

# Chameleon Care

## Introduction

Chameleons are lizards from Africa, southern Spain, Cyprus, Canary Islands, Madagascar, southern Asia to Sri Lanka and islands in the Indian Ocean. They were also accidentally introduced to Hawaii. There are at least 85 recognized species that are of the genera *Chameleo*, *Furcifer* or *Brookesia*.

Chameleons have always been one of the most popular reptiles in the pet trade. Because of their turret-like independently roaming eyes, outrageous colors (that change depending on emotion, temperature, health and defense), prehensile tails, zygodactyl feet, and expansive sticky tongue capable of catching prey a body length away, their appeal is understandable. Until recently all chameleons offered for sale were wild caught. Most species are not hardy and die easily in captivity. Some species such as *Chameleo senegalensis* and *C. gracilis* are extremely difficult to maintain in captivity, although small specimens seem to fare better than adults. Recently small numbers of captive born *C. pardalis* and *C. calyptratus* are being produced and seem much hardier and better suited to captivity.

Chameleons are insectivores and like most insectivores live in dispersed populations in the wild. Chameleons are naturally solitary and view other chameleons with alarm. Complex social and agonistic displays have evolved to keep chameleons apart from one another in the wild. This is especially true for males. It seems logical in captivity to keep chameleons physically and visually separated from one another (and their reflection from a mirror) except during brief encounters for breeding. In large enclosures, one male may be kept with several females if they get along. In general however, keeping chameleons together is an additional stress on animals that seem very susceptible to stress and should be avoided.

## Feeding

Chameleons eat and drink relatively large amounts. Some people estimate they must consume their own weight weekly. Given that insects are relatively light, this is an incredible amount. The bulk of their diet can be crickets, waxworms, and mealworms but also provide seasonally available insects such as flies, moths, grasshoppers, cockroaches, bees with their stingers removed, and spiders. Some species will take small land snails, slugs, and anolis. Individuals can become bored with monotonous diets of just crickets and refuse to eat until new prey is offered. Variety is crucial for a healthy diet. Insects should be dusted with calcium and/or fed calcium-

enriched diets. One way to feed chameleons is to place the insects in a container with a sturdy rim that the chameleon can walk on. In the bottom, place the powdered calcium with just a small pinch of bird or reptile multivitamin mixed in. The chameleon then can get a small amount of calcium each time it eats a dusted insect. They should be fed as much as they will eat in half an hour once or twice a day every day and should always have some food loose in their cage. Occasionally skipping feeding for a day is acceptable.

A good (if not essential) supplement to their diets is pinkies or baby mice. Some larger species will enthusiastically eat pinkies if hand fed. Hold the pinky close the chameleons head so they do not damage their tongue with such a heavy object. Most smaller species have to be assist fed or carefully force fed. To force feed a chameleon, gently restrain its head and, when they open their mouth, quickly but gently push a killed pinky past their tongue and they should swallow it. In time they will take pinkies on their own. Pinkies should be fed once or twice a week. Keep in mind that force feeding is very stressful, and some individuals may not tolerate it.

Another essential item required in a relatively large amount is water. Chameleons drink prodigious amounts of water compared to other reptiles. Recently imported chameleons often are dehydrated and should be rehydrated immediately. Chameleons generally do not drink from still water in a water bowl. One watering technique is to mist the cage heavily and let them lick up droplets of water. This also ensures a relatively high humidity. One is never sure if they get enough this way, so another method is to drip water near the chameleon from a syringe or pipette held very still. Most chameleons are attracted to the dripping water and will drink directly from it. With a little patience, they will open their mouths and one can slowly fill their mouth. Once full, the chameleon will abruptly stop, raise its head, and swallow the water. In a few minutes, it will be ready to drink again. This should be repeated several times until they are satiated. An intravenous drip set can be set up for a slow drip over leaves into a water bowl allowing the chameleon to drink at will. This should be turned on daily in the morning. Aerators or sizzle stones driven by air pumps can be placed in water bowls and often attract chameleons to drink.

### **Housing**

Cage requirements of chameleons is one area that is uncertain. Many people believe they need large cages while others do well with them in smaller cages, especially captive born animals. One thing is obvious, being arboreal animals they need more vertical space than width or depth to their

cage. As discussed earlier, chameleons should be housed individually (this includes visual barriers as well). Cages can be made of wood frames with smooth screen tops and front and semi transparent plastic stretched over the rest of the frame. Good air circulation seems beneficial to chameleons. Glass aquaria set on one end to maximize vertical space also can be used with screen fronts or tops. The following cage sizes are suggested: Dwarf species 3 feet long, 1.5 feet deep, and 2 feet high or 29-gallon aquarium. Medium to large species and giant species 4 feet long, 2 feet deep, and 4 feet high, or 29-55-gallon aquaria (larger aquaria for larger species). Chameleons also can be maintained on isolated hanging plants without the use of cages.

Ultraviolet lights are crucial for chameleons and should be left on for 12 hours each day and turned off at night. Unfiltered sunlight is desirable when possible. Preferred temperatures vary between species, although most species do well with daytime temperatures of 68-80° F. Montane species can be kept from 70-80° F during the day with drops to 60-70° during the night. Lowland species prefer slightly warmer temperatures of 80-88° during the day and 65-78° at night. A basking area under a 25-100 watt incandescent light that gets even warmer should be offered so that the chameleon can behaviorally thermo regulate. This is especially important for gravid females.

Branches should be provided for climbing (hardwood branches without bark work well). Plants also seem appreciated. Hanging plants such as pathos, English ivy, and spider plants as well as heart leafed philodendrons on the bottom of the cage all work well. Any plants that do well under low light can be used. Ultraviolet lights are fine for plant growth. Plants not only boost humidity and increase climbing areas but also provide cover for chameleons. Plastic plants also work well. The idea is to provide scattered areas of shade and shelter as well as numerous open areas.

The bottom of the cage can be left bare or covered with Astroturf, newspaper, or bark chips and peat (stay away from substrates that stick to their tongue). Egg-laying species need to excavate a burrow or they may become egg bound and die. Most chameleons are oviparous (producing eggs that hatch outside the body), a few are viviparous (give birth to living offspring).

### **Diseases and Other Medical Consideration**

Healthy chameleons should be alert, active, and have a strong grip. A good indicator of overall condition is eye-globe position. In the healthy chameleon, the globe should not sink into the orbit much at all. Dehydrated or underweight chameleons often have a globe sunken into the orbit, which

is a poor prognostic sign. Thin chameleons also have reduced fat reserve at the lateral tail base and a prominent pelvic girdle. Unhealthy chameleons often have uniformly light or dark color.

Chameleons are prone to MBD (Metabolic Bone Disease) especially when raised in captivity. Treatment is similar to that for iguanas, but the prognosis is poor. Chameleons are often heavily parasitized with a wide variety of protozoans, coccidia, nematodes, and cestodes. Salmonella is not uncommon. Routine repeated fecal examinations and cloacal washes are recommended with treatment dependent on results. Unthrifty appearance, poor color, diarrhea, melena, hematochezia, and maldigestion can be associated with parasitism.

Abscesses are common and treated similarly to those in iguanas. Abscesses in the feet, in the commissure of the jaws, involving the mandible or maxilla, or retrobulbarly offer a poor prognosis. Respiratory tract infections, infection stomatitis, and visceral gout also have been mentioned as causes of death. Pregnant or gravid females often die late in gestation for unknown reasons especially after multiple clutches. Certainly the large clutches characteristic of chameleons make it difficult for the female to eat at a time of huge metabolic demand on the female. Appetite falls off dramatically in late term gravid or pregnant females. For egg laying species, lack of a suitable nesting substrate inhibits the female from laying and can cause dystocia and egg yolk peritonitis. Robust body condition and a hot basking area are crucial to breeding females.