



Veiled Chameleon *Chameleo calyptratus*

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Set-Up/Enclosure

Lighting/Heating - Captive habitat should always mimic an animal's natural environment as closely as possible. Veiled Chameleons are diurnal (day active) animals from Yemen and Saudi Arabia; with this in mind there are several factors to take into consideration if one is to successfully keep these animals in captivity. Lighting is one of the most important aspects of the set-up as it enables basking lizards to properly synthesize and metabolize nutrients and encourages natural behavior. Chameleons should have an average (9-13) hour photo (daylight) period induced with synthetic UVB lights. There are three types of UVB lights available in pet stores. The first, in order of efficacy is the mercury vapor bulb which produces around 30-35% UVB radiation as well as 100-250w of heat that is ideal for a veiled chameleon. The mercury vapor bulb produces maximum UVB for as long as it's producing light and the radiation is focused and penetrates with full potency at 36 inches so this bulb can be used in large enclosures. The second option is a compact fluorescent bulb that is available with 10% UVB output. This bulb needs to be used in conjunction with an incandescent, basking heat bulb as it does not give off heat of its own. Animals need to be able to bask within six inches of this bulb and it needs to be changed every six to eight months as the gases that produce the UVB dissipate. The third option is a fluorescent tube light which is available in varying percentages of UVB output from 2.0-10.0; only the high end of this range will prove effective for this species of chameleon, so go with an 8.0 or 10.0. This bulb like the other fluorescent mentioned should be used in conjunction with a heat bulb, within six inches of the animals basking site and changed every six to eight months. No matter which UVB bulb one chooses, make sure that there is no glass or plastic between the bulb and the animal as this will filter out all of the beneficial radiation (this is why setting an animal in front of a window is useless); not to mention creates a potential fire hazard. The regions of the Middle East that veiled chameleons inhabit are somewhat arid, in the wild they experience a dramatic temperature gradient with daytime basking temperatures reaching upwards of 105 degrees F and night time lows sinking below 65 degrees F. To recreate this in captivity one should use the aforementioned lights to create a basking spot at one extreme end of the enclosure with temperatures that reach at least 90 degrees F, while the cool side of the enclosure may fall into the 70's or 80's. Because chameleons are a diurnal (day active), basking lizard, they have a small organ located on top of it's head between their eyes called the pineal organ, this tells the animal how warm it's getting and allows it to thermoregulate (control it's body temperature) and adjust its position accordingly. If the animal just needs to lower its body temperature by a few degrees, it may opt to gape (open it's mouth to allow excess heat to escape) rather than move to a cooler area. Avoid heat pads or heat rocks as they can potentially cause burns due to your chameleon's inability to fully sense ventral heat. At night, all heat sources may be turned off allowing the enclosure to fall to your home's ambient room temperature.

Substrate - There are several options for appropriate substrate (bedding). Because of the hunting methods used by chameleons, they often get an accidental mouthful of substrate when going after prey so the substrate needs to be either digestible, small enough to pass, or eliminate the possibility of ingestion all together. Fine ground coconut bark or unfertilized potting soil are ok to use as they hold some humidity and

are comprised of small enough particles that they can generally be passed through an adult chameleon's digestive system. Another viable possibility is creating a false bottom and then covering it with moss to provide drainage for a water feature and hydration and nutrients for a planted terrarium. There is plenty of good setup and design information available online if one decides to take the terrarium/vivarium route. If one doesn't mind the unnatural look of newspaper or paper towel, these eliminate the potential for ingestion and are easy to change out frequently for a clean enclosure; this method is also economical!

Furniture - Cage décor is a welcome addition, keep in mind that veiled chameleons appreciate as much climbing space as possible. Do not to use pine or cedar because of harmful phenols in softwoods. If you collect limbs from outdoors be sure to bake (200 degrees for an hour or two) or bleach them (soak in one part bleach to 10 parts water solution then let dry) to make them safe for use in a terrarium with an exotic animal. Foliage, artificial or otherwise, is a good idea to make your pet feel safe and secure in its enclosure. A drip system or water feature is a crucial aspect of the terrarium as well, as chameleons do not recognize water as such unless it is moving. Your chameleon will also use the moving water to rinse its eyes.

If set-up properly, a veiled chameleon terrarium can be conducive to a mentally and physically healthy animal as well as an aesthetically pleasing display for one's home.

Interaction/Handling

Human Interaction - We should always bear in mind when keeping reptiles is that they are naturally cryptic (secretive) and typically solitary animals. Though as social creatures we generally thrive on social interaction and contact, chameleons are quite the opposite. Handling should be as minimal as possible as a chameleon's entire existence depends upon its ability to blend in with its environment and when we pull them out of their habitat and expose them it's generally nothing short of terrifying. Most chameleons will become stressed by the interaction and may quit eating or alter their natural behavior. It is also worth mentioning that veiled chameleons can deliver a nasty bite!

Diet and Supplementation – Veiled chameleons are the only omnivorous chameleon. A young chameleon can eat appropriately sized, commercially available insects such as crickets, meal worms, wax worms, and cockroaches. As they mature one can add rich leafy greens like romaine, collard greens, mustard greens, etc. Adult male veiled chameleons will even eat large prey such as mice or quail which should be available in the freezer of a good, reptile-friendly pet shop. One should use Calcium and vitamin supplements throughout your chameleon's life. Dust prey items with a Ca D3 powder with little to no Phosphorus, every other feeding. A multi-vitamin powder can be used in the same manner, but only about once a week.

Chameleon to Chameleon Interaction – I will reiterate here that chameleons and reptiles in general are not social animals so they definitely do not *need* cage mates. Young veiled chameleons that have not reached sexual maturity can cohabitate with one another but they have a tendency to attempt to eat anything and everything, which can lead to missing tails, toes or worse. Sexually mature males cannot cohabitate together as there will inevitably be territorial skirmishes. Chameleons of the opposite sex should only be housed together if one is willing and fully prepared to take on the problems and responsibility that can accompany reproductive animals. I should mention here that even without a male, female chameleons generally will still produce eggs (infertile) and often have problems associated with egg-binding – for this reason, female veiled chameleons have a much shorter life expectancy than males. Veiled chameleons are actually sexually dimorphic so even as hatchlings there is a physical difference in the sexes – males have a spur at the heel of their back feet (as hatchlings this just looks like a pinched fold of skin), whereas females have smooth feet.