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FROGS

Red-eyed Treefrog

Agalychnis callidryas

Agalychnis callidryas is one of the most recognisable frogs in the terrarium hobby: leaf-green with bright red eyes, orange feet and blue and yellow flanks. It sleeps under a leaf during the day and wakes only when the lights go out. With steady warmth, high humidity and a tall, densely planted enclosure it is a rewarding frog to watch, but not to handle.

Family: Phyllomedusidae

Mild skin toxins

KEY FACTS

THE ANIMAL

Adult size	**4-8 cm** snout-vent length
Weight	**6-15 g**
Lifespan	**4-8 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest and wetland**
Skin toxins	**Mild** Wash your hands after contact and keep your fingers away from your eyes and mouth
Difficulty	**Intermediate**

CARE

Min. enclosure	**45 × 45 × 60 cm** L × W × H for 2 adults
Temperature, day	**24-28 °C**
Temperature, night	**20-22 °C**
Humidity	**60-90%**
Water	**Water dish** depth 2-3 cm
UVB	**Optional** Ferguson zone 1
Diet	**Insects**
Kept	**In pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**On leaves over water**
Sexually mature	**12-24 months**
Eggs per clutch	**10-100**
Hatching	**6-8 days**
Larval period	**35-60 days** from hatching to metamorphosis
Larval diet	**Algae/plants, complete diet and other tadpoles**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
IUCN	**Least Concern (LC)**

About the species

Agalychnis callidryas is a slender tree frog with long, thin limbs and large adhesive discs on the fingers and toes. The back is leaf green, the flanks have blue and yellow markings, the belly is white to pale yellow, and the feet are orange. The eyes are red with a vertical slit pupil, and when the frog sleeps they are covered by a golden, net-patterned nictitating membrane. At rest it tucks its legs under its body, so the vivid colours are hidden. If disturbed, it suddenly opens its eyes and exposes its flanks and feet. This can make a predator hesitate for a moment, and the frog uses that moment to escape.

Females are clearly larger than males. Males reach up to 55 mm and females up to 70 mm. Adults typically weigh 6-15 g. The flank markings vary with the distribution: in Costa Rica and Panama they can be blue, blue and red, orange or purple. Captive-bred colour forms are also available in the trade, including yellow, black and albino animals.

The species was described by Cope in 1862 as *Hyla callidryas* and today belongs to the family Phyllomedusidae.

Skin toxicity: The bright colours are not a warning of toxicity as in the poison dart frogs. The skin does contain several biologically active peptides intended to deter predators, so it is a genuine skin secretion. It is not described as dangerous to humans, and nothing suggests that the species is particularly toxic. The field is set to mild: wash your hands after working in the terrarium, and do not touch your eyes or mouth afterwards.

In captivity the species lives on average a little over 4 years, and some animals exceed 8 years; wild animals probably live about 5 years.

Read more: Buying animals: captive-bred, wild-caught and transport

Distribution and habitat

Agalychnis callidryas lives in Central America, mainly on the Caribbean side, from southern Mexico through Belize, Guatemala, Honduras, Nicaragua and Costa Rica to Panama. There are also records from northern Colombia. Most recorded observations come from Costa Rica and Panama.

The species occurs from sea level up to about 1,250 m and is common in many places. It is assessed as Least Concern (LC), but forest loss and collection for the pet trade put pressure on local populations.

> **Native range:** Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama and Colombia.

HABITAT

Agalychnis callidryas lives in humid lowland rainforest and secondary forest, always near ponds, swamps or other still water, which it needs for breeding. It stays high in the foliage, rarely comes down to the forest floor and climbs more than it hops. By day it sleeps on the underside of a leaf, and at night it hunts insects.

The breeding season follows the rainy season, which in the range lasts from May to November with a peak in June. Temperature and humidity in the wild are not known.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Agalychnis callidryas makes use of height, so the terrarium must be tall and have many large leaves to sleep on. A pair of adults needs a terrarium of at least 45 × 45 × 60 cm and three animals at least 60 × 50 × 60 cm. The species is best kept in a group of 4-8 animals in a correspondingly larger terrarium.

Plant densely with robust, large-leaved plants such as pothos, *Philodendron*, *Dieffenbachia* and *Ficus*, and supplement with branches, cork tubes and bamboo. Young frogs grow and thrive better in planted terrariums than in unplanted ones. The plants create small differences in temperature and humidity so the frog can choose for itself, and they provide shade from the light.

The substrate does not matter much, because the frog is almost never down there. Damp kitchen paper is easy to change and works well, but coconut fibre, sphagnum or a substrate with a drainage layer and leaf litter also work. Avoid small stones and bark, which the frog can swallow when it snaps at food. Mesh across three quarters of the lid keeps the air from becoming stagnant.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

Keep the terrarium at 24-28 °C by day and 20-22 °C at night. Unplanted terrariums easily become a few degrees warmer than planted ones. There is no winter rest.

Avoid draughts and large fluctuations, and do not place the terrarium near doors and windows. If the room cannot hold the heat, use a weak heat bulb above one of the lid's mesh sections or a thermostat-controlled heat mat on the side. Measure both high up and low down, because there can be several degrees' difference. A frog that sits sluggishly with its legs stretched out and wrinkled skin by day may be too warm.

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity should be 60-90 %. One misting a day gives about 60-80 %, and a spray system 1-2 times daily gives 80-90 %. Preferably mist in the evening when the frogs wake, and let the terrarium dry out a little during the day. This counteracts fungi and bacteria.

Use a hygrometer, and mist with dechlorinated tap water, rainwater or reverse osmosis water.

WATER AND WATER QUALITY

Provide a stable, shallow water bowl in the enclosure. 2-3 cm of water is enough so that the frog can easily climb back out. The frog does not drink much, but absorbs water through its skin. Ideally change the water daily, and always clean the bowl when it is dirty and at least every other day.

Treat tap water with a water conditioner that removes chlorine, chloramine and heavy metals, or use rainwater. Do not use soap or cleaning products near the water. If disinfection is needed, F10 diluted 1:500 can be used, and wear gloves when cleaning. The tadpoles need their own aquarium; see under breeding.

Read more: Quarantine and hygiene Read more: Rearing tadpoles

LIGHTING AND UVB

Provide 10-12 hours of light a day, primarily for the plants. The species needs no light beyond what the plants require, but a low level of UVB can be provided if possible. It is not known whether the species benefits from UVB, so it is optional; if you choose it, use a weak source (Ferguson zone 1) together with the plant tubes, and make sure there is plenty of shade among the leaves.

Read more: Lighting and UVB

FEEDING

The staple food is insects of suitable size: crickets, houseflies, blowflies and moths. A feeder insect must be no larger than the distance between the frog's eyes. Waxworms and small silkworms are also taken, but put them in a dish with high sides so they cannot crawl away and hide. The species takes smaller prey than other tree frogs.

Adults get 3-6 feeder insects three times a week. Juveniles are fed daily. Feed the crickets fruit, vegetables and oats before they are served, and dust them with a calcium and vitamin powder: for juveniles at every feeding and for adults at every second one.

Give the food just before the lights go out, because the frog hunts only in the dark. Chilled feeder insects in a dish with high sides, or a weak lamp in the room outside the terrarium that lures the feeders onto the glass, make it easier for the frogs. Carotenoids in the diet increase the females' growth and egg production and give redder skin; a one-sided diet can produce paler animals, so vary the food.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Agalychnis callidryas is strictly nocturnal and calm. During the day you will often see only a green lump under a leaf with its eyes closed, and that is perfectly normal. When darkness falls, the frog quietly climbs around among the plants, hunting and calling.

The species can be kept in pairs or small groups if there is space and plenty of perches. During the breeding season the males can fight quite a bit. The frog should not be handled, both because of the skin secretion and because its delicate skin is damaged by soap, cream and sweat. If a frog has to be moved, use a clear tub.

Breeding

SEXUAL MATURITY AND SEXING

Females are clearly larger than males, and this is the surest distinguishing feature along with the male's call. Sexually mature males develop small brown nuptial pads at the base of the thumb. The young become sexually mature between the end of the first year and two years of age. Breed only fully grown animals in good condition.

MATING

In the wild the species breeds in the rainy season. In captivity the rainy season must be imitated. This can be done with a month with only two light sprayings a week, a temperature lowered by about 3 °C, and less food. After that you return to the normal temperature, mist heavily at least twice a day and feed every night. When the males call and have nuptial pads, and the females are plump with eggs, the animals are moved to a rain chamber.

The rain chamber is a waterproof enclosure with 5-8 cm of water on the bottom, a submersible pump on a timer that lets it rain for a couple of hours several times each night, and an aquarium heater set to about 27 °C. Place large, smooth leaves over the water, and add a piece of cork the frogs can climb onto. Use at least two males per female, and put the males in a day or two before the females. If it does not succeed within 1-2 weeks, move the animals back, feed well for a week and try again. Change part of the water daily. Amplexus is normally seen within 1-2 days.

EGGS AND TADPOLES

The female lays the eggs in a clump on the underside of a leaf that hangs out over water, and she may lay several clumps in one night. A clump holds from about a dozen to over 100 eggs, typically 20-40. The eggs sit in a sticky jelly. Eggs on the glass in the rain chamber are also common. There is no parental care, so remove the adults once the eggs are laid, and switch off the rain.

If the eggs are over water, they can be left in place. Otherwise the leaf can be cut off and hung over an aquarium, for example with tape on the glass. When the tadpoles hatch, they drop into the water.

The tadpoles are omnivorous and feed on algae, plant matter and small particles, but they can also eat each other, so avoid overcrowding. An aquarium of 100 × 50 × 30 cm at 23-25 °C with a sponge filter and regular partial water changes works well, and they can be fed crushed fish flakes and spirulina powder in a 1:1 ratio. 20-30 tadpoles can also be kept in a tub of about 19 litres, with half the water changed twice a week and every other day as they grow, and fed daily with as much as is eaten within 10 minutes.

METAMORPHOSIS

The eggs normally hatch after 6-8 days if left in peace. The embryos can hatch earlier if the clump dries out or is shaken by a predator, and this produces smaller, less developed tadpoles. Therefore keep the air humid and do not disturb the eggs.

The hind legs appear after about 30 days and the front legs after about 36 days. Most tadpoles finish metamorphosis within eight weeks at a water temperature of 24 °C, but some take longer. Once the front legs have appeared, the tadpoles stop eating, and they climb out of the water before the tail is gone. Place a piece of cork or a branch in the water so they can get out, and keep a net over the aquarium, because the little frogs climb straight up the glass.

REARING THE YOUNG

Move the newly metamorphosed juveniles to a simple setup with damp kitchen paper, a shallow water dish and a few plants. Juveniles dry out easily, so keep it humid. 10-20 juveniles can stay in a 20-40 litre terrarium for the first month and are then moved to a taller terrarium.

Once the tail is absorbed, the juveniles take flightless fruit flies and 3 mm crickets every night. Dust the food with calcium and vitamins at every feeding. Sort the juveniles by size so the smallest are not outcompeted. Young frogs are often brown by day and green at night until they get older.

Health and common mistakes

Agalychnis callidryas tolerates husbandry mistakes poorly. The typical problems are:

- Dehydration and excessive temperature. The signs are lethargy, wrinkled skin and stretched legs. Check the thermometer and hygrometer immediately.
- Bacterial infections and intestinal parasites, especially in wild-caught animals. Buy captive-bred animals instead.
- Infectious diseases such as chytrid fungus and ranavirus. Quarantine new animals and use separate equipment.
- Pale colours and poor condition after a one-sided diet. Vary the food.

- Weakened bones from too little calcium and D3.

A healthy frog sits in the upper part of the enclosure during the day, has strong limbs and a rounded belly, and opens clear, red eyes when disturbed. A weakened frog often sits on the bottom and is dull in colour. Seek a vet with knowledge of amphibians if the frog stops eating, or has sores, swellings, or reddish or cottony areas on the skin, especially on the belly and the inside of the hind legs.

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.