

# CAPTIVE CARE OF KINGSNAKES & MILKSNAKES

## (Genus *Lampropeltis*)

### Natural History

Kingsnakes and milksnakes are some of the most beautiful snakes in the world and are very popular and easily kept in captivity. Moderately sized and usually quite docile, these snakes appeal to the beginner as well as to the experienced herpetoculturist. The scientific name for the genus of kingsnakes and milksnakes is *Lampropeltis*. *Lampro* is derived from the Greek word for "shiny" and *peltis*, Greek for "shields." The name is a very accurate descriptor of these snakes with their glossy, smooth, well-defined scales. *Lampropeltis getula* (kingsnakes), *L. triangulum* (milksnakes) and the other six species (comprising forty-five subspecies) can be found throughout most of the United States, the southern parts of Ontario and Quebec, down through Central America and parts of South America. Kings can be found in arid deserts, swamplands, farmlands, grasslands, pine and deciduous forests, up to 8500 feet in the Rockies and to 10,000 in the Andes, and in riparian habitats. These constrictors, in the wild they consume a variety of prey, including other snakes, amphibians, lizards, rodents, birds, even rattlesnakes.

One of the most interesting things about some of the kings and milks, and something which unfortunately works only too well, is their mimicry of the venomous coral snakes. As most people cannot tell the difference and many believe that all snakes are uniformly dangerous, wild kings and milks are often met with the business end of a shovel rather than the respect they deserve for their efforts in keeping the rodent populations in check. To set the record straight, *Lampropeltis* and coral snakes can easily be told apart by the order of the color of their bands. Both snakes have yellow, red and black bands. Kings and milks have black bands touching the red bands; in corals, the yellow touches the red bands. A simple rhyme makes it easy to remember the order: Red on yellow, kill a fellow. An alternative rhyme, yellow on red, you're dead" is a bit of an overstatement, as the vast majority of people who do get bitten by a coral snake just become very ill, recovering with no residual effects.

As *Lampropeltis* are easily bred in captivity, there is never a reason to purchase a wild one. In California and now, in Arizona, there are stringent laws concerning the wild collection and the sale of captive bred kingsnakes about which many pet stores are unfamiliar. Captive breeding has produced numerous color and pattern morphs, ranging from different types of albinos to striped and mottled markings. Some of the most striking, however, are the most natural - vivid bands of colors, or the simple black and brilliant yellows of the Florida and Sonoran kings.

Kings and milks are oviparous, laying fifteen or so eggs. Hatchlings emerge from the eggs anywhere from six to ten weeks after being laid, and range in size from eight to thirteen inches long. Adults range in size from three feet up to seven feet, depending upon the species. With proper care, kings will live 20 or more years.

### Selecting Your Kingsnake or Milksnake

What subspecies you select is a personal decision, but the criteria by which you evaluate the potential purchase remains the same. The snake should have a firm rounded body. Check the sides for any caving, sign of possible broken ribs (which happens primarily to wild-caught snakes). The eyes should be clear with no sign of secretions, cloudiness (other than routine opaquing before shedding) nor any signs of mites; mites may also be detected by their feces, a grayish-white "dust" speckling the snake's body. There should be no gaping--open mouth breathing or catching of breath--which is indicative of a respiratory or parasitological infection. The skin should be shiny with no sign of sores, scabs or discolored patches. The ventral surface (the belly side) should look as good as the top surface. The vent (cloaca) should be clean, free of any feces or urates. There should be no swelling either above the vent or towards the tail. The inside of the mouth should be uniformly pink. Red spots may be a sign of beginning mouth rot; yellow, cheesy substance is a sign of advanced mouth rot. There should be no excess mucous, and the tongue sheath should be clean and whole.

Unless a snake has been handled a lot by a number of different people, it will not be particularly tame when you first pick it up or when it is first handed to you. The snake should move purposefully and persistently; let it move from hand to hand. A wild or highly stressed snake is going to wave the upper half of its body in the air trying to escape as soon as it is free of your hands. When the snake is comfortable with you, it will spend some time wrapped around your hand or arm, actively interested in its surroundings as evidenced by tongue flicking and alert to movement. When you first hold the snake, feel

along its entire length to see if you can feel any bumps, lumps or unusually hard or soft areas. When you put the snake down, check your hands to see if there are any mites. Look at the snake move to see that it is moving smoothly, with no abrupt hitches in gait or tremors.

## Housing your snake

Kings and milks are escape artists. If there is any small (very small) gap or hole, or any "give" to the fitting of the top attached to their tank or between the doors and casement, your snake will escape. Kings, more than any other snake, is known for its tenacity it testing its environment, looking for a way out. Once out, they are very difficult to find. For this reason, the selection and purchase of a commercial enclosure (or design of a custom enclosure) is just as important as your personal selection of a snake. A tight enclosure is more expensive, whether you buy one or make it yourself, but this is an expense that you cannot skimp on. What is the point of saving some money on an inferior enclosure if, in the end, you lose your snake? Doing it right the first time will save you from some grief down the line.

### Enclosure

The enclosure you select must have a tightly fitting, locking, top. Available commercially are a variety of glass enclosures with tops consisting of screen mesh and a hinged glass door which locks into place with a small swing latch. Available now are also locking screen tops, which can be put on previously purchased tanks. With either of these enclosures, check the give of the tops before you place your snake inside and walk away. Snakes are, for the lack of a better word, squishy, and can squeeze themselves through impossibly tight spaces. Any gaps due to "give" in the doors or tops can be reduced significantly by fitting aquarium airline tubing all around the opening.

Hatchlings may be housed in a ten-gallon enclosures. Medium sized adults may be housed in twenty-gallon enclosures. The longer and larger snakes should be housed in a 60-gallon enclosure. Try to get high-sided enclosures so that you may put in some vertical climbing and above-the-floor basking areas. Milk and king snakes, like all the other snakes in the family Columbia (typically, non-venomous snakes considered to be more highly evolved than the boas and pythons), have only one functioning lung. Due to the lack of space inside the confines of their rib cage, all organs are elongated and so there is now room for only one working lung. Their left lung is still there, withered to a vestigial stub. Because of this somewhat reduced lung capacity, and the fact that when such snakes cannot stretch fully out on a regular basis, they are prone to respiratory infections. For this reason, it is important to give the snake as much stretching room as possible.

### Heat

The *Lampropeltis* that live in climates that experience extremes in heat and cold alter their daily habits to accommodate such extremes. Hibernating through the cold winters, northern and mountain snakes spend the season dormant. Desert species will hide in cool crevices during the hottest part of the day, becoming crepuscular (active at dawn and dusk). In captivity, the extremes do not need to be provided unless you are trying to breed your snakes. In general, provide a temperature gradient ranging from 76-86 F, with nighttime drops into the low 70's. If you are providing an enclosure with high enough sides to establish basking and hiding areas at different levels within the enclosure, you will need to make sure that gradient is both horizontal as well as vertical. Do not try to guess the temperature. You must use thermometers. Ideally, one should be placed in the cool end, the warm end, and at any other area where the snake spends much of its time. The hottest areas should not exceed the maximum stated range by more than a couple of degrees, especially for snakes from temperate areas.

Heating pads (either people heating pads or ones developed for reptiles) can be placed under half the tank, or inside the tank, under half the substrate. Under no circumstances is a hot rock to be used as is or as the sole source of heat. If you want to use one, it must be connected to a thermostat so that you can control the temperature; these "rocks" heat up to 105 F on the surface, too hot for the majority of reptiles, and capable of causing severe burns. Incandescent and other heat lights are impractical for two reasons: they must be turned off a night, thus allowing to great a drop in temperature, and they bother the snakes, especially the nocturnal ones. Radiant heat from below can be supplemented with a non-light emitting heat source such as the new ceramic heating elements. If the ambient room air temperature is always warm (in the low to mid part of the gradient required), then you may be able to make do with only one heat source.

## Humidity and Water

Provide a bowl of water for your snake. This is generally all the humidity they will need. They will often soak in the water, especially prior to a shed. As they often defecate in the water, you must check it daily, cleaning and disinfecting it before placing it back in the tank. One of the problems experienced years ago by herpetoculturists and hobbyists keeping *Lampropeltis* is that the substrate was kept too damp, causing bacterial, fungal and respiratory infections. Make sure that the substrate remains dry at all times.

**Note:** some books and reptile keepers recommend just putting in a bowl of water once a week for a limited period of time. Until such time as you learn to speak *Lampropeltis*, or your snake learns to vocalize its needs, or you both communicate by telepathy so that you will know when exactly it is thirsty, keep water in there all the time.

## Furnishings

Kings and milks are rather secretive snakes, preferring to curl up in a rocky crevice or under a log. Shelters of some sort should be provided in both the cool and in the warm ends of the enclosure. They can range from commercially available "rocky" caves, half-circles of tree bark, and upside-down flower pots. Less aesthetically pleasing is the "green" approach--recycle facial tissue and other suitably sized boxes into caves. They are easily disposed of and replaced when they get soiled.

Enclosures may range from the strictly utilitarian (substrate, caves, water bowl) to being a vivarium, outfitted with substrate similar to that found in the snake's native habitat, rocks, branches, backdrops, etc. It is easier to start of utilitarian, and then design and plan the interior design once you see your snake in place and it has acclimated to captivity.

## Substrate

Until you are certain that your new acquisition has no worms, protozoan infections or mites, start it off on paper towels or butcher paper. Easily changed when soiled, these materials will also enable you to monitor the condition of the feces and to detect the presence of mites.

Once you are sure your snake is parasite-free and healthy, you can continue using these papers, or use one of the following substrates: untinted aspen shavings (cedar and redwood are toxic, and there is some feeling that their relative, the pine, may be toxic as well); AstroTurf or outdoor carpeting; number three aquarium gravel (not silica sand), washed and dried before use; mixture of sterile potting soil and sand. This latter substrate is what caused early king-keepers such problems--the surface of this type of substrate was too often damp. When using this soil mix, the top several inches should be very dry. Desert vivaria can be outfitted with a fine grade aquarium silica sand.

The real key to substrates is how difficult they are to clean and change, and how likely you are to do what is necessary as often as it is necessary. The more difficult or complicated you make the inside of the enclosure to clean, the less likely a busy person is going to do it. Find that delicate balance between providing as much interest and variety for your snake and what you can reasonably expect to be able to do on an at least weekly basis.

## Feeding

Captive born hatchlings are started off on pink mice, and so feeding them is rarely a problem. Wild caught snakes, on the other hand, may have been feeding primarily on lizards or frogs, making it quite a bit more difficult and time consuming to get them switched over to mice. All kings and milks should be fed pre-killed prey.

Hatchlings can be started on one-two day old pinkie mice. If frozen mice are used, make sure to defrost thoroughly (leave on counter, under a light, or soaking in warm water). Feed one to two mice every two to seven days, depending upon growth rate desired. Generally speaking, a snake will grow faster being fed several small prey a couple of times a week rather than one big prey once a week. Smaller prey is more digestible than larger prey, so the snake is getting more nutrition from them.

Sub adults can be offered bigger mice one or more times a week. A good rule of thumb is to feed prey that is as big girth-wise as is the widest part of the snake's body. You will find that they are hungrier in the spring and summer, winding down during the fall; many stop feeding altogether during the winter months even though they may still be somewhat active.

Adult size is generally reached within three years at which time the amount and rate of feeding can be reduced. Feed adult mice or just weaned pink rats. At this point, judgment must come into play. You want your snake to be well rounded, with no visible line of backbone or ribs. The amount of food it takes to maintain that weight and appearance varies between species. Start with once a week; if the snake looks too lean, increase to one mouse twice a week. Another rule of thumb: snakes over four feet long need at least two adult mice each week.

## Handling Your Snake

After giving your snake a couple of days to settle in, begin picking it up and handling it gently. It may move from you and it may anoint you with a smelly musky substance from its vent. Be gentle but persistent. Daily contact will begin to establish a level of trust and confidence between you and your snake. When it is comfortable with you, you can begin taking it around the house. Don't get over-confident! Given a chance and close proximity to seat cushions, your snake will make a run (well, a slither) for it, easing down between the cushions and from there, to points possibly unknown. Always be gentle, and try to avoid sudden movements. If the snake wraps around your arm or neck, you can unwind it by gently grasping it by the tail and unwrapping it from around you. If you start at the head, you will find that your snake is stronger than you are, or at least, more tenacious.

## Veterinary Care

This is an essential, and often overlooked, part of bringing a new animal into your home, and when an animal gets sick and changes to its environment fails to achieve a cure. When your snake first defecates, collect the feces in a clean plastic bag, seal it, label it with the date, your name and phone number and the snake's name, and take it and your snake to a vet who is experienced with reptiles and have the sample tested for worms.

## Necessities

Some things you should have on hand for general maintenance and first aid include: Nolvasan (chlorhexidine diacetate) for cleaning enclosures and disinfecting food and water bowls, litter boxes, tubs and sinks etc. Betadine (povidone/iodine) for cleansing scratches and wounds. Set aside a food storage bowl, feeding and water bowls, soaking bowl or tub, even sponges, to be used only for your snake.

## Sources

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