

The Mystical Gray-Banded: Gem of North American

Kingsnakes

Gerold pleaded with Cindy to go to Texas. "It would be wonderful! It's beautiful there!" This, of course, was not to mention the snakes—a reason unto itself.

So, Cindy relented. Two days of intense driving in a car with no air conditioning through mostly questionable countryside (in terms of beauty) brought them to Van Horn, where, indeed, there were some snakes to be found. The most memorable moment, however, was the flat tire that inevitably occurred. Not to worry; Gerold had a can of neat stuff with which you could reinflate the tire in just a moment. He shook the can, and globs of goo dribbled out and around the tire stem. After frustrating attempts to inflate the tire in this manner, and with the help of expletives that don't bear repeating in this article, the can was heaved. Out came the tire wrench, only to discover that the lug nuts wouldn't budge. Two hundred pounds of angry herper furiously stomping repeatedly on the wrench finally caused the lug nuts to loosen their hold. Welcome to Texas—now on to gray-banded kingsnake country.

The gray-banded kingsnake (*Lampropeltis alterna*) has had its scientific name changed many times since its description in 1901 (Brown, as cited in Miller, 1979). Miller (1979) provides an excellent review of gray-banded kingsnake taxonomy in his master's thesis on the natural history of this species. At that time, gray-banded kingsnakes were considered to be members of the *mexicana* complex. Other members of this group included the Greer's kingsnake (*Lampropeltis mexicana greeri*), the variable kingsnake (*L. m. thayeri*), and the San Luis Potosi kingsnake (*L. m. mexicana*). Later, the gray-banded kingsnake was defined as a separate species based on biochemical stud-

These authors share valuable information for those who keep or breed this attractive species.

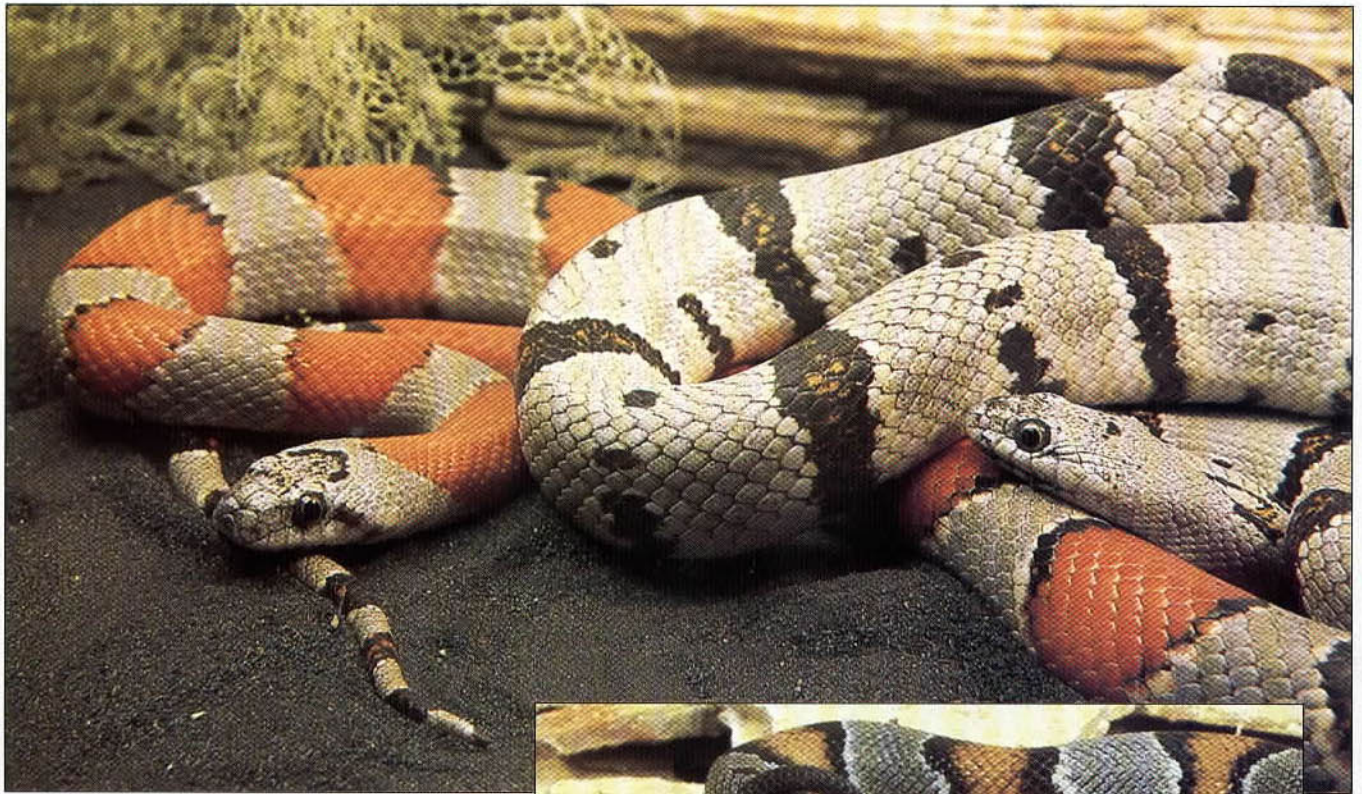
by Gerold and Cindy Merker

ies (Gartska, 1982). Most people refer to the gray-banded kingsnake as *Lampropeltis alterna*, although some herpetoculturists still refer to it as *Lampropeltis mexicana alterna*.

Habitat and Distribution

The gray-banded kingsnake ranges from western Texas into northern Mexico. These animals have recently been discovered in extreme southern New Mexico, in a mountain range that extends north from Texas. In Texas, they are found in at least nine of the 10 western counties (Miller, 1979; Tennant, 1984; Cranston, 1991). Recently, *Lampropeltis alterna* was also found in Upton county, Texas, on the west side of King Mountain (Hollister, pers. comm.).

Preferred habitat for this animal includes the rocky limestone hillsides that are prevalent in west Texas (Miller, 1979; Tennant, 1984; Barringer, 1995). Dominant plants associated with gray-banded kingsnake habitat are sotol, acacia, and



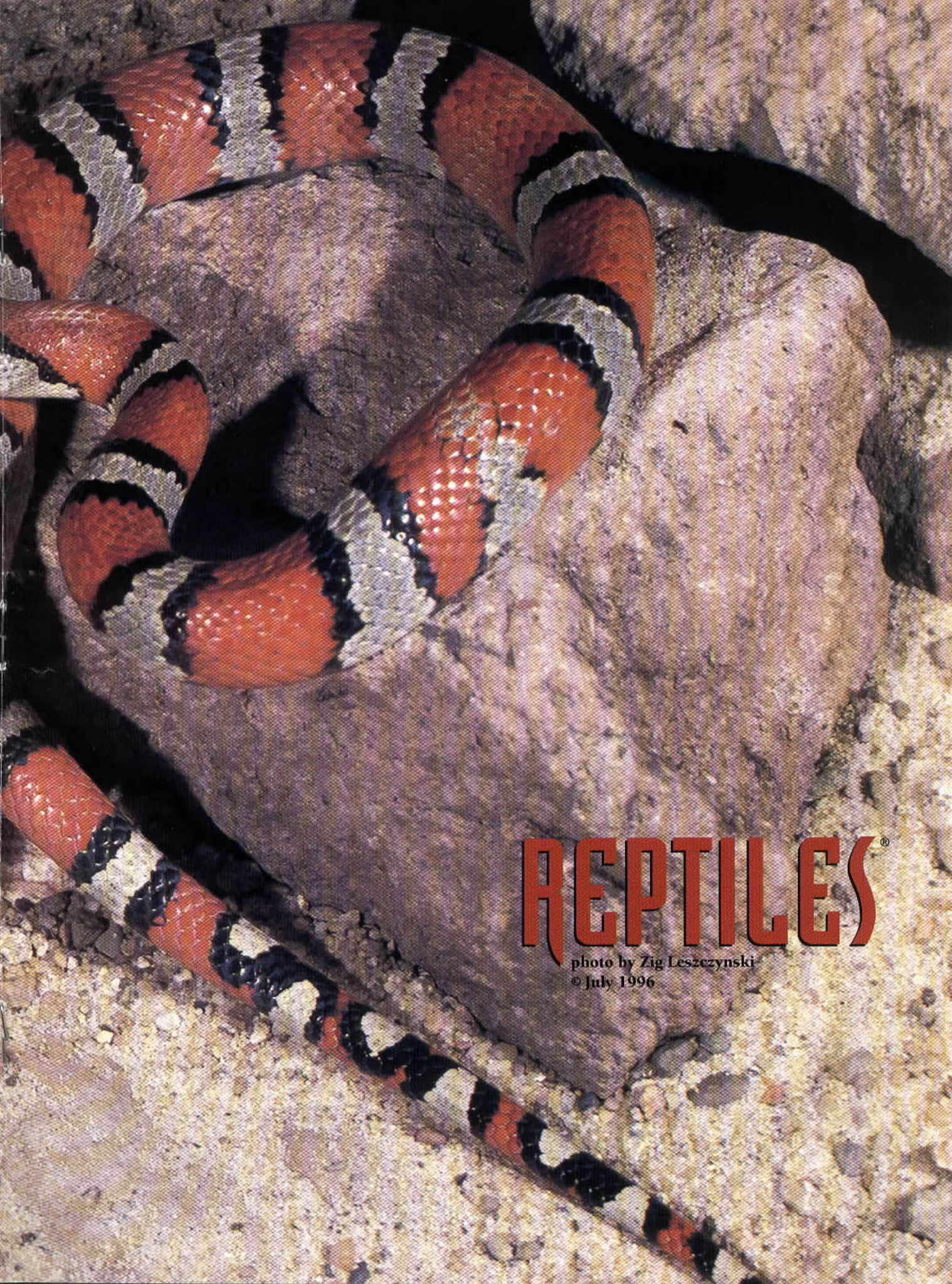
TOP: These gray-banded kingsnakes represent the extremes in coloration. The animal with the reduced bands is known as an *alterna* morph, the animal with the wide orange saddles is a *blairi* morph.

MIDDLE: This *blairi* morph from Val Verde County, Texas, is typical of some populations in which alternates exist between a few of the bands.

LEFT: Some herpetoculturists prefer to call the gray-banded kingsnake *Lampropeltis mexicana alterna*.

ON OVERLEAF: The gray-banded kingsnake is a very variable species. It ranges from western Texas into northern Mexico. It has also recently been discovered in extreme southern New Mexico.





REPTILES®

photo by Zig Leszczynski
© July 1996



Gerold Merker

This captive-bred snake is a light phase *blairi* morph from Val Verde County, Texas. Some of the light phases have an even more vibrant orange-red in the saddles.



This light phase gray-banded kingsnake was captive-bred from parents of unknown origin. Note the bright orange coloration in the saddles.

Gerold Merker

lechugilla. During the day, gray-banded kingsnakes are thought to reside in deep fissures within the limestone (Miller, 1979; Tennant, 1984). At night, they come to the surface in search of prey or mates. Because roads often cut through the limestone bluffs, these snakes are found occasionally by illuminating road cuts. Indeed, many collectors hike along road cuts with flashlights during the late spring and early summer to find gray-banded kingsnakes perched on the rocks, sometimes at tremendous heights. Most collectors believe that the likelihood of these tri-colored gems coming to the surface is greatly enhanced by an early evening thundershower followed by a brief period of drying. Most sources (Miller, 1979; Tennant, 1984; Switak, 1984; Cranston, 1991; and others) describe gray-banded activity as restricted usually to the night, although there are exceptions to this rule (Wright and Wright, 1957; Turner, 1977). We have never found gray-bands during the day; all of our sightings have occurred between 9:20 PM and 3:30 AM, with the majority occurring between 9:30 PM and midnight. However, other collectors have different hours they believe are best for capturing these kingsnakes, adding to the snake's mystique.

Description

Lampropeltis alterna is a medium-sized snake within the family Colubridae. Conant and Collins (1991) list the record for this form as 57 inches (1.46

male measuring slightly more than 42 inches (1.07 meters+) in total length. We do have a captive-bred female that measures 45 inches (1.15 meters); however, most individuals are much shorter, with adults measuring as little as 20 inches (0.49 meters). These kingsnakes usually weigh less than 200 grams, although under captive conditions, gray-banded kingsnakes can become obese and weigh more than 350 grams! The gray-banded kingsnake has a flattened head with large eyes that protrude slightly.

Coloration in this species varies tremendously. Some are almost coal-black, while others have an extremely light gray background with bright orange saddles. Two basic color morphs exist: The *alterna* phase has as many as 23 saddles with greatly reduced red/orange coloration and thin black alternate bands between the saddles (Mecham and Milstead, 1949); the *blairi* phase has less than 15 wide red/orange saddles and usually few, if any, alternate bands (Miller, 1979). The *alterna* morph is found mainly in the western populations, and *blairi* almost exclusively in the eastern populations. However, it should be noted that both forms can occur in the same population.

In the wild, gray-banded kingsnakes



Here is potential habitat for the gray-banded kingsnake (*Lampropeltis alterna*) in the western part of its range.

Gerold Merker

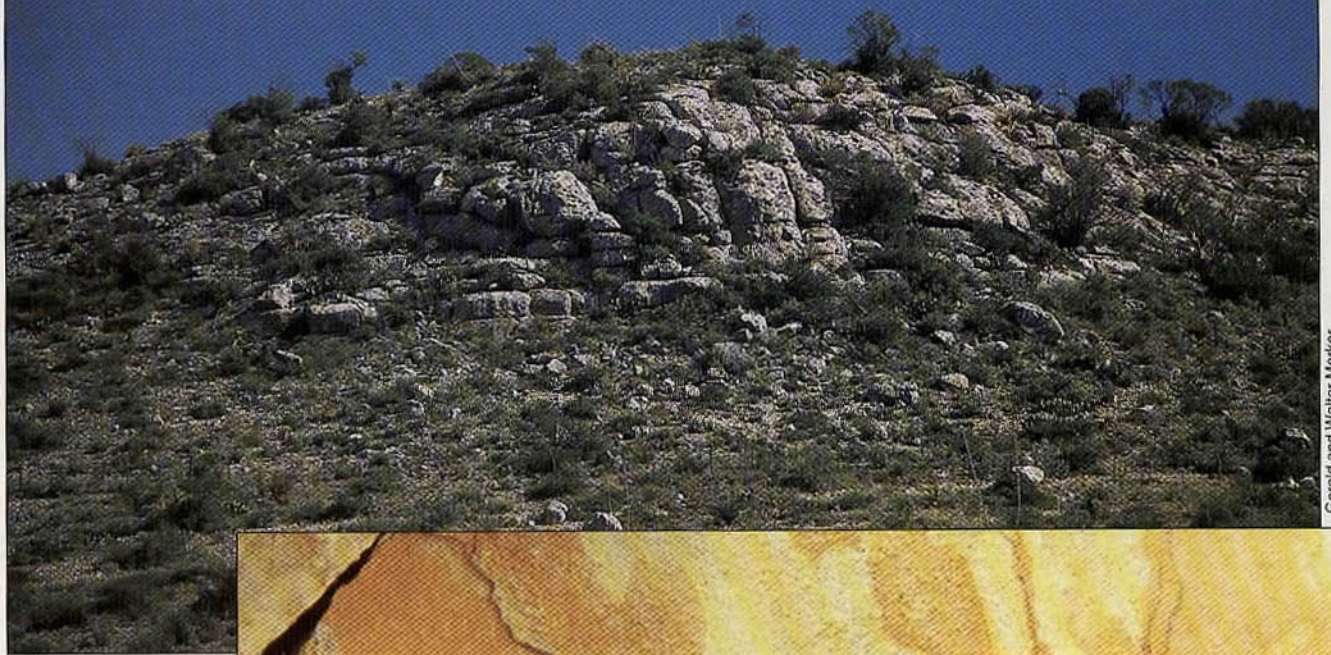
meters). John Hollister (pers. comm.) observed a large male in Langtry, Texas, that was more than 50 inches (1.28 meters+) in length. The largest wild-caught individual in our collection is a



Potential habitat for the gray-banded kingsnake (*Lampropeltis alterna*) in Val Verde County, Texas, includes typical rocky areas.

Gerold Merker

Terrell County, Texas, is another area inhabited by *Lampropeltis alterna*.



Gerold and Walter Merker

This dark phase gray-banded kingsnake was captive bred from parents captured in Langtry, Val Verde County, Texas. This snake has dark reddish-brown colored saddles on a dark gray background.



Gerold Merker

prey upon lizards, frogs and small mammals. We have captured two gray-banded kingsnakes with obvious stomach contents. Eventually, both of these animals defecated lizard scales. References list the following lizards as wild prey items: eastern fence lizards (*Sceloporus undulatus*), crevice spiny lizards (*Sceloporus poinsetti*); canyon spiny

lizards (*Sceloporus merriami*), and various whiptail (*Cnemidophorus*) lizards (Mecham and Milstead, 1949; Wright and Wright, 1957; Miller, 1979). Canyon tree frogs, *Hyla arenicolor* (Miller, 1979; Tennant 1984), pocket mice (Wright and Wright 1957) and reptilian eggs (Miller, 1979) also have been recorded as prey.

Reproduction In the Wild

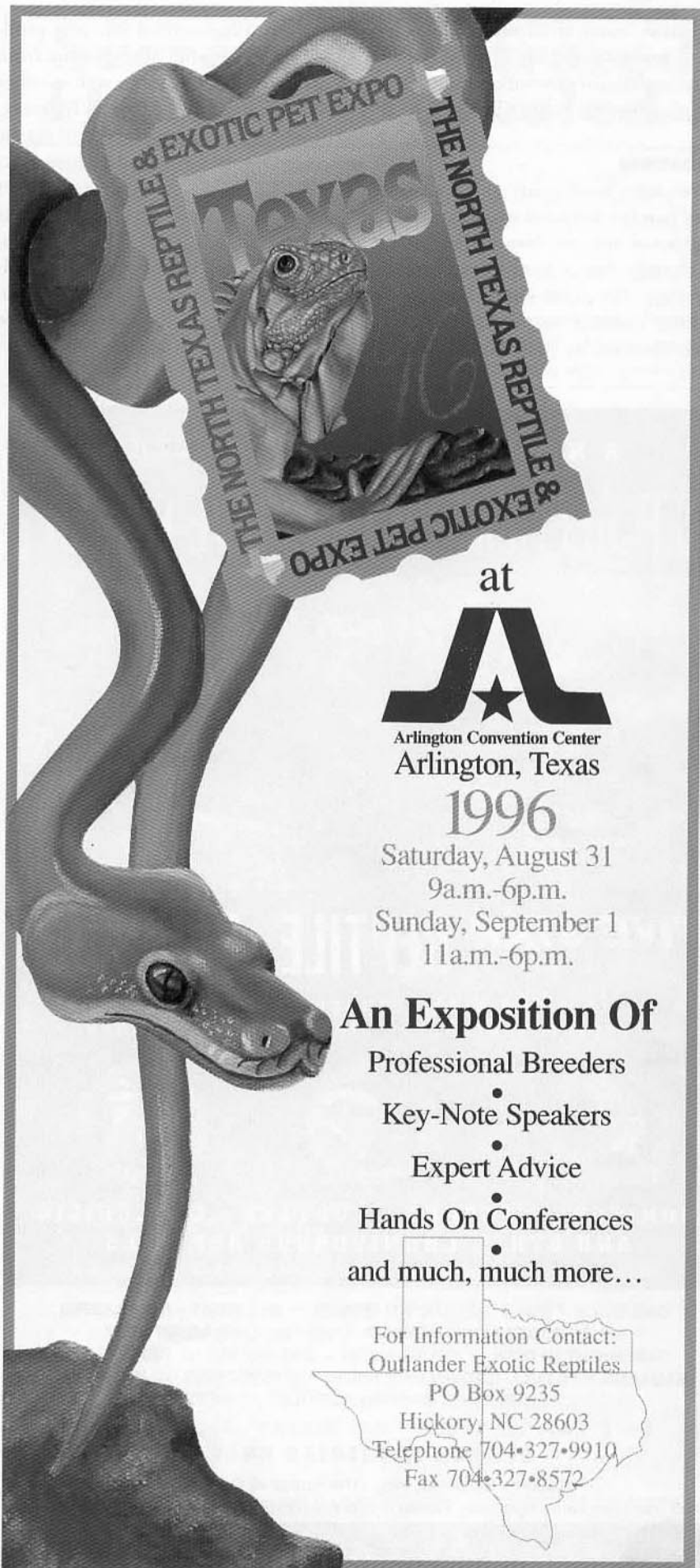
Reproductive data about wild specimens is sparse due to the secretive nature of these snakes. Several collectors have found snakes copulating in the wild in both Terrell and Val Verde Counties, Texas. On June 12, a pair of these snakes were observed at 11:05 PM copulating on a rock cut in Terrell

County, Texas (John Hollister, pers. comm.) at an ambient temperature of 27 degrees Celsius (82 degrees Fahrenheit). Another pair copulated soon after capture upon being placed in a cardboard box (Blair, pers. comm.). During the latter part of June and early part of July, gravid gray-banded kingsnakes are occasionally found. We found a gravid female at 10:20 PM on June 25 while walking among rock piles below a rock cut in Langtry, Texas. This *blairi* phase individual weighed 96 grams at the time of capture, and on July 28, she laid five fertile eggs. The eggs measured approximately 6 mm x 10 mm and hatched 57 days later. The neonates averaged 26 cm in total length (range 24 to 28 cm) and weighed an average of 7 grams (range 6 to 8 grams). John Hollister's copulating female produced four eggs on July 12, 30 days after he first observed the pair breeding.


If you want to try your luck at capturing a gray-banded kingsnake and you live outside of Texas, keep in mind that you must possess a five-day (\$25) or annual (\$75) nonresident small game hunting license. A similar residential hunting license is required for Texas residents. Furthermore, one may collect gray-banded kingsnakes only by walking along roadsides and utilizing a hand-carried light. Hunting while using a vehicle is frowned upon by the Texas Parks and Wildlife Service and may result in a ticket.

Captive Care

We maintain neonatal gray-banded kingsnakes in clear shoe boxes housed within a heated rack. When the snakes reach approximately 50 grams (2 ounces), they are placed into Herpatat™ modular cages that allow the snakes access to a heated subterranean region. In these cages, the animals grow to maturity—which can occur anytime between 18 to 30 months. Once snakes reach approximately 150 grams (6 ounces), they are housed in large sweater boxes in a lidless shelving unit built by Sandmar Enterprises. Some of our larger specimens (200 grams plus) are kept in display cages, also designed by Sandmar Enterprises. These cages have a large display area with access to a subterranean area via a PVC-lined hole. All cages have several hiding areas



at



Arlington Convention Center
Arlington, Texas

1996

Saturday, August 31
9a.m.-6p.m.

Sunday, September 1
11a.m.-6p.m.

An Exposition Of

- Professional Breeders
- Key-Note Speakers
- Expert Advice
- Hands On Conferences
- and much, much more...

For Information Contact:
Outlander Exotic Reptiles
PO Box 9235
Hickory, NC 28603
Telephone 704•327•9910
Fax 704•327•8572

and fresh water at all times. Any cage that provides a secluded region should prove satisfactory for successfully keeping gray-banded kingsnakes.

Substrate

We have used many substrates for gray-banded kingsnakes with varying degrees of success. Newspaper is easy to change, but it is not aesthetically pleasing. The same could be said for indoor/ outdoor carpeting. Sand has been used for its natural appearance;

however, it has several inherent problems. Sand does not absorb water from feces and spilled water as well as other substrates, and it is extremely heavy. This may cause the underside of plastic sweater boxes, weakened by heat tape, to collapse, or cause shelves to bend or be pulled off the walls. Corn cob is lighter than sand and is visually pleasing, but it can quickly become a breeding ground for bacteria after it gets wet. The product used in many large-scale collections is wood (mainly pine) shav-

ings. This substrate is inexpensive, light and absorbent. We used wood shavings for many years, until recently. Over the years, many of our snakes have experienced varying degrees of respiratory or mouth problems when kept on certain types of wood shavings, especially brands with large quantities of dust. The symptoms included coldlike sneezing and mucus build-up in the mouth and nares of the snakes. Often, these animals would be near the water bowl with their mouths agape. We have several gray-banded kingsnakes (*Lamproptelis alterna*) and Trans Pecos rat snakes (*Bogertophis subocularis*) that have had these problems occur chronically for five to 10 years. The mouths of the afflicted animals are caked with a dried mucus substance, preventing correct closure of their mouths.

In the past 18 months, we have changed to the substrate Care Fresh, a new product made from wood pulp fibers. These fibers are too short to be drawn into paper, so some entrepreneur came up with the idea of using this material to make a new substrate for reptiles and other small animals. These fibers do not have any dyes or any of the dust associated with some types of wood shavings. The latter aspect helps create a more healthful situation for most snakes. By not constantly inhaling wood shaving dust, the snakes' lungs remain clear. Because they do not inhale wood shaving dust constantly, the mouth and nares remain free of the dried mucus. The results of using Care Fresh in our collection have been dramatic, with most of the problems virtually disappearing within two weeks. We now keep all of our adult snakes on this product. Although we find Care Fresh highly suited to our needs, there are a few things to remember. This product can have tremendous dessicating abilities. Even though this may not be a problem with gray-banded kingsnakes, other snakes (especially small ones) can become dehydrated quickly. Make sure that snakes kept on this product have access to water at all times. Also, the color of Care Fresh is a basic gray, which is not terribly attractive. Finally, Care Fresh substrate is costly to use on a large scale. We have spoken to several large-scale breeders that use this prod-

**A NUTRITIONALLY BALANCED
REPLACEMENT DIET FOR LIVE FOODS!**



FIVE STAR REPTILE™ SAUSAGE
★★★★★

"A world class diet prepared for the exclusive convenience of world class reptile owners."



**MONITORS • TEGUES • TURTLES • CROCODILIA
AND OTHER CARNIVOROUS REPTILES**

READILY ACCEPTED AND ENJOYED BY ALL CARNIVOROUS REPTILES EXCEPT SNAKES

*** ONE SLICE = ONE FULL-GROWN MOUSE * ALL MEAT - NO FILLERS!
* NO REFRIGERATION NEEDED * NO SPOILING WHEN LEFT
OVERNIGHT IN DISH * ECONOMICAL - ONE POUND OF REPTILE™
SAUSAGE = 16 FULL-GROWN LIVE MICE * OVERCOMES OBJECTIONS
TO CHILDREN OWNING REPTILES AS PETS**

**Sold Only at Better "Pet Stores" Everywhere
- DEALER INQUIRIES ONLY -**

Robert's Serpents, Inc., "The House of Quality"
8805 Dee Ellen Lane, Riverview, Florida 33569 • ph. 813-677-9669 • fax 813-671-3419

1 - 8 0 0 - 7 4 7 - 0 5 5 7

Secrets of Infrared Heating Revealed!

uct not only for their snakes, but also for their breeder mice. These large-scale breeders make it affordable by purchasing large amounts of Care Fresh directly from the manufacturer at reduced prices. For those interested in using this product, this may be the route to take.

In some of our large display cages, we use Lizard Litter cage substrate. Like Care Fresh, this product has small amounts of dust. However, it is also quite costly.

Thermal Gradient

Critically important to a good cage design is creating a thermal gradient so the snake has a range of temperatures from which to choose. This is accomplished most easily by placing heat tape in a routed groove under one side of the cage. Once a gradient is established, it is not uncommon to observe a snake keeping part of its body on the heated part of the cage and the other part on a cooler region. For example, after a meal, the kingsnake may keep its stomach region on the heated section of the cage. To ensure that the heat tape maintains a constant temperature, a good pulse-proportional thermostat, such as those designed by Helix Magnetics, Micro-climate or other manufacturers, is a vital necessity. These thermostats maintain a constant temperature (+/-1 degree Fahrenheit), thus preventing the cage bottoms from becoming overly warm. Our temperature regimen ranges from 18 degrees Celsius (65 degrees Fahrenheit) at the cool end to 31 degrees Celsius (88 degrees Fahrenheit) at the warm end of the cage. These temperatures are maintained during spring, summer and fall.

Feeding

Feeding adult gray-banded kingsnakes is quite easy. Most captive-bred animals will readily accept domestic mice. The occasional wild-caught snake may refuse to eat domestic mice, but usually they will accept lizards. This can cause problems, especially if the feeder lizards are parasitized.

Before we offer a lizard to a reluctant feeder, we try a lizard-scented pink or fuzzy mouse. To put the lizard scent on the mouse easily, we place a washed pink mouse in with several lizards in a



PEARLCO CERAMIC BULB

Imagine natural "sun like" heat **without light** that provides added health benefits for your animal as well. By using our long life Pearlco Ceramic Element or Enerjoy Radiant Module® SSHC as shown in our latest innovation "The Hood", you will achieve this and more.

Nothing Works Better

Proper use of infrared allows the user to create the correct heat gradient (high and low heat) for their animal. Since infrared heats the object or body that it hits, it is possible to target heat an area without having to heat the entire enclosure while still creating a proper heat gradient. Infrared heat penetrates the skin tissue and is slowly absorbed by the animal, allowing them to effectively absorb the correct amount of heat they require for proper digestion or for basking.

Added Health Benefits

Infrared is more than just a heat source. Infrared heat has been shown to improve circulation, lower stress and benefit animals with rheumatic and respiratory conditions.

Veterinarians have found infrared heat to be a beneficial asset to the expedient recovery of convalescing animals.

Zoos and scientific institutes, veterinarians, breeders and consumers have reported to us time and time again the positive results they have obtained, beyond heating, when using our infrared products as a heat source.



RAM NETWORK

Tel: 818-345-0484 • Fax: 818-345-3324
6860 Canby Ave., Suite 115, Reseda, CA USA
<http://www.herp.com/ram/>

What Our Clients Say

"The ruby-faced bulbs tend to have hot spots, whereas ceramic bulbs we find to be evenly heated."

—Wayne Schulenburg, Animal Care Manager, San Diego Zoo

"Our aquatic turtles laid eggs for the first time anyone can recall. The box turtle is eating better, and king snake is much more active."

—J.C.Matalon, Student Animal Care Supervisor, Hartnell College Vet Tech Program

Buy With Confidence

Our staff has many years of animal husbandry, show and zoo experience. We support our customers with the technical assistance they need. We have worked with major zoos, professionals and consumers to support their efforts and help them excel in the latest "State of the Art" infrared heating technology.

Guaranteed Results

After trying our products, if you do not find them to be everything we say, simply return them within 30 days and your money will promptly be refunded.



"The HOOD" module is safe to touch!

Call 1-800-R-NETWORK...or send for your Free Information Kit Today!

Mail to: **Ram Network**
6860 Canby Ave., Suite 115
Reseda, CA 91335

Please send me my free information kit on your products.

I am a (check one)

- Distributor
 Retail Store
 Zoo, Vet, Professional Breeder
 Private Party

Name _____

Address _____

City _____ State _____ Zip _____

Tel: () _____

small plastic container. Then we place the lizard-scented mouse in with the snake. This usually does the trick. A second effective strategy is to offer a gray-banded kingsnake a previously frozen/thawed pink mouse (Staub, pers. comm.). For some unknown reason, this food item has been accepted readily by several of our reluctant feeders. Once they are feeding consistently, each of our adult stock receives two small mice weekly, an adequate amount that does not encourage obesity.

Captive Propagation

An important aspect to the successful propagation and general health of the gray-banded kingsnake is a cooling period for at least two months (Murphy et al., 1978; Miller, 1979; Tennant, 1984; Cranston, 1991; Mattison, 1991; Rossi and Rossi, 1995).

This is accomplished by turning off the heat tapes during winter and allowing the cages to cool to 12 degrees Celsius (55 degrees Fahrenheit). Prior to this cooling, the snakes should be main-

tained at active temperatures without food for 14 days in order to clear their digestive systems. Failure to do this sets up an extremely hazardous situation, since cool temperatures prohibit digestion. Undigested food can rot in a snake's gastrointestinal tract, eventually causing the animal's demise. Our cooling period lasts from mid-November, after the last feeding on November 1, until February 14—approximately 90 days. The snakes are cooled in their individual cages, to which clean cage substrate has been added. During brumation, the snakes are checked weekly, provided with fresh water and weighed. Routinely, gray-banded kingsnakes lose less than 1 percent of their body mass during brumation. The cool-down can help tremendously with their feeding response the following spring. Reluctant feeders often come out of brumation with a fierce feeding response. In fact, neonates that refuse to feed voluntarily often emerge from a short brumation with a new desire to eat pink mice! Successful breeding is another important reason for brumating gray-banded kingsnakes.

Captive breeding of gray-banded kingsnakes has been common for the past 20 years (Wagner, 1976; Assetto, 1978; Murphy et al., 1978; Miller, 1979; Tennant, 1984; Cranston, 1991; Rossi and Rossi, 1995). In our collection, animals begin feeding within two weeks after brumation. This is a crucial time period. It is vital that females are fed large amounts of food during the spring to ensure that they have adequate energy stores for proper egg development.

Within six weeks of the spring "emergence," most females are ready to breed. At this time, it is important that healthy females be placed with males. Most breeders mention the importance of waiting until at least one post-emergence shed before placing a female with a male. Some breeders believe it is best to wait until the female has undergone two sheds before she is placed with the male. In our collection, we have gone the entire gamut, from no sheds to three sheds. If the female is cycling, successful copulation can and will occur regardless of the numbers of sheds she has had. However, if a female has undergone a shed recently, this can

WEST
COAST
REPTILE

REPTILES

AMPHIBIANS

INVERTEBRATES

ACCESSORIES

FROM THE REGULAR

TO THE RARE

WHOLESALE ONLY

OPERATING WITH INTEGRITY SINCE 1980

WEST COAST REPTILE

620 East Walnut Avenue; Fullerton, CA 92635
TEL: 714-446-0470 FAX: 714-446-0453

indicate that she is ovulating. Excitement on the part of the male once the female is placed in the cage will verify her ovulation.

Courtship in gray-banded kingsnakes is typical of all colubrids and has been discussed extensively (Murphy et al., 1978; and Miller, 1979). Copulation lasts from five to 20 minutes in our collection. Immediately, we microscopically check a cloacal sample from the female for viable sperm—a procedure recommended by Applegate (1988). If no motile sperm is noted, the female is placed with another male. Sperm production is very sporadic, especially in the older snakes. Our oldest male (20+ years) produces viable sperm some years, but not in others. Furthermore, some males produce no sperm early in the breeding season, but will produce viable sperm later during that same season. We allow females to breed repeatedly to maximize the probability that fertile eggs will result. Some females only breed during a two-week period, others have bred with a male over a span of four weeks. Egg production occurs within 70 days of the first breeding. Our females always undergo a pre-egg-laying shed. Once this occurs, we place a moist sphagnum moss-filled plastic container, with a hole twice the diameter of the female, into the cage. Most females will use this container in which to lay their eggs, but it is a good idea to check them frequently to make sure that eggs are not laid elsewhere. Females oviposit within six to 11 days (usually eight days) following their pre-egg laying shed. We incubate the eggs in a 1:1 ratio vermiculite-to-water mixture (by weight) at a temperature of 27 degrees Celsius (82 degrees Fahrenheit). The eggs hatch within 55 to 70 days. This is the classic methodology for breeding gray-banded kingsnakes, but it has not always been successful in our collection.

Problems associated with captive reproduction in *Lampropeltis alterna* are best described with a case study of our first gray-banded kingsnake breeding.

During the spring of 1981, a female gray-banded kingsnake (*Lampropeltis alterna*) purchased from a reptile specialty shop in 1979 produced seven fertile eggs. We were ecstatic with this clutch, since it represented our first cap-

tive clutch for this species. We incubated the eggs utilizing the typical strategy for that time. The eggs were placed in an incubator set at 80 degrees Fahrenheit in a container of vermiculite and water (1:1 ratio by weight). Over the course of incubation, four of the eggs died. After 65 days, one of the eggs had pipped. Within 24 hours, this animal emerged from the egg after having absorbed most of its yolk. Twenty-four hours later, we slit open the remaining two eggs to discover a dead, tiny,

deformed embryo, and a very weak, small neonate. The neonate was placed on damp paper towels and kept at 26 degrees Celsius (80 degrees Fahrenheit). Although this snake remained in a catatonic state for several days, it eventually thrived—remarkably surviving to this day!

Over the course of the next dozen years, our reproductive success with this species was similar to our initial experience. As many as 55 fertile eggs would be produced, but a large per-

UNIQUE CHECKS FOR REPTILE LOVERS!

Reptile Checks #29
Checks Designed Exclusively for REPTILE LOVERS & Enthusiasts

Also available from The Styles Company... Angels #52, Astronomy #64, ATV #63, Auto Racing #35, Baseball #69, Birds #25, Birds of Paradise #64, Boat Racing #38, Bowling #03, Cats #27, Country #09, Dental #56, Dirt Bike #47, Diving #51, Dolls #22, EMS #34, Environmental #10, Fishing #23, Firefighter #32, Fitness #68, Football #75, 4x4 Wheeler #45, Golf #61, Hockey #70, Horses #24, Joe Montana #30, Manticurian #17, Martial Arts #58, Mountain Bike #62, Medical #04, Nurse Expressions #20, Open Wheel #37, Photography #45, Player #45, Police #06, Sewing #08, Southwest #21, Stylist #15, Top Fuel #36, Tennis #72, Tropical Fish #26, Teacher #05, Undersea Fantasy #50, Victorian #67, Wedding #65, Wine #71, Army #40, Navy #41, Air Force #42 & Marine #43 Checks! CALL FOR A FREE BROCHURE! 1-800-356-0353

NEW!

CUSTOM IMPRINT LINE of your choice here! (See details below)

3 Unique Rotating Designs

NEW! Also Available...

Leather Check Book Cover

Custom embroidered genuine leather check book cover!

Only...\$18.95 Available in Black and Burgundy

Custom Watch

- Quality Quartz Movement
- Leather Strap
- Polished Case & Hands

Only...\$24.95

Checks Meet all Bank Regulations • FREE check cover • FREE check register • FREE deposit slips

<p>100% Satisfaction Guaranteed on all of our products!</p> <p>For questions concerning your order... 1-800-356-0353</p> <p>Send check or M/O to: THE STYLES COMPANY P.O. BOX 5000 LAKE FOREST, CA 92630-8500</p> <p>We also accept VISA & MasterCard...</p> <p>Card # _____ Exp. / _____ Calif. add 7.75% tax</p> <p><input type="checkbox"/> YES, I would like custom imprinting on my checks! (limited to 26 characters/spaces, see charge to right)</p>	<p>REPTILE CHECKS #29 See check pricing and quantity to right →</p> <p><input type="checkbox"/> Old English Script <input type="checkbox"/> If you would like alternate type, check box to left and add \$2.50</p> <p><input type="checkbox"/> Elegance Architect <input type="checkbox"/></p> <p>Embroidered Genuine Leather Check Cover, add \$18.95</p> <p>Indicate Quantity & Color: Black <input type="checkbox"/> Burgundy <input type="checkbox"/></p> <p>Reptile #29 Custom Watch Quantity: _____ Only...\$24.95 ea.</p> <p>ZOO949 Custom Imprint Line add \$2.00</p> <p>Priority mail service add \$3.75 (Can save up to 1 1/2 weeks)</p> <p>Priority mail service and in-plant rush add \$6.25 (Can save up to 2 weeks)</p> <p>Shipping & Handling \$1.75</p> <p>TOTAL</p>	<p>It's Easy to Order:</p> <ol style="list-style-type: none"> 1. Enclose an original VOIDED check or reorder form from your current check supply. Indicate any changes clearly on voided check or reorder form. 2. Enclose a sample deposit slip from your existing checks. 3. We need your daytime phone _____ <p>* Number my checks starting with # _____ <small>(If a start number is not specified checks will start at #101)</small></p> <p>Check pricing and quantity</p> <p>Single Checks: Carbonless Duplication:</p> <table border="0"> <tr> <td><input type="checkbox"/> 200 - \$13.95</td> <td><input type="checkbox"/> 150 - \$15.95</td> </tr> <tr> <td><input type="checkbox"/> 400 - \$25.95</td> <td><input type="checkbox"/> 300 - \$28.95</td> </tr> <tr> <td><input type="checkbox"/> 600 - \$35.95</td> <td><input type="checkbox"/> 450 - \$39.95</td> </tr> </table> <p>↑ BEST VALUE!! ↓</p> <p>Your order will be mailed to the address on your voided check. Allow 2-4 weeks for delivery.</p>	<input type="checkbox"/> 200 - \$13.95	<input type="checkbox"/> 150 - \$15.95	<input type="checkbox"/> 400 - \$25.95	<input type="checkbox"/> 300 - \$28.95	<input type="checkbox"/> 600 - \$35.95	<input type="checkbox"/> 450 - \$39.95
<input type="checkbox"/> 200 - \$13.95	<input type="checkbox"/> 150 - \$15.95							
<input type="checkbox"/> 400 - \$25.95	<input type="checkbox"/> 300 - \$28.95							
<input type="checkbox"/> 600 - \$35.95	<input type="checkbox"/> 450 - \$39.95							

MARINE LIFE CD-ROM



SYSTEM REQUIREMENTS:
(IBM & IBM Compatibles only)
• IBM PC 386SX 25 or compatible
required (486-33 recommended)
• 2 MB of RAM
(4 MB recommended)
• VGA video adapter set at
640x480, 256-color resolution
• MS-DOS 5.0 or higher
• Windows 3.1 or higher
• 2 MB of free space on hard
drive
© 1995 ACE-CD Publishing, Inc.
All rights reserved.

Main Album



Using the newest CD-ROM technology by ACE-CD PUBLISHING you can enjoy the exquisite beauty and diversity of nature's richest domain using this in-depth view of sea life on CD-ROM.

Ocean Reefs: Nature's Richest Domain, Vol. 1, contains over 800 full-color images by world-renowned photographer Scott W. Michael. There are 8 albums cataloged to explore over 400 species of Marine Angelfish, Butterfly fish, Gobies & Blennies, Wrasse & Hogfish, Predatory Fish, Hard Stony Corals, and Soft Corals with Polyps and Anemones.

All species are identified with photo ID, common and scientific names, origin, size and special notes of interest for the aquarium or diving enthusiast. All images ZOOM in for full screen display or browse through the system using the auto-SCROLL feature.

For direct orders, and additional information call: (818) 360-3503

DEALERS & DISTRIBUTORS WANTED:
Call us regarding our wholesale and distributor prices on CD's, and interactive displays using the latest touch screen computer systems.



Gerold Merker

Here is a dark phase gray-banded kingsnake that was captive bred from adults caught on either side of the gray-banded kingsnake range. This animal is a *blairi* morph. However, one of its parents was a typical *alterna* morph, so when this animal is bred, depending on the morph of its mate, a whole range of gray-banded kingsnakes could be produced.



Gerold Merker

This attractive *alterna* morph is typical of specimens from Presidio County, Texas. This animal was captive bred from stock found on River Road.

centage of these would be lost due to one or more unknown causes. Some of the problems experienced included: almost full-term embryos dead in the shell, severely kinked neonates, and neonates pipping and exiting the egg before absorbing the yolk. Many herpetoculturists working with this species related experiences similar to ours.

It should be noted that wild-caught

gravid females have produced 100-percent fertile eggs with 100-percent hatching in captivity (Miller, 1979; Hollister, pers. comm.).

After relating our difficulty in getting fertile eggs to hatch, numerous people who had bred gray-banded kingsnakes gave us their ideas. Three main ideas that we examined included: (1) the females were kept too cool during bru-

ALBINO BALL PYTHONS

The most sound investment snake in the industry today. Buy your albino or hetero Balls from the breeder who has the largest and most diverse collection of these beautiful pythons. Please call to discuss pricing or send S.A.S.E. for free price list on albino Balls and other quality pythons, boas and colubrids for 1996.

Jamie Quick Reptiles

RD #3 Box 566, Middletown, NY 10940
(914) 361-4206

BALL PYTHON OWNERS!!!

Your Python will eat (on its own) everytime, with my Guaranteed feeding method, or your money back! 15 years experience in feeding disorders. For kit, send \$7 to:
Riverside Reptile Breeders, P.O. Box 285,
Belcamp, MD 21017

REPTI BARK

Natural Cage Substrate Tree Bark



Perfect Cage Substrate
for all High Humidity
Loving Reptiles!

3100 McMillan Road • San Luis Obispo, CA 93401 • Ph: (805) 542-9988

Learn as much as you
can about a reptile *before*
you purchase it.

Pet Exotic

Quality Captive Born Reptiles

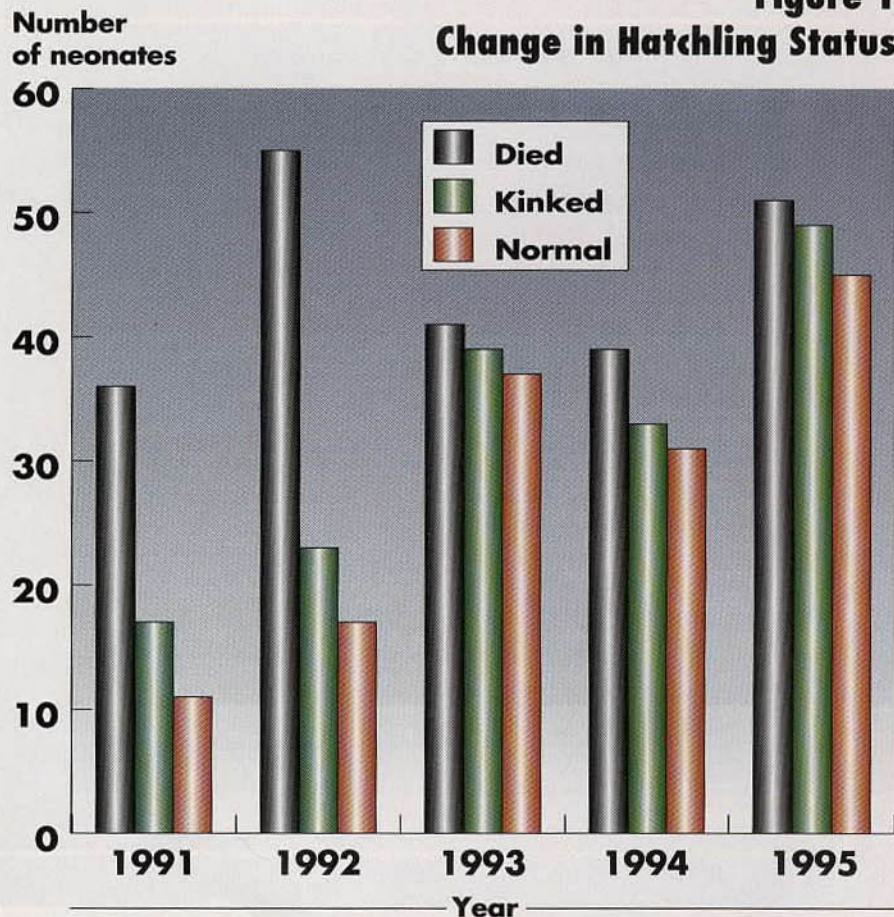
For Free Price List:

Pet Exotic
C/O Allen Shelton
1609 Carolyn
Irving, TX 75061
or fax: (214) 438-8091

Inquire about our many payment options

Figure 1

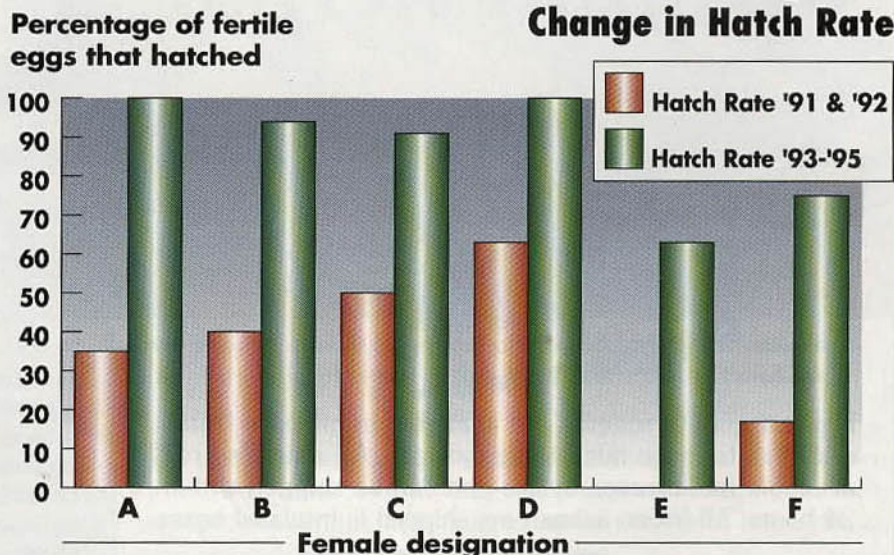
Change in Hatchling Status



Captive breeding success for *Lampropeltis alterna* for the years 1991 through 1995. In 1993, 1994 and 1995, the adult female gray-banded kingsnakes received Rep-Cal on their mice once weekly.

Figure 2

Change in Hatch Rate



Hatching success for individual female *Lampropeltis alterna* comparing the combined 1991-1992 and 1993-1995 breeding seasons. The only difference between the two series of years was that during 1993-1995, the adult females were supplemented with Rep-Cal weekly. Calculations were made by dividing the number of eggs hatching by the total number of fertile eggs produced by the females during those years.

mation; (2) our egg incubation substrate was too moist; and (3) the females were not receiving adequate calcium in their diets.

During the winter of 1990 to 1991, our breeding group of 10 females was divided into two groups. One group was allowed to cool down to 10 to 12 degrees Celsius (50 to 55 degrees Fahrenheit), our normal cooling protocol; the second group was allowed access to heat tape running at approximately 29 degrees Celsius (85 degrees Fahrenheit) for the entire brumation period. During the spring of 1990, both groups were bred with three males, all of which were cooled at 10 to 12 degrees Celsius (50 to 55 degrees Fahrenheit). Sperm production was verified microscopically in all three males. Two females in the "warm" group failed to breed. One died, and the other did not ovulate. The other three "warm" females produced infertile eggs. The females that were cooled to normal winter cooling temperatures produced 37 fertile eggs, 40 eggs total—typical results compared to other years. These eggs were incubated in a modified Hovabater incubator at approximately 26 degrees Celsius (80 degrees Fahrenheit), and 23 hatched. Again, these were typical results when compared to other years.

Miller (1979) reported that females maintained at warmer temperatures during winter failed to produce eggs when bred. For obvious reasons, this was the only season that we allowed females access to warm regions in their enclosures during the winter cooling period.

During the 1991/1992 breeding season, females were cooled to typical levels (50 to 55 degrees Fahrenheit). Our 10-female breeding group, including an extra two females acquired during the summer of 1991, produced a total of 78 eggs, 55 of which were fertile. This was our largest group of fertile eggs ever. Having spoken with several breeders who thought the 1:1 vermiculite:water (by weight) medium we were utilizing was too wet, we decided to incubate some of our eggs on a mixture of 9:1 perlite:water (by weight) medium. These breeders believed that the high water content was causing the eggs to swell too much, reducing the oxygen



Critter Country

FOR AMPHIBIANS & REPTILES

Safe at Last

Critter Country Litter is the cleanest and safest bedding available for reptiles, amphibians and all furry critters.

- Safe if ingested
- Bonds odor and no ammonia forms
- Good for all critters
 - large or small
- Will not grow molds or fungus
- Many times more absorbent than cob, walnut shell or wood
- Biodegradable
- Toilet flushable
- Vacuumed free of dust
- Grass fiber pellet is free of insect contamination
- Satisfaction of owner and pet guaranteed



Ask for Critter Country at your local Pet Store, or call Mountain Meadows Pet (1-800-752-8864) for the Dealer or Distributor nearest you.

SANDFIRE DRAGON RANCH



**BOB MAILLOUX
PROPRIETOR**

P.O. Box 3152 • Vista, CA 92085
(619) 726-4878 • fax (619) 726-9980

From the Rain Forest to the Desert

NO REPTILE SOURCE QUITE LIKE AQUATIC DEPOT

*Fully acclimated captive bred
and imported reptiles and
amphibians.*

*Quality livestock is our
business. Daily wholesale
shipments of live reptiles,
freshwater and marine
tropical fish, live corals,
invertebrates, and aquatic
plants.*

AQUATIC DEPOT, INC.

427 SOUTH HINDRY AVE.
INGLEWOOD, CA 90301
PHONE: 310-641-4664
FAX: 310-642-6789

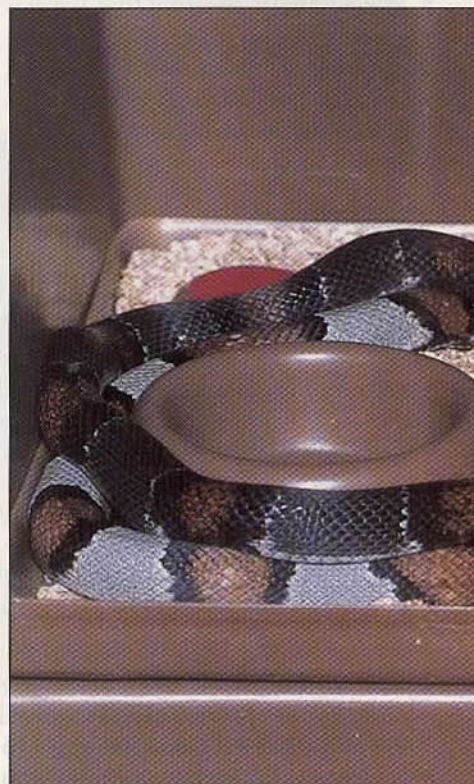
PET STORES OR DEALERS ONLY



permeability, resulting in the neonates being suffocated inside the egg. The 55 fertile eggs were broken into two groups. One group was incubated in the normal vermiculite mixture; the second group was incubated in the new perlite mixture. The eggs were incubated at approximately 26 degrees Celsius (80 degrees Fahrenheit). Our dismal hatch rate that year was nine babies out of 27 eggs from the vermiculite mixture, and eight out of 28 from the perlite mixture. Because there were no statistical differences between the groups, we jettisoned the idea that our eggs were not hatching due to improper incubation material.

During the winter of 1993, we talked with Dr. Dale DeNardo at one of the conferences of the Northern California Herpetological Society (NCHS). The discussion revolved around our disappointing hatch rate for gray-banded kingsnakes. In providing information such as neonates being kinked, not absorbing yolk sacs and dead almost full-term in the shell, Dale suggested that the adult females were not receiving sufficient calcium in their diets. Therefore, their eggs did not receive sufficient calcium while developing,

***Lampropeltis alterna* copulation
lasts from five to 20 minutes.**



**KING MEAL WORM,
THE ZOPHOBAS
WORM!**



KING MEAL WORM

- Does not require refrigeration

Standing orders upon request • Guaranteed live delivery
Same day shipment on all orders received by 11:00 AM PST

BASSETTS CRICKET RANCH, INC.

365 S. Mariposa, Visalia, CA 93292
NATIONWIDE: 1-800-634-2445
FAX: 209/747-3619

CRICKETS

- All sizes available

**we're oh
so good**



resulting in our grim statistics. We decided to determine if calcium was, indeed, the culprit. We started placing calcium in the form of Rep-Cal on adult females' food items once weekly. Now, you may wonder why we chose Rep-Cal. Actually, it was the only product we had around, because we had received a free sample at yet another NCHS conference! Humanely dispatched mice were placed in a small plastic container with Rep-Cal, and these dusted mice were then fed to the female gray-banded kingsnakes. We supplemented all 10 of our breeder females—no control this time! Once we got the fertile eggs, they were incubated in the standard 1:1 vermiculite:water (by weight) incubation medium.

The results were staggering, at least to us. In 1993, we produced a total of 42 fertile eggs, 39 of which hatched! Also, similar high hatch rates were achieved during the 1994 and 1995 breeding seasons. The only different husbandry procedure was the use of the calcium supplement.

We should point out that although our hatch rate from fertile eggs increased dramatically, our overall production of fertile eggs did not change. We still had a number of females produce either infertile eggs or no eggs after being bred with a fertile male. Furthermore, we

should note that Rep-Cal also contains vitamin D₃, which may have been responsible for increased hatch rate. More data needs to be collected to ascertain the impact of vitamin D₃ on egg hatching in gray-banded kingsnakes.

Rearing Neonates

The single most challenging aspect of keeping gray-banded kingsnakes is the rearing of neonates. Many herpetoculturists have become frustrated while trying to overcome the obstacle of entic-

ing a baby snake to eat a domestic pink mouse.

To entice baby gray-banded kingsnakes to voluntarily feed on pink mice, we have employed all of the strategies mentioned earlier, as well as ideas from other sources (Applegate, 1989; Rossi and Rossi, 1995). This includes offering lizard-scented pink mice, pre-frozen then thawed pink mice and split-brained pink mice. Results have been mixed. In general, fewer than 10 percent of our hatchlings will accept an



Gerold Merker



TNT SNAKES

918-371-5017

P. O. Box 1733 • Owasso, OK 74055

Call today for a current price list.

Our snakes are domestic bred and are top quality.

**ALBINO BALL PYTHONS ALBINO QUERETARO KINGSNAKES
ROSY BOAS APRICOT PUEBLAN MILKSNAKES CORNS
JUNGLE CORNS SNOW JUNGLE CORNS
50/50 KING SNAKES and more!**

Photography by Lane Stephens



RAINBOW MEALWORMS

126 E. Spruce Street
P. O. Box 4907
COMPTON, CALIFORNIA 90224

Call Now !!!!
1 (800) 777-9676

Feed your pets the "BEST"!
Feed them
Rainbow Crickets



**WE GUARANTEE
LIVE DELIVERY,
WITH AIRMAIL**

Please notify us of any
loss within 24 hours.

Dealer Inquiries Welcome
OVERCOUNT WITH EVERY ORDER

MEALWORMS • MEALWORMS • MEALWORMS



A Natural fit for you and your pet!

NATURAL PET™ brings you the latest in holistic care for your animal friends!

- Wipe out fleas and skin problems without harsh chemicals
- Find out how an all natural diet can prevent disease
- Treat many common ailments with home remedies
- Prepare healthy home-cooked meals for your pet

Plus, discover the latest holistic products, services, advances, books, events and more!

Subscribe today!
For faster service, call: **1-800-735-9335**



YES, please send me **NATURAL PET™**!

12 Bi-monthly Issues Only \$27.97 (I save \$19.43 off the newsstand rate!)

6 Bi-monthly Issues Only \$17.97 (I save \$5.73 off the newsstand rate!)

Name _____

Address _____

City/State _____ Zip _____

Acct# _____ Exp. Date _____ Signature _____

Canadian: \$23.51/yr or \$38.49/2 yrs. Foreign: \$25.97 surface/yr or \$43.97 surface/2 yrs. \$31.97 air/yr or \$55.97air/2 yrs. International money order, please. Please allow 6 to 8 weeks for delivery.

P.O. Box 420235
Palm Coast, FL 32142-0235

Payment Enclosed

Please bill me

Please charge my:

Visa MasterCard

K607HY

undoctored pink mouse as its initial meal. Another 10 percent or so will feed on lizard-scented pink mice. The rest will not look at a pink mouse in any shape or form. These animals usually are offered a lizard as their first meal. After several lizard meals, many will feed on pink mice that are either frozen and thawed or are lizard scented. By then, winter is fairly close, and acquiring feeder lizards becomes more difficult. If the snake does not feed on a pink mouse, we usually force-feed the snake using a "pinkie press." This is done several times to ensure that the snake adds some body mass. If the snake still refuses to feed voluntarily on a pink mouse, it is kept warm for 10 days and then is allowed to brumate for eight weeks. When the snake is warmed during the "spring," it often eats a pink mouse on its own. By 9 months of age, all our neonate gray-banded kingsnakes usually begin feeding on pink mice.

Medical Problems

Several of our wild-caught gray-banded kingsnakes initially had minor parasite/pathogen problems. Four had



Gerold Meiker

Cage setups for large adult gray-banded kingsnakes provide the animals with a thermal gradient by heating just one side of the cage. Humidity is reduced in the cage by keeping water on the "cool" end.

nematodes; one had a mild bacterial infection and another had protozoans. All were treated with the tried-and-true methods mentioned in many other articles (Klingenberg, 1993; Mader, 1991, 1993).

Nematodes were treated with Panacur (fenbendazole), bacterial infections were treated with antibiotics, and the protozoans were treated with Flagyl (metronidazole). Central to a snake's recovery is assuring that the animal is kept in a nonstressful situation. This means paying particular attention to caging and furniture, temperature regimens and food. If these parameters are not properly provided, the snake may perish.

Two times during the past 20 years, we have had an outbreak of mites affecting some of our gray-banded kingsnakes. These arthropods were controlled utilizing strategies outlined by



HERE THEY ARE!!!



TRADING CARDS

New Cards Each Month

- 1) Snakes (Five Cards)
- 2) Lizards & Turtles
(Five Mixed Cards).....\$5.50 Ea.
Shipping & Handling ..\$1.25
Additional Items S&H..\$.50

REPTILE POSTER

- 1) Four with Nature (Lizard, Snake, Frog and Turtle)\$10.00
Shipping & Handling Included

EMBROIDERED HATS & TEE SHIRTS

- 1) Hats & Tee-Shirts.....\$15.00 Ea.
Two for.....\$25.00
Shipping & Handling.....\$3.00
Additional Items S&H.....\$1.00

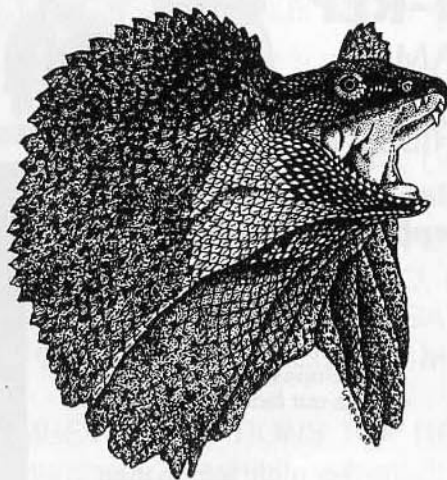
ITEMS IN FULL COLOR

SEND CHECK OR MONEY ORDER TO:

Lazy Lizards • P.O. Box 646 • York, SC 29745

SC residents please add 5% state sales tax. <http://www.herp.com/lazyliz.html>

SERPENT'S DEN



**Large
In-Stock
Selection of
Reptiles, etc.**

Serving:
Breeders, Pet Stores,
Hobbyists and Zoos
Since 1978

Hours:

11 a.m. - 5 p.m. 7 Days

**Call
Before Visiting!**

Send S.A.S.E. for price list

Serpent's Den

P.O. Box 952 • Route 209
Milford, PA 18337-0952
Tel. (717) 296-5877
Fax (717) 296-4614

TIMBERLINE

MARION, ILLINOIS

"Growers of Live Pet Foods and Bait"
CRICKETS • MEALWORMS
SUPERWORMS • WAXWORMS

"Our New State-of-the-art
growing facilities assure consistent quality and
protection against harmful bugs and diseases.

It's the only facility like it in the world!"

Great Service-Guaranteed Live Delivery Nationwide

One Call Does It All!

800-423-2248

Fax: 618-997-4692



Mader and Palazzolo (1993). Another important medical concern is dystocia, which is egg retention (Mader, 1992). The afflicted female will lay part of her clutch, and then retain one to three eggs in her oviduct. In the past, we have taken these females to a veterinarian to have the retained eggs surgically removed. Lately, we have employed a different strategy. Now, our breeder females are maintained in large sweater boxes. We believe the extra size of the cage encourages the snakes to move about and, in the process of doing so, to exercise. Theoretically, the exercise increases the snake's overall muscle tone, and this seems to reduce the incidence of egg binding. In the past three years, only two females—as opposed to three times that many in prior years—have experienced dystocia. Both females were maintained on heat with minimal disturbance, and the retained eggs passed within 21 days. This practice has proven effective with other kingsnakes and rat snakes experiencing dystocia. However, it should be pointed out that if retained eggs are not passed, they must be removed surgically by a qualified veterinarian. The longer snakes retain eggs, the greater their risk of complications that may jeopardize their future health and reproduction.

NEKTON® NEKTON®

NEKTON-REP

A COMPLETE VITAMIN
SUPPLEMENT FOR
REPTILES & AMPHIBIANS.



Other fine products for Reptiles & Amphibians from Nekton

TONIC-R

- contains the nutritional requirements an animal's organism needs.
- is an effective aid to preventing vitamin and mineral deficiencies.
- helps support the organism in times of stress.
- is an excellent aid to treatment in illness.
- the ideal diet for hand raising.

MSA

- supplies breeding and young animals with essential trace elements and minerals.

REP-COLOR

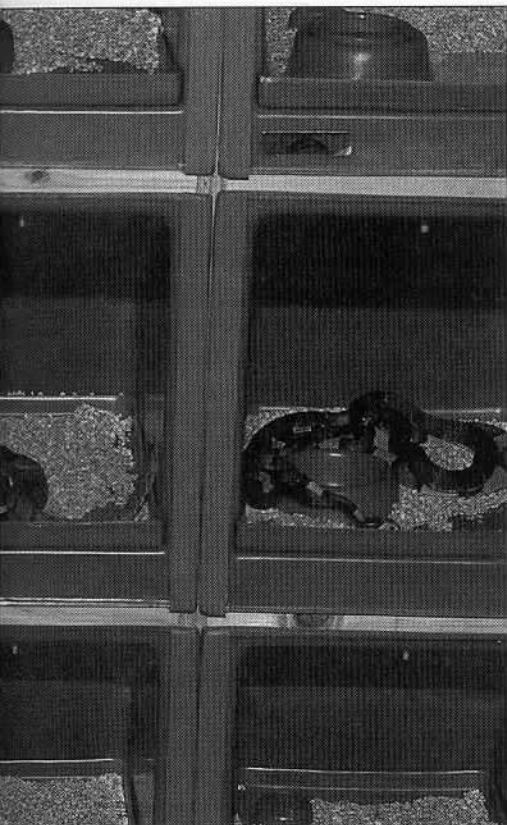
- contains supplementary Canthaxanthin and Apocarotenal.
- develops deepest color and brings out faded colors.

For more information
call or write:

NEKTON U.S.A., INC.

14405 60th Street North
Clearwater, Florida 34620
Phone (813) 530-3500
FAX (813) 539-0647

NEKTON - PRODUKTE
W.-GERMANY



Gerold Merker

When conditions are correct, multiple breedings of gray-banded kingsnakes can occur, as evidenced by this photograph. The authors have had up to three pairs breeding at once.

Conclusion

Obviously, from reading this article you know that we have captured several gray-banded kingsnakes over the years. However, for us, each animal has been the result of a long, tiring expedition.

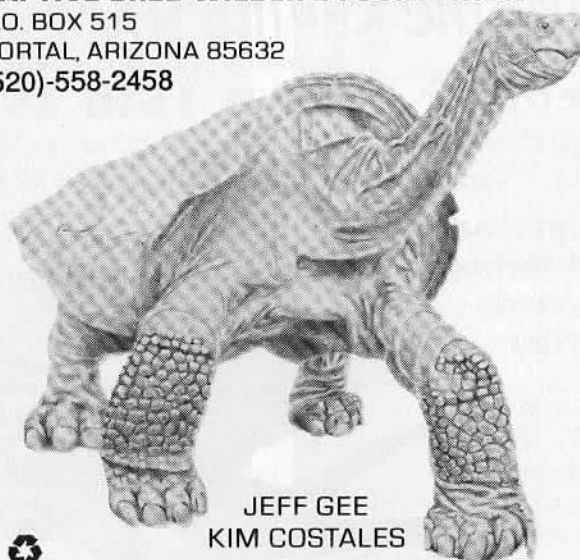
That first collecting trip was filled with fruitless efforts. Hours of driving produced only a couple of western diamondback rattlesnakes (*Crotalus atrox*). "Wonderful Texas" was turning into "Boring Texas" for Cindy. The motel where we were staying was situated nicely, but otherwise, it was beyond our worst nightmare. The "linen" was dirty, the water was nonpotable, and there were more bugs inside the room than outside. No wonder people would rather hunt herps than sleep!

On Father's Day, we drove about 20 miles to the closest telephone. It was a moonlit night, and we passed one huge western diamondback rattlesnake. The call home put Cindy in better humor, and we decided to call it a night.

Driving by a road cut on the trip back

CAPTIVE BRED WILDLIFE FOUNDATION

P.O. BOX 515
 PORTAL, ARIZONA 85632
 (520)-558-2458



JEFF GEE
 KIM COSTALES



- TORTOISES..... GALAPAGOS, RADIATED, SPURRED, LEOPARD, BROWN, RED-FOOTED
- TURTLES..... ALBINO RED-EAR SLIDERS, AMAZON YELLOW SPOT SIDENECK
- LIZARDS..... CARIBBEAN ISLAND IGUANAS, LEOPARD GECKOS
- BIRDS..... EMUS, RHEAS
- PYTHONS..... ALBINO BURMESE, CARPET, CHILDRENS, INDIAN, RINGED
- BOAS..... BRAZILIAN RAINBOW, DUMERILS, ROSY, ARGENTINE, COLUMBIAN
- MILKSNAKES..... HONDURAN, SINALOAN, PUEBLAN, MEXICAN, NELSONS
- KINGSNAKES..... ALBINOS, GRAY-BANDED, MEXICANA, BLOTCHED, CALIFORNIA
- RATSNAKES..... ALBINOS, TRANS-PECOS, TEXAS, BLACK, CORNS, ASIAN
- GOPHERSNAKES..... ALBINOS, STRIPED, PACIFIC, SAN DIEGO, SONORAN, PINES
- SUPPLIES..... BOOKS, FROZEN RODENTS, HEAT PADS, PROBES, HIDE BOXES
- T-SHIRTS..... SAME AS OUR LOGO, (GRAY, HEAVY, 100% COTTON, M, L, XL) \$13
- PRICE LIST..... PLEASE SEND YOUR COMPLETE NAME & ADDRESS AND 2 STAMPS

**INTERNATIONAL REPTILE BREEDERS ASSN
 PRESENTS**

LARGEST REPTILE SHOW ON THE WEST COAST

- *JUNE 29-30, 1996 MESA COMMUNITY AND CONFERENCE CENTER, MESA, AZ 85211-1466
- *JULY 13-14, 1996 SAN DIEGO CONCOURSE, PLAZA HALL, SAN DIEGO, CA. 92101
- *OCT. 5-6, 1996 SAN DIEGO CONCOURSE, PLAZA HALL, SAN DIEGO, CA. 92101
- *NOV. 16-17, 1996 MESA COMMUNITY AND CONFERENCE CENTER, MESA, AZ. 85211-1466

MEET THE NATIONS TOP HERPETOCULTURIST

Hundreds of exhibitors featuring 1,000's of captive bred reptiles and amphibians, educational workshops and lectures and the latest in reptile related products.

****\$1.00 of regular adult admission donated to CHIAC****

Admission: \$7.50 Adults (2 day pass \$12.00)

\$4.50 Under 10 yrs. (2day pass \$7.00)

FOR BOOTH INFO CONTACT IRBA (800) 497-3550
 PO Box 85152-279 S.D. CA 92186 FAX 619-263-6898

MID-ATLANTIC REPTILE SHOW 1996

Sponsored by the Maryland Herpetological Society

September 14th & 15th 1996

Saturday 10:00am to 4:30pm (Lectures 7:00 pm to 11:00pm)

Sunday 11:00am to 6:00pm (Speakers to be announced)

Proceeds purchase rainforest through the Ecosystem Survival Plan

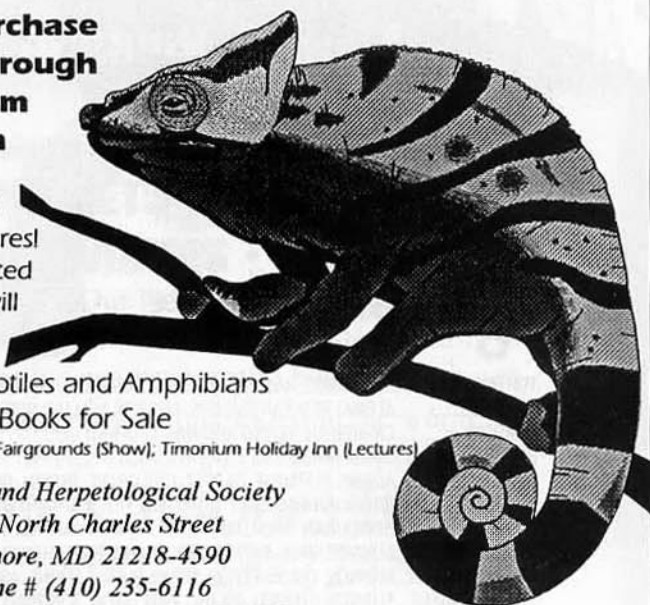
In 1993 we
donated \$18,000
and saved 131 acres!
In 1994 we donated
\$22,000 which will
save even more!

Captive-born Reptiles and Amphibians
Equipment and Books for Sale

Location: Maryland State Fairgrounds (Show), Timonium Holiday Inn (Lectures)

The Maryland Herpetological Society
2643 North Charles Street
Baltimore, MD 21218-4590
Phone # (410) 235-6116
or contact Tim Hoen at (410) 557-6879

Captive born reptiles only. Vendor sales only. No venomous. Not responsible for damage, theft, or injuries.



BUSHMASTER REPTILES INC.

The finest Quality Imported and Captive Bred Reptiles

- ♦Irian Carpet Pythons
- ♦Boelens Pythons
- ♦Timor Pythons
- ♦Tortoises
- ♦Turtles
- ♦More!
- ♦Irian Blue Tongue Skinks
- ♦Frieded Dragons
- ♦Savu Pythons
- ♦Chondros
- ♦Geckos
- ♦More!

"The best Herps come
straight from the Bush!"

Call or Fax
for current inventory.

Wholesale or Exotic
Purchases Only Please.

Bushmaster
Reptiles Inc. is
a Direct Importer,
Breeder and Broker
of many High Quality
Rare and Hard to Find Reptiles.

Bushmaster Reptiles Inc., P.O. Box 19096, Boulder, CO. 80308
Tel. (303) 530-2252 Fax (303) 530-2233

CANNED REPTILE FOODS



San Luis Obispo, CA 93401
Ph: (805) 542-9988

Not a Cheap Heating Pad!

Developed from Aerospace Technology
specifically for reptile terrariums!



3100 McMillan Rd.
San Luis Obispo,
California 93401
(805) 542-9988

to the motel, Gerold decided he had to "check it out." A black object caught his eye, and he ran over to it with his flashlight to investigate. Suddenly, he was jumping up and down and screaming! Flat tires, bug bites and a grouchy wife were completely forgotten in the excitement of capturing his first gray-banded kingsnake. The trip to Texas had been worth it, after all.

Acknowledgements

We are indebted to numerous people for their help in all aspects of this article. These people kindly provided information on their experiences regarding the natural history and captive husbandry of the gray-banded kingsnake. Others helped with the photography and initial editing of this article. Some even helped with all aspects of this article!

These people include: Jean Allured, Robert Assetto, Jeff Barringer, Ric Blair, Doug Brown, Young Cage, Dr. Dale DeNardo, Dr. Ben Dial, John Fraser, Dr. Ronald Garthwaite, John Hollister, Robert Mackin, Norm Nunley, "Buzz" Ross, Gerry Salmon, Rick Staub, Kamuran Tepedelen, Ron Tremper, Peter and Nancy Wright and the staff at Terry's Filmworks, Inc. If we have left anyone off of this list, kindly accept our apologies. ★

References

Applegate, Robert. 1988. "Captive Propagation of the Durango Mountain Kingsnake (*Lampropeltis mexicana greeri*) and the Arizona Mountain Kingsnake (*Lampropeltis pyromelana*)." From Symposium Proceedings on Captive Propagation and Husbandry in Reptiles and Amphibians. Ralph Gowen, editor. Nor. Cal. Herp. Soc.: 87-95.

Assetto, Robert, Jr. 1978. "Reproduction in the Gray-Banded Kingsnake, *Lampropeltis mexicana alterna*." *Herp. Rev.* 9:56-57.

Barringer, Jeff. 1995. The *alterna* worldwide web page. An excellent resource for up-to-the minute information on this popular species.

Conant, Roger and Joseph T. Collins. 1991. *Reptiles and Amphibians of Eastern/Central North America*. Houghton Mifflin Company, Boston, Mass. 450 pp.

Cranston, Thurgess. 1991. "Notes on the Natural History, Husbandry, and Breeding of the Gray-Banded Kingsnake, *Lampropeltis alterna*." *The Vivarium*, 3(2):7-10.



Bill Love

It is crucial that female gray-banded kingsnakes be fed large amounts of food in the spring to ensure proper egg development. This female is in the process of laying her clutch.



Gerold Merker

Note the misshapen egg in this clutch of gray-banded kingsnakes. The egg eventually hatched into a healthy neonate.

Reptile RAPIDS

RAINFOREST WATERFALLS

Imagine... easily creating a natural and exotic rainforest waterfall habitat for you and your herp!



Model# SFR-01 (Small Flat Back)
H 9.5" X W 12.0" X D 9.0"
Available in Four Sizes and Two Colors.
Includes Variable Flow Pump!

With over 6 years of experience in rock manufacturing, we proudly present the finest in ZooQuality™ artificial rock habitat necessities for herps. Ask for our line of pools, caves, plants, vines & Reptile Rapids™ Rainforest Waterfalls at your local pet & reptile dealer.

Call Us Today, For a Dealer Located Near You
Dealer and Distributor Inquiries Invited!

SEND \$2 FOR A COLOR BROCHURE TO:
PACIFICA PRODUCTS
P.O. BOX 3990 DEPT RC
SIMI VALLEY, CA 93093
PHONE 805-527-5707
1-800-800-9770
FAX 805-527-6577



Reptile Rapids & ZooQuality are trademarks of Pacifica Products

Specializing in CHAMELEONS

(Farm-raised Imports & Captive-bred)

Now!

The Largest
Selection of
Arrow Frogs
Available in
the USA



Reptile Specialties

By Appointment Only - John Uhern

Tel: (818) 352-1796 Fax: (818) 353-7381

7473 Foothill Blvd., P.O. Box 31, Tujunga, CA 91042



Gartska, W. R. 1982. "Systematics of the mexicana Species Group of the Colubrid Genus *Lampropeltis*, with a Hypothesis on Mimicry." Museum of Comparative Zoology, Harvard University, Brevoria: 466.

Klingenberg, Roger J. 1993. *Understanding Reptile Parasites*. Advanced Vivarium Systems, Lakeside, CA. 81 pp.

Mader, Douglas. 1991. "Vomiting and Regurgitation in Reptiles." *The Vivarium*, 3(2):11-13.

Mader, Douglas. 1992. "Egg Retention in Reptiles." *The Vivarium*, 2(5):13,14+22-23.

Mader, Douglas. 1993. "Common Reptilian Bacteria: What Are They and What is Their Significance?" *The Vivarium*, 4(6):27-29.

Mader, Douglas and Carl Palazzolo. 1993. "Mite and Tick Infestations." *Reptiles*, 1(1):64-72.

Mattison, Chris. 1991. *A-Z of Snake Keeping*. Sterling Pub. Co., Inc. N. Y. 143 pp.

Mecham, J. S. and W. W. Milstead. 1949. "*Lampropeltis alterna* from Pecos County, Texas." *Herpetologica*, 5:140.

Miller, Dennis. 1979. A Life History Study of the Gray-Banded Kingsnake, *Lampropeltis mexicana alterna*, in Texas. Master's thesis from Sul Ross University.

Murphy, J. B., B. W. Tryon and B. J. Brecke. 1978. "An Inventory of Reproduc-

BLACK JUNGLE Terrarium Supply

5 Assorted AIR
PLANTS \$9.95 Plus
\$3.50
\$6.21
Nevada Residents Add 7% Sales Tax



Create your own hidden jungle!

EXOTIC PLANTS

- Bromeliads (Air Plants)
- Carnivorous Plants
- Dried Lichens
- Ferns & Tropicals
- Cacti & Succulents
- Dried Conks

NATURAL DECOR

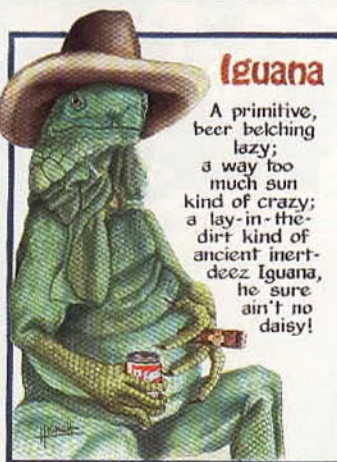
- Jungle Vine
- Kiwi Vine
- Bamboo
- Cypress
- Cork Tubes
- Cork Tile
- Jungle Root
- Jungle Stars
- Grape Wood
- Cholla Wood
- Fig Wood
- Manzanita

For a Complete Catalog

Send \$1 (Receive \$2 off first order) to:
2160 W. Charleston, Suite L-33R
Las Vegas, Nevada 89102

800-268-1813

E-mail: jungle1@ix.netcom.com



Iguana

A primitive,
beer belching
lazy;
a way too
much sun
kind of crazy;
a lay-in-the-
dirt kind of
ancient inert-
deez Iguana,
he sure
ain't no
daisy!

©1993 PERIWINKLE'S PET GALLERY™ ALL RIGHTS RESERVED

100% Cotton T-Shirt \$19.00

Ash - Wh - Nat	S-M-L-XL
2X -	\$23.00 3X - \$27.00
Mousepad 8"x9 1/2"	\$12.00
Zipper Canvas Tote	\$22.00
20"x15"x5"	
Magnet - 3"x4"	\$ 6.00
S/H	\$0-20 \$4.00
	\$21-\$30 \$5.00
	\$31-\$50 \$6.00
	\$51-\$70 \$7.00

M/C - VISA - Check

Call or Write to Order

703-257-9039

PERIWINKLE'S PET GALLERY

9691 Copeland Dr. Manassas, VA 22110



Gerold Merker

Neonate gray-banded kingsnakes remain in their eggs for up to 24 hours, during which time they absorb their yolk sacs.

tion and Social Behavior in Captive Gray-Banded Kingsnakes (*Lampropeltis mexicana alterna*), Brown. *Herpetologica* 34(1):84-93.

Rossi, John V. and Roxanne Rossi. 1995. Snakes of the United States and Canada: Keeping Them Healthy. Volume 2: Western Area. Krieger Publishing Company. Malabar, Florida. 325 pp.

Switak, K. H. 1984. The Life of Desert Reptiles and Amphibians. Karl H. Switak, San Francisco, CA. pp. 32.

Tennant, Alan. 1984. The Snakes of Texas. Texas Monthly Press. Austin, TX. 516 pp.

Turner, Earl. 1977. Colorful Kingsnake of the Trans-Pecos, Texas. Texas Parks and Wildlife. XXXV (1): 10-11.

Wagner, Ernie. 1976. "Some Parameters For Breeding Reptiles in Captivity." Proceedings of the 1976 Reptile Symposium. Frederick, MD. pp.1-8.

Wright, A. H., and A. A. Wright. 1957. Handbook of Snakes of the United States and Canada. Cornell University Press, Ithaca, NY.

GO FOR THE GOLD

GUARANTEED LIVE DELIVERY

- Crickets - 7 sizes
- Superworms
- Giant Mealworms
- Mealworms
- Waxworms
- All Accessories



ARMSTRONG'S

CRICKET FARM



P.O. Box 745, Glennville, GA 30427 • 800/658-3408 • Fax: 800/654-1670
 P.O. Box 125, West Monroe, LA 71294 • 800/345-8778 • Fax: 800/345-6033

REPTILES®



EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT REPTILES & AMPHIBIANS...

- ✓ Learn how to set up your reptiles terrarium
- ✓ Get the facts on Nutrition and Health Care
- ✓ Save your issues for future reference on breeding and species profiles

FOR FASTER SERVICE CALL
1-800-321-1000
 SUBSCRIPTION ORDERS ONLY
\$27.97
12 MONTHLY ISSUES

— HERE'S HOW TO ORDER —

1 YEAR
(12 monthly issues)
for \$27.97
(Save 41% off the newsstand price)
 Send name, address and payment (U.S. Funds Only) to:

Reptiles Magazine
 Subscription Department
 P.O. Box 58700
 Boulder, CO 80322-8700

Please allow 6 to 8 weeks for delivery.

(Canada add \$8/year postage, plus 7% GST; Foreign add \$16/year surface mail or \$28/year air delivery.)