King of
A colubrid pro
shares the nitty-gritty
about breeding
these mighty snakes.

By Robert Applegate

A kingsnake is a mem-
er of any one of
eight species and mul-
tiple subspecies that make up the
genus Lampropeltis. The eight
species include the gray-banded
kingsnake (alterna), prairie kingsnake
(calligaster), common kingsnake (petula),
Mexican gray-banded kingsnake (mexicana),
Sonoran mountain kingsnake (pyromelana), Ruthven’s
kingsnake (ruthveni), California mountain kingsnake (sonata)
and milk snake (triangulum). (Milk snakes are also kingsnakes;
they are the only one of the eight species that doesn’t have the
word “kingsnake” as part of their common name, but oddly one of
the subspecies of the milk snake group is the scarlet kingsnake.)

Kingsnakes have the largest natural geographical range of any
land snake, being found from southern Canada to northern South
America, from below sea level to more than a mile high in eleva-
tion and from jungle to desert habitats. Kingsnakes are powerful
constrictors that feed on almost any animal they can overpower
and swallow whole, including venomous snakes. They range in
size from 18 inches to almost 8 feet.

Most kingsnakes make good pets. Many are very colorful, and
some are coral snake mimics. Most are easy to care for in captiv-
ity. This article will concentrate on breeding this wonderful group
of snakes in captivity.

Choices, Choices, Choices

Which kingsnake should you select? Some, like the scarlet
kingsnake, are extremely colorful and do very well when their cap-
tive requirements are
met; however, their
hatchlings are so small that it is difficult to find appropriate-sized
food. Some, such as the gray-banded kingsnake, do great as
adults, but many of the neonates require lizards or tricks to get
them to start feeding. Others, such as the larger milk snakes and
common kingsnakes, can exceed 6-foot lengths.

All the kingsnakes deserve to be worked with. My advice
includes doing your homework, visiting breeders if possible, mak-
ing sure you have the resources necessary to care for the snake
and then make your choice. Once you have made a decision, check
availability, talk to breeders who produce your selection and ask
last-minute questions before making a purchase. It’s best to pur-
chase captive-bred kingsnakes. Except in rare circumstances, it
makes no sense to collect or buy wild-caught kingsnakes for a
breeding colony when there are so many beautiful, parasite-free,
captive-produced kings that readily feed available.
Kings

I suggest buying baby kingsnakes that have fed at least three times on baby mice before you take possession. You can assume that the parents were healthy and well kept, or the babies wouldn't be available for sale.

Purchasing adult snakes scares me. I don't want to tell you how many adult snakes have been offered to the general public as "proven breeders" (not by me!). Many I've seen were proven alright — proven to be sterile or laying infertile eggs. There are probably cases where young healthy breeder snakes are offered, but again, ask questions. One question should be: "Why are you selling a pair in prime condition for this price when you can make more each year selling the offspring?"

Inbreeding

If you buy related snakes for your breeders, is that bad? As with most questions relating to reptiles, there is no absolute answer. Inbreeding is common in herpetoculture. If it is done and the results are good, that's called line breeding. If the results are bad, it is "in-breeding syndrome." Wild snakes in general don't travel far, and many return to one area for breeding each spring. Many wild populations have inbreeding.

Many kingsnakes have been bred brother to sister for many generations in captivity with no noticeable negative effects. If there are no "bad genes" present, the resulting offspring will be OK; results of normal-phase breeding seem to bear that out.

With genetic mutations, such as albinism, something malfunctioned in the animal's genetic makeup to lose the normal coloration or characteristic. There is a much greater chance that there could be other faulty genes present. Bottom line: If unrelated snakes are available, these are preferable. If you can only get your hands on related breeders, however, it should be OK.

Breeding Groups

For a basic breeding group, I recommend purchasing two males and four females, as unrelated as possible (unless there is a certain genetic trait you want to isolate and work with, in that case, related works best). If all grow to maturity, you have two trios; when it comes time to sell or pick for future generations of breeders, you can mix from the two unrelated trios. If something...
happens to one male, your second male can breed to all four females, and if one female “goes down,” you still are in production.

Be sure the kingsnakes are sexed correctly. Check for yourself, or have the breeder confirm the sex and show you how. The usual mistake is to think a male is a female because the hemipenes don’t “pop” when checked. I always double check with a probe. You don’t want to raise your snakes for two to three years only to find out some of your girls are boys.

**Raising Youngsters**

I prefer a clear, plastic shoebox rack system to raise my babies. I usually keep babies in the standard shoebox during the first year. The cage floor has heat provided by heat tape toward the rear (with the thermostat set at 84 degrees Fahrenheit and a background temperature in the mid-70s), so the snake can thermoregulate. Each shoebox has a snake record card taped on the lid. I prefer fine, kiln-dried pine shavings as substrate and provide a lightweight water bowl for each baby. If you use a heavy water bowl, make sure it’s resting on the cage floor; if there is substrate underneath, it may attempt to burrow and crush itself.) Keep neonates separately. If you keep baby kings together, one may kill and swallow its cagemate, often dying itself in the process.

I don’t believe you can overfeed the babies at this point; offer two, three, even four meals a week. Make sure to use size-appropriate rodents. Each meal should leave a small but noticeable lump in the snake’s body. If your snakes accept and keep their meals down, they will grow rapidly. Size is the important thing in sexual maturity, not age. I have had Pueblan milks breed at 9 months and Durango mountain kings double clutch before their second birthday. Not all snakes accept food and grow this fast, but as long as they are getting long — not fat — it’s fine. Once they near their adult size (which varies with species and individuals) and start getting fat, slow down on the food. You do not want overweight breeder snakes.

If your snakes accept food all year, feed them through the first winter. If they seem healthy, but refuse food during the winter (many individuals of some of the mountain species do this), brumate them.

The cage should be dry, but with drinking water available. If it gets too humid, consider a covered water bowl, or remove the bowl for a few days. When the ventilation holes in the box can’t keep up with the humidity caused by feces, or you have to clean the box too often, it is time to move the snake up to a sweaterbox, and for smaller species, a breeder cage.

**Setting the Mood**

As your snakes’ second winter approaches, it’s time to evaluate them as potential breeder candidates. Are they large enough to breed next spring? Again, go to your breeder for answers specific to the species with which you’re working. Some kingsnakes breed at less than 3½ ounces, others should be more than 10 ounces.

If you decide to breed your snakes, do not feed them during the last two weeks of
These gray-banded kingsnake (Lamprophelys altomena) babies will be ready for their first meal anytime after their first shed.

October. Keep them warm, so they can digest and pass any remaining stomach contents. Then put the snakes together as a breeding group; limit it to one male per group, but as many females as you can reasonably track.

I keep adult kingsnakes together year-round, though they are separated for feeding and when a female is ready to lay eggs. Always feed kingsnakes in isolation, and keep them apart for a few hours until the feeding response has abated. I have 2-foot-square, glass-fronted cages with multiple drawers underneath that I can use to isolate them. Remember that in the wild these snakes are solitary as well as snake eaters, so watch them for a while after any introduction.

Turn the heat down or off, depending on your background temperatures, and let the cage temperature drop to about 50 degrees Fahrenheit. Some of the more tropical kingsnakes do not need this low of a drop; in the wild they may coordinate their breeding cycle with daylight hours or perhaps the rainy season. However, I have worked with all eight kingsnake species, and this works. The temperatures in the room will fluctuate some, but avoid major changes (10 degrees or more) in a short time, even if you have to insulate the room or cage.

Check on the snakes once a week or so, give them fresh water and keep an eye out for shed problems. If an animal has shedding difficulties, soak it overnight in a shallow ventilated container as you would normally. However, the water should be at the cold-room temperature (in the 50s). The skin should be loose the next day.

My snakes receive a cooling period (formation) from November 1 to March 1. My cages are large and contain lots of Calci-Sand, so they do not change temperatures quickly. On March 1, I hit a switch, and all the heat tapes come on. It takes a few days for the cages to heat up. Some breeders be-

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A Mexican milk snake (Lampropeltis triangulum annulata) utilizes her laybox to deposit her eggs.

"big three" for incubation: proper temperature (80 to 82 degrees Fahrenheit), proper humidity (close to 100 percent) and good ventilation. Eggs should be dry to the touch, but moisture should show on the side of the incubation chamber. I use vermiculite for incubation, but I have also used perlite with success.

If eggs are infertile or go bad, they may become soft, limp, smelly or sweaty. Don't throw eggs away until you are certain they are bad. I've had some pretty awful-looking eggs hatch. Only throw bad eggs out if they can safely be removed from a good clutch. You don't want to ruin a good egg that is attached to a bad one.

At this time, evaluate the female again. Is her condition good enough to warrant a second (or third) clutch? Either way, feed her multiple small meals. If you decide she's OK to breed again, immediately reintroduce the male. She may already have a second clutch without the male if she is in good condition, but you get more fertile eggs with a second mating. If the mating is successful, the next shed will be another pre-egg-laying shed. Feed your snakes well the rest of the season, until brumation time.

Your eggs should hatch in 55 to 75 days after laying. If some eggs initially hatch, and two to three days later the rest have not slit, you might consider slitting them yourself.

The newly hatched babies should be separated. Keep their individual record cards showing hatch dates, parents, etc. handy. You will want this information for tracking purposes in the future, especially if your snakes end up producing a desirable trait. The neonates usually shed approximately one week later. Once they have shed, they are ready for their first meal. Depending on the snake and the amount of nutrition carried from the egg, some wait almost a month to feed. Now is the time to try to find what they will accept. Good luck!