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POISON DART FROGS

Little Devil Poison Frog

Oophaga sylvatica

Oophaga sylvatica is one of the largest poison frogs in the genus *Oophaga*: a diurnal forest-floor frog of 3-4 cm from the rainforests of Ecuador and Colombia, known for its many colour forms in orange, red and yellow on a black or brown background and for its persistent brood care.

Family: Dendrobatidae Former name: *Dendrobates sylvaticus*

KEY FACTS

THE ANIMAL

Adult size	**3-4 cm** snout-vent length
Lifespan	**10-15 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Rainforest**
Skin toxins in the wild	**Mild**
Skin toxins in captivity	**None** Captive-bred animals. Wild-caught animals can keep their toxins for a long time
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 60 × 60 cm** L × W × H for 2 adults
Temperature, day	**23-26 °C**
Temperature, night	**21-23 °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**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles carried to water**
Egg-laying site	**On the ground**
Sexually mature	**18-24 months**
Eggs per clutch	**4-20**
Hatching	**10-16 days**
Larval period	**75-90 days** from hatching to metamorphosis
Larval diet	**Unfertilised eggs from the female**
Parental care	**Guards the eggs, carries the tadpoles and feeds the tadpoles with eggs**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
IUCN	**Near Threatened (NT)**

About the species

Oophaga sylvatica is one of the largest species in the genus *Oophaga*. Adults measure 3-4 cm from snout to vent. Size varies between populations, and males are on average only slightly larger than females. The skin is smooth, and the toes lack webbing. The sexes cannot be told apart by colour, and the males give themselves away only by their call.

The species was described by John W. Funkhouser in 1956 as *Dendrobates histrionicus sylvaticus* and appears in older literature as *Dendrobates sylvaticus*. The species name *sylvatica* comes from the Latin for forest and points to the habitat in the lowland rainforest. Colours vary greatly, with a base colour from dark brown to black and markings in orange, red or yellow,

from a few large spots and bands to a dense network. There are also forms with white or light blue spots on a reddish-brown background. The hobby distinguishes between many locality forms, e.g. 'Santo Domingo', 'San Lorenzo', 'Lita' and 'Guanguí'. Genetic studies regard them all as one species, but the southern populations in Colombia in particular may in time prove to contain several species. Family trees built on DNA point to *Oophaga lehmanni* as the closest relative and not to *Oophaga histrionica*, of which the species was formerly regarded as a subspecies.

In the wild the skin is poisonous. The poison consists mainly of histrionicotoxins, which the frog does not produce itself but takes up from ants and mites in its diet. The skin of one wild frog holds about 360 μg of toxin, enough to kill three to four mice by injection. Captive-bred animals that are fed feeder insects do not acquire the poison and are regarded as non-poisonous. How dangerous the skin is to humans on contact is not documented, so the frogs should not be handled, and your hands should be washed after working in the enclosure.

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

Distribution and habitat

Oophaga sylvatica lives in north-western Ecuador and south-western Colombia, along the Pacific side of the Chocó region. In Ecuador the species has been found in the provinces of Esmeraldas, Pichincha, Imbabura, Cotopaxi, Manabí, Santo Domingo de los Tsáchilas and Los Ríos. The type locality is near Santo Domingo de los Colorados. In Colombia it is found in the departments of Nariño and Cauca.

The species has been seen from sea level up to about 1,000 m. It is common in Colombia but has disappeared from large parts of its Ecuadorian range, where the forests have been cleared. The Santiago River in Ecuador divides the northern and southern populations into two genetic lineages.

> **Native range:** Ecuador and Colombia.

HABITAT

Oophaga sylvatica lives in humid rainforest in the lowlands and on the lowest mountain slopes. The frogs are seen in the interior of the forest, along riverbanks and in the vegetation by small streams, and they tolerate partly destroyed forest and plantations, especially where it is humid. Where there are no bromeliads, as along roadsides and in secondary forest, breeding sites are lacking, and the species is therefore found mostly in undisturbed forest.

The temperature on the forest floor is even, about 26-27 °C all year, and the daily swing is only 2-5 °C. The males call between about 6 and 19 o'clock from a perch above the ground and keep to small territories, while the females range over a much larger area and can climb considerably higher than the males. When the frogs rest, they hide under leaf litter and dead branches. The diet consists mostly of small arthropods in the leaf litter; ants make up 40-86 % of the prey, and the rest is mites, springtails and insect larvae. Bromeliads and heliconias are used as breeding plants.

Read more: Feeder animals: keeping and breeding

Care

THE ENCLOSURE

An enclosure of at least 60 × 60 × 60 cm (length, width, height) suits one pair. The males are strongly territorial, and the females also hold territories and form a hierarchy when there are many animals. In an enclosure at least 120 cm long, a male and two females can exceptionally be kept together, but the arrangement is unnatural, causes stress and does not produce more juveniles, because the females often eat each other's eggs.

Use a drainage layer of expanded clay pellets covered by a mesh, so the lower layer does not seep through, and on top unfertilised soil, coconut fibre or sphagnum. Lay a thick layer of dry oak or beech leaves on top; it provides cover and keeps small animals alive. Pieces of peat, stones and cork boards provide cover and territory boundaries, and living plants such as moss, climbers and especially several medium-sized tank bromeliads are necessary for breeding, because the female carries the tadpoles there. Ventilation at the front and top is important, so the air does not stand still. The mesh must have such small openings that the feeder insects cannot escape.

Tilted film canisters that can hold a little water provide extra places for egg-laying and tadpoles and can be moved without disturbing the animals. Give juveniles their own enclosure once they have metamorphosed.

Read more: Terrarium construction and bioactive substrate Read more: Rearing tadpoles

TEMPERATURE

Oophaga sylvatica comes from a lowland with almost constant warmth, so the temperature must be kept stable: 23-26 °C by day and 21-23 °C at night. The daytime temperature should not stay above 26 °C for long, and the night should not fall below 21 °C. Briefly the animals tolerate up to 29-30 °C and down to 16-17 °C without harm, but that should be the exception. A night-time drop of a couple of degrees is beneficial.

Hot frogs become sluggish and hide, and stagnant, warm air is dangerous. Ensure good ventilation, and avoid lamps that heat a small vivarium too much. The species has no winter rest in the wild and should not be given a cool period. No heat spot is needed.

HUMIDITY AND MISTING

Humidity is kept at 70-80 % during the day and rises towards 100 % early in the morning and late in the evening, as when fog and rain drift in over the forest. At midday it may fall to about 70 %. An automatic rain system or an ultrasonic fogger makes it easy to maintain humidity without daily work; otherwise the enclosure is misted heavily every day, preferably morning and evening.

Use soft water: rain water, reverse-osmosis water or dechlorinated tap water. The leaf litter and the bottom layer must be moist but not waterlogged, and the air must move, so that no mould forms. If it becomes too dry, the frogs become less active and withdraw under the leaves.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

A shallow water dish with 1-2 cm of water and a ramp of stones or moss is enough for adults; the frogs are poor swimmers, and the water should reach no more than about three quarters of the animal's height when it stands. The depth is borrowed from a close relative. A water dish is not necessary if humidity is high and the leaf litter is damp, but it gives somewhere to drink.

Use rainwater, reverse-osmosis water or dechlorinated tap water, and change the water often, preferably every other day. Amphibians absorb water and substances through the skin, so soap, cleaning agents, cream and plant-care products must not come near the vivarium. Rinse newly bought plants thoroughly, because they may have been sprayed.

LIGHTING AND UVB

The lighting should first and foremost suit the plants. Fluorescent tubes or LED lights of about 6,500 K give natural colours and good plant growth; choose light sources with high efficiency and a reflector. A need for UVB has not been documented for the species, and only a little direct sunlight reaches the forest floor. Vitamin D3 is given instead with the supplement on the food. If you still want to give UVB, Ferguson zone 1 is the highest that makes sense, and there must be plenty of shade.

Keep a fixed day length of 12 hours, which matches the tropical day.

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

FEEDING

Adults take the usual small feeder insects: springtails, small and large fruit flies, micro crickets, small waxworm larvae, booklice, firebrats and finely sifted meadow plankton. In the wild the frogs live mostly on ants and mites and therefore prefer small prey, even as adults. Newly metamorphosed juveniles are very small and need springtails for the first four to six weeks.

Adults are fed every other day, juveniles daily. Dust the food with a vitamin and mineral preparation for amphibians: the adults' food 1-2 times a week, the juveniles' food daily for the first four weeks. Springtails are hard to dust, so feed them the preparation instead. Fruit flies can be vitaminised with a liquid preparation before they are given to the frogs.

The diet must be varied. Females that get only fruit flies lay no feeder eggs or poor ones and cannot raise offspring; many failed breeding attempts are due to a monotonous diet. Meadow plankton and a varied selection of small insects are a good basis. Give the food on small dishes that can be taken out and cleaned every two to three days, so that no residues collect on the bottom. Springtails gather on pieces of cork board or peat sprinkled with a little dry yeast. Keep your own cultures of springtails and fruit flies, because large quantities are needed.

BEHAVIOUR AND HANDLING

The males are strongly territorial and call from morning to evening; the call is short and high, about five notes per second. Rival males call in competition, advance and retreat and can end up in wrestling matches. Females also defend a spot and form a hierarchy when space is tight. The species is therefore kept in pairs.

The frogs are diurnal and bold when they feel secure, and move openly among leaves and plants. Stress shows itself in that they hide and stop calling and eating. Frogs should not be handled, because the skin is sensitive and because in the wild the poison sits in the skin. Keep the animals in the enclosure while you clean, or move them with a clean, moist plastic container. Keep newly bought animals in quarantine for a few weeks before they are allowed in with others.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

The sexes have the same colour and almost the same size. The surest way to tell them apart is the call: only the males call. A pair is therefore selected by keeping a group of juveniles together until they are sexually mature, and then placing the animals that call with an animal that does not.

The animals are fully grown and sexually mature after 18-24 months. Once a pair has formed, they are kept together.

MATING

The male calls from a raised spot, and an interested female approaches. The pair chase and circle each other, sit huddled together and touch each other, while the male leads the female to a place where she can lay the eggs. There is no amplexus: the male deposits sperm on the substrate, and the female lays the eggs afterwards.

A varied and nutritious diet, humid air and a stable temperature are the most important prerequisites for the pair to breed. A rain system and a fogging system can help imitate the rainy season. Put several medium-sized tank bromeliads and a couple of film canisters at different heights in the enclosure, so the pair has a choice.

EGGS AND TADPOLES

The female lays 4-20 eggs on a leaf, in the leaf litter or in a tilted film canister; the number per laying varies. The male visits the eggs several times a day and moistens them with fluid so they do not dry out. The female comes more often the closer hatching is. It is crucial that one of the parents is present when the eggs hatch, because the tadpoles survive only if they are carried to water.

When the tadpoles hatch, they climb onto the female's back, and she carries them one at a time to small pools of water, preferably in the leaf axils of bromeliads, sometimes several metres up in the trees. She must remember where each one is placed.

The tadpoles are specialists and live exclusively on the infertile eggs that the female lays in the water for them. They can hardly make use of other food, e.g. fish food, so artificial rearing is very difficult. Let the female do the rearing herself, therefore, and give her many small, water-filled sites: tank bromeliads and film canisters with water. Feeder eggs require that the female gets a very varied diet.

METAMORPHOSIS

The tadpoles hatch after about 10-16 days, depending on temperature. From hatching to metamorphosis takes about two and a half to three months, that is 75-90 days. Throughout, the tadpoles live only on the eggs the female lays.

When the front legs appear, the little frog leaves the water. Make sure that the water level in the breeding sites is low and that there is easy access from the bromeliad to moist land: leaf litter, moss or a ramp. Let the juvenile leave the water by itself.

REARING THE YOUNG

Newly metamorphosed juveniles are very small and need springtails as their staple food for the first four to six weeks, supplemented with the smallest fruit flies. Dust the food daily with a vitamin and mineral preparation for the first four weeks. Give the juveniles a moist enclosure with moss, leaf litter and small hiding places, and feed them daily.

The juveniles grow slowly and reach adult size after about a year and a half. Keep them separate from the adult animals, and move them to a larger enclosure when they can cope with eating larger food. Keep the juveniles in groups until they can be sexed, and then put a pair together in an enclosure of their own of at least 60 × 60 × 60 cm.

Health and common mistakes

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

- Overheating and stagnant air. The frogs become sluggish and hide. Keep the daytime temperature below 26 °C and ensure ventilation.
- Deficiency diseases such as soft bones and crooked legs if the food is not dusted with vitamins and minerals. Varied food for both adults and juveniles is essential.
- No or weak offspring if the female is given only monotonous food. She then does not produce good feeding eggs.
- Stress and parasites in wild-caught animals, which are harder to keep alive. Buy only captive-bred animals.
- Chytrid fungus (*Batrachochytrium dendrobatidis*), a serious amphibian disease, which has also been found in the species in the wild. Quarantine new animals for a few weeks.

The animals live 10-15 years in captivity. Contact a vet with amphibian expertise if a frog stops eating, loses weight or develops swellings or sores.

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.

The full guide with map and updates: herpy.org/en/poison-dart-frogs/oophaga-sylvatica