

Carpet Chameleon (*Furcifer lateralis*)

Care Sheet



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Introduction

Carpet chameleons (*Furcifer lateralis*) are an interesting species in the hobby. They seem to be the ideal species for a chameleon keeper. They are one of the most vibrantly colored species of chameleons in the world, stay a very manageable size, are highly prolific, and are quite hardy as captive bred animals. Even with all of these positive attributes they haven't quite caught on in the hobby and very few people are breeding. Notably, before I started working with them there was practically only one person working with them over multiple generations in the United States, Kevin Stanford. Kevin has produced hundreds of individuals of this species. When he took a bit of a break from producing large numbers, captive bred *lateralis* practically disappeared from the hobby. Luckily there seems to be a bit of a resurgence in their popularity and more and more people seem to be taking them seriously as captive breeding projects. I really hope this continues as *lateralis* make an ideal "second chameleon". They really aren't any more sensitive than the ubiquitous panther chameleon, as long as they are captive bred. I think their unfair reputation as being delicate or short-lived stems from the fact that wild caught *lateralis* are very difficult to keep alive due to the ordeal of collection and importation. While they aren't the longest lived chameleons a healthy captive bred *lateralis* can live two to three years with good care. They more than make up for their relatively short lives by being highly prolific. Because of this they make an ideal breeding subject for a hobbyist looking for a fast turnaround time and a limited amount of space. It only takes one picture of a healthy female *lateralis* to understand why I am so passionate about this wonderful little species.

Description and Sex Determination

One of the best things about *lateralis* is their smaller size making it making them a viable option even for apartment dwellers with limited space. In my experience adult *lateralis* are about 4" (10 cm) snout to vent and about twice that including the tail. There is usually no difference in size between males and females although I have seen a few wild caught males that were unusually large.

The most obvious difference between the sexes is coloration. Adult males can be beautiful with very nice shades of green and blue but it's the females that really put on a beautiful display. The variety and vividness of coloration of female *lateralis* is almost unmatched in the chameleon world. Females can display greens, reds, blues, yellows, white, black, orange, and even purple. What I love most about their coloration is just how variable they can be even among

clutchmates. These aren't like pardalis where different localities have predictable colors and patterns. They are all just one species and localities are not recognized.

Sex determination is fairly straight-forward even without judging by coloration. Even juvenile males will have a noticeably widened tail base due to hemipenes. With practice a breeder can see this difference in tail base right out of the egg.



Young Adult male



Adult female



Juvenile

The Terrarium

When keeping lateralis indoors I prefer to use all glass terrariums like those made by Zoo Med or Exo Terra. My adults are kept individually in 18" x 18" x 24" or 18" x 18" x 18" glass terrariums. All screen enclosures that are typically recommended for chameleons can also be used successfully. All screen enclosures will require a higher wattage basking light and more frequent and prolonged misting sessions.

The Terrarium Interior

I prefer to keep my lateralis in fully planted naturalistic glass terrariums. The bottom of the terrarium has a drainage layer of gravel or clay pellets of one to two inches deep. On top of this drainage layer is placed a porous fabric that is used as a weed barrier. On top of the fabric a three inch layer of soil is used. I use a 50/50 mixture of sand and peat moss. Live plants like Ficus sp. and Schefflera sp. are planted directly in the soil layer. A one inch thick layer of dead leaves on top of the soil completes the bioactive substrate. Some people will add springtails and isopods to the soil as cleaner crews but in my experience this is unnecessary. These beneficial insects always find their way into the substrate anyway from the leaves, plants, soil, and branches.

Since lateralis are arboreal the enclosure should have a live bushy plant that takes up about half of the volume of the terrarium which they can climb on, hide in, and drink off of. Thin branches of various diameters should be arranged throughout the cage so that the chameleon can perch at a variety of conditions in the cage. There should be some branches in the upper parts of the terrarium that are exposed to the basking and UV light and branches toward the middle and bottom that are shaded by leaves. The branches should be placed at a variety of angles: horizontal, diagonal, and vertical.

Light, Temperature, and Water

Since lateralis are diurnal and heliophilic animals bright light of the proper spectrum needs to be provided. I believe that lateralis require or at the least thrive when strong lighting which provides ultraviolet radiation is provided. T5 high output fluorescent lighting has become the gold standard for terrarium lighting and if you are lighting a larger enclosure (24" or taller) they are probably your best bet. LED lighting is also becoming more popular for terrariums but does not provide the proper UV radiation. If you are keeping the chameleons in smaller enclosures (mine range from 18" to 24" tall) then a standard T8 fluorescent shop light will be adequate. The shoplights can be purchased for only \$10 for a 48" dual fixture. The bulbs are also cheaper as well. Regardless of whether you choose T5 or T8 a dual bulb fixture is recommended. One bulb should be a 6500K bulb which will provide nice white light and will be very beneficial to both plants and chameleons. The other bulb should be a UVB producing bulb. The T8 bulbs I use and recommend are the Zoo Med 10.0 bulbs. These

should be replaced once a year. The T5HO bulbs I use and recommend are the Arcadia 6.0 bulbs. These only need to be replaced every eighteen months. Linear fluorescent bulbs are best if you are lighting several terrariums. However, if you are only lighting one smaller terrarium then a screw-in compact fluorescent bulb may be an effective option. UV producing CFL bulbs are available from Exo Terra and Zoo Med although I have no experience with them. Some keepers swear by them while others will say they are dangerous or ineffective. I cannot say personally as I only use linear fluorescent bulbs.

Lateralis come from a tropical climate and so require fairly warm temperatures. Like with keeping all reptiles, thermal gradients are the key to success. You want to provide a variety of suitable temperatures from which the chameleons can choose. Lateralis need a basking spot which is provided by a light source. My heat light of choice are halogen puck lights. A string of four or five can be purchased for \$20 or less. Only use one per enclosure unless dealing with a very large terrarium. There are a few things to consider when using these lights. First make sure you get the halogen and not xenon puck lights that do not have a self contained dimmer switch. These will not work with a timer. Also, the puck lights should be plugged into a dimmer switch. This allows you to very precisely control the amount of heat produced by these bulbs to achieve the desired temperatures. Use of a dimmer also dramatically increases bulb longevity. A plug-in dimmer can be purchased cheaply online. If you are using a terrarium that is greater than 24" in height than a puck light will likely be insufficient and more typical screw in bulbs in the 40-60 watt range may be needed.



Halogen puck lights



Plug-in dimmer switch

Both heat lights and fluorescent lights should be plugged into a timer. This allows for a predictable light cycle which the chameleons can follow. This also easily allows you to adjust the time that the lights are on during different seasons. My lights are on for fourteen hours during the peak of summer, ten hours during winter, and twelve hours during fall and spring.

Your heat lights and fluorescent lights should create nice thermal gradients in the terrarium. For lateralis I try to aim for a localized basking spot of around 90-95 F. The top most part of the terrarium is around 80-85 F and 70-75 F towards the bottom and in shaded regions. A night time drop is natural and is easily accomplished just by turning off the lights at night. My nighttime temperatures are around 70 F. During the winter months all of these temperatures are about five to ten degrees cooler.

To provide your chameleons with adequate water you will need some way to mist the terrarium. This can be as easy and cheap as a one dollar hand mister that is usually used for hair or as complex as an automated misting system. If you only have one or two terrariums you could possibly get away with hand misting but I think that an automated misting system is one of the best investments you can make. The mist provided is very fine, can be regulated precisely with a timer, and doesn't disturb the animals. I use and recommend MistKing misting systems. I have several MistKing pumps in operation including one that has seen continuous use for ten years without issue. I am also starting to use ProMist pumps and am satisfied so far.

My chameleons that are in glass terrariums get misted two or three times a day for approximately thirty seconds to one minute each session. However, this is something that needs to be adjusted for every enclosure and keeper. The goal is to thoroughly cover the leaves of the plants and the sides of the terrarium with water droplets and then stop before the soil becomes overly saturated. It is important not to mist the enclosure again until all of these water droplets have evaporated and the top most layer of the soil/leaf litter has started to dry out. To make sure this happens proper ventilation must be present in the enclosure. This is easily achieved by making sure the entire lid of the enclosure is screen and that at least one

of the sides has some ventilation openings. All of the terrariums that I have previously mentioned have this type of proper ventilation. I will not list a proper humidity for this species as I have never measured it in my terrariums. It may take time and practice to find the proper misting schedule for your own enclosures. Just remember, it's OK for the terrarium to dry out for most of the day as long as the humidity remains relatively high and the animals have the opportunity to drink daily.

Chameleons will not drink from a water bowl. They receive all of their required water by lapping up the water droplets from misting that has accumulated on plant leaves and the sides of the terrarium.

Diet and Nutrition

Furcifer lateralis are completely insectivorous, or insect eating. I provide my animals with as much variety of insects as possible. My feeders include crickets, mealworms, superworms, red runner roaches, green banana roaches, fruit flies, and bean beetles. Make sure that the insects are of appropriate size. The insects should usually be about the length between the chameleons eyes. Longer is ok for mealworms. As with all insect feeders the insects should be fed a healthy gutload to make them more nutritious. I feed my insects only fresh produce. My gutload often includes apples, sweet potatoe, kale, collard green, dandelion greens, carrot, and peppers.

Lateralis are voracious eaters and should be fed accordingly. Juveniles are fed daily as much as they will eat. Adults are fed every other day. Plan on six appropriately sized insects per adult animal and up to twelve insects for juveniles per feeding.

Supplementation is a hotly contested topic in chameleon husbandry. I won't go into the debate here but will instead just outline what I have had success with. All of my feeder insects are dusted with Repashy Calcium Plu LoD. In addition to this dusting schedule I also provide supplemental vitamin A. I provide extra vitamin A but taking a human grade vitamin A liquid capsule, cutting the tip off, and putting one drop directly in the mouth of the chameleon. Males get this supplement once a month, females twice a month.

Breeding

Furcifer lateralis are prolific breeders that make for a very rewarding breeding project in a short period of time. Both males and females are usually ready to mate for the first time at six months old. Females signal their receptiveness by turning beautiful pastel shades of soft greens, pinks, blues, and purples. Mature males will rarely turn down an opportunity to mate. When you suspect a female is ready to mate you can place the pair together. If she is receptive then she will stay softly colored, not move much, and not react to the male. If she is not ready to mate she will often turn mostly black with vibrant reds and blues. She will often puff up with mouth open and possibly lunge at the male to repel him. Unreceptive females should be removed right away and you can try again in a few days. If the female is receptive the male will head bob and mating usually begins quickly. Copulation often lasts around twenty to thirty minutes. Sometimes one mating is all a female will accept before becoming unreceptive and aggressive towards the male. Sometimes they will mate several days in a row before she becomes unreceptive. I always separate them when I am not present to watch. They can be an aggressive species and cause real harm to each other.

Egg laying can be the most challenging part of breeding *lateralis*. They are notorious for scattering eggs instead of burying them. I have found that as long as they are provided with an appropriate egg laying site at the appropriate time they will dig and bury their eggs regularly. Anywhere from fourteen to thirty five days after breeding the female will be ready to lay her eggs. A day or two before egg laying the female will usually stop eating. This is when I will place her in the laying box. I use a five gallon opaque plastic container as an egg laying site. A 20-40 watt heat light is placed on one side. The inside of the container has a six to eight inch layer of soil. I use a 50/50 mixture of sand and peat moss. The key to getting the female to dig and bury her eggs is to have the soil at the appropriate moisture level. The soil should be very wet but without standing water. Whenever I have had a female not dig it was because the soil was too dry. I will leave the female in the egg laying container all day when the lights are on and return her to her terrarium at night. The next morning I will water her heavily and offer food. After a drink she goes back in the container. This is repeated until she lays the eggs. Even if the female does not bury her eggs and instead scatters them on the surface there is still a good chance of saving the eggs as long as they are found quickly before they dessicate. I have had clutches of anywhere been six and eighteen eggs.

Eggs are incubated in lightly moistened vermiculite. Twenty grams of water are added to thirty grams of vermiculite in a sixteen ounce deli cup. No holes are used in the deli cup. There are two incubation strategies when it comes to temperature. The eggs can be incubated at a constant 70° F the entire length of incubation. This works very well but often results in longer incubation times. Also, the eggs will often develop at different rates using with some eggs hatching months apart from each other. Another method that I currently use is to diapause the eggs for a period of time to simulate winter. My current regimen is to incubate the eggs at 72°F for forty-five days then lower the temperature to 60°F for forty-five days. After the forty-five days of diapause the eggs are again incubated at 72°F for the duration of incubation. Using the diapause method often shortens incubation times and the eggs also tend to hatch closer to each other. Even with diapause incubation time can vary widely. I have experienced incubation times of anywhere from six to thirteen months.

Hatchling care is identical to adults except on a smaller scale. Another exception is that the hatchlings can be raised together in small groups until sexual maturity. Food items include fruit flies, bean beetles, and pinhead crickets. As the babies grow it is sometimes necessary to separate them based on size as some will grow quicker than others. They will grow rapidly with appropriate care and will be ready to breed themselves in as little as six months.



Juvenile coloration



Mating



Unreceptive/gravid female coloration



Receptive female coloration



Hatching

Some Final Comments

Furcifer lateralis are one of my favorite species of chameleon. They are small, gorgeously colored, prolific, and can live in small beautifully planted natural terrariums. As captive bred specimens they are as hardy as any other chameleon. I hope that this care sheet provides the needed information for other keepers to continue on with this wonderful little species.

I would like to acknowledge and thank Kevin Stanford for all of the help he gave me in starting out with this species.

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