

Panther Chameleon

Panther chameleon (*Furcifer pardalis*) care and information.

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Panther chameleons (*Furcifer pardalis*) inhabit lowland forests that generally hug the coasts of northern Madagascar. Panther chameleon domain was primarily dense wet forest before humans colonized the island. Things have changed considerably in the past 1,500 to 2,000 years — the land has become mostly cleared by deforestation and for agriculture.

Drastic habitat alteration, while hurting rain forest specialist species, seems to have benefited the panther chameleon. Its numbers are believed to have increased dramatically in response to the more open environment. The panther chameleon's "weedlike" ability to prosper amidst apparent devastation is the primary reason the species is deemed common and still exported from Madagascar.

Natural History

In Madagascar, October to March is spring and summer, when male panther chameleons seek out females for a temporary pair bonding. Sexual pairs remain in visual contact anywhere from a few weeks to several months for mating.

Male panther chameleons' colors become vivid, and their banded patterns more distinctively contrasting. A suffusion of red spots stains their skin, particularly on their heads and eye turrets. During this time, males are especially intolerant of other rival males and attack them vigorously when noticed within a distance of approximately 30 feet.

When a female panther chameleon is receptive to breeding, her coloration appearance will be almost uniform orange to beige. She maintains this pattern as the male approaches. Breeding can occur quickly, lasting five to 40 minutes, and may be repeated several times over a period of two to three days. Within days, the female assumes a darker and more boldly marked pattern, a signal to other males that she is gravid.

After a gestation period of anywhere from 14 to 33 days, the female panther chameleon descends to the ground. She uses her front and back legs to excavate a narrow tunnel. It's barely large enough for her to back into completely to deposit her clutch. After she's finished covering the hole, its location is indistinguishable from the surrounding substrate.

A clutch from newly imported female panther chameleons typically consists of 14 to 36 eggs. Multiple clutches of eggs may be deposited over many months, though field studies have yet to give detailed statistics on number of clutches, eggs per clutch, incubation times and temperatures.

Wild hatchling panther chameleons have been found ascending large trees, possibly to stay out of reach of terrestrial predators until they attain some size. Adult panther chameleons may be neonates' worst enemies; they will eat juveniles of their own species.

Male panther chameleons are the most colorful of the sexes, attaining total lengths of 15 to 18 inches or more and typically weighing 150 to 250 grams. Their normal life expectancy is five to seven years. The smaller females are 9 to 13 inches long, weigh 35 to 70 grams and have a life span of three to four years.

Color Variations

Male panther chameleons exhibit tremendous color variation across their range. Variants are distinguished by color, though their trade names are typically based on the nearest town, geographic region or island on which they occur. Generally recognized locales include Nosy Be, Ambanja, Ambilobe-Sirama, Diego Suarez, Sambava, Nosy Boraha, Tamatave, Nosy Mitsio and Ankaramy, with more waiting to be found.

Panther chameleon color variations are genetically controlled. Males and females from the same locale produce like-colored offspring. If a male from one region is bred to a female from a differing region, the possibilities are endless. Smaller sublocale variations can occur, particularly in neighboring Ambanja and Ambilobe. Because female *pardalis* are not noticeably distinctive in color from one locale to the next, misidentification is common. Inadvertent color hybridization occurs frequently among captive breeders.

Stress Factors

Stress is generally defined as any condition in an animal's environment capable of negatively affecting its health. Some stress factors occur naturally, such as predation, territorial disputes with other chameleons, drought, parasites and weather extremes.

Captive panther chameleons face many stress conditions that they would not face in the wild. These include overcrowding and proximity to other chameleons (especially male-to-male contact), substandard cage size, poor lighting, improper thermal gradients, deficient nutrition, overbreeding in females, inadequate hydration and excessive handling. Optimal conditions would be those that best mimic the natural environment while eliminating the naturally occurring stress factors.

Panther chameleons can survive and prosper in captivity in less than optimal conditions. But there is no line drawn above which you are guaranteed success, and below which you are doomed to failure. The more you are able to minimize stress factors and approach optimal conditions in your chameleon husbandry, the more likely you are to have a healthy and long-lived pet.

Chameleon Cages

Male panther chameleons tend to patrol a harem domain; they require minimum cage dimensions of 18 inches wide by 18 inches deep by 48 inches tall. Females do not require as much space. They can be kept in a cage 16 inches wide, 16 inches deep and 30 inches tall. In choosing any enclosure, bigger is always better.

Mature panther chameleons should be housed separately. Young adult and larger males should not be visible to any other panther chameleon, male or female, in adjoining cages. If close proximity is unavoidable, place a visual barrier between cages. Dominant males can visually intimidate other males or females to unhealthy stress levels.

Panther chameleon caging should be constructed of some sort of screen material to allow for good ventilation. Aquariums are not recommended. While aluminum screen works well for smaller chameleons, it can cause abrasions and damage claws of larger chameleons. Reptarium brand cages, or those with larger gauge, plastic-covered metal mesh, are a good choice.

Panther chameleons require foliage that occupies 50 to 75 percent of the available cage space. This can be a woody plant, such as a ficus or schefflera, or a vine with a support frame, such as pothos or philodendron. Plastic plants with clean, nontextured surfaces may be used. Additional horizontal basking perches can be created using bamboo, wooden dowels or clean sticks. Secure them in the cage to supply adequate climbing and basking "branches" at all levels.

The bottom of the panther chameleon's cage should be left as bare as possible to facilitate examining stools and cleaning. A clean cage bottom reduces the possibility of accidental ingestion of nonfood objects. Try to elevate the cage above the floor, as the chameleon will benefit because its natural instinct is to be above danger.

Lighting and Temperatures

Panther chameleons are diurnal and regulate their daytime body temperature by varying their exposure to the sun. They require exposure to not only visible sunlight, but also those wavelengths of light referred to as UVA and UVB. Household window glass blocks out 100 percent of UVB. Chameleons kept indoors need both a basking heat source and access to these vital wavelengths.

All commercially available UVB lights also produce UVA. You can provide all necessary basking heat by using a household bulb in a reflective dome, and a separate UVB light. A mercury vapor bulb, if used, can provide both heat and all necessary wavelengths of light.

The basking spot for the panther chameleon should be 95 to 103 degrees Fahrenheit. Locate it at the top of the cage with access perches below. A thermal gradient is created over the cage's vertical span, allowing the lizard to move further down or to the side to thermoregulate for optimal digestion, gestation, etc. General daytime cage temperatures are best if kept at 75 to 85 degrees and 70 to 78 at night.

Hydration and Humidity

Panther chameleons obtain most of their moisture from drops on leaves during rainfall. For this reason, a drip system is recommended to hydrate them. This can be as simple as a plastic cup sitting on top of a cage with a pinhole in its base allowing for a regular drip down onto a plant within the cage. The cup should be large enough (12 to 16 ounces), or refilled often enough, to allow a drip rate of one drop per second for 20 to 30 minutes. Water should be offered at least once per day. Inexpensive drip systems are available at most pet stores or from specialty Internet and mail-order suppliers.

Panther chameleons do best with a relative humidity of about 70 percent. This is not always possible for many hobbyists,

with lower humidity levels (due to home heating and air conditioning) being prevalent. Simple humidifiers can help, or hydration frequency can be increased to twice daily. Plastic sheeting can also cover cage walls for part of the day to slow evaporation, but should not always be kept on to hamper air flow.

The Panther Menu

Panther chameleons are primarily carnivorous. While mammals and reptiles (including smaller chameleons) may occasionally be eaten, insects are the staple. Wild chameleons receive an adequate diet, with enough random variety to meet their needs. If you offer fresh-caught, wild insects, be sure to avoid stinging bugs, especially fireflies, which can be fatal to your chameleon if consumed.

Most hobbyists cannot duplicate the diversity of wild insects for their panther chameleons. They must rely on the marketplace for feeder insects. Commonly available bugs include crickets, superworms, mealworms, waxworms, hornworms, houseflies, fruit flies and assorted mantids and roaches.

It is more important to offer feeder insects a nutritious diet prior to presenting them as food. Called "gut loading," this process is required because commercially available insects are often deficient in necessary nourishment for healthy chameleons.

Roaches and crickets are the easiest to gut load and are the insects of choice at The Chameleon Company. Fresh or frozen produce and fruits are good gut-load foods. Offering fish flakes boosts protein and vitamins. Cricket or insect gut-load products are also commercially available. Insects should be gut-loaded for at least four hours prior to being given as food. Calcium and vitamin supplementation is also recommended. Dust insects once or twice a week with a powdered vitamin/mineral supplement prior to offering them to your chameleons.

Any cricket or roach offered should not be longer than the distance between the chameleon's eyes. The insect's diameter should be no greater than a third of the width of the panther chameleon's head. Narrow insects, such as mantids and superworms, may be much longer, because they are less problematic for panthers to swallow.

Panther chameleons prefer "free-ranging" prey. If this is not practical, you can mount a 16- to 32-ounce deli cup (with tiny water drainage holes in the bottom) in the cage. Temporarily at least, the cup should contain most of the insects. Keep eight to 10 insects in the cage at any one time. Too many loose, hungry insects can stress and possibly nibble on your chameleon.

While not common, panther chameleons may graze on plants, especially as juveniles. For reasons not fully understood, chameleons also occasionally consume dirt, tree bark, small pebbles and other roughage.

Watching a panther chameleon eat is one of the many fascinations we have with these marvelous creatures, but it may take a bit of patience before you actually observe it.

Other than actually witnessing it eating a meal, good signs that your panther chameleon is eating are a healthy defecation the next day, and no food left crawling around or hiding.

Breeding

Panther chameleons are oviparous (egg-laying). While sexual maturity in pardalis is primarily a function of size, they are typically ready to breed when 7 to 10 months old.

The first signal indicating that a female panther chameleon may be ready to breed is her color. Maturity typically gives her a dull orange or pastel appearance. This indicates only the possibility that she is ready to mate; she can also appear this way for other reasons. Her reaction to the introduction of a male shows her readiness to breed.

Male panther chameleons are almost always ready to mate. Upon seeing a female, a mature male approaches her with their ritualistic yet comical head bobbing and a noticeable intensification of color.

If the female panther chameleon is nonreceptive, expect a quick change in her demeanor. It may consist of any of the following: a darkening of color, gaping mouth, puffed-out throat and vertical body enlargement, vigorous rocking motion and rapid retreat. If she displays these behaviors, remove the male immediately, and try again in a few days. If receptive, she shows little reaction, and her color remains neutral.

It is recommended that panther chameleons be kept together for up to 72 hours, as additional matings may, and normally do, occur.

During the 14- to 33-day gestation period, a gravid female panther chameleon appears very dark and boldly marked. As eggs develop in her abdomen, they may be visible (as if she swallowed dozens of marbles) or felt with gentle palpation. As her egg-deposition time nears, a female may be excessively active. She may wander the base of her cage scratching, or begin digging in potted plants.

At this time, give the female panther chameleon access to a laying medium. A mixture of barely moist peat moss and topsoil in a one-third to two-thirds ratio works well. Use a bucket or other container that is at least 10 inches in diameter, and fill it with firmly packed dirt 8 to 12 inches deep. Place it along a wall of the cage so she can find it and climb into it. She may excavate several test holes, but will lay her eggs in only one. Repeated hole digging is often a sign of excessive soil moisture or some other unsuitable condition.

After one successful mating, female panther chameleons are capable of sperm retention, and may produce one or more additional viable clutches without breeding again that season.

Incubation

Remove the panther chameleon eggs to a separate container. A deli cup of at least 16-ounce capacity, with a tight-fitting lid, works well. Just below the top rim, make a hole with a diameter no larger than one-eighth of an inch to allow for oxygen exchange.

Large or coarse grade vermiculite is a good incubation medium. Moisten it with nonchlorinated water to a ratio of 0.8 to 1 part water added to one part vermiculite by weight, and place it in the cup to a depth of 2 or more inches. Bury the eggs 1 to 1 1/2 inches deep in the medium and cover them. Allow for clearance of about three-fourths of an inch between the top of your vermiculite and the lid.

Label the container with relevant information about the clutch: parentage, date laid and number of eggs. Place the container in a dark place where the temperature remains a stable 73 to 80 degrees. Check the eggs once a month for moisture content, adding a few drops of water when needed. It's normal for a few eggs to die and become moldy, shriveled or turn black. You may remove them, although bad eggs virtually never cause good eggs adjacent to them to spoil.

Incubation lasts six to 13 months, with seven to nine being the norm. The duration of time from the first to last egg hatching is often two to three days, although it can take several weeks. Averaging 1 1/2 inches in total length, neonate panther chameleons can be housed together, but need to be thinned to individual cages as they grow. Except for needing smaller insects as food, all other husbandry remains the same.

With advances in chameleon husbandry happening almost monthly and information being rapidly disseminated via literature and the Internet, success rates for the long-term viability of *Furcifer pardalis* in captivity continue to climb. Captive-bred panther chameleons are now being produced and sold for prices less than imported animals. With their stunning beauty, unimaginable uniqueness and advancing herpetocultural successes, panther chameleons have few peers among nature's many masterpieces.