

INFORMATION ON MEDICALLY IMPORTANT SNAKES IN INDIA



Developed by
Centre for One Health
National Centre for Disease Control
Directorate General of Health Services
Ministry of Health and Family welfare
Government of India

Morphology of the snake:

Key identification feature of snakes



Fig: Morphology of Indian Cobra (*Naja naja*)

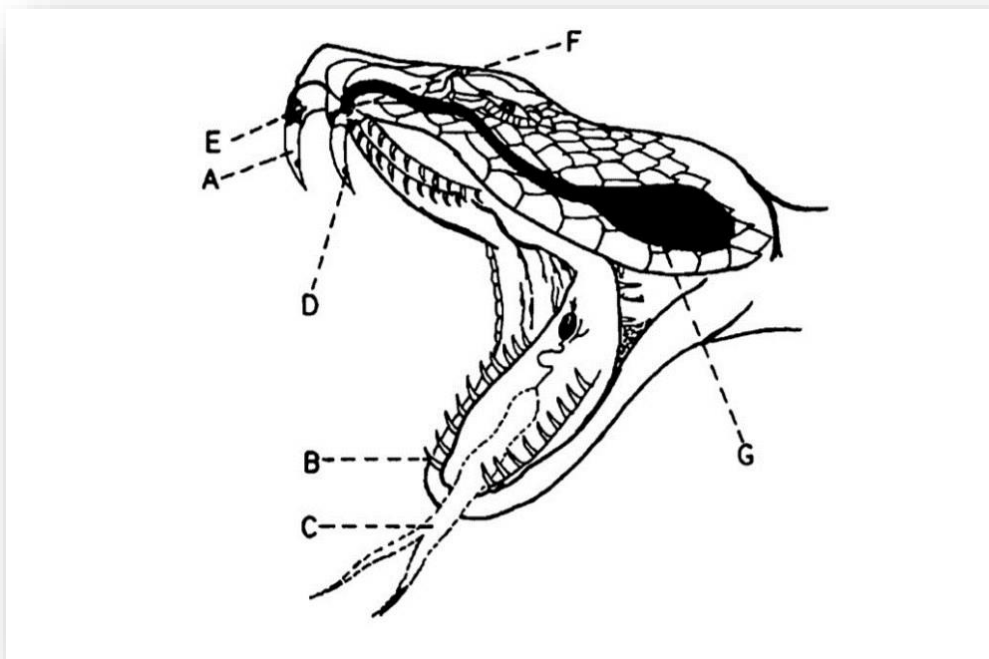
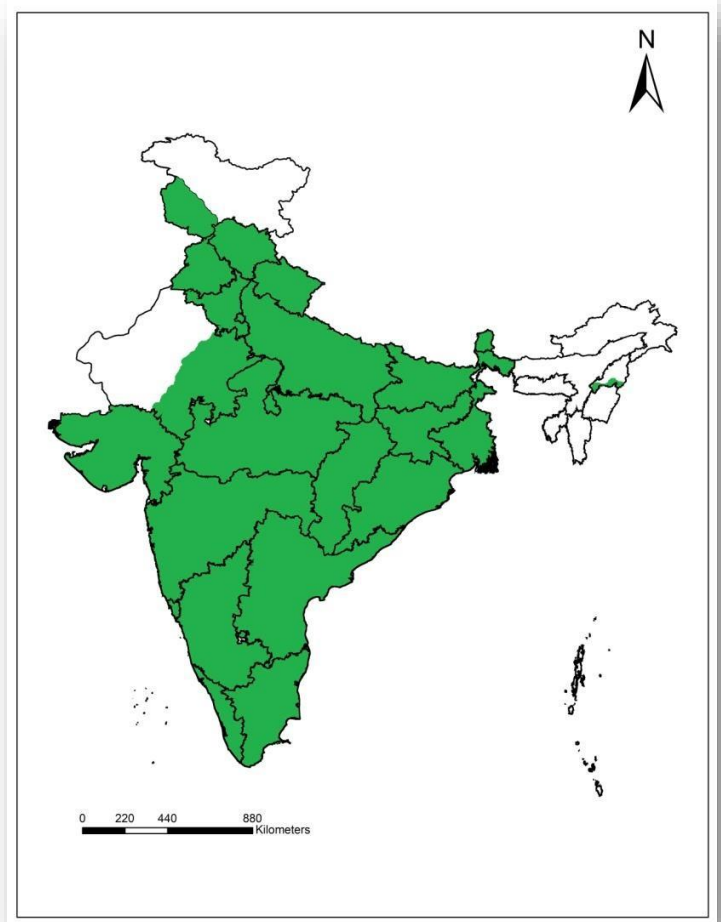


Fig: Mouth Parts of viper: A) Fang, B) Curved teeth, C) Tongue, D) Orifice of fang, E) Sheath over fang, F) Poison duct at base of fang, G) Venom gland.
Source: Sharma, R.C (2007)

Medically important snake species of India

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



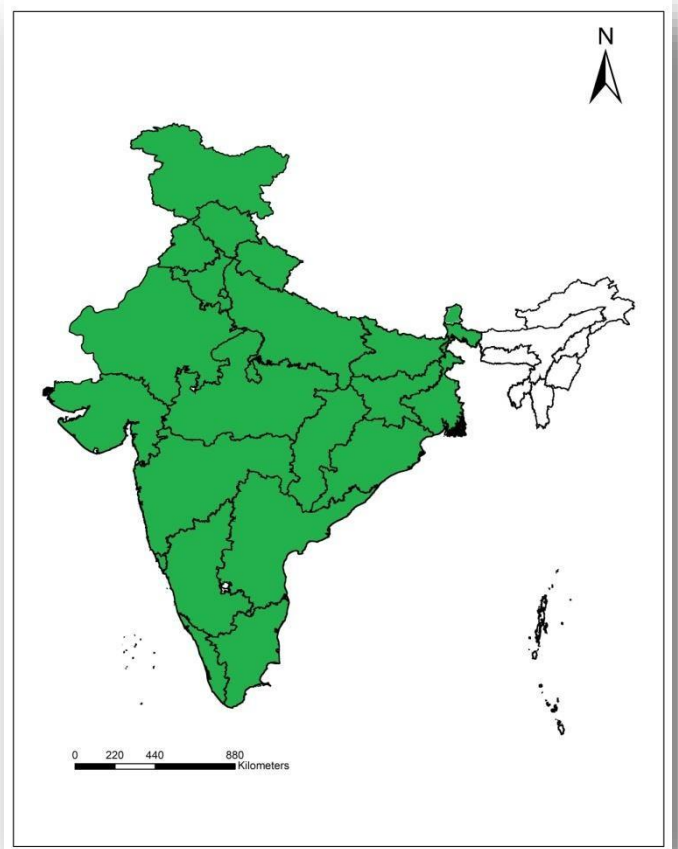
Description:

Scale pattern:



- It is one of the big snake species that can grow up to 180cm, but usually, it's around 100-120cm.
- Its body is thick, covered in dry-looking scales with ridges. Its head is triangle-shaped, wider than its neck, and has small ridged scales. Its eyes are medium-sized with vertical pupils.
- Its upper body is brown, reddish-brown, yellow, or grey, and it has three rows of round or almond-shaped blotches that help identify it from a distance.
- Its belly is creamy-white with random black patches on some scales.

2. Spectacled cobra (*Naja naja*)



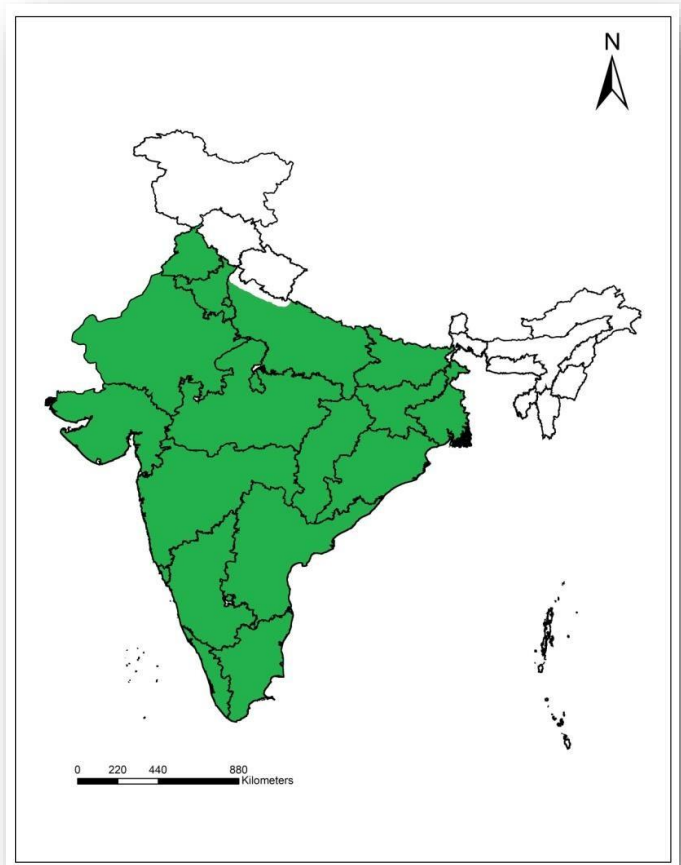
Description:

Scale pattern:



- Indian cobra measuring between 120 to 150 centimeters in length, while snakelets are approximately 25 to 30 centimeters long.
- Its body is slender and maintains a consistent thickness from its head to its midsection. The snake's coloration varies based on its geographical location.
- In South India and coastal regions, it exhibits shades of yellow-brown and may feature subtle dark markings.
- In central and Northern India, it assumes a darker hue, resembling chocolate brown or black. When feeling threatened, this snake raises its hood, making it easily recognizable.
- Hood marking resemble easily from another species of cobra.
- In a relaxed state without a raised hood, identifying characteristics include a head and neck of equal width, a rounded snout, and lips lacking distinct patterns.

3. Saw-Scaled viper (*Echis carinatus*)



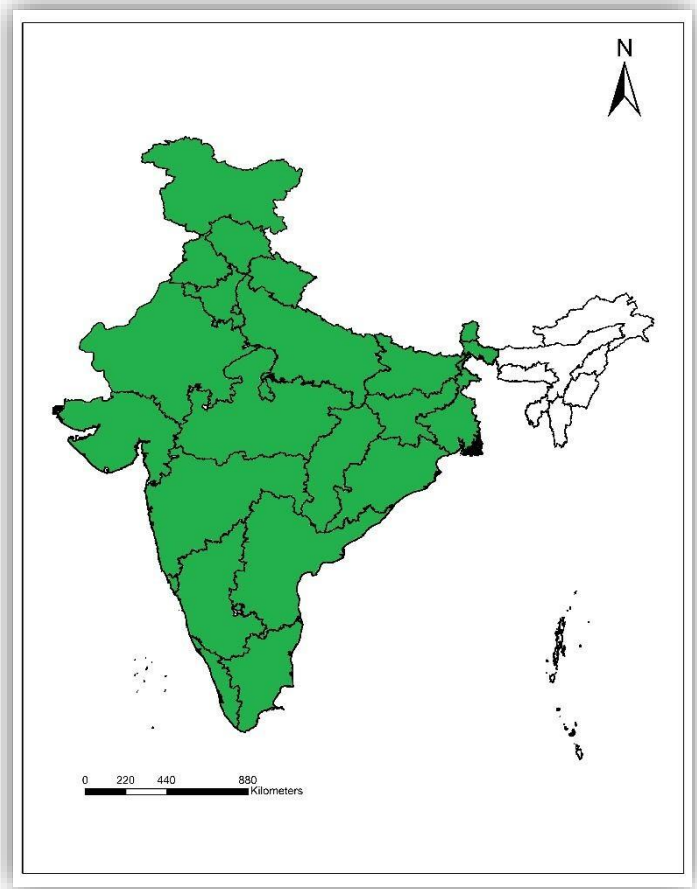
Description:

Scale pattern:



- This snake is typically small, with a maximum length of around 60 centimeters, although individuals exceeding 50 centimeters are uncommon.
- snakelets measure approximately 8-9 centimeters in length. Its body is relatively short and thicker in appearance, with dry, prominently keeled scales and a short tail.
- The upper part of its body exhibits a reddish-brown or brown hue, adorned with a series of white-yellow blotches running along its entire length.
- These blotches are bordered by distinctive white wavy lines due to easily identified species. A distinctive "plus" shaped marking on the top of its head serves as a key identifying feature, allowing for quick recognition even from a safe distance
- Its underside is creamy white or light yellow, often featuring dark spots. The snake's head, reminiscent of other vipers, is triangular in shape and noticeably wider than its neck. Its medium-sized eyes are equipped with vertical pupils.

4. Common Krait (*Bungarus caeruleus*)



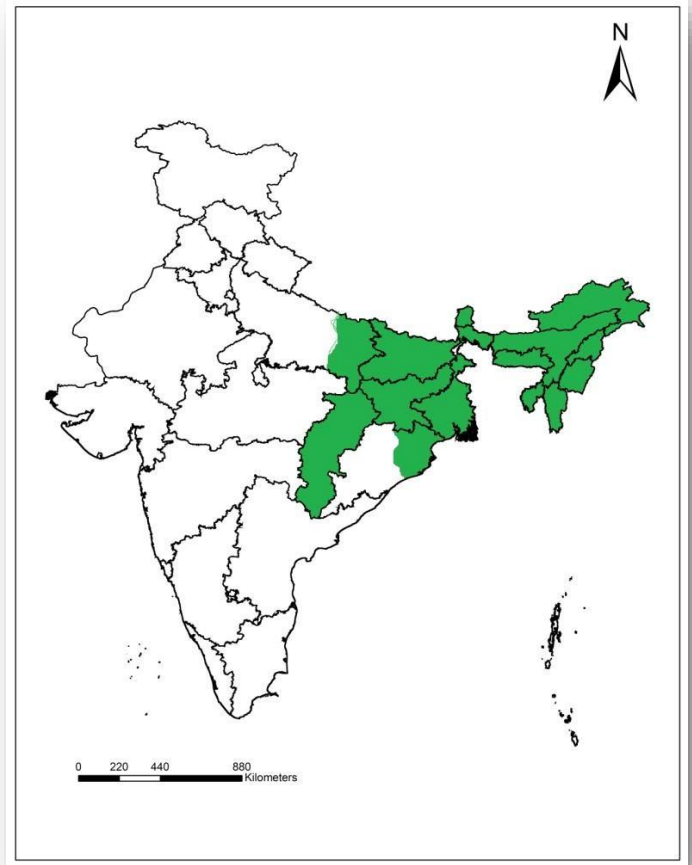
Description:

Scale pattern:



- This snake is of medium size, typically reaching lengths of up to 150 cm however the commonly length would be of 100 cm.
- It has a sleek bluish-black body with paired milky white bands. Its underside is creamy white and lacks markings.
- The white bands may be missing from the head portion to about one-third of the body length.
- In some cases, certain specimens may exhibit gradually enlarged white spots along the vertebral region where the bands are absent.
- A distinctive feature for identifying this snake is the presence of an enlarged hexagonal scale on its vertebral area.
- The snake's head is not significantly wider than its neck and features entirely black, medium-sized eyes. Its diet consists of other snakes, rodents, and lizards.

5. Monocled cobra (*Naja kaouthia*)



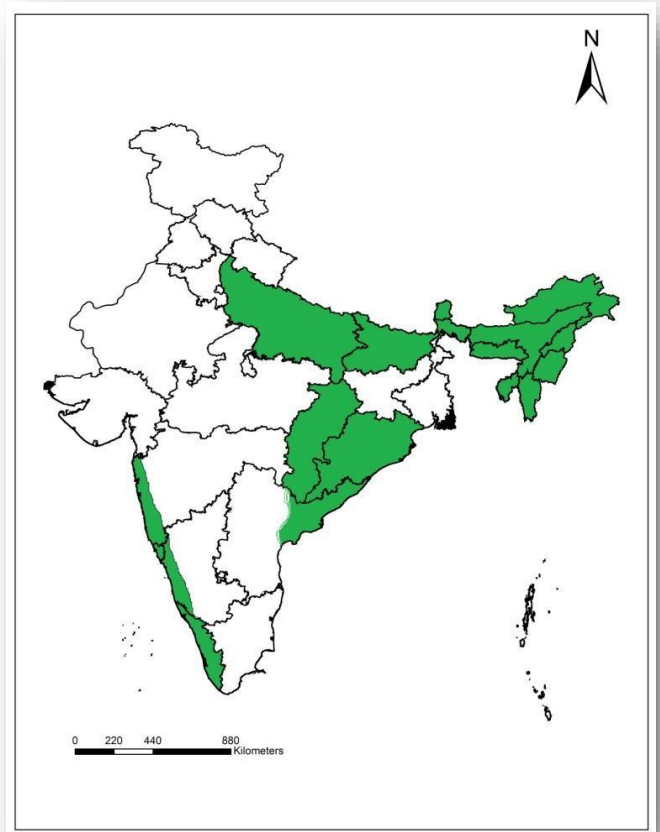
Description:

Scale pattern:



- This snake is known for its considerable size, capable of reaching lengths of up to 230 centimeters.
- When they are born, these snakes measure around 25-30 centimeters. Their bodies are characterized by a slender form that maintains a consistent thickness from the head to the middle section and then tapers into a medium-length tail.
- The coloration and patterns of these snakes exhibit considerable variation, ranging from glossy greyish-black to yellow-brown.
- Some individuals may display dense yellow-white bands across their bodies, while others have a uniform distribution of light-colored patches on the dorsal surface. In certain cases, the posterior part of the body appears darker than the anterior and mid-sections.
- At all stages of their life, these snakes have a distinctive rounded or oval-shaped hood mark, which can vary in size and dimensions.
- The undersides of these snakes typically have a glossy grey or brown coloration, while the underside of the tail often exhibits a darker hue.

6. King cobra (*Ophiophagus hannah*)



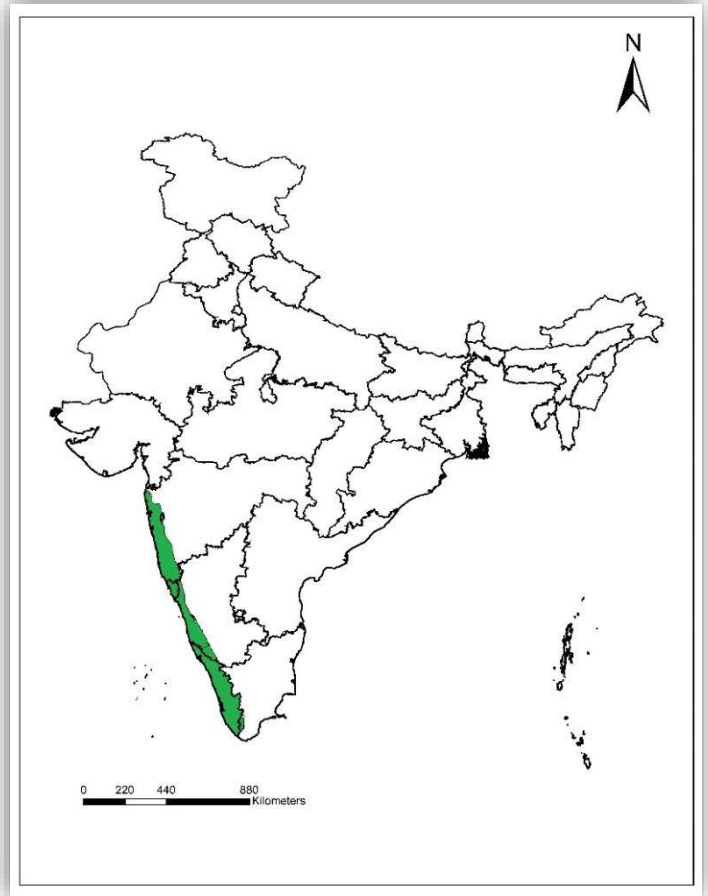
Description:

Scale pattern:



- This snake is one of the largest venomous snake species of India. Its reaching lengths of up to 585cm (19ft). However, it is more commonly found within the range of 240-425cm.
- Snakelets individuals measure approximately 43-50cm in length. Its physique is characterized by an elongated body that maintains a consistent thickness from the head to the majority of its length, adorned with large, smooth scales.
- When provoked, this snake can display a lengthy and narrow hood.
- Its dorsal body is predominantly grey-brown and adorned with yellow-brown bands throughout.
- In contrast, young snakes are darker in hue, featuring white or off-white bands.
- The snake's underside typically exhibits a pale yellow or grey coloration, with darker shades present along the outer edges of the ventral scales.

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



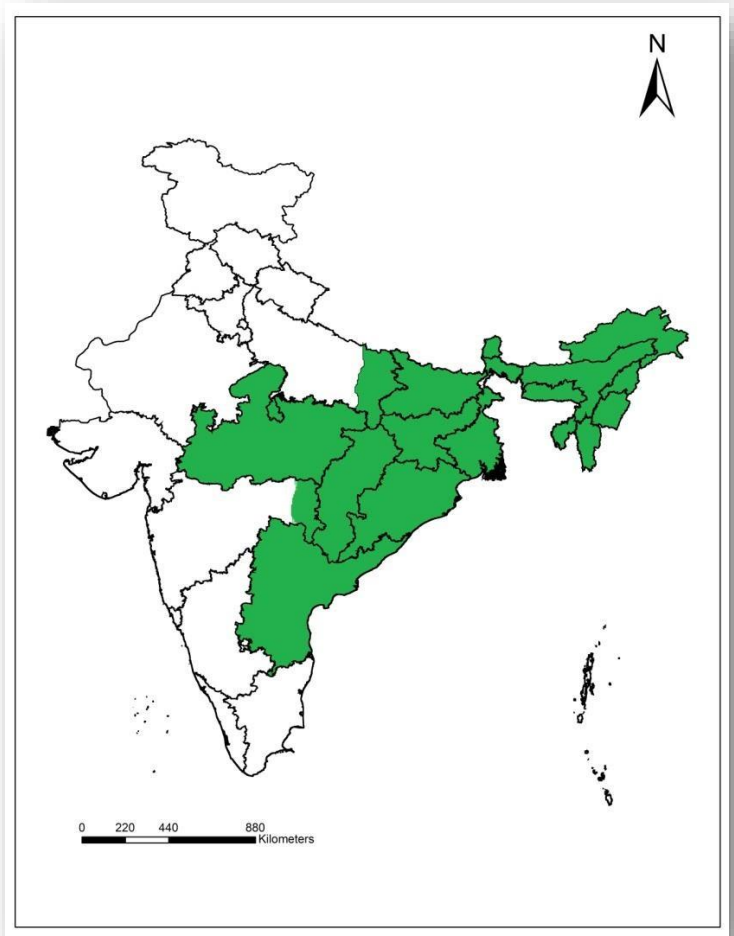
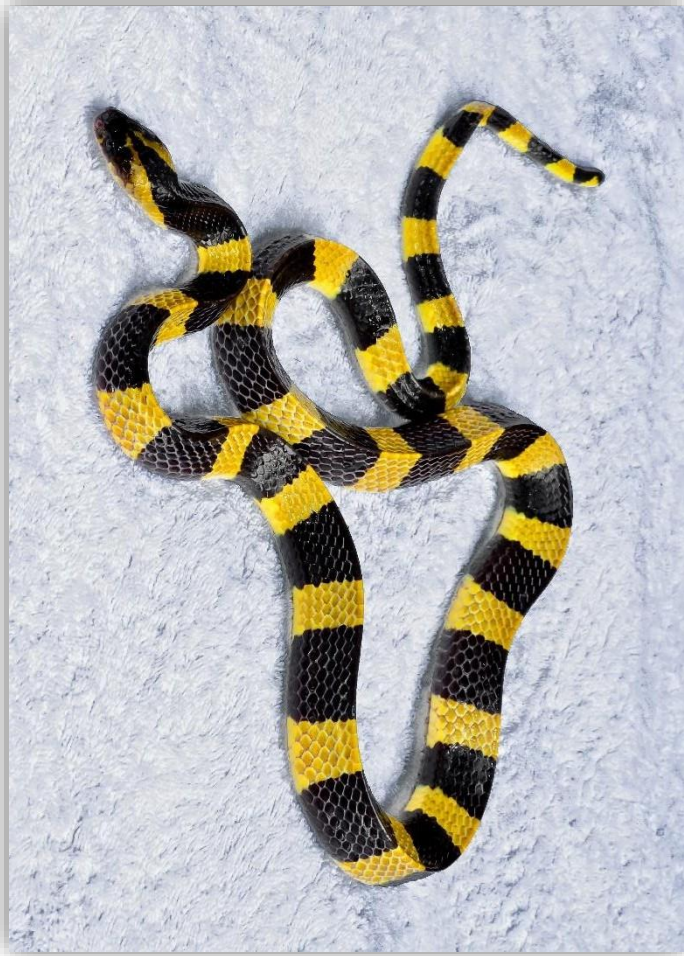
Description:

Scale pattern:



- This snake is relatively small with other venomous species, with a maximum length of 55cm. New born individual measure around 12-13cm.
- They sport a reddish-brown or grey-brown hue with distinct dark brown or black triangular markings on each side of their upper body.
- The underbelly displays a greyish tone with similar dark brown or blackish spots.
- Their head takes on a triangular shape, appearing flat when viewed from the top, and noticeably wider than their neck.
- A distinguishing feature is the dark chocolate brown or blackish coloring of both the upper and lower lips, making it easily identifiable in the field.
- Additionally, their tail is short, slender, and lighter in color compared to the rest of their body.

8. Banded krait (*Bungarus fasciatus*)



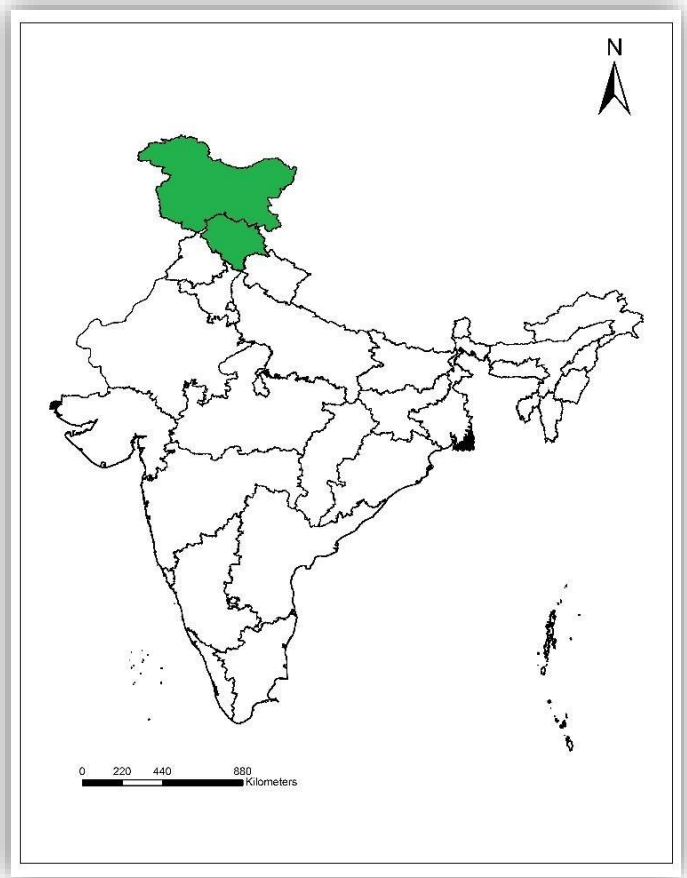
Description:

Scales pattern:



- This snake can reach up to length of 225 centimeters (7 feet and 5 inches).
- Its body exhibits a triangular cross-section from its neck to its tail, culminating in a rounded tip.
- The snake's entire body is adorned with wide black and yellow bands that also extend to its underside, which is easily resemblance of this species.
- Scales on the dorsal side is hexagonal in shape like common krait.

9. Central Asian Cobra (*Naja oxiana*)



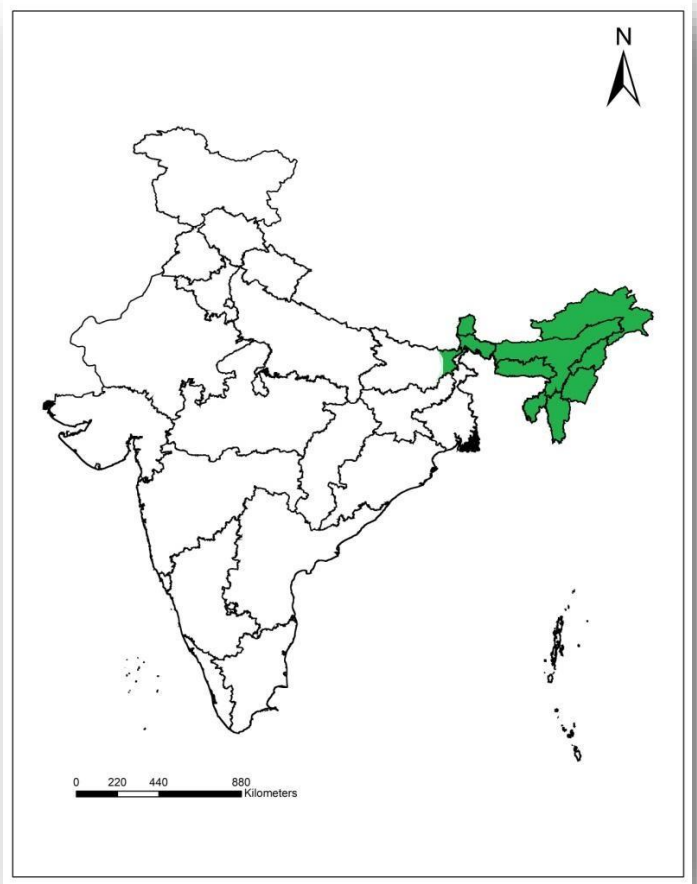
Description:

Scales pattern



- This snake can reach lengths of up to 150 centimeters. Its body is slim, maintaining a consistent thickness from its head to the middle, and culminating in a moderately long tail.
- The snake's coloration varies, ranging from yellow-brown to grey, with occasional instances of black or dark grey.
- Juvenile of this species have lighter hues and exhibit blackish or dark brown bands. These bands on the front part of their bodies are as wide as their base color.
- In adult, these bands become less distinct, sometimes rendering the snake's appearance pattern-free. The underside of the snake is yellowish-white and, in juveniles, it also features bands resulting from the extension of dorsal bands.
- However, these bands fade as the snake matures, with the first six bands on the anterior side being the only ones remaining visible throughout its life stages. The snake possesses a sizable head, approximately as wide as its neck, with a rounded snout. Its eyes are medium-sized and have rounded pupils. The snake's hood is narrower and somewhat resembles that of the King Cobra.

10. Greater Black Krait (*Bungarus niger*)



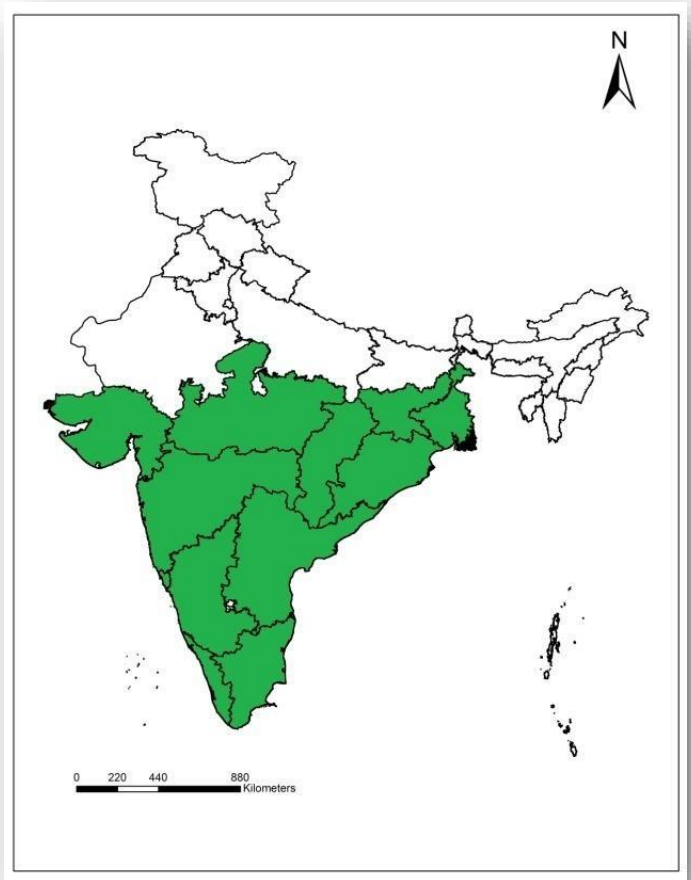
Description:

Scales pattern



- This snake is of medium size, typically reaching lengths of up to 130cm.
- Its entire body lacks distinct patterns and displays a shiny bluish-black, dark chocolate brown, or dark grey coloration, while the belly is uniformly white or off-white, with the outer edges of its ventral scales shaded in grey.
- The scales along its spine are hexagonal in shape, wider than they are long, and notably larger than the scales surrounding them.
- Its head is moderately sized, slightly broader than the neck, and features a rounded snout. Like other krait species, its eyes appear entirely black.

11. Bamboo pit viper (*Craspedocephalus gramineus*)



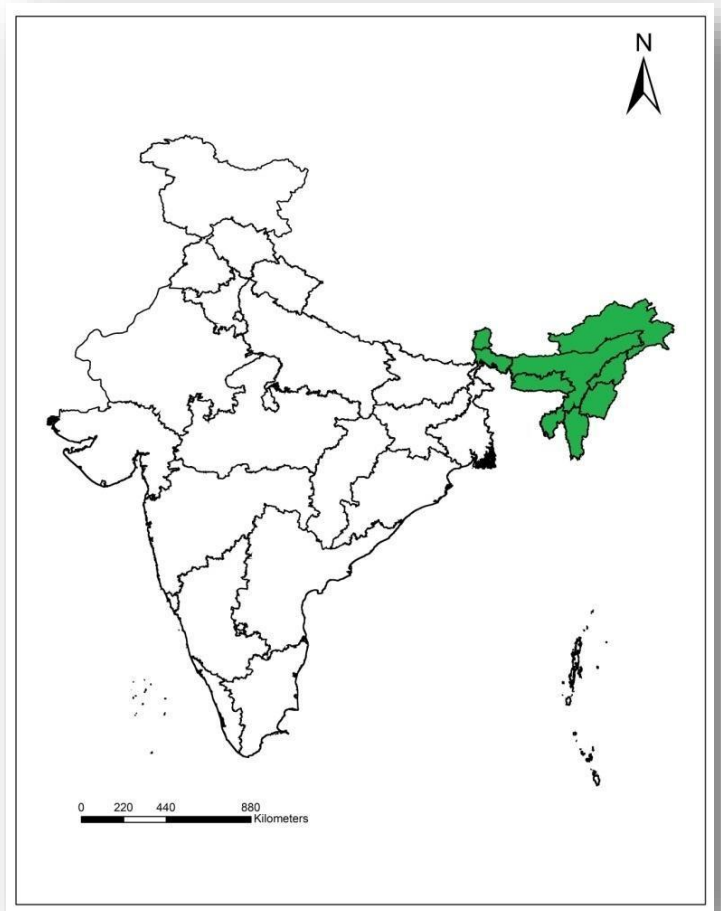
Description:

Scales pattern



- This snake is typically of medium size and can reach a maximum length of 114cm, although it's more commonly found in the range of 60-70cm.
- Its body is covered in scales with moderate keeling and terminates in a tail of moderate length. The upper part of its body exhibits a green or yellowish-green coloration, adorned with irregular black markings that tend to be less distinct in adults but more noticeable in juveniles.
- The underside of the snake is colored vibrant enamel yellow.
- Its head is notably large and broader than its neck, featuring heat-sensing pits located between the eyes and nostrils. Additionally, its eyes are of moderate size and possess vertical pupils

12. Mountain pit-viper (*Ovophis monticola*)



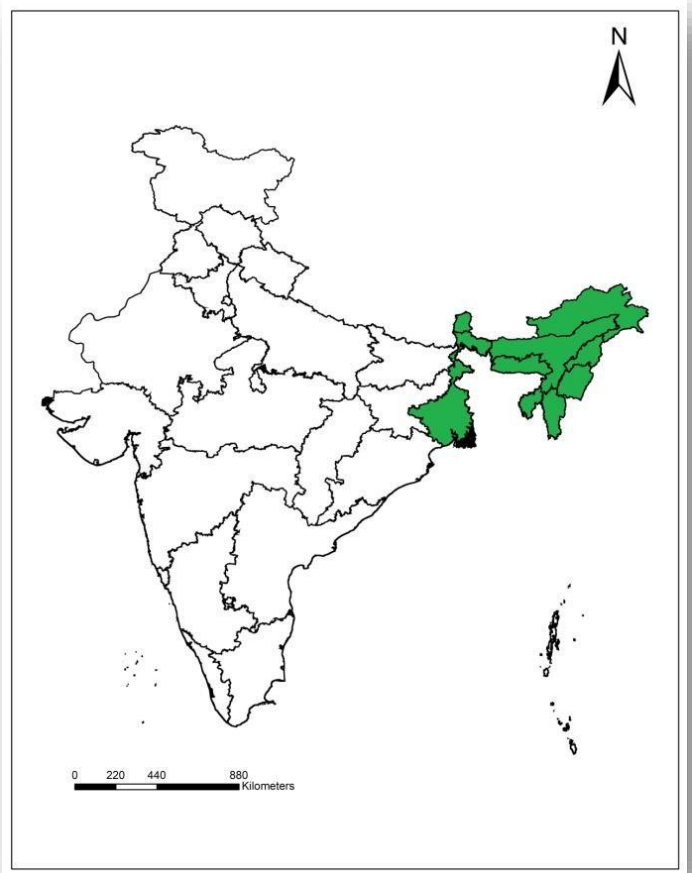
Description:



Scales pattern

- This Pit Viper is of medium size, while females reaching lengths of up to 125cm, males growing up to 50cm. Its body is compact and sturdy, covered in keeled scales and culminating in a slender, short tail.
- Typically, the upper body of this snake exhibits a brown or grey-brown hue adorned with a series of relatively square-shaped blotches extending from the head to the base of the tail, which tends to transition into a lighter brown or yellowish-brown coloration. Additionally, smaller patches are present on the sides of its body.
- The underside of this snake is usually pale or white, often bearing varying degrees of mottling in shades of brown. Its head is notably large, triangular in shape, and noticeably wider than the neck, covered in tiny scales.
- The top of its head tends to be darker, often appearing blackish or dark brown, and is typically bordered by a lighter color around the edges behind the eyes.
- The eyes are of moderate size and blend with the surrounding scales due to a mixture of black, brown, grey, and white markings.

13. Lesser black krait (*Bungarus lividus*)



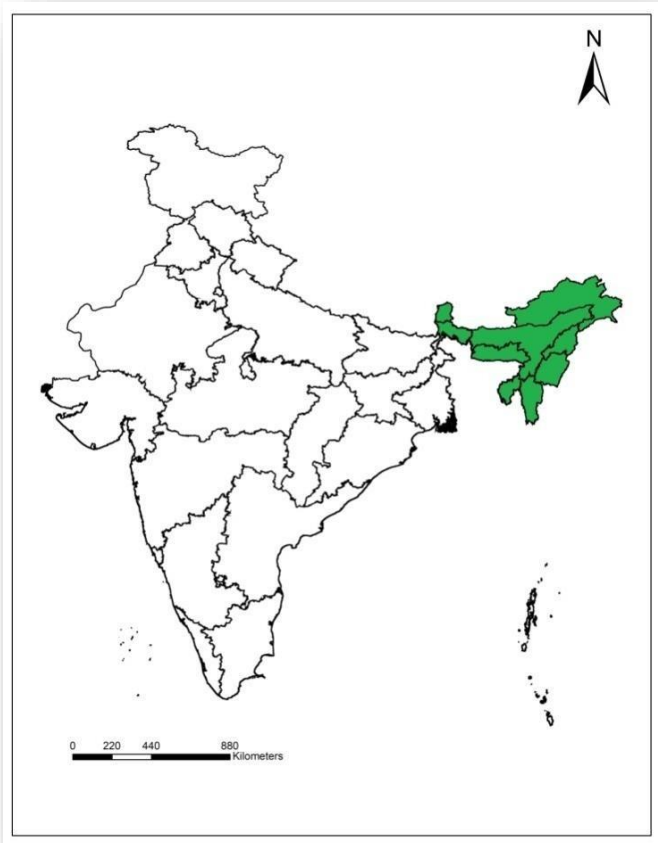
Description:

Scale pattern



- This snake is of medium size, reaching a maximum length of 102cm.
- Its entire body lacks distinct patterns and exhibits a glossy bluish-black, dark chocolate brown, or dark grey coloration.
- Conversely, the underside displays a uniform, patternless white or off-white hue, with the outer edges of its ventral scales tinged with grey.
- Its head is of moderate size, slightly wider than the neck, and features a rounded snout.
- Similar to typical Kraits, its eyes have an entirely black appearance. The hexagonal vertebral scales on its back may not be prominently visible.

14. Red-necked keelback (*Rhabdophis subminiatus*)



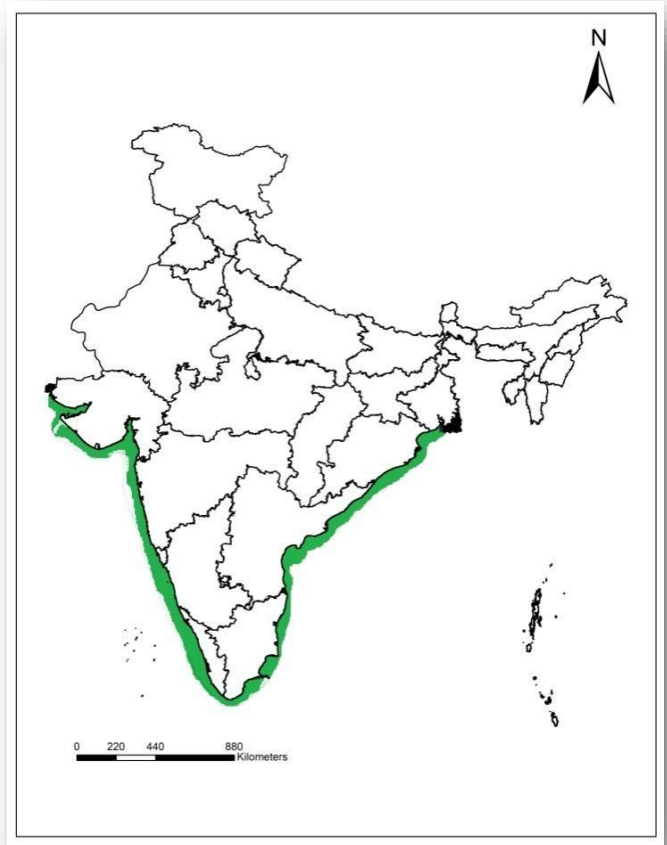
Description:

Scale pattern



- On average, this snake measures about 100cm in length, but it can reach up to approximately 130cm when fully grown.
- The snake's head is pointed and covered in smooth scales. It boasts relatively large eyes with round pupils and is slightly distinct from the neck
- Juveniles typically have a head color ranging from grey to olive-green, while adults exhibit a more pronounced olive-brownish head color.
- The snake's body is slender, adorned with pointed, highly keeled scales. In both juveniles and adults, the dorsal coloration is prominent, displaying an olive-brownish hue accompanied by black checkered body markings. These patterns tend to fade as the snake matures. Juveniles exhibit a vibrant red nape, which slightly dulls in color as they become adults. The inter-scale coloration is black. Ventral Body: The ventral scales on this snake are glossy yellowish-white, each featuring a black dot on the edge. Head Tail: The snake's tail is pointed and of typical length.

15. Hook-nosed sea snake (*Enhydrina schistose*)



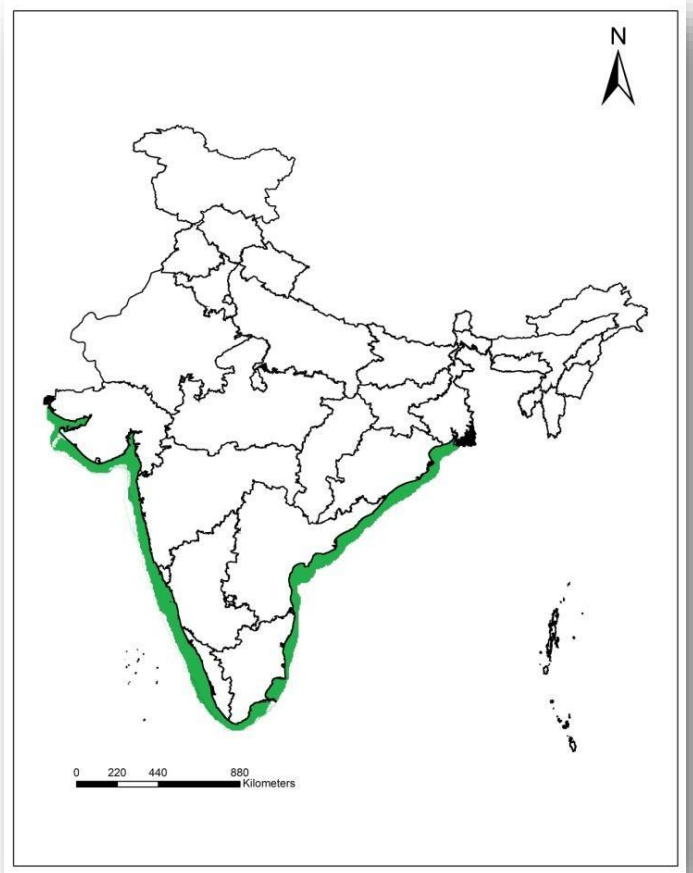
Description:



Scale pattern

- This Sea Snake is of substantial size and has the potential to reach lengths of up to 190cm, although it is typically found in the range of 100-120cm.
- Its body shape is slender towards the front and noticeably flattened towards the rear. One distinguishing feature of its snout is the presence of a curved, beak-shaped rostral scale that points downwards.
- The upper part of its body displays shades of grey, blue-grey, or olive green, accompanied by yellowish-white coloring on its sides and underside. Dark bands, numbering between 46 and 59, adorn its upper and side body regions, with the widest bands on top, tapering towards the sides, and absent on the underside.
- These bands are more prominent in juveniles compared to adults.
- Its tail, in characteristic fashion, is flat and resembles an oar.

16. Short sea snake (*Hydrophis curtus*)



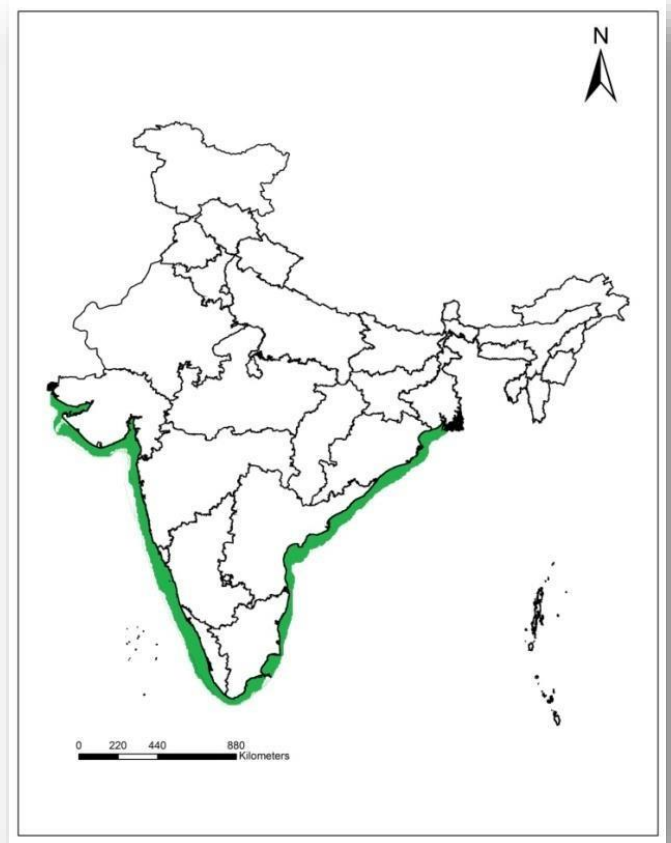
Description:

Scale pattern



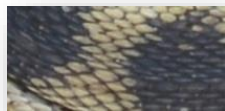
- This sea snake is characterized by its relatively compact size, typically reaching lengths of up to 110 cm. Its body is short and somewhat stout, with a posterior compression along the lateral sides.
- Notably, the widest part of its body measures 1.5 to 2 times the diameter of its neck. The head of this sea snake is relatively large and features a blunt snout.
- In terms of coloration, its dorsal body is primarily adorned in shades of olive green or grey-brown, while its underside is typically yellow-white in color.
- One of its distinctive features is the presence of 35 to 55 narrow green-black bands that run along its upper and side dorsals. These bands can occasionally intersect at the top and taper to a point as they approach the underside of the snake.

17. Annulated Sea snake (*Hydrophis cyanocinctus*)



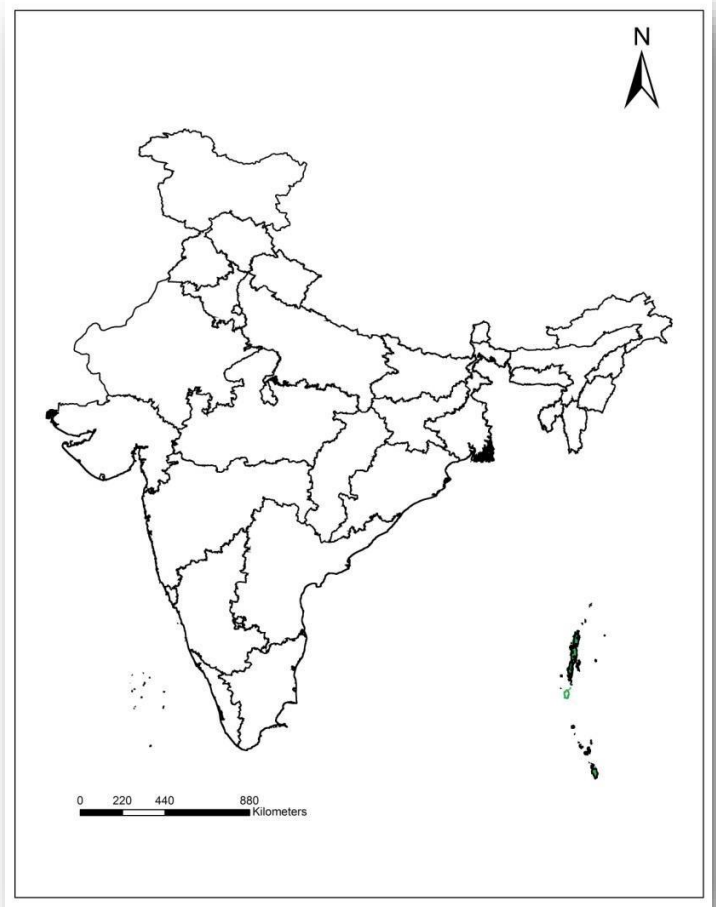
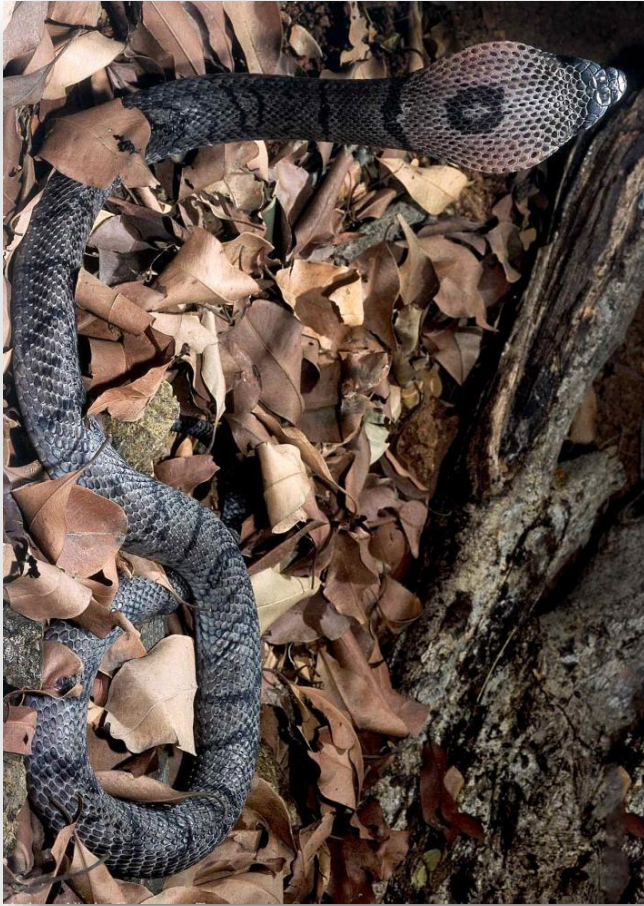
Description:

Scale pattern



- This large-sized sea snake, known for its impressive size, can reach lengths of up to 275 cm. However, it is more commonly found in the range of 100 to 150 cm in the wild.
- This remarkable serpent possesses a distinctive physical profile, characterized by its slender anterior body and lateral compression towards the posterior.
- One of its most striking features is the significant diameter of its body, which measures approximately 2 to 2.5 times that of its neck.
- It displays hues of pale yellow, olive-brown, green, and gray along their dorsal side, while their underside tends to be whitish in color.
- The striking feature of their appearance is the presence of 50 to 75 dark dorsal bands that adorn their bodies. These bands can manifest in three primary patterns: Encircling the body with the broadest section on top.

18. Adman Cobra (*Najas agittifera*)



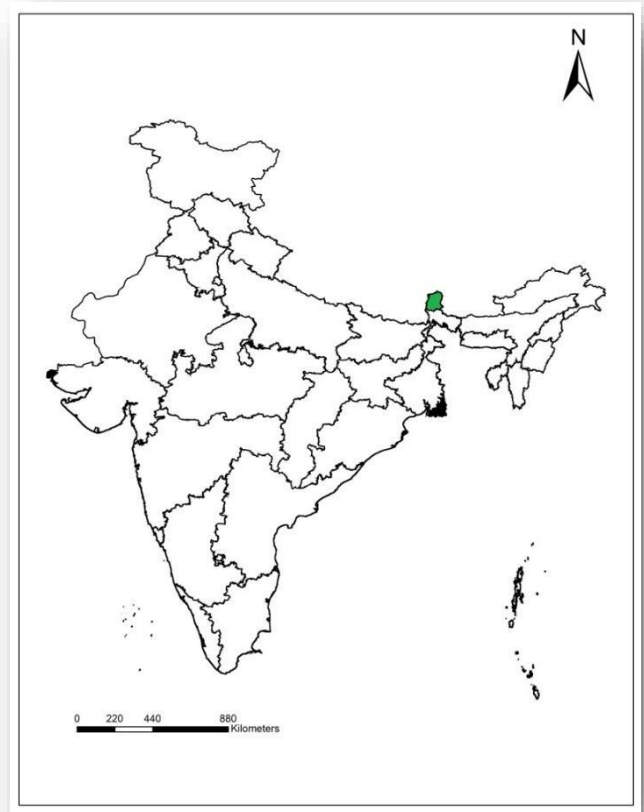
Description:

Scale pattern:



- The head is wide and somewhat separate from the neck. The eye is of moderate size, featuring a circular pupil, while the nostrils are notably large.
- Adults exhibit three distinct color variations. A consistent glossy black coloration on the upper body, with a subtle and undefined black monocle-shaped hood mark.
- The underside is characterized by a shiny dark-gray hue. The head is black, adorned with pale white patches on the shields. Light brown or cream-colored upper body with faint black lines encircling both the body and tail, along with an inconspicuous black monocle hood mark featuring a brown center.
- The underside exhibits a pale brown tone. The head is light brown, adorned with black spots. A uniform grayish appearance on the upper body with clearly defined narrow and irregular black cross-bars spanning the body and tail, along with a distinct black monocle hood mark featuring a gray center.
- The underside showcases a grayish shade. The head is black, featuring pale white patches on the shields. Juveniles and sub-adults exhibit a broad black cross-band on the throat or the underside of the neck.

19. Himalyan pit-viper (*Gloydius himalayanus*)

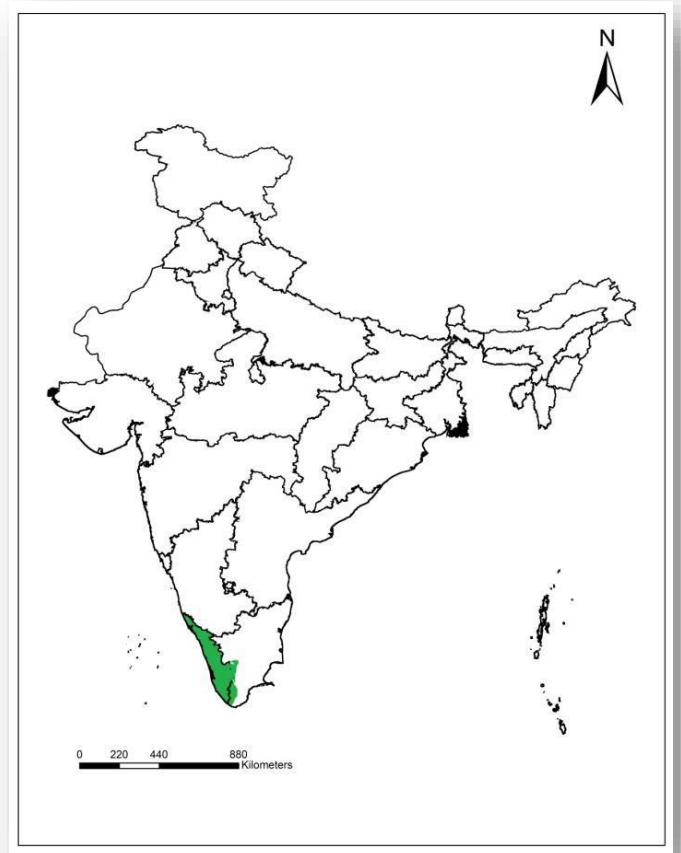


Description: Scale pattern



- The head of this snake is characterized by its distinctive triangular and elongated shape, which is notably larger than its neck.
- Along the body and tail, an elongated, thin, and cylindrical structure, with distinct transverse bands that run across both the body and the tail.
- A closer look at the head, the rostral, while slightly visible from above, doesn't dominate the head.
- The nasal scales have a trapezoid shape and are undivided. The internasals are in close contact with each other.
- A unique feature is the presence of two canthal scales between the internasal and the supraocular, with the posterior one being notably smaller in size.
- The dorsal part of the head is covered in very small, convex, and irregularly shaped smooth scales. Moving on to the scales around the mouth and eyes, there are typically 7 to 8 supralabial scales present.

20. Northern larged- scaled pit viper (*Craspedocephalus marcolepis*)

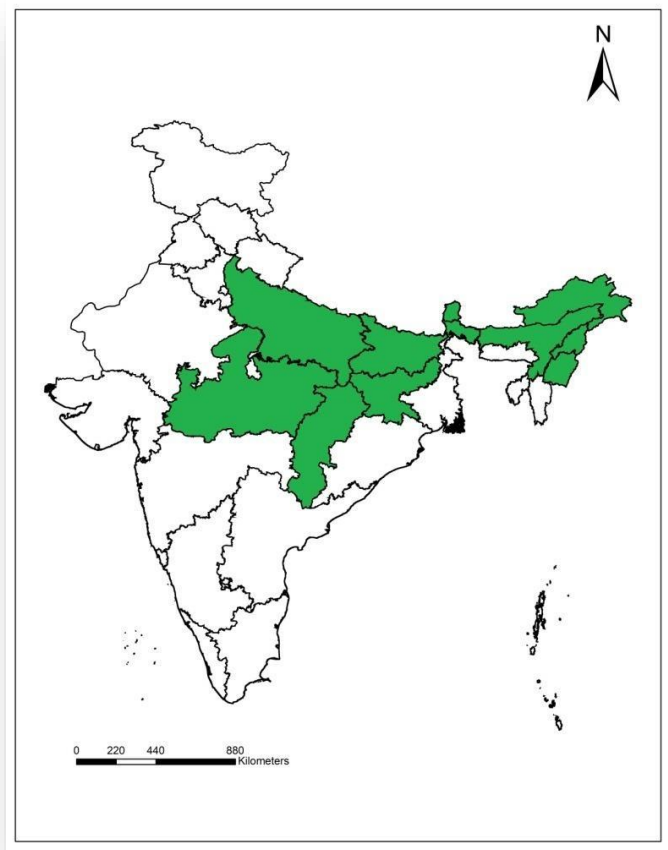


Description: scale pattern



- This snake typically reaches a medium size, with individuals growing up to 97cm, although they are commonly found in the 50-60cm range.
- Their body is characterized by a substantial thickness and is adorned with remarkably large scales, while their tail follows the usual length for this species.
- Their upper body exhibits a vibrant green hue with interspersed black scales, while the underbelly displays shades of yellow-green or whitish.
- One distinguishing feature of this species lies in its remarkably large body and head scales, making it readily recognizable in its natural habitat.

21. Salazar pit viper (*Trimeresurus salazar*)



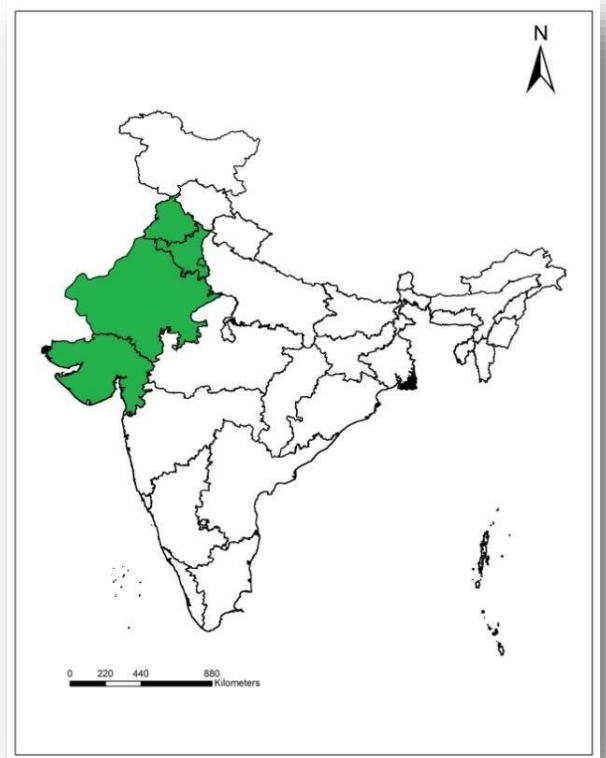
Description:

scale pattern



- This snake typically falls into the medium size category, with the potential to reach lengths of approximately 110 centimeters, although larger individuals do exist.
- Its upper body and head display colors ranging from green to yellow-green or plain yellow, devoid of any noticeable markings on the upper side.
- Notably, the head often features a reddish-orange fine streak located beneath and behind the eyes, which tends to be more prominent in males and faint or even absent in females.
- In males, a ventral-lateral stripe runs along the first dorsal rows, appearing yellow above and reddish-orange below, whereas in females, it remains consistently yellow.
- The snake's underside, including its lips, adopts an enamel yellow or yellowish-white hue.
- When it comes to the tail, including its underside, it adopts a darker shade than the dorsal body and exhibits dark rusty coloring, which transitions to orange as the snake matures.
- The head of this snake is notably large and distinctly wider than its neck, featuring heat-sensing pits located between the eyes and nostrils. Its eyes are of moderate size and are characterized by vertical pupils
-

22. Sochurek's saw scaled viper (*Echis carinatus sochureki*)



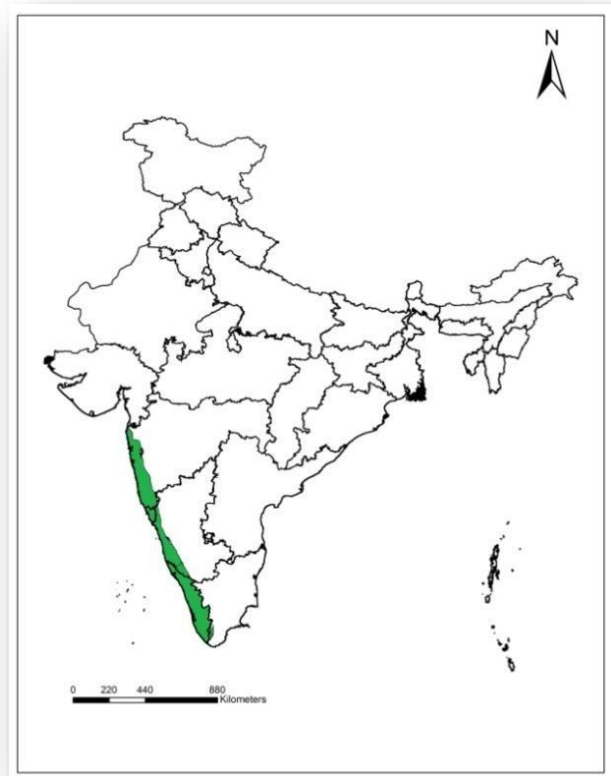
Description:

scale pattern



- The Saw-scaled Viper is known for its relatively larger population, which can reach lengths of up to 80 centimeters.
- This snake possesses a short and relatively thick body with a dry appearance, attributed to its highly keeled scales.
- The tail is notably short. Its upper body displays variable colors ranging from sandy brown to grey-brown, adorned with a series of 31-41 prominent, oval-shaped white or off-white blotches running along its entire length.
- The spaces between these blotches are a dark grey, and there's a somewhat discontinuous pattern of wavy lines or curves on both sides of the white blotches. The underbelly of this snake is typically white or off-white, with the occasional presence of dark brown or blackish dots.
- The head is triangular in shape and clearly distinguishable from the neck. It's covered in small, rough scales and features an elongated "plus" shaped marking on the top, which serves as a distinctive characteristic for identification.
- This Saw-scaled Viper's eyes are relatively large and have vertically elliptical pupils.

23. Malabar pit viper (*Craspedocephalus malabaricus*)



Description:

Scale pattern



- This snake typically reaches a medium size, with the potential to reach lengths of up to 105cm, although it's more commonly found in the range of 50-60cm.
- Its body is covered in scales that have a slightly raised ridge, and it has a moderately long tail.
- The snake exhibits a range of color patterns on its upper body, including variations of green, blue-green, brown, orange, and yellow.
- However, its precise identification in the field is often based on location information. The snake's head is typically characterized by its large size, triangular shape, and a width greater than that of its neck.
- It possesses heat-sensing pits situated between its eyes and nostrils, and its eyes are of moderate size, featuring vertical pupils.
- The tail of this snake tends to be darker in color than its dorsal body, owing to the presence of black spots throughout.

Picture credits:

- Vivek Sharma, Herpetologist Snake Hub
- Vishal Santra, Herpetologist, Society for Nature Conservation Research and Community Engagement (CONCERN)
- Ajay Kartik, Curator & Herpetologist, Madras Crocodile Bank Trust
- Gnaneswar Ch. Project Leader & Herpetologist - Snakebite Mitigation, Madras Crocodile Bank Trust
- Dr. Gajendra Singh, Wildlife Officer, Centre for One Health, National Centre for Disease Control, MoHFW

***Note:** The Malabar Pit Viper (*Craspedocephalus malabaricus*), a medically important snake species found in the Western Ghats of India. This species further splits into three distinct species, each inhabiting various region within the Western Ghats:

- i) *Craspedocephalus travancoricus*
- ii) *Craspedocephalus peltopelor*
- iii) *Craspedocephalus anamallensis*

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Do's and Don'ts During Snake Bite

Do's

Stay calm and reassure the bitten person

Move slowly away from the snake.

Leave the wound area (bite mark) alone

Remove the shoes, belt, rings, watches, jewelry or tight clothes from the affected area

Make the patient lie in prone, on the left side, with the right leg bent and hand supporting the face

Rush to the nearest health facility for medical treatment

Don'ts

Don't allow the victim to become over-exerted or panic

Don't attack or kill the snake. If you are close enough to hurt it, it can defend itself by biting you

Do not cut and apply or inject anti-snake venom locally on the wound

Don't tie the affected area to stop blood circulation. *It can lead to infections that cause loss of limbs or even death.*

Don't lay the patient on his/her back. *Lying on the back can block the airways.*

Don't use traditional methods or any unsafe treatments.



