



The majestic Florida Kingsnake



A young Prairie Kingsnake shows spunk

# Kings of North American Snakes

## Lampropeltis by Jim Low

Of the approximately 47 genera of snakes native to North America, *Lampropeltis* is a royal stand-out.

"Kingsnakes," as they're commonly known, aren't the biggest serpents on the continent. That honor belongs to the Eastern Indigo Snake and to members of the Bullsnake clan.

Nor is *Lampropeltis* the most numerous genus. Its 6 species and 24 subspecies

in North America are outclassed by several other genera. These include our most ubiquitous genus, *Thamnophis* (the garter snakes and their kin), with 13 species and 40 subspecies, and the rattlesnakes of genus *Crotalus*, with 13 species and 25 subspecies.

In fact, kingsnakes are not even poisonous.

Still, they can afford to take an attitude of regal indifference about such de-

tails. For, if push comes to shove, they can simply eat their competitors. That's what is most striking about snakes of the genus *Lampropeltis*. The knowledge that they can, and routinely do, devour other snakes, including venomous ones, is pretty sensational. While it isn't true that kingsnakes seek out venomous snakes just for the thrill of killing them, these monarchs of snake-dom don't hesitate to tackle prey that

would be deadly to most other animals. Every *Lampropeltis* species is, if not immune, at least highly tolerant of the venom of snake species native to North America.

Pit vipers seem to sense it; when confronted by a fearless kingsnake, a rattlesnake abandons its usual "the best defense is a good offense" attitude. Instead of coiling up with head held high and attempting to bite its attacker, the rattlesnake tends to

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keep its head and neck low to the ground. This makes it harder for the kingsnake to get the grip necessary to throw tight coils down the length of the victim's body and suffocate it. The rattler will also strike at the kingsnake with its midsection or tail, but these maneuvers seldom succeed.

But, being the "king" snake is not without hazards; they have plenty of enemies of their own. Skunks, raccoons, dogs, cats, hawks, and owls all take their toll. Plus they, like all wildlife, are constantly in peril from the ultimate predator, man.

Humans might not be so hard on kingsnakes if they weren't so good at what they do. One of kingsnakes' most common and striking characteristics, and a very effective one with the average mammalian predator, is mimicry. Even an experienced outdoorsman is apt to jump to the wrong conclusion upon sighting a Mexican Milk Snake, or Scarlet Kingsnake. It's easy to be fooled into thinking these harmless species are potentially lethal coral snakes, and many people pick up stout sticks and take irreversible action before they calm down enough to recall the old mnemonic device: "Red touch yellow, kill a fellow. Red touch black, venom lack." Similarly, the Eastern Milk Snake is sometimes killed because it bears a superficial resemblance to the venomous Copperhead.

Milk snakes are among the most interesting of the kingsnake tribe, even without their colorful markings. Although one of two species in the genus *Lampropeltis* that doesn't bear the customary regal title, the milk snake is still a king, through and through. It is the most variable of the group, with 23 recognized subspecies distributed from southeastern Canada to Ecuador. Eight of those subspecies occur in the United States.

All these varieties are "allopatric"; that is, they are recognizable variations found in a well-defined geographic area, and are related to one another closely enough that they interbreed where their ranges touch. This results in border areas where individuals show mixtures of the characteristics that distinguished their parents.

A fascinating aspect to this theme, which has caught the interest of those who study population genetics, is provided by the Scarlet Kingsnake (*L. triangulum elapsoides*). In certain parts of Kentucky and Tennessee the ranges of the Scarlet Kingsnake and Eastern Milk Snake overlap, and the two subspecies remain genetically distinct. In southern New Jersey and northeastern North Carolina, however, the two subspecies also share territory, and they interbreed. This produces what was once called the Coastal Plain Milk Snake. It was long thought to be a separate subspecies. Perhaps one day it will be a separate subspecies. Herpetology buffs with an evolutionary bent have to wonder exactly what's going on here. Does the situation with the Eastern Milk and Scarlet Kingsnakes represent a window through which a new species is emerging, to be closed when the genetic make-up of the two variations becomes sufficiently different to prevent interbreeding? If so, what factors are at work to bring about the differentia-

tion?


Or, perhaps the opposite is true, and the Milk and Scarlet Kingsnakes are two different races that have been separated somehow in the past, and which, upon coming into contact with one another again, are in the process of reopening the phylogenetic window between them.

The tendency of kingsnake subspecies to intergrade creates what could be considered either a treasure trove of variations, or a taxonomic nightmare, depending on your point of view. In different parts of the continent specimens of the Common Kingsnake (*L. getula*) may be dark or light, solid, banded, blotched, chain-linked, speckled, or even longitudinally striped!

While "milk snakes" are essentially tri-colored and seem bent on attracting attention to themselves, many members of genus *Lampropeltis* that bear the name "kingsnake" are basically camouflaged or black and white, and for the most part seem to be trying to avoid notice. The prin-


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### Mimicry in Kingsnakes

The ecological significance of "color mimicry" in snakes is an issue of debate among experts. Some claim that if two species live under similar conditions in similar habitats, they stand a good chance of eventually looking alike. This appearance, they say, may take the form of camouflage, which tends to hide the animal, or of an extremely bold pattern which will startle predators and give the snake an extra second or two to escape. Another school of thought claims that the incidence of *Lampropeltis* species which mimic venomous snakes is too high to be mere coincidence and must indicate a genetic advantage which is selected for under natural conditions.

Four examples are illustrated: top left—a tri-colored kingsnake mimics a common coral snake (inset); bottom left—an Eastern Milk Snake mimics a Copperhead (inset); top right—a Gray Banded Kingsnake and a Rock Rattlesnake (inset) look alike; bottom right—a bi-colored Honduran Milk Snake mimics a bi-colored Bay Island Coral Snake (inset), also from Honduras.



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cial exception is the California Kingsnake (*L. getula californiae*), which wears boldly contrasting white or yellow crossbands on a black or chocolate-brown background.

Aside from the milk snakes, the only member of the genus that does not go by some variation of "kingsnake" is the Mole Snake, one of two subspecies of *L. calligaster rhombomaculata*. It ranges from Maryland to northern Florida, and west as far as central Tennessee and southeastern Louisiana. The other subspecies of *L. calligaster* is commonly known as the Prairie Kingsnake (*L. c. calligaster*).

Both *calligaster* and *rhombomaculata* are secretive, spending much of their time looking for a meal in the burrows of other animals or burrowing in loose soil themselves. When they are seen, it is usually on roads following a heavy rain. Occasionally they are turned up by farmers while plowing or by excavating equipment in construction projects. They make use of a variety of habitats and sometimes are found in thickets, woodlands, cultivated fields, and even in urban areas.

Honors for the rarest member of the genus is a toss-up. The Gray Banded Kingsnake (*L. mexicana*) inhabits mesquite and creosote bush, desert flats, and other barren, rocky areas from 1,200 to 7,500 feet elevation on either side of the Pecos River in west Texas. In parts of its range, *L. mexicana* overlaps with the Mottled Rock Rattlesnake (*Crotalis lepidus*), which it mimics.

Another uncommon species, the Sonora Mountain Kingsnake (*L. pyromelana*) makes its home in mountainous chaparral woodland and pine forest, rocky canyons, and around springs and streams from Mexico into southwestern New Mexico and southeast to northwest Arizona. There are isolated pockets of Sonora Mountain Kingsnakes in Arizona, Utah, and Nevada.

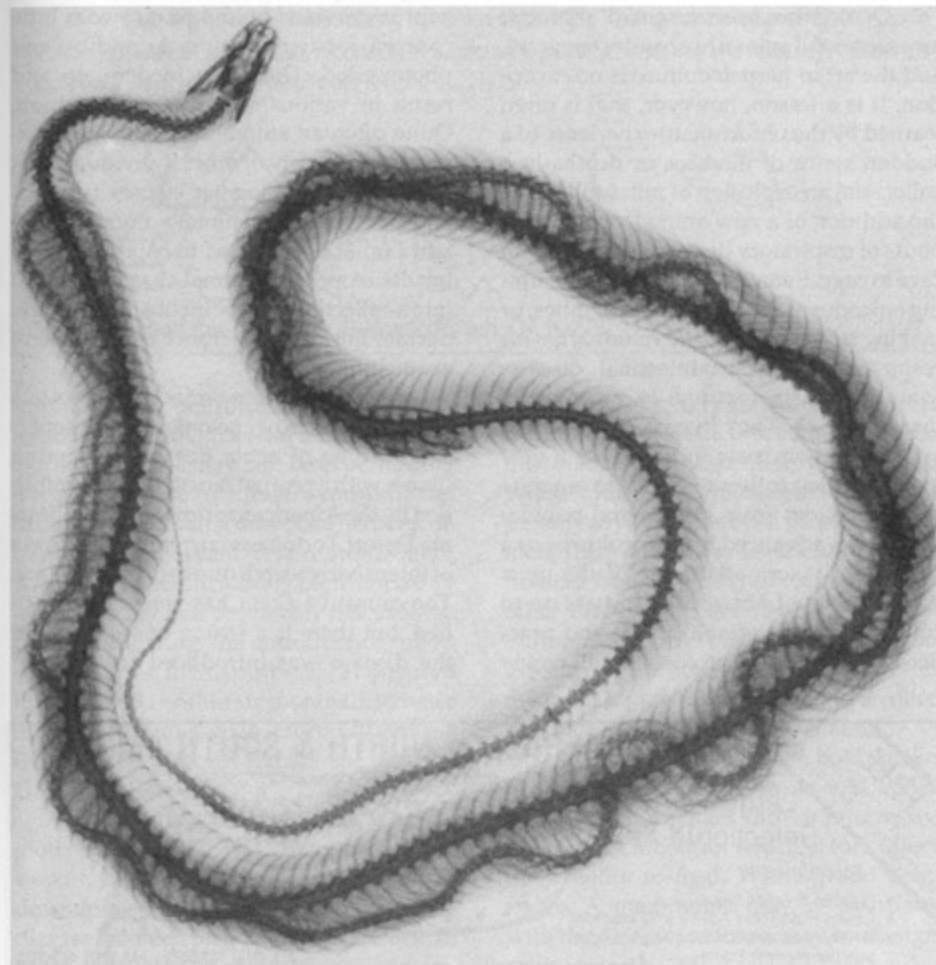
Most kingsnakes do well in captivity, but a few cautions are in order. Whether in the wild or caged, kingsnakes' instincts tell them that other snakes are food. They are readily cannibalistic and can eat snakes with which they are confined, including

those of their own species and even their own size. Lizards are fair game too. It's best to keep kingsnakes in separate cages. They will also feed on live or pre-killed rodents and birds.

These hardy egg-layers lend themselves to most captive breeding programs. This fact, along with the extreme diversity of colors and patterns, even within the same clutch, have made them a staple in the pet industry. Their temperature and humidity requirements vary with the subspecies, but, in general, the requirements are within the abilities of most amateur

herpetologists to fill. Virtually all of the popular herpetology texts that include information on the care of captive snakes include a large section on the husbandry of *Lampropeltis*. One of the books to have on the shelf is *Kingsnakes & Milk Snakes* by Ronald G. Markel (TFH Publications, 1990). It has every species of *Lampropeltis* pictured in color, along with sections on captivity, albinism, mimicry, and diseases and medications. 🐍

Jim Low is a Missouri biologist who has written extensively for R&A Magazine.



Radiograph of a kingsnake after eating a snake larger than itself. Reprinted with permission of McMillan Publ. Co. from *Snakes of the World* by Raymond L. Ditmars. Copyright 1931, renewed © 1959 by Gladys D. Ditmars and Beatrice D. Stanchfield