in Japan. Not only Japanese mamushi, *A. blomhoffi blomhoffi* is collected, but also many continental forms are imported recently, which are *A.b. brevicaudus*, *A. caliginusus* and *A. saxatilis* from Korea and *A.b siniticus* from China. These mamushis are imported as live specimen for wine or cooking mainly, but baked ones are also imported for medical use. Actual numbers of them are not known. Additionally *Elaphe quadrivirgata* is used for cooking also in Japan. In Okinawa, Japan, the sea-snake *Laticauda semifasciata* are collected in the night when seasnakes are landing to lay eggs and baked for eating. *Laticauda laticaudata* also is collected in same fashion, although this species is less prefered than L. semifasciatus. Trimeresurus flavoviridis is used for skin goods or snake wine and collection of this snake is recommended by the government of Okinawa or Kagoshima prefecture, because this snake is too dangerous to the people.

Unfortunately we have no contacts in Hong Kong now. However we have a visit of a Chinese worker, Dr. Zhao Er-mi who stayed at our Institute about one month. He is one of leaders in herpetology of China and will provide you much informations you need. His address is as follows:

Prof. Zaho Er-mi
Chengdu Institute of Biology
Academia Sinica
Chengdu, Suchuan
People's Republic of China

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SOUTH AFRICA

From N.H.G Jacobsen, Nature Conservation Division, Pretoria
The Transvaal Division of Nature Conservation, are in the process of a reptile and amphibian survey in the Transvaal. This survey will be finalised towards the end of 1983 although basic ground work should be over by the end of the current year. The survey should be able to provide some answers as to whether there are any endangered snakes in the Province. Python sebae which is listed under Schedule II of CITES would fit into this category as its stronghold in the Republic is in the Transvaal and to a lesser extent Natal. Its range is diminishing owing to increasing population pressure and agricultural land cleari
However in parts it is still reasonably common and is of course protected by legislation. They appear to breed readily in captivity and several persons have managed to do this. Although P. saxuloides has been taken up under CITES, there still exists some reservation as to its taxonomic status and therefore at this stage we do not accept it as being specifically distinct from P.Sebae.

Once we have finished analyzing the survey I would be in a better position to be of assistance. Some of our burrowing species are exceedingly rare but whether this is due to current collecting methods or whether the snake is very rare is something still to be decided on. This includes such species as Xenocalamus transvaalensis.

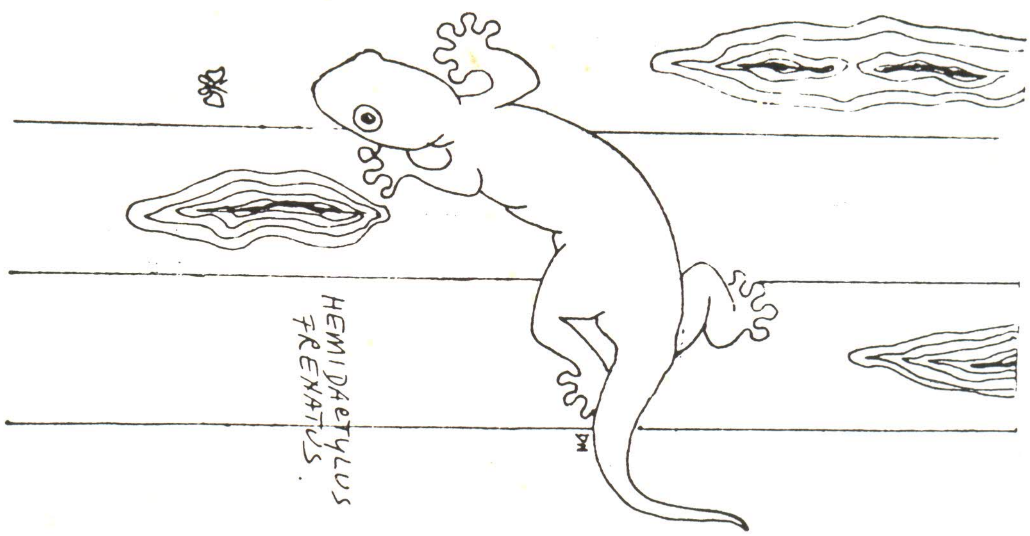
SUBSCRIPTION

Local : Rs. 10 annually

Foreign : $ 2 annually (surface)

$ 4 annually (air-mail)

Cheques should be made to the Madras Snake Park Trust



Cover drawing by Shekar Dattatri

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