

## Marsupial Treefrog Care and Information

**A look at the marsupial treefrog life cycle and care information.**

*By Lynda Rex*

Marsupial treefrog by Bill Love. The marsupial treefrog is conspicuously missing from the majority of reptile collections. This is unfortunate, as my husband and I have found these frogs to be both hardy and fascinating captives. The marsupial treefrog is native to Peru and other bordering countries, and dwells in the humid forests of this area. Marsupial frogs do not produce and lay clutches of eggs like most frogs, but have their own method of reproduction. According to available accounts, the male frog fertilizes the eggs externally and then places them in a pouch on the back of the female frog. The female carries the eggs until they reach tadpole stage. She then deposits them in an area of protected water. Although we have not had the opportunity to witness this process, we have witnessed the results.

Information on reproduction in the natural habitat suggests that the tadpole stage of this species may last for as much as a full year. The water over much of their range is barely above freezing for part of the year and the cold temperature delays the transition to the frog stage.

One reason this frog is not usually available is that it is infrequently collected in its native habitat. This is surely working in the frogs' best interests! Perhaps the popularity and enjoyment of this species will grow with the availability of captive-bred specimens.

### Description

As with many frog species, there is a vast size difference between the sexes. While the male may not be particularly impressive, the female is quite beautiful. Males are approximately 2 inches in length, females, 4 to 5 inches.

The male is rather common in appearance, being slender and having a golden brown coloration. The female, on the other hand, is a pastel green (varying in intensity during the day) with golden markings scattered over the body. In addition to size and color differences, the female tadpole "pouch" is clearly visible on the lower aspect of her back. This appears as a relatively large, horizontal slit with upturned corners. The females are noted to be much more active in the enclosures. Observation during both daylight and nighttime hours usually reveals the females out in the open and in clear view, while the males are more timid and prefer to hide.

### Setup and Acclimation

The breeding animals in our collection were wild-caught specimens. Upon receipt, these animals were introduced into very small enclosures. We used a 2.5-gallon aquarium for each pair. We start many animals in confined spaces to allow for ease of hunting. Sphagnum moss was used as a substrate and cork bark pieces used for hiding places. A small water bowl was added to each tank and partially covered with cork bark. Contrary to popular practice, we use only artificial plants in our breeder terrariums. We are convinced that keeping the cages clean and the bacteria count low is much easier when everything can be removed from the cage and disinfected. In addition to the moss and cork, each cage was furnished with small, artificial plants of various types. This resulted in a "full"-looking cage that provided multiple opportunities for hiding.

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Marsupial treefrogs by Bill Love. For the acclimation period, we placed the cages in a dim room with only low levels of artificial light. No heat or UVB was provided. Ambient room temperature was kept at 72 to 75 degrees Fahrenheit (22 to 24 degrees Celsius), day and night. During this period, we provided moderate cage misting once a day and fed crickets and occasional waxworm larvae. All prey items were coated with vitamin powder once a week and calcium twice a week. This acclimation period resulted in healthy pairs. No parasite removal was attempted. Being nocturnal, the animals ate only during the night. We make the assumption that amplexus must have also occurred during the night. We did little to disturb the frogs during this period (three to four months). After this time they were relocated to our "reptile room."

### Long-Term Habitats

With the move into our communal reptile room, several changes occurred within the frogs' environment. UVB light was added for 12 hours a day. The light was kept 18 to 24 inches above the cage to prevent over-exposure.

Humidity in the reptile room is kept at 60 to 65 percent, while the level of humidity in the acclimation room was only 30 to 40 percent. The level of humidity in the reptile room is provided by the use of two cold-air humidifiers running 24 hours a day. Moderate misting was continued and no heat was added. The temperature remained 74 to 78 degrees Fahrenheit (23.5 to 25.5 degrees Celsius) with occasional daytime increases to 80 to 82 degrees Fahrenheit (27 to 28 degrees Celsius) within the racks. The enclosure size was gradually increased over several weeks. As they became comfortable, each pair was moved first to a 5-gallon, and then to a 10-gallon enclosure. Other than the size change, the setup was kept identical to the acclimation setup.

After a period of time, swelling became visible on the back of one female. This swelling continued to increase over a couple of weeks, and it became obvious that she was carrying tadpoles. Since amplexus was not observed, exact gestation is not known. As the swelling increased, noticeable lumps began to appear beneath the skin of the back. The water bowl in this cage was cleaned and refilled every day in preparation for the tadpole "deposit." Aged well water was used in all enclosures. As time went by, the female was noted to spend an increasing amount of time exploring, and sitting in, the water bowl. The tadpoles were deposited during daylight hours.

#### Tadpoles

Upon arriving home on one particular evening, we found 40+ tadpoles swimming in the water bowl. Given the size and number of these tadpoles, it was quite amazing that one female had carried them!

The female was resting in the cage, in open view, looking much thinner but appearing healthy. She was fed vitamin- and calcium-coated crickets and began eating immediately. The tadpoles were removed to a "nursery tank." During the first few hours of life, the tadpoles bit each other almost continuously and we feared we would be unable to keep the tadpoles communally. This fear was unfounded, since this behavior ceased as soon as ample food was provided.

The tadpoles, on the date of deposit, had bodies that resembled split peas, both in size and shape. We offered fish flakes, which were taken immediately. From the date of deposit, feeding times often resulted in a "feeding frenzy" type of behavior. The nursery tank used was a 10-gallon aquarium with 2.5 to 3 gallons of water. For the first few days, bottled water was used as a precaution. After this time we switched to aged well water. The well water was from a very deep well and had no discoloration or odor. The tadpoles were raised communally, with all 40 being kept in one 10-gallon aquarium. The aquarium was set up with a bare glass bottom, floating artificial plants and a "sand shark" filter. While no airstone was used, the filter pump was set up to cause a slight "waterfall" effect, which served to oxygenate the water. The power setting on the pump was set to low, at first, to avoid entrapment of the tadpoles. No heat was provided and the water temperature was kept at approximately 72 to 75 degrees Fahrenheit (22 to 24 degrees Celsius). We felt that keeping the temperature low would promote growth in the tadpole stage, allowing the froglets to become larger. No UVB was provided. At times the tadpoles seemed to cluster near the pump, probably because the water was a degree or two higher there as a result of the pump and filter functioning.

#### Tadpole Feeding

During the first two weeks, the tadpoles were fed rather heavily by the standards of most frog breeders. They were given a moderate amount of food four to six times a day. While this may seem excessive by some, the tadpoles eagerly ate each time food was offered.

During the first few weeks, they were much more comfortable feeding at the bottom of the tank and often waited for the food to sink before consuming it. The flakes were then purposely saturated and placed on the floor of the tank. Growth was phenomenal with an approximate eight-fold increase in the size of the largest tadpole within the first two weeks. While this frequent, heavy feeding did cause an increase in water pollution, we felt that more frequent water changes were preferable to the loss of tadpoles to hunger. Initially, an 80 percent water change was required every other day. At the point when the density in the tank reached its maximum, water changes were required daily. This period lasted 10 to 14 days. Once the froglets began to be removed from the water, the frequency of water changes decreased. By this time, feeding had been reduced to three times daily. It was at this time that we had our only casualties.

Within two days, five or six tadpoles were consumed by the others. Those eaten were among the smallest. One tadpole had 80 percent of its tail bitten off, but did manage to survive and become one of our largest froglets. This behavior was alleviated by floating small pieces of kale or collard greens on the surface of the water. This gave the tadpoles something to consume between feedings. They ate this eagerly also. The tadpoles became so aggressive during feedings that when a hand was placed in the tank, to sink the food, the tadpoles would swarm my fingers (like tiny piranhas) and nibble at the flesh.

#### Metamorphosis

During week four, the first tadpoles began to develop limbs. Hind limbs appeared first, followed by arms (usually three to

four days later) and then facial changes, which seemed to happen in the span of only a few hours. While treefrogs usually begin to emerge from the water once limbs appear, this particular species seemed very content to remain in the water, surfacing to breathe at intervals. When the first frogs had nearly absorbed their entire tails and had not yet emerged, we decided to come up with a criterion for their removal from the water.

Tadpoles were removed from the water when at least 50 percent of the tail was reabsorbed, facial changes were apparent and surfacing to breathe was noted.

Even though we did provide climbing branches and rocks as soon as the first tadpoles began to develop legs, we feared that the frogs might eventually drown due to their reluctance to leave the water. This criteria, although experimental, was successful as we had 0 percent mortality removing the frogs in accordance with it. Size and developmental discrepancies were vast during this entire process. For example, at two weeks, some of the tadpoles had increased eight times in size, while others had barely grown since deposit. The process of conversion to frog was very scattered. Percentages are noted below:

Week #4: 43 percent

Week #5: 12 percent

Week #6: 21 percent

Week #7: 12 percent

Week #8: 10 percent

After week #8: 2 percent

These numbers represent the percentage of frogs removed from the nursery tank relative to the time required for metamorphosis. As you can see, the metamorphosis of the frogs was a long process. The very last to develop still had no legs when its last sibling was being removed from the tank! After the tadpole mortality in week three, the remaining tadpoles all survived to become frogs.

**Froglets**  
Over the period of the five weeks when the frogs were being removed from the water, a special tank was set up to house the new frogs. This tank was kept simple for ease of cleaning. A 10-gallon aquarium was set up with a wet paper towel substrate. To this tank was added artificial plants for hiding, a small artificial tree and a shallow water bowl with sloped sides. The only other furnishing was a bowl of damp sphagnum moss.

Froglets were not noted to eat until approximately two days after the tail was absorbed. At this point, they began to feed on dusted crickets. The frogs were already large enough to begin feeding on small crickets. The frogs' initial color was a dark green with occasional brown markings. Within a week the color became a vibrant pastel green and gold. These colors were comparable to the colorations of the adult female. Some frogs appear more vibrant than others. This may be a sexual difference seen even in early development. Within a short time the "tadpole pouch" began to become visible. While this might help in the determination of sex, the male can also have a fold of skin over the back that mimics the pouch! As sexual maturity is reached, the difference becomes obvious. The growth rate of the frogs is remarkable, with the largest frog growing to 2/3 the size of the father in only two months. It can only be assumed that the age of sexual maturity is relatively young. The total number of tadpoles produced in this clutch was 68. Of this number, 63 tadpoles survived to become frogs.

**Conclusion**  
This relatively unpopular and unknown frog is an extremely good captive animal. It appears to be hardy, adjusts well to captivity and has strong, healthy young. It has been a pleasure for us to work with the marsupial treefrog. We hope that others will soon gain an appreciation for them as well. There is something intrinsically fascinating about live-bearing reptiles, especially amphibians! We look forward to increasing our work with these types of animals, as well as others.