

Snakes

Introduction

- ❑ There are really only three snakes you have to keep track of on the AT: the eastern coral snake, the timber rattlesnake, and the copperhead.¹
 - ❑ Other snake bites carry the risk of bacterial infection, but they are not venomous like these three.
 - ❑ It is important to not attempt to kill any snakes you see because they play vital roles in the trail ecosystem (such as keeping rat populations down).

Coral Snakes

- ❑ Many will be familiar with a common rhyme to keep track of whether a snake is a coral snake or not: “Red touch yellow, kill a fellow. Red touch black, friend of Jack.”
 - ❑ If the red rings on the snake are surrounded by yellow rings, it is a coral snake that will inject you with neurotoxins that (can) cause fatal respiratory paralysis.²
 - ❑ If the red rings are surrounded by black rings instead, it is probably a scarlet kingsnake, a shameless animal con-artist. Scarlet kingsnakes are not venomous in the slightest.³
 - ❑ If you have a lapse of memory and can’t remember the stripe order, you can also remember that the true coral snake will always have a black snout, while the scarlet kingsnake has a red snout.⁴
 - ❑ A more detailed breakdown of the differences can be found [here](#). See if you can figure out which one of these is venomous and which one is an imposter.



Image 1: Coral Snake and Scarlet Kingsnake

- ❑ Coral snakes are related to the other neurotoxic snakes of the world, including mambas, cobras and sea krait. Their venom is the deadliest of the snakes on the trail, but they inject low quantities compared to other venomous snakes. This, coupled with their highly reclusive nature, means that coral snakes are relatively less dangerous than the other snakes discussed.⁵
- ❑ While rattlesnakes and copperheads have fangs that extend and fill with venom as they strike (like pop-up books crossed with hypodermic needles and cyanide), coral snakes only have smaller fixed fangs (see the picture below). As such, they tend to hang on when they bite, and secrete their venom over time instead of injecting it all at once like the others do. Thus, the faster you knock them off of you, the less venom gets deposited.
- ❑ Coral snakes may decide to “chew” when they are holding on, though they do not need to do so to inject venom.⁵
- ❑ Eastern coral snakes, the ones you have to worry about on the AT, typically only go as far north as North Carolina.

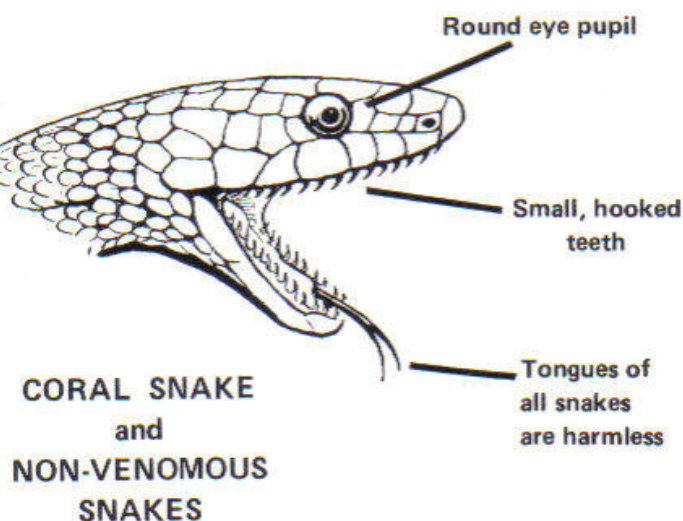
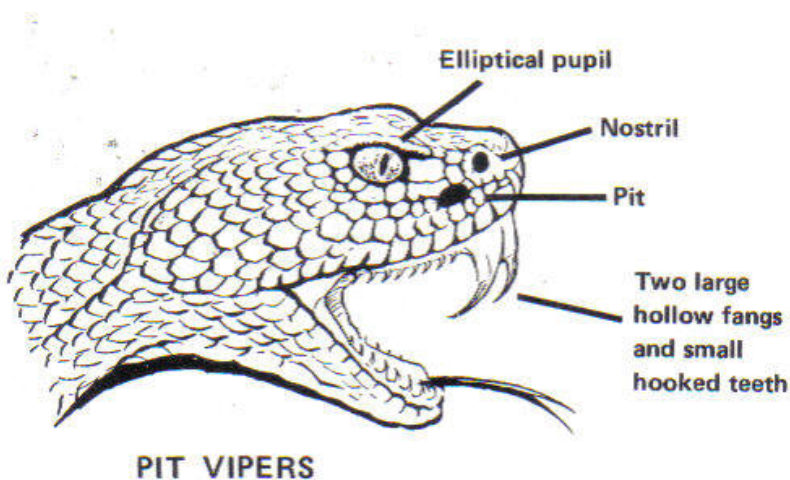


Image 2:
Differences Between Pit
Viper Morphology and
That of Other Snakes

Timber Rattlesnakes

- ❑ There is no rhyme to identify the timber rattlesnake; fortunately, they are usually kind enough to provide an audible warning to you before they take a chunk out of your leg.
 - ❑ If you hear a rattling noise, even if you are not sure if it is the rattle of a rattlesnake, stop immediately and try to identify the location of the sound.
 - ❑ Some people mistake the noise of cicadas or grasshoppers for the rattle because they've never heard it before (it's pretty distinctive). A video of a timber rattlesnake rattling in the wild can be found [here](#).
 - ❑ If you do believe it is a rattlesnake, and have identified its location, back away **SLOWLY** from the snake's position; fast or uncontrolled motion can cause the snake to strike.⁶
 - ❑ Timber rattlesnakes are part of a subfamily of snakes called pit vipers (*Crotalinae*). This classification falls into the family of snakes called vipers (*Viperidae*).
 - ❑ Pit vipers have a heat-sensitive sensory organ on each side of the head (the "pit" from where they derive their name) that enables them to locate warm-blooded prey and strike accurately, even in the dark.⁷
 - ❑ Being part of the viper family, timber rattlesnakes have a very distinct triangular head. They are tan or light brown with dark stripes, and have an orange or brown stripe running from head to tail across the top of their back.⁷
 - ❑ Not that it is really a good way to identify them, but rattlesnakes tend to be a little bit "stouter" than other snakes, with a larger body diameter to length ratio.
- ❑ While it is possible to get away with knowing nothing more than that rattlesnakes rattle, this is not always the best choice of identifier for several reasons.
 - ❑ Rattlesnakes are not compelled by some mystical force to rattle before they strike. It is entirely possible that a snake that does not rattle is a rattlesnake.⁸
 - ❑ The series of rings that rattlesnakes use to produce the rattling noise are not present in younger rattlesnakes. The snake produces one of these rings each time it molts, so young snakes have fewer of them, and babies have only a "button".⁹
 - ❑ Wet rattlesnakes cannot rattle, since the water interferes with the functioning of the aforementioned rings that rub together to produce the distinctive sound.¹⁰



Image 3:
Coiled Timber
Rattlesnake

Copperheads

- ❑ The last kind of snake you need to worry about is the copperhead, which also belongs to the pit viper subfamily.
 - ❑ Copperheads have the distinctive triangular head just like the rattlesnakes do.
 - ❑ Copperheads range from having a copper hue to having an orange-pink hue, and have brownish red cross bands on the midline of their backs.¹¹
- ❑ The copperhead is probably the hardest of the three to identify because it doesn't have distinctive stripes and doesn't have the capacity to rattle at you before striking.
- ❑ While all three types of snake generally try to avoid human contact, the copperhead is notable for being relatively the worst at doing such.
 - ❑ Coral snakes and timber rattlers will generally have no qualms slithering away from humans, but copperheads have a "freeze" reflex that gets them stepped on more frequently than the others.¹²
 - ❑ This tendency to freeze is hypothesized to be present because of the extreme effectiveness of their camouflage: when lying on dead leaves or red clay, they can be almost impossible to notice.
 - ❑ They will frequently stay still even when approached closely, and will generally strike only if physical contact is made.¹²



Image 4:
Camouflaged
Copperhead

Advice and Tips

- ❑ While it is inevitable that you will come across several snakes if you complete a full thru-hike, there are certain steps that can be taken to minimize likelihood of encounters..
 - ❑ Snakes are cold blooded and will therefore be active mostly in warmer climates (you aren't likely to find them at any of the higher elevation passes or if you are approaching Katahdin in late fall).
 - ❑ While it would be intuitive if all snakes hunted during the day (when it's warmer), pit vipers hunt primarily at night.¹⁰
 - ❑ Their prey (mainly rodents) is nocturnal, not diurnal. Because they must eat, they are out when their prey is out.
 - ❑ It is wise then, if you are in warmer weather, to wear shoes and carry a flashlight whenever you walk anywhere at night.
 - ❑ Despite hunting at night, these snakes aren't necessarily absent during the day, though they may not be particularly active.
 - ❑ Often snakes will find a nice sunny rock or log to sit on, with crevasses nearby that they can move into if they get too hot (or if they want to conceal themselves).

- ❑ It is not uncommon for hikers to be bitten when traversing anything that requires handholds or footholds because such places are commonly the hidey-holes for sleepy snakes.¹⁰
 - ❑ Check any places that you can't see into directly with your hiking pole to make sure nothing is lurking out of sight.
 - ❑ If you do have a close encounter of the snake kind, there are some things to keep in mind to minimize the likelihood of ending up in a hospital.
 - ❑ Don't assume an apparent lack of interest indicates the snake is sleeping, ignoring you, blind and deaf, or too full to move.
 - ❑ While a snake may strike across a greater distance if coiled, snakes can attack from any posture (including a seemingly asleep one). Most snakes can strike accurately a distance of roughly one-half their body length.¹³
 - ❑ While strike speed depends on the species, many snakes extend, bite, and recoil in under a second, moving faster than our eyes can track.¹⁰
 - ❑ Do **NOT** move rapidly around snakes. Snakes interpret rapid motion as threatening and are much more likely to strike than if you move in a calm, controlled manner.⁶
 - ❑ If you have anything to keep in between you and the snake (hiking pole, hiking partner), do so.
 - ❑ If the snake does strike, there is a possibility it will strike at your front-guard rather than you.
 - ❑ Do not attempt to poke or prod the snake with a stick or other object in an attempt to get it to move out of your way– this will just annoy the snake.
 - ❑ The best solution is to wait until it clears the trail (and then some more so that it doesn't ambush you from the bush that it slithered into).
 - ❑ One last miscellaneous thing to keep in mind: if you see what appears to be a dead pit viper, keep your distance. Dead pit vipers can retain some neurological reflexes, and have been known to bite! ¹³

If You Are Bitten

- ❑ The first thing that should be done is to move away from the snake that bit you, be it venomous or not. Depending how much you startled it, it may strike multiple times so moving away a reasonable distance should be the first thing you do. If possible, try to at least get a good glimpse of it so that you can identify it or give information to others that may need to for antivenin.¹⁴
- ❑ After this, if you at all suspect that the snake was venomous, you should contact the proper authorities (911, a park emergency number, etc.). Fortunately, no snake in North America has potent enough venom to kill within the hour (black mambas in Africa, for

example, can kill a human adult in as little as 20 minutes). However, every second still counts.

- ❑ It is possible to receive a “dry bite” that actually contains little to no venom, but counting on this is not a good bet. The amount injected varies with the size of the snake, how startled it was, its age (control over injection), your body weight, immune functioning, etc. In short, because you can never be certain, it is always better to be safe than sorry (dead).¹⁵
- ❑ If you have no means of communication, but are hiking with a partner, send your partner ahead to request aid and stay where you are. If you have neither means of communications nor a hiking partner, slowly make your way to a place where you can request aid yourself (the “slowly” part will be discussed further below).
- ❑ After calling for help, wash the wound with soap (if you have it) and water. If you make it through the neurotoxic paralysis or cytotoxic necrosis, there is a distinct possibility of simple bacterial infection.¹⁶
- ❑ Jewelry, tight clothing, or other constricting items should be removed from the bite area so that if swelling occurs they will not get in the way later.¹⁴
- ❑ After you have called for assistance the most important thing you can do is to be calm. Panicked thought will increase heart rate and only make the venom spread through your system more quickly.¹⁴
- ❑ Likewise, hasty movement will also increase heart rate, and will be less beneficial than taking a more measured pace if you must move at all (if you are alone and must get to a position to contact someone).
 - ❑ If you do not have to request aid yourself, you should sit down, stay still, and conserve as much energy as possible.¹⁴
- ❑ **DO NOT** elevate the bite above the level of your heart, because doing such will significantly increase the rate at which the venom spreads throughout your bloodstream (causing a faster onset of symptoms and death).¹⁶
- ❑ If it is a shallow bite, let the wound bleed out naturally. Because of anticoagulants in the venom, it will bleed extensively for the first few minutes and will taper off as time passes (and your body’s platelets begin to become effective).
- ❑ If the bite is deep enough to cause spurting (the strike hit an artery and you are losing blood fast), **DO NOT USE A TOURNIQUET AND DO NOT ICE THE WOUND.**
 - ❑ Restricting blood flow is a very bad idea for rattlesnake and copperhead bites because their venom contains hemotoxic compounds that destroy red blood cells; by limiting blood to a certain area, you are effectively guaranteeing necrosis of that area and amputation will be necessary.¹⁷
 - ❑ Instead, if blood loss is significant, apply **SLIGHT** pressure (in the form of a constriction band if you have one) that will reduce blood flow somewhat but not

excessively hamper its progress— a good rule of thumb is if you can fit a finger under the wrap without undue effort.¹⁶

- ❑ The general goal when dealing with a bite that is causing you to lose a lot of blood is to minimize blood loss while allowing adequate enough blood flow to the area such that necrosis does not occur.

Things Not To Do

- ❑ Do not take stimulants (which elevate heart rate) if you suspect a venomous bite; tobacco and coffee will both increase the rate at which the venom spreads. Also, don't drink alcohol for the same reason (and the added fact that it severely inhibits decision making).¹⁶
- ❑ Do not make incisions to attempt and “draw the venom out.” All you will do is cause more blood loss while accomplishing nothing.
- ❑ Do not attempt to “suck the venom out” of the bite with your mouth. Apart from being an exercise in futility, doing such for rattlesnake bites, if you have any sores or openings in your mouth, can lead to immediate loss of consciousness or even death.¹⁶
- ❑ Do not attempt to chase after and kill whatever snake bit you to aid in identification. Your exertion is far more costly than any benefit you could possibly provide.

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