

PROCEEDINGS OF 8<sup>th</sup> ANNUAL INTERNATIONAL HERPETOLOGICAL  
SYMPOSIUM ON CAPTIVE PROPAGATION & HUSBANDRY. PUBL. 1985

MAINTENANCE AND REPRODUCTION OF BLACK-HEADED PYTHONS

AT THE DALLAS ZOO

David G. Barker

The maintenance techniques used in the Dallas Zoo Department of Herpetology have resulted in the successful reproduction of black-headed pythons, Aspidites melanocephalus. General guidelines for husbandry are presented in this paper. Information on enclosure sizes, egg sizes, and weights, neonate lengths and weights, and hatching dates can be found in other references (Murphy et.al. 1981).

Black-headed pythons are housed in an area containing both exhibit and reserve cages. At least one black-headed python is on public exhibit at all times. Temperatures in this area vary from a low of 26.5 degrees C at 0200h to 29.4 degrees C at 1500h. When possible black-headed pythons are caged singly, and if circumstances necessitate housing more than one individual per enclosure, males are kept together. Care is taken to closely match sizes of males housed together.

Each cage housing mature black-headed pythons has a "basking spot". This "basking spot" is created by using different wattage incandescent bulbs, depending on the size and depth of the enclosure, so that a portion of the substrate is heated to 32.5 degrees C to 40.0 degrees C. These heat lights are usually turned on at 0700 hours and extinguished at 1700 hours. Skylights provide a natural photoperiod. Artificial light durations are altered to correspond to the natural photoperiod. Black-headed pythons which are not on exhibit are maintained on substrates of gravel, rocks and wood. All enclosures have hiding boxes or props for security. Water is available at all times.

Mature female black-headed pythons have in their enclosures a container of slightly damp sphagnum moss throughout the year. Gravid females have always laid eggs in those containers. Black-headed pythons tend to spend large amounts of time in these containers, even when offered other "dry" hide boxes. They seldom defecate in these containers.

Black-headed pythons are fed appropriately sized dead rodents, ranging from small adult mice for hatchlings to large rats for adults. Black-headed pythons are usually savage feeders and will accept food no matter how it is offered. Generally, food is held with tongs and offered to each python. It is important to never feed black-headed pythons together. Those housed together are separated for feeding and not reintroduced until the next day.

Usually, one food animal is offered to each snake per meal. Adult black-headed pythons are fed three meals per month. Juveniles are fed weekly. At irregular intervals food is withheld from adult pythons for three to six weeks. A python will experience these deprivations from one to three times per year. Potential breeding females are fed increased amounts of food from September through January. Vitamin supplements are added to the diet from September through January. Hartz Mountain Vitamin A & D in Wheat Germ Oil and Vitamin E in oil filled capsules are used. A small drop of each is placed on the fur of a food animal each meal.

In 1979 and 1984, black-headed pythons received daily simulated rain showers from September through January. All adults were placed in enclosures with good drainage and a fine mist of water was sprayed into the cage for periods of time ranging from two hours to eight hours. Females are placed with single males or with groups of males in mid-December. These breeding groups are left undisturbed for varying periods of time, ranging from one day to one

week. Ritualized combat between males occurs, but is not often observed. Different combinations of sexes, individuals and cages are tried through mid-March, though courtship and copulation is rarely observed after mid-February. Copulations resulting in fertile eggs occurred from mid-December, during the showers, through February, after the showers had been stopped. While other copulations of black-headed pythons have been observed under other conditions, none has resulted in eggs. During these rains, black-headed pythons often hold their heads and necks perfectly vertical, a posture not noted at other times or in other pythons at the Dallas Zoo.

Gravid black-headed pythons bask regularly under heat lights and unusual positions are often assumed. They often hold the posterior half of their bodies up-side-down or on the side while basking in the heat light or coiling in the sphagnum filled container. One gravid female often lies completely up-side-down. Gravid females spend a large percentage of time coiled in the moist sphagnum filled containers. Feeding behavior of gravid females varies; one female fed until a week before egg deposition in 1979. The same female refused all food throughout her 1984 pregnancy. Gravid black-headed pythons shed one or two weeks before egg deposition. Black-headed pythons at the Dallas Zoo, after egg deposition are observed to coil tightly around the eggs. Disturbing these brooding females results in little or no defensive behavior. Brooding females at the Dallas Zoo exhibit no thermoregulatory twitching behavior.

Deposited eggs are always removed from the coils of the females and set up in vermiculite/water mixtures in sealed ten gallon aquaria. Four pounds of vermiculite and 64 ounces of water are used in the incubation of these very large eggs. An incubation aquarium is opened briefly to allow for air exchange about once a week at the beginning of incubation and about times per week toward the later stages of incubation. When the eggs begin to hatch a ventilated top is used on the aquarium. A hatching black-headed python usually remained in the egg 12-48 hours after slitting the shell. In 1978, a clutch of six eggs was incubated at temperatures of 30C- 32.8 degrees C with a daily fluctuation. All of the eggs hatched after a 75 day incubation. In 1984, one clutch of one fertile egg, and a second clutch of two fertile eggs, were incubated at a constant temperature of 32.8 degrees C. Low temperatures of 26 degrees C, caused by incubator malfunction after four weeks apparently caused the death of these fertile eggs.

Once hatchling black-headed pythons have left the eggs, they are placed together in a ten gallon aquarium containing wet paper towels. As each individual completes an initial shed, it is placed singly in another enclosure. The large size of hatchlings (approximately 22 inches) dictates their being set up in 10 gallon aquaria or other similar sized enclosures. Newspaper substrate, hiding box, large water bowl, and reduced ventilation (to increase humidity) are the characteristics of a successful hatchling black-headed python set up.

Hatchling black-headed pythons exhibited an interesting head flattening behavior whenever anything large was passed over them, or when they were otherwise alarmed. They assumed a somewhat elapid like appearance with this behavior. This was exhibited for approximately one week.

Hatchling black-headed pythons did not voluntarily begin feeding on rodents. They appeared to be interested in feeding on snakes, although they were not offered the opportunity. They would bite utensils which had been used to handle other snakes, if given the chance to closely examine them. Eight weeks after hatching, all young black-headed pythons were assist fed (Barker, 1982). Each python was fed a small adult mouse with little trouble. All young black-headed pythons began voluntarily feeding on dead adult mice after from one to three assist feedings. Black-headed pythons grew from hatchling to apparent adult size in two years, but did not exhibit sexual behavior until

five years of age.

#### LITERATURE CITED

Barker, D.G. 1982. Maintenance and reproduction of pythons at the Dallas Zoo. 5th Annual Rep. Symp. on Cap. Prop. and Husbandry:88-92.

Murphy, J.B., W.E. Lamoreaux, D.G. Barker, 1981. Miscellaneous notes on the reproductive biology of reptiles. 4. Eight species of the family Boidae, genera Acrantophis, Aspidites, Candoia, Liasis, and Python. Trans. Kans. Acad. Sci. 84(1):39-49.

Department of Herpetology, Dallas Zoo, Dallas Texas