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POISON DART FROGS

Brilliant-thighed Poison Frog

Allobates femoralis

Allobates femoralis is a small, dark frog of 3-4 cm from the Amazon and the Guiana Shield with an orange-yellow spot behind the arm and a crescent-shaped orange spot on the thigh. It is diurnal and ground-dwelling, the males defend territories with a loud call, and the courtship is one of the longest among poison frogs. The species belongs to the family Aromobatidae and is regarded as non-toxic.

Family: Aromobatidae Former name: *Epipedobates femoralis; Phyllobates femoralis; Dendrobates femoralis*

KEY FACTS

THE ANIMAL

Adult size	**3-4 cm** snout-vent length
Lifespan	**5-10 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Rainforest**
Skin toxins	**None known**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 40 × 40 cm** L × W × H for 2 adults
Temperature, day	**25-28 °C**
Temperature, night	**21-24 °C**
Humidity	**70-100%**
Water	**Water dish** depth 1-2 cm
UVB	**Optional** Ferguson zone 1
Diet	**Small invertebrates (springtails, fruit flies)**
Kept	**In pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles carried to water**
Egg-laying site	**On the ground**
Eggs per clutch	**8-20**
Hatching	**15-20 days**
Larval period	**40-50 days** from hatching to metamorphosis
Larval diet	**Algae/plants**
Parental care	**Guards the eggs and carries the tadpoles**

PROTECTION AND PAPERWORK

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

About the species

Allobates femoralis is a slender, long-legged frog. Males measure 28-33 mm from snout to vent and females are slightly larger; adults measure 25-38 mm, that is 3-4 cm. The back is dark brown to black and slightly granular, the throat is black, and the belly is white with black markings. A pale brown stripe runs from the snout to the hind legs, and a broken white stripe runs along the side from the snout to the arm and on to the leg. Behind the arm is an orange-yellow spot and at the outer thigh a

crescent-shaped orange spot, which the male displays during courtship. The pattern varies between populations: in Ecuador and Peru the upper side stripe is golden yellow and the lower one bluish white, while animals from Brazil and Guyana have white stripes and a grey, blue-marbled belly.

The species was described by George Albert Boulenger in 1884 and has since been placed in the genera *Phyllobates*, *Dendrobates* and *Epipedobates*. Today it belongs to the family Aromobatidae, not Dendrobatidae, to which most poison dart frogs in the hobby belong. Courtship behaviour also varies between populations, so animals from different areas should not be mixed.

A. femoralis is regarded as non-toxic, and dangerous skin toxins are not documented. It is not entirely settled, however: some populations may have weak toxicity, and captive-bred animals may take up weak alkaloids from their food into the skin. The skin is thin, as in all amphibians, so do not handle the animals, and wash your hands after working in the terrarium.

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

Distribution and habitat

Allobates femoralis lives in the Amazon Basin and tropical eastern South America: Brazil, Guyana, Suriname and French Guiana, as well as the eastern parts of Colombia, Ecuador, Peru and Bolivia. A single record in Venezuela may be due to confusion with *Ameerega picta*. By far most of the recorded finds come from Brazil, followed by Ecuador, French Guiana, Peru, Suriname and Colombia.

The species is assessed as Least Concern (LC) on the IUCN Red List, because it is widespread and common, and no particular threats have been demonstrated.

> **Native range:** Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru and Suriname.

HABITAT

Allobates femoralis lives on the floor of tropical lowland rainforest, where it moves about in the leaf litter. It is most often found below 300 m above sea level, but in Colombia and Ecuador up to about 1,000 m. The species is diurnal and feeds on small insects such as beetles, crickets, cockroaches and ants, while the young mostly take springtails.

The males call from elevated spots such as roots and fallen trunks and defend a territory against other males. The females stay within a few small areas and move mostly on days with courtship. Breeding follows the rainy season: in the eastern part of the range from November to April with a peak in January and February. In the dry season there are only occasional clutches, when it rains. The females move more when it is cool and wet.

Read more: Feeder animals: keeping and breeding

Care

THE ENCLOSURE

A pair of *Allobates femoralis* needs a glass terrarium of at least 60 × 40 × 40 cm. The species lives near the ground, so floor area counts most, but the males like to climb a little to call. If several pairs are kept together, the terrarium must be large and have many visual barriers, because the males are territorial.

A good setup has clay balls in the bottom and a thick layer of clean oak leaf litter on top, where the frogs hide and lay eggs. The back and side walls can be covered with tree fern and cork, and half a coconut shell as a hide, a branch as a lookout, a few plants and a small water dish complete the terrarium. The lid must have ventilation that is tight enough that fruit flies cannot escape. The frogs are fast, so take care when the door is opened.

TEMPERATURE

By day the temperature should be 25-28 °C and at night 21-24 °C, that is 3-4 degrees lower. The daily swing corresponds to conditions in French Guiana and promotes breeding. The temperature need only vary 1-2 degrees over the year, and there is no winter rest.

Poison dart frogs tolerate prolonged heat poorly, so watch the temperature in summer, and use a digital thermometer with the probe low down in the terrarium. The heat should preferably come from the room and the lighting.

HUMIDITY AND MISTING

Humidity should be high: 70-80 % in the middle of the day and up to 100 % morning and evening. An automatic rain system that gives, for example, two short showers a day keeps the leaf litter moist and the frogs active; a fogging system helps with the humid morning and evening hours. Leaves and furnishings should be able to dry out a little in between, so that mould and stagnant air do not develop.

Use reverse-osmosis water or rain water, so that no limescale spots form. If the leaf litter becomes dry, the frogs quickly dry out.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

Provide a shallow glass dish of about 10 cm in diameter with 1-2 cm of water, which the frogs can easily climb out of. The male also uses it when he is to deposit the tadpoles. Use rain water, reverse-osmosis water or dechlorinated tap water, and change the water often.

Amphibians absorb water and substances through the skin, so soap, cleaning products and cream must not come near the enclosure. Scrub the dish with hot water without soap.

Read more: Rearing tadpoles

LIGHTING AND UVB

The light is mainly for the plants. Provide 12 hours of light a day, for example from 7 to 19 h. Fluorescent tubes or LEDs of around 6,500 K give natural colours and good plant growth.

UVB is not documented as necessary for the species, and the frogs get their vitamin D3 through the supplement on the food. If you choose a weak UVB source anyway, stay with Ferguson zone 1, and provide a dense leaf litter layer to retreat under.

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

FEEDING

Allobates femoralis feeds on small insects. In the enclosure the staple diet consists of wingless fruit flies, supplemented with springtails, very small crickets, small wax moth larvae and meadow plankton. The young mostly take springtails and small fruit flies.

Feed adult frogs two to three times a week, and juveniles every day or every other day. Dust the feeder insects with a vitamin and mineral powder for amphibians. Keep your own cultures of fruit flies and springtails, so that there is always food.

BEHAVIOUR AND HANDLING

Allobates femoralis is diurnal, and the males are territorial. They call with a loud, long, vibrating call of about five seconds and defend their area against other males, sometimes with fights lasting about a quarter of an hour, until one withdraws. The females are not aggressive towards each other, and a male can quite well court two females. Therefore keep one pair or a male with two females, but never several males in a small enclosure.

The species is fast and shy, especially when young. Do not handle the animals; the skin is thin and does not tolerate soap, salt and cream. If a frog has to be moved, lure it into a clean plastic tub.

Breeding

SEXUAL MATURITY AND SEXING

The males are recognised by the call and are slightly smaller than the females, which are distinctly larger and fuller. Age at sexual maturity is not documented. The surest way to a pair is to let several juveniles grow up together and see who calls, or to buy an established pair.

MATING

Mating takes place in the male's territory and is one of the longest courtships among poison frogs: the male can court a female for two to three days. He leads her around to a covered egg-laying site under leaves or a trunk, calls along the way with a lower courtship call and shows off by puffing up his throat, lifting his legs, turning around and stretching his hind legs, so that the orange thigh spots can be seen. The female follows and strokes her arms and legs across his belly. The females rarely reject a male.

At the egg-laying site the female takes the initiative for the touching, and in some populations the male grasps her around the head while the eggs are laid. In the enclosure, two short rain showers a day keep the breeding urge up, and a thick layer of oak leaves provides many places to lay eggs.

EGGS AND TADPOLES

The female lays the eggs in the leaf litter under a leaf or a piece of wood, so that it forms a roof over the clutch. Each clutch is 8-20 eggs. The male guards the eggs, and when they hatch the tadpoles climb onto his back. He carries them to pools of water outside the territory, in the wild up to 180 m away, and often distributes them among several places. The female only carries tadpoles if the male has disappeared. A male that takes over a new territory may eat the previous owner's eggs.

In the terrarium the male deposits the tadpoles in the water dish. For deliberate rearing, the tadpoles can be moved to a tub or singly to tubes with half osmosis water and half aged water with oak leaves, preferably with a filter. Keep the water at about 26 °C, change it once a week, and feed freely with dried nettle leaves.

METAMORPHOSIS

The eggs develop in the leaf litter for 15-20 days before the tadpoles hatch and are carried to water. Under natural conditions 40-50 days then pass until metamorphosis, and the actual transition from tadpole to froglet takes about three days.

When all four legs are visible, metamorphosis is near. Provide easy access to land, for example a tilted box or cork and stones sticking up out of the water, so the froglet can climb out without drowning.

REARING THE YOUNG

The newly metamorphosed juveniles are very small. Keep them in a small rearing enclosure with clay balls, clean oak leaves and the same climate as the adults, with two short rain showers a day. Feed them every other day with springtails and wingless fruit flies dusted with vitamins and minerals. The juveniles are shy, so give them plenty of hides, and move them only when necessary.

Health and common mistakes

There is no list of diseases for the species, but these problems recur in poison frogs:

- Desiccation due to too low humidity or a dry leaf litter.
- Heat stress, if the enclosure becomes too hot in summer.
- Chytrid fungus (*Batrachochytrium dendrobatidis*), a serious amphibian disease. Keep new animals in quarantine, separate from those you already have.
- Deficiency diseases such as soft bones and crooked legs, if the food is not dusted with vitamins and minerals.
- Parasites, which cause weight loss despite a good appetite. A faecal sample at the vet reveals them.

Life expectancy is not documented for the species; 5-10 years in the enclosure is an estimate based on other small poison frogs. Amphibians are difficult to diagnose and treat, so prevention is the most important thing. Contact a vet with amphibian expertise if a frog becomes lethargic and emaciated or develops sores on the skin.

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.