

VENOMOUS SNAKES OF THE PHILIPPINES

COBRAS

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 cobra's head. All of the Philippine cobras have conspicuous dark bars or spots on the underside of the neck at about the level of the hood. The king cobra is the world's largest venomous snake, with an average adult length of 3-4 meters (maximum length of 5.5 meters). A full grown king cobra can be yellow, green, brown, or black with yellowish or white cross-bars or chevrons on the back. The throat is light yellow or cream colored with four similar crossbars under the head. King cobras are active during the daytime and prefer to escape unless they are cornered or provoked. This is not true of females guarding their nests during the egg-laying season from January through April, when they may attack without provocation.

Northern and Southeastern Philippine cobras and equatorial spitting cobras reach an average adult length of 1-1.5 meters. These cobras are commonly active in the evening but are not exclusively nocturnal (active by night).

Northern Philippine cobras have a yellowish to olive brown background color and lack distinct markings on their back. The throat is yellowish white with one or several pairs of lateral spots.

Southeastern Philippine cobras have an iridescent brownish black and yellowish reticular background color. The chin and upper neck are whitish yellow with black bands or splotches.

Equatorial spitting cobras found in the Philippines have a uniform jet black color with a bluish black belly and pale markings on the neck and chin.

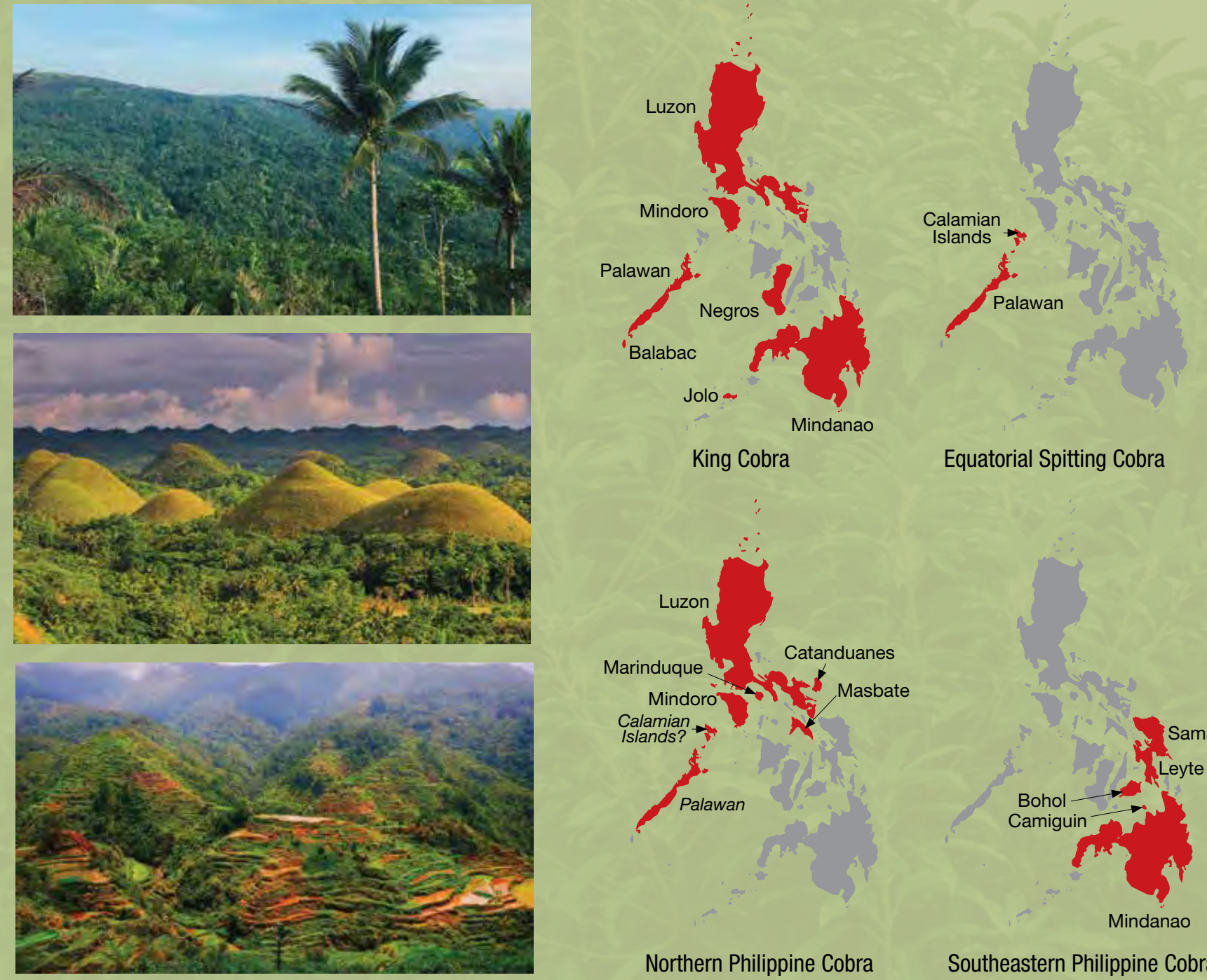
Northern and Southeastern Philippine cobras and equatorial spitting cobras are generally timid and will seek to escape when encountered. They are the most dangerous when surprised in close quarters and tend to hold on and chew savagely when biting.

These snakes also have a highly developed ability to "spit" venom at intruders, ejecting their venom accurately into the eyes of their victims from a distance of up to three meters. The venom of all cobras in the Philippines contain potent and fast-acting neurotoxins. Bites from king cobras are of special concern because of the greater volume of venom injected.



HABITATS

Cobras are at home in many types of terrain in the Philippines, from sea level up to 1,800 meters in elevation. All of the Philippine cobras are terrestrial, but specimens are sometimes encountered in trees and streams. Ideal habitat for cobras found in the Philippines include savannas and grasslands, bamboo thickets, dense or open forests, dense mangrove swamps, hilly jungles, as well as cultivated areas. King cobras are found on Balabac, Jolo, Luzon, Mindanao, Mindoro, Negros, and Palawan Islands. Equatorial spitting cobras are found only on Palawan and some of the Calamian Islands. The Northern Philippine cobra has been recorded from Luzon, Mindoro, Masbate, Marinduque, Calamian Islands, Palawan and Catanduanes. This species is common in areas populated by man and is an important cause of snake bites in the Philippines. The Southeastern Philippine cobra inhabits the islands of Mindanao, Samar, Leyte, Bohol, and Camiguin and is likely to occur on some of the other smaller, nearby islands.



LANCE-HEADED PIT VIPERS

DESCRIPTION AND BIOLOGY

Philippine, Polillo, and Bataan pit vipers all belong to a group of tree dwelling snakes called lance-headed pit vipers. General characteristics of this group of snakes include a broad, flattened head, very distinct from the narrow neck, with a moderately compressed, cylindrical body, and a prehensile tail of moderate length. Their eyes are small to moderate in size with vertically elliptical pupils. Pit vipers have a pair of heat sensing pits located between each eye and nostril. *Trimeresurus* spp. snakes have a dorsal background color of green, greenish-yellow, or bluish-green, a characteristic broken or continuous line of yellow dots along the sides near the belly with or without a series of irregular dark blotches or crossbars, varying in color, along the back. Pit vipers possess a very sophisticated venom delivery system. Large tubular fangs are placed in the front of the mouth that are hinged, allowing them to be folded back when not in use. Their venom is primarily hemotoxic and all of the lance-headed pit vipers of the Philippines are capable of inflicting a dangerous bite. Primarily nocturnal in habit, these snakes are sluggish and docile during the day, but will bite when threatened.



HABITATS

The lance-headed vipers that inhabit the Philippines are arboreal and usually found in bushes or in small trees. Generally, they live in lowland forests and are often encountered along banks of streams or in damp localities at elevations up to 600 meters. Habitats include mangrove and hardwood forests. The Philippine pit viper and its subspecies have been recorded from Camiguin, Jolo, Luzon, Mindanao, Polillo, Bataan, Bohol, Catanduanes, Dinigat, Leyte, Mindoro, Negros, and Panay.



CORAL SNAKES

DESCRIPTION AND BIOLOGY

The coral snakes of the Philippines can be classified as either Asiatic coral snakes (*Hemibungarus* and *Calliophis* spp.) or long-glanded coral snakes. Both of these types of snakes are characterized by small heads that are not distinct from the body, a slender and elongated, cylindrical body with a short tail, and small eyes with round pupils. Long-glanded coral snakes reach an average adult length of only 0.3 meters. They have elongated venom glands that extend posteriorly for about 1/3 of the body length. Long-glanded coral snakes have a background color of brown to black above, with longitudinal blue, yellow, or whitish lines and the head and/or ventral surface of the brightly colored tail. Adult Asiatic coral snakes average 0.3 to 0.5 meters in length. They have a cream band across the base of the head and a background color of russet to pink, with narrow, widely separated black cross bands or a background color of brown to crimson, with 3 longitudinal black strips from head to tail. Many harmless snakes mimic their coloration. Coral snakes are seldom aggressive unless provoked or handled.



HABITATS

The coral snakes of the Philippines are typically found in scrub jungles or monsoon forests, up to elevations of 1,100 meters, and are often found near human habitations. These snakes generally avoid dry terrain. Although occasionally active in the early morning, coral snakes are mostly nocturnal and remain hidden during the day within the organic layer of the forest floor, or beneath logs, and other debris in wooded areas. Asiatic coral snakes have been recorded from Luzon, Mindoro, Cebu, Negros, Panay, and Polillo. Long-glanded coral snakes occur on Palawan, Luzon, Mindanao, Samar, the Calamian Islands, and throughout the Sulu archipelago.



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. Sea snakes are air breathers and must surface to breathe. Specialized lung and nostrils with valves enable sea snakes 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. Generally, sea snakes are not aggressive. They are not thought to strike humans unless provoked nor do they typically pursue swimming prey. However, there are species that may bite if they are stepped on or handled roughly. All sea snakes have fixed fangs and potent venom. Stoke's sea snakes have fangs that are capable of penetrating a wetsuit. Some species of sea snakes have venom that is several times more toxic than the cobra's venom. Fortunately, only small amounts of venom are usually injected, so fatalities are rare. The most serious bites involve multiple serrated-edged lacerations which may result in death from respiratory, heart, or kidney failure.



HABITATS

The Philippines have one of the highest densities of sea snake populations in the world and these marine reptiles are commonly encountered in both the inshore and offshore waters throughout the archipelago. One species of sea snake, the Lake Taal snake, is the only known species to have adapted to fresh water and lives in a flooded volcanic caldera on Luzon. The greatest numbers of sea snakes are found along coastlines of warm, shallow waters without a strong surf or current. The mouths of rivers, bays, and mangrove swamps are especially favored. They thrive in a variety of habitats, ranging from muddy or turbid water to clear waters and coral reefs. Many species of sea snakes enter brackish or freshwater occasionally. Some species of sea snakes that inhabit the deeper ocean waters are only found close to shore, when wind or currents cause beach strandings.



SPECIES CHECKLIST

| SPECIES | COMMON NAME |
|--|--|
| COBRAS | |
| <i>Ophiophagus hannah</i> | King cobra |
| <i>Naja philippinensis</i> | Northern Philippine cobra |
| <i>Naja samarensis</i> | Southeastern Philippine cobra |
| <i>Naja sumatrana</i> | Equatorial spitting cobra |
| LANCE-HEADED PIT VIPERS | |
| <i>Tropidolaemus subannulatus</i> | North Philippine temple pit viper |
| <i>Trimeresurus flavomaculatus</i> | Philippine pit viper |
| Subspecies | |
| <i>Trimeresurus flavomaculatus haleus</i> | Polillo pit viper |
| <i>Trimeresurus flavomaculatus mcgregori</i> | Bataan pit viper |
| CORAL SNAKES | |
| <i>Calliophis intestinalis bilineata</i> | Palawan long-glanded coral snake |
| <i>Calliophis intestinalis philippina</i> | Northern Philippine long-glanded coral snake |
| <i>Calliophis intestinalis sulensis</i> | Sulu long-glanded coral snake |
| <i>Calliophis calligaster (Hemibungarus calligaster)</i> | Philippines coral snake |
| <i>Calliophis calligaster gemianulis</i> | Central Philippine coral snake |
| <i>Calliophis calligaster mcclungi</i> | Polillo coral snake |
| SEA SNAKES | |
| <i>Aipysurus eydouxii</i> | Olive-brown sea snake |
| <i>Astrota stokesii</i> | Stoke's sea snake |
| <i>Hydrophis atriceps</i> | Black-headed sea snake |
| <i>Hydrophis belcheri</i> | Belcher's sea snake |
| <i>Hydrophis brookii</i> | Brook's small-headed sea snake |
| <i>Hydrophis caeruleus</i> | Dwarf sea snake |
| <i>Hydrophis cyanocinctus</i> | Annulated sea snake |
| <i>Hydrophis fasciatus</i> | Banded small-headed sea snake |
| <i>Hydrophis hardwickii</i> | Hardwicke's sea snake |
| <i>Hydrophis jerdoni</i> | Jerdon's sea snake |
| <i>Hydrophis lamberti</i> | Lambert's sea snake |
| <i>Hydrophis melanosoma</i> | Black-banded sea snake |
| <i>Hydrophis ornatus</i> | Reef sea snake |
| <i>Hydrophis platurus</i> | Pelagic sea snake |
| <i>Hydrophis schistosus</i> | Beaked sea snake |
| <i>Hydrophis semperi</i> | Lake Taal snake |
| <i>Hydrophis spiralis</i> | Yellow sea snake |
| <i>Laticauda colubrina</i> | Yellow-lipped sea krait |
| <i>Laticauda laticaudata</i> | Black-banded sea krait |
| <i>Laticauda semifasciata</i> | Broad-banded Blue sea krait |
| <i>Thalassophis anomalus</i> | Anomalus sea snake |

SNAKEBITE PREVENTION

Venomous snakes are found throughout the Philippines. Assume that any snake you encounter is venomous. Leave snakes alone. Many people are bitten because they try to kill a snake or get a closer look at it.

Avoid high risk snake habitats if tactical situations permit. Locate bivouacs away from piles of brush, rocks, or other debris. Avoid swimming in coastal areas where sea snakes can be found.

Remediate conditions which attract snakes. Remove woodpiles, rock piles, construction debris, dumps, dense undergrowth, and any other similar snake shelter. Store supplies off the ground. Practice good sanitation and 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. Stay on clear paths.

Be alert in areas where snakes may be hiding or sunning. Do not 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.

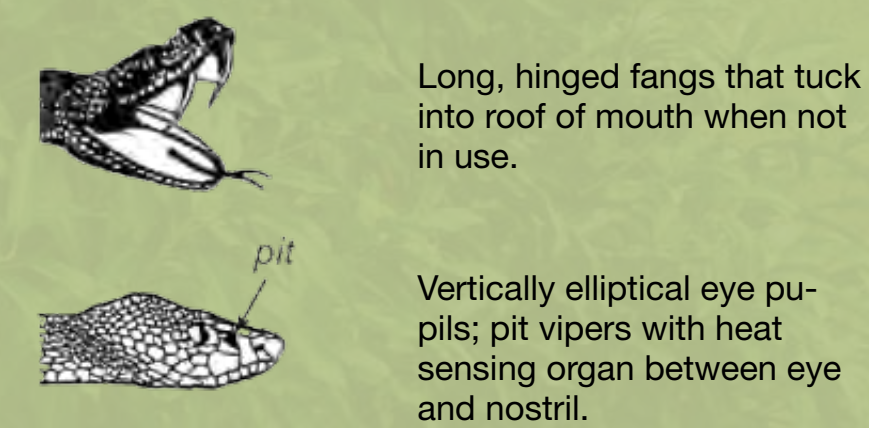


SNAKEBITE FIRST AID

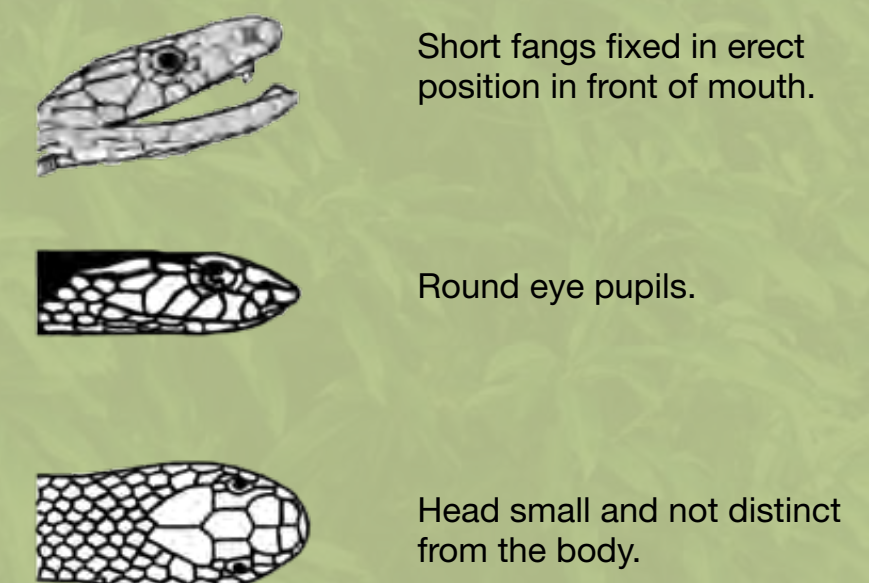
- Avoid panic!
- Rinse spitting cobra venom out of eyes with clean water as soon as possible.
- Move victim out of danger and place at rest.
- Reassure and calm the patient.
- Remove rings and constrictive items.
- Lightly immobilize injured part in functional position.
- Transport victim to medical facility as soon as possible.
- Retain snake or capture photo for identification if possible.

SNAKE IDENTIFICATION

LANCE-HEADED PIT VIPERS



COBRAS/CORAL SNAKES/SEA SNAKES



SNAKE VENOMS AND THEIR EFFECTS

BITES by venomous snakes can result in a wide range of effects, from simple puncture wounds to life-threatening illness and death. Snake venom 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 nerves 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 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 kidney failure or shock.

All snake venom has both neurotoxins and hemotoxins. The venom of lance-headed pit vipers (*Trimeresurus* and *Tropidolaemus* spp.) is primarily hemotoxic, with only a small neurotoxic component and causes pain, blistering, hemorrhaging, and digestion of tissue around the bite wound. Viper bite victims may bleed from the bite site or bleed spontaneously from the mouth or old wounds.

The venom of cobras, coral 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.

Bites by Philippine cobras are immediately painful and tender to the touch. These cobras tend to hold on and chew savagely when biting. Specific symptoms of cobra envenomation include drowsiness, difficulty in speaking, drooling, blurred vision, shortness of breath, and loss of consciousness. These symptoms occur within one hour after the bite. Respiratory arrest can occur within minutes.

A unique form of toxicity occurs with the spitting cobras found in the Philippines (equatorial, northern and southeastern Philippine

cobras) spit venom into the eyes. Venom entering the eyes may cause immediate burning pain with inflammation and possible permanent blindness unless the venom is rinsed out of the eyes as soon as possible.

Coral snakes do not strike like the vipers; they bite and often chew to inject their venom. Coral snakes must hold on for a longer period of time for significant envenomation to occur. At the site of the bite, there is usually little swelling or inflammation. Neurological symptoms including slurred speech, an overall tingling sensation, drooping eyelids, blurred vision, muscle weakness and respiratory paralysis are often delayed for 12 or more hours after the bite.

The venom of sea snakes is initially painless and small amounts of venom are usually injected. Fatalities are rare. The more serious bites involve multiple serrated-edged lacerations that produce muscle stiffness, difficulties in speaking, blurry vision, and swallowing, flu-like symptoms and muscular paralysis.

Antivenom is available for most of the venomous snakes found in the Philippines. Your medical care facility can administer antivenom if available. For more on antivenom sources and availability, visit:

World Health Organization Venomous Snakes and Antivenom Database: <https://www.who.int/en/news-room/fact-sheets/detail/snakebite-envenoming>
The University of Adelaide Clinical Toxinology Resources: <http://www.toxinology.com/>



Symptoms from cobra envenomation in bite regions of the hand.



Fang wound and symptoms from viper envenomation.

