Breeding the Albino Ruthven’s Kingsnake

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with photos by the author
Introduction

You’re probably aware that the prices of many exotic colubrids have declined over the past few years. Snakes that once sold for atmospheric prices are now within the means of many hobbyists. The albino Ruthven’s Kingsnake (sometimes called the Queretaro Kingsnake), Lampropeltis ruthveni, is one such snake. Five years ago, these beautiful snakes commanded upwards of $1,000 each; today you can buy one for under one-third of that price.

That’s good news for hobbyists, because the albino Ruthven’s makes an excellent choice for any hobbyist. Its advantages include:

- **Small size**: most adults remain under 36 inches
- **Even temperament**: bites are rare with normal handling
- **Dependable feeding**: generally feeds well on rodents, unlike many other king and milk snakes
- **They make no special demands on their keepers**: albino ruthveni look delicate, but you can maintain them like any other kingsnake
- **They’re easy to breed**: breeding requirements for the albino ruthveni are identical to other kingsnakes

*Lampropeltis ruthveni* is found on the Central Mexican Plateau. The habitat consists of rocky woodlands at rather high elevations. There has been little study of their natural habits. Currently in the hobby, more albinos seem to be produced than normals. There are two phases of the albino Ruthven’s Kingsnake available: candy cane and orange albino. You can also buy normal phase specimens,

An exceptional albino Ruthven’s Kingsnake. The red bands are rather wide and dark; possibly this could represent hybridization with one of the Mexican subspecies of Milk Snake, *L. triangulum*.
which are attractive in their own right. These snakes are bred with Variable Kingsnakes, *L. mexicana*, by some breeders to obtain new color varieties.

The key to successfully breeding the albino *ruthveni* lies in effectively managing its breeding cycle. That cycle consists of six phases, which include brumation, early spring, mating, egg-laying, hatching, and post-mating. This article will show you how to successfully manage these six phases.

**Brumation**

The first phase in the cycle is brumation, this is the process by which snakes and other reptiles prepare for the spring breeding season. It is similar to hibernation, and the two terms are often used interchangeably. Brumation is important because it brings about the physical and hormonal changes that males need to produce viable sperm. Males not brumated can still copulate, but their sperm is seldom viable. Females don’t need to brumate to produce viable eggs, but most breeders cycle their females along with their males to keep both sexes on the same seasonal rhythm.

Brumation is hard on a snake, and weak snakes do not survive. For this reason you should examine any snake before you cycle it over the winter. Watch for specimens with signs of respiratory illness, because brumation will kill them. Signs of trouble include wheezing, labored breathing, and bubbles coming from the mouth. Any snake exhibiting these symptoms should be warmed to 86°F immediately. This will cure a mild infection, but consult a veterinarian for specimens that show severe symptoms.

When evaluating your albino *ruthveni*, consider its weight. Snakes must have enough stored fat to last for four months without eating. Good candidates for brumation have full bodies and a robust appearance. Never cycle an underweight snake; it may starve over the winter or develop a respiratory infection because of its weakened condition.

You should prepare your albino *ruthveni* for brumation with a two-week fast. Fasting is necessary for a snake to clear its digestive system. If you lower the temperature without fasting your snake, any food that remains in its digestive tract will rot and become...
Septic. This occurs because a kingsnake’s body temperature must be at least 75°F for its digestive enzymes to function properly. For this reason you should maintain your snake at the normal keeping temperatures of 75 to 85°F during the fast. Many breeders fast their snakes in mid-October and brumate them in early November, a schedule commonly used for most temperate colubrids.

It’s a good idea to clean your snakes’ cages when you end the fast. As you settle your snakes for the winter, don’t fall for the temptation of brumating your pairs together. This practice may make for less maintenance, but it’s better to winter albino *ruthveni* separately. If wintered together, they may be uninterested in each other when it comes time for mating or one may attempt to eat the other.

**Lowering the Temperature**

Once your snakes have clean quarters, you can officially begin brumation. Many breeders cycle their snakes for four months, from early November to early March. This should be a quiet time for them, with few disturbances. Albino *ruthveni* are best brumated at 50 to 55 degrees. To brumate your snakes, start by turning down or off any heating devices. Lower the temperature over the course of a week to avoid shocking your snakes. In warm areas of the country you may have to lower the temperature by air conditioning or other artificial means. Many breeders modify a small refrigerator to hold the proper temperature by removing some of the insulation. As your snakes brumate, check the temperature daily with a max-min thermometer. This instrument measures the highest and lowest temperatures attained since it was last reset. By resetting the thermometer every day, you’ll get an accurate picture of how the temperature ranged over the past 24 hours.

Albino *ruthveni* don’t eat during brumation, but they need to drink. Over the winter you should provide fresh drinking water every week. While replacing the water you can also examine your snakes. Watch for signs of respiratory infection.

**Starting a New Season**

After four months of rest your albino *ruthveni* will be ready to start a new season. Early March is a good
time to ease them into spring. To bring your snakes out of brumation, reverse the process you used to start their brumation. Warm the snakes gradually, so they’re at 75 to 85°F by the end of the first week. Check the health of your snakes at this time. This lets you treat sick animals promptly so they won’t be lost for the season.

With warmer weather your snakes will soon regain their appetites. You can start feeding them again when the temperature is back to normal keeping parameters. Feed both sexes generously during the first month after brumation. I have found it best to feed the snakes twice weekly. Females require heavy feedings to induce ovulation. Males need to add weight because they sometimes fast during the breeding season.

Mating

Once you’ve prepared both sexes for breeding, the question becomes when to introduce them. Most experts agree that it’s best to unite pairs after the female completes her first shed of the spring. Females are especially receptive to courting attempts at this time and are producing lots of pheromones to attract the male.

Introduce the pair by placing the newly-shed female into the male’s cage. Mating usually happens shortly after the female enters the male’s cage. The entire act is usually over within an hour, but many breeders keep their pairs together overnight to help ensure a successful mating.

It only takes one mating to impregnate a female, but it’s hard to know whether that has occurred. To increase the odds that your female becomes gravid, mate her often. It may be wise to house the pair together for a few days or to introduce the female for a few hours daily for a week. Many

top: Hatching normal Ruthven’s Kingsnake. Although not uncommon in the hobby, the natural history of this animal remains poorly understood.

middle: Female albino Ruthveni in a homemade nest box. These snakes are no more difficult to breed than other Lampropeltis.

bottom: Two clutches of Ruthveni eggs in a homemade incubator. When incubating eggs, an accurate, digital thermometer is a must.
hobbyists continue to breed their females until they are visibly gravid. Mate your female to more than one male if you can. This guards against having an infertile male.

You should wait until the female is three years old before breeding her. Breeding a two-year old places too much stress on a snake that isn’t a robust breeder to begin with. For the same reason you should avoid breeding your females more than once in a season.

**Egg-laying**

If you follow the above guidelines you’ll probably have a gravid female by the end of spring. But how will you know? Watch for these signs: swelling in the lower two-thirds of the body, changes in feeding patterns (females often eat more when they first become gravid and suddenly stop when they’re closer to laying), restlessness (usually occurs just prior to laying), and the pre-laying shed (most females shed their skins eight to ten days before depositing their eggs). It can take roughly 30 to 50 days from breeding to laying. Clutches range from six to ten eggs.

Prepare a nesting box when you think egg-laying is at hand, generally right after the pre-laying shed. You can build one by burning a three-inch diameter hole into the lid of a plastic shoebox. Fill the box loosely with damp sphagnum moss. The female will retreat into the moss when you place the nesting box in her cage. She’ll deposit her eggs inside, and the damp moss will prevent the eggs from drying out. Never disturb a female while she’s laying her eggs. Most Queretaro Kingsnakes finish within 24 hours, but this varies among females.
Moving the Eggs

You should move the eggs to an incubator box soon after you discover them. An incubator box is simply a small container that keeps the eggs moist until they hatch. You can make an incubator box from a plastic shoebox or small food-storage container. Drill a few small holes into the lid for ventilation, and fill the box one-third full with moist vermiculite. The vermiculite should be wet enough to allow a little water to leak from your fingers as you squeeze a handful firmly.

Once you’ve prepared the incubator box, you can move the eggs. If the eggs were recently laid, you can detach them individually from the clutch (females typically deposit their eggs in a mass). This lets you incubate each egg separately. Should one later die, you can safely remove it without disturbing the others. As you move an egg, try to preserve its original orientation. If, for example, an egg lies at a 45 degree angle, maintain that position as you move it. Shape the vermiculite in the incubator box to accommodate the egg. Failure to do this could kill the tiny embryo inside.

It’s likely that you’ll discover the eggs after they’ve fused together (snake eggs bind a few hours after being laid). Never try to separate the eggs when this happens. Instead, transfer the entire clutch to the incubator box, preserving the original orientation.

Your incubator should be maintaining reliably a temperature of about 81°F for 24 hours before introducing the eggs. As they incubate, monitor the temperature with a max-min thermometer. Place the probe inside an incubator box to get an accurate reading. For best results, maintain a stable temperature in the incubator. Check the moisture of the vermiculite periodically and add water if necessary. This prevents the eggs from drying out.

Hatching

Your albino rathveni should hatch in six to eight weeks if they’re kept at 81 degrees. Hatching begins when a neonate slits the leathery shell with an egg tooth and pokes its heads through the opening. The new snake remains like this, with its head peeping out of its shell, as it surveys its surroundings. Hatchlings often duck back into their shells when disturbed, leaving behind a telltale slit in the egg.

Breeders are producing interesting and attractive snakes by crossing different Lampropeltis. This beautiful snake is a hybrid between L. rathveni and L. mexicana “thayeri.”

After about a day, the neonate will finally emerge from its shell. Never force a snake to leave its shell early, as this will kill it. Hatchlings usually curl up defensively in a corner of the incubator box after exiting their eggs. At this point you should transfer the newborn to its own cage. Most snakes hatch within a few days of each other. Any eggs that remain after a week are probably dead.

The care of the neonates is like that of the adults. Most will feed on pink mice after their first shed, but some will need lizards or lizard-scented mice for the first few feedings. It is best to house baby rathveni individually, as they have been known to eat each other.

The End of the Mating Season

Once the mating season ends you can coast a little. All that remains is to fatten up the females. Many of them lose weight over the summer, due to the stress of breeding. Heavy feedings in late summer and fall will prepare them for the next brumation.

Conclusion

This article has shown you how to breed the albino rathveni successfully. Of the six phases of the breeding cycle, early spring is the most critical. Mistakes made then can ruin an entire season. Be sure to feed your females generously so they’ll ovulate. Despite these precautions, it’s easy to breed the albino rathveni. Therefore, you stand an excellent chance of succeeding with this beautiful and valuable kingsnake.