

## Veiled Chameleon Care

**Everything you need to know to successfully keep and breed the veiled chameleon.**

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Various reptile species have different tolerances for handling. One species that tolerates handling poorly is the veiled chameleon (*Chamaeleo calyptratus*). Veiled chameleons can be grouchy, ill-tempered and sometimes downright testy, but they are also spectacularly beautiful, fascinating and challenging to keep and breed.

Chameleons as a group are some of the most demanding reptiles to keep in captivity; they are not recommended for children or beginning reptile hobbyists. However, among a challenging group, veiled chameleons are the easiest chameleon species to keep and breed. They are hardy, and captive-bred animals are readily available.

### Natural History

In the wild, the adaptable veiled chameleon tolerates a wide range of temperatures and humidity levels, and is found in a variety of different habitats in Yemen and Saudi Arabia. Escaped veileds are a problem in Hawaii, where they are considered an invasive species and are illegal to keep. Like almost all chameleons, veileds are totally arboreal. Their morphology reflects this, especially their perfectly evolved pincer feet, ideal for grasping and tenaciously hanging onto branches.

Veiled chameleons are large. Males range in length from 17 to 24 inches from nose to tail, and females are 10 to 14 inches. Males are easily distinguished from females even at birth; they have a tarsal spur — a small, triangular, fleshy appendage found in the crotch of the rear feet — that females lack. Both males and females have a finlike structure on the top of the head, called a casque, but it is much larger in males. Males are vividly colored, with green and yellow as the primary colors but also including brown, black, white and blue. Females are less vivid and primarily a green shade with little to no pattern, unless they are gravid.

It is commonly thought that chameleons change color in order to blend into their surroundings, “disappearing” in the process. While their coloration may add some camouflage, it is now known that chameleons use their color-changing ability for inter and intra species communication as well as indicating health, sexual receptivity and reactions to environmental conditions such as temperature. Color changes in veiled chameleons are the most dramatic when males encounter other males or see females, and when females are gravid.

### Captive Care

Veileds are commonly bred in the reptile trade, and it's best to purchase a captive-born animal. Price depends on the age of the animal and the vendor, but generally ranges from \$20 to \$100. Look for bright-eyed, straight-limbed and feisty animals — those are the healthy ones. Chameleons that sit listlessly and don't constantly swivel their turreted eyes about should be avoided. Always purchase chameleons from sources that provide the proper environment, including a good diet and UV lights.

Veiled chameleons are not just intolerant of other chameleon species; their temperament extends to their own species as well. Animals over 3 months of age should always be housed individually. Veileds need to be physically and visually separate from each other, males in particular. Males placed together will fight, causing possible injury to one or both animals. Keep in mind that aquariums should be avoided for use with chameleons, which become stressed if they constantly perceive another chameleon (even if it's their reflection).

Veiled chameleons mature quickly and can reach adult size in about six to eight months. Adults need an enclosure measuring at least 2 feet long by 2 feet wide by 3 feet tall. Vertically oriented cages work best. Chameleons need ventilation in their enclosures, so screen cages are recommended. There are several companies that offer screen cages especially suited to housing chameleons. The cages are shipped flat and require assembly, but are attractive and functional.

Branches of different sizes and orientation should be placed in the cage. Cover the bottom with newspaper or a similar substrate. No loose substrate should be used as chameleons can accidentally ingest it while catching prey items. Veileds require some cover, so include a plant in the enclosure. Make sure the plant is nontoxic because veiled chameleons will consume some vegetable matter. The best plants to use are ficus and pothos.

### Heating and Lighting

Chameleons, like all reptiles, do not produce their own body heat and must obtain it from the environment in order to properly digest their food and keep their metabolism going. In the wild, veiled chameleons bask in the sun to increase their body temperature, and when too hot, they move into a cooler area. This behavior is called thermoregulation. In captivity, this requires providing the animal with different areas of the cage at different temperatures.

Veiled chameleons need a basking spot that is between 90 and 100 degrees Fahrenheit. Use a heat lamp to provide a basking spot. Heat lamps can be inexpensively purchased at home supply stores; reflector domes with spotlight bulbs work well. Make sure, however, the lamp is secure on top of the cage, otherwise it can be a fire hazard. Place a basking branch under the spot light, but to prevent burns make sure the chameleon cannot come into direct contact with the light or fixture. Use a high-quality thermometer to check the temperature in the basking area. Veiled chameleons do well with an ambient temperature in the 70s or 80s during the day with a drop into the 70s at night.

Veiled chameleons need full-spectrum lighting that includes wavelengths in the UVB range to produce vitamin D3, which is essential for proper dietary calcium absorption. If possible, it's a good idea to take chameleons outside periodically where they can get some natural sunlight, but make sure they can get into a shaded area as well so they don't overheat.

Chameleons raised indoors without exposure to full-spectrum lighting may develop a disorder called metabolic bone disease, also known as nutritional secondary hyperparathyroidism. Metabolic bone disease is a general term that covers a host of problems caused by dietary deficiencies or imbalances of calcium, phosphorous and/or vitamin D3. The main sign is weakened bones, which may fracture or break at stress points, or cause a malformed, soft jaw (among other problems).

Providing full-spectrum lighting, along with a proper diet and calcium supplementation is essential to preventing this disorder. Full-spectrum lights are fluorescent bulbs that produce high amounts of UVB and UVA; they should run the length of the enclosure. These bulbs can be purchased from reptile suppliers and pet stores. All lights should be turned off at night.

### Food and Supplements

Veileds consume both plant and animal matter. Placing a ficus or pothos in the enclosure provides veileds with both cover and vegetation to munch on. It's also a good idea to offer them different veggies on a regular basis. Attach a veggie clip (used in aquariums) with washed leaves of collard or mustard greens somewhere in the enclosure.

The diet should be as varied as possible and can include crickets, mealworms, waxworms, nightcrawlers and cockroaches. Feed prey items a high-quality diet before offering them to chameleons (a process called "gut loading"). Prey items should be given high-calcium greens, such as collard, mustard and endive; vegetables, including carrots, squash and zucchini; and a protein source, such as flaked fish food or dry cat food. There are also some commercial products on the market made especially to gut load feeder insects.

It also is essential that prey items are dusted with a reptile calcium supplement before feeding. The easiest way to do this is to place the insects in a bag with a supplement and shake. Adults can eat every other day and receive calcium supplement twice a week. Place insects in a raised dish with high, smooth sides to prevent escapes. Be sure that uneaten insects are removed; too many loose, hungry insects in a cage can actually harm a veiled.

Veiled chameleons will not drink from a dish of standing water, so mist the plants in the enclosure to increase humidity and to provide drinking water. Adult veiled enclosures should be misted three to four times a week. There are also "chameleon drippers" on the market. These are small, plastic reservoirs with a drip valve on the bottom. They are filled with water and are set to drip onto vegetation in the cage. Put a small dish on the bottom to catch excess water and prevent flooding.

### Breeding

Female veiled chameleons can reach sexual maturity as early as 5 months (sometimes even earlier), but it is not recommended that females this young be bred. Females that are not bred at the first signs of receptivity will not invariably become egg bound, as is sometimes reported in the literature. Egg binding occurs when females do not have enough calcium in their diets, or are not healthy enough to meet the demands of gestation and egg laying. Healthy females at 9 to 12 months of age are ready for breeding.

Many females that are sexually receptive display robin's-egg-blue coloration on their sides and casque, but the best way to tell if they are receptive is to place them in the male's cage and watch their interaction. An unreceptive female is easy to spot; she turns black and gapes her mouth while hissing. She should be removed immediately and placed back in her

cage. Receptive females retain their passive coloration and walk calmly around the cage while the male pursues.

Mating takes place usually within a few minutes of the female's introduction and may be repeated several times over the course of a day. A successfully inseminated female will change from her normal coloration to a base of black with distinctive green and yellow markings. Feed gestating females every day.

After successful copulation, oviposition occurs between 30 to 40 days. It is advisable to put an egg-laying chamber in the cage on day 20 just in case, because lack of a laying site is thought to be one of the main causes of egg binding.

Females dig down into the soil and create a nest, where they deposit their eggs and then bury them completely. In captivity, the easiest way to provide this is to use a 5-gallon bucket filled with moist play sand 6 to 12 inches deep. The sand should be moist enough so a female can tunnel without it collapsing.

Before laying, a female restlessly wanders around her cage looking for a place to lay. Usually she will choose the bucket, but occasionally if there is a large plant in the enclosure, she may dig beneath it. The female veiled begins by creating a tunnel.

Once it is deep enough (this may take several hours), she turns around, lays her eggs and then buries them. Clutch sizes have a considerable range of anywhere from 12 to 80 eggs; females may produce three to five clutches a year. Gestation and egg laying are very taxing for female veiled chameleons, so it is imperative that only healthy animals be bred.

Females are receptive to mating again several weeks after laying eggs. Even without a second mating, many females can lay a second clutch from retained sperm 80 to 100 days after the first rendezvous.

Eggs should be dug up and incubated in slightly moist vermiculite at 75 to 80 degrees. Bury the eggs halfway into the incubation medium. Fertile eggs are bright white and, when illuminated from behind in a dark room, are suffused with blood vessels. Infertile eggs are usually yellow and lack blood vessels. During incubation, eggs must be spaced a least 1 inch apart (to prevent premature hatching). After 150 to 200 days, the eggs hatch. Right before hatching, eggs "sweat" — form little beads of water on their surface — and begin to cave in.

#### Hatchling Care

Six to eight baby veiled chameleons can be housed together in a screen enclosure measuring at least 20 inches tall by 10 inches wide by 12 inches long. Make sure to provide a live plant (pothos is ideal) to give the babies some cover. Keep the bottom of the cage bare, or use newspaper. Provide many twigs of small diameter at different angles for climbing. Grapevine wreaths found at any craft store work well for this. Youngsters' heating and lighting needs are the same as for adults, but the temperature should be monitored carefully; babies can easily overheat.

Feed hatchlings small crickets (no larger than their head) or fruit flies dusted with calcium supplement every day. Using raised feeding cups is a good way to provide food; babies know where to find it, and the insects won't disperse through the enclosure. It's especially important to watch for uneaten insects roaming the cage of baby veileds, as the feeders can irritate them during sleep or harm them.

Mist the enclosure with purified water twice a day to raise the humidity and provide drinking water. Do not spray the babies directly as they easily startle. At 3 months of age, youngsters must be moved into their own individual enclosures, where they are not only physically, but also visually, separate from other chameleons.

#### Conclusion

Veiled chameleons may not have a calm demeanor, but they do have that incredible color-changing ability, independently rotating eyes, shockingly long, sticky tongues — and let's admit, they are seriously cool. The captive care requirements of veileds are more involved than many other reptiles, but they are rewarding to keep and breed, even if they are not particularly appreciative of the efforts made on their behalf.