Care Cards

Chameleons

Chameleons are fascinating animals with their bizarre eye movements and gripping little feet. They are frequently an impulse purchase by people unfamiliar with their specific care requirements. This usually results in poor development, unthrifty health, and more often than not the animals eventual demise. The following article is an overview of basic chameleon care and should be used prior to the acquisition of a first chameleon or the purchase of additional specimens to a collection. No specific species will be discussed in this article.

HOUSING

Chameleons are not social animals. They are best housed singularly to prevent fighting and unnecessary stress. Newborns can be kept in small groups until 2-4 months of age. When any aggressive behavior is observed such as biting, hissing, or displaying of bright colors, it is time to separate the animals. Even when housed separately, if the animals can visualize each other they will remain in a constant state of stress, which will have a detrimental effect on the animals overall health status.

Chameleons are visually dependent animals. If their habitat is not visually pleasing, they will exhibit poor feeding and reproduction. Most chameleons are arboreal or tree dwelling animals, and therefore require more height than length in their enclosures. With terrestrial or ground dwelling chameleons, the height is less important.

Wire cages are preferred over glass enclosures when housing chameleons. Glass sided enclosures often cause damage to the animal's face and tongue when feeding. Additionally, when placed in a glass enclosure with overhead lighting, the animals reflection will be visualized in all glass panels. This will make the chameleon feel surrounded by intruders and cause it to maintain a constant state of stress. Although it is more difficult to maintain high temperatures with wire cages, the animals will be more comfortable and the air quality will be better with these enclosures.

Live plants such as ficus, pothos, schefflera, or hibiscus are a necessity in any quality chameleon cage. Not only are they visually pleasing but the potting material can be used by gravid females for egg laying. Additionally, chameleons will sometimes ingest fresh budding leaves, which are rich in nutrients. A note of warning when using ficus plants, some breeders have noted eye irritation in their chameleons associated with ficus sap.

Cages should always be placed outside during good weather so the chameleon can get the benefit of direct, unfiltered sunlight. Chameleons, like other reptiles, are prone to metabolic bone disease from improper calcium levels. The cage should always provide a cooler area to prevent overheating. **Never** place a glass or plastic enclosure outside in direct sunlight.

Gravid females should be housed separately in an enclosure that provides security and seclusion. If a gravid female is not comfortable in her surroundings, she will retain her eggs or babies for too long and complications may occur. Try to allow females to lay their eggs in the animals normal enclosure. Excessive relocating could lead to insecurity and egg/baby retention. Their enclosure should be clean and well ventilated. A sturdy plant with a pot deep enough to contain soil approximately twelve inches or twice the length of the female's body should be provided. The soil should be kept damp but not soggy. If the soil is too wet the babies or eggs will drown.

TEMPERATURE AND THERMOREGULATION

Reptiles are ectothermic (cold-blooded) and require supplemental heat in captivity to help maintain normal body temperature. Reptiles maintain their preferred body temperature by moving back and forth between sunny and shaded areas; this process is called thermoregulation. Each species of reptile has its own preferred optimal temperature zone (POTZ). Proper body temperature is necessary for optimum metabolic processes including: digestion, growth, healing, reproduction, and proper immune system function. This is extremely important for sick, stressed, or injured reptiles.

Chameleons come from different areas of the world. To maintain your chameleon at the proper temperature for its well being, it will be necessary to know something about the animals natural habitat. For most species an enclosure maintained between 80-92 degrees Fahrenheit in the day and between 67-72 degrees Fahrenheit at night will suffice. For arboreal species, a basking site near 92 degrees Fahrenheit during the day will help insure proper digestion after feeding. Similarly, the terrestrial species will need a heated ground area for digestion.

LIGHTING

All lighting fixtures should be installed to prevent the reptile from coming into direct contact with them, and so that water cannot accidentally be splashed on hot surfaces. Most reptiles require a photoperiod (light/dark cycle) of approximately 12-14 hours of light daily. I suggest 14 hours during the summer and 12 hours during the winter; each photoperiod should run for 6 months. Chameleons require a minimum of 8 hours of darkness for sleeping each night. This must be kept in mind when locating the enclosure in an area that receives late night activity. Although the cage lights may be off, the room lights, noise, or activity around the enclosure will prevent the pet from quality rest and will lead to unnecessary stress. Automatic timers are ideal for maintaining photoperiod. Several brands of full-spectrum ultraviolet lights are available. My preferred strip light is ZooMed's Reptisun 10.0. I recommend using a combination of both incandescent and fluorescent lights for maximum heat and ultraviolet stimulation. Additionally, I strongly advise one or two hours of direct, **unfiltered** (not through glass or plastic) sunlight daily. Natural exposure to unfiltered sunlight is the best husbandry practice owners can provide for their chameleons. Always provide a shaded area during sun exposure and **never use a glass or plastic container**!

Wide-spectrum plant lights are of no use to a chameleon. With artificial lights the ultraviolet radiation will eventually degrade to the point of being ineffective long before the fluorescent tube burns out. It is essential that these bulbs be changed whenever black bands appear around the ends of the tubes, or about every six to twelve months. Make sure the basking site is under the artificial light source and is no more than 8 to 12 inches away.

Basking is an important aspect of chameleon nutrition. Ultraviolet light, either natural or artificial, is essential in the synthesis of vitamin D3 within the reptile's skin. Vitamin D3 is necessary for the proper absorption of calcium from the digestive system. Inadequate ultraviolet stimulation can lead to metabolic bone disease and possible death.

WATER REQUIREMENTS

In nature, chameleons obtain their water from rain or dew droplets as they accumulate on leaves or run down the animals head. Chameleons rarely will recognize standing water, however, if the surface is agitated with an air stone, some will drink from a bowl. The two most common ways for providing water to your chameleon are misting and dripping.

Misting involves a delicate spraying of the reptile and its enclosure either with a spray bottle or a hose. The water should be directed in an upward direction to mimic natural rainfall. Dripping involves a water reservoir with either a piece of tubing or some small holes in the bottom. The object is to provide a constant stream of droplets for the chameleon to lap either in flight or as they accumulate on a leaf. Wire bottom cages are preferred with dripping to prevent flooding of the enclosure.

FEEDING

Most chameleons are insectivorous, although some will additionally consume flowers, foliage, and fruit. The most important aspect of feeding any chameleon is to provide a variety of food items. Some frequently offered insects include: crickets, waxworms, mealworms, superworms, grasshoppers, cockroaches, and termites. Insects should be properly gut-loaded or dusted with a

calcium/vitamin solution prior to being fed. With regards to items other than insects to offer your chameleon, I suggest flowers from hibiscus, dandelion, nasturtium, and rose. Additionally, fresh leaves from hibiscus or ficus plants as well as mustard, turnip, and collard greens have been consumed by many chameleons. A feeding cup can be attached to the inside of the enclosure, and crickets and other food items may be placed inside the cup to prevent them from dispersing throughout the enclosure.

CAGE CLEANING GUIDELINES

Salmonella is perhaps the most recognized zoonosis associated with reptiles. Infected animals shed the organism in their feces. Owners should be aware of this when handling reptiles or their feces. Most infections occur within the first month of exposure to the pet. Contamination usually occurs when owners place objects or food in their mouth after handling contaminated material. Symptoms include fever, diarrhea, vomiting, dehydration, abdominal cramps and in extreme cases, death. In infants and the elderly, Salmonellosis can be a serious infection sometimes requiring hospitalization.

The difference between cleaning and disinfecting is that cleaning only removes debris while disinfecting kills bacteria and other organisms. The two most commonly used disinfectants are bleach, or sodium hypochlorite and Nolvasan, or chlorhexidine diacetate. Bleach should be mixed at four ounces or one half cup to one gallon of water. Nolvasan should be mixed at two ounces or one-quarter cup to one gallon of water. The disinfectant should be applied to all cage surfaces and left in contact for ten minutes before removing. The cage should be thoroughly rinsed and allowed to dry before returning the reptile. Bleach and its fumes can be toxic. Good ventilation and protective items should be used when disinfecting. Cage materials can be soaked with the same mixture for disinfecting. A minimum of thirty minutes contact time will be necessary before rinsing. Thoroughly rinse the items and, if possible, allow them to air dry in direct sunlight for several hours before returning to the cage.

Do not use pine oils or other phenol-based disinfectants for cleaning your chameleon cage. These items are very toxic and easily absorbed through the animals skin. Even lingering odors can be dangerous.

Chameleons are fascinating as well as challenging animals to maintain in captivity. The key to properly owning a chameleon is advanced preparation and research prior to the purchase. Chameleons are very frail reptiles that rapidly deteriorate when sick or diseased. Careful observation will allow you to recognize subtle changes in the animal so proper care can be administered.

References:

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