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FROGS

Waxy Monkey Tree Frog

Phyllomedusa sauvagii

Phyllomedusa sauvagii is a large, calm tree frog from the Gran Chaco and the adjoining forests of South America. It wipes a waterproof, waxy layer over its own skin and therefore needs a warmer and drier enclosure than most other tree frogs. The skin secretion is biologically active, so wash your hands after contact.

Family: Phyllomedusidae

Mild skin toxins

KEY FACTS

THE ANIMAL

Adult size	**7-10 cm** snout-vent length
Lifespan	**5-10 years**
Active	**At dusk and at night**
Lifestyle	**Arboreal**
Habitat	**Savanna and dry forest**
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	**24-29 °C**
Basking spot	**29-32 °C**
Temperature, night	**18-21 °C**
Humidity	**50-75%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Winter rest	**18 °C** 4-6 weeks
Diet	**Insects**
Kept	**Singly, 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	**200-800**
Hatching	**5-9 days**
Larval period	**28-42 days** from hatching to metamorphosis
Larval diet	**Algae/plants and complete diet**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Not listed**
IUCN	**Least Concern (LC)**

About the species

Phyllomedusa sauvagii is a stout, waxy green tree frog of 7-10 cm. A cream-white stripe runs under the jaw and continues along the underside of the body, and the belly has irregular white stripes and spots. The large, golden eyes have a vertical, slit-shaped pupil, as in the other tree frogs of the family. The fingers and toes can grip branches like a hand, and the frog walks slowly and deliberately through the branches instead of hopping.

Males are smaller and slimmer than females and have loose skin on the throat, where the vocal sac sits. Females have a rounder snout. In the breeding season males develop brown, rough nuptial pads on the first finger.

The skin is densely covered with wax glands. The frog wipes the secretion over its whole body with its hands and feet, which makes the skin almost watertight: evaporation is only 5-10 % of that of other frogs and on a level with lizards. The species also excretes nitrogen as uric acid instead of urea and can fall into a kind of torpor during the day. The secretion also protects against bacteria and fungi.

The species was described by Boulenger in 1882 and is named after the French zoologist Henri Émile Sauvage. The genus name is composed of the Greek words for leaf and guardian. The genus belongs to the family Phyllomedusidae, which used to be counted as part of Hylidae.

Skin toxins: The skin secretion is a genuine defensive secretion with about 50 different biologically active peptides, including the strongly opioid dermorphin. It can sting in the eyes and open wounds, and the field is therefore set to mild. Wash your hands with warm water before and after contact, do not use soap or cream immediately beforehand, and rinse thoroughly with water straight away if you get secretion in your eyes. The secretion is made in the frog's own skin glands and does not come from its food, so captive-bred animals have it too.

In captivity the species lives from about 5 to over 10 years.

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

Distribution and habitat

Phyllomedusa sauvagii lives in southern central South America: eastern Bolivia, Paraguay, northern Argentina and Mato Grosso do Sul in central Brazil. Most of the range lies in the Gran Chaco, the large, hot and dry plain that stretches across Paraguay, south-eastern Bolivia and northern Argentina. The species is found up to about 1,500 m.

> **Native range:** Argentina, Bolivia, Paraguay and Brazil.

HABITAT

Phyllomedusa sauvagii lives in trees and bushes in the dry forests of the Chaco and in moister forest along ponds and watercourses. It prefers an open, sunlit tree crown to dark forest. During the day it rests on a branch or a leaf, and at night it hunts insects. The males begin to call about two hours after sunset.

In the dry season the temperature in the area is about 16-21 °C with the humidity down at about 50 %, while the rainy season brings 25-28 °C and over 80 %. The rainy season runs from October to March or May. The species breeds only during or just after heavy rain, not throughout the season. The frog tolerates body temperatures from about 20 to 40 °C, higher than most frogs, and prefers 22-26 °C.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Phyllomedusa sauvagii is arboreal and needs height and plenty of branches. For two animals 45 × 45 × 60 cm is enough. A group of 3-4 animals needs at least 45 × 45 × 90 cm, and 5-8 animals at least 90 × 45 × 90 cm.

Set up sloping climbing branches, cork and vines so that the frog can choose between warm and cool. Plants with large, smooth leaves such as *Scindapsus* and *Philodendron* provide shade and perches, and the frogs use them for egg laying. For breeding animals a semi-sterile setup is often best: a glass terrarium with a drain, a false bottom, a water dish and a few potted plants, so that roundworms cannot build up in the substrate. A naturally planted terrarium with leaf litter and moss also works. Place the terrarium out of direct sunlight. Good ventilation is important: mesh across the whole lid, and preferably in the sides too.

TEMPERATURE

Keep 24-29 °C by day with a warm spot of 29-32 °C at the top and a drop to 18-21 °C at night. The species comes from the Gran Chaco and tolerates heat far better than most tree frogs; it can cope with temperatures around 35 °C for short periods during the day, provided it has shade and water.

Provide a gradient from top to bottom, and measure with a thermometer both at the top and at the bottom. A small heat bulb at the top creates the warm spot, but it dries the air, so use a thermostat.

Winter rest: before breeding, the dry season is imitated by reducing the light to 8 hours and the temperature to about 18 °C for 4-6 weeks, keeping humidity down around 50 % and feeding sparingly. Afterwards you return to the normal temperatures. This is a breeding technique and not necessary for animals that are simply being kept.

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity should be 50-60 % during the day and rise to 70-75 % in the morning and evening when the enclosure has been misted. This is dry for a tree frog and an important difference from e.g. *Agalychnis callidryas*. Persistently high humidity and still air carry a risk of bacterial skin infections.

Mist briefly at fixed times, and let the enclosure dry out in between. Frequent misting is unnecessary for this drought-tolerant species; a moist sponge in the water dish can take its place. Keep the substrate lightly moist, never soaking wet, with both moist and dry zones, and mist a little more often in warm weather. Use dechlorinated tap water, rain water or reverse-osmosis water, but not distilled water, which lacks minerals.

WATER AND WATER QUALITY

Provide a stable water dish with smooth stones or a sloping edge, so the frog can easily get up, and change the water every day. The frog absorbs water through its skin and likes to sit in the dish. In a rain chamber for breeding, use a water section of 5-15 cm.

Amphibians absorb substances through the skin, so use dechlorinated tap water or rain water, and keep soap, cleaning products and insecticides away from the enclosure. Clean the dish with warm water, and rinse it thoroughly.

LIGHTING AND UVB

Give 12 hours of light a day and darkness at night, and use plant lighting if the enclosure is planted. The frog likes to sit in the open and bask briefly, and a weak UVB source is recommended to aid calcium metabolism and prevent bone weakness. UVB is not strictly necessary, however, and the exact requirement is not known, so place the lamp over part of the enclosure, preferably over a mesh, and provide plenty of shade. Replace the UVB tube according to the manufacturer's instructions.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

FEEDING

Phyllomedusa sauvagii eats insects: crickets, cockroaches, moths, flies and waxworms. The feeder insect must be no wider than the frog's head. Many frogs refuse worm-like food. Young animals are fed daily and adults every second or third day.

Gut-load the feeder insects well for a day or two before use and dust them with a vitamin and calcium mix with D3, either mixed 1:1 or alternating. Offer as varied a diet as possible, and do not use wild-caught insects, which can carry parasites and pesticides. The frog readily learns to take food from tweezers.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Phyllomedusa sauvagii is calm and slow and walks instead of hopping. It is active at dusk and at night, but gets used to being active when feeder insects are put in the enclosure. The males call in the evening with a "crawk-crawk-crawk".

The species can be kept singly, but does best in small groups of 2-8 animals, and the interaction in the group also promotes breeding. Keep it only with its own species, because smaller animals may be eaten. The frog gets used to being handled, but becomes stressed by too much, and the skin does not tolerate soap, cream or sweat. Remember that the secretion can sting the eyes. If the frog has to be moved, use a transparent tub or clean, moist hands.

Breeding

SEXUAL MATURITY AND SEXING

With good care the frogs are sexually mature and fully grown after 12-18 months. Males are smaller and slimmer and have loose throat skin; in the breeding season they develop brown nuptial pads on the first finger. Females have a rounder snout and are distinctly thicker when carrying eggs. Breed only with fully grown animals in good condition. The species has been

bred in captivity in Europe and the USA for more than 25 years.

MATING

Breeding follows the rainy season, so in the enclosure first the dry season and then the rain are imitated. After 4-6 weeks of a cool, dry period (see winter rest under temperature) the light is increased to 12-14 hours, the temperature returns to normal, and misting is done more often, so that the humidity lies at 70-80 % for about a week. Then misting is heavy to imitate the summer rain, and the males begin to call.

A separate rain chamber with drainage and a misting system makes this easier. Two males per female give competition and the best results. The male grips the female behind the forelegs (amplexus), and the pair seeks out water with vegetation, where the male fertilises the eggs while the female lays them. Lower the humidity to the normal 50-60 % again once the eggs have been laid and hatched.

EGGS AND TADPOLES

The female lays 200-800 eggs on the midrib of a leaf over the water and folds the leaf around the eggs; in large clutches she uses up to three leaves. Between the eggs she lays empty, jelly-filled capsules, which retain moisture and glue the leaf together. The eggs dry out very easily and must sit on a large leaf over still water, so that the tadpoles fall directly into the water when they hatch. There is no parental care.

Cut the leaf off and hang it over an aquarium, e.g. with tape on the glass, or place it in a container with a little water at the bottom, so that the eggs are not under water. Eggs that slip down into the water usually develop anyway. Keep the eggs at about 24 °C.

The tadpoles swim freely in the water and need clean water. An aquarium of about 40 litres with fine sand, aquatic plants and a small filter can hold up to 30 tadpoles with a weekly water change of 25-30 %, more as the tadpoles grow. For smaller numbers, plastic trays without a filter with a 50 % water change every other day will do. Keep the water at about 24-25 °C. Give fine powder food for the first two weeks, then fish flakes and freeze-dried tubifex; dead insects, chopped earthworms, algae and plants are also taken.

Read more: Rearing tadpoles

METAMORPHOSIS

The eggs hatch on their own after 5-9 days. The tadpoles are large at hatching, over 20 mm, with big external gills and a tail making up about two thirds of the length. Metamorphosis takes about 4-6 weeks, although in tree frogs as a whole it can last 40-90 days.

When the front legs appear, the tadpoles stop feeding. Give them plants, branches or an even, sloping bank so that they can easily climb out of the water, and keep a lid or net on the tank.

REARING THE YOUNG

Move the young to small cups with a little water at the bottom and a sloping leaf as a landing as soon as they have all four legs. When the tail is gone, they go into small enclosures with sphagnum or kitchen roll on the floor and plastic pots or plants to sit on. The first meal is typically 2-3 fruit flies (*Drosophila hydei*); too much food at once stresses the small frogs. After a week or two they can have small crickets, but too many large feeder insects can cause cloacal prolapse. Newly hatched crickets, newly hatched waxworms and mealworm larvae can also be used.

Mist daily, feed every other day, and dust the food with calcium and vitamins. Once the young are eating well, they can be moved together in groups.

Health and common mistakes

Phyllomedusa sauvagii tolerates drought and heat, but not mistakes in care. The typical problems are:

- Persistently high humidity without ventilation, which causes bacterial skin infections. Keep the air moving, and let the enclosure dry out.
- Bone weakness in animals without calcium, D3 and UVB. Dust the food, and vary it.
- Lungworm (*Rhabdias*) and other roundworms, which are common in tree frogs. Keep the enclosure clean, and have a vet examine a faecal sample.
- Abrasions on the snout when the frog rubs it against the glass in small enclosures or during transport. They can be treated

with antibiotic ointment.

- Overheating from direct sun or an overly powerful lamp.

Never use ivermectin on the skin of tree frogs; it has been fatal for *Agalychnis callidryas*. Contact a vet with amphibian expertise if the frog stops eating, has sores, swellings or reddish areas on the skin, or is lethargic.

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.