

# Cobra

Volume 28

April - June 1997



*Quarterly Newsletter*  
*Of the Chennai Snake Park Trust*

CHENNAI SNAKE PARK TRUST\*  
BOARD OF TRUSTEES

Shri B. Vijayaraghavan. IAS (Retd.)  
Chairman  
Dr. R.J Ranjit Daniels  
Hon. Secretary  
Shri P.V. Laxminaryana  
Dr. V. Krishnamurthy  
Shri S. Subbarayalu Naidu IFS ( Retd.)  
Shri K. R. Venkatesan. IFS ( Retd.)  
Dr. A.V. Gopalakrishnan  
Shri M. Raghuraman  
Shri V.S. Raghavan  
Dr. T. Sundaramoorthy

Wildlife Warden, Chennai  
(Ms. Mita Banerjee IFS)

Jt. Director, Tourism Dept.,  
Government of Tamil Nadu.  
(Shri S.M. Sankaralingam)

Officer-in-Charge,  
Zoological Survey of India,  
Southern Regional Station,  
Chennai. (Dr. P.T. Cherian)

Head, Dept. of Zoology,  
Madras University.  
(Dr. Jayapaul Azariah)

Editorial Committee:

Dr. R.J. Ranjit Daniels,  
Editor.  
Shri. B. Vijayaraghavan  
Dr. V. Krishnamurthy  
Shri. V. Kalaiarasan

Cover

*Rana temporalis*

The Bronzed Frog is widespread in the Western Ghats and Sri Lanka. A species with versatile habits seasonally adaptive to aquatic, terrestrial and arboreal situations.

Photo : R.J. Ranjit Daniels.

\* Consequent on Madras being renamed as CHENNAI, The Madras Snake Park /Madras Snake Park Trust are now known as Chennai Snake Park/ Chennai Snake Park Trust

*"A naturalist is lucky in two respects. First, he enjoys every bit of the world about him and has a much more enriched life than someone who is not interested in nature. Second, he can indulge his hobby in any place at any time, for a naturalist will be fascinated to watch nature struggling to exist in the midst of a great city as well as observe its riotous splendour in a tropical forest. He can be equally interested in and moved by the great herds on the African plains or by the earwigs in his back garden."*

*Gerald Durrell*

*(The Amateur Naturalist)*

# Cobra

Volume 28

April - June 1997

## CONTENTS

- 1** A Field Guide to the Frogs and Toads of the Western Ghats, India : Part II - R J Ranjit Daniels
- 25** Status and Distribution of Reptiles in Wayanad, Kerala - Joseph Thomas, Sabu Jahas and P.S. Easa
- 31** Key to the identification of the species of *Micrixalus* Boulenger (Ranidae: Anura: Amphibia) from India. - C. Radhakrishnan
- 34** Occurrence of the Elliot's Shieldtail Snake (*Uropeltis ellioti*) in Anaikatty Hills, Nilgiri Biosphere Reserve - P.Kannan and S.Bhupathy
- 36** Occurrence of Brown Whip Snake (*Ahaetulla pulverulenta*) in Siruvani foot hills - C. Venkatraman, V. Gokula and Saravana Kumar
- 38** Random Harvest - B.Vijayaraghavan
- 40** Annual Report 1996-97
- 48** Reptile Species on Display at the Chennai Snake Park.

Cobra invites articles and short notes on reptiles and amphibians, their ecology, biology, natural history, conservation or other aspects. These may be of scientific or popular interest. Black and white photographs are also welcome.

Please send your contributions to the Editor, **Cobra**, Chennai Snake Park Trust, Rajbhavan Post, Chennai 600 022.



## A Field Guide to the Frogs and Toads of the Western Ghats, India :

### Part II\*

R J Ranjit Daniels

M S Swaminathan Research Foundation

3rd Cross Street, Taramani Institutional Area

Madras 600 113

#### Family Ranidae (True Frogs)

The family Ranidae has a worldwide distribution. More than 650 described species exist currently.

Ranids are generally smooth skinned with horizontal pupil. The skin is occasionally wrinkled or warty; pupil vertical. Species vary in habits from being aquatic to arboreal. Many species have well developed discs on digits as in treefrogs. Both direct (without a free-living tadpole stage) and indirect development are known. Tadpoles are grouped as Type IV.

There is considerable amount of taxonomic uncertainties in this large family of frogs. All species in the Western Ghats are in the subfamily Raninae. For the sake of convenience, all frogs in the genera/subgenera *Limnonectes*, *Tomopterna*, *Indirana* and *Occidozyga* are collectively treated as *Rana*. Where definitely known, however, the generic names in current use are given within parentheses.

\* Part I appeared in Cobra Vol. 27 (Jan - March 1997)



### *Micrixalus fuscus* (=herrei)

#### Dusky Torrent Frog

Adult Size : Very small to small.

Description of Adult: Extremely variable in colouration. Light tan-reddish, brown-black above with various amounts of black marbling and spotting. Ventrally yellow-tan with or without brown reticulations, especially on the throat. Thin dorso-lateral fold on sides white or black. A light yellowish stripe from anus to the inside joint of thigh always present. Feet bluish grey dorsally. Webbing variable; 3/4 to complete on feet. Fingers and toes with enlarged discs.

Habitat : Evergreen forests, moist deciduous and gallery forests.  
Commonly along streams.

Range : Endemic. Southern Western Ghats (Kerala, Tamilnadu and Karnataka).

Altitude : 200-750 m ASL.

### *Micrixalus gadgili*

#### Sabarigiri Torrent Frog

Adult Size : Very small.

Description of Adult: Pale to dark greyish with irregular darker markings. Occasionally spotted paler. A dark band from eyes along the sides. Limbs barred. Throat and breast marbled with sepia or brown. Sometimes entire under parts white. Tympanum fairly distinct. Dorsolateral folds absent. Digits with well-developed discs. Toes sparsely webbed. Skin smooth.

Habits : Similar to *Microhyla ornata*. Seeking shelter under damp leaf litter. Away from water.

Habitat : Evergreen forests.  
Range : Endemic. Sabarigiri (Kerala).

Altitude : 400-1100 m ASL.



*Micrixalus nudis*

**Pillai's Torrent Frog**

Adult Size : Very small.

Description of Adult: Brownish without any dorsal markings. A chocolate band from behind eye to shoulder. Dark brown band along sides. Limbs with cross bands. Ventrally white. Throat and chest marbled with brown and white. Dorsolateral glandular fold absent. Tympanum indistinct. Fingers and toes with enlarged discs. Webbing on toes 3/4.

Habitat : Streams in well shaded forests.

Range : Endemic. Southern Western Ghats.

Altitude : Up to 900 m ASL.

*Micrixalus opisthorodus*

**Pink-thighed Torrent Frog**

Adult Size : Small.

Description of Adult: Dark brown. Sides paler. Dark band through eyes. Under parts yellow with a series of dark mottled markings which are dense on throat rendering it darker. Lower sides of thighs pinkish. Anal region black. Limbs cross-barred. Dorsolateral folds present. Toes 3/4 webbed. The only species of *Micrixalus* with a papilla on tongue.

Habitat : Streams in sholas. Heard during the day.

Call : A sharp and loud 'trrik'.

Range : Endemic. Kerala and Tamilnadu. Common in the Nilgiris (Upper Bhavani).

Altitude : 1000 to over 2000 m ASL.



*Micrixalus saxicola*

**Black Torrent Frog**

Adult Size : Small.

Description of Adult: Slate-brown-black. Irregular markings on dorsal parts faintly visible. Pale whitish below. Throat and breast brownish. Fingers and toes with large discs. Dorsolateral folds absent. Hind limbs very long. Toes fully webbed.

Habits : A rather active species. Diurnal. Clinging to rocks above torrential water. Capable of flying leaps from rock to rock; emerging quickly whenever in water.

Call : A shrill insectlike chirp. 'Chi-ri-ri-ri'. Often faintly audible from beside rushing water.

Habitat : Torrential streams in evergreen forests.

Range : Endemic. Southern Western Ghats. Kerala and Dakshina Kannada (Karnataka).

Altitude : Up to 900 m ASL.

*Micrixalus silvaticus*

**Forest Torrent Frog**

Adult Size : Very small.

Description of Adult: Brown with rather faint darker markings. A broad chevron shaped mark between eyes. Limbs cross-barred. Brownish below. Resembles *M. thampii*. Tympanum indistinct. Dorsolateral folds incomplete. Toes less webbed (less than 1/2). Toe discs smaller. Legs shorter.

Habitat : Forests.

Range : Endemic. Tamilnadu and Kerala.

Altitude : More than 2000 m ASL (Ootacomund).

### *Micrixalus thampii*

#### Thampi's Torrent Frog

Adult Size : Very small.

Description of Adult: Greyish above. Sides black. Hind limbs with dark bands. Hind surface of thigh with a white stripe extending to about half the length (as against full in *M. fuscus*). White below, marbled on breast. A clear white line through mid calf. Similar to *M. fuscus*. Snout shorter and rounded. Toes 1/2-3/4 webbed (full in *M. fuscus*). Tympanum distinct; less than 1/2 diameter of eye. Digits with discs. Discs with deep circum-marginal groove.

Habitat : Streams.

Range : Endemic. Silent Valley (Kerala).

Altitude : 900 m ASL.

### *Nannobatrachus (Nyctibatrachus) beddomii (=anamallaiensis)*

#### Beddome's Dwarf Frog

Adult Size : Very small.

Description of Adult: Brown with black markings. Throat and abdomen greyish. A pale bluish white streak behind and below eyes and an irregular series of similarly coloured spots along sides of neck and torso. A tan triangular patch on snout between eyes. Limbs boldly barred with dark cross bands. Toes 1/4 webbed. Toes with small discs. Tympanum indistinct or absent.

Habits : Keeps under stones and leaves. Within crevices on wet earth banks overhanging water. Frequently calls on overcast days.

Call : A shrill and drawn insect-like 'brreep'.

Habitat : Evergreen and secondary forests. Roadsides within estates and grass-covered hillsides.

Range : Endemic. Kanyakumari, southwestern Tamilnadu and Kerala. Not recorded north of the Palghat gap.

Altitude : 200-900 m ASL.

### *Nannobatrachus (Nyctibatrachus) kempholeyensis*

#### Rao's Dwarf Frog

Adult Size : Very small.

Description of Adult: Uniformly deep bronze or black. Throat in males yellowish. Under parts of females finely marbled. Hand white. Foot darkish. Eyes red and striking. Stout and toadlike in general appearance. Skin without folds. Limbs stouter than *N. beddomii*. Males have large external vocal sacs.

Habitat : Near water falls (under rocks).

Range : Endemic. Kemphole (Hassan district, Karnataka).

### *Nyctibatrachus aliciae*

#### Alice's Wrinkled Frog

Adult Size : Very small to small.

Description of Adult: Dorsally dark brown with light cream coloured blotches. Blotches coalesce into 2 broad broken stripes extending behind eyes to the groin. Another diffuse broad cream coloured band extends mid-dorsally, broken up with darker brown. A light triangular spot in area between eyes. A light blotch above lip on either sides. Limbs barred with brown and cream. Hands entirely dark brown. Belly white. Throat with dark markings. Squat frog. Tympanum not visible. Skin folds present. Toes 3/4 webbed. Discs well developed on both fingers and toes. Femoral glands in males weak.

Habits : Nocturnal. Under leaves in water seepage.

Call : Musical and loud. Bird-like. 'phe-pheow' in quick succession. Followed by a series of 'pit-tit-tit-tit' resembling that of *R. cyanophlyctis*.

Habitat : Wet floors within evergreen and secondary forests. Streams.

Range : Endemic. Southern Kerala (Ponmudi Hills) and Dakshina Kannada (Karnataka).

Altitude : Up to 840 m ASL.



*Nyctibatrachus deccanensis* (=pygmaeus)

**Pygmy Wrinkled Frog**

Adult Size : Very small.

Description of Adult: Lacks the dorsolateral pale bands. Brown below. Skin smooth dorsally. Dorsolateral folds irregular. Toes 1/2-2/3 webbed. Fingers and toes lack the enlarged discs.

Range : Endemic. Anamalai Hills (Kerala).

*Nyctibatrachus humayuni*

**Humayun's Wrinkled Frog**

Adult Size : Medium-large.

Description of Adult: Grey-black. Whitish below. Large and stocky with powerful limbs. Adult size exceeding 8.0 cm. Thick skin with numerous folds. Fingers and toes with large discs. The discs bear distinct circum-marginal grooves dividing the discs into upper and lower faces. Tympanum obscure. Male femoral glands present.

Habits : Aquatic preferring rock crevices.

Call : Loud, occasional 'wok; wok'.

Habitat : Evergreen forests and in well watered plantations.

Range : Endemic. Northern Western Ghats. Northwards from Dakshina Kannada till about Mahabaleshwar (Maharashtra).

Altitude : Around 600-700 m ASL.



*Nyctibatrachus major*

**Large Wrinkled Frog**

Adult Size : Medium.

Description of Adult: Yellow-tan to brown or black. Occasionally with broad whitish lateral bands (juveniles). Limbs cross barred. White below with or without marblings on throat. Tympanum indistinct. Skin folds numerous. Fingers and toes with large discs. Toes 2/3-3/4 webbed. Male femoral glands well developed.

Habits : Nocturnal. Aquatic.

Call : Musical. 'Tou' or 'ou-wink'. Occasional.

Habitat : Evergreen to secondary forests. Streams.

Range : Endemic. Southern Western Ghats extending northwards to Dakshina Kannada (Karnataka).

Altitude : Up to 900 m ASL.

*Nyctibatrachus minor*

**Ponmudi Hills Wrinkled Frog**

Adult Size : Very small.

Description of adult: Light tan, buff or chocolate. Brown on anterior half of body. Dark brown markings surrounding most of the skin folds. A pronounced dark line between nostril and eye. A dark line between the eyes. A thin white band along the sides. Limbs barred. Hind limbs occasionally uniformly dark. White below. Fingers and toes with well-developed discs. Webbing on feet absent. A distinct dorsolateral fold present. Male femoral glands absent.

Habitat : Evergreen forests.

Range : Endemic. Ponmudi Hills (Kerala).

Altitude : 310-375 m ASL.



Cobra, Vol. 28. 1997

*Nyctibatrachus sanctipalustris*

**Brahmagiri Wrinkled Frog**

Adult Size : Small.

Description of Adult: Toes 1/2 webbed. Fingers and toes with well-developed discs. Skin with closely set folds. Distinguished from *N. sylvaticus* by the absence of canthus rostralis.

Range : Endemic. Brahmagiri Hills (Kodagu district, Karnataka).

*Nyctibatrachus sylvaticus*

**Rao's Wrinkled Frog**

Adult Size : Small.

Description of Adult: Brown above. Limbs faintly cross barred. White below. Lower lip barred. Slender body. Tympanum partly visible. First finger shorter than second. Hind limbs long. Toes 1/2 webbed. Fingers and toes dilated into discs. Inner metatarsal tubercle elongate and spade-like. Eyes more lateral. Canthus rostralis present giving a more typical 'frog look'.

Range : Endemic. Kemphole and Sakleshpur (Hassan district, Karnataka).

*Rana (Indirana) beddomi*

**Beddome's Leaping Frog**

Adult Size: Small to medium.

Description of Adult: Fawn-olive-black. Sometimes bearing darker bands and spots. Pale mid-dorsal stripe frequently present. Dark brown-black line through eyes and tympanum. Limbs cross barred. White below.

Fingers and toes with well-developed discs. First finger equal to second in length. Tympanum 2/3 eye (usually larger in males). Webbing on toes extend to the lower 1/2 of fourth toe. Habits: Active. Given to powerful and erratic leaps; taking off and nose diving into the leaf litter.

Habitat : Secondary and dense evergreen forests. Stream banks.

Range : Endemic. Entire Western Ghats as far north as Mahabaleshwar (Maharashtra).

Altitude : Up to over 1000 m ASL.



Cobra, Vol. 28. 1997

Remarks : Tadpoles occur on slimy rock faces in forest edges. Transparent or spotted. Generally well camouflaged. Skitter along the rock face enmasse on disturbance. Tail thrice as long as head and body.

*Rana (Indirana) brachytarsus*

**Shortlegged Leaping Frog**

Adult Size : Small. Colouration similar to *R. beddomi*. Generally darker appearing grey.

Generally similar to *R. beddomi*. Smaller size. More folded dorsal skin. Smaller tympanum (< 2/3 diameter of eye). Discs on fingers and toes smaller. Web between toes extends to the upper half of fourth toe.

Habitat : Evergreen, moist deciduous, secondary and open forests. Generally away from water.

Range : Endemic. Kerala.

Altitude : Up to 950 m ASL.

*Rana (Indirana) diplosticta*

**Spotted Leaping Frog**

Adult Size : Very small.

Description of Adult: Reddish brown with black streak through the eyes; the portion of eyes above this greenish gold. Sides occasionally blotched. Light brown ventrally with dark brown reticulations. Limbs cross-barred. A black lumbar spot dorsal and anterior to the hind limbs always present. Generally similar to *R. leptodactyla*. Toes less than 1/4 webbed. Tympanum 1/2 diameter of eye. Breeding males with 5 large and sharp spines on the mid-surface of first finger. Fingers and toes with enlarged discs.

Habitat : Evergreen forests.

Range : Endemic. Kerala and Tamilnadu (Srivilliputtur).

Altitude : Up to 950 m ASL.



*Rana (Indirana) leithii*

**Leith's Leaping Frog**

Adult Size : Small.

Description of Adult: Brown with small black spots. Limbs with transverse bands. White below. Throat mottled brown. A golden patch on back occasionally present. Skin on back with longitudinal warts. Strong fold from eye to shoulder. First finger shorter than the second. Tympanum 2/3 diameter of eye. Toes 2/3 webbed. Finger and toes with enlarged discs.

Habits : Under stones and litter. Diurnal.

Habitat : Forests.

Range : Endemic. Surat Dangs to central Kerala. Commoner in the north.

Remark : The tadpoles are similar in habits to that of *R. beddomi*. Tail 2 1/2 times the length of head and body.

*Rana (Indirana) leptodactyla*

**Thinlegged Leaping Frog**

Adult Size : Small.

Description of Adult: Olive-brown above mottled with darker brown. A more or less distinct sub-triangular spot between eyes often demarcated in the front by a paler cross bar. Black temporal spot present. Pale mid-dorsal stripe often present. Limbs cross-banded. Snout spotted with brown. White below. Fingers and toes with enlarged discs. First finger shorter than second. Tympanum 2/3 diameter of eye. Toes 1/4 webbed.

Habitat : Forests.

Range : Endemic. Kerala, Tamilnadu and Karnataka.



*Rana (Indirana) phrynoderma*

**Rough-skinned Leaping Frog**

Adult Size : Small.

Description of Adult: Tympanum faintly marked. Head and back with large warts. Fingers and toes with enlarged discs.

Range : Endemic. Anamalais.

*Rana (Indirana) semipalmata*

**Brown Leaping Frog**

Adult Size : Small.

Description of Adult: Brown above. Black line through eyes. Limbs cross barred. 'U' shaped broken stripe on back. White below. Throat with brown marbling. Tympanum as large as eye. First finger longer than second. Fingers and toes with discs. Toes 1/2 webbed. Webbing on 5th toe does not reach disc. Nostril closer to the eye than tip of snout.

Habits : Arboreal.

Call : Described as resembling the 'rapid drumming of the finger nails on a thin tin plate (8-20 strokes)'.

Range : Endemic. Hills of Tamilnadu and Kerala.

Altitude : Up to 2000 m ASL.

*Rana (Indirana) tenuilingua*

**Narrow-tongued Leaping Frog**

Adult Size : Very small.

Description of Adult : Pale brown with dark band through eye. Similar to *R. sauriceps*. Fingers and toes with enlarged discs. Skin on back with 6-7 fine longitudinal folds.

Range : Endemic. Kemphole (Karnataka).

*Rana (Limnonectes) brevipalmata***Short-webbed Frog**

Adult Size : Small.

Description of Adult: Colour pattern similar to *R. limnocharis*. Presence of pale mid-dorsal stripe rather frequent. Hind limbs longer than *R. limnocharis*. Web between toes less developed. Metatarsal tubercle larger. Tympanum less than 1/2 diameter of eye.

Habitat : Banks of streams in forests.

Range : Endemic. Tamilnadu (Nilgiris) and Kerala.

Altitude : 600-700 m ASL.

*Rana (Limnonectes) crassa***Jerdon's Bull Frog**

Adult Size : Large.

Description of Adult: Generally confusable with *R. tigerina*. Differs from *tigerina* by darker colouration and being more spotted than streaked. White below. Breeding individuals do not develop the bright yellow as that in *tigerina*. Mid-dorsal stripe less striking; more often absent than present. Juveniles show traces of green on head and sides; darker than juvenile *tigerina*. Smaller than *tigerina*. Skin more warty (vs. thin long folds). Snout and limbs (especially hind) much shorter. Metatarsal tubercle much larger.

Habits : More of an active forager. Rests exposed along fields and on edge of water within excavated shallow depressions.

Call : A loud and sharp 'paka-paka-pak' or 'paka-paka' in quick succession. Distinct and strikingly different from that of *tigerina*.

Habitat : Urban-cultivation and scrub. Large tanks and reservoirs.

Range : Tamilnadu. Foot hills of Kalakkadu. All India. Srilanka.

Altitude : up to about 250 m ASL.

*Rana (Limnonectes) keralensis (=verrucosa)***Verrucose Frog**

Adult Size : Small to medium.

Description of Adult: Ochraceous-black. Most frequent colour pattern is similar to *R. limnocharis*. Black markings on back and limbs variable. A broad pale mid-dorsal stripe frequently present. A gold-yellow diamond-shaped spot on midback almost always present. White below. Rear sides of thighs marbled yellow and chocolate. Stocky. Dorsal skin folded and warty. Snout rather short exaggerating the eyes in profile. Tympanum as large as eye. Toes almost fully webbed. First finger longer than second.

Habits : Stays near water but does not stay underwater for long. Rests on rocks well camouflaged beside streams. Juveniles rest in shallow water with just the eyes and snout showing.

Call : Aggressive. 'Crok-crok-crok....' (9-11 times) in quick succession. Lower pitched than *R. limnocharis*.

Habitat : Hill streams, roadside seepage and rain water in rock quarries. Betelnut plantations.

Range : Patchily distributed. Western Ghats of Tamilnadu, Kerala and Karnataka. Near Bombay. Surat Dangs. Javadi Hills and Shevroys (Eastern Ghats). West Bengal and Andaman Islands.

Altitude : Up to over 2000 m ASL.

Remarks : This species has a very interesting pattern of distribution. Its occurrence in eastern India and the Andamans needs authentication. The recent report by Dr R S Pillai of its occurrence in the Andamans is based on a single specimen collected in 1972. I have seen a specimen from West Bengal. It is certainly different from that in the Western Ghats.



*Rana (Limnonectes) limnocharis*

**Streaked or Paddy Field or Cricket Frog**

Adult Size : Small-medium.

Description of Adult: Olive grey-brown with black spots and streaks. A pale mid-dorsal stripe often present. White under sides. Black throat in breeding males. Slender. Long pointed snout. Toes with 1/2 webbing. Dorsal skin with slender folds. First finger longer than second. Tympanum 2/3 diameter of eye.

Habits : Rather terrestrial. Frequently in grass.

Call : Aggressive. 'Creak; creaka-creaka-creaka....' in quick series. In chorus after rains and around fields.

Habitat : Urban. Cultivation to dense forests. Streams.

Range : Entire Western Ghats. Indian subcontinent. Southeast Asia till Philippines.

Altitude : Sea level up to 2000 m ASL.

*Rana (Limnonectes) murthii*

**Murthy's Frog**

Adult Size : Small.

Description of Adult: Dark brown with irregular black markings. Dark line through hind margin of eye. 'V' mark on back in line with the shoulders. Mid-dorsal pale stripe may be present. Hind part of thigh variegated. Limbs barred. White below. Brownish on throat and breast. Overall appearance similar to *R. limnocharis* and *R. keralensis*. Toes 1/2 webbed. First and second fingers almost equal in length. Tympanum distinct (2/3 eye). Hind limbs stout. Males bear 2 patches of papilla on breast.

Habitat : Streams on forest edge. Wet leaf litter.

Range : Endemic. Tamilnadu (Gudalur) and Karnataka (Dakshina Kannada).

Altitude : Up to 900 m ASL.



*Rana (Limnonectes) nilagirica*

**Nilgiri Cricket Frog**

Adult Size : Small to medium.

Description of Adult: Differs from *R. limnocharis* only by the longer hind limbs.

Range : Endemic. Nilgiris.

*Rana (Limnonectes) parambikulamana*

**Rao's Parambikulam Frog**

Adult Size : Small.

Description of Adult: Yellow-brown above, deeper on head and shoulders. Pale mid-dorsal stripe present. Broad white band from eye to shoulder. Limbs barred. White underside. Lips barred. Overall appearance similar to *R. tigerina* and *R. limnocharis*. Tympanum indistinct. Fingers short. An inverted 'U' shaped fold on back. Toes 1/4 webbed. Metatarsal tubercle large.

Habitat : Forests.

Range : Endemic. Parambikulam (Kerala).

Remarks : This species has been described by C R N Rao on the basis of a single specimen collected by him.

*Rana (Limnonectes) rufescens*

**Rufescent Frog**

Adult Size : Small.

Description of Adult: Brown with black and red markings. Back occasionally wholly brick red. Generally resembles *R. limnocharis*. Distinguished by large inner metatarsal tubercle. Skin with numerous warts.

Habitat : Forests.

Range : Endemic. Entire Western Ghats.



**Rana (Limnonectes) sauriceps**

**Rao's Kodagu Frog**

Adult Size : Small.

Description of Adult: Chocolate red. Sides darker. Fore arm and tarsus faintly barred. Throat and chest yellow. Abdomen brown. Under surface of thighs pale orange. Lips barred.

Diamond-shaped pit dorsally on snout. Tympanum nearly as large as eye. Long hind limbs. Toes nearly 1/2 webbed.

Range : Endemic. Kodagu (Karnataka).

**Rana (Limnonectes) syhadrensis**

**Tiny Cricket Frog**

Adult Size : Very small.

Description of Adult: Olive to brown-reddish with or without black markings on back. Pale mid-dorsal stripe frequently present. Thighs barred. Upper lip white. Black throat in breeding males. Generally similar to *R. limnocharis* although much smaller. The smallest of adult ranids in the Western Ghats. Hind limbs short. First finger hardly extends beyond the second. Toes slightly webbed (less than *limnocharis*).

Call : Described as resembling a 'bleating sheep'. Rather different from that of *R. limnocharis*.

Habitat : Grass in roadside channels and around rain water pools.

Range : Karnataka and Goa. Widespread in peninsular India.

**Rana (Limnonectes) tigerina**

**Indian Bull Frog**

Adult Size : Large. The largest Indian frog.

Description of Adult: Yellow to olive green (the green disappearing with age) with black spots and stripes. Pale and broad lateral and mid-dorsal bands frequently present. Pale limbs with bold bands. White underparts. Males turn yellow during breeding. Vocal sacs cobalt blue. Large size. Long snout with wide gape. Prominent tympanum and eyes. Long and powerful limbs. Toes almost fully webbed. Metatarsal tubercle small. Skin on back longitudinally folded.



Habits : Solitary. Sedentary resting for long in the same place and day after day. Pounce feeds (vs. active search).

Call : A loud and low pitched 'bong' or 'oong-awang'.

Habitat : Open forests to dense forests. River and stream beds. Hill cultivation and suburbs. Along hill roads and channels.

Range : Entire Western Ghats. Indian subcontinent. Srilanka. Southeast Asia. China.

Altitude : Up to 2000 m ASL.

Remarks : Tadpoles are olive-brown with black streaks turning green towards metamorphosis. At this stage, tadpoles tend to be solitary inhabiting small rock pools along hill streams.

**Rana (Occidozyga) cyanophlyctis**

**Water Skipper or Skipper Frog**

Adult Size : Medium.

Description of Adult: Brown-olive (sometimes greenish or black) with distinct black spots on back and limbs. White below. A white stripe along sides and on rear side of thighs distinct. Pale mid- dorsal stripe absent. Skin generally smooth. Tympanum distinct. Toes fully webbed. Eyes rather dorsally placed. Differs from *R. hexadactyla* in having thinner thighs. The first finger not longer than the second.

Habits : Aquatic. Floats on surface with all four limbs up often folded close to the body; a rather characteristic posture of the species. Skips on surface when disturbed.

Call : A sharp 'pit-ti-ti-ti-ti-ti-tit' followed by occasional 'prik..prik'. Aggressive and territorial.

Habitat : Urban to hill streams. Just any place where there is water.

Range : Entire Western Ghats. All India. Srilanka. Southeast Asia. Arabia.

Altitude : From sea level to the highest hills. Over 2000 m ASL.



***Rana (Occidozyga) hexadactyla***

**Indian Pond or Green Frog**

Adult Size : Large.

Description of Adult: Blackish olive to grass green. Back generally devoid of markings except for the pale-yellow mid-dorsal line which is frequently present. White-yellow below. Juveniles are blackish with pale stripes along the sides. Confusable with *R. cyanophlyctis*. Skin smooth. First finger extends slightly beyond. Toes fully webbed. A small though distinct inner metatarsal tubercle present.

Habits : Aquatic. Rests amongst aquatic plants with only the head above the surface of water. Adults tend to feed on leaves of aquatic plants.

Call : An abrupt low pitched 'pui-ta-tak'. Somewhat similar to the first phrase of *R. cyanophlyctis*.

Habitat : Rice fields, stagnant water with dense submerged and floating vegetation. Pools beside hill streams. Srilanka.

Range : Entire Western Ghats up to Bombay along the coast. Peninsular and Eastern India.

Altitude : Up to 700 m ASL.

Remarks : The specimens from the Western Ghats are generally black or olive in colour with stripes and never as green as those in the eastern plains of the peninsula. They are also less vegetarian in diet.

***Rana aurantiaca (=bhagmandlensis)***

**Golden Frog**

Adult Size : Small.

Description of Adult: Rather similar to young *R. temporalis*. Orange-bronze dorsally with dark sides. Whitish below. Finger tips black. Tympanum 1/2 diameter of eye (smaller than *R. temporalis*). Finger and



toe tips dilated into small discs. Males with a dark pigmented humeral gland close to the 'armpit'.

Habits : Rather similar to *R. temporalis*. Sometimes ascending low plants.

Call : Rather distinctly insect-like chirp. 'Pti-ri-ri-ri...' or 'chick-chick-chick'.

Habitat : Streams in evergreen forests.

Range : Western Ghats of Kerala and Karnataka as far north as Agumbe. Srilanka.

Altitude : Up to 780 m ASL.

***Rana curtipes***

**Bi-coloured Frog**

Adult Size : Medium.

Description of Adult: Olive-ochraceous-bright golden yellow above. Jet black on sides, limbs and below. A reddish parotoid patch may or may not be visible. Occasional dark spots on back. Legs slender and weak. Tips of fingers and toes dilated into small discs. Toes entirely webbed. Tympanum distinct.

Habits : More toadlike. Often seen away from water. Juveniles aggregate beside streams at metamorphosis.

Call : A rather plain and weak 'wut, wut' or 'thrub, thrub' in chorus.

Habitat : Streams, forests and plantations.

Range : Endemic. Kerala, Tamilnadu and Karnataka (up to Uttara Kannada).

Altitude : Up to 1000 m ASL.

Remarks : Tadpoles are large in size and olive brown to jet black with a large oval parotoid patch on either side. (The largest tadpoles in the Western Ghats). Inhabit streams, moving about in large tightly packed shoals.



***Rana intermedius***

**Rao's Sakleshpur Frog**

Adult Size : Small.

Description of Adult: Brown. Sides darker. Limbs faintly cross barred. Abdomen and throat with irregular dark patches. Yellowish under thighs; marbled along the margins. General appearance as *R. temporalis*, *aurantiaca* and *malabarica*. Tympanum distinct. Hind legs long. Finger and toes with discs.

Range : Endemic. Sakleshpur (Hassan, Karnataka).

***Rana malabarica***

**Fungoid Frog**

Adult Size : Medium.

Description of Adult: Brick red to bright crimson dorsally with black sides, limbs and underparts. White marbling on sides and limbs variable. Occasional black markings on back. Skin smooth. A thick fold from tympanum to groin. Toes fully webbed. Tips of fingers and toes swollen but not enlarged into discs.

Habits : More terrestrial in habits. Staying within holes and crevices in damp areas. Nocturnal.

Call : Described as 'wak-wak-wak'.

Habitat : Forests, cultivation and homesteads.

Range : Entire Western Ghats. Madhya Pradesh.

Altitude : Sea level to about 2000 m ASL.



***Rana temporalis***

**Bronzed Frog**

Adult Size : Medium.

Description of Adult: Bronze to brown-tan with deep chocolate sides (the distinction disappearing with age). A pale band along sides distinct in young frogs. Legs cross barred with brown. Whitish below. Skin smooth. A distinct glandular fold from tympanum over shoulder to groin. Tympanum distinct. Tips of fingers and toes dilated into discs. Toes almost fully webbed.

Habits : Aquatic to arboreal, varying with the local weather conditions. Mostly preferring the edge of water resting partly immersed.

Call : A loud and clear pulsating 'wak'. Males calling from shallow water sound more like a resonating bell. Occasionally a soft prelude 'too-too-too' followed by the normal 'wak'.

Habitat : Streams and channels in forests and cultivation.

Range : Endemic. Southern Western Ghats till as far as Karnataka.

Altitude : Up to 2000 m ASL.

***Rana travancorica***

**Travancore Frog**

Adult Size : Small.

Description of Adult: Dark grey above obscurely spotted with a darker shade. A pale cross bar between eyes sometimes visible. Throat and lower surfaces of thighs profusely clouded with brown. No glandular lateral fold. Tympanum hidden. Fingers short. First not extending as far as second. Hind limbs stout. Toes with distinct, though small discs; 3/4 webbed. Dorsal skin corrugated with dark irregular longitudinal folds.

Range : Endemic. Shenkottah (Tamilnadu).



*Rana (Tomopterna) breviceps*

**Indian Burrowing Frog**

Adult Size : Small-medium.

Description of Adult: Pale to dark brown-grey above. Occasionally spotted with yellow or white. White below. Throat darker. Yellowish mid-dorsal line often present. Pale lateral bands and snout. Stocky build. Blunt nose. Metatarsal tubercle well developed. Tympanum 2/3 diameter of eye. First finger much longer than second.

Habits : Fossorial.

Call : A loud 'awang'.

Habitat : Open forests and agricultural areas.

Range : Western Ghats north of c. 17° N. Bombay. Indian subcontinent.

*Rana (Tomopterna) dobsoni*

**Dobson's Burrowing Frog**

Adult Size : Small-medium.

Description of Adult: Similar to *R. breviceps*. Longer snout. Less webbing between toes.

Range : Karnataka, Andhra Pradesh and Tamilnadu.

*Rana (Tomopterna) leucorhynchus*

**Rao's Burrowing Frog**

Adult Size : Small.

Description of Adult: Pale brown above with a broad white band on snout extending till anterior margin of eyes. Dark 'W' shaped band between eyes. White between eyes and shoulders. 'U' shaped mark on sides of body. Limbs cross-barred. White below. Undersides of thighs yellow. Foot chocolate brown. Toes short; 1/3 webbed. Metatarsal tubercle large.



Habitat : Forests.

Range : Endemic. Kodagu (Karnataka).

Remarks : This species has been validated by a single specimen collected and described by C R N Rao in 1937.

*Rana (Tomopterna) rolandae*

**Southern Burrowing Frog**

Adult Size : Small.

Description of Adult : Olive-brown with dark symmetric markings. Small red spots on back. Thin, pale mid-dorsal line often present. Black throat in breeding males. White underparts. Overall smooth and soft. Stubby snout. Inner metatarsal tubercles well developed. A distinct tubercle at the tibio-tarsal articulation.

Habits : Fossorial and nocturnal.

Call : Normally a shrill 'trrik'. An incessant and long drawn 'brreep, brreep' in chorus at breeding.

Range : Tamilnadu and Kerala (Trivandrum). Widespread in the eastern plains of peninsular India. Srilanka.

(To be continued)



## Status and Distribution of Reptiles in Wayanad, Kerala

Joseph Thomas, Sabu Jahas and P.S. Easa

Division of Wildlife Biology

Kerala Forest Research Institute

Peechi - 680 653, Kerala

### Introduction

Reptiles of Western Ghats are least documented compared to other classes of vertebrates. Smith's Fauna Volumes (1933, 1935 & 1943) still remain to be the authentic record of reptiles in this faunistically diverse region. Beddome (1962) published his information on the reptiles of South India. Though there had been a few attempts to list reptiles in some parts of Kerala (Inger and Shaffer, 1984; Inger *et. al.*, 1984; Radhakrishnan, 1996) works of Beddome (1876 & 1880) and Wall (1918) are the only published information on reptiles of Wayanad. This paper lists the reptiles of Wayanad along with details of their distribution and habitat particulars based on survey conducted in Wayanad from July, 1994 to July, 1996. An attempt is also made to assess the status of each species in this region.

### Study Area

Wayanad forms part of Nilgiri Biosphere Reserve contiguous with Bandipur and Nagarhole of Karnataka and Mudumalai of Tamil Nadu. The total extent of Wayanad forest is about 1200 Km<sup>2</sup> of which 344 Km<sup>2</sup> form the Wayanad Wildlife Sanctuary. The Wayanad plateau is at an elevation of 900 - 1600 m. The eastern and western slopes of Wayanad



plateau differ in topography and climate. The northern part with an elevation of 700-1600 m differ from the southwestern slope of uneven peaks ranging from 1000 - 2000 m. The vegetation includes evergreen forests confined to the northern parts and moist and dry deciduous forests (MDF&DDF). The latter is mostly in the areas bordering adjacent States. The natural forests are intervened with bamboo thickets and plantations of teak and eucalypts (PLN). The eastward flowing Kabani with a number of tributaries drain the area.

### Method

All habitat types in Wayanad were surveyed for Total Species Inventorying during summer and rainy seasons making observations and collections of reptiles. Attempts were also made for an assessment of their abundance in different habitats by recording the number of each species in different habitats taking care to spend time in proportion to the total area. Species were classified into different status categories based on their abundance and distribution in Wayanad. A species is considered common if it is numerous and widely distributed. A rare species is less in number but with wider or restricted distribution. A species is considered very rare if they are few in number and restricted in their distribution. Status of certain species are indeterminate because only one specimen was available from the area during the survey. Smith (1933, 1935 & 1943), Murthy (1990) and Tikadar and Sharma (1992) were referred for identification. The collected specimens were preserved in 10% formaldehyde and are kept in the museum of Wildlife Biology Division of Kerala Forest Research Institute, Peechi.

### Results and Discussion

Forty four species of reptiles under fourteen families were recorded from Wayanad (Table I). Of these, twelve species viz. *Cnemaspis waynadenensis*, *C. beddomei*, *Calotes grandisquamis*, *C. nemoricola*, *C. rouxi*, *Draco dussumieri*, *Mabuya allapallensis*, *Ristella beddomei*, *Sincella laterimaculatum*, *Rhinophis sanguineus*, *Amphiesma monticola*, *Callophis bibroni* and *Trimeresurus malabaricus* are endemic to Western Ghats (Swengel, 1990 & 1991). *Crocodylus palustris*, *Varanus bengalensis*, *Lissemys punctata*, *Python molurus* are considered to be endangered.



Species such as *C. palustris* was recorded only from Kabani river and its tributary, Nulpuzha. *Cnemaspis beddomei* and *Callophis bibroni* were few and distributed in Kuruva. *Hemidactylus triedrus*, *C. nemoricola* and *Chamaeleon zeylanicus* were also recorded only from Kuruva area. *Mabuya allapallensis* was abundant but restricted to Nalloor vayal near Muthanga. This is a new record for Kerala. *Calotes grandisquamis* and *Ophiophagus hannah* were observed in Titunelli, the largest contiguous patch of evergreen forest in the area. *Cnemaspis gracilis* though widely distributed were few in number. *Cnemaspis wynadensis*, *Calotes calotes*, *Ristella beddomei*, *Varanus bengalensis* and *Boiga trigonata* were recorded from all the places. However, their numbers were observed to be very low.

Wall (1918) listed 43 species of snakes from Nilgiris and Wayanad, a majority of which were from Wayanad region. Most of these were mentioned to be very common in the area as evident from the number of specimens he had collected. The present survey record of twenty species of snakes indicate the possibility of at least twenty species missing in Wayanad region. The present rarity of species could be most probably due to increase in number of settlements and human disturbance. However, since there was no serious attempt to locate the subterranean Uropeltids and Typhlops, no conclusions could be drawn on the status of these groups. Beddome (1962), Smith (1933, 1935 & 1943) and Tikader and Sharma (1992) mention only few reptiles specifically from the area. The present survey indicates a species of Crocodile, two species of turtles, twenty one species of lizards and twenty species of snakes in Wayanad. Occurrence of *Crocodylus palustris*, *Hemidactylus triedrus*, *Calotes nemoricola*, *Chamaeleon zeylanicus*, *Ristella laterimaculatum* and *Mabuya allapallensis* need special mention since these are reported for the first time from Wayanad.

#### Acknowledgment

The authors are grateful to the Biosphere Reserve wing of the Ministry of Environment and Forest, Government of India for financial assistance, the Staff of Kerala Forest Department for extending all support during the survey and Shri C. Radhakrishnan of Zoological Survey of India, Western Ghat Regional Station for helping us in reconfirming the identification.



Table I. List of Reptiles in Wayanad

| Species Name                                    | Habitat        | Status    |
|---|----------------|-----------|
| <b>Family : Crocodylidae</b>                    |                |           |
| 1. <i>Crocodylus palustris</i> Lesson           | Riverine       | Very rare |
| <b>Family : Emydidae</b>                        |                |           |
| 2. <i>Melanochelys trijuga</i> (Schweiger)      | Rivers, ponds  | Common    |
| <b>Family : Testudinidae</b>                    |                |           |
| 3. <i>Lissemys punctata</i> (Lacepede)          | Paddy field    | Common    |
| <b>Family : Gekkonidae</b>                      |                |           |
| 4. <i>Cnemaspis beddomei</i> (Theobald)         | MDF            | Very rare |
| 5. <i>C. gracilis</i> (Beddome)                 | MDF            | Rare      |
| 6. <i>C. kandiana</i> (Kelart)                  | MDF, PLN       | Common    |
| 7. <i>C. wynadensis</i> (Beddome)               | MDF, PLN, DDF  | Rare      |
| 8. <i>Hemidactylus brooki</i> Grey              | MDF, PLN       | Common    |
| 9. <i>H. frenatus</i> Schlegel                  | MDF, PLN       | Common    |
| 10. <i>H. triedrus</i> (Daudin)                 | MDF            | Rare      |
| <b>Family : Agamidae</b>                        |                |           |
| 11. <i>Calotes calotes</i> (Linn)               | MDF, PLN       | Rare      |
| 12. <i>C. nemoricola</i> Jerdon                 | MDF            | Rare      |
| 13. <i>C. rouxi</i>                             | MDF, PLN       | Common    |
| 14. <i>C. versicolor</i> (Daudin)               | MDF, DDF, PLN  | Common    |
| 15. <i>C. grandisquamis</i> Guenther            | Evergreen      | Rare      |
| 16. <i>Draco dussumieri</i> (Dum. & Bibr.)      | DDF, MDF, PLN  | Common    |
| <b>Family : Chamaeleonidae</b>                  |                |           |
| 17. <i>Chamaeleon zeylanicus</i> (Linn.)        | MDF            | Rare      |
| <b>Family : Scincidae</b>                       |                |           |
| 18. <i>Mabuya allapallensis</i> Schneider       | DDF, PLN       | Rare      |
| 19. <i>M. carinata</i> (Schneider)              | All habitats   | Common    |
| 20. <i>M. macularia</i> (Blyth)                 | MDF, DDF, PLN  | Common    |
| 21. <i>Ristella beddomii</i> Boulenger          | MDF, PLN       | Rare      |
| 22. <i>Riopa punctata</i> (Gmelin)              | MDF, DDF, PLN  | Common    |
| 23. <i>Sincella laterimaculatum</i> (Boulenger) | Semi-evergreen | Rare      |



| Species Name                                 | Habitat                           | Status    |
|--|-----------------------------------|-----------|
| <b>Family : Varanidae</b>                    |                                   |           |
| 24. <i>Varanus bengalensis</i> (Daudin)      | All habitats                      | Rare      |
| <b>Family : Typhlopidae</b>                  |                                   |           |
| 25. <i>Ramphotyphlops braminus</i> (Daudin)  | All habitats                      | Common    |
| <b>Family : Uropeltidae</b>                  |                                   |           |
| 26. <i>Rhinophis sanguineus</i> (Beddome)    | MDF                               | Unknown   |
| <b>Family : Boidae</b>                       |                                   |           |
| 27. <i>Python molurus</i> (Linn.)            | MDF, DDF                          | Common    |
| 28. <i>Eryx conicus</i> (Schneider)          | MDF, PLN                          | Common    |
| <b>Family : Colubridae</b>                   |                                   |           |
| 29. <i>Ahaetulla nasutus</i> (Lacepede)      | All habitats                      | Common    |
| 30. <i>Amphiesma monticola</i> (Jerdon)      | MDF                               | Unknown   |
| 31. <i>Amphiesma stolata</i> (Linn.)         | MDF, PLN                          | Common    |
| 32. <i>Boiga trigonata</i> (Schneider)       | MDF, DDF, PLN                     | Rare      |
| 33. <i>Chrysopelea ornata</i> (Shaw)         | MDF                               | Common    |
| 34. <i>Coluber mucosus</i> (Linn.)           | All habitats                      | Common    |
| 35. <i>Dendrelaphis tristis</i> (Daudin)     | MDF                               | Common    |
| 36. <i>Lycodon aulicus</i> (Linn.)           | All habitats                      | Common    |
| 37. <i>Oligodon taeniolatus</i> (Jerdon)     | MDF                               | Unknown   |
| 38. <i>Xenochrophis piscator</i> (Schneider) | All habitats<br>near water source | Common    |
| <b>Family : Elapidae</b>                     |                                   |           |
| 39. <i>Bungarus caeruleus</i> (Schneider)    | All habitats                      | Common    |
| 40. <i>Callophis bibroni</i> (Jan)           | Semi-evergreen                    | Very rare |
| 41. <i>Naja naja</i> (Linn.)                 | All habitats                      | Common    |
| 42. <i>Ophiophagus hannah</i> (Cantor)       | MDF, Evergreen                    | Rare      |
| <b>Family : Viperidae</b>                    |                                   |           |
| 43. <i>Trimeresurus malabaricus</i> (Jerdon) | MDF,<br>Semi-evergreen            | Common    |
| 44. <i>Vipera russelli</i> (Shaw)            | All habitats                      | Common    |

MDF : Moist Deciduous Forests  
DDF : Dry Deciduous Forests  
PLN : Teak and Eucalypts Plantations



## Reference :

- Beddome, R.H. 1876.** Description of a new species of Indian Snake of Genus *Platyplectrurus* from the Wayanad. *Proc. Zool. Soc. London.* 701.
- Beddome, R.H. 1880.** Description of a new Snake of Genus *Plectrurus* from Malabar. *Proc. Zool. Soc. London.* 182.
- Beddome, R.H. 1962.** Some reptiles of South India. *J. Bombay Nat. Hist. Soc.* 59: 430. (reprint).
- Inger, R.F., Shaffer, H.B., Koshy, M. and Badke, R. 1984.** A report on a collection of Amphibia and Reptiles from Ponmudi, Kerala, South India. *J. Bombay Nat. Hist. Soc.* 81: 406 and 551.
- Murthy, T.S.N. 1990.** Illustrated Guide to the Snakes of the Western Ghats, India. *Rec. Zool. Surv. India. Occasional Paper No. 114.* Zoological Survey of India, Calcutta.
- Radhakrishnan, C. 1996.** Survey of Reptilian Fauna of Perambikulam Wildlife Sanctuary, Kerala. *Cobra* 24:7-12.
- Smith, M.A. 1933.** *The Fauna of British India including Ceylon and Burma, Reptilia and Amphibia, Vol. I Loricata, Testudines.* Taylor and Francis, London.
- Smith, M.A. 1935.** *The Fauna of British India including Ceylon and Burma, Reptilia and Amphibia, Vol. I Loricata, Testudines.* Taylor and Francis, London.
- Smith, M.A. 1943.** *The Fauna of British India, Ceylon and Burma including the whole of the Indo-Chinese sub-region. Reptilia and Amphibia, Vol. III. Serpentes.* Taylor and Francis, London.
- Swengel, F.B. 1990.** A checklist of endemic vertebrates of the Western Ghats region, In: *Nilgiri Tahr*, Regional Stud book update, Minnesota Zoo, USA. 4-13p.
- Swengel, F.B. 1991.** Endemic vertebrates of the Western Ghats region-an update. In: *Nilgiri Tah.*, Regional Stud book update, Minnesota Zoo, USA. 12-13p.
- Tikader, B.K. and R.C. Sharma, 1992.** *Hand Book of Indian Lizards.* Zoological Survey of India, Calcutta.
- Wall, F. 1918.** Notes on a collection of snakes made in the Nilgiri Hills and the adjacent Wayanad. *J. Bombay Nat. Hist. Soc.* 26: 152.



## Key to the identification of the species of *Micrixalus* Boulenger (Ranidae: Anura: Amphibia) from India.

C. Radhakrishnan,  
Zoological Survey of India,  
Western Ghats Field Research Station,  
Calicut - 673 002.

### Introduction

The genus *Micrixalus* Boulenger of the Anuran family Ranidae is separable from other Ranids by the absence of vomerine teeth. The genus is currently represented by eight valid species in India. They are, *M. borealis* (Annandale) *M. fuscus* (Boulenger), *M. gadgili* Pillai and Pattabiraman, *M. nudis* Pillai, *M. opisthorhodus* (Gunther), *M. saxicolus* (Jerdon), *M. silvaticus* (Boulenger) and *M. thampii* Pillai. Out of the eight species, but for *M. borealis* recorded from Arunachal Pradesh of north-east India, seven are known from the Western Ghats of South India.

The literature dealing with the descriptions of the Indian species of *Micrixalus* are that of Annandale (1912), Boulenger (1882), Gunther (1868), Jerdon (1853), Pillai (1978, 1981) and Pillai and Pattabiraman (1990).

Pillai in 1978, while describing *M. nudis* has provided a key to the identification of the Indian and Sri Lankan species of *Micrixalus* known till then. Confining to the Indian species, the key is revised here deleting *M. herrei* of Myers (1942) treated as a junior synonym of *M. fuscus* by Inger *et. al.* (1984) and incorporating *M. thampii* and *M. gadgili* described subsequently.



## Key to the identification of species of *Micrixalus* Boulenger known from India :

1. Dorsolateral glandular folds absent.....2  
Dorsolateral glandular folds present.....5
2. Papilla on tongue present.....*saxicolus*.  
Papilla on tongue absent.....3
3. Fingers free.....4  
Fingers with a rudiment of web.....*borealis*.
4. Inner metatarsal tubercle small; Outer metatarsal tubercle absent.....*nudis*.  
  
Inner metatarsal tubercle elongated ; Outer metatarsal tubercle small and nodule like.....*gadgili*.
5. Papilla on tongue present.....*opisthorhodus*.  
Papilla on tongue absent.....6
6. Dorsolateral glandular folds complete ; Hinder side of thigh with or without a stripe.....7  
  
Dorsolateral glandular folds incomplete ; hinder side of thigh black with a narrow whitish oblique line from base to half or less its length ; toes half or three-fourths webbed.....*thampii*.
7. Stripe on hinder side of thigh horizontal, broad and extending to articulation of the femur and tibia ; toes three-fourths to nearly entirely webbed.....*fuscus*.  
  
Hinder side of thigh blackish brown ; toes less than half webbed.....*silvaticus*.



**Acknowledgement :**

The Author is grateful to the Director, Zoological Survey of India, Calcutta for facilities and encouragement.

**Reference :**

- Annandale, M. 1912. Zoological results of the Abor Expedition, 1911-12. I. Batrachia. *Rec. Indian Mus.* 8: 7-36.
- Boulenger, G.A. 1882. *Catalogue of the Batrachia Salientia S. Ecaudata in the collection of the British Museum*, London.
- Gunther, A. 1868. First account of species of tail-less Batrachians added to the collection of the British Museum. *Proc. Zool. Soc. London.* pp. 478-490.
- Inger, R.F. and Shaffer, H. B., Koshy, M. and Badke, R. 1984. A report on a collection of Amphibia and Reptiles from Ponmudi, Kerala, South India. *J. Bombay Nat. Hist. Soc.* 81 (2) : 406 - 427.
- Jerdon, T.C. 1853. Catalogue of Reptiles inhabiting the Peninsula of India. *J. Asiatic Soc. Bengal.* 22 : 522 - 534
- Myers, G. S. 1942. A new Frog of the genus *Micrixalus* from Travancore. *Proc. Biol. Soc. Washington.* 55: 71 - 74.
- Pillai, R.S. 1978. A new Frog of the genus *Micrixalus* Boul. from Wynad. S. India. *Proc. Indian Acad. Sci.* 87: 173-178.
- Pillai, R.S. 1981. Two new species of Amphibia from Silent Valley, S.India. *Bull. Zool. Surv. India.* 3(3): 153-158.
- Pillai, R.S. and Pattabiraman. 1990. Amphibians from Sabarigiri Forest, Western Ghats, Kerala, including a new species of *Micrixalus*. *Rec. Zool. Surv. India.* 86(2): 383-390.



**Occurrence of the Elliot's Shieldtail Snake  
(*Uropeltis ellioti*) in Anaikatty Hills,  
Nilgiri Biosphere Reserve**

**P. Kannan and S. Bhupathy**

**Salim Ali Centre for Ornithology & Natural History**

**Kalampalayam (P.O.) Coimbatore - 641010**

The Western Ghats is one of the biodiversity hotspots in the world. About 160 species of reptiles have been reported from this hill range and over 50% of them are endemic (Smith 1943). The Shieldtail snakes are adapted for subterranean life in humus rich hill forests. Forty three species of uropeltids have been described by Smith (1943). However, the total number of uropeltid species is reported to be 47 (Gans 1966 cited in Rajendran 1985) and all of them are endemic to India and Sri Lanka.

A herpetofaunal survey was conducted in the first fortnight of December 1996 in Anaikatty around the developing campus of the Salim Ali Centre for Ornithology and Natural History (SACON). On December 6, 1996, one uropeltid snake was located under a tamarind tree (*Tamarindus indica*) at about 8 am. It was a rainy day. Anaikatty Hills are part of rainshadow area of the Western Ghats and this locality has an elevation of about 600 m. General vegetation type of this area is dry deciduous and it receives about 800 to 1000 mm rainfall annually.

The snake was identified as *Uropeltis ellioti* following the key and description provided by Smith (1943) and Rajendran (1985) ; absence of mental groove and supra-ocular scales, and laterally compressed tail ending in a large down curved caudal scute with two ridges.



The specimen measured 275 mm in total including 10 mm tail. Number of vertical scales were 175 and it had 20 scales around the mid body. Overall colouration of the specimen was dark brown and it had yellow line on each side of the neck. Yellow stripes on each side of the tail were also observed which were connected with a transverse bar over the anal region. These are additional features for this species' identification.

*Uropeltis ellioti* is endemic to India and is reported to have distribution in the Western and Eastern Ghats including Coimbatore district (Smith 1943, Murthy 1990). However, precise locality record in Coimbatore district is not available.

#### References

- Rajendran, M.V. 1985. *Studies in Uropeltid snakes*. Madurai Kamarajar University, Madurai, 342 pp.
- Smith, M.A. 1943. *The Fauna of British India*. Reptilia and Amphibia, Vol. III. Serpentes. Taylor and Francis, London. 583 pp.
- Murthy, T.S.N. 1990. Illustrated guide to the snakes of the Western Ghats. *Occasional Paper* 114. Zoological Survey of India, Calcutta. 76 pp.



## Occurrence of Brown Whip Snake (*Ahaetulla pulverulenta*) in Siruvani foot hills

C. Venkatraman, V. Gokula and Saravana Kumar\*

Salim Ali Centre for Ornithology and Natural History

Kalampalayam, Coimbatore - 641 010

\* Wildlife Institute of India,

Dehradun - 248 001.

On 25th February 1997, a dead snake was found on the road close to SACON's Field station amidst moist deciduous forest at Siruvani foot hills, Coimbatore. It was assumed to have been killed by vehicular traffic and was identified as brown whip snake (*Ahaetulla pulverulenta*) based on the morphological characters given by Smith (1943) and Murthy (1990).

The distribution of this species is given as Western Ghats (Karwar, N.Kanara, Nilgiris, Castle Rock, Nellampathy Hills, Travancore); Ceylon and found in the plains and in the foot hills upto 3000 feet (Smith, 1943). As the distribution is given in a broader scale, information on its distribution in any protected or unprotected area would be helpful. Moreover, it was sighted only once since 1993. This species was sighted only once in Varagaliar of Indira Gandhi Wildlife Sanctuary by one of us during a five month field work. This is also moist deciduous type forest. It was not at all sighted in Mudumalai Wildlife Sanctuary. The altitude of the Siruvani foot hills is 560 m MSL and about 600 m MSL in Varagaliar. Previously, this species has been recorded in Sayivala, New Amarambalam Reserve Forest, Kerala; Alagiri Hills, Madurai district, Tamil Nadu (Murthy, 1990).



Although, we recorded many snakes from these areas during the past three year period (1994-1996), this is the observation of this species. Therefore it can be presumed that the population of this species is very low in these areas based on our information.

**Reference :**

- Murthy, T.S.N. 1990. Illustrated guide to the snakes of the Western Ghats. Occasional paper 114. *Zool. Surv. India*, Calcutta 76 pp.
- Smith, M.A. 1943. *The Fauna of British India. Reptilia and Amphibia. Vol.III Serpentes*. Taylor and Francis, London. 583 pp.



## Random Harvest

### If you can't beat 'em, eat 'em

South Korea, like some other countries, faces a serious problem from introduced species of animals which wreak havoc on native species. The huge-sized American bull frog introduced into South Korea has become highly destructive to native species of frogs and snakes. A report in the *Telegraph* of 13 June 1997 says that the Government's attempts to check the menace by enlisting school children and soldiers have not yielded results and, therefore, a new method had been devised. "The cooked frogs were offered to hundreds gathered outside the environment ministry. Low in fat and calories but high in nutrition, frog meat is a healthy alternative to beef, the ministry said."

Obviously, the recipe is not restricted to frog legs alone.

### The call tells it all

Writing under the title, "Communication signals and sexual selection in amphibians", Debjan Roy reports in *Current Science* (Vol. 72 No. 12, 25th June 1997) on the research done for three years on female reciprocal calls in the frog *Polypedates leucomystax*. Till recently, it was assumed that the advertisement calls of the male frogs alone mattered in sexual selection. The calls of the male frog provided receptive females with information on species identity, sex and the reproductive fitness of the male. The study showed that the reciprocal calls of the females had an equally important role to play in sexual selection. The paper narrates the sequence of events between the first advertisement call of the male and the amplexus. The female reciprocal call seems to act as a "catalytic" for the reproductive activity of the breeding colony. "The present findings



clearly indicate that, prior to sexual contact, the following should happen sequentially : (i) Distance between the advertising male and the responding female has to be 10 c.m. or less; (ii) The advertising male which had been calling till then should stop advertising ; (iii) The responding female has to respond by producing reciprocal calls; (iv) Male which had stopped calling should restart calling but with a higher intensity. Only then sexual contact is established. The establishment of sexual contact in terms of amplexus results after the change from the advertisement call to courtship call....” The paper says that while “ the means by which female anurans differentially recognise fitter males is problematic”, “atleast in some species, including *P. leucomystax*, fitness is thought to be positively correlated with body size and body size may be predicted by parameters of the advertisement calls”.

B. Vijayaraghavan



**CHENNAI SNAKE PARK TRUST**  
ANNUAL REPORT 1996-97

During the year 1996 -97, Mr. B. Vijayaraghavan and Dr. R.J. Ranjit Daniels continued as the Chairman of the Board of Trustees and the Hon. Secretary respectively. Mr. S. Subbarayalu Naidu, I.F.S. (Retd) was elected as a Trustee on 22.6.96 consequent on the expiry of the term of office of Dr. Aruna Devaraj on 19.6.96. Mr. B. Vijayaraghavan was re-elected as the Trustee and Chairman of the Board of Trustees on 14.2.97. Dr. R. J. Ranjit Daniels was re-elected as the Trustee and Hon. Secretary of the Trust on 22.3.97. Dr. V. Krishnamurthy was re-elected as Trustee on 22.3.97. Dr. S. Paulraj, Wildlife Warden, Chennai ceased to be the *ex officio* Trustee on 19.6.96 consequent on his transfer and his successor Ms Mita Banerjee, became *ex officio* Trustee with effect from 19.6.96. Dr. G. Durairaj, Prof. and Head, Dept. of Zoology, University of Madras, on his retirement from the University on 30.6.96, ceased to be a Trustee and Dr. Jayapaul Azariah, his successor in the University, became *ex officio* Trustee in his place on 1.7.96.

2. Mr. V. Kalaiarasan continued as the Director during the year.
3. Consequent on the renaming of Madras as Chennai, the names Madras Snake Park/ Madras Snake Park Trust have been changed as Chennai Snake Park/Chennai Snake Park Trust.
4. The Chennai Snake Park completed twenty five years of its existence in 1997.
5. At the close of the year, the Snake Park had on display seven species of crocodiles, four species of turtles/tortoises, five species of lizards and thirty one species of snakes, a total of forty seven reptile species. A detailed list is annexed. This is the highest stock of species the Snake Park has had since its inception in 1972.
6. During the year, 6,90,117 visitors (5,26,374 adults and 1,63, 743 children ) visited the Park.



7. The total income for the year was Rs. 13,92,446 and the expenditure Rs. 13,48,317. The audited Balance Sheet for the year is appended.
8. On a request received from the Deputy Conservator of Forests, Wildlife Division, Port Blair, Andaman and Nicobar Islands, the staff of the Snake Park held in November 1996, a one week's training class for four members of the staff of the Wildlife Division, Port Blair, on the handling and care of snakes and other reptiles.
9. The Snake Park assisted the C.P.R. Environmental Education Centre in conducting a training programme for school teachers on "Role of Zoos in Conservation Programme in Schools" at the Snake Park during 19th - 23rd September 1996 and 29th -31st January 1997.
10. On a request received from the District Forest Officer, Dharmapuri, the Director and one Animal Keeper of the Snake Park assisted the Forest Department Officials in releasing 12 crocodiles from Hogenekkal Crocodile Rehabilitation Centre, Tamilnadu, in the Yelagiri Reserve Forests in January 1997.
11. Marsh crocodile and reticulated python from the surplus stock available with the Snake Park were supplied to the Calcutta Snake Park. In exchange, the Chennai Snake Park received yellow monitor, banded krait, monocellate cobra and ornamental snake. Six reticulated pythons were supplied to the Aringnar Anna Zoological Park.
12. During the year, marsh crocodile, Indian flapshell turtle, Madras pond turtle and reticulated pythons bred in the Park.
13. Dr. V. Krishnamurthy and Dr. A.V. Gopalakrishnan, Trustees have been good enough to spare time to attend to the veterinary care of the reptiles.
14. All four issues of the quarterly newsletter *Cobra* due in the year have been published.
15. Mr. V. Kalaiarasan, now Director and formerly Research Assistant in the Snake Park, has completed his Ph.D dissertation on



Community Structure of Reptiles in Scrub Jungle Forests of Chengai MGR and Madras Districts" and it is under the consideration of Bharathidasan University, Thiruchirapalli.

16. Mr. R. Aengals, till recently Research Assistant in the Snake Park, has submitted his Ph.D dissertation on "Studies on the Ecology of Common Arboreal and Land Snakes in Scrub Jungle Forests of Chengalpattu MGR District- Tamilnadu" to Madras University.
17. Mr. R. Rajarathinam continues as Research Assistant in the Snake Park and is working on his Ph.D dissertation on "Comparative Ecological Studies on Indian Black Turtle (*Melanochelys trijuga*) and Indian Flapshell Turtle (*Lissemys punctata*) in different habitats in Chennai, Southern India."
18. Dr. A. V. Gopalakrishnan, Trustee acted as co-guide to Mr. M. Madan Mohan for his dissertation on "A Survey on Ecto and Endoparasitic Worm Burden in Captive and Wild Snakes at Madras Snake Park, Guindy" which has been submitted to Bharathidasan University.
19. Dr. A. Velmanikavalli is doing research on "Endo and Ectoparasites of Snakes" at the Snake Park in partial fulfilment of her post graduate studies.
20. During the year, students of the Tamilnadu Veterinary and Animal Science University undertook a project on "Visitors attitude towards Snakes" at the Chennai Snake Park.
21. The Chennai Snake Park Trust is grateful to the Government of Tamilnadu in the Environment and Forest Department, the Chief Wildlife Warden, Tamilnadu, and the Central Zoo Authority of India for all the encouragement and support received

**B. Vijayarghavan**  
Chairman  
(for and on behalf of the  
Board of Trustees)



## Auditors Report to the Trustees of Chennai Snake Park Trust

We have audited the attached Balance Sheet of M/s Chennai Snake Park Trust as at 31st March 1997 and also the annexed Income and Expenditure Account of the Trust for the year ended on that date and report that :

- 1) We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit.
- 2) In our opinion, proper books of account as required by law have been kept by the Trust so far as appears from our examination of those books.
- 3) The Balance Sheet and Income and Expenditure Account dealt with by this report are in agreement with the books of account.
- 4) In our opinion and to the best of our knowledge and according to the explanations given to us, the said accounts give a true and fair view :
  - i) In the case of the Balance Sheet, the state of affairs of the Trust as at 31st March 1997 and
  - ii) In the case of Income and Expenditure Account, the surplus for the year ended on that date.

for Sri & Sri Associates  
Chartered Accountants

**M. B. Srinivasan**  
Partner



### Chennai Snake Park Trust, Rajbhavan Post, Chennai Balance Sheet as on 31st March 1997

| Amount       | Funds & Liabilities                     | Amount       | Assets             | Amount       | Amount       |
|--------------|---|--------------|--------------------|--------------|--------------|
| 31.03.96     |   | 31.03.97     |                    | 31.03.96     | 31.03.97     |
| 9,90,570.05  | Trust Fund                              | 13,10,459.45 | Fixed Assets       | 11,56,535.69 | 10,56,744.69 |
| 3,19,889.40  | Add : Excess of Income Over Expenditure | 44,129.34    | Advance to Staff   | 99298.45     | 20655.95     |
| -----        |   | -----        | Sundry Debtors     | 0.00         | 8,833.05     |
| 13,10,459.45 | SECURED LOAN                            |              | Term Deposit       | 3,01,134.00  | 5,12,289.00  |
| 1,57,910.00  | Sundaram Finance                        |              | Other Deposit      | 7,287.00     | 8,037.00     |
| -----        | GRANTS                                  |              | Accrued Interest   | 59,250.00    | 96,393.00    |
| 1,26,646.00  | Grants from CZA Utilised                | 13,54,588.79 | Stock              | 25,821.25    | 12,115.00    |
| 0.00         | Unutilised                              |              | Cash at Bank - SBI | 0.00         | 99,995.45    |
| -----        | Current Liabilities & Provision         | 77,411.00    | Cash at Bank - PNB | 1,91,043.86  | 11,622.65    |
| 2,53,147.50  | Sundry Creditors                        | 1,26,646.00  | Cash in Hand       | 7,792.70     | 2,048.65     |
| -----        | Deposit from Staff                      | 87,354.00    |                    |              |              |
| 18,48,162.95 | Provision for Gratuity                  | 62,076.65    |                    |              |              |
|              |   | 7,000.00     |                    |              |              |
|              |   | 1,13,658.00  |                    |              |              |
|              |   | 18,28,734.44 |                    |              |              |
|              |   | 18,48,162.95 |                    |              |              |

As per our report of even date

for Sri & Sri Associates  
Chartered Accountants  
**M.B. Srinivasan**  
Partner  
Place : Chennai Date : 20.06.97

for Chennai Snake Park Trust  
**B. Vijayaraghavan**  
Chairman



**Chennai Snake Park Trust, Rajbhavan Post, Chennai**  
**Income and Expenditure Account for the Year ended 31st March 1997**

| Amount as on 31.03.96 | Expenditure             | Amount as on 31.03.97 | Amount as on 31.03.96 | Income                       | Amount as on 31.03.97 |
|-----------------------|-------------------------|-----------------------|-----------------------|------------------------------|-----------------------|
| 3,66,042.20           | To Salaries & Wages     | 4,65,014.30           | 12,53,058.00          | By Gate Collections          | 12,16,491.00          |
| 18,452.95             | " Exgratia              | 23,304.00             | 64,945.00             | By Camera Collection         | 71,986.00             |
| 21,145.75             | " Medical Reimbursement | 24,298.40             | 10,047.75             | By Cobra Subscription        | 5,620.00              |
| 3,000.40              | " LIC Premium           | 1,874.00              | 0.00                  | By Sale of Post Card         | 10,686.00             |
| 15,699.50             | " Tea Allowance         | 18,036.00             | 34,267.00             | By Sale of Strickers & Books | 29,646.00             |
| 2,226.00              | " Washing Allowance     | 4,831.50              | 43,049.25             | By Miscellaneous receipts    | 9,076.70              |
| 21,807.65             | " Off Day Compensation  | 27,647.80             | 12,754.00             | By Interest (S.B)            | 11,798.00             |
| 1,860.00              | " Meals & Tiffins       | 778.50                | 9,520.00              | By Interest (F.D)            | 37,143.00             |
| 654.50                | " Collection Bata       | 914.00                | 77,561.00             | By Sale of Jeep              |                       |
|                       |                         |                       | 25,821.25             | By Closing Stock             |                       |
| 10,369.95             | " Supply of Uniform     | 13,824.00             |                       |                              |                       |
| 5,266.00              | " Demonstration Charges | 4,756.40              |                       |                              |                       |
| 1,261.65              | " Trust Meeting         | 1,248.80              |                       |                              |                       |
| 40,800.00             | " Research Stipend      | 37,500.00             |                       |                              |                       |
| 17,735.85             | " Other Stipend         | 12,000.00             |                       |                              |                       |
| 1,01,235.35           | " Purchase of Feed      | 1,31,692.95           |                       |                              |                       |
| 0.00                  | " Purchase of Reptiles  | 6,720.00              |                       |                              |                       |
| 28,250.00             | " Purchase of water     | 29,220.00             |                       |                              |                       |
| 1,94,420.90           | " Park Maintenance      | 1,98,235.71           |                       |                              |                       |
| 13,692.25             | " Purchase of Fuel      | 12,868.65             |                       |                              |                       |
| 8,704.60              | " Spare Part & repairs  | 11,291.10             |                       |                              |                       |
| 8,470.00              | " Road Tax / Insurance  | 6,061.00              |                       |                              |                       |
| 42,895.85             | " Printing & Stationery | 49,819.65             |                       |                              |                       |
| 58,568.00             | " Purchase of Books     | 20,942.00             |                       |                              |                       |
| 20,193.00             | " Electricity Charges   | 23,853.00             |                       |                              |                       |
| 6,179.75              | " Telephone Charges     | 6,000.00              |                       |                              |                       |
| 720.00                | " Rent Paid             | 240.00                |                       |                              |                       |
| 13,795.35             | " Laboratory Expenses   | 830.00                |                       |                              |                       |
| 4,500.00              | " Audit Fees            | 4,500.00              |                       |                              |                       |
| 0.00                  | " Taxation Fees         | 3,750.00              |                       |                              |                       |



| Amount 31.03.96 | Expenditure                       | Amount 31.03.97 | Amount 31.03.96 | Income | Amount 31.03.97 |
|-----------------|-----------------------------------|-----------------|-----------------|--------|-----------------|
| 10,045.90       | " Books & Periodicals             | 2,211.00        |                 |        |                 |
| 15,794.00       | " EWF                             | 18,333.00       |                 |        |                 |
| 34,254.10       | " Interest on Loan (H.P)          | 36,000.00       |                 |        |                 |
| 9,212.35        | " Provision for Gratuity          | 20,504.00       |                 |        |                 |
| 70,466.40       | " Depreciation                    | 1,00,021.00     |                 |        |                 |
| 25,039.25       | " Misc. Expenses                  | 14,887.35       |                 |        |                 |
| 1,145.25        | " Interest Paid                   | 1,052.00        |                 |        |                 |
| 152.00          | " Maintenance of Kotivakkam       | 0.00            |                 |        |                 |
| 0.00            | " Bank Charges                    | 10.00           |                 |        |                 |
| 0.00            | " Cheque Dishonoured              | 200.00          |                 |        |                 |
| 16,248.50       | " Bad Debts written Off           | 0.00            |                 |        |                 |
| 12,10,305.20    |                                   | 13,37,270.11    |                 |        |                 |
| 1,520.25        | Add : Decrease in Stock           | 13,706.25       |                 |        |                 |
| 12,11,825.45    |                                   |                 |                 |        |                 |
| 691.60          | Less Purchase Return              | 13,50,976.36    |                 |        |                 |
| 12,11,133.85    |                                   | 2,659.00        |                 |        |                 |
| 3,19,889.40     | Excess of Income Over Expenditure | 13,48,317.36    |                 |        |                 |
| 15,31,023.25    |                                   | 44,129.34       |                 |        |                 |
|                 |                                   | 13,92,446.70    | 15,31,023.25    |        | 13,92,446.70    |

As per our report of even date

for Sri & Sri Associates  
 Chartered Accountants  
 M.B. Srinivasan  
 Partner  
 Place : Chennai Date : 20.06.97

for Chennai Snake Park Trust  
 B. Vijayaraghavan  
 Chairman



**Chennai Snake Park Trust, Rajbhavan Post, Chennai  
Schedule of Fixed Assets as on 31st March 1997**

| Particular           | W.D.V.<br>as on<br>01.04.96 | Addition | Deletion | Total<br>as on<br>31.03.97 | Depreciation<br>for the Year | W.D.V.<br>as on<br>31.03.97 |
|----------------------|-----------------------------|----------|----------|----------------------------|------------------------------|-----------------------------|
| Land                 | 4,60,010.00                 | 0.00     | 0.00     | 4,60,010.00                | 0.00                         | 4,60,010.00                 |
| Capital Work         | 4,61,483.97                 | 0.00     | 0.00     | 4,61,483.97                | 4,61,48.00                   | 4,15,335.97                 |
| Vehicle              | 1,91,008.00                 | 0.00     | 0.00     | 1,91,008.00                | 47,752.00                    | 1,43,256.00                 |
| Furniture & Fittings | 32,966.72                   | 0.00     | 0.00     | 32,966.72                  | 3,297.00                     | 29,669.72                   |
| Office Equipments    | 11,067.00                   | 230.00   | 0.00     | 11,297.00                  | 2,824.00                     | 8,473.00                    |
| TOTAL                | 11,56,535.69                | 230.00   |          | 11,56,765.69               | 1,00,021.00                  | 10,56,744.69                |



**REPTILE SPECIES ON DISPLAY  
AT THE CHENNAI SNAKE PARK  
(As on 31.03.97)**

- |                             |                                   |
|-----------------------------|-----------------------------------|
| 1. Marsh crocodile          | <i>(Crocodylus palustris)</i>     |
| 2. Gharial                  | <i>(Gavialis gangeticus)</i>      |
| 3. Saltwater crocodile      | <i>(Crocodylus porosus)</i>       |
| 4. Morelett's crocodile     | <i>(Crocodylus moreletti)</i>     |
| 5. Spectacled cayman        | <i>(Caiman crocodilus)</i>        |
| 6. Siamese crocodile        | <i>(Crocodylus siamensis)</i>     |
| 7. African dwarf crocodile  | <i>(Osteolaemus tetraspis)</i>    |
| 8. Indian soft-shell turtle | <i>(Lissemys punctata)</i>        |
| 9. Pond turtle              | <i>(Melanochelys trijuga)</i>     |
| 10. Aldabra tortoise        | <i>(Geochelone gigantea)</i>      |
| 11. Star tortoise           | <i>(Geochelone elegans)</i>       |
| 12. Common monitor          | <i>(Varanus bengalensis)</i>      |
| 13. Water monitor           | <i>(Varanus salvator)</i>         |
| 14. Yellow monitor          | <i>(Varanus flavescens)</i>       |
| 15. Chameleon               | <i>(Chamaeleon zeylanicus)</i>    |
| 16. Green iguana            | <i>(Iguana iguana)</i>            |
| 17. Common cobra            | <i>(Naja naja naja)</i>           |
| 18. Monocellate cobra       | <i>(Naja naja kaouthia)</i>       |
| 19. Black cobra             | <i>(Naja naja oxiana)</i>         |
| 20. Common krait            | <i>(Bungarus caeruleus)</i>       |
| 21. Banded krait            | <i>(Bungarus fasciatus)</i>       |
| 22. Russell's viper         | <i>(Vipera russellii)</i>         |
| 23. Saw-scaled viper        | <i>(Echis carinatus)</i>          |
| 24. Malbar pit viper        | <i>(Trimeresurus malabaricus)</i> |
| 25. Bamboo pit viper        | <i>(Trimeresurus gramineus)</i>   |



**Cobra, Vol. 28. 1997**

- |                             |                                       |
|-----------------------------|---------------------------------------|
| 26. Rat snake               | ( <i>Ptyas mucosus</i> )              |
| 27. Green vine snake        | ( <i>Ahaetulla nasutus</i> )          |
| 28. Bronze-back tree snake  | ( <i>Dendrelaphis tristis</i> )       |
| 29. Flying snake            | ( <i>Chrysopelea ornata</i> )         |
| 30. Banded racer            | ( <i>Argyrogena faciolutus</i> )      |
| 31. Trinket snake           | ( <i>Elaphe helena</i> )              |
| 32. Common kukri            | ( <i>Oligodon arnensis</i> )          |
| 33. Wolf snake              | ( <i>Lycodon aulicus</i> )            |
| 34. Cat snake               | ( <i>Boiga trigonata</i> )            |
| 35. Checkered keel-back     | ( <i>Xenochropis piscator</i> )       |
| 36. Olive keel-back         | ( <i>Atretium schistosum</i> )        |
| 37. Striped keel-back       | ( <i>Amphiesma stolata</i> )          |
| 38. Green keel-back         | ( <i>Macropisthodon plumbicolor</i> ) |
| 39. Common sand boa         | ( <i>Eryx conicus</i> )               |
| 40. Red sand boa            | ( <i>Eryx johnii</i> )                |
| 41. Indian python           | ( <i>Python molurus</i> )             |
| 42. Reticulated python      | ( <i>Python reticulatus</i> )         |
| 43. Dog-faced water snake   | ( <i>Creberus rhynchops</i> )         |
| 44. Annulated sea snake     | ( <i>Hydrophis cyanocinctus</i> )     |
| 45. Yellow sea snake        | ( <i>Hydrophis spiralis</i> )         |
| 46. Hook-nosed sea snake    | ( <i>Enhydrina schistosa</i> )        |
| 47. Narrow-headed sea snake | ( <i>Microcephalophis gracilis</i> )  |



Annual subscription for 4 issues of COBRA  
commencing from the date of  
subscription including postage.

Inland Individual - Rs. 75/-  
Inland- Institution - Rs. 150/-  
Overseas Individual & Institution - U.S. \$ 10/-

Subscription may be sent by MO/DD  
drawn in favour of  
" Chennai Snake Park Trust"  
Payable at Chennai.

Chennai Snake Park Trust  
Raj Bhavan Post  
Chennai - 600 022. India.

AIMS AND OBJECTIVES OF  
**CHENNAI SNAKE PARK TRUST**

- i) To maintain and display a captive collection of snakes and other reptiles as a means of education of the public.
- ii) To promote knowledge on snakes and other reptiles and dispel the erroneous beliefs about them.
- iii) To undertake captive breeding of vulnerable species of snakes and other reptiles.
- iv) To aid and assist research in herpetology.
- v) To provide facilities for the identification and classification of snakes and other reptiles and, for this purpose, maintain a museum of study collections.
- vi) To maintain a library of books and other literature on herpetology.
- vii) To publish scientific and semi- scientific literature on snakes and other reptiles.
- viii) To undertake survey on the distribution and status of snakes and other reptiles.
- ix) To provide consultancy services on snakes and other reptiles.
- x) To provide a common forum for amateur herpetologists to interact.