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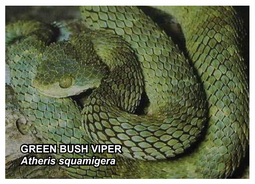
VENOMOUS SNAKES OF WEST AFRICA

Adders and Vipers

Behavior:

- Bush vipers (*Atheris spp.*) are active both day and night. They live on the ground and in trees and are quick to strike if disturbed. Some species have very small ranges.
- African adders (*Bitis spp.*) are found throughout the region, absent only from mountaintops and the harshest deserts. They are most active at night but bask during the day along footpaths.
- Sand/Horned vipers (*Cerastes spp.*) are mainly nocturnal and terrestrial. Can make themselves almost invisible by wriggling down into loose sand. Often hide in rodent holes or under stones. When irritated, they rub inflated loops of their body together to make a "rasping hiss." Can strike quickly if disturbed.
- Carpet vipers (*Echis spp.*) become active at twilight. During the day they hide under logs, rocks and brush piles or bury themselves in the sand. When disturbed, they will stand their ground, rub their scales together to make a hissing sound and strike quickly and repeatedly. They have been known to chase humans for some distance.

Habitats: Mountain and rain forests, edges of rivers and lakes, tree crop plantations, rocky outcrops, open grasslands and savannas, villages and farms. Sand dunes, loose sand and areas of desert shrub (Sand/Horned vipers only).


GREEN BUSH VIPER
Atheris squamigera


PUFF ADDER
Bitis arietans


GABOON ADDER
Bitis gabonica


RHINOCEROS VIPER
Bitis nasicornis


WEST AFRICAN CARPET VIPER
Echis ocellatus

Snakebite Prevention

- **LEAVE ALL SNAKES ALONE!** Venomous snakes are found throughout West Africa. Treat all snakes you encounter as venomous and deadly. Many people are bitten because they try to kill a snake or get a closer look at it.
- Snakebites occur most often:
  - After rainstorms that follow long, dry spells or after rains in desert areas.
  - During the half-hour before total darkness and the first two hours after dark.
- As tactical situations permit, avoid high risk snake habitats. Locate bivouacs away from piles of brush, rocks, or other debris. Swim only in approved areas.
- Eliminate objects that can hide or attract snakes:
  - Remove wood and rock piles, construction debris, dumps, high grass or dense undergrowth.
  - Practice good sanitation by removing clutter and trash and store supplies elevated off the ground.
  - Control rodents and other prey animals that will attract snakes into your area.
- To keep snakes out of dining, living and work areas, keep windows and doors closed whenever possible and make sure screens are tightly fitted, without holes and in good working order. Also seal or block holes in foundations, crawlspaces and roofs.
- Practice "SNAKE-SMART" behavior:
  - Shake out bedding and clothes before use and sleep off the ground, if possible. Using a zipped pop-up bed net will provide protection in open outdoor areas.
  - Wear thick leather boots for the best foot protection. Never walk barefoot or in shower shoes outside.
  - Avoid walking alone and keep to clear paths. Always use a flashlight at night.
  - Watch where you put your hands and where you step especially in natural environments.
  - Don't reach or step into places you cannot directly see into.
  - Be alert to and avoid areas where snakes may be hiding or sunning.
- If a snake is encountered at close quarters, try to remain calm and stand still. Do not make threatening gestures toward the snake. Move backward slowly. Protect and shield your eyes if in close proximity to a cobra that has "reared up."
- Do not pick up a "dead" snake; it may only be injured, stunned or playing dead. Even a recently killed snake can bite by reflex action.
- ONLY IF NECESSARY, use a stick or shovel and place dead snake in a hard-sided container. Never handle the head if transporting a dead snake that needs to be identified.

Venomous Snake Identification

ADDERS and VIPERS *Bitis, Echis spp.*	Wide Head, Narrow Neck	Vertically Elliptical Pupils	Hinged Front Fangs	Keeled Scales	Stout Body, Short Tail; 1½-3 feet in length
BOOMSLANG *Dispholidus typus*	Oval Head, Distinct from Neck	Round Pupils	Rear Fangs	Keeled Scales	Slender, Elongate Body; 6 feet in length
BURROWING ASPS *Atractaspis spp.*	Short Head, Barely Distinct from Neck	Round Pupils	Hinged Front Fangs	Smooth Scales	Cylindrical Body, Little Spine at End of Short Tail; 1-2½ feet in length
BUSH VIPERS *Atheris spp.*	Broad Head, Narrow Neck	Vertically Elliptical Pupils	Hinged Front Fangs	Keeled, Over-lapping Scales	Slender Body, Tail Used to Grasp Tree Limbs; 2 feet in length
COBRAS *Naja, Pseudohaje spp.*	Broad, Flattened Head, Slightly Distinct from Neck	Round Pupils	Fixed Front Fangs	Smooth Scales	Cylindrical Body, Long Tail; 5-9 feet in length
MAMBAS *Dendroaspis spp.*	Long, Flattened Head, Slightly Distinct from Neck	Round Pupils	Fixed Front Fangs	Smooth Scales	Long, Cylindrical Body, Thin Tail; 5-8 feet in length
VINE SNAKES *Thelotornis spp.*	Long, Lance-Shaped Head, Distinct from Neck	Horizontal Keyhole Pupils	Rear Fangs	Keeled Scales	Long, Slender Body, Thin Tail; 4 feet in length

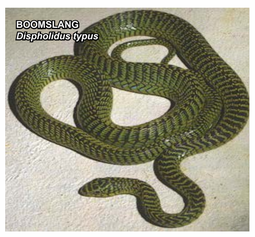
Boomslang, Vine and Tree Snakes

Behavior:

- Active during both the daytime and nighttime.
- Live in trees and feed on bats, birds, and lizards.
- They usually are not aggressive: will quickly flee to nearest tree or bush if surprised on the ground.
- When molested, they inflate their bodies or necks as a threat posture before biting.

Habitats: Trees next to caves; coastal bush and reeds; tropical forests; open savannas; towns and farms near forests.


FOREST VINE SNAKE
Thelotornis kirtlandii


BOOMSLANG
Dispholidus typus

Snakebite First Aid

- Stay calm and move victim and any onlookers away from the snake. If possible, close off the area where the snake was seen and restrict access until area is cleared by preventive medicine, vector-control or other appropriate personnel.
- Have the victim lie down immediately; reassure and calm the victim.
- Remove constrictive items (jewelry, watches, rings, clothing or shoes). Lightly immobilize the injured part of body and place in a comfortable position. DO NOT apply tourniquet or try to cut and draw out venom.
- Take the victim to a medical facility as soon as possible. Venomous snakebites cannot be treated in the field, don't waste valuable time trying.
- Record the appearance and progress of symptoms in as much detail as possible.
- Safely try to note the appearance of the snake (shape of head, body color, shape and length, etc.)
- Antivenin (antivenom) is available for some snake species, your medical care facility can administer antivenin if available.
- For spitting cobra venom in the eyes, the most effective treatment is to immediately flush the affected eye with large volumes of water. Put a pad over the eye, bandage eye and have victim wear dark glasses. Don't let the victim rub their eye. Seek medical attention immediately.

Burrowing Asps

Behavior:

- Burrowing asps spend the majority of time underground in burrows under stones, concrete slabs, logs, or wooden planks.
- They are active on the surface only during the nighttime hours or after heavy rains flood their burrows.
- They feed on small reptiles and rodents found in holes or underground. They do not climb.
- They are not aggressive: bites usually occur at night when snakes are stepped on accidentally.

Habitats: Burrows in sand or soft soil, semi-desert areas, woodlands, and savannas.


VARIABLE BURROWING ASP
Atractaspis irregularis


SMALL-SCALED BURROWING ASP
Atractaspis microlepidota

Snake Venoms and Their Effects

SNAKE VENOMS are complex mixtures of many toxins and enzymes. Snakes use their venom to subdue and digest their prey. The effects of a snakebite can range from a simple puncture wound to death. The severity and types of symptoms depend on the species of snake and how much venom is injected. It is possible to be bitten by a venomous snake and not be envenomated (dry bite) since the snake does not always inject venom.

EFFECTS OF SNAKE VENOMS on humans vary. Depending on the species of snake, the venom either has hemotoxins (which affect the blood system), neurotoxins (which affect the nervous system) or a combination of both.

- In general, the venoms of adders, vipers, boomslang and vine snakes are made up mainly of hemotoxins. Their venom attacks blood cells and destroys muscles and blood vessels. Hemotoxins cause blood to leak into surrounding tissues, causing severe swelling, pain, and discoloration at the site of the snakebite.
- In general, the venoms of tree snakes, cobras and mambas are made up mainly of neurotoxins. Their venom attacks the brain and nerves, and can destroy or paralyze the nerves that control the heart and breathing.

ADDERS AND VIPERS

- These snakes have hollow, hinged fangs in front of mouth to deliver venom.
- African vipers have a strong hemotoxic venom that causes widespread tissue destruction and external and internal bleeding.
- Puff adders probably kill more people than any other African snake.
- Bush viper bites are uncommon and little is known about their venoms. Bites cause pain, swelling and blood clotting failure.
- Carpet viper venom is highly toxic and deadly. Bites can cause swelling at the bite site, blistering and death of skin tissue, internal bleeding and kidney failure.
- Night adder bites are merely painful and can result in minor swelling.


HOLLOW, HINGED FRONT FANGS


VIPER BITE WOUND


EFFECTS OF PUFF ADDER VENOM

BOOMSLANG, VINE and TREE SNAKES

- Venom is delivered from grooved, enlarged teeth at the back of the upper jaw.
- These snakes must chew for a few seconds to deliver much venom.
- Drop-for-drop, boomslang venom is more toxic than the local vipers and cobras.
- Boomslang and vine snakes have a deadly hemotoxic venom. It destroys the blood's ability to clot.
- Severe boomslang and vine snake bites cause internal bleeding, huge "bruises" all over the body, and bleeding from mucous membranes.
- Tree snakes have mild neurotoxic venom that can affect the brain and nerves.


VENOM FANGS IN REAR OF UPPER JAW

BURROWING ASPS

- Burrowing asps can bite sideways using large, hollow front fangs that extend outside of the closed mouth.
- Little is known about burrowing asp venom.
- Most bites cause only local pain and swelling. Severe bites cause fever, vomiting and blood in the urine.
- Small-scaled and variable burrowing asps can cause fatal bites.

VENOM FANGS AT FRONT OF UPPER JAW

EFFECTS OF BURROWING ASP VENOM

COBRAS

- Venom is delivered by fixed, hollow fangs at the front of the mouth.
- Cobras have lethal neurotoxic venom. Cobra bites are painful and can cause swelling, blistering and tissue death at the bite site.
- A serious bite can cause drooling, slurred speech, confusion, blurred vision and dilated pupils.
- Spitting cobras can squirt venom as far as 8 feet. Venom in the eye is not life-threatening, but long-term effects include infections or permanent visual impairment or blindness.
- Venom from a black-necked or red spitting cobra that gets in the eyes may cause immediate, intense and long-lasting burning pain, profuse eye-watering, spasms and swelling of the eyelids or cloudy vision.

FIXED FRONT FANGS

EFFECTS OF COBRA VENOM

COBRA BITE WOUND

MAMBAS

- Large, hollow, fixed front fangs are used to deliver venom.
- Mambas can strike a long way out and up.
- Mambas are among the most dangerous snakes in the world. Their neurotoxic venom causes swelling at the bite site and death from respiratory failure.

FIXED FANGS IN FRONT OF MOUTH

EFFECTS OF MAMBA VENOM

MAMBA BITE WOUND

Cobras

Behavior:

- Active both day and night. They seek shelter in termite mounds, rock formations, rodent burrows and buildings.
- Cobras are ground-dwellers, but can climb and are good swimmers.
- When threatened, cobras will expand their necks into hoods; when provoked they will hiss loudly and may try to attack rather than escape.

Habitats: Villages and farms, open woodlands, termite mounds, oases in semi-desert areas.


EGYPTIAN COBRA
Naja haje


BLACK-NECKED SPITTING COBRA
Naja nigricollis


FOREST COBRA
Naja melanoleuca

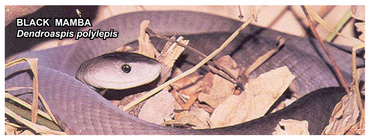

GOLD'S TREE COBRA
Pseudohaje goldii

Mambas

Behavior:

- Most active during the daytime and are tree-dwellers but can be encountered in low shrubs, on rocks, or on the ground.
- Mambas are usually not aggressive and move off rapidly at first sign of danger. If cornered and a person persists, it can strike a long way out and up extremely fast.
- Mambas will enter houses and shelter in thatched roofs, also termite hills, animal burrows, hollow trees and rock crevices.

Habitats: Villages and farms, thatched roof houses, savannas, tree crop plantations, open woodlands, and coastal thickets.


BLACK MAMBA
Dendroaspis polylepis


WEST AFRICAN GREEN MAMBA
Dendroaspis viridis

Snake Distribution Checklist

Species	Common Name	Family	Benin	Burkina Faso	Cameroon	Cape Verde	Cote D'ivoire	Gambia	Ghana	Guinea	Guinea-Bissau	Liberia	Mali	Mauritania	Niger	Nigeria	Sao Tome and Principe	Senegal	Sierra Leone	Togo
Adders and Vipers																				
Atheris broadleyi	Broadley's bush viper	Viperidae			X															
Atheris chlorechis	Western bush viper	Viperidae	X		X		X		X	X		X				X			X	X
Atheris hirsuta	West African hairy bush viper	Viperidae					X													
Atheris squamigera	Green bush viper	Viperidae	X		X				X							X				X
Atheris subocularis	Southwest Cameroon bush viper	Viperidae			X															
Bitis arietans	Puff adder	Viperidae	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X
Bitis gabonica	Gaboon adder/viper	Viperidae	X		X											X				X
Bitis nasicornis	Rhinoceros viper	Viperidae	X		X		X		X	X		X				X			X	X
Bitis rhinoceros	West African Gaboon viper	Viperidae	X				X	X	X	X	X	X						X	X	X
Cerastes cerastes	Desert horned viper	Viperidae											X	X	X					
Cerastes vipera	Sahara sand viper	Viperidae											X	X	X					
Echis jogeri	Joger's carpet viper	Viperidae						X		X	X		X					X		
Echis leucogaster	White-bellied carpet viper	Viperidae	X	X				X		X	X		X	X	X	X		X		
Echis ocellatus	West African carpet viper	Viperidae	X	X	X		X	X	X	X			X	X	X	X		X		X
Boomslang, Vine and Tree Snakes																				
Dispholidus typus	Boomslang	Colubridae	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X
Thelotornis kirtlandii	Forest vine snake	Colubridae	X		X		X		X	X	X	X				X			X	X
Burrowing Asps																				
Atractaspis irregularis	Variable burrowing asp	Atractaspididae	X		X		X		X	X		X				X			X	X
Atractaspis microlepidota	Small-scaled burrowing asp	Atractaspididae	X	X	X			X					X	X	X	X		X		
Cobras																				
Naja annulata	Banded water cobra	Elapidae			X															
Naja haje	Egyptian cobra	Elapidae	X	X	X		X	X	X				X	X	X	X		X		X
Naja katiensis	West African spitting cobra	Elapidae	X	X	X		X	X	X	X	X		X	X	X	X		X		X
Naja melanoleuca	Forest cobra	Elapidae	X	X	X		X	X	X	X	X	X	X			X	X	X	X	X
Naja nigricollis	Black-necked spitting cobra	Elapidae	X	X	X		X	X	X	X	X	X	X		X	X		X	X	X
Naja nubiae	Nubian spitting cobra	Elapidae													X					
Naja senegalensis	Senegalese cobra	Elapidae	X	X			X	X	X	X	X		X	X	X	X		X		X
Pseudohaje goldii	Gold's tree cobra	Elapidae			X		X		X							X				X
Pseudohaje nigra	Black tree cobra	Elapidae	X				X		X	X		X				X			X	X
Mambas																				
Dendroaspis jamesoni	Jameson's mamba	Elapidae	X		X				X							X	X			X
Dendroaspis polylepis	Black mamba	Elapidae		X	X		X			X	X		X					X		
Dendroaspis viridis	West African green mamba	Elapidae	X				X	X	X	X	X	X						X	X	X

NOTE: Due to limitations of information, other venomous animals could be present in the area and not included on this list. Be cautious around all animals especially when you are in a natural habitat.

Entomological Sciences Program
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