

Don't Tread on Me

BY NATHAN SCHIFF

Always be careful when you turn over a piece of wood that is lying on the ground. You might find something horrid there. Last month, under an insect-rearing cage in the Delta Experimental Forest, a research associate discovered a Canebrake rattlesnake, *Crotalus horridus*, coiled up and ready to strike. The associate carefully collected the snake; we took some pictures of it and then released it a few days later. Only after it was gone, when I was reading about it in my books, did I realize



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how special this animal is. Not only is it one of the most evolutionarily advanced snakes, it has special significance for America as one of our nation's oldest patriotic symbols.

Rattlesnakes are a small group of about 30 New World species in the pit viper subfamily (Crotalinae) of the widely distributed snake family Viperidae (about 225 species). Viperids have extra long hollow fangs that are hinged so they can fold up when the snake closes its mouth. Pit vipers have specialized openings called loreal pits, normally located on the snake's face below eye level and between the eye and the nostril, which can detect infrared or heat. These pits enable the snake to hunt in low light because they can detect the heat of the prey against the relatively cool background habitat. In many species, especially rattlesnakes, the hollow fangs are fed by large reservoirs of venom at the back of the head. Accommodating the reservoirs gives the head its characteristic triangular shape. Combined with highly toxic venom, these adaptations would make the rattlesnake extremely dangerous except they tend to have a relatively mild temperament, and they often give a warning rattle instead of striking. The rattles are composed of interlocking sections of dry skin that are added each time the snake sheds, and the snake vibrates them to make a distinctive sound. Snakes can add 2 to 3 rattles per year but they can also be damaged and lost so it is not really possible to age a snake by counting the rattles.

Identifying The Canebrake

The Canebrake rattler has a wide distribution in the Eastern United States. It extends west from Maine to Minnesota and south to Northern Florida and east Texas. Although some observers recognize two subspecies, the more northern "Timber" rattler and the southern "Canebrake" rattler, the prevailing scientific opinion is that it is just a single variable species. The northern form of the snake is typically brown to yellowish and even black, overwinters in group dens and prefers mountainous or upland forested habitats. The southern form is mostly gray with a reddish-brown dorsal stripe, overwinters individually in protected

areas and prefers swampy or floodplain habitats. Both forms hibernate over the winter and emerge in late spring when the temperature warms up. Individuals are active day and night, although they spend most of their time coiled to strike waiting for prey. They eat mostly small mammals but occasionally take amphibians, lizards or small birds. Canebrake rattlers live up to 20 years, females start reproducing when they are about 5 years old, and they normally wait 2 or 3 years between

broods of approximately 12 young that are live born. Mating and birthing both occur in the fall. It is often reported that young rattlesnakes are more dangerous than old rattlesnakes. This is probably true but not because the venom is more toxic, rather, rattlesnakes have to learn how much venom to inject, and the younger snakes are more likely to inject a larger dose than a mature snake.

Persevere And Triumph

Although there is much more to learn about the biology of the Canebrake rattler, there is also a fascinating history of the rattlesnake as an American patriotic symbol. As an example, in May of 2002, the secretary of the Navy issued instruction 10520.6, which ordered that the First Navy Jack (maritime flag) be flown for the duration of the global war on terror as a reminder of the Navy's origin and our nation's will to persevere and triumph. The First Navy Jack was originally flown by Commodore Esek Hopkins in 1775, and, until recently, it was believed that the First Navy Jack was a field of 13 red and white stripes with a diagonal moving rattlesnake and the motto "Don't tread on me." Even though historians have discovered the real Jack was just the field of stripes without the snake, there are so many similarities between the rattlesnake and the American military, (both are deadly, both are not easily provoked, both give a warning before they strike) that the Navy has adopted the "traditional" Jack, with the rattlesnake, as its standard. Most ships started flying the Jack on 9/11/2002, the first anniversary of the attacks that started the war on terror.

The next time you see a Canebrake rattler you should remember it is a very sophisticated venom-injecting machine. Even though it will probably warn you if you are too close, you should give it a wide berth.

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