Cobra

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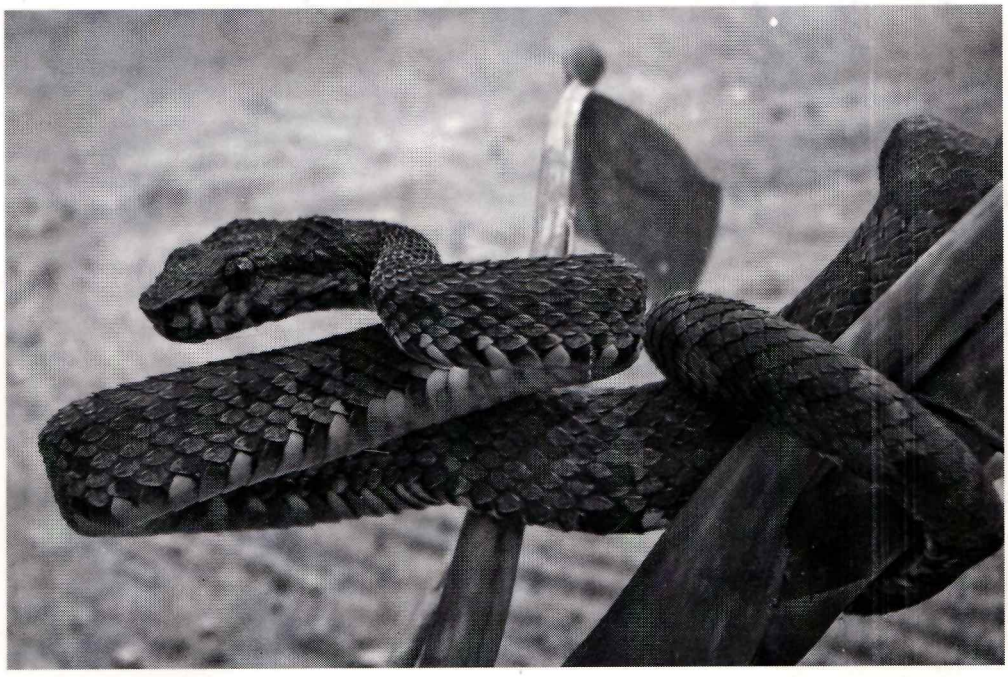

CHENNAI SNAKE PARK TRUST

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Dr. G. Thirumalai

Cover

Malabar pit viper (*Trimeresurus malabaricus*)

Venomous. Mostly nocturnal. Endemic to India. Found at middle and higher altitudes in the forests of the Western Ghats on low bushes and trees or on rocks. Common in its range. Grows to about 2½ feet.

Photo : **Chandra Mouli.**

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"Out of [the] complex inter-relationship between man and snake has come one of the most fascinating animal involvements in human history. It is a pity that today this involvement is still riddled with ignorance and prejudice. Here we are .... in what we like to think of as an enlightened age, and we are still reacting towards the snake as if we were a bunch of medieval peasants. We have stopped burning witches and it is high time we stopped making a bogey-man out of the snake. There is no reason why this should not be possible, simply by studying the creature and learning what it is really like".

— Ramona and Desmond Morris:
Men and Snakes (1965)

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SCIENTIFIC NAMES OF SOME INDIAN SNAKES[1]

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'Welcome home husband however drunk you be' – that's the English name of a plant. If you don't believe me, look up *The Names of Plants* by D.Gledhill P.1. It is also called 'houseleek' (*Sempervivum*). There is nothing to rival plants for some of the most fascinating English and Latin names – often fanciful, sometimes bizarre. In the animal kingdom, birds, compared to other classes, have somewhat picturesque names. Snakes come a close second. The rest of the animal taxa generally bear drab and dull names.

A most beautiful Latin name for an Indian snake is or, rather, was, *Naia tripudians*. That was the former name of the spectacled cobra, the generic name now spelt as *Naja* and with different specific names *naja, oxiana, kaouthia etc.* for the different species into which the genus has now been divided. *Naja* was earlier spelt *Naia* because the consonant 'j' in Latin originally used to be written the same way as the vowel 'I', 'i', yet recognised as a different letter. *Naja* is from the Sanskrit *Naaga* which is from the Old High Germanic base *snachan* meaning 'to creep'. *Tripudians* is from the Latin *tripudium* which, according to Cassell's Latin Dictionary, is the name given to various forms of religious and war dances. F.Wall* carries this farther and furnishes the original Latin word to mean, 'I dance on the toe'. How the elaboration 'on the toe' comes in is not clear. No doubt, it sounds very poetic and brings to mind Milton's call to Euphrosyne,

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[1]Excerpted from *Name-Dropping – In Latin (An Enquiry into the Scientific Names of Indian Snakes)* by B.Vijayaraghavan, C.S.P.T Occasional Papers No.3/2007.

* The references to Wall, unless otherwise stated, relate to his *Snakes of Ceylon*. (See 'works cited' at the end).

"Haste thee, Nymph, and bring with thee
Jest and youthful jollity, ...
Sport that wrinkled Care derides,
And Laughter holding both his sides,
Come, and trip it as you go,
On the light fantastic toe"
(L'Allegro)

(Trip it = dance)

In the meaning of *tripudium*, the anatomically nearest reference to the toe could be found in the *Shorter Oxford English Dictionary on Historical Principles*: 'a beating the ground with the feet'. Be that as it may, I can only express my sorrow that this evocative name for a 'dancing' snake should have been abandoned for whatever reason.

Another snake with a beautiful name is the common trinket snake whose specific name in Latin is *helena* (*Coelognathus helena*). Both the English name and the specific name in Latin are a tribute to its looks. Helen, the classic example of female beauty was the wife of Menelaus, the king of Sparta. The besotted Trojan prince, Paris, abducted her, precipitating the Trojan war which ended in the siege and destruction of Troy. In *Doctor Faustus* (1604), Christopher Marlowe alludes to this and says of 'sweet Helen': "Was this the face that launched a thousand ships and burnt the topless towers of Ilium?"

A snake whose face is very unlikely to remind us of Helen is the dog-faced water snake. Its Latin name is equally slanderous: *Cerberus rynchops*. Cerberus is the three-headed dog which keeps guard in hell. It is its narrow snout and prominent lower jaw that have given the snake its somewhat unfortunate appearance.

Some scientific names of snakes, just as of other fauna and flora, have names of individuals or places built into them. The place name or toponym refers to the location which yielded the type specimen, that is, the specimen based on which the taxon was originally described. Thus we have *Typhlops andamanensis* (Andaman worm snake), *Melanophidium wynaudense* (Wynad shieldtail), *Platyplectrurus madurensis* (Madurai shieldtail), *Uropeltis dindigalensis* (Dindigal shieldtail), *Oligodon arnensis* (Common kukri snake. Arni in Tamil Nadu), to name a few.

Some of the scientific names of animals are eponyms i.e. based on a personal name and this is the name of the person who provided the type specimen or the scientist who first described the animal or plant, or the name given by him in honour of someone else for whatever reason. Snakes named after persons are disproportionately large in number compared to other animals. Out of the 277 Indian snakes so far described, as many as 62, i.e. 22 %, have been named after persons. Among those so honoured are well-known persons such as Patrick Russell (*Daboia russelii* : Russell's viper), W.T. Blanford (*Leptotyphlops blanfordii* : Sindh thread snake), Richard Henry Beddome (*Typhlops beddomei* : Beddome's worm snake), Cantor (*Trimeresurus cantori* : Cantor's pit viper), Stoliczka (*Liopeltis stoliczkae*: Stoliczka's stripe-necked snake), Thomas Caverhill Jerdon (*Typhlops jerdoni* : Jerdon's worm snake), Herbert Musgrave Phipson (*Uropeltis phipsonii* : Phipson's shieldtail), Eugene W. Oates (*Typhlops oatesii* : Oates' worm snake), Albert Gunther (*Plectrurus guentheri* : purple shieldtail), Malcolm A. Smith (*Uropeltis smithi*: violet shieldtail) Humayun Abdulali (*Dendrelaphis humayuni* : Nicobar bronzeback tree snake) and Romulus Whitaker (*Eryx whitakeri* : Whitaker's boa).

The youngest person who has had the honour of having a snake named after him must be Nikhil, son of Romulus Whitaker. As a four-year old child he was accompanying his herpetologist-father, on a field trip in the Palni Hills. Left awhile on the roadside, he innocently picked up a creepy-crawly which, much to the amazement of his father, proved to be a hitherto-unknown species of kukri snake. It came to be named *Oligodon nikhili* (Nikhil's kukri snake). No other specimen of this snake has been found so far.

While some of the eponyms refer to well-known personalities, some are obscure. The search for the person behind the name can be a rewarding experience. One such case is that of the John in *Eryx johnii* : red sandboa. I wondered who this John could have been especially since there are references to one Rev.John in Patrick Russell's *An Account of Indian Serpents Collected on the Coast of Coromandel* (1796). Russell, hailed as the Father of Indian Ophiology, was then based at Vizagapatam (Visakhapatnam in the present state of Andhra Pradesh) and was making a study of the snakes of the Coromandel region. He refers to a few occasions when he had received snakes for identification from Tranquebar (Tharangampadi, now in the Nagapattinam District of Tamil Nadu). His correspondent was one Mr. John.

Since he was sometimes referred to as Rev. John, it looked probable that he was connected with the 300 years old church of Tranquebar. With the help of Mr. S. Muthiah who has a fund of information about men and matters relating to the old Madras Presidency, I could contact Dr. Andreas Gross of the Gurukul Lutheran Theological College and Research Institute, Chennai, who passed on some bits of information about Rev. John. Similarly, I could collect some information about the German missionaries in Tranquebar in the 18th and 19th centuries from Rev. J.G.Johnson who had retired as the Bishop of Tranquebar and his wife Rev. Eva Maria Siebert-Johnson who is from Germany and had also worked for long years in Tranquebar and from his sister Dr. Hilda Shanthi Maduram who has written a doctoral thesis on the work of German missionaries in South India during the 18th and 19th centuries in the field of natural history and culture. The information so pieced together, in so far as it relates to Rev. John, is briefly as follows:

Tranquebar (a corruption of the Tamil name Tharangampadi – (the place of the singing wavelets) — was, under a treaty, handed over by the king of Tanjore, Raghunatha Nayak, in 1620, to the King of Denmark represented by Ove Gedde, Commander of the Royal Danish Navy, for being developed as a trading centre and port. Under the orders of King Frederick IV of Denmark, a protestant mission was opened at Tranquebar. However, the first Royal Danish missionaries were not Danes but Germans. At that time, many of the court officials, church functionaries and officers of the army in the Danish Kingdom were Germans. The first Royal Danish missionaries who came to Tranquebar in 1706 were the Germans, Barthlomeus Ziegenbalg and Heinrich Pluetschau, both from the pietistic centre at Halle. Ziegenbalg built a church in Tranquebar in 1718 and named it 'the New Jeruselem Church'. (The three-centuries old church badly damaged by time and the tsunami of 2004 has now been completely renovated). He also established there the first printing press in India. The Dansborg Fort was also built in Tranquebar during this period Other missionaries of German origin followed Ziegenbalg and Pluetschau and they were all called the Royal Danish missionaries. The Rev. Christopher Samuel John belonged to this tradition. He was born in 1746 and came to Tranquebar in 1771 after having studied theology at Halle and having been ordained in Copenhagen. Many of these missionaries such as Ziegenbalg himself and Johann Philipp Fabricus, Johann Peter Rottler and Christopher Samuel John had extra-mural interests particularly in the fields of natural history, Tamil language and indigenous culture. John's interest extended not only to snakes but also to

fishes and to the education system. I give this brief account just to show how profitable could be a little investigation of this aspect of Latin nomenclature (or, English nomenclature, for that matter).

Most snakes have been named in English and / or Latin with reference to their morphological features, colour or markings or distribution, habitat or habits. Examples of such names of Indian snakes, *currently in use*, are given below*:

*Abbrevations used: Gr. = Greek. L.= Latin.

* * * * *

***Ahaetulla nasuta* (Common vine snake)**

The generic name is from the Sinhalese *ehetulla* meaning 'eye-plucker', an allusion to the widely-held belief that the snake strikes at the eye. (See Gharpurey). Many, however, are of the view that this is a misbelief. All things considered, it would be safer to keep an open mind on the subject. L. 'nasutus' = large-nosed. An allusion to the extended snout of the snake.

***Ahaetulla dispar* (Gunther's vine snake)**

'Ahaetulla' (see above). L. 'dispar' =dissimilar. Probably a reference to the fact that the snake occurs in two very distinct colour phases:either bright green or brownish green. Incidentally, Dr. Albert Gunther who first described the snake in 1864 mistook this to be a case of sexual dimorphism. What is more, Charles Darwin, in his *The Descent of Man* (1871), the sequel to *The Origin of Species* (1859), while marshalling facts in support of his hypothesis that sexual selection exercises a major influence in the evolution of species relied in part on this erroneous observation. Darwin says: "In the *Tragops dispar* [of India] the male is bright green, and the female bronze-coloured". (Gunther had placed it in the genus *Tragops*).

* * * * *

***Boiga trigonata* (Common cat snake)**

The generic name was given in 1826 by Fitzinger, a zoologist in Vienna. The meaning of the word could not be traced. 'Trigonal'=triangular from L. *via* Gr.'trigonon'. Wall says in a paper entitled "A popular treatise on the common Indian Snakes - Part VII" that appeared in the *Journal of the Bombay Natural History Society* Vol.XVIII that it is called trigonatus (=triangular) because of the peculiar markings on its body but hastens to add that these markings are not exactly triangular but more like the Gr.letter gamma (γ) for which reason he gave it the English name gamma snake. If I may hazard a guess, triangular is an allusion to the laterally flattened body which gives it a triangular shape in cross-section.

* * * * *

***Bungarus fasciatus* (Banded krait)**

L. 'bungarus' = Latinised version of 'bungarum' meaning 'gold' in Telugu, an allusion to the wide yellow bands on its body. The genus 'bungarus' later came to include differently-coloured kraits also. (See below). L. 'fascia' = 'band'.

Krait is often explained as the name in Hindi for the snakes of this genus. But the matter does not appear to be as simple as that. Wall says in his paper on common Indian Snakes in Vol.XVIII No.4 of T*he Journal of the Bombay Natural History Society*: " I have frequently heard it called 'krait' or 'karait' by natives but am not sure whence these names emanate.... Major McMahon says, 'Krait is, I presume, merely an English corruption of the Urudu word 'Kalgundait'. If not, it must be a Bengali corruption of it as no native of Delhi would understand you if you spoke of the krait or karait". Wall relies on one Baboo Awmoola Rattan Bysach whose Urudu work on medicine explains as follows: 'Kala'=black. 'Gundait' refers to the white lines across the common krait's body.

***Bungarus caeruleus* (Common krait)**

L. 'bungarus' (see above). L. 'caeruleus' = dark blue. The snake though glossy black or bluish grey or dark brownish black gets a blue iridescence in certain lights.

* * * * *

Cerberus rynchops **(Dog-faced water snake)**

Cerberus=Gr.'kerberos' in Grecian mythology is the three-headed dog that guards the entrance to Hades. 'rhunchos'=L. for snout. 'ops' L. for face. An allusion to the peculiar underhung condition of the lower jaw.

Chrysopelea ornata **(Ornate flying snake)**

Gr. 'Chrusos' = gold. Gr. 'peleios' = black. L. 'ornata'= adorned. A beautiful snake with yellow, greenish-yellow or pale green back and black cross-bars with orange or red vertebral spots or rectangles.

Chrysopelea paradisi **(Paradise flying snake)**

Chrysopelea (see above). 'paradisi' = from 'paradise'. The origin of the specific name of this snake confined to the Narcondam island (in the Andamans) is not known. It may be because of the beauty of the snake, but there are snakes which are equally or even more beautiful. Gunther had described *C.ornata* which is more beautiful than *C.paradisi* as "the most beautiful of all snakes". Even this is arguable. Could it be its beauty plus its gliding form that occasioned the nomenclature? It is interesting to note here that some birds also have similar appellations and they have long tail streamers: the greater racket-tailed drongo (*Dicrurus paradiseus*), male Asian paradise fly-catcher (*Terpsiphone paradisi*)* and many species of birds of Family Paradisaeidae. One bird of paradise (*Pteridophora alberti*) has long streamers growing from its head instead of from its tail as in others. The streamers of all these birds while in flight and a colourful snake gliding in the air seem to arouse a similar wonderment in us. Like angels from paradise in flight? (Or, is it my fancy taking flight?)

* * * * *

* The specific names of both the birds had been conferred by Linnaeus in 1766 / 1758. The specific name of the snake was conferred by Boie in 1927. Boie was very likely inspired by Linnaeus's nomenclature.

***Daboia russelii* (Russell's viper)**

'Daboia': origin not clear. Wall in his *The Poisonous Terrestrial Snakes* gives 'the Daboia' as one of its common names, but the language is not mentioned. The specific name is after Dr.Patrick Russell (1727-1805) who first described the snake. He had done extensive work on the snakes of the Coromandal region and is hailed as the Father of Indian Ophiology**.

* * * * *

***Elachistodon westermanni* (Indian egg-eater)**

Gr. 'elachistos' = small. Gr. 'odous' = tooth. The snake has minute teeth. Its principal diet is bird-eggs which are swallowed whole and the shell gets broken by the bony projections of the vertebrae that enter the oesophagus. Most other snakes have large, backward-sloping teeth to grab and hold live prey. This snake was till recently considered as probably extinct; it had not been seen since the early 1900s. However, Ashok Captain et al. have reported the discovery of a dead specimen in Wardha district of Maharashtra in Aug.2003. Who was Westermann?

* * * * *

***Hypnale hypnale* (Hump-nosed pit viper)**

Gr. 'hupnaleos' from the sleep-inducing effect of snake venom—nothing peculiar to this species. The English name is misleading as the snout-tip is turned up very slightly. *Polon thelissa* is an ancient Sinhalese name for this snake, meaning 'upturned-lip viper', according to a source quoted by Indraneil Das.

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** For more on Russell, see the author's *Snake Studies:India* (C.S.P.T. Occasional Papers No.1/2005)

***Kerilia jerdonii* (Jerdon's sea snake)**

From vernacular name 'Keril', according to Wall. Which is the language refered to ? Jerdonii after Thomas Caverhill Jerdon (1811 - 1875). He was a surgeon in the Madras Army of the East India Company's establishment. His principal interest was in ornithology and his *Birds of India* was a seminal work. And so was his *Mammals of India*. It is likely that the type specimen of the snake was provided by him. Malcolm Smith furnishes the origin of the type specimen as Madras (where Jerdon was stationed).

* * * * *

***Leptotyphlops blanfordii* (Blanford's thread snake)**

Gr. 'leptos' = thin. Gr. 'tuphlos'= blind. Gr. 'ops'= eye. Small and inconspicuous eyes, hence the misbelief that the snake is blind. Blanfordii after William Thomas Blanford (1833-1905), another pioneer in Indian Ornithology. He arrived in India to join the Geological Survey. He was an expert on the birds of Sind and of north-eastern India and, along with E.W. Oates, authored the four bird volumes in the *Fauna of British India* Series. It is likely that the type specimen of the snake was provided by him. Malcolm Smith furnishes the origin of the type specimen as Sind (where Blanford had done extensive work on birds).

* * * * *

***Lycodon aulicus* (Common wolf snake)**

Gr. 'lukos'= wolf. Gr. 'odous'= tooth. There is an enlarged tooth near the front of both maxilla and mandible, reminding one of the canine teeth in wolves, foxes and dogs. Hence also English name. L. 'aulicus'= a house dweller, from its frequent intrusion into human habitations.

* * * * *

***Macropisthodon plumbicolor* (Green keelback)**

Gr. 'makros' = large. Gr. 'opisthe'= behind. Gr. 'odous'= tooth. A reference to a peculiarity in its dentition. The maxillary at its hind-most extremity has a pair of very large teeth separated by a short interval from the normal array as in other snakes. The pair of large teeth can easily be mistaken for poison fangs. This is a non-venomous snake.

L. 'plumbum'= lead. L. 'color'= colour. How did a green-coloured snake come to be named as lead-coloured in Latin? The following observation of Wall may explain this: "The green, bright though it is, is not due to green pigment. A yellow pigment overlies the scales like a varnish. This is soluble in spirit, to which it imparts its colour, leaving the specimen first bluish, then blue, and finally plumbeous". It is, therefore, likely that a preserved specimen gave it its Latin name whereas its English name was from a live specimen.

* * * * *

***Naja kaouthia* (Monocled cobra)**

Naja from 'naaga', meaning snake in Sanskrit and Indian languages. Kaouthia from 'keutey' its name in Bengali. Wall in his *The Poisonous Terrestrial Snakes* also quotes Fayrer to this effect without mentioning the Bengali name. Fayrer's work referred to is most probably *Thanatophidia of India* (1872). The nomen bears a similarity to the Sanskrit 'kaudraveya', a serpent-son of Kadru who, according to Hindu mythology, is the mother of all snakes.

Cobra is a shortened form of 'cobra de capello' which is Portugese for 'snake with hood'. The Portugese 'cobra' is derived from Latin 'coluber' meaning 'snake'.

* * * * *

***Oligodon affinis* (Western kukri snake)**

Gr. 'oligos' = few. Gr. 'odous'= tooth. Wall gave the English name to *Oligodon* spp. because of the posterior teeth which are very much compressed and shaped like a gurkha's kukri knife. The specific name 'affinis' from L. 'affinitatem' meaning kinship, resemblance etc.? If so, the significance is not known.

One of the earlier generic names for the *Oligodon* spp. was "Simotes" which is Gk. for 'snub nose'. This refers to the roastral shield which is reflected back on to the snout to a remarkable degree in all the kukri snakes.

* * * * *

***Plectrurus aureus* (Golden shield tail)**

Gr. 'plectrum' = anything to strike with – a thin flat piece used to pluck the strings of musical instruments. A reference to the enlarged, roughened, flat scale that caps the short, blunt tail. This resembles a shield, a typical feature of snakes of family Uropeltidae. The function of this appendage does not seem to have been clearly established. U. Gruber(1968) says "....it possibly serves to anchor the animal to the ground. Shield-tailed snakes are thought by some to burrow by pushing the tail tip forward and turning it from side to side". Carl Gans (1976) says : "Literature reports mention the use of the tail as a *point d'appui* and also refer to the formation of a plug closing the tunnel [thus giving it protection from subterranean predators]. My observations suggest that the latter biological role establishes the major selective advantage for this system". The 'plug' refers to the fact that the structure of the terminal shield ensures that a large mass of soil adheres to it even when the rest of the body is clean. The uropelts are confined to the forested mountainous regions of south western India and Sri Lanka; they are found nowhere else in the world. Very little work has been done on these snakes. L. 'aureus' = golden.

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***Ptyas mucosa* (Indian rat snake)**

It is seen from Dr. Albert Gunther's account (1864) that the generic name was given by Fitzinger but without any explanation. Dr.Gunther says: " I adopt this name, although unaccompanied by a proper diagnosis, in preference to that of *Coryphodon* because the latter is preoccupied by a genus of fossil Mammalia....". Wall says in a paper on Indian Snakes in Vol.XVII No.2 of *The Journal of the Bombay Natural History Society* that 'ptyas' is derived from a Greek word meaning 'spitter'. The rat snake does no such thing. L. 'mucosus' = slimy. From a mistaken notion that the snake is slimy to the touch. This is a general misbelief about all snakes.

Thus, in calling it *Ptyas mucosa*, the snake is misunderstood twice over; it is neither a spitter nor slimy.

* * * * *

Ascertaining the meaning or significance of scientific names of flora and fauna can prove to be a daunting task. Names which are toponyms or eponyms or distribution-related or habitat-related or descriptive of appearance or behaviour can prove easy to decipher. Even here difficulties crop up when some Latin-sounding word is not genuine Latin but a latinized form of a word from another language, almost always Greek. The oddities of the latinization process can leave one perplexed. In a number of cases, the meaning or significance of the scientific name will not be apparent at all. Authors have often coined artificial words in simulated Latin. Sometimes an intelligent guess may be possible, sometimes not even that. Accessing the original account given by the author of the name, often in the distant past, is not always easy and may well be beyond the reach of the average researcher. Nor is the original account always revealing. The author might have been inspired by some far-fetched association which he alone was aware of. In fact, the International Union of Biological Sciences, whose job it is to establish and periodically revise the code of nomenclature for universal acceptance, urged at the 14th International Zoological Congress held in 1953 at Copenhagan that, when proposing generic names, the author should explain its etymology(See Macleod R.D.). But, then, the majority of extant names are of an earlier vintage. Also, for some reason, this discipline does not appear to have been extended to specific names.

Many snake names are enigmatic. One instance is *Dendrelaphis tristis*, common bronzeback tree snake. '*Dendrelaphis*' from L. 'dendron' = tree + L. 'elaphis' = snake. Therefore, tree snake. But, '*tristis*'? L. 'tristis' means sad. This snake does not appear to be any sadder than most other snakes. On the contrary, it is an active and energetic snake. The specific name of the common myna also is *tristis*. Certainly not a sad bird! A smart, perky, jaunty, vigorously active bird with its incessant rowdy chatter and a whole repertoire of calls. It has been presumed that, in both cases, *tristis* refers to the sombre colouration.

A very difficult case is the specific name *braminus* in *Ramphotyphlops braminus* (Braminy worm snake)*. What is the orgin of braminus? The nomen was given in 1808 by Daudin (who placed it in the genus *Eryx*, later changed to *Typhlops* and then to *Ramphotyphlops*). Malcolm Smith gives the citation as " Daudin, 1803, *Hist. Nat. Rept.* Vii P.279 (based on Russell)". This follows what G.A. Boulenger had said in his *The Fauna of British India—Reptilia and Batrachia* (1890) and in his *Catalogue of the Snakes in the British Museum (Natural History)*(1893). But a perusal of Daudin's book (after getting the relevant pages translated from French to English) throws no light on the matter whatsoever. Nor is Russell's book – if the reference is to *An Account of Indian Serpents Collected on the Coast of Coromandel* (1796)– of any help in the matter. Russell gives only its native name *Rondeoo talooloo pam* – the double headed snake, a misbelief.

A curious account appears in an article entitled "Ethnozoology of the n*goo-how-pak-pet* (Serpentes: *Typhlopidae*) in Southern Peninsular Thailand" by Olivier S.G. Pauwels *et al.* This says that *Ramphotyphlops braminus*, called *ngoo-how-pak-pet* in Siamese, is worshipped by the inhabitants of the Southern Siamese Peninsula, who zealously keep dried and perfumed specimens at home as lucky charms, and attribute to it mythical significance. The authors add that the legends about the snake "seem to derive from Indian mythology". They add further: "In the context of the *ngoo-how-pak-pet*, apparently derived from the Braminical folklore, *R. braminus* never better wore its scientific epithet". Very puzzling. There is no indication what the Indian mythology or braminical folklore referred to is.

The origin is, perhaps, something more prosaic. The appellation 'braminy' occurs elsewhere also: braminy fig tree, braminy bull, braminy kite, braminy duck and braminy skink. But there is no one common explanation that suits all the 'braminys'. Indraneil Das (1998) gives 'bamani' as the Assamese name of the buff-striped keelback (*Amphiesma stolatum*) — a snake with a brown back and two distinct ribbon-like yellowish stripes on its back from neck to the tip of the tail. Das attributes the Assamese name to the stripes "that are reminiscent of the sacred thread of Brahmins". 'Braminy' could generally be perceived as an allusion to holiness. The braminy fig tree is another name for the peepal or Bodhi tree (*Ficus religiosa*). This

* 'Brahminy' and 'Braminy' are variant spellings of the common names of the different species referred to in this part of the [paper]. For the sake of uniformity, the latter spelling has been adopted throughout.

tree is held as sacred by Hindus and Buddhists. Similar is the case with the braminy bull. It is the grey or black cattle of the species *Bos indicus*, also known as Zebu, that originated in India, characterised by a prominent hump over the shoulder and neck, with a large dewlap and horns that usually curve up and backwards and drooping ears. It is associated with Lord Shiva whose vehicle it is, *Nandikeswara* or *Nandi*. The braminy kite (*Haliastur indus*) is similarly widely held in India as sacred and a bird of good omen. Under the name garuda, it is the vehicle of Lord Vishnu. It is called 'bramani cheel' in Hindi. But neither the braminy myna, now called braminy starling, *Sturnus pagodarum,* (it is called braminy myna / bamani myna in Hindi / Bengali), nor the braminy duck, now called ruddy shelduck, *Tadorna ferruginea,* nor the braminy skink (or common skink, *Mabaya carinata*, its Hindi name is bamani) can have any claim to holiness.

That brings us to Wall (1921) who explains *braminus* as "Latinized form of bramin, in allusion to its brown colouration". He has said so also in a paper published in the *Journal of the Bombay Natural History Society* Vol.XXV. How bramin can be colour-related is not clear at all. But one thing is clear: there is a certain vague similarity in colouration among some of these species. Nigel Hankin says that "about the only quality that the braminy kite, braminy duck and braminy myna... share in common is a certain reddishness in colour". A little far-fetched, perhaps, but still worthy of consideration. This is, to some extent, true of the braminy skink also whose dorsal colour is shiny brown or bronze. Similarly, the colour of *Ramphotyphlops braminus* is reddish brown (or blackish brown). So, *braminus*, perhaps, does have something to do with colour as Wall presumed. But how? Is it because some Hindu holy men are dressed in fawn-coloured clothes? As Sherlock Holmes would say, "when you have eliminated the impossible, whatever remains, *however improbable*, must be the truth".

While globally accepted scientific names have brought about some order in nomenclature if not total stability, the oddities, aberrations and absurdities in the Latin terminology have infuriated some scientists. So much so, demands are heard at times that the present system of dog-Latin appellations be thrown overboard and a simple and sensible system of symbols and numbers be adopted as in Chemistry. But this kind of a cleansing operation will surely rob our life-forms quite something of their indefinable charm. No one will seriously contend that just because personal names of the human race can often be confusing, sometimes bewilderingly so, there

is a case for changing over to a system where everyone is identified only by a number. Such is the stuff Orwellian nightmares are made on.

Notwithstanding all the road-blocks in our search for meaning, it is a journey well worth our effort and time. Becoming aware of the etymology and significance of the Latin name transforms the gobbledegook into an interesting tit-bit that imprints the name in our memory. And, suddenly, the animal also looks more interesting. We see it in a new light as it were. It is almost as if henceforth we can deal with it on first-name terms.

Tailpiece:

Mark O'Shea, an expert on snakes who is a familiar figure in the visual media, narrates how he was once bitten by a highly poisonous canebrake rattle snake. While being rushed to the hospital in an ambulance, he realised that he was becoming unconscious and, if that happened, he might never wake up. In a desperate attempt to keep himself awake during the twenty minutes drive, he tried to remember the Latin names of all the 32 rattlesnake species. One by one, he could recollect 29 names and then had to think hard. This mental exercise kept him conscious till he reached the hospital. He lived to tell the tale in his book, *Venomous Snakes of the World*. You see, Latin names have their uses after all – even if you are not inclined to explore their meaning and significance.

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DESCRIPTION OF TWO NEW SPECIES OF *XENOPHRYS* (AMPHIBIA: ANURA: MEGOPHRYIDAE) FROM NORTH - EAST INDIA

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Introduction

The Anuran family Megophryidae (*Megas* meaning large, *ophrys* meaning eye brow) comprises of short legged toads which can be distinguished from true toads (Bufonidae) and true frogs (Ranidae) by the following combination of characters: Either the body has a toad-like shape with many warts and missing parotids or body not toad-like and the upper eyelid has a characteristic border and the snout tip protrudes above the mouth; the pupil is vertical (Schleich & Kastle, 2002). Seven species are known from North-East India, namely *Xenophrys boettgeri* (Boulenger), *X. glandulosa* (Fei Ye. Huang), *X. kempii* (Annandale), *X. major* (Stejneger), *X. parva* (Boulenger), *X. robusta* (Boulenger) and *X. wuliangshanensis* (Ye and Fei) (Frost ,2006).

Two megophryids, collected during field surveys in Mizoram and Nagaland revealed on examination to be new to science.

The specimen from Mizoram was collected from a terrestrial habitat in the Agricultural Guest House compound in the night and that of Nagaland from a torrential mountain stream side during day. In both the cases search for more specimens did not yield any further addition.

These are described here.

Abbreviations

SVL	Snout to vent length
HW	Head width
HL	Head length
MN	Distance from back of mandible to nostril
MFE	Distance from back of mandible to front of eye
MBE	Distance from back of mandible to back of eye
IFE	Distance between front of eyes
IBE	Distance between back of eyes
IN	Internarial space
EN	Distance from front of eye to nostril
EL	Eye length
SN	Distance from snout to nostril
SL	Distance from front of eye to tip of snout
TYD	Maximum tympanum diameter
TYE	Tympanum eye distance
IUE	Minimum distance between upper eye lids
HAL	Hand length (from base of outer palmar tubercle to tip of third finger)
FLL	Forelimb length
TFL	Length of third finger (from base to tip)
FML	Length of femur (from vent to knee)
TBL	Length of tibia
FOL	Foot length (from base of inner metatarsal tubercle to tip of fourth toe)
FTL	Length of fourth toe (from base to tip of 4th toe)
SS	Shoulder to tip of snout

Measurements were taken with the help of an electronic digital caliper and are in millimeters.

Etymology.

The species described are named after the place from where they are collected.

***Xenophrys zunhebotoensis* sp.nov.**

Material examined: 2 examples (1 female, 1 male), INDIA: Nagaland, Zunheboto district, Nguti (Sukhalu), (collected from a mountain stream with rocks and boulders) (N.25° 58' 45.1", E. 94°30' 24"), Alt. 1715msl, 10.8.2005, Coll. R.Mathew.

Description of the Holotype: (A gravid Female),(Plate-I, A),Regd.no.V/A/ERS/ZSI /774

A small *Xenophrys*, (SVL 39mm) dorsum smooth with few ridges and warts, slaty brown above; a dark triangular patch between the orbit (Plate-III,D); a broad incomplete 'V' shaped ridge behind the eye, another similar ridge of inverted 'V' shape towards the posterior side thereby imparting an indistinct hourglass pattern on the back; 2 parallel lines on either side between the 'V' shaped ridges; supratympanic glandular fold white, distinct, curving on to the anterior region of the tympanum(Plate-III,G) to give it a round shape; nostril closer to eye; vomerine teeth prominent, close to each other; snout slightly upturned, obtusely pointed (Plate-III, A) flanks with small round tubercles; leg when stretched along the side of the body, Tibio - tarsal articulation reach the middle of eye; digits free with small swollen discs, that on the toes smaller; ventrally throat and chest the colour of dorsum; abdomen, thighs and shank off white with light round blotches(Plate-II,A); legs with dark bands dorsally; axial and femoral glands prominent(Plate-II,E). A slit on the latero-ventral side showed yellowish round eggs (Plate-I ,C)

Description of the Paratype. (Male), (Plate-I,II,B)V/A/ERS/ZSI/775.

Smaller than the female, (SVL 30mm); similar to holotype; snout slightly upturned, nasal aperture large, closer to eye; dorsum smooth without ridges and warts; tympanum larger than in the female; 4th finger distinctly longer than the 3rd on the right hand, subequal on the left hand; jaws with white cross bars; legs when stretched alongside the body, Tibio - tarsal articulation reach the middle of eye;

belly and ventral side of femur and tibia whitish; the axial and femoral glands smaller than that of the female.

Habitat notes:

The Holotype and paratype specimens were collected from a torrential mountain stream strewn with rocks and boulders.

***Xenophrys serchhipii* sp. nov.**

Material examined: 1 example, Regd.No. V/A/ERS/ZSI/773. INDIA: Mizoram, Serchhip district, Serchhip, Agriculture Guest House compound (N. 23° 20' 31.6", E. 92° 50?' 46.6", Alt.880 m above msl. , 23.9.2005, Coll. R.Mathew.

Description of the Holotype.

A small *Xenophrys*, (SVL 37.05mm), toad like, (Plate-I,D); dorsum dark brown or almost black, without the usual dark triangular mark between the eyes (Plate- III,E) ; a 'V' shaped ridge dorsally between eye and shoulder level; nostril prominent, closer to tip of snout; snout sharply pointed (Plate- III,B); vomerine teeth very prominent, globular, close to each other; tympanum large, oval, depressed, darker, bordered above by the supra tympanic fold, distinct (Plate-III,H); supra tympanic glandular fold prominent; jaws with white cross bars, that on lower jaw broader ; digits long, 2nd and 4th fingers sub equal in length, 3rd longest; tips of fingers and toes swelled up into small discs; sub articular tubercles indistinct; dorsum below the tympanic region with longitudinal ridges and small, round and conical warts of varied sizes, these are more on the lateral side; dorsum homogeneously dark; nostrils equidistant to eye and snout; tip of snout concave dorsally; upper eye lid with two prominent warts; ventrally throat and chest brown to black, mottled with white (Plate-II,C); a pair of axillary and femoral glands (Plate-II,F); legs when stretched along the side of the body, Tibio - tarsal articulation reach up to anterior region of eye; legs above with dark bands; head above with various sizes of round warts; fingers and toes free but for the rudiment of web between 2nd and 3rd toes; belly and ventral side of femur and tibia whitish.

Habitat notes.

This specimen was collected in the night from the Guest House compound as it was trying to enter its hide-out in the earth beneath. On an earlier attempt seeing the collector it had retreated. It was alert and agile and was collected with the help of a net bag.

Since the two newly described species come closer to *X. wuliangshanensis* (Plate-1,E; Plate-II,D,G; Plate-III,C,F,I) measurements of *X. wuliangshanensis* is compared with the measurements of the new descriptions.

Measurements (in mm) of *Xenophrys zunhebotoensis* sp. nov.(female and male), *Xenophrys wuliangshanensis* and *Xenophrys serchhipii*sp. nov.

	X.zunhebotoensis		*X .wuliang-shanensis*	*X .serchhipii*
	female	male		
SVL	39.00	30.00	32.15	37.05
HW	12.50	09.00	09.77	12.45
HL	11.00	08.50	10.68	11.40
MN	10.00	06.00	08.82	9.91
MFE	09.00	05.50	08.29	8.19
MBE	04.00	02.50	05.08	4.23
IFE	05.00	05.00	05.15	5.59
IBE	11.00	08.00	06.80	7.14
IN	03.00	02.50	04.82	3.20
EN	01.50	01.10	01.59	2.73
EL	04.50	03.70	03.25	6.07
SN	02.20	01.50	02.42	2.32
SL	04.50	03.20	04.11	4.43
TYD	03.10	02.00	02.69	2.34
TYE	02.10	01.70	02.69	2.34
IUE	03.50	03.40	04.36	3.95
HAL	09.70	09.00	09.20	9.74
FLL	08.20	07.00	08.24	9.74
TFL	06.00	05.20	04.92	5.33

FML	15.00	13.00	14.02	19.45
TBL	18.00	15.00	14.80	18.27
FOL	17.05	13.00	13.04	16.49
FTL	10.50	08.00	07.92	8.20
SS	15.50	14.00	14.00	14.70
TAL	09.00	08.20	08.00	14.20

For comparison, the indices of the readings were taken (SVL/HW x 100 etc.)

	zunhebotoensis. sp.nov		*wuliang-shanensis*	*serchhipii*. sp.nov
	female	male		
SVL	39.00	30.00	32.15	37.05
HW	312	333	329	298
HL	355	353	301	325
MN	390	500	365	374
MFE	433	545	388	452
MBE	975	1200	633	876
IFE	780	600	624	663
IBE	355	375	473	519
IN	1300	1200	667	1158
EN	2600	2727	2022	1357
EL	867	810	989	610
SN	1772	2000	1329	1597
SL	867	938	782	836
TYD	1258	1500	1195	1583
TYE	1857	1765	1195	1583
IUE	1114	882	737	938
HAL	403	333	349	380
FLL	476	429	390	380
TFL	650	577	653	695
FML	260	231	229	190
TBL	217	200	217	203
FOL	229	231	247	225
FTL	371	375	406	452
SS	252	214	230	252
TAL	433	366	402	261

Conclusion

While comparing the new species *Xenophrys zunhebotoensis* sp.nov. with *X. wuliangshanensis* significant differences were observed in the following characters.

1.	HL	Length of head
2.	MBE	Distance from back of mandible to back of eye
3.	IBE	Distance between back of eyes
4.	IN	Internarial space
5.	EN	Distance from front of eye to nostril
6.	EL	Eye length
7.	SN	Distance from snout to nostril
8.	SL	Distance from front of eye to tip of snout
9.	TYD	Maximum tympanum diameter
10.	TYE	Tympanum eye distance
11.	IUE	Minimum distance between upper eyelids
12.	FLL	Forelimb length
13.	FML	Length of femur
14.	FTL	Length of 4th toe

While comparing the new species *Xenophrys serchhipii* sp.nov. with its closely related species *Xenophrys wuliangshanensis*, significant differences were observed in the following characters.

1.	MBE	Distance from back of mandible to back of eye.
2.	IBE	Distance between the back of eyes
3.	IN	Internarial space
4.	EN	Distance from front of eye to nostril
5.	EL	Eye length
6.	SN	Distance from snout to nostril
7.	SL	Distance from front of eye to tip of snout
8.	TYD	Maximum tympanum diameter
9.	TYE	Tympanum eye distance
10.	IUE	Minimum distance between upper eye lids

11. TFL Length of 3rd finger
12. FML Length of femur
13. FTL Length of fourth toe
14. TAL Length of tarsus

The type materials are deposited in the holdings of the Eastern Regional Station, Zoological Survey of India, Shillong.

Acknowledgement

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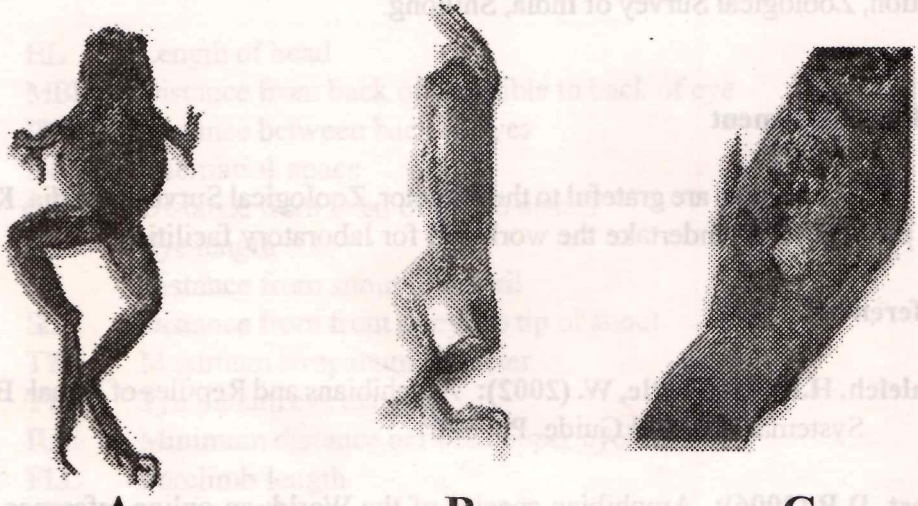
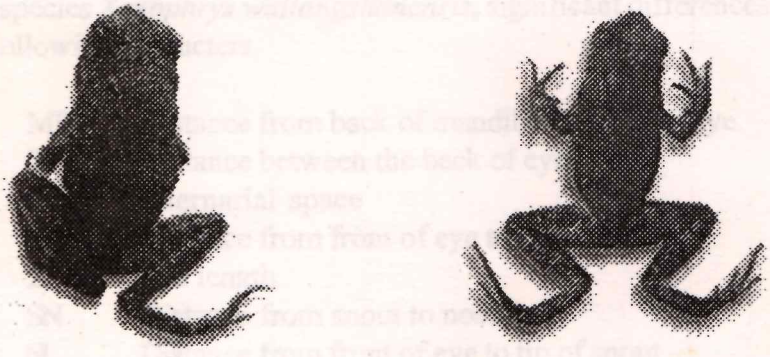
PLATE- I

Dorsal view of A) *X. zunhebotoensis* sp.nov. (female)Holotype ; B) male; C) Gravid female with eggs; D) *X. serchhipii* sp.nov Holotype E) *X. wuliangshanensis* (Ye and Fei)



A B C

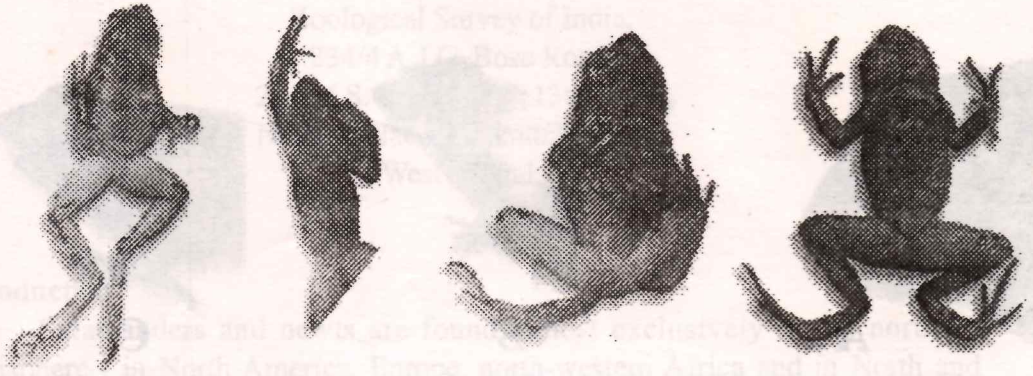


D E

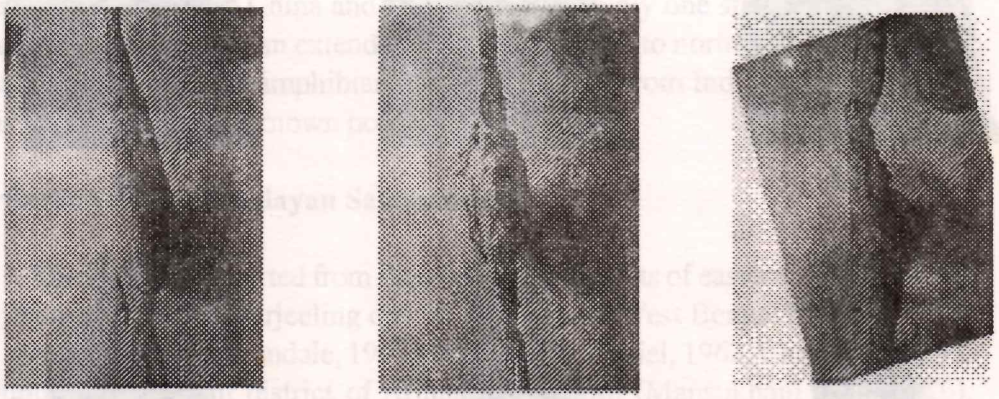
PLATE- II

Venrtral view of A) *X. zunhebotoensis* sp.nov.(female)Holotype; B) male; C) *X. serchhipii* sp.nov.; D) *X. wuliangshanensis* (Ye and Fei).

Femoral glands of E) *X.zunhebotoensis* sp.nov. F) *X. serchhipii* sp.nov. G) *X. wuliangshanensis*



A B C D



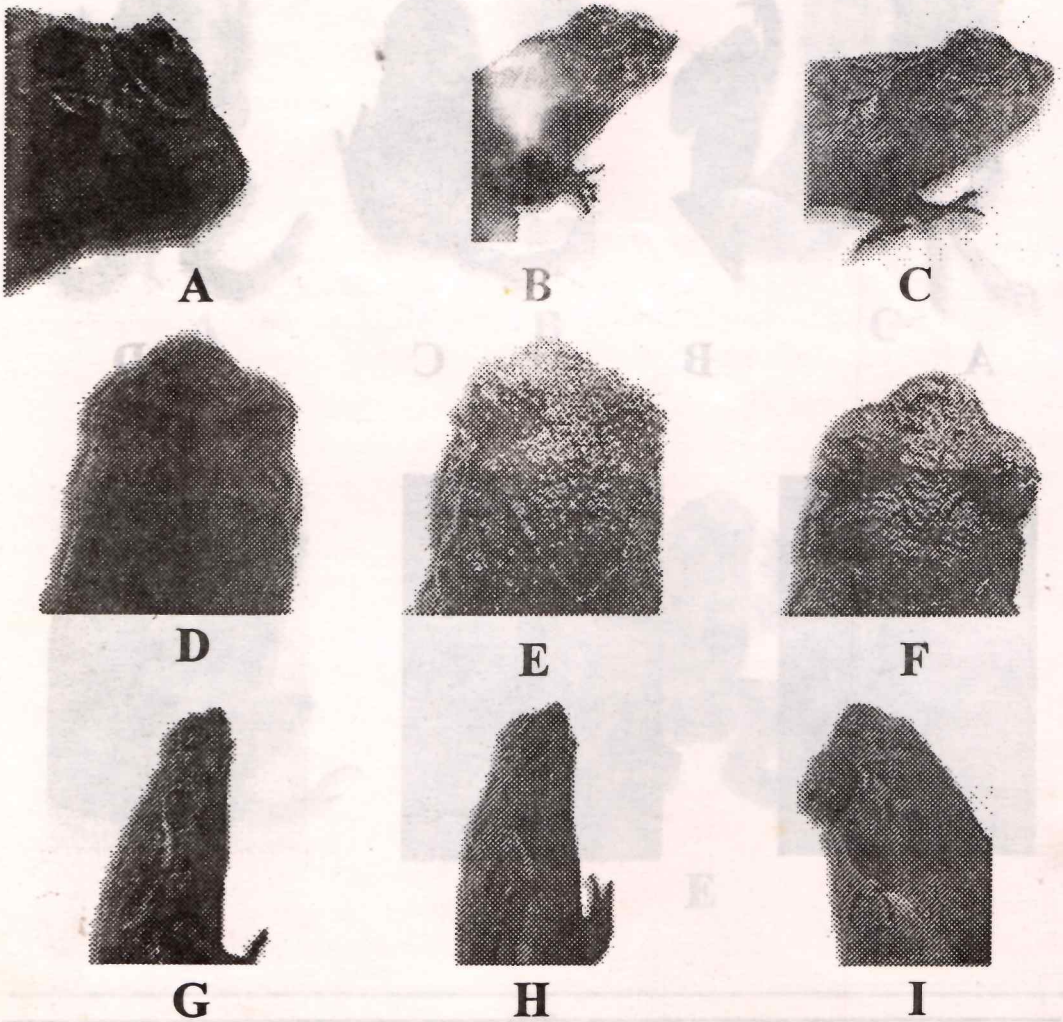
E F G

PLATE- III

Snout region of A) *X.zunhebotoensis* sp.nov. B) *X.serchhipii* sp.nov C) *X.wuliangshanensis* (Ye and Fei)

Triangular marks in D) *X.zunhebotoensis* sp.nov.; E) *X.serchhipi* sp.nov.; F) *X.wuliangshanensis* (Ye and Fei).

Tympanum in G) *X. zunhebotoensis* sp.nov.; H) *X.serchhipii* sp.nov.; I) *X.wuliangshanensis* (Ye and Fei).



DISTRIBUTION SITES OF THE HIMALAYAN SALAMANDER (*TYLOTOTRITON VERRUCOSUS*) ANDERSON IN THE DARJEELING HILLS OF NORTHERN WEST BENGAL, INDIA

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Introduction

Salamanders and newts are found almost exclusively in the northern hemisphere - in North America, Europe, north-western Africa and in North and Central Asia. Some members of the family Hynobiidae are found in north-east Asia and some members of the family Salamandridae are found in Central Asia and south-eastern Asia. The genus *Tylototriton* consists of four species, three of which are exclusively restricted to China and south-east Asia. Only one species, *Tylototriton verrucosus* Anderson has an extended range from China to north-eastern India. It is the only species of tailed amphibian (Caudata) known from India. The distribution of this species in India is known poorly.

Distribution of the Himalayan Salamander

The species is reported from Ilam and Jhapa districts of eastern Nepal (Soman, 1966; Shrestha, 1984), Darjeeling district of northern West Bengal between 1330-2220 metres altitude (Annandale, 1907; Smith, 1924; Daniel, 1962; Chaudhuri, 1966; Dasgupta, 1990), Lohit district of Arunachal Pradesh (Mansukhani *et al*, 1976), Ukhrul and Senapati district of Manipur (Selim, 2001). It is also known from the Kakhyen hills of Myanmar, Chiang Mai province of northern Thailand and from western China (Anderson, 1871). Although there are no confirmed reports, the species may also occur in Sikkim and Bhutan.

The related species: *T. kweichowensis* Fang and Chang, *T. taliangensis* Liu and *T. shanjing,* Nussbaum, Brodie and Yang are all found in China and South-east Asia.

Surveys done on the Himalayan Salamander

Annandale (1907-1908), Smith (1924), Daniel (1962), Chaudhuri (1966) and Dasgupta (1990) all reported the occurrence of the Himalayan Salamander from the Darjeeling hills of northern West Bengal. Soman (1966), Shrestha (1984, 1989) noted its distribution in Nepal. Mansukhani *et al.* (1976) reported it from Arunachal Pradesh and Selim (2001) from Manipur.

The first survey on the species in the Darjeeling hills was conducted by Ritwik Dasgupta during 1983-1988 and he reported the species from 10 sites (Dasgupta, 1990). The second survey was conducted by Daniele Seglie *et al.* in 2002 and he reported the species from 16 sites in the Darjeeling hills (Seglie *et al.* 2003) Our survey from June, 2005 to July, 2006 observed the species in 20 sites.

Methodology

A status survey was conducted by us in the Darjeeling hills of northern West Bengal from June, 2005 to July, 2006. The specific small ponds (locally called "pokhries") which serve as breeding sites for the Himalayan Salamander were visited during three surveys to the area each consisting of 10-15 days duration. The physical parameters of the sites like area, depth, altitude, covering vegetation, surrounding vegetation, were measured. The co-ordinates of the site were also noted.

Results

Sites where salamanders were found

1. **Lake inside Margaret Hope's Tea Estate** : It is a natural lake having cement bund on the lower side and marshy land on the upper side surrounded by tea bushes. A few hundred salamanders were found and it is protected by Forest department and it is a good place for breeding of salamanders.

2. **Site inside the Oaks Tea Estate**: It is an artificial dam made for generating hydroelectricity with marshes on upper side. A few scores of salamanders were found which were affected by pollution from pesticides used by the tea estate.

3. **Pacheng Bazar**: It is a natural marsh in the town of Pacheng but dry as it is threatened by drainage for agriculture. A few scores of salamanders were found.

4. **Site beside Shanti Rani High School, Pacheng**: It is an artificial reservoir made for generating hydroelectricity but now dry and filled with shrubs and grasses. A few scores of salamanders and eggs were also found. During most of the time it is filled with water and it is a good site for breeding.

5. **Majhidhura (Near Sukhiapokhri)** : It is a natural marshy land surrounded by grassland. A few dozens of salamanders were found .

6. **Dungdungia (Near Sukhiapokhri)** : It is a natural marshy place at the top of a hill surrounded by Cryptomeria trees. Less than 10 salamanders were found.

7. **Jorepokhri**: The two ponds at the top of the hill are cemented and converted into a recreational park by DGHC. A small pool beside the road to Jorepokhri was containing less than 10 salamanders.

8. **Maneybhanjang:** It is a small permanent pool with marshy land on lower side. Most of the marshy land is now converted into football ground. Less than 10 salamanders were found and the pool is polluted by washing clothes and utensils.

9. **Simana**: A small rain puddle beside a permanent stream between Simana and Fatak. Surrounded by bushes and grasses and less than 10 salamanders were found.

10. **Solimore**: A natural pool between Fatak and Seeyok surrounded by grasses and herbs. Less than 10 salamanders were found.

11. **Seeyok**: It is a temporary marsh opposite to DGHC view point surrounded by grass and less than 10 salamanders were found.

12. **Nakhapani**: It is a natural pond inside Gopal Dhara Tea Estate surrounded by tea bushes and a few dozens of salamanders were found

13. **Ninth mile upper pond**: It is a natural pond inside a village, surrounded by bushes and trees Less than 10 salamanders were found and they are threatened by the commercial fishes released.

14. **Ninth mile lower pond**: Two natural ponds near Thurbo Tea Estate, surrounded by trees and bushes and partially by marshy land. Less than 10 salamanders were found and they are threatened by the commercial fishes released.

15. **Mirik-Social Forestry Area**: Many artificial pools made by Forest Department for breeding salamanders. A few scores of salamanders were found.

16. **Mirik-Raidhap Area**: Two rock pools beside a hill stream and few rain puddles in a football ground were found. A few dozens of larvae of different stages were found in the rock pools.

17. **Pokhritar**: A big natural pond inside Pokhritar village, near Bagora, surrounded by human habitation. A few scores were found. The pond is polluted by domestic sewage.

18. **Debrapani**: It is a small natural pool surrounded by bushes and trees and partially by marshy land. Less than 10 salamanders were found. Pool is filled by plant debris.

19. **Satdobate**: A big natural marshy land and a sacred place for local people. A few scores of salamanders were found and it is a good place for their breeding.

20. **Namthing Pokhri**: It is a big natural lake fenced and protected by a NGO (NEWS). A few hundreds of salamanders were found and it is a good place for their breeding.

Other details about the sites are given in the Table 1.

Table 1 : Showing the descriptions about the sites where the salamanders were found.

Name of the Site	Type	Area (sq m)	Depth (metres)	Latitude N	Longitude E	Altitude(metres above m.s.l.)
Margaret Hope T.E.	Natural	3150	2.0	26°5625803	88°1628643	1600
Oaks T.E.	Artificial		1.0	26°562 8933	88°1521993	1550
PachengBazar	Natural	1540		26°5720853	88°1528783	1740
ShantiRani H.S.	Artificial	252		26°5629103	88°1526213	1690
Majhidhura	Natural	750	0.15	26°592 5803	88°0928643	2148
Dungdungia	Natural	600	0.30	26°562 5803	88°1628643	2227
Jorepokhri	Natural	0.04	0.30	26°592 2403	88°0921493	2263
Maneybhanjang	Natural	12	0.30	26°5922993	88°0723463	1934
Simana	Natural	01	0.15	-	-	-
Solimore	Natural	07	0.50	26°5525803	88°0822173	1996
Seeyok	Natural	112	0.15	26°5525973	88°0824883	2057
Nakhapani	Natural	144	0.60	26°5520643	88°0829333	1728
9thmile upper pond	Natural	88	1.0	-	-	1614
9thmile lower pond	Natural	78	0.50	26°5423213	88°0925083	1584
Mirik Social forestry area	Artificial	105	1.0	26°5321463	88°1122353	1577
Mirik-Raidap area	Natural	04	0.30	26°5321863	88°1122853	1607
Pokritar	Natural	1750	2.0	26°582283	88°072423	1854
Debrapani	Natural	09	1.5	26°5821863	88°0929333	1728
Satdobate	Natural	10000	0.50	26°5726563	88°1020183	1874
Namthing pokhri	Natural	5250	2.0	26°5524243	88°2325513	1737

Discussion

All the 20 sites detected were in the Darjeeling hills between the altitudes of 1577 and 2227 metres above mean sea level. The surveys revealed the presence of the Himalayan salamander in four more localities from where they were not earlier recorded. Although Seglie *et al.* (2003) reported the salamander from one site in the Kalimpong hills (Algarah: 26°55'70" N, 88°24202" E) on the east of the Teesta river, the authors did not find the presence of the salamander from that site. The present survey revealed the presence of the species only in the Darjeeling hills on the west of the Teesta river as also recorded by Smith (1924). According to Dasgupta (1988) some tadpoles of the salamander were released in Senchal lake by the Forest department, but even after visiting Senchal Lake (26° 55' 81" N and 88° 24' 02" E), we couldn't find salamanders as the lake was built for water supply. However a few salamanders inside the Senchal Wildlife Sanctuary (26° 59' 90" N and 88° 15' 73" E) was noticed.

Even small waterbodies with only 10-15 cm of water can allow the adults to breed and deposit their eggs. Today, due to ever increasing human population, accelarated by the tea and tourism industry, all flatlands in the hills are being used for housing and building tourist complexes. The slopes are all being converted to huge tea estates.Goat and cattle grazing loosen the soil leading to soil erosion and siltation of the existing waterbodies which are already highly polluted by detergents used during washing clothes and pesticides from surface run-off of tea gardens. Some of the smaller waterbodies still left are often used as garbage dumps and public toilets. In the few unpolluted waterbodies, carps and other cultured fishes have been introduced which completely destroy the eggs and larvae of the salamanders.

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NOTE ON THE FEEDING OF WHITE-LIPPED PIT VIPER *TRIMERESURUS ALBOLABRIS* GRAY, 1842 FAMILY: VIPERIDAE BOIE, 1827 IN CAPTIVITY

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The white-lipped pit viper *Trimeresurus albolabris* Gray, 1842 (Family : Viperidae) has earlier reported from West Bengal (Darjeeling) and Assam (Dibrugarh) and rest of the records are doubtful in India (Whitaker and Captain, 2004). Recently a specimen was collected from a secondary growth of mixed vegetation dominated by *Melastoma malabathricum* during a field survey to record the status of serpent fauna of Assam University campus and surrounding areas in Dorgakona, Cachar District, Assam.

The specimen was caught to record morphometric data and for further study to confirm the species identification. The specimen was later photographed and kept in captivity in the Department of Ecology and Environmental Science laboratory, Assam University.

The snake was kept in a plastic container of eight litre capacity. A few twigs and leaf litter were provided within the container to simulate a natural condition. Feeding was tried with three kinds of preys viz. grasshoppers, frogs (*Fejervarya limncharis*) and geckos (*Hemidactylus frenatus*) in two different time periods i.e. in early evening and at late night as it is a nocturnal snake. The snake used to feed in late night and early morning and the gecko (*Hemidactylus frenatus*) was the most preferred food item, followed by the frog (*Fejervarya limnocharis*), while Grasshoppers were discarded. The feeding experiments were performed at regular intervals during September 2 – October 14, 2006 for a span of 42 days and food items were offered on 34 occasions.

The feeding pattern is depicted in Table 1.

Table 1.

Prey Item	Number offered	Number consumed	Percentage consumed
Gecko	13	12	92.3 %
Frog	15	2	13.3 %
Grasshopper	6	0	—

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RANDOM HARVEST

Rescued from the brink, now back to the brink.

That, in brief, has sadly been the tale of gharial conservation in India. The gharial was on the brink of extinction in the early 1970s with an estimated wild population of just about 200. A crocodile recovery programme for all the three crocodilians of India was then formulated by the Govt. of India with assistance from the FAO/UNDP. This led to the collection of about 12,000 gharial eggs during a period of three decades. Over 5000 young gharial were released, mostly in protected areas. "While numbers built up in some areas like the Chambal River (and subsequently crashed), in other places like the Mahanadi in Orissa only two gharials have survived although 700 were released there".

At present, there are only some 200 adult gharials in the wild. (Back to the early 1970s!) Breeding is taking place at only four locations in the wild: Chambal River, Girwa River, Son River and the Rapti / Narayani River in Nepal. The gharial is confirmed as extinct in the wild in Burma, Pakistan, Bhutan and, probably, Bangladesh.

(Source : *Zoos' Print* Vol.XXI, No.10, Oct.06.)

Ø Ø Ø

Frogs in peril

Of all of God's creations, the frogs seem to have the toughest time. They live in a wide variety of habitats, on land and in water, but everywhere their luck seems to be running out. Numerous species of frogs have become extinct in the past few decades many of them even without being known to science, and far more are threatened. Habitat destruction, pollution of the waters, prevalence of pesticides and herbicides, global warming, known and unknown diseases, vulnerability of frog eggs, tadpoles and juveniles to a whole lot of native predators, introduction of non-native predatory fish, cattle grazing, prolonged droughts, floods, depletion of the ozone layer and consequent increase in ultra-violet ray radiation, acid rain, human exploitation for food and for the pet trade, all these and some more have conspired to take a heavy toll of frog populations across the globe.

Reporting from Altanta, *The Hindu* of Feb16, 2007 narrates the efforts of a group, aptly named the Amphibian Ark, to save the frogs from impending doom from a killer fungus called the chytrid fungus. Scientists suspect that the fungus has its origin in Africa. The African clawed frog, which carries the fungus on its skin and is immune to its deadly effects, has been shipped all over the world for research. The fungus makes it difficult for the frogs to use their pores, causing them to die of dehydration. It has been linked to the extinction of amphibians from Australia to Costa Rica.

A passing thought: Is n't it curious that Africa which had seen the emergence of the human race is also the original home of some of the lethal viruses that have afflicted the human-kind? Like the yellow fever, the Crimean-Congo haemorrhagic fever, the O'nyong-nyong fever, the different types of Ebola, the Rift valley fever, the Marburg fever, the Lassa fever and the deadliest of all, HIV/AIDS. And, now it is the turn of the frogs to be felled by an African killer fungus. What Pliny said more than 19 Centuries ago holds true to this day: "*Ex Africa semper aliquid novi*" ("There is always something new from Africa"). Let the commendable efforts of groups like the Amphibian Ark meet with all success!

In the meantime, let us, in the words of 'Anon.', celebrate the frog, one of the most endearing creatures that populate this planet:

"What a wonderful bird the frog are!
When he walk, he fly almost;
When he sing, he cry almost.
He ain't got no tail hardly, either;
He sit on what he ain't got almost".

Ø Ø Ø

When turtles spy.

The Hindu Business Line of 12 Nov.2005, reports the claim of a Russian Scientist, Alexei Burikov of the Roster-on-Don State Pedagogical University, to have developed gadgets that can be used for remote controlling turtles for spying missions. A tiny camera could be fixed to the turtle's shell which could relay reconnaissance pictures of an area to a command and control centre. They could also be used to perform a whole range of dangerous operations, from placing bombs in an enemy HQ to depositing high-tech recording devices. The report ends, however, on a cheerful note: "The invention could be used for environmental purposes as well".

Ø Ø Ø

Do saw-scaled vipers hibernate?

"In Maharashtra (Ratnagiri dt.), over 2500 saw-scaled vipers [Echis carinatus] were recorded in one week (July). The same area was visited in December and not a single snake could be found. Hibernation or aestivation in laterite crevices may account for this dramatic disappearance".

— Whitaker & Captain (*Snakes of India— The Field Guide*)

Ø Ø Ø

Virgin birth in Komodo dragon

Virgin birth, scientifically known as Parthenogenesis, refers to the biological reproduction that involves the development of a female sex cell without fertilization by a male sex cell. It occurs commonly among lower plants and invertebrate animals,

particularly rotifers, aphids, ants, wasps and bees. It has been noticed in some species of fishes. Among snakes, parthenogenesis has been noticed as a regular occurrence only in one species – the brahminy blind snake (*Ramphotyphlops braminus*). Parthenogenesis is the only mode of reproduction in this snake and not a single male has been found so far even though this is a species that now occurs world-wide. There are a few reported cases of chance occurrences of virgin birth in some individuals of rattle snakes and one Burmese python.

Parthenogenesis has been found to occur in some individuals of lizard species such as the new world lizards of the genus *Cnemidophorus* and the old world lizards of the genus Lacerta. It has been reported also in the Western fence lizards and the Australian Bynoe's geckos.

And now comes a report (*The Telegraph* 29 Jan.2007) of a female komodo dragon in the London zoo which has had no contacts with a male ever, having produced a clutch of eggs from which four babies emerged in Apr.2006. This is the first reported instance of parthenogenesis in a komodo dragon. Close on its heels comes the report of another virgin komodo dragon in the Chester zoo in northern England having laid a clutch of 'parthenogenetic' eggs. Since the incubation period is between seven and nine months, the results should have been out by now.

The komodo dragon (*Varanus komodoensis*) is the largest living lizard measuring more than 10 ft. and weighing some 140 kg. It is found in the Indonesian islands of Komodo, Rintja, Padar and Flores. It figures in the Red Data List of endangered species.

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"Man-eating" pythons

One occasionally hears stories of pythons and other such large snakes eating or attempting to eat humans. But authentic accounts are extremely rare. Writing in *The Monitor – Newsletter of the Hoosier Herpetological Society* Vol.16, N0.7. July 2005, Ed Ferrer says "...Scientists feel it is unlikely that a large snake could take an adult human. First, the chance of a healthy human being caught is improbable, although someone injured, resting or asleep might be vulnerable. Secondly, although

snakes have the ability to dislocate their jaws and swallow items bigger around than they are, our wide shoulders make this feat very unlikely. Although adult humans are not prime targets for these large predators, children and babies are certainly on the menu". Ed Ferrer then proceeds to recount a few confirmed cases of pythons killing adult humans.

Now *The Hindu Business Line* of 28th Feb. 2007 reports that a python kept as a pet in southern Vietnam strangled its owner who had cared for it for more than 10 years. The 40 kg. 2.5 – metre reptile reached out and wrapped itself around the neck of its 69 - year - old keeper and squeezed him to death. But the snake did not try to swallow him.

Incidentally, in case you ever happen to get entangled with a python or *vice versa*, remember that the coils are the real danger, not the head. There is a vernacular saying: "to let go the head and hold the tail". This bespeaks the folly of trying to tackle a problem from the wrong end. But, in the case of a python attack, that is precisely what you should do. Grab the tail and unwind the coils. Simultaneously, keep an eye on the head too lest it gives you a bite which can be nasty though not poisonous. And best of luck!

- B. Vijayaraghavan

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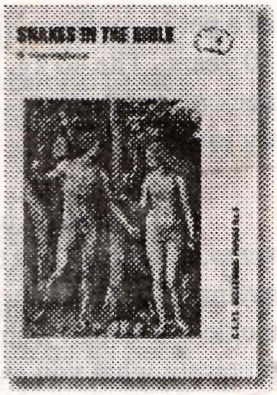

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