Introduction:

Tropical Evergreen forests are treasure troves of Biodiversity. Their close canopy, stratified appearance, high humidity, trees laden with lianas and epiphytes, thick leaf litter, network of rocky streams makes them one of the most complex, diverse and stable ecosystem of the world. The Diversity of Amphibians and Reptiles meet their highest expression in such a complex and stable ecological systems.

A frog that completes life cycles up on the canopy, a snake that can crawl on the vertical surface of a tree, a master of mimicry and highly camouflaged creature, torrent frogs on the bryophyte covered rocks, mass basking of turtles on the fallen logs in the river, a perfect glider from higher to lower canopy and a little burrower to giant Pythons are the examples of the herpetofauna you might expect to see in this rain forest of Assam.

The diversity

Among the 122 species of Amphibians and 168 species of reptiles so far known from Northeast India,...species are so far reported from Jeypore. However, this is just a tip of an iceberg …and many more to be discovered yet especially that of canopy dwellers and burrowers!!

Amphibians:

Amphibian means dual mode of life and are applied to animals completing their life cycle involving water and land. Anurans the tailless amphibians, Salamandars the tailed amphibians and the Caecilians the limbless amphibians look like a large worm or small snake!!

Toad	Frog
• Rough and dry Skin. • Stubby body, short hindlegs. • Lay eggs in long strings. • A group of Toads- KNOT.	• Smooth or Slimy Skin • Strong long legs, webbed feet • Lay eggs in Clusters • A group of Frog-ARMY

General facts

Reptiles are "cold-blooded" it is more accurate to say that they are unable to regulate their body temperatures by generating heat. Thus snakes, lizards, turtles need to warm themselves by basking in the sun, Rocks, logs, branches, grassy patches, near holes, under vegetation are the frequently used places for basking activity. Fallen logs and sand bars are preferred basking ground for Turtles.

Why Snakes are so special:

Snakes are the most modern of reptiles, first appearing in the fossil record during the time of the dinosaurs. It is thought that they evolved from ground dwelling or burrowing lizards that exploited the survival advantages to be found in a cylindrical, legless body. They had the ability to move without legs over and through all types of terrain, vegetation and water. They had the ability to find, capture and eat prey without the aid of appendages, as well as to periodically shed an old skin and get a new one with brightly hued mantle.

Snakes are specialized animals with elongated bodies and no legs. They have no ears, no eyelids, although they do have a protective window over the eye. A snake's organs are elongated. They have a long, forked tongue that helps them smell. Gaseous particles from odors are picked up by the tongue and inserted into the Jacobson's Organ at the roof of the mouth. The two halves of a snake's jaw are not fused together but are loosely connected by a ligament, allowing it to swallow food much larger than its head.

Snakes (Pit vipers and Pythons) possess a unique sensory system for detecting infrared radiation, enabling them to generate a 'thermal image' of predators or prey. Infrared signals are initially received by the pit organ, a highly specialized facial structure that is innervated by nerve fibers.

Snakes detect infrared signals through a mechanism involving radiant heating of the pit organ, rather than photochemical transduction.

Snakes find their prey by sight and scent, and sometimes temperature. Except for burrowing species, snakes have excellent short-range vision. Species like Rat snake, Bronzeback snake, catch their prey by hunting it down, others like Python, Pit vipers through ambush. Cobra, Krait, Pit viper kills their prey through venomous bites, others by constriction, still others by simply overpowering and then swallowing their prey. Lacking any chewing teeth, all snakes swallow their meals whole.

Predators and Prey:

All snakes are predators. The food range varies extremely. Depending on size and species, they may feed on invertebrates such as slugs, worms and insects, or on fish, amphibians, lizards, snakes, birds, bird eggs and small mammals. A Burmese rock python can devour a whole Barking deer and the king cobra feeds on other snake and monitor lizards. Species such as copper headed trinket snake and Monocled cobra consume great numbers of rodents, and their presence around barns is of great benefit to farmers. Similarly, snakes and especially juveniles are being eaten by variety of birds (Crested serpent eagle, Adjutant stork), food of many monitor lizards, and mongoose.

Sailors of the canopy:

What is the common between Flying frog, flying snake and flying lizards?

Answer: None of the can flies actually but all of them have developed aerodynamic membrane that enables them to glide from the forest canopy.

Lizards (Flying Dragon or Draco) have folds of skins along side of the body called patagia, Tree frogs have webbed fingers and toe and a flying snake of the genus *Chrysopelia* flatten their body as they glide through the canopy as much as 50 meter!

Camouflaged creatures and Master of Mimicry:

Cryptic coloration is common in rainforest reptiles and amphibians. Thus a green pit viper, green tree frog, green cat snake and a green vine snake are seldom seen among green vegetation. A flat tail gecko on the tree bark, a bronze back tree snake on a dry branch and a warty tree frog on a rotten log remain perfectly camouflaged making distinction difficult. Thus crypsis is the first line of defence!

Mock Viper, a small non venomous colubrid snake mimics like a deadly viper. A false wolf snake *Dinodon septentrionalis* mimics venomous Kraits.

Similarly, Warty tree frog (*Theloderma*) mimics bird droppings and it is almost impossible to locate them as they sit on the rotten forest logs.

A male rat snake mate with a female cobra

Rat snakes and Cobra are distantly related species and belongs to two different families. Two distantly related species cannot mate with each other and thus this belief is false. What might happen is, in summates the two sexes often differ in adult size, and in some sexually dimorphic species like in Cobra, males are larger and slender and females are relatively shorter and stout.

What is the chance of getting a bite from a venomous Snake?

Snake don't like to bite us. They try to conserve their venom which will be wasted if they bite human as we are not their food. The important thing to remember is that unless you attempt to harm or capture a snake, it is almost impossible to get bitten. You have a better chance of being struck by lightning than being by a venomous snake.

Myth: *Banded Krait (Goala) snakes are so named because of their ability to suck milk directly from the udders of cows.*

Reality: Although milk snakes are common around barns that house cows, they completely lack the anatomy necessary to suck milk (or anything else for that matter). Barns are attractive to milk snakes because they provide abundant food in the form of small rats and mice.

Why do all reptiles have tails?

Tail in reptiles performs wide variety of functions, a majority of them associated with defense. Skinks, Geckos, Lacertids break off the tail voluntarily, a process known as autotomy. Autotomised tails distracts predators, thereby enhancing escape by the tail's erstwhile owner. Tails of the juvenile's supple skink (*Lygosoma albopunctata*) are brightly colored or otherwise conspicuous, and evidently function to lure a predator's attack away from the more vulnerable and less dispensable parts of the animal.

When threatened, our snakes like Cat Snakes *Boiga* put its tail under dry leaf and vibrate to produce sound- kind of rattle snake effect! Venomous Coral Snakes and their look alike harmless Kukri Snakes when cornered, display the brightly colored underside of the tail which is in conspicuous contrast to the rest of the body. The sudden display of color can startle a prospective predator. Banded Krait has short, blunt tails that look almost identical to the head that can distract a predator. Yellow spotted wolf snake when threatened by a predator; hide its head under its body coil in an act of defense.

Besides defense, tail has many different functions. Snakes like Pythons and Pit Vipers have prehensile tails that enable them to hold onto branches or vines to assist them in climbing trees. Geckos use the tail to store energy during periods when food is scarce.

As a rule, turtles do not use their tails for any of the purposes mentioned for other reptiles. However, having a short, blunt tail, rather than no tail at all, can be vital for a turtle. Adult male turtles generally have longer, stouter tails than females and use their tails to hold onto the female's tail during the mating process.

Turtles and Tortoises:

Turtles and Tortoises are the most distinctive among the living reptiles. A unique shell composed of bones and skins gives protection to the body. The shell is composed of two major parts, the carapace (or upper shell) and the plastron (or lower shell), the two joined laterally by a narrow part laterally, called the bridge. No Turtle species possess teeth.

Venomous serpents:

Only a few species are dangerously venomous. Monocled cobra, King Cobra, Coral Snake, Banded Krait, Black Krait, Green pit viper, Popes pit viper are the so far identified venomous serpents of Jeypore.

Avoiding Snake bite:

The best way to avoid being bitten by a snake, venomous or otherwise, is to keep your distance. Most snakebite occurs when snakes are handled or cornered. To avoid being bitten by a snake when hiking, always look before putting your hands or feet down as you climb over rocks and logs and always wear sturdy shoes or boots.

If bitten by a venomous snake, you should remain calm and seek immediate medical assistance. Commercial snakebite kits, which suggest making lacerations in the area of the bite and applying suction and tourniquets, are not recommended.

Our Snakes are protected by law:

All snakes receive some protection under the Wildlife (Protection) Act 1972 of India. None of them may be taken from the wild for purposes of sale.

Burmese rock python is protected under schedule I of act. Rat snake, Cobra, common water snake and king cobra are protected by schedule II of the act. None of our snake can be killed or held in possession except under special permit.