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POISON DART FROGS

Yellow-banded Poison Frog

Dendrobates leucomelas

Dendrobates leucomelas is one of the largest and boldest poison frogs: 3-5 cm, bright yellow with broad black bands, diurnal and always out in the terrarium. It is hardy, calls with loud, bird-like trills and is a classic first poison frog.

Family: Dendrobatidae

KEY FACTS

THE ANIMAL

Adult size	**3-5 cm** snout-vent length
Weight	**3 g**
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	**Beginner**

CARE

Min. enclosure	**45 × 45 × 45 cm** L × W × H for 2 adults
Temperature, day	**22-26 °C**
Temperature, night	**19-22 °C**
Humidity	**80-95%**
Water	**Water dish** depth 1-2 cm
UVB	**Optional** Ferguson zone 1
Diet	**Small invertebrates (springtails, fruit flies)**
Kept	**In pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles carried to water**
Egg-laying site	**On the ground**
Sexually mature	**10-24 months**
Eggs per clutch	**2-12**
Hatching	**10-14 days**
Larval period	**70-90 days** from hatching to metamorphosis
Larval diet	**Algae/plants and complete diet**
Parental care	**Guards the eggs and carries the tadpoles**

PROTECTION AND PAPERWORK

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

About the species

Dendrobates leucomelas is recognised by its bright yellow to orange base colour with broad black bands and spots all over the body. The bands vary from animal to animal and between populations, from thick, unbroken bands to fine dots. In some forms the bands break up into spots with age, while others become blacker. Several forms are distinguished, especially the standard Venezuelan forms and the larger, shyer forms from Guyana, and they should be kept apart.

The species is among the largest in the genus. Adults measure 3-5 cm from snout to vent, but rarely over 4 cm, and weigh about 3 g. The female is usually slightly larger and more pear-shaped than the male. The toes have adhesive pads, so the frog can climb on leaves and glass, even though it lives mostly on the ground.

The species was described by Steindachner in 1864. It is diurnal, inquisitive and bold, and the males are territorial. They defend their calling site against other males, and the disputes can end in wrestling belly to belly, accompanied by a buzzing sound.

Skin toxicity: The poison comes from the diet. In the wild the frog takes up alkaloids from ants, mites and other small arthropods and stores them in the skin. Captive-bred animals on fruit flies and springtails lack the poison, whereas wild-caught animals can retain it for a long time. Do not handle the frogs, wash your hands after working in the terrarium, and do not touch your eyes or mouth afterwards.

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

Distribution and habitat

Dendrobates leucomelas lives in the northern part of South America: in Venezuela, Guyana, the far north of Brazil and the far eastern part of Colombia. This corresponds to the western and central part of the Guiana Shield. Most records come from Venezuela. The species is common in its range, and the population is not regarded as threatened.

> **Native range:** Venezuela, Guyana, Brazil and Colombia.

HABITAT

Dendrobates leucomelas lives in warm, humid tropical forest, often near water, and in forest islands that are dry for part of the year. It is found from sea level up to about 800 m. The frogs move about on the forest floor in the leaf litter, on stones, roots and fallen trunks, and low in the vegetation.

In the wild the temperature is typically 26-30 °C, depending on elevation and time of day. The area has a dry season of 4-5 months, during which the frogs gather in moist places under stones and fallen trunks and pause breeding. The species is probably the only poison frog that aestivates during the dry season. The breeding season follows the rainy season and falls in February and March.

Care

THE ENCLOSURE

A pair of *Dendrobates leucomelas* needs an enclosure of at least 45 × 45 × 45 cm. A trio or a larger group needs more space, for example 60 × 45 × 45 cm, and more hides than animals. Preferably choose an enclosure that is wider than it is tall, because the frogs climb but use mostly the floor.

Lay a drainage layer of clay pebbles at the bottom, separate it with a fibre mesh, and top with a moist substrate of peat, bark and moss with a thick layer of leaf litter on top. The leaf litter holds the moisture and provides food for springtails and isopods, which keep the substrate healthy. Use cork, branches and live plants, so that the frogs have hides and can climb, and give each male a calling spot and a cave with a smooth floor, for example a coconut shell over a petri dish.

The enclosure should be mostly glass with a tight-fitting lid. A lid with 70-90 % glass and 10-30 % mesh lets the air change without drying out.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

The daytime temperature is kept at 22-26 °C with a small drop at night to 19-22 °C. Although the species experiences 26-30 °C in the wild, it tolerates heat poorly in the enclosure, and overheating is one of the most frequent mistakes.

No heat lamp is needed. Room temperature is normally enough, but watch for sun through the window and heat from lamps in summer. The species has no winter rest, but benefits from a period of less misting, which imitates the dry season (see mating).

HUMIDITY AND MISTING

Humidity should be 80-95 %. Mist once or twice a day with reverse osmosis water or dechlorinated tap water, so that leaf litter and plants become wet, and let the surface dry out a little between mistings. A timer-controlled rain system is a great help, especially in summer.

Place the hygrometer at the frogs' level, not at the top. If it becomes too wet without air exchange, the floor can start to go mouldy and rot.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

A shallow water dish with 1-2 cm of water is enough. The frogs are poor swimmers and can drown in deep water, so the dish must have a low edge or a stone to climb out on.

Use reverse osmosis water or dechlorinated tap water without additives. Amphibians absorb water and substances through the skin, so soap and cleaning products must not come near the terrarium. Change the water every day or every other day, and scrub the dish regularly in hot water without soap.

LIGHTING AND UVB

The frogs and plants need 12 hours of light a day. Use a full-spectrum LED lamp that does not give off much heat, and place it above the lid.

No need for UVB has been documented in the species, so UVB is optional. A weak UVB source can be used by experienced keepers. If you do, stick to Ferguson zone 1, and provide shade, so that the frogs can always get away from the light.

Read more: Lighting and UVB

FEEDING

In the wild *D. leucomelas* eats ants, termites, small beetles and other small insects and spiders. In the terrarium fruit flies are the staple: *Drosophila melanogaster* for young and small animals and *D. hydei* for adults, supplemented with springtails and small isopods. Feed daily; an adult frog can eat 50-75 fruit flies a day and a young one 20-30.

Dust all fruit flies with a calcium and vitamin supplement for amphibians, and also give vitamin A 1-4 times a month depending on age and breeding. Start cultures of fruit flies and springtails before the frogs move in. Never use insects from the garden or field, which may have been sprayed.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Dendrobates leucomelas is diurnal and bold, especially the Venezuelan forms, which are almost always out. The forms from Guyana are shyer. The males call with loud, bird-like trills lasting 10-15 seconds, which are most intense one to two hours after sunrise and before sunset, and they call eagerly when it rains.

The species works well in pairs and in groups, but females may eat each other's eggs, so if you want young, there should be only one female in the terrarium. Two males may fight over the calling sites, and a group requires space and many hiding places.

The frogs should not be handled. The skin is thin and sensitive. If a frog has to be moved, coax it into a small cup with a lid, move it, and let it climb out by itself.

Breeding

SEXUAL MATURITY AND SEXING

The male is slimmer and slightly shorter than the female and calls from high places in the enclosure. The female is larger and pear-shaped, especially when carrying eggs. It can be difficult to sex the animals reliably before they are 2-3 years old, so calling is the best distinguishing feature.

Males can begin calling at 6-8 months, and females are mature at 10-14 months, but both sexes should preferably be about two years old before being bred. Give them time: the older the female is at first laying, the better a breeder she becomes. Buy 4-5 young, and there will almost always be a pair among them.

MATING

The species is easy to breed, but never as productive as many other poison frogs. This is due to the dry season of 4-5 months in the wild, during which breeding stops, and even animals bred for many generations still follow that rhythm.

The male calls, and the female follows him to his calling site and strokes him over the back and snout. Sometimes they circle each other and stamp their feet. If a pair does not breed, imitate a dry season: cut down on misting and feeding for a couple of weeks, and then gradually increase again to the normal level.

EGGS AND TADPOLES

The female lays the eggs on a smooth leaf or a petri dish under a coconut shell. A clutch is 2-12 eggs; the Venezuelan forms typically lay 3-6 eggs every other week during the breeding season, whereas the larger forms from Guyana lay larger clutches, but less often. The eggs are fertilised outside the body, and the male guards them and keeps them moist.

If the eggs stay in the terrarium, they hatch after 10-14 days, and one of the parents, usually the male, carries the tadpoles to water. If you want more young, take the eggs out, and add just enough almond leaf water (reverse osmosis water with Indian almond leaf) to touch the eggs without covering them.

The tadpoles are cannibals and are kept individually in cups of about 1 litre with about ¾ litre of almond leaf water and a piece of almond leaf to gnaw on. Feed a small pellet of prepared tadpole food 1-2 times a week, and change half of the water once a week. The female does not feed the tadpoles with eggs.

Read more: Rearing tadpoles

METAMORPHOSIS

The eggs hatch after 10-14 days, and metamorphosis is complete after 70-90 days. At 24 °C the tadpoles get hind legs after about six weeks and front legs after about nine weeks and climb out of the water after about ten weeks.

When all four legs are out, most of the water is removed, and the cup is tilted about 45°, so that the froglet gets a gentle slope up onto land. It lives off its tail for the first few days and should not be fed until the tail has been absorbed.

REARING THE YOUNG

When the tail is gone, the froglet is moved to a simple rearing box with moist leaf litter, moss and hiding places and fed like an adult, just with the smallest feeder insects: springtails and *Drosophila melanogaster*, dusted with calcium and vitamins.

The young need to grow up for 8-10 weeks before they can move to a new home. Keep them of the same size together, and move them to larger terrariums as they grow. If growth stalls, there is usually too little food or too little supplement.

Health and common mistakes

No particular diseases have been described for the species, but the pitfalls that recur for poison frogs also apply here:

- Overheating: the frog sits lethargically and seeks water. Keep the terrarium below about 27 °C, and move it out of the sun.
- Lack of calcium and vitamins: weak legs and jaw problems. Dust all feeder insects.
- Intestinal parasites: weight loss despite a good appetite. Have a faecal sample examined at the vet.
- Fungal and bacterial infections of the skin, especially in a dirty terrarium with too little air exchange.
- Drowning: deep water is dangerous for a poor swimmer.

See a vet with amphibian expertise if the frog stops eating, loses noticeable weight or has sores on the skin. Quarantine newly acquired animals before putting them with others.

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.