

# VENOMOUS SNAKES OF AFGHANISTAN AND PAKISTAN

## COBRAS AND KRAITS

### DESCRIPTION AND BIOLOGY

Cobras are recognized by the hoods that they flare when angry or disturbed; the hoods are created by the extension of the ribs behind the cobras' heads. The Indian cobra has a wide black band on the underside of the neck, and a hood marking design which shows half-rings on either side of the hood; the Oxus cobra lacks this distinctive hood marking. Cobras in the Afghanistan/Pakistan region are more active during the early evening and early morning. Cobras can be very aggressive when they are protecting their nest and eggs. Oxus and Indian cobras do not "spit" venom but when biting they hold on and chew savagely. Common kraits are smooth, glossy bluish-black snakes with narrow white cross bands and the rounded head slightly distinct from the neck. The body color varies from a dark steely blue-black in a specimen which has freshly shed its skin to a pale faded bluish gray in one just about to shed. Common kraits usually prowl on hot, humid nights and are quite agile in their movements. They have a tendency to seek shelter in sleeping bags, boots, and tents. Specimens disturbed during day rarely bite, but at night they are extremely dangerous and aggressive. This snake is of special concern to soldiers. It's venom is about 15 times more deadly than the Indian cobra.



### HABITATS

Cobras are at home in many types of terrain. Flat country with high grass and scattered groves of trees is an optimum habitat for Indian cobras. Rice fields and other sorts of agricultural land may support many Indian cobras, and they are often common around villages and cities. Here they may be found in crumbling walls, old buildings, and gardens. Oxus cobras occur in the stony, rocky, shrub-covered foothills along the northern frontier of Pakistan across Afghanistan and into eastern Iran and southern parts of Russian Asia. In some areas, they are found at elevations above 3,000 meters. Oxus cobras are commonly encountered in empty buildings and overgrown fields, especially in areas with abundant rodent populations. Common kraits are found in a variety of habitats at low and moderate elevations, most commonly in open country, cultivated areas, and scrub jungles up to 1,700 meters elevation. They are often found near human habitations and frequently enter poorly constructed or dilapidated buildings. Kraits and cobras generally avoid very rocky or sandy terrain and desert areas.



## PIT VIPERS

### DESCRIPTION AND BIOLOGY

Haly's and Himalayan pit vipers are small snakes, with a total length around 90-100 cm long. The color of the skin varies from gray, brown to red, dark green or even black. The pit vipers are generally considered to be the most advanced family of snakes since they possess a very sophisticated venom delivery system. Large tubular fangs are placed in the front of the mouth and they are hinged, allowing them to be folded back when not in use. Their heads are covered with numerous small scales and their eyes have vertically elliptical pupils. Pit vipers have a pair of heat sensing pits located between each eye and nostril. Their venom is primarily hemotoxic, causing pain, blistering, hemorrhaging, and digestion of tissue around the bite wound. These snakes are mainly nocturnal, resting during the day beneath stones or shrubs, and during warmer months, emerging only after sunset. Reports vary as to aggressiveness. Pit vipers usually will not strike unless continuously disturbed or hurt, but have been known to bite with only minor provocation. Pit vipers are active from the end of March until October.



### HABITATS

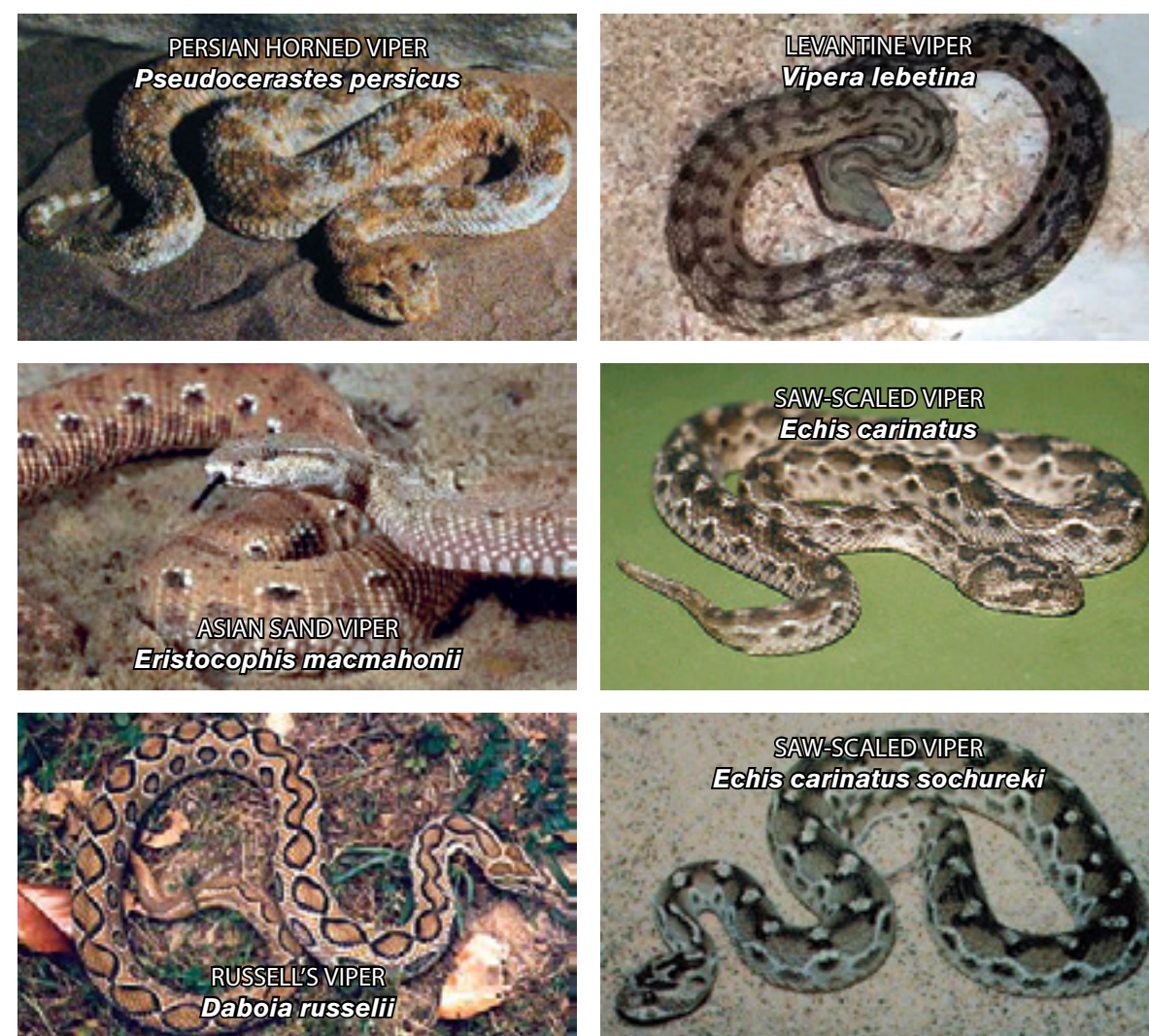
Pit vipers live in a variety of habitats from desert shrub to short grass or wooded steppes, coniferous forests, and mountainous areas at elevations of 1,500 to 5,000 meters. Favored habitats include dry, rocky areas, and they are often abundant around rocky bluffs that serve as hibernating dens. Often seen close to hiding places where they retreat when disturbed. Pit vipers take refuge under fallen timber, crevices in or under rocks, beneath boulders, ledges, stones, and fallen leaves.



## VIPERS

### DESCRIPTION AND BIOLOGY

Vipers typically have broad, triangular heads. Most species are also heavy-bodied with relatively short, slender tails. Most vipers have numerous and heavily keeled body scales. Their long fangs permit deep penetration and envenomation of prey. Their venom is primarily hemotoxic, some with a neurotoxic component, and cause pain, blistering, hemorrhaging, and digestion of tissue around the bite wound.



Russell's vipers are one of the most dangerous snakes of the Afghanistan/Pakistan region. These snakes are short-tempered and very aggressive. When disturbed, they strike with great force and speed. Russell's vipers are medium-sized to large snakes with strongly keeled scales, a distinctive bright chain pattern, and a large triangular head. They are predominately nocturnal but active by day during cool weather.

Saw-scaled vipers are rough-scaled snakes with large eyes, a head wider than the neck and a stocky body. Their scales are heavily keeled. The body is brown, grayish or sandy with a darker zigzag pattern on the back and a distinct cross or lance mark on the head. Most species are generally nocturnal during hot dry weather; during the day they are found under rocks, in mounds of dead plant stalks, or in bushes up to height of 2 meters or more. Saw-scaled vipers assume a defensive figure eight coil when encountered, rubbing body scales together to produce a distinctive rasping sound. These snakes are involved in many snakebite incidents and numerous fatalities almost everywhere throughout their range, and are considered to be some of the most dangerous snakes in world because of their venom toxicity and high population densities. Saw-scaled vipers are extremely short-tempered, aggressive, and will strike without provocation. They usually try

to escape when encountered, but they have been reported to chase victims aggressively.

Asian sand vipers are active during twilight and at night. These snakes resort to a side winding movement when hurried or alarmed. When agitated, sand vipers hiss loudly, raise their head and a loop of their body well above ground, and strike with great vigor. Persian horned vipers have a typical bulky viper-like body, with a very broad head with short horns above the eyes. Generally nocturnal, they are sluggish, placid, and less likely to bite during day, but dangerously active and aggressive at night. Persian horned vipers have a characteristic side winding locomotion method. They frequently hide in rodent tunnels and underneath rocks. The Levantine viper has a generally dusty appearance, and is light gray in color with small, rectangular brown, reddish, or dark gray blotches. These snakes are primarily nocturnal, but are quite alert and will strike quickly during the day. Their temperaments are unpredictable, and they may strike quickly and savagely at any time.



### HABITATS

Russell's vipers occur throughout eastern Pakistan, living in rice paddy fields and other agricultural land, as well as open, rocky, bushy, or grassy terrain up to elevations of 3,000 meters. Saw-scaled vipers are very abundant and inhabit most of the desert and dry areas of Afghanistan and Pakistan. They can live far from any water source and are found in barren, rocky, and sandy deserts, and dry scrub forests, from the sea level to an elevation of about 2,000 meters. They may enter human dwellings in search of prey. Asian sand vipers are found almost exclusively on sand dunes or desert regions at elevations below 1,200 meters. Persian horned vipers inhabit flat, sandy regions and rocky areas up to elevations of 2,000 meters. Levantine vipers live in a wide variety of habitats from marshes and plains at sea level to mountainous areas at elevations up to 2,000 meters and are often encountered near farms and grazing areas. They also inhabit semi-desert areas and rocky, hilly country at moderate elevations, with scattered bushes and adequate water supply.

## SEA SNAKES

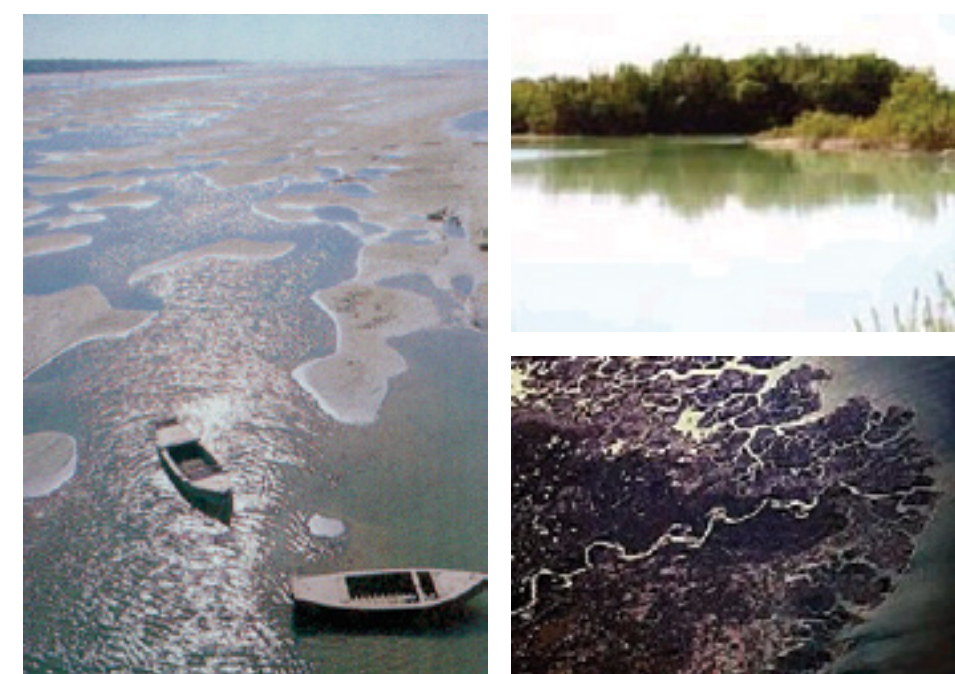
### DESCRIPTION AND BIOLOGY

Sea snakes differ in appearance from other snakes in that they have an oar-like tail and laterally compressed bodies to aid in swimming. A specialized lung and nostrils with valves enable them to remain submerged for periods of up to 8 hours. Most sea snakes are completely marine and lack the enlarged ventral scales that enable land snakes to grip the ground. Once ashore, these ocean-going snakes are helpless, and cannot crawl. Most species are dark above and lighter below, or ringed with black and grayish green. They feed on small fish and are preyed upon by sea birds, sharks, and larger fish. Because of their marine environment, sea snakes seldom come in contact with humans. The exceptions are fisherman who capture these dangerous snakes in fish nets and scuba divers who swim in waters where sea snakes are found. Serious envenomations by sea snake bite is, however, extremely dangerous and potentially fatal. Some species of sea snakes have venom several times more toxic than the cobra's. Their venom is a potent nerve toxin that acts by blocking transmission of messages from nerves to muscles. Fatal bites result in death from respiratory, heart, or kidney failure.

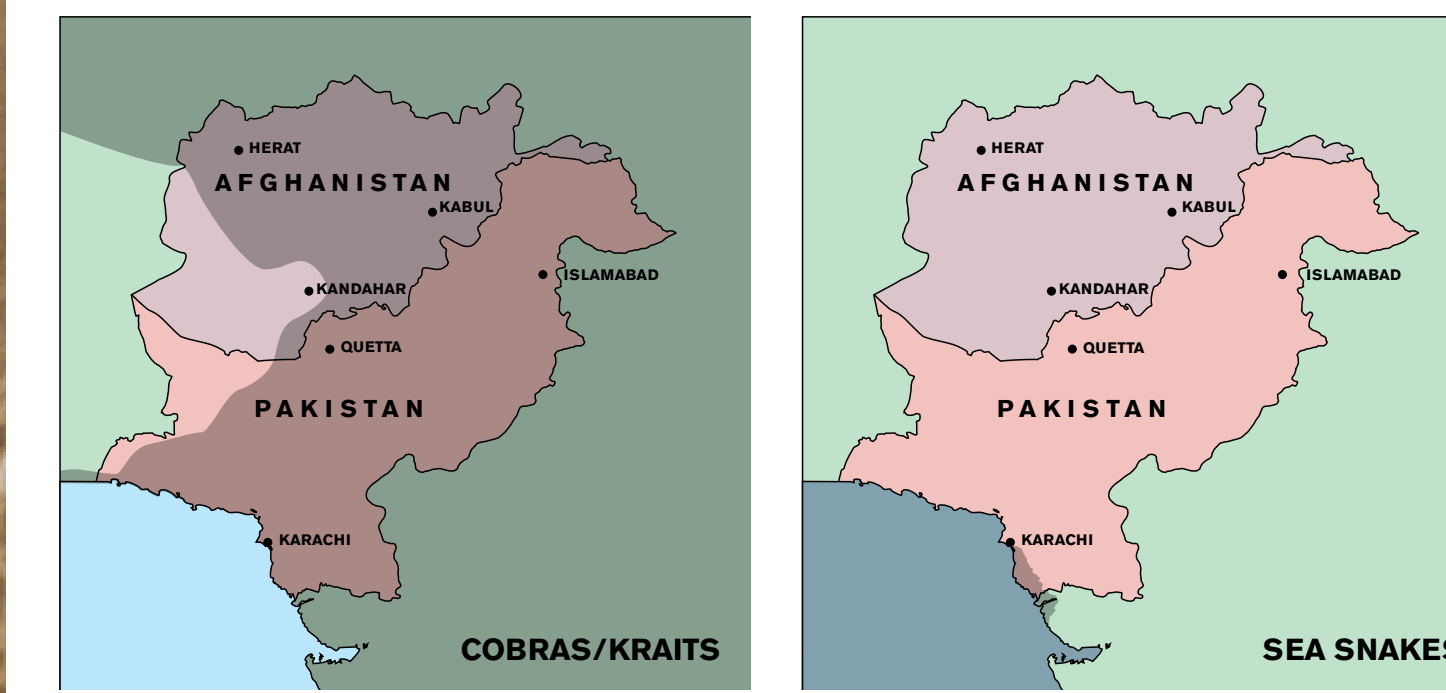
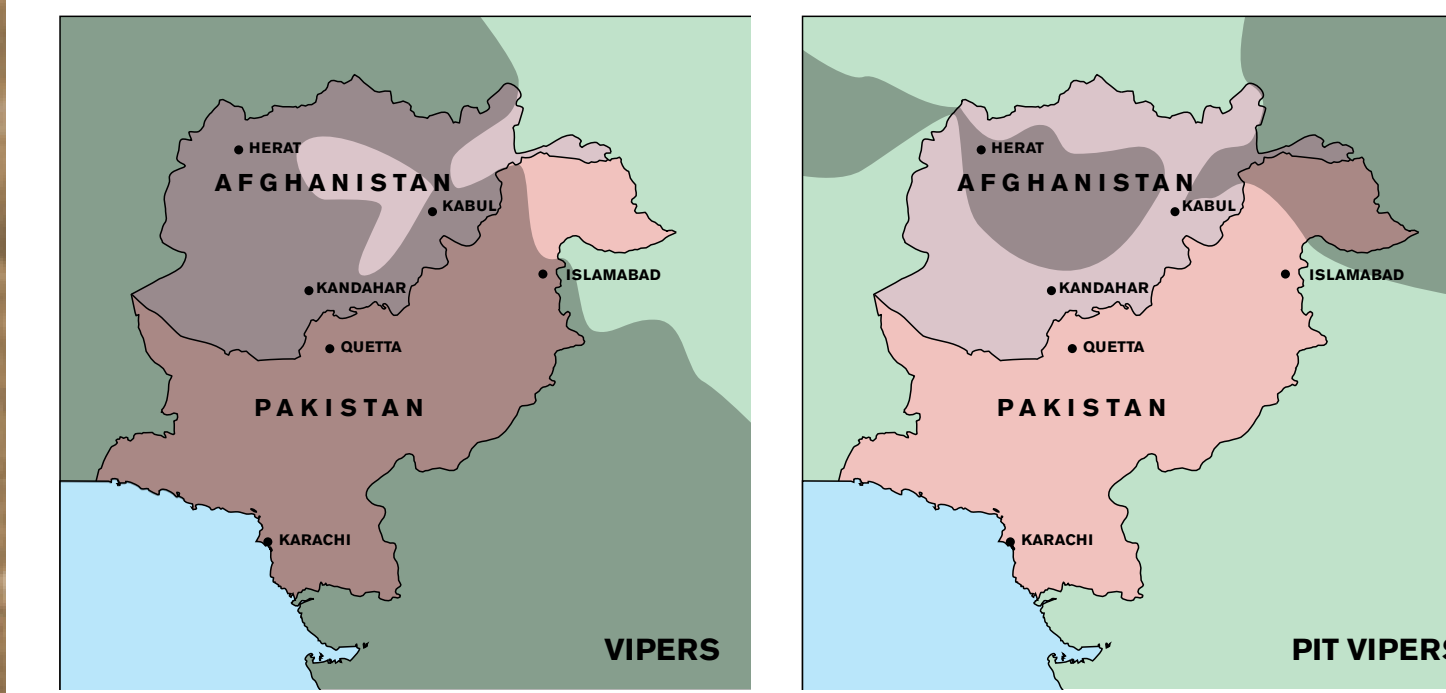


### HABITATS

The greatest numbers of sea snakes are found in the warm shallow waters, without strong surf or current, along the Arabian Sea coast. The mouths of rivers, bays, and mangrove swamps are especially favored. Many species of sea snakes enter brackish or fresh water occasionally. Some species of sea snakes that inhabit the deeper ocean waters are only rarely found close to shore, when wind or currents cause beach strandings.



## SNAKE DISTRIBUTION



## SPECIES DISTRIBUTION LIST

Species	Common Name	Afghanistan	Pakistan
<i>Bungarus caeruleus sindanus</i>	Common Krait		X
<i>Naja naja</i>	Indian Cobra	X	X
<i>Naja naja oxiana</i>	Oxus Cobra	X	X

## PIT VIPERS

<i>Agkistrodon halys</i>	Haly's Pit Viper	X	X
<i>Gloydius himalayanus</i>	Himalayan Pit Viper	X	

## VIPERS

<i>Daboia russelii</i>	Russell's Viper		X
<i>Echis carinatus</i>	Saw-Scaled Viper	X	X
<i>Echis c. multisquamatus</i>	Saw-Scaled Viper	X	
<i>Echis carinatus sochureki</i>	Saw-Scaled Viper	X	X
<i>Eristocophis macmahonii</i>	Asian Sand Viper	X	X
<i>Pseudocerastes persicus</i>	Persian Horned Viper	X	
<i>Vipera lebetina</i>	Levantine Viper	X	X

## SEA SNAKES

<i>Astrotia stokesii</i>	Stoke's Sea Snake		X
<i>Enhydrina schistose</i>	Beaked Sea Snake		X
<i>Hydrophis caeruleus</i>	Dwarf Sea Snake		X
<i>Hydrophis cyanocinctus</i>	Annulated Sea Snake	X	
<i>Hydrophis lapemoides</i>	Arabian Gulf Sea Snake	X	
<i>Hydrophis mamillaris</i>	Broad Banded Sea Snake	X	
<i>Hydrophis ornatu</i>	Reef Sea Snake		X
<i>Hydrophis spiralis</i>	Yellow Sea Snake		X
<i>Lapemis curtus</i>	Shaw's Sea Snake		X
<i>Microcephalophis cantoris</i>	Cantor's Sea Snake	X	
<i>Microcephalophis gracilis</i>	Graceful Small-Headed Sea Snake	X	
<i>Pelamis platurus</i>	Yellow-Bellied Sea Snake	X	
<i>Thalassophina viperina</i>	Schmidt's Sea Snake	X	

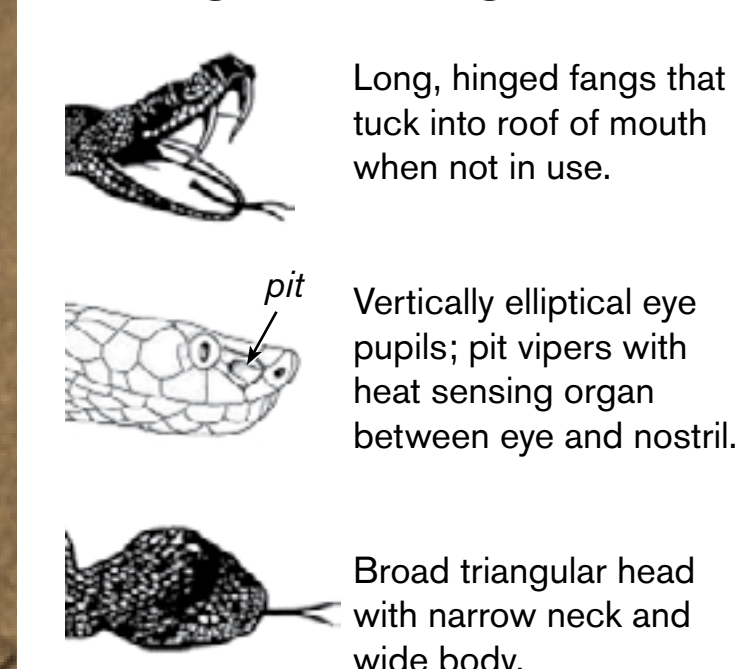
## SNAKE IDENTIFICATION

### VIPERS/PIT VIPERS

Long, hinged fangs that tuck into roof of mouth when not in use.

Vertically elliptical eye pupils; pit vipers with heat sensing organ between eye and nostril.

Broad triangular head with narrow neck and wide body.

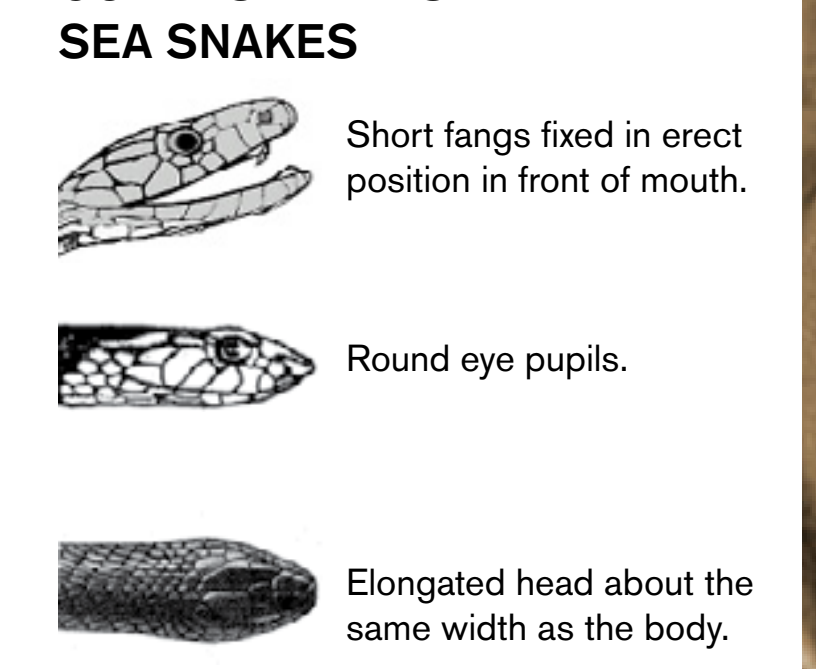


### COBRAS/KRAITS/SEA SNAKES

Short fangs fixed in erect position in front of mouth.

Round eye pupils.

Elongated head about the same width as the body.



## SNAKEBITE PREVENTION

Venomous snakes are found throughout Afghanistan and Pakistan. Assume that any snake you encounter is venomous: Leave it alone and unmolested!

As tactical situations permit, avoid high risk habits. Locate bivouacs away from piles of brush, rocks or other debris. Avoid swimming in coastal areas where sea snakes abound.

Remediate conditions which attract snakes. Remove woodpiles, rock piles, construction debris, dumps, dense undergrowth and similar shelter for snakes. Store supplies elevated off the ground. Practice good sanitation. Control rodents.

Practice "snake smart" behavior. Shake out bedding and clothes before use. Sleep off

the ground, if possible. Know that thick leather boots offer the best foot protection. Avoid walking alone, especially during the period from dusk to complete daylight. Keep to clear paths.

Be alert in areas where snakes may be hiding or sunning. Don't reach or place parts of body into uninspected places, especially in high grass or among rocks. Keep hands off of rock ledges. Never sit on or step over large rocks or logs without first checking to see what is on the other side.

In the unit compound, keep doors, windows and vents closed whenever possible. Block holes in foundations, crawl spaces, ceilings and roofs.

## SNAKE VENOMS AND THEIR EFFECTS

The venom of the snakes is a complex mixture of generally two types of proteins, each distinguishable by its activity.

One category of venom is the neurotoxins. These venoms affect the nervous system, causing destruction or paralysis of the cells that regulate heartbeat and respiration. Victims may die from asphyxiation or heart failure.

The other major group is the hemotoxic venoms with proteins that attack blood cells and also destroy both muscular and vascular tissue. Hemotoxic venoms allow blood to escape into the surrounding tissue, causing severe swelling, pain and discoloration at the site of the snakebite. Victims may die from shock.

All snake venom has both neurotoxins and hemotoxins. The venom of vipers and pit vipers is primarily hemotoxic with only a small neurotoxic component and causes pain, blistering, hemorrhaging and digestion of tissue around the bite wound. The venom of cobras, kraits and sea snakes contains a higher percentage of neurotoxins. Their venom produces much less obvious symptoms but can affect nerves far removed from the site of the bite.

Antivenin is available which can neutralize the effects of snake venom.

Fang wound and effects of hemotoxic venom from viper bites.



## SNAKEBITE FIRST AID

Avoid panic! Lightly immobilize injured part in functional position.

Move victim out of danger and place at rest. Transport victim to medical facility as soon as possible.

Reassure and calm the patient. Retain snake for identification if possible.

Remove rings and constrictive items.



UNITED STATES ARMY PUBLIC HEALTH CENTER (provisional)  
ENTOMOLOGICAL SCIENCES PROGRAM,  
ABERDEEN PROVING GROUND, MD 21010-5403  
CP-001-0216

