

Basilisks

Captive Care and Breeding

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Few could argue that one of the most spectacular lizards that can be part of one's herpetological collection is the Green Basilisk (*Basiliscus plumifrons*). Its bright green coloring, large dorsal fin and caudal fin (found in the male) brings back a Jurassic nostalgia to the observer.

Four known species of basilisk exist and are distributed from tropical Mexico down through Central America to northern South America. *Basiliscus vittatus*, commonly known as the Brown or Striped Basilisk, is found throughout southern Mexico, parts of Central America, and into Colombia. *Basiliscus basiliscus*, the Common Basilisk, is distributed throughout Central America and Colombia. *Basiliscus galeritus*, the Western (or Red-headed) Basilisk, inhabits western Colombia and Ecuador up through Central America. Lastly, the Green Basilisk, *Basiliscus plumifrons*, is resident to Central American rain forests in Panama, Costa Rica, and Nicaragua.

The reptile aficionado who frequents the local pet shops is likely to encounter three of the four mentioned above: *plumifrons*, *vittatus*, and *basiliscus*. The males of these species grow to lengths of up to three feet--most of which is tail. Upon maturity, raised dorsal and caudal fins appear and give them an exotic and enchanting appearance. Males tend to be highly territorial and keeping multiple males in small enclosures is inadvisable. Fighting will almost always occur, resulting in dominance over weaker males which will not thrive under such stress. Males tend to exhibit head bobbing as both a threat gesture and a courtship behavior to attract potential mates. Female basilisks are comparatively smaller and lack the ornamental fins of their male counterparts.

These lizards are arboreal and prefer locations near water. Being easily frightened, the lizard will drop from a branch overhanging a pool of water and scurry off to seek protection. Having specialized scales on the bottoms of the rear feet, basilisks are able to run across the surface of water for some distance before breaking the surface tension and swimming away hurriedly.

They have been thus dubbed the "Jesus lizard" in parts of their native countries. In captivity, these lizards tend to maintain their somewhat skittish nature and do not make the best pets for those who wish to handle their pets frequently.

Housing & Maintenance

Basilisks generally do well in captivity, provided their minimum requirements are met. They can be kept in standard glass aquariums with locked screen covers. The tank size corresponds to the number of animals one wishes to maintain. The author maintains a small group (three females and one male) in

a 55-gallon aquarium and has been successful with this type of setup. As mentioned earlier, only one male per enclosure should be housed with two or three females.

Large, sturdy climbing branches should be included as cage furniture to satisfy the arboreal nature of these animals and to mimic their natural environment. Potted plants such as pothos, dracena, or philodendron can also be added to enhance the beauty of the enclosure and add to the lizards' sense of security.

Coming from the tropical zones of the Americas, basilisks need temperatures in the mid-70s up through the 80s. Relative humidity requirements vary among species and depend on the keeper's goal. Humidity at about 60-70% is acceptable. This can be accomplished by a daily misting, or setting up a system with a timer to mist several times per day. As an example of changing humidity needs, in *Basiliscus basiliscus*, relative humidity is increased to upwards of 80% to induce breeding.

As with most captive reptiles or amphibians, full-spectrum lighting is necessary for the synthesis of vitamin D3 and utilization of calcium. Exposure to natural sunlight is beneficial. Remember that the sun's ultraviolet light is filtered by the glass sides of the aquarium; the keeper can utilize an outdoor screen enclosure for brief periods of exposure.

Also, basilisks enjoy a basking site, and as with all cold blooded reptiles, these lizards regulate their body temperatures by moving back and forth between heat sources and shaded areas. Therefore, the keeper should provide open exposure to heat as well as to shaded areas to aid in thermoregulation. A ceramic heating element suspended above the cage does not emit light but is a good source of heat.

Diet

Basilisks enjoy a variety of insects and readily accept crickets, mealworms, Zoophobia, wax worms, grasshoppers, spiders, and an occasional pinkie mouse. Their food should be dusted with a fine powder vitamin supplement and calcium supplement with vitamin D3 about once per week.

One may also give feeder crickets a vitamin-enriched diet. Rather than using potatoes to sustain large amounts of crickets, feed them oranges, shaved carrots, and rolled oats to gut-load the prey items; when the lizards dine on these crickets, the basilisks will enjoy the prey's vitamin-enriched diet as well. Gut loading has been cited in much of the herpetocultural literature. As for pinkie mice, these can be offered once a week or less, and can also be dusted with a supplement.

Breeding

Successful breeding results from several factors: manipulation of humidity, temperature, and photoperiod, health of specimens to be bred, and careful incubation of eggs. For *Basiliscus basiliscus*, high relative humidity is necessary to stimulate breeding (about 80% seems to be what is needed).

Increased temperature following a cooler dry period is also warranted. Temperatures in the mid- to upper 80s is optimal. A photoperiod of 12 hours light to 12 hours dark seems to be the best ratio. These guidelines can also be used for *Basiliscus plumifrons* and *vittatus*; however, in the latter a lower relative humidity will also be effective in inducing breeding behavior.

One should only choose healthy specimens with ample fat stores in the tails. They should not appear emaciated, nor should their abdominal regions be flaccid to the touch. Weak specimens should be given adequate time to gain strength and weight before being subjected to breeding stresses.

After choosing healthy specimens and following the conditioning procedures above, one can begin to introduce females to the male. Separating females from males prior to breeding increases likelihood of successful copulations. The male demonstrate interest in his soon-to-be concubine by repeated head bobbing gestures followed by inching closer and closer to their targeted female. The female may respond positively by lowering her head and raising her tail. This behavior further cues the male. After repeated head bobbing by the male and subsequent acceptance by the female, the male proceeds to seize the female by the flap of skin on the back of her head. Copulation may last as long as 20 minutes, but averages 10 minutes.

Multiple successful copulations increase the likelihood of viable fertile eggs. Gravid females plump up after a week or two, and by the third week begin looking for a suitable site to deposit the eggs. Prior to this, a mixture of damp peat moss, soil, and sand should be placed in the breeding tank as an egg-laying medium for gravid females. Females use a receptor system in their snouts to judge proper temperature and humidity of the deposit site; while burrowing, females frequently point their snouts into the burrow to check if these conditions are adequate.

Clutch sizes vary between the species. In *Basiliscus basiliscus*, clutches range from 8-18 eggs (averaging 12). In *Basiliscus vittatus*, maximums of 12 have been noted, but averages are lower (around five to seven eggs). *Basiliscus plumifrons* may lay up to 15-17 eggs per clutch. These lizards are known for their ability to lay multiple clutches per season, sometimes up to four or five. In general, clutch depends on the age, size, and health of the female.

Eggs should be removed and marked on their tops with a pencil in order to preserve their original orientation. The eggs are then transferred to a circulated air incubator and placed in a mixture of water and vermiculite (1:1 by weight). Eggs should be placed about two-thirds down, with their tops slightly visible. A thin layer of damp sphagnum moss may be placed on top to increase humidity. Incubation temperatures should be maintained at around 84°F, with a high relative humidity, especially during the first four weeks.

Hatching occurs at around eight to ten weeks and occurs over one to two days. Hatchlings emerge from the leathery eggs by way of their egg tooth, which later drops off. Young basilisks should be left in the incubator until the

yolk sac is absorbed. After this, they can be placed in a separate tank which is set up similar to their parents enclosure, and reared on small one- to two-week-old crickets and wax worms.

They reach sexual maturity within 18-24 months. However, fighting among males may be observed as early as five months, and males should be separated at this time. Hatchlings have high calcium requirements and should be offered calcium- and vitamin-enriched insects often. Providing clean water regularly is also a must.

Diseases & Disorders

In captivity, basilisks are subject to a variety of diseases that are common to captive-raised reptiles. Frequently, one may note that the tips of the snout is abraded on certain specimens. This is caused by continual rubbing against the tank's barrier. In general, basilisks are unaware of the glass or screen that surrounds them and therefore try to move forward in a vain effort. While it can be treated easily, advanced cases of rostral sores can result in complications, including severe infection and subsequent death.

Another commonly seen disorder occurs in hatchlings and adults who do not have adequate ultraviolet light, or who lack calcium or vitamin D3. Metabolic bone disease is characterized by bone deformities and softening of bone tissue and eventual death if untreated. Some deformities may not clear up after treatment so early intervention is essential.

Stomatitis, or mouth rot, is seen in many reptiles. Caused by bacteria which forms in and around the jaw line, it can be treated by a veterinarian with topical antibiotics. Specimens who suffer from stomatitis often go off-feed and become weak and lose weight. Regular checking of the oral cavity can curtail advanced stages of the disease. The oral cavity should appear pink and healthy. Any caseous matter or spongy masses could be a sign of stomatitis and the animal should be taken to a veterinarian for diagnosis and treatment.

External parasites such as ticks or mites may plague some specimens, especially imports. Ticks feed off a host by drawing blood and nutrients which would otherwise go towards the growth and repair of the host's cells and body. Carefully remove the ticks by using a pair of sterile tweezers or forceps to gently pull the parasite from the basilisk's body. Betadine solution can be applied to decrease risk of infection.

Some basilisks can also harbor internal parasites such as protozoa and nematodes. Imports tend to be at greater risk of parasite infestation, but captive specimens exposed to parasites may also become infested. Characterized by loose, runny stools and weight loss, parasitic infestation can be diagnosed via fecal sample examination by a veterinarian and treated accordingly.

While basilisks are susceptible to these problems, if treated early they can recover and be enjoyed by the advanced hobbyist. Green and Brown Basilisks especially make beautiful additions to a collection. Trends indicate

that captive-bred specimens will continue to be available through private breeders.

Although fairly plentiful in the wild, encroachment on their habitat coupled with deforestation may impact the future of this species. It is the author's hope that this article will stimulate more interest in such wonderful and beautiful reptiles