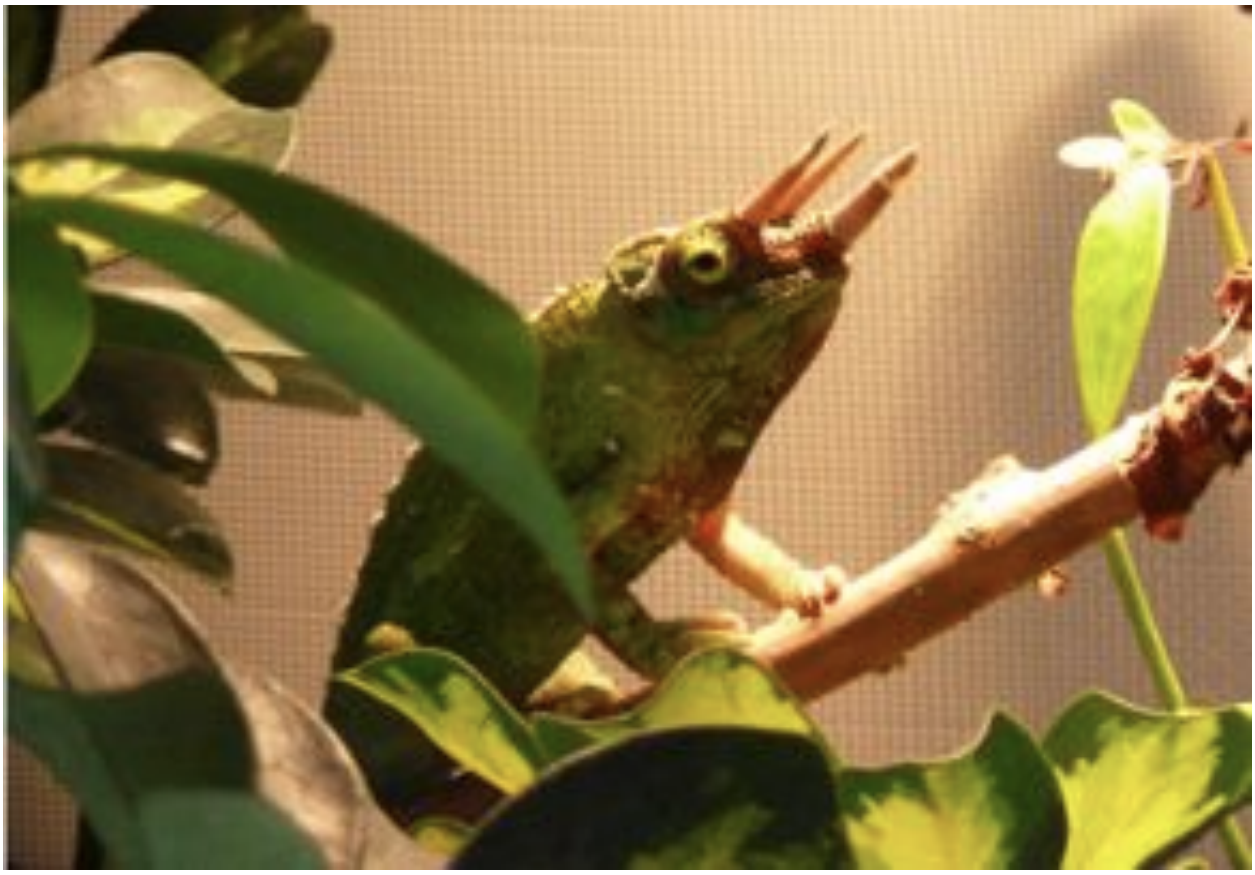
CARING FOR YOUR JACKSON'S CHAMELEON
(*Chamaeleo jacksonii xantholophus)*

by Giuseppe Vercellotti

GENERAL INFORMATION

Jackson's chameleon (*Chameleo jacksonii)* is one of the most popular chameleons. The males of this species are characterized by the presence of three horns, which give them a "miniature-triceratops" look. The female of the species may or may not have horns, depending on the subspecies. As all chameleon species, the Jackson's chameleon has several notable features, including the ability to move their eyes independently and a long, sticky tongue that is used to capture preys from a distance. Additionally, they can change their skin color in relation to mood and temperature and exhibit specific adaptations to arboreal life, such as clamp-like paws and a prehensile tail. Like most mountain species of the genus, *C. jacksonii* is ovoviviparous, meaning that the female carries fertilized eggs in her body for several months until the young are ready to hatch.



Male *C. jacksonii xantholophus*.

Jackson's chameleons are originally from Kenya and Tanzania, where they are typically found at mid-high elevations. Three subspecies of *C. jacksonii* have been described and differ in coloration, size and horn expression in females. One of the subspecies (*C.*

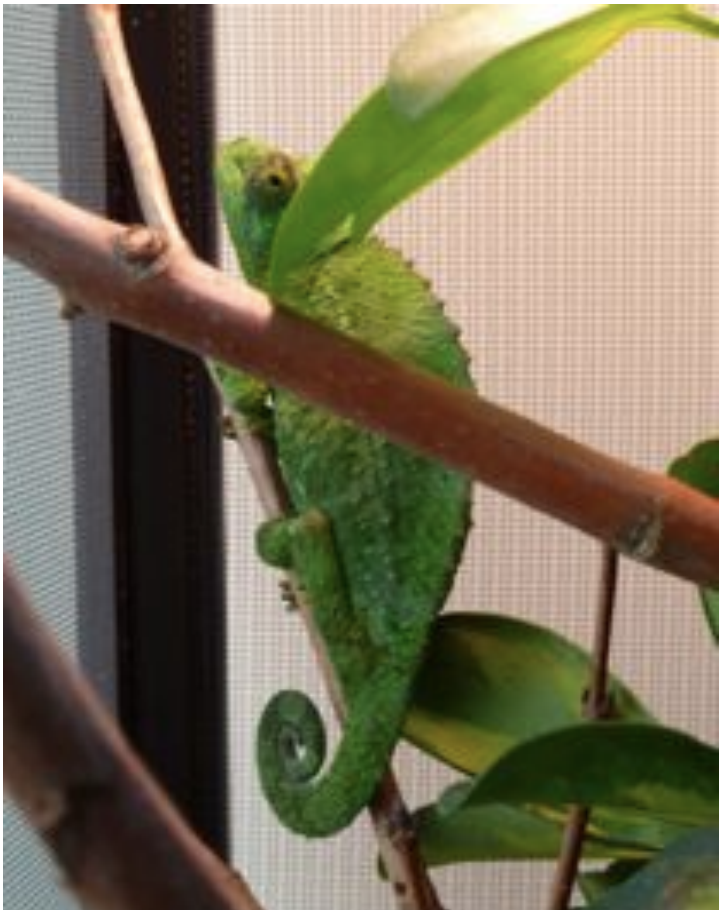
jacksonii xantholophus) was introduced to Hawaii in the 1970's and rapidly colonized several islands of the archipelago. This subspecies is the one most commonly available in the Unites States, either wild caught (WC) in Hawaii and Africa or captive bred (CB) thanks to the efforts of breeders across the country. Typically, CB animals are preferable to WC ones because they are more accustomed to human presence and less infested by parasites.

TEMPERATURE AND HUMIDITY

The secret to successfully care for your chameleon is dedication. The first step is to gather information on the species, its natural habitat and dietary requirements. Chameleons generally require more care than other animals because they are not as tolerant to stress and suboptimal environmental conditions. Typically, chameleons require well-defined temperature and humidity conditions and do not enjoy being handled, even though inter and intra-specific tolerance to stressors can vary greatly. The best approach to their captive care is to reproduce their natural habitat as closely as possible and to avoid disturbing them. In the case of Jackson's chameleons, it is important to keep temperatures around 70-80 °F (~20-27 °C), with a vertical temperature gradient provided by a basking spot lamp placed atop a corner of the enclosure. A temperature drop of 10-15 °F (~5-10 °C) at night is preferable but, while crucial to guarantee proper neonatal development and survival, apparently not essential for juveniles and adults.

Male *C. jacksonii xantholophus* basking.

Jackson's chameleons are a mountain species from tropical and subtropical Africa. They require moderate-high humidity levels around 50-70%, ideally with higher humidity in the early morning and decreasing humidity during the day. These daily humidity gradients can be reproduced relatively easily when an automatic using a misting system. Since the humidity requirements of the species are much higher than those of a typical home (20-40%), it is important to increase humidity in the enclosure by furnishing it with live plants, spraying water at least a couple times a day and/or using misting/fogging systems.



Female *C. jacksonii xantholophus*.

DIET

Chameleons are carnivore reptiles that feed primarily on insects, even though the larger species have been observed to prey also on small mammals and birds. In captivity, *C. jacksonii* readily accepts a number of different feeder insects of appropriate size. A general rule of thumb when determining the appropriate size of feeder insects for your chameleon is to select insects whose length does not exceed your chameleon's snout's breadth. Newborn *C. jacksonii* are best raised on fruit flies (*Drosophila sp.*) and pinhead crickets; as your chameleon grows, it will eat houseflies, crickets of increasing size (3/8", 1/4", 1/2", 3/4", 1") and a number of small-sized worms.

Newly hatched *C. jacksonii xantholophus*

It is extremely important to guarantee that your chameleon's diet is varied and rich and to ensure that different nutrients are provided via supplementation and gut-loading. Supplementation typically refers to sprinkling feeder insects with calcium and vitamins available commercially; gut-loading refers to providing feeder insects with a diet varied and rich in vitamins and nutrients. I personally employ both methods, but have a preference for gut-loading, which provides a diet closer to what chameleons would find in the wild. Additionally, a chameleon's diet should include a variety of different feeders, offered routinely as part of a balanced diet. Even when properly gut-loaded, different feeders are rich in different nutrients and I recommend avoiding a diet exclusively based on any feeding insect. While crickets may represent the staple food, it is best to offer also other prey items, such as meal worms, fly larvae, flies, Phoenix® worms, butter worms, wax worms, hornworms and silkworms. I typically offer different feeders on a daily basis, making sure not provide an overall balanced diet. To this end, it is ideal to keep a log for each chameleon, where dietary and health information is recorded.

The following table shows the nutritional value of the most common feeder insect:

	Crickets	Meal Worms	Wax Worms	Fly Larvae	Butter worms	Phoenix® Worm
Moisture, %	69.07	62.44	61.73	68.18	50.54	
Fat, %	6.01	12.72	22.19	7.81	5.21	9.4
Protein, %	21.32	20.27	15.5	15.58	16.2	17.3
Fiber, %	3.2	1.73	7.69	3.46		
Ash	2.17	1.57	1.02	1.4	1.04	
Ca, ppm	345	133	283	874	429	8155
P, ppm	4238	3345	2161	2405		5355
CA/P ratio %	0.081	0.04	0.131	0.363		1.523

** Nutritional values provided by feeder insect breeders/sellers. Actual values may vary depending on feeder insect diet.*

SETUP

Here is everything will need to prepare a home for your new Jackson's chameleon:

- ***Screen Cage*** – A screen cage of 18"x18"x24" is good for adults, but you may

consider getting a smaller one until your chameleon gets bigger. If you decide to go big from the start, make sure that the food is provided in deli cups, easily accessible. Free roaming prey in an enclosure that is too big may lead your chameleon to starve!

- ***Basking Lamp*** – These are light bulbs for basking spots designed to produce heat in a well-defined area. Clamp lamp holders are needed, so that you can attach the lamp to the cage. This will create a heat gradient ideal for your pet.
- ***UVA/UVB light*** – These fluorescent lights are specifically designed to provide reptiles with the appropriate amounts of ultraviolet radiation that the chameleon will need for Vitamin D metabolism.
- ***Timer*** – It is advisable to have a timer to control both basking spot and UV lights. Day-night light cycles should be timed in such a way that your chameleon is exposed to light for an adequate time every day.
- ***Plants*** - I recommend live plants, in particular *Schefflera*, *Hibiscus*, *Ficus* and *Pothos*. For Jackson's chameleons' enclosures I prefer *Schefflera* to other plants, as it has dense foliage and sturdy stems that will easily bear the weight of your chameleon. Live plants are better looking than plastic ones and help controlling humidity. Other plants may be ok, but check they are not poisonous. Make sure to wash all plants with hand soap solution and to rinse them completely prior to introducing them in the chameleon's enclosure. I generally place 2" of gravel at the bottom of the plant's pot to ensure proper drainage of excess water and avoid root decay.
- ***Branches*** – In addition to live plants, you should plan on furnishing your chameleon's cage with tree branches of appropriate sizes (1/4" to 1/2" in diameter. You may collect branches anywhere, but make sure to wash them with hand soap solution and to rinse them completely prior to introducing them in the chameleon's enclosure.
- ***Dripper/Mister*** - A dripping cup for water is important to guarantee your animal has drinking water supply (they won't drink off cups) and maintain humidity. If you go with the cup, you may want to spray water in the enclosure twice a day. An automated system replaces the need for a dripper and spraying, is more convenient for the keeper but also more expensive. When using a misting system, thanks to a digital timer you can recreate humidity gradients throughout the day that best resemble the natural habitat of your chameleon.
- ***Temperature/Humidity Gauges*** – Gauges are needed to monitor the climate of the enclosure and make any necessary adjustments to recreate conditions similar to those of the chameleon's natural environment.

REFERENCES

Necas, P. 1999. C*hameleons. Nature's Hidden Jewels.* Krieger Pub Co, 348p. – This is the best book available on chameleons; it describes their taxonomy, origin, anatomy and some physiology, captive care and reproduction. It includes species-specific sections and color pictures.

Le Berre F. 1995. *The New Chameleon Handbook*. Barron's Educational Series, 128p. – This is a good book for beginners; it provides general information on physiology, selection and care and includes a number of color pictures.

De Vosjoli P, Ferguson G. 1995. *Care and Breeding of Chameleons.* Advanced Vivarium Systems, 128p. – This book is a great reference for anybody who is interested in keeping and breeding Panther, Veiled, Jackson's and Parson's chameleons. The book discusses each species separately, reviewing its natural distribution and behavior, captive care and reproduction.

Manchen K. 2010. Jackson's Chameleons (Trioceros jacksonii) in Captivity. Chameleons! Online E-Zine, July 2010. (http://www.chameleonnews.com/10JulManchen.html)

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