

A Great Gecko to Keep— *Uroplatus henkeli* in Captivity

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Introduction

Henkel's Leaf-tail Gecko, *Uroplatus henkeli*, is the most commonly kept and bred member of the Malagasy Leaf-tail genus *Uroplatus*. They are a native of the Lokobe Forest on the island of Nosy Be, off the north coast of Madagascar, plus a limited range within northern mainland Madagascar. Their habitat is humid forest. Adults can reach between 9 and 10 inches (23-25 cm) in total length, making them the second largest member of the genus after *U. fimbriatus*. The species is very similar to *U. fimbriatus* and was only described as a separate species by Bohme and Ibsch in 1990.

In common with some other large Leaf-tails such as *U. fimbriatus* and *U. sikorae*, this gecko mimics tree bark in appearance, having a flattened tail and cryptic coloration to help them blend in with their surroundings. In addition, *U. henkeli* has a fringe of skin around the lower sides of its head, body and legs which merges the outline of the body with its background and reduces the shadows cast by the gecko. Being nocturnal, they spend the daylight hours hanging vertically on tree trunks. Even when in the open, these animals can be hard to spot, so effective is their camouflage. *U. henkeli* exhibits a wide range of coloration, some specimens being simply a mottled gray or brown while others are striped, lichen-patterned, or have contrasting patches of white or cream. There is also some ability for these geckos to change their color and pattern. They often assume a more contrasting coloration at night.

Nocturnal activity is quite different from their daytime routine. Henkel's Leaf-tails come to life like animated gargoyles after the sun goes down. Their actions are very controlled and deliberate, somewhat reminiscent of chameleons, as they patrol or sit alert on the lookout for their next meal. Not having the chameleon's tongue, *U. henkeli* tense their whole body like a spring and launch with considerable speed and force at prey. Often they hang on to a branch with their back feet and return to their original position once they have made a strike.

Another interesting facet of behavior is the use of their tail. They often wave it back and forth rhythmically whilst walking. Different types of tail waving are displayed when food is sighted and during courtship. A slow, controlled wave often indicates that potential prey has been sighted whilst a fast tail vibration precedes mating.

Captive Environment

Henkel's Leaf-tail has proved to be the easiest *Uroplatus* species to maintain and breed in captivity due to their general hardiness and ability to withstand higher temperatures than most of their relatives. Although they can endure brief periods with temperatures above 32°C, *Uroplatus henkeli* should be kept somewhat cooler. Daytime highs of 25–28°C and nighttime lows of 18–22°C are adequate. Cooler temperatures at night are easily tolerated. My herp room routinely drops to 14–16°C during the winter months. In the wild, this species has been observed breeding at temperatures of 10–12°C (low 50's F) (Baldwin, 1997).

In addition to a suitable temperature range, correct humidity is also extremely important. Daytime humidity of 70–80% and nighttime humidity of 90–100% works well. Hand or automatic misting morning and night will do in most cases. It is important that the substrate does not become saturated and remain constantly wet as this can encourage the proliferation of bacteria. Setting up the vivarium so that some areas are drier than others will allow the geckos to select a comfortable spot. A small artificial waterfall or water bowl with an airstone in it can raise the humidity and create an appropriate gradient.

Full-spectrum lighting is recommended to benefit both plants and geckos. Although they are nocturnal, in the wild Henkel's Leaf-tails often sleep on tree trunks where they are exposed to ultraviolet (UV) light from the sun. I have found weak full-spectrum lighting (Vitalites) suspended directly over the vivaria to be adequate. In my set-ups, the animals often sleep fairly close to the light source and thus are able to benefit from the weak UVB generated from this type of lighting. If dietary

supplements containing vitamin D₃ are not used, stronger UVB lighting is required. Adding a blacklight (BL) or other more powerful fluorescent tube made specifically for reptiles may work. If the local climate is suitable and screen caging is used, the geckos can be placed outside to receive natural sunlight.

Enclosures should be as large and as tall as possible when housing adults. An ideal size would be anywhere from 1 to 2.5 meters high with a floor space of over 0.6 sq. m. This being said, I have successfully maintained and bred this species long-term in vivaria of only 0.6 m in height. Hatchlings do well in small plastic pet keepers where feeding can be closely monitored. After a couple of months, they can be moved into larger quarters.

Glass or acrylic enclosures with screen tops or all screen enclosures are suitable. In areas where humidity is low, the glass or acrylic types will retain humidity better. If the ambient humidity is high, the screen cages are better as the increased ventilation helps to keep bacteria levels down.

The substrate can consist of orchid bark, soil, coconut coir or peat moss. I prefer a mixture of soil, bark and coir covered with areas of moss and dried leaves. Hatchlings can be kept on paper towel with a few leaves scattered on top.

The cage furnishings should consist of smooth branches, large pieces of bamboo or cork bark arranged in such a way as to provide climbing and resting areas. *U. henkeli* prefers to sleep on smooth vertical surfaces. If suitable branches are not available, they will most likely be content to sleep on smooth vivaria walls. Adding sturdy plants such as *Sanseveria* spp. will help to increase humidity, provide additional climbing areas and surfaces from which the geckos can drink following misting.

Diet

Uroplatus henkeli will readily hunt crickets and waxworms. They can also be fed superworms or roaches from forceps or by using feeding dishes. These last two food items will usually disappear into the substrate before being eaten if they are simply broadcast into the vivarium. If they can be obtained, land snails are another very useful food which adds calcium to the diet (Robertia, 1999). Judging by the way my animals seem to take an interest in hatchling geckos should I happen to set a small enclosure within their sight whilst cleaning, I am sure that they would not hesitate to eat other small lizards.

In captivity, dietary supplements are important, especially for breeding females and juveniles. Unless strong UVB lighting is used, a supplement containing both calcium and vitamin D₃ is recommended. One product that works well is Miner-All I (indoor) as it sticks very well to prey insects. Most females will learn to drink from an eyedropper a solution made of supplements dissolved in water. Many will also lick baby food mixed with supplements off the tip of their snout. This can prove very useful during the breeding season when females utilize large amounts of calcium.

Breeding

If kept as described in this article, *U. henkeli* will breed quite readily in captivity. In some cases, it may take several months before a pair produces viable eggs. In others, it can happen within the first two months. Often several clutches of infertile eggs will be deposited in the open before the first clutch of fertile eggs is laid. Infertile eggs will be poorly calcified, soft and misshapen.

Pairs or trios of one male to two females can form breeding groups. I have not observed any aggression between females. Males may be aggressive breeders but will normally back down if the female vocalizes or bites in his direction. Once the male's advances, consisting of tongue flicking, a few jerky movements and rapid tail vibrating, have been accepted, the actual act of mating is quite gentle. The male does not employ the usual saurian neck bite but instead he merely rests his head and one leg on top of the female and brings his vent into opposition of that of the female. Mating can last over an hour (personal observation).

Normally clutches of two hard-shelled eggs are produced. Occasionally only a single egg will be laid. Before egg deposition, the female will start to explore the enclosure and she may push her snout into the substrate as she does so. Once a suitable site has been found, she will hollow out a slight depression with her hind feet and remain there until the eggs have been laid and the shells have hardened. As the shells harden, they are rolled in the soil so that particles of substrate stick to the shell and provide some protective camouflage. The eggs are not buried. Often they will be deposited

in a sheltered nook or partly or completely under surface debris such as dead leaves or moss. The whole process often takes a considerable time and morning checks will often reveal the female still nesting. I have noticed that females in my collection shed their skin one to three days before egg-laying. This has proved to be a helpful indicator as to when to search for eggs.

Eggs can be laid at anytime of the year, with the heaviest production being in the summer and fall. Some females will stop breeding for between two and four months, starting in early winter.

Incubation and Care of Hatchlings

Incubation lasts for 80–90 days at a temperature of 24–26°C. One method of incubation that works well is to place the eggs on dry vermiculite in a small jar lid and then set the lid on top of wet vermiculite inside a deli container that has a few small holes in the sides and top. Start with one cup of vermiculite and add one-half cup of water. Add more water if necessary to bring the water level to within one-half inch of the surface of the medium. Do not drain excess water unless it is equal to or greater than the top level of the vermiculite. The vermiculite must not dry out as high humidity is very important to successfully hatch strong neonates. In addition, an open container of water placed inside the incubator will help keep humidity levels elevated. Robertia (1999) advocates suspending the eggs on a hardware cloth hammock above distilled water inside a tall deli container with three small holes below the eggs and three more in the lid.

Healthy hatchlings will shed soon after hatching and will look like miniatures of the adults. An incomplete first shed is a sign that the gecko is weak and may be dehydrated. Administering a diluted electrolyte solution may help in such cases. Sometimes the tail may be slightly curled or even bent at an angle, but if the animal is otherwise strong and healthy it will straighten and flatten as it grows.

Most hatchlings will begin feeding on small crickets and/or waxworms within four to ten days. One that does not eat on its own after two weeks, sooner if a decline in condition is noticed, should be hand-fed crushed crickets, waxworms or other insects to help get it started. Some individual hatchlings will ignore food items on the vivarium substrate. In these cases, adding slanted pieces of cork bark or branches that the prey can easily climb up on will help to bring the insects within striking range. Juveniles do well if fed three to six insects four or five times per week. With good feeding adult size can be attained in twelve to eighteen months. Some individuals have large appetites and grow very fast, while others are slow but steady in gaining weight. A varied diet is important as hatchlings may start taking one type of food while ignoring others during the first few weeks.

In my experience, *Uroplatus henkeli* has proved to be hardy and productive, although it does require more attention and specialized care than some of the more common gecko species. I would not recommend Henkel's Leaf-tail to the novice herpetoculturist but, if they do their homework, anyone with some experience with lizards should be able to keep and possibly breed this species. It is a great gecko to keep.

Literature Cited

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All photographs by the author