herpy

FROGS

Gliding Leaf Frog

Agalychnis spurrelli

Agalychnis spurrelli is a tree frog of 5-9 cm from the humid lowland forests of Costa Rica, Panama, Colombia and Ecuador: green on the back with white spots, orange flanks and a dark red iris. It is nocturnal, lives high in the trees and can glide from branch to branch on its large webbing. In the terrarium it is hardy and breeds readily when the terrarium is kept clean and dries out by day.

Family: Phyllomedusidae Former name: *Agalychnis litodryas*

KEY FACTS

THE ANIMAL

Adult size	**5-9 cm** snout-vent length
Lifespan	**5-10 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest**
Skin toxins	**None known**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 45 × 60 cm** L × W × H for 4 adults
Temperature, day	**22-27 °C**
Temperature, night	**20-23 °C**
Humidity	**65-75%**
Water	**Water dish** depth 2-3 cm
UVB	**Recommended** Ferguson zone 2
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	**12-18 months**
Eggs per clutch	**30-110**
Hatching	**7-9 days** at 24-26 °C
Larval period	**42-63 days** from hatching to metamorphosis
Larval diet	**Algae/plants and complete diet**
Parental care	**None**

PROTECTION AND PAPERWORK

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

About the species

Agalychnis spurrelli is a slender, arboreal tree frog with large eyes and vertical pupils. Males are 5-6 cm long and females 6-7 cm, measured from snout to vent. Large females can exceed 9 cm, and size varies a great deal between populations.

The back is green, lighter by day and darker at night. Many animals have irregular white spots on the back with a black edge, and the pattern is unique to each animal, while some have no spots at all. The flanks are normally orange, the belly is white to cream, and the iris is dark red. Fingers and toes have adhesive discs. The toes are fully webbed and the fingers webbed to about three quarters. The large area of skin is used as a parachute when the frog jumps from a branch and glides out at an angle of up to 45 degrees. When climbing, it moves hand over hand.

The previously described species *Agalychnis litodryas* is now regarded as a variant of *Agalychnis spurrelli* that lacks the orange flanks. Young frogs do not have the full webbing; it develops only as they grow.

The species is calm and easy to keep, and several males and both sexes can be kept together outside the breeding season. By day the frogs sleep on leaves and panes, and they become active only after dark. Skin toxins are not documented in the species. Lifespan is not known; the figure in the box is borrowed from the genus.

Distribution and habitat

Agalychnis spurrelli lives in the humid lowland forests on the Pacific side of Central and South America and on the Caribbean side of Costa Rica: in south-eastern and south-western Costa Rica, in Panama, in the Pacific lowlands of Colombia and in north-western Ecuador. The species occurs from sea level up to about 880 metres.

The populations are not regarded as threatened at species level, but deforestation is the greatest threat, because the species depends on intact forest with small waterholes.

> **Native range:** Costa Rica, Panama, Colombia and Ecuador.

HABITAT

Agalychnis spurrelli lives in tropical and subtropical humid lowland forest, where it stays in the tree canopy. It is nocturnal and sleeps by day on leaves or branches. During the breeding season it goes down to temporary ponds, water-filled hollows in fallen trees and swamps.

The climate is warm and humid with heavy rainfall. The breeding season falls in the rainy season, when a heavy downpour can make large numbers of frogs gather at the same waterhole and breed almost simultaneously. The eggs sit on the leaves over the water, and the tadpoles drop into the water when they hatch. In the water the tadpoles live in groups and may move towards the brightest parts of the waterhole.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Agalychnis spurrelli lives high up in the vegetation, so the height of the terrarium and the number of branches matter more than floor area. A terrarium of at least 60 × 45 × 60 cm holds a small group of four animals. A group of ten animals, for example six males and four females, needs at least 90 × 45 × 60 cm. The terrarium must be well ventilated, preferably with a glass front and a mesh top.

Furnish with live plants with large, strong leaves, for example *Monstera deliciosa*, *Spathiphyllum* and *Ficus*. The long stems of *Monstera* work as walkways, and the leaves are sleeping places. Add horizontal and sloping branches at several heights. The frogs also often sit on the glass.

The floor is most simply kept bare with a layer of damp kitchen paper beside the water bowl. The paper is changed every day along with a wipe of the panes and removal of faeces. Daily cleaning is the key to healthy animals over the long term, and it barely disturbs the sleeping frogs. A terrarium with a soil substrate and live plants can also be used, but then hygiene must be extra good, because parasites build up in the soil.

For breeding, a separate rain chamber of at least 125 × 60 × 75 cm is used, so the males can keep their distance while calling. It is furnished with branches and large leaves.

TEMPERATURE

By day the terrarium is kept at 22-27 °C, and at night the temperature may fall 3-5 °C to 20-23 °C. There is no need for a hot basking spot: gentle heating of the room or a heat mat on the side of the terrarium is enough. The night temperature is borrowed from the other species in the genus.

Measure the temperature in the upper part of the terrarium, where the frogs sit. Heat combined with persistent damp stresses the frogs and causes weight loss and infections, so the terrarium must be able to dry out by day.

During the breeding sequence the rain chamber is cooled for two days by putting 10 cm of cold water in the bottom, so the air stays at 15-20 °C. The water is then warmed to 25 °C (see Mating).

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity is kept at 65-75 % outside the breeding season. The terrarium is misted heavily in the evening, shortly before the light goes out, so that the humidity rises to 80-100 % for a few hours and falls again during the night and day. The frogs absorb water through the skin and drink dew from leaves and glass, so all surfaces must be clean.

Do not keep the terrarium permanently wet. Constant damp and stagnant air cause weight loss and bacterial infections. Ventilation must ensure that the terrarium dries out again during the day.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

There must always be a large, shallow bowl of clean water in the terrarium, where the frogs can easily climb in and out. The water depth is 2-3 cm. The frogs often urinate and defecate in the water, so the bowl is emptied, scrubbed and refilled every day. Use dechlorinated or filtered water, and never use soap or detergents on the bowl.

The tadpoles are raised in an aquarium or a tub with dechlorinated water at 23-26 °C, preferably with an air stone bubbling gently. No filter is needed, but part of the water is changed regularly.

LIGHTING AND UVB

The terrarium must have 12 hours of light and 12 hours of darkness. Plant lighting from LEDs or fluorescent tubes gives the plants what they need and the animals a clear day. UVB is recommended at low strength: a T5 fluorescent tube with a low UVB share (about 6 %) above the terrarium, so the frogs can seek shade under leaves and branches themselves. Ferguson zone 2 is an estimate based on the species living in the lowland tree canopy.

The light must not heat the terrarium, and the lamp must be placed so the frogs cannot touch it.

Read more: Lighting and UVB

FEEDING

Agalychnis spurrelli eats live insects. Brown crickets of a suitable size are the staple food, supplemented with, for example, cockroaches, waxworms and houseflies. Feeding takes place 3-4 times a week with two to three insects per frog, in the evening when the frogs wake. Adult frogs that become too fat get fewer.

The insects are fed fruit and vegetables before being given to the frogs. Dust them with calcium and a vitamin and mineral supplement, and let the frogs have them quickly, before the powder falls off. Remove uneaten insects the next morning so they do not gnaw at the sleeping frogs. Young frogs have a large appetite and are fed almost daily.

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

BEHAVIOUR AND HANDLING

Agalychnis spurrelli is calm and nocturnal. Males are not aggressive towards each other outside the breeding season, and several males and both sexes can be kept together as long as there is enough space. During the breeding season the males become very active, call loudly and follow the females around all night.

Open the terrarium carefully, because the frog jumps far and can glide out if frightened. It is handled only when necessary, and preferably with damp, powder-free disposable gloves. Frogs from different localities can differ greatly in size, so pairs and groups are put together by size.

Breeding

SEXUAL MATURITY AND SEXING

Females are larger and heavier than males. Males develop nuptial pads on the first finger in the breeding season, and females are distinctly plump when full of eggs. Adult size and sexual maturity are reached when the frogs are 12-18 months old, if conditions are optimal.

MATING

Agalychnis spurrelli breeds spontaneously and can be tried for breeding all year round, as long as the frogs are in good condition and breeding does not burden them. There is no need for a long dry season followed by a long rainy season; a longer period of constantly wet conditions stresses the frogs and causes weight loss and infections. What matters is a clear distinction between the normal terrarium and a warm, humid and wet rain chamber.

Move the group to the rain chamber when the males have nuptial pads and the females look full. Put 10 cm of cold water in the bottom. For two days the air is 15-20 °C, the frogs are not fed, and the water is changed daily. On the third day the water is warmed to 25 °C with a water heater, the ventilation is partly covered, and a pump sends the water around as rain. The air becomes about 25 °C and over 80 % humid. The rain runs by day and is switched off at night, when the frogs are active.

The males become very active and call, and pairs find each other on the very first night. Mating and egg-laying usually take place after 1-4 days of rain. If there are no eggs after five days, the frogs are moved back to the normal terrarium and tried again a few weeks later. The rain chamber is used for one week at most at a time.

EGGS AND TADPOLES

The eggs are laid at night or early in the morning on smooth, stable surfaces over the water: leaves, the glass walls of the rain chamber and the sides of flowerpots. A clutch is up to 110 eggs, in a single layer or in two rows close beside each other. The eggs lie in a thin but tough membrane and do not have the large jelly clump known from other species in the genus. The female goes down into the water at the bottom several times to moisten her belly, then returns to the row and continues laying, so the eggs look like one continuous row. The pair is separated when laying is finished. There is no parental care.

Remove all the frogs and leave the eggs in the rain chamber, where the air is warm and humid. The leaves with eggs can also be cut off and hung over a container with a little water, but the eggs do best where they were laid.

METAMORPHOSIS

The eggs hatch after 7-9 days at about 25 °C, and the tadpoles drop into the water. The tadpoles are easy to raise in groups: an aquarium or a tub with water at 23-26 °C, an air stone and regular partial water changes. Filtration is not necessary.

They have a large appetite and are fed tropical fish flakes, powdered fish food, blanched spinach leaves and occasionally a few frozen bloodworms. Feed twice a day in amounts they eat within a short time, and remove leftovers.

Metamorphosis takes place after 6-9 weeks, and tadpoles from the same clutch leave the water at different times. Provide floating plants or stones they can climb onto, and move the newly metamorphosed young to a small tub with a leaf, damp kitchen paper and a shallow water bowl.

REARING THE YOUNG

Newly metamorphosed young are 15-25 mm and begin to eat 7-10 days after leaving the water. They are housed in small plastic containers with a large leaf, branches, damp kitchen paper and a shallow water bowl. The first food is small nymphs of brown crickets (1st and 2nd instar) or fruit flies, dusted with calcium. They are fed almost daily, because they have a large appetite. The young do not have full webbing; it develops as they grow. Care and temperature are otherwise as for the adults.

Health and common mistakes

Diseases and husbandry errors in *Agalychnis spurrelli*:

- Too wet and too warm: constant damp and stagnant air cause weight loss and bacterial infections. Keep the air dry by day, and let the terrarium dry out between mistings.
- Roundworms and lungworms (for example *Rhabdias*): tree frogs are very susceptible, and the worms build up in soil and dirty water bowls. A clean terrarium, daily cleaning and a clean floor prevent them. Treatment requires a vet, because some dewormers are lethal to tree frogs.
- Cloacal prolapse: can occur when young frogs are given too many large feeder insects.
- Snout abrasions: occur when the frogs jump against the glass in terrariums that are too small or restless.
- Bone disease from too little calcium and vitamin D. Dust the food with calcium and vitamins.
- Chytrid (*Batrachochytrium dendrobatidis*) is a fungal disease that is deadly to amphibians and can be carried by animals without symptoms. Quarantine new animals.
- Animals that will not eat or have sores or swellings must go to a vet with amphibian expertise.

Read more: Quarantine and hygiene

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.