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POISON DART FROGS

Splash-backed Poison Frog

Adelphobates galactonotus

Adelphobates galactonotus is one of the large poison frogs and is known for its bright patch of colour across the back in orange, yellow, red or blue against black legs and flanks. It is diurnal, grows to about 4 cm and lives in the rainforest of Brazil south of the Amazon River. It is more reserved than the most common poison frogs, and breeding follows the seasons to a greater degree.

Family: Dendrobatidae Former name: *Dendrobates galactonotus*

KEY FACTS

THE ANIMAL

Adult size	**4 cm** snout-vent length
Lifespan	**10-20 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	**Intermediate**

CARE

Min. enclosure	**60 × 45 × 45 cm** L × W × H for 2 adults
Temperature, day	**21-25 °C**
Temperature, night	**18-21 °C**
Humidity	**70-100%**
Water	**No water dish**
UVB	**Optional**
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	**8-12 months**
Eggs per clutch	**4-8**
Hatching	**14 days**
Larval period	**60-90 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

Adelphobates galactonotus is among the largest poison dart frogs. Adults measure about 4 cm from snout to vent and are heavily built. Males are typically slightly smaller than females. The species is very variable in colour: the back can be orange, yellow, red, almost white or blue, while the legs and underside are black. Some animals are patternless, others have spots or a net-like pattern of yellow and black.

The colour forms are regarded as one species. Genetic studies have found almost no difference between them, and the distribution of the forms does not follow a clear geographical pattern. The species was described by Steindachner in 1864 as *Dendrobates galactonotus* and today belongs to the genus *Adelphobates*. The species name comes from Greek and means "milk back". The colour forms have largely the same toxin profile, so the colours probably have more to do with recognition and mate choice than with warning predators.

The female is often longer and broader than the male. Sex cannot be determined reliably until the animals are 10-12 months old, and no single feature is entirely dependable. A calling animal is always a male.

Lifespan in captivity is typically around 10 years, but animals over 20 years are known. In the wild most probably live 4-6 years.

Skin toxicity: Poison dart frogs do not produce their own toxins but take up alkaloids from certain prey in the wild. Wild animals therefore have toxins in the skin, but the potency is not documented, and the rating of mild is an estimate. Captive-bred animals fed fruit flies and springtails do not develop the toxin. The skin is thin and absorbs substances, so 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

Adelphobates galactonotus is found only in Brazil, in the southern Amazon Basin. The range lies south of the lower Amazon River and extends roughly from the Tapajós River eastwards towards the mouth of the Amazon. Most records are from the state of Pará, and the species is also found in Maranhão, Tocantins and northern Mato Grosso. Known localities include the Gurupi Reserve in Maranhão and the Cristalino Park in Mato Grosso, where a yellow and black net-patterned form lives. The species occurs in many protected areas but has disappeared from a few sites because of deforestation and flooding from hydroelectric dams.

> **Native range:** Brazil.

HABITAT

Adelphobates galactonotus lives in moist tropical lowland forest and has been found up to about 600 m. It stays on the forest floor among leaves, roots, fallen wood and cover, and climbs only a little. It seems to prefer forest with many Brazil nut trees. The eggs are laid on the ground, and the male carries the tadpoles to water, probably also to rain water that has collected in the shells of Brazil nuts.

Parts of the range have a distinct dry and rainy season, and the species breeds more seasonally than many other poison frogs. Precise measurements of temperature and humidity at the sites are not documented, so the figures under care are based on experience from captivity. The species tolerates a certain amount of disturbance of the forest and is still widespread and locally common, but it is threatened by loss of habitat and by illegal collecting.

Read more: Humidity, misting and ventilation Read more: Rearing tadpoles

Care

THE ENCLOSURE

A pair of *Adelphobates galactonotus* needs a terrarium of at least 60 × 45 × 45 cm (about 120 litres). The frog is large and eats a lot, and floor area matters more than height, so choose a wide, deep terrarium rather than a tall one. A group needs considerably more floor space than a pair, not just more height.

Use a living, planted terrarium with a drainage layer, a fibre mesh, a damp substrate and a thick layer of leaf litter on top. Provide several shaded hiding places of cork, roots and plants, and set up feeding and egg-laying sites in two places, so that one frog cannot keep the others away.

Ensure good ventilation, and seal all gaps around cables, doors and drains so the frogs cannot escape. Let the terrarium run in, and build up a population of springtails and isopods before the frogs go in. Avoid deep or steep-sided open water.

Do not keep different species or colour forms together. Adults can change their relationships when they reach sexual maturity, so always have an extra, established terrarium ready in case a frog has to be separated.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

By day the temperature should be 21-25 °C, and at night it may fall to 18-21 °C. There should be no hot basking spot and no heat lamp.

Heat is the greatest danger: the temperature must not stay above 27 °C for long, especially if ventilation is poor, and above about 29 °C it is dangerous. Measure the temperature at the frogs' height and at several places in the terrarium, and cool the terrarium in summer.

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity should be 70-100 %. Mist daily with dechlorinated tap water, reverse-osmosis water or spring water, so that humidity briefly rises to about 90 %, and then let the exposed leaves dry a little while the leaf litter and hiding places stay moist. Constantly fogged-up glass, waterlogged substrate and stagnant air are not signs of good care.

The species can tolerate down to 50 % humidity for short periods if it has access to moist spots, but low humidity can quickly become fatal. Frogs do not drink but absorb water through the skin, so misting is vital. A timer-controlled rain system keeps humidity even, also when you are away.

WATER AND WATER QUALITY

Adelphobates galactonotus does not need a water dish or a waterfall when the enclosure is misted regularly and has a moist layer of leaf litter. Stagnant water in open dishes quickly grows bacteria, and deep or steep-sided water is a risk for frogs that climb only a little.

For breeding, set out at least two small cups of water where the male can deposit the tadpoles. Use reverse-osmosis water with a piece of Indian almond leaf, so that the water turns brown and tannin-rich, and change it regularly so it does not become dirty. The frogs absorb substances through the skin, so never use soap or cleaning products in the enclosure.

LIGHTING AND UVB

UVB is optional for *Adelphobates galactonotus*. If you choose to provide it, it should be weak (Ferguson zone 1) and combined with dense shade, and it does not replace supplements. The plants need light, so use an LED plant lamp that does not heat up the enclosure. Keep a fixed daily rhythm of about 12 hours of light and 12 hours of darkness.

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

FEEDING

Adelphobates galactonotus eats small arthropods. Wingless fruit flies are the staple food: adults take both *Drosophila melanogaster* and suitably sized *D. hydei*, while newly metamorphosed juveniles need the smallest. Adults also take small crickets of pinhead size. Springtails and small isopods are welcome at all ages and often live in the enclosure, and bean beetles and aphids can provide variety.

The species is a hungry frog, so feed according to the animals' condition, age and breeding activity rather than a fixed number. Give as many flies as the frogs eat within a few minutes.

Feeder insects from cultures do not have the nutritional content of nature and must be dusted with a complete calcium and vitamin supplement, following the manufacturer's instructions. Start the feeder cultures before the frogs arrive.

BEHAVIOUR AND HANDLING

Adelphobates galactonotus is diurnal and fairly calm. It is less bold than the most outgoing poison dart frogs and likes to hide, but established animals can be quite visible when there is plenty of cover. Whether the species can be kept in a group depends on sex, age and temperament. Juveniles that grow up together can fall out when they reach sexual maturity, and a compatible pair is the safest way to keep them.

A group requires a large floor area, several feeding spots and many hiding places. Watch for chasing, wrestling, frogs kept away from food, weight loss and a frog that hides all the time or sits high up. Then separate the animals.

The frogs should not be handled. The skin is thin and absorbs substances from your hands, and traces of soap and cream can harm them. If a frog has to be moved, coax it down into a clean cup with a lid.

Breeding

SEXUAL MATURITY AND SEXING

The female is often larger and broader than the male, and the male may have slightly wider toe pads and calls. No single feature is reliable, and young animals cannot be sexed reliably until they are 10-12 months old. Sex is best determined by repeated observation of adult behaviour: a calling animal is a male, and an animal that lays eggs is a female. The species becomes sexually mature at about 8 months of age but typically does not breed until the animals are at least a year old. Buy several animals, therefore, so the chance of getting both sexes increases.

MATING

Adelphobates galactonotus breeds more seasonally than most poison frogs and depends on the change between the dry and rainy season. A couple of weeks with somewhat less misting and slightly lower humidity, followed by heavy misting, can get breeding started. Do not go so far that the frogs dry out: the enclosure must still be moist in the leaf litter and hiding places. There is no known winter rest.

The male lures with a low, sustained buzzing call and leads the female to a hidden spot where the eggs are laid and fertilised. Breeding is harder and more irregular than with the most common poison frogs, so expect to need patience.

EGGS AND TADPOLES

Adelphobates galactonotus lays its eggs on land: on a smooth, broad leaf, under leaf litter or cork, or in a petri dish under a coconut shell. Set up several egg-laying sites. Clutches are modest, typically 4-8 eggs. The male tends the eggs, and after hatching he carries the tadpoles on his back to water.

The eggs can stay in the enclosure, where the male moves the tadpoles to a cup you have set out himself. This is the easiest option. Alternatively, the eggs are carefully moved to a clean petri dish with a little water and hatched at the same temperature as the enclosure. The tadpoles do not depend on infertile eggs from the female and are raised on prepared tadpole food and algae.

Keep the tadpoles separately in clean cups of reverse-osmosis water, a piece of almond leaf and a little moss, and give no more food than they manage to eat. Avoid crowding, because differences in size, aggression and cannibalism can occur. Use clean tools and change the water regularly. The tadpole stage varies, so follow the development rather than going by a particular date.

METAMORPHOSIS

The eggs hatch after about 2 weeks. The tadpoles metamorphose after 60-90 days, depending on temperature, food and water quality. The hind legs appear first, then the front legs.

When the front legs have appeared, the juvenile must be able to get out of the water. After a day or two, move it to a small rearing container with easy access to land, e.g. a tilted box with moist sphagnum and a little water. The newly metamorphosed frog does not eat until the tail is absorbed and the mouth is fully developed.

REARING THE YOUNG

The juveniles do not eat until the tail is gone. After that they take the smallest *Drosophila melanogaster* and springtails, and as they grow they can take larger flies. Dust all food with a complete calcium and vitamin supplement.

Use a small rearing container with leaf litter, plant cuttings and a population of springtails. Keep juveniles of the same size together, and watch for aggression and animals that fall behind. When the juveniles have become robust, they can move to a more permanent enclosure with hiding places. The juveniles have a large appetite, so provide several feeding sites. The juveniles cannot be sexed before 10-12 months.

Health and common mistakes

No actual list of diseases is documented for the species, so seek a vet with amphibian experience if in doubt. The most important pitfalls are:

- Overheating. Sustained temperatures around 27-28 °C are a warning, and above about 29 °C it is dangerous. Measure the temperature at the frogs' level, and cool in summer.
- An enclosure that is too dry. Low humidity without access to moist spots can quickly become fatal. Mist daily, and keep the leaf litter moist.

- Lack of calcium and vitamins. Feeder insects from cultures must be dusted with a complete supplement.
- Aggression and stress. Chasing, wrestling and frogs that are kept away from the food can cost animals their lives. Separate rivals.
- Poor water and unclean tools. Food residues and stagnant water grow bacteria and fungi. Use clean tools for everything.

Contact a vet if a frog stops eating, loses weight, sits lethargically, moves poorly or has sores or discoloured skin. Keep newly bought animals separate for 30-45 days, so that infection is not spread.

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.