

# POISONOUS SNAKES OF INDIA

B.Sc. Part-I  
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# Introduction

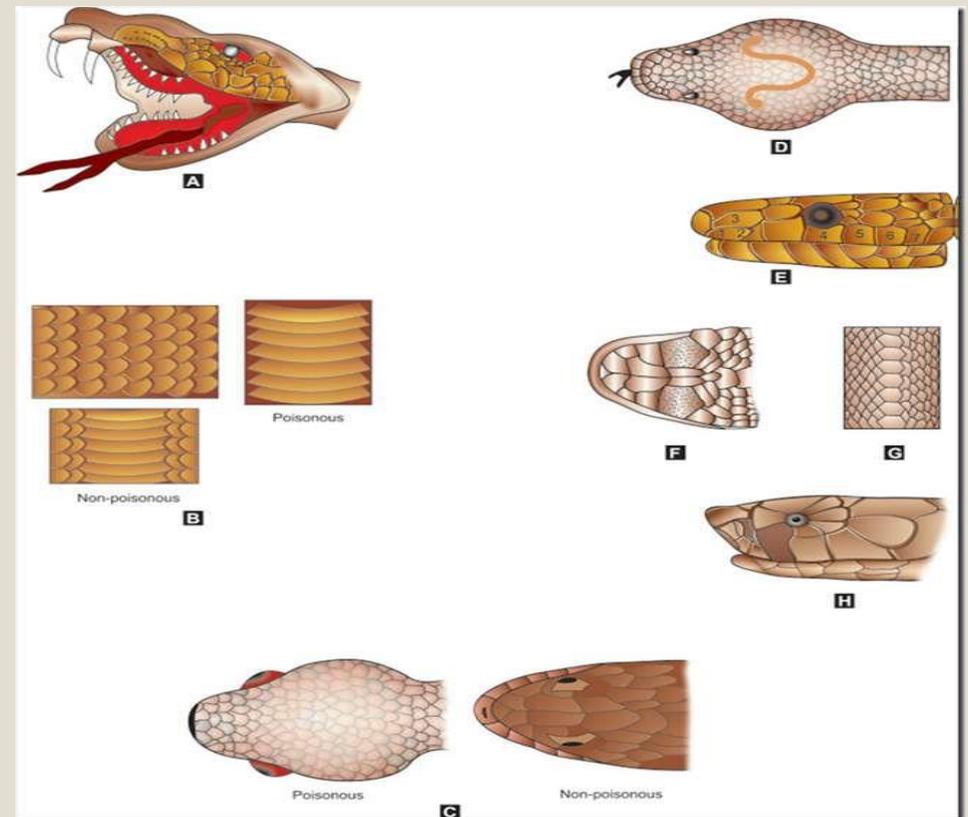
- Snakes are the most widely feared creature on the earth. These are cylindrical ,long, limbless, cold blooded reptiles. In spite of being scary and fearful , due to their feeding habit and control of rodents they are most widely worshiped, appreciated and respected.
- There are about 236 species of snakes are found in India, most of them are non poisonous, their bites do not harm people. Among all the species found in India 13 are poisonous.
- Among these 13 species, four species Naza naza (common cobra), Bungarus caerulees (common karait), Dabiola russeli (Russel's viper) and Echis carinatus (Saw scaled vipers) are highly venomous snakes. In India they are believed to be the cause of most of the poisonous bites
- Venomous snakes are species of the suborder Serpents that are capable of producing venom, which is delivered by injecting, into their preys by using hollow or grooved fangs
- Bites from venomous snakes can produce a no. of symptoms, includes swelling and localised pain, and can results in convulsion,vometting and even paralysis.

# Types of poisonous snakes

- Poisonous snakes are divided into five families:
- **Colubridae:** Largest snake family, found in every continent except Antarctica e.g. African boomslang snake, twig snakes.
- **Atractaspididae:** e.g. mole vipers or adders.
- **Elapidae:** Found in tropical and subtropical region around the world e.g. cobra, krait, coral snake.
- **Viperidae:** Found in most part of the world except Antarctica, Australia, Hawaii, Madagascar e.g. Russell's viper, saw-scaled viper.
- **Hydrophidae:** e.g. Sea snakes.

# Important features of snakes

Figure- A to H: Important features of poisonous and non-poisonous snakes: (A) Poison apparatus and fangs (canalised and grooved), (B) Ventral shields (belly scales) and vertebrals, (C) Head scales, (D) Cobra (note the hood and spectacle mark) (E) Cobra – Third supralabial touching eye and nasal shield, (F) Krait – four infralabials (note the large fourth one), (G) Krait – enlarged vertebrals on the back, and (H) Pit viper – a pit between eye and nostril



# Features of poisonous snakes

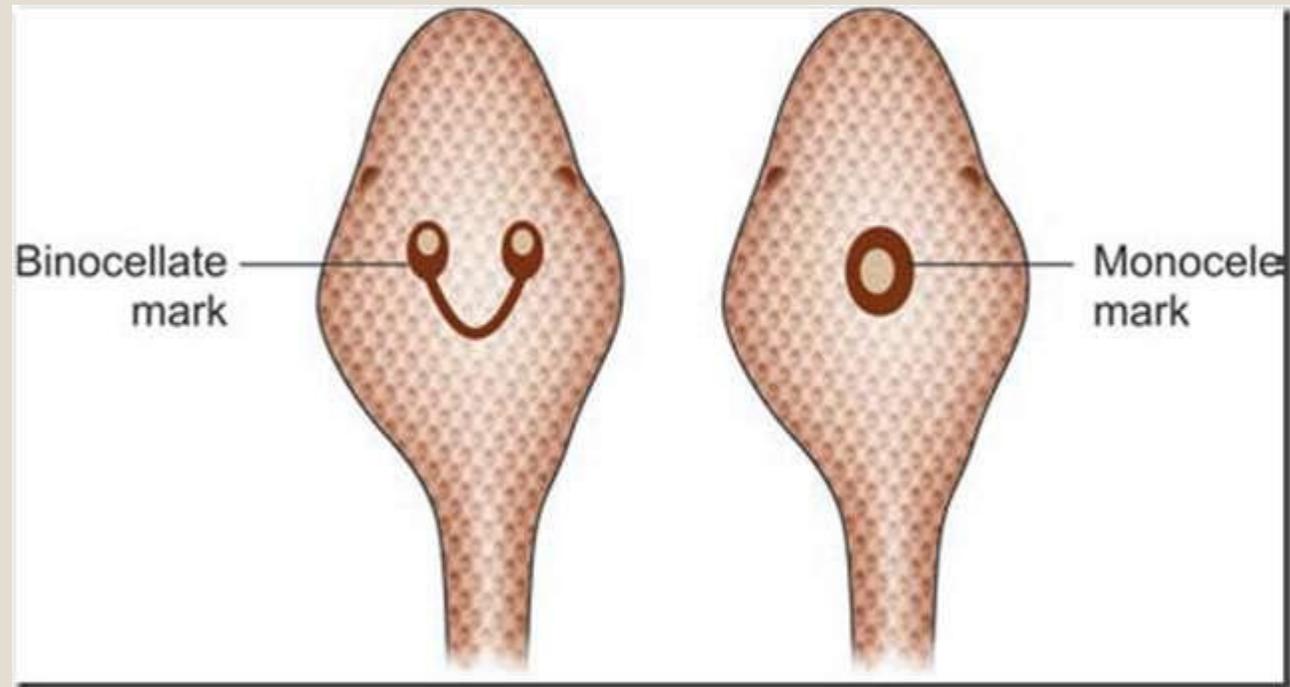
- **Belly scales:** Large; they cover the entire breadth of belly.
- **Head scales:**
  - ✓ Usually small in vipers.
  - ✓ maybe large in pit vipers.
  - ✓ Cobras and Coral snakes' third labial touches the eyes and nasal shields.
  - ✓ Kraith; there is no pit and the third labial does not touch the nose and eyes.
- **Fangs:** Hollow like hypodermic needles
- **Tail:** Compressed
- **Habits:** Usually nocturnal

# Features of Common Cobra

- **Zoological name:** Naza naza
- **Common name :** Common cobra, Nag
- Common cobras are usually brown or black in color
- Head is covered with shields. The third supra-labial shield touches the eye and nose
- A small wedge shaped scale called as cuneate is present between 4th and 5th infra-labials
- Pupils are round
- Hood is present. Dorsal aspect of hood may have monocellate (monocelle) or binocellate (spectacle) mark. Ventral surface of hood have two dark spots
- Fangs are short, grooved and situated anteriorly
- Tail is cylindrical. Caudal scales (scales on undersurface of tail) are divided and double
- Venom — neurotoxic



# Hood marks: Indian Cobra



# Indian Krait

**Zoological name:** Bungarus caeruleus

**Common name:** Indian krait, common krait, Blue krait, Maniyar, Kawadya

- Usually steel blue or black in color with single or paired white bands on back. The bands are more distinct towards the tail.
- Pupils are round.
- Large hexagonal scale presents over back.
- The 4th infra-labial scale is the largest scale of other infra-labial scales.
- The subcaudal (ventral scales distal to vent) are undivided and entire.
- Fangs are short, grooved and situated anteriorly
- Venom— neurotoxic.



# Russell's Viper

- **Zoological name:** *Daboia russelii*
- **Common names:** Russell's viper, Chain viper
- Head is large, flat and triangular with small scales. White V shaped mark present on head
- Pupils are vertical
- Large nostrils
- Body is stout and fatty with brown or yellowish color
- Body scales are semi-elliptical
- Three rows of chained dark spots present on back
- Tail is narrow and short. Scales are divided into two rows
- Fang are long, curved, hollow, channelized and hinged
- When disturbed, makes a loud and hissing sound
- Venom — Vasculotoxic and hemotoxic



# Saw-scaled vipers

- Zoological name: *Echis carinatus*
- Common names: Saw-scaled vipers, Indian saw-scaled vipers
- Wide head, Wider than their neck
- Large eyes
- Rough scaled snake
- Snake venoms are mostly of four types : neurotoxins, cardiotoxins, hemotoxins and cytotoxins



# Sea Snakes

- Sea snakes are usually bluish, grayish or greenish in color. They have prominent nostrils and are situated on the top of snout
- Body is flat and belly scales are not broad
- Tail is flattened and paddle shaped
- Venom — myotoxic



# Conclusion

- Though many different kinds of poisonous snakes are found in India, the snakes most commonly found to cause death consists of the big four, common cobra, Common karait, Russell's viper and Saw- scaled viper. Other common poisonous snakes found in India are king cobra, Malabar pit viper, bamboo pit viper, banded karait, sea karait,etc.
- Every species of snake has different constituents in its venoms, most venoms are complex toxins with many components mainly neurotoxic, hematotoxic cytotoxic or a combination of all. It require specific anti venom for efficient and proper remedy and cure.