**Lesley Marshall*

Jackson's Chameleon *(Chamaeleo/Trioceros jacksonii)*

Three Horned "Triceratops" Chameleons

Also known as the Jackson's horned or three horned chameleon, the Jackson's chameleon is a relatively small to medium sized chameleon that is characterized by its green base color with three prominent horns in males, and absent or greatly reduced horns in females. The purpose and function of these horns remains to be fully known and understood, although they are likely used, and tends to be most prominent in male chameleons, for sexual selection, courtship, and reproductive behaviors and displays, as well as possibly to assist in further distorting the chameleon's outline to potential predators. As with most other chameleon species, Jackson's chameleons are sexually dimorphic in terms of their sizes and coloration, appearance, and color intensity, with females and juvenile Jackson's chameleons typically becoming less vibrantly colored than males. Jackson's chameleons are perhaps one of the hardiest, inexpensive, and widely kept and available chameleons in the pet trade, and can provide years of enjoyment and satisfaction for those ready to take on a chameleon.

Chameleons in general are a highly diverse and specialized family of Old World lizards with several extremely unique features and adaptations for survival. Perhaps best known are their color and/or pattern changing abilities. The skin and scales of chameleons possesses a thin, superficial layer of color changing pigments, with another deeper layer consisting of guanine cells. In order to change their coloration, chameleons rely on changing the space and distance between these guanine cells, thereby changing the wavelengths of light reflected from the skin and scales. While it is popularly believed that chameleons change their colors and patterns for camouflage or crypsis, and while it is true that this has functions in concealing the animal from predators and prey, this is not the primary reason for their color changes. Instead, they will change color as a means of social signaling, to display territoriality and dominance, displaying defensive behaviors, and/or to aid in thermoregulation. Most chameleons also have highly specialized zygodactylus feet and prehensile tails for climbing and gripping branches as well. They also have highly modified and rapidly extrudable sticky tongues used and designed for capturing prey. Chameleons also possess a pair of highly mobile, independently operating eyes, giving them excellent depth perception and motor coordination as well. These are only some of the many unique features chameleons possess, making them popular and unusual pet reptiles to maintain in herpetoculture.

Taxonomy

Life: All living, physical, and animate entities

Domain: Eukaryota
Kingdom: Animalia
Phylum/Sub Phylum: Chordata/Vertebrata
Class: Reptilia
Order: Squamata
Suborder: Lacertilia
Infraorder: Iguania
Family: Chamaeleonidae
Subfamily: Chamaeleoninae
Genus: Triceros/Chamaeleo
Species: *Triceros/Chamaeleo jacksonii**
**Taxonomy subject to change and revision.*

Lifespan and Longevity

If provided the proper care, Jackson's chameleons can attain longevity of 4 to 10 years on average depending on male or female. Males are generally larger and longer lived than females.

Distribution and Habitat

The three horned, or Jackson's chameleon is a relatively small to medium sized, arboreal to semi-arboreal species of chameleon with a fairly broad distribution in eastern Africa. More specifically, this species most notably occurs in southern to south-central Kenya and northern Tanzania. Within this range, these chameleons may occupy dense, well vegetated tropical to sub-tropical mountainous forests, woodlands, and thickets, as well as lightly populated, forested residential areas. This species is also introduced in Florida and Hawaii in the United States as well.

Origin/History

Trioceros jacksonii (Boulenger, 1896).

The Jackson's chameleon became popular in the international pet trade in the 1970's (Dodd 1982). They were shipped by the thousands from Kenya primarily by exporter Jonathan Leakey. Some (via a southern California reptile wholesaler) reached Oahu, Hawaii legally in 1972 under a pet store import permit and were sold. A second shipment was in poor condition; these chameleons were released to recover on the property of the Kaneohe pet store owner and subsequently became a free-ranging population in Hawaii. These founders have been the source of an expanding chameleon trade and distribution.

Since 1984, virtually every wild-caught Jackson's chameleon for sale in the continental United States has been of Hawaiian origin (McKeown 1995). By the early 1980's, the species had reached Maui in the Makawao-Pukalani area and began to spread as a free-ranging population (Loope 1994). During the late 1980's and early 1990's it was illegal to keep Jackson's chameleons in Hawaii, but in 1994 that ruling was rescinded; it remains illegal to transport them between islands in Hawaii but not to ship them to the mainland. At present, chameleons exist as free-ranging populations on Oahu, Maui, Hawaii, and most recently Kauai.

Experience Level Required

Intermediate/Moderate.

Size

Adult Jackson's chameleons are dimorphic in size, with the males being slightly larger than females. Male's total snout-to-tail length ranges from 9.0 to 13.0 inches; whereas Female's total snout-to-tail length ranges from about 10.0 to 13.0 inches. Average snout-to-vent length of up to

about 6.2 to 6.3 inches (SVL).

Housing and Enclosure

Enclosure System: Primarily Arboreal. Housing must be sealed, well ventilated, and escape proof. Hatchling and juvenile chameleons up to around six to eight months can be maintained in roughly a 20 gallon tall enclosure, but be sure to not use too large of enclosures as they can become stressed and have greater difficulty finding their food. Most adult chameleons should be kept in at least a 30 to 50 gallon tall or equivalent sized 18" x 18" x 36" enclosure. Glass or screen enclosures can be used depending on your household's ambient temperature and humidity. Providing a substrate is optional as chameleons are arboreal and will seldom use it, but substrates that can be provided can include cypress mulch, sphagnum moss, chemical and pesticide free potting soils, or coconut fiber. Chameleons are highly arboreal and specialized lizards that require additional climbing, basking, and hiding opportunities by providing additional vertical artificial foliage, driftwood, branches, logs, and other furnishings. Most chameleons also will not recognize standing water, and should be misted, by hand or with a commercially available misting and/or fogging system to ensure they receive adequate moisture and hydration.

Temperature, Lighting, and Humidity

Provide a lighting and temperature gradient for Jackson's chameleons from 88 degrees F to 95 degrees F. A basking temperature of about 85 to 95 degrees F. should be provided. Use an infrared night time bulb to create nighttime temperature gradients of 75 to 85 degrees F. Use florescent, broad spectrum, and UVA/UVB lighting, as well as exposure to natural sunlight for optimal health of Jackson's chameleons. Providing the correct amounts of UVA/UVB overhead incandescent and florescent lighting, and calcium-to-phosphorus ratios is essential for ensuring the health and overall well-being of Jackson's chameleons in captivity. Without UVA/UVB, or adequate amounts of it, they can be susceptible to the abnormal bone growth and development known as Metabolic Bone Disease (MBD), and other health and development maladies. Also be sure to spot clean the enclosure for urates, feces, or uneaten food at least twice per week. Be sure to periodically replace the substrate, clean, and disinfect the enclosure and its furnishings at minimum every 2 to 3 months. More specific lighting, heating, and humidity product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well. Maintaining the correct relative humidity is a very important component of chameleon care, and Jackson's chameleons require levels at, or around 75 to 100%.

Feeding, Diet, and Nutrition

Insectivorous*;* In the wild, Jackson's chameleons are primarily insectivorous, feeding on insects and other invertebrates they can locate and capture using their specialized eye-sight and long sticky tongues. In captivity, feed Jackson's chameleons a variety of appropriately sized feeder insects such as crickets, roaches, mealworms, superworms, and waxworms. Feeder insects should be gut-loaded in order to increase their optimal nutritional value. Jackson's chameleons also require additional calcium and vitamin D3 supplementation 1 to 2 times weekly or as otherwise directed for optimal health and development. This is in order to prevent Metabolic Bone Disease (MBD) and other growth and nutritional deficiencies. Their feeding frequency will depend on the age, size, and overall health of your animal. Food can be given by hand or in a small dish mounted off of the enclosure's floor for arboreal animals. Use care as to not overfeed them, as obesity and other health related issues can become an issue. More specific dietary and supplementary product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

Handling

Jackson's chameleons will generally not tolerate frequent handling, and it should be kept to low

levels. Should a chameleon be handled, it is important to remember to not forcefully pick up the animal, which may lead to further stress and/or injury. Allow a chameleon to walk onto your hands or gently coax them to do so if possible. Generally, chameleons are better suited as display animals.
Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens

Contact

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