

FACTS, MYTHS, MISCONCEPTIONS AND SUPERSTITIONS ABOUT SNAKES

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Since time immemorial snakes have been an integral part of human life. Having evolved around 60 million years ago, after the extinction of the great Dinosaur dynasty, snakes seem to have remained fairly unchanged, with the changing times.

They must have evolved from lizard like creatures by losing their limbs while taking up burrowing mode of life. The Ajolote lizard of México is one such lizard that has long snake like body with small limbs, a most likely candidate to be the ancestor of snakes

Since 1979, I have been involved in the study of different aspects of Snakes like role of venom in the treatment of cancers, neuralgia, artificial incubation, survey of biodiversity, effects of pollution on snakes etc.

Snakes are the least understood animals and most disliked too, probably because of their venom and numerous distorted stories. It is true that bite of a venomous snake can be fatal to man, but the percentage of such snakes is just 10 %.

Most of the people are unaware of the real facts about snakes hence they believe anything that said about snakes. This article is to create awareness amongst common man. Some of the facts about snakes are as mentioned below.

All snakes are limbless which helps them to slide fast into the burrows with ease.

The skin is cutinized which means covered with a waxy cuticle. Since snakes crawl on rough surfaces the skin tends to get torn regularly hence it is shed periodically. During this time they are almost blind and irritable. This is because the transparent covering of the eye becomes opaque.

They have fixed eyelids hence snakes do not blink; as a result even if they are dead it appears as though they are alive and are seeing. This in fact has led to a feeling amongst the public that if you kill a snake it will capture your image and take revenge later.

Snakes have poor sense of vision, but react to fast moving objects with lightning speed

They lack Ear openings and tympanum (ear drum) hence sound waves are picked and heard through vibrations on the ground that is transmitted through jaws. They cannot detect air bone vibrations easily. If someone wants to keep a snake at bay a good option would be to tap the ground hard and create sufficient vibrations.

They lack a chest bone called sternum hence they easily flatten their body and move through small spaces.

They lack urinary bladder to reduce the space in the body for its occupation.

Snakes have moveable jaw bones which can be separated into 2-4 units while swallowing large prey. Snakes feed once every 2-3 days. But if food is not available they can survive for several months without eating. All snakes are carnivorous, feeding on a wide range of prey, from ant grubs to larger mammals and even eggs.

Venomous snakes inject their poison into the prey, let them go, once the prey is paralyzed they swallow the victim without chewing. Non venomous snakes like rat snakes etc grab the prey with a sudden move and swallow the victim alive. Some other non venomous snakes like boas, pythons etc wait patiently for an unsuspecting prey and ambush it in tight coils until the prey suffocates to death and then swallow whole. Some Snakes normally do not feed on dead prey; probably the act of chasing and hunting does not exist. Pythons and some other snakes feed on dead animals. Feeding greatly depends on several factors, such as ideal temperature, humidity etc. They avoid eating if they are nervous particularly in captivity. Once they have eaten, if they are Scared or mishandled they regurgitate the food. Hence snakes should not be disturbed while they are feeding. The mouth is modified to swallow prey much larger. Both the jaws bear numerous teeth which are curved backwards to prevent the prey from escaping. The digestive system consists of a mouth with teeth, a buccal cavity, a pharynx, an oesophagus, a stomach, intestine, and a rectum. They pass faeces mixed with urine which is rich in uric acid. Hairs, feathers, scales etc remain undigested.

Many reptiles live in very dry habitats so

conserving water in their body is extremely important.

Snakes can sense pain and changes in humidity, temperature, and pressure.

Since snakes are cold blooded or exothermic they totally depend on external sources to warm their bodies. This is why snakes bask in sunlight in cool winters. Snakes like Pit vipers etc have heat detecting pits at the tip of the head, to detect heat of the prey. Hence even in total darkness they detect the prey efficiently.

The left lobe of the lung is reduced in size since the body is narrow and not much space is available for the two lobes.

They have an organ to detect smell called Jacobson's organ located in the roof of the mouth. This is the reason why they regularly flicker their tongue in and out of the mouth to detect smell particles of the air hence their sense of smell is excellent.

In summer most snakes hide in rat holes, burrows and other cooler places like around water tanks etc to escape from excess heat, this is known as aestivation.

In extreme cold conditions they take shelter in warm places like in the brick piles, burrows, tree trunks etc this is known as Hibernation.

By chance if they do not get a right place for hibernation or aestivation they die of Hypothermia or hyperthermia. Every year during peak summer and peak winter I have rescued many immobile snakes on the verge of death.

The male and female get attracted towards each other by secreting scent. Then they exhibit courtship behaviour before mat-

ing, usually with a dance in the monsoon season. The female after one month of mating lays about 20- 60 eggs in a safe place like termite mound, rat hole etc. The eggs take about 2 months to hatch. Vine snakes, sand boas, Pythons, sea snakes, vipers etc give birth to live young ones.

The eggs are leathery and yolk filled. The egg contains everything required by the developing embryo. There is a food supply in the form of a rich yolk, water (contained in the albumen, or 'white'), and protective membranes in several layers, which prevent harmful bacteria from entering but allow respiratory gases to pass through.

The ability to produce these eggs has enabled the snakes to colonize areas well away from water, unlike the amphibians, which must always return to water to breed.

These are but, some of the facts which make the snakes most intriguing and mysterious.

India is a heaven for more than 300 species of snakes, of which only 30 are highly venomous. In India Bangalore with its moderate climate provides right conditions for several snakes to live and prosper.

Interestingly even the highly urbanized areas in Bangalore have several snakes. It is true that prosperity of man has made the snakes to prosper and increase in number, owing to the fact that human beings produce garbage which attracts rodents and hence snakes.

Even agriculture has played a part in the prosperity and success of snakes like Rat snakes, Cobras, Kraits, Vipers etc. because paddy fields and barns are the ideal habitat

for several snakes, which even attract birds and rodents.

Unfortunately in the recent times snakes are facing massive threat from human beings

Due to the umpteen number of myth, misconception and superstitions.

The southern part of India where Bangalore is located has a huge population of people who strongly believe in colorful stories and countless number of superstitious beliefs. Even a highly educated individual seem to strongly accept the age old false beliefs about snakes.

It is believed that if a cobra is hurt or killed its partner takes revenge even if it is several years over since the incident occurred. This feature is propagated all over India. Although a total bluff created by the movie makers in order to build a colourful story and incite fear and thrill, most ignorant people have taken it so seriously that they themselves have started adding more spices to ultimately make it outrageous. This is absolutely not possible because snakes have poor memory. Once a case was reported by a person saying that a snake followed him in his backyard for a few meters when the area was scanned it was found, the snake a cobra had laid eggs, and probably it was protecting its territory.

Most people feel that all snakes are dangerous and hence should be killed at the very first sight, though there are a set of Hindus who treat snakes as God and hence avoid killing.

In many parts of India a specific festival called Nagapanchami is celebrated to high-

light the significance of Cobras. During this festival cobras are collected and are taken in pots to the serpent temples where they are displayed and offered milk. It is not clear if snakes drink milk, though snakes do drink lot of water

A common scene witnessed even today in several parts of india, though banned by wildlife rules is cobras dancing to a certain tune played with a wooden flute. This has fooled even the most sensible people. The realty is a cobra is only reacting in defence. Such snakes are actually handled quite brutally by stitching the lips or removing their fangs. (See the picture for dark patches due to infections on the lips) Such snakes live for a few days only.

One of the worst scenarios is people believing that snake bite should be treated with herbal drugs and mantras. This feeling has infact taken away the life of numerous people. No venomous snake bite can be cured with herbs and mantras. The right remedy is, timely first aid followed by anti-venin. In many places fake doctors make a fortune by selling such herbal remedies.

It has been observed that even in well established cities people believe that cobras shed a diamond after attaining old aged through its mouth. In fact many people are named as Nagamani meaning Cobra Diamond.

Vine snakes are falsely believed to fly in the air and pull out the eye balls of a person a misconception, may be because vine snakes have a pointed snout.

The list of such superstitious believes is never ending. Move in any part of southern India, every other person has some story or

the other to tell about the snakes. Among the snakes cobras top the list.

These are just a few of the vast number of myths associated with the snakes

My studies on snakes in the southern parts of India suggest that the awareness level about the facts of snakes is considerably low even among the people who study life sciences. The situation is so bad that except cobras most other snakes cannot be identified whether they are venomous or non-venomous. Recently a college students brought a snake which was a poisonous common Krait, and he thought it was a harmless water snake.

It is true that all venomous snakes and some non venomous snakes bite readily if handled. Among non poisonous snakes, keel backs, rat snakes, pythons etc bite with immense ferocity. Hence snakes should be handled with great care. Even a minute scratch of poison fang can be dangerous.

An 18 year old girl just few days back died of a cobra bite because her parents wasted time treating her with herbs. These cases are extremely common even in a city like Bangalore, and one can imagine status in rural areas were bites are more common. I myself being a victim of a viper bite a few years back, very well know how important first aid and the right treatment is.

It is observed that in Bangalore 50% of the snakes are harmless rat snakes while cobras constitute 40% this is due to the fact that rat snakes and cobras are highly adopt-

able and easily survive in any harsh environment unlike other snakes.

In one of the cases a clutch of twelve rat snakes eggs were collected and artificially incubated. These eggs hatched after a prolonged period of 130 days. Both cobras and rat snakes exhibit high endurance hence long dry spells and cold conditions, they with stand with moderate ease.

FIRST AID

As a first aid, soon after the bite a crape bandage has to be tied between the site of the bite and the heart, which should be tight enough to prevent lymph flow and loose enough to allow blood flow. This means while passing a finger beneath the bandage, one has to feel some difficulty. The victim has to be kept as calm as possible to avoid increase in the BP. First Aid usually reduces the serious effects of venom. Then the victim has to be rushed to the hospital.

Conclusion:

Although some snakes are extremely dangerous to man, their survival and existence is essential to the ecosystem in general and mankind in particular. All snakes have a right to live on the planet earth as we have a right to live. Due to the countless myths, superstition, and misconceptions several snakes

are slaughtered needlessly, leading to ecological imbalance.

Today there is an increase in the population of rodents etc in several parts of the world, including UK and India. Snakes are the ideal living machines to track down the rodents and check their population and consequently control diseases like plague etc.

Aquatic snakes like keel backs, trinket snakes feed on mosquito larvae; hence reduce the incidence of malaria, filaria and brain fever.

As social responsibility I have launched a non profitable voluntary organization called SWEAR (Society of Wildlife Education, Adventure and Rehabilitation) in which students of the college are active members, totally involved in handling all kinds of smaller wild animals like monkeys, lorries, owls, snakes etc. lot of poor construction labourers and people living on the road sides in huts are victims of snake bites hence they are being regularly explained about the identification of snakes and first aid through awareness programmes and slide shows.

The SWEAR volunteers have rescued snakes from wells, bathrooms, godowns, building tops, cars, etc. based on phone calls made by the residents.

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Dr BM Zahir with Dr Ataz during an awareness programme in a city college



Rescue snake

Snake with needle attached

Snake after Antivenom treatment



Rat snake rescued, deep cut attached and released after treatment