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POISON DART FROGS

Brazil-nut Poison Frog

Adelphobates castaneoticus

Adelphobates castaneoticus is a small, glossy black poison frog with white or yellowish spots and bright orange patches at the forelimbs and knees. It lives on the forest floor in the Brazilian state of Pará in the Amazon and is named after the Brazil nut, whose empty shells the male uses as water pools for the tadpoles. Little is known about its care.

Family: Dendrobatidae Former name: *Dendrobates castaneoticus*

KEY FACTS

THE ANIMAL

Adult size	**18-23 mm** snout-vent length
Lifespan	**8-15 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	**45 × 45 × 45 cm** L × W × H for 2 adults
Temperature, day	**24-27 °C**
Temperature, night	**20-24 °C**
Humidity	**70-100%**
Water	**No water dish**
UVB	**Optional**
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	**5-7 months**
Eggs per clutch	**4-8**
Hatching	**10-14 days**
Larval period	**60-90 days** from hatching to metamorphosis
Larval diet	**Algae/plants and other tadpoles**
Parental care	**Guards the eggs and carries the tadpoles**

PROTECTION AND PAPERWORK

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

About the species

Adelphobates castaneoticus is a small poison dart frog of 18-23 mm from snout to vent. Females are about 2.5 mm larger than males. The back is smooth and glossy black with spots and streaks in white or shades of yellow, and the belly is dark grey to black with the same pale pattern. There is a distinct yellow or orange spot where the front leg meets the body, and two matching spots at each knee on the hind leg. When the frog sits still, the knee spots merge into one large spot. A further spot on the underside of the shank is only visible from below.

The species was described in 1990 by Janalee Caldwell and Charles Myers as *Dendrobates castaneoticus* and is the type species of the genus *Adelphobates*. The species name derives from Latin castanea, chestnut, and alludes to the Brazil nut, which is called castanha-do-pará in Brazil. The sister species is *Adelphobates quinquevittatus*, which lives further west, and the species is also closely related to *Adelphobates galactonotus*, which is far better known in captivity.

The species is only rarely kept, and knowledge of its care is sparse. Brazil does not permit export of the species. Lifespan and temperament are not documented; the lifespan in the fact box is an estimate.

Poison dart frogs do not produce their own toxins but take up alkaloids from prey in the wild. The potency in *A. castaneoticus* is not documented, and the skin toxicity is set to mild based on its closest relatives. Captive-bred animals fed fruit flies and springtails carry no significant toxin. Even so, wash your hands before and after contact with the terrarium.

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

Distribution and habitat

Adelphobates castaneoticus is found only in the rainforest of central Brazil, in the state of Pará. The type locality is Cachoeira Juruá on the Xingu River. The species is also known from Taperinha about 300 km to the northwest and from the Tapajós forest near Santarém. The localities are far apart, and the species is probably more widespread than the records show.

The species occurs in several protected areas, including the national forests near Altamira and Tapajós and Cristalino Park. It is considered common within its range, and the population appears stable. The threats are logging, conversion of forest to agriculture and forest fires.

> **Native range:** Brazil.

HABITAT

Adelphobates castaneoticus lives in lowland rainforest and is diurnal. It stays in the leaf litter on the forest floor and climbs only a little into low vegetation. Its food is ants, termites and other small arthropods.

The climate in the range is tropical, warm and humid, with small differences between day and night and a drier period for part of the year.

The species is tied to Brazil nut trees. The nuts' hard capsules fall to the ground, where agoutis and other animals break them open to reach the seeds. The empty shells are left lying and fill with rain water. Here the tadpoles can grow up, but also in water-filled tree holes and stumps. The pools of water are small and short-lived and are shared with larvae of insects and other amphibians, so the tadpoles are predators that eat mosquito larvae, smaller tadpoles and plant material.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Little is known about the care of *Adelphobates castaneoticus*. The species lives in the leaf litter of the forest floor in a warm, humid lowland climate. Temperature and humidity are borrowed from the sister species *Adelphobates quinquevittatus*, and the breeding figures from the far better known *Adelphobates galactonotus* and from *A. quinquevittatus*.

Two adults can be kept in a terrarium of at least 45 × 45 × 45 cm. The species is small and lives on the ground, so floor area matters more than height. Use a living, planted terrarium with a drainage layer, a fibre mesh, damp substrate and a thick layer of leaf litter on top. The leaf litter is the frog's own habitat, and it must be thick enough for the animals to hide beneath it.

Provide several shaded hiding places of cork, roots and plants. Ensure good ventilation and seal all gaps, because the frogs are small. Let the terrarium run in, and build up a population of springtails and isopods before the frogs go in.

Do not keep different species together. Because the temperament is unknown, it is wise to have an extra, established terrarium ready for separating animals.

Read more: Humidity, misting and ventilation Read more: Terrarium construction and bioactive substrate

TEMPERATURE

The daytime temperature should be 24-27 °C, and at night it falls 3-4 °C, to 20-24 °C. The variation over the year should be small, 1-2 °C. This fits the lowland climate of Pará.

There should be no basking spot and no heat lamp. Heat is the greatest danger for small frogs in closed enclosures, and temperatures above about 28 °C are dangerous. Measure the temperature at the frogs' level, and make sure the enclosure can be cooled in summer, for example with ventilation or a cooler location.

There is no known winter rest. In winter the enclosure can be kept slightly drier, but there should always be moist hiding places.

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity should be about 70-80 % in the middle of the day and close to 100 % in the morning and evening, and the leaf litter and substrate should be moist at all times. Mist once or twice a day with rain water or reverse-osmosis water, or use a rain system and a fogger on timers. Ensure ventilation so the air does not become stagnant and the planting does not stay soaked for long periods at a time.

A period of somewhat less misting followed by heavy misting imitates the change between the dry and rainy season and can get breeding going. Never let the leaf litter and hiding places dry out: small frogs dry out quickly.

WATER AND WATER QUALITY

A water dish is not necessary unless you want to raise young. The frogs get their moisture from misting and the moist leaf litter. Amphibians absorb water and substances through the skin, so use only rain water or reverse-osmosis water for misting, and avoid cleaning products and soap in the enclosure.

For tadpoles you can set out small, smooth water containers that resemble the water-filled nuts in the wild: a coconut shell, a small ceramic cup or a film canister with 2-5 cm of water. Keep the water clean, and change it regularly. The tadpoles eat each other, so each container should hold only one tadpole.

LIGHTING AND UVB

Provide 10-12 hours of light a day with fluorescent tubes or LEDs for the plants. In the wild the species lives in the shade under the forest canopy, so the light should give the plants enough to grow without heating the enclosure. It is not documented that the species needs UVB; weak UVB is optional. Make sure there is plenty of shade, so the frogs can choose for themselves.

Read more: Lighting and UVB

FEEDING

In the wild *A. castaneoticus* feeds on ants, termites and other small arthropods. In captivity feed springtails, small fruit flies and small isopods. Adults also take slightly larger fruit flies (*Drosophila hydei*) and small crickets, but start with the smallest feeder insects.

Feed every second to third day, as many feeder insects as the frogs eat within a couple of hours. Remove food that has not been eaten, so it does not stress the frogs. Lightly dust the feeder insects with a calcium supplement and occasionally with a vitamin supplement. Keep your own feeder cultures, so there are always fresh animals.

Juveniles are fed every day with springtails and the smallest fruit flies. There are no fixed feeding schedules for the species, so follow the animals' weight and condition: a round but not fat frog is healthy.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

A. castaneoticus is diurnal and lives mostly on the forest floor. Temperament and territorial behaviour are not documented, but *A. galactonotus* can become aggressive towards conspecifics when it becomes sexually mature. Therefore keep no more than a pair, and have an extra enclosure ready to separate animals.

The male has a throat pouch and calls in the breeding season; what the call sounds like is not documented. Frogs should be handled as little as possible: the skin is thin and sensitive, and handling stresses the animals. When the enclosure needs cleaning, move the frogs with a clean plastic cup rather than by hand. Always wash your hands before and after.

Breeding

SEXUAL MATURITY AND SEXING

The females are about 2.5 mm larger than the males, and only the male has a throat pouch. A calling animal is a male, and an animal that lays eggs is a female, so sex is best determined from behaviour over time. The species can become sexually mature after 5-7 months. Start with several juveniles, so the chance of getting both sexes increases.

MATING

Mating is not described in detail for the species. In *A. galactonotus* the male calls and leads the female to a hidden spot where the eggs are laid. A somewhat drier period followed by heavy misting can get breeding going; never go so far that the frogs dry out. Captive breeding is rare.

EGGS AND TADPOLES

The eggs are laid on the ground and the male guards them. The number per clutch is not documented; in *A. galactonotus* it is 4-8 eggs. After hatching, the male carries the tadpoles to small, temporary pools of water, in the wild water-filled Brazil nut shells, tree holes and stumps.

The tadpoles are predators and eat mosquito larvae, smaller tadpoles and plant matter, so each tadpole needs its own container. Feed fish food, mosquito larvae and algae. The water must be clean and at the same temperature as the terrarium. Parental care beyond guarding and transport is not documented.

METAMORPHOSIS

Hatching time and larval period are not documented for the species. In the sister species *A. quinquevittatus* the eggs hatch after 10-14 days, and in *A. galactonotus* the larval period lasts 60-90 days. In the wild the tadpoles develop quickly because the pools dry out, so the larval period may be shorter.

When the front legs appear, the tadpole needs shallow water and easy access to land via a sloping piece of cork or bark. Move it to a damp, established rearing terrarium when the tail is almost absorbed.

REARING THE YOUNG

The newly metamorphosed juveniles are very small. Keep them in a small, established enclosure with moist leaf litter and many hiding places, and give them springtails every day; after about a week, juveniles of the sister species also take the smallest fruit flies. Calcium and vitamin supplements are given a few times a week. Growth and timing of moving them are not documented for the species. Keep the juveniles separate from adults, and put them together with others only when they are almost fully grown.

Health and common mistakes

No list of diseases is documented for the species, so care follows what applies to poison frogs in general. The most important pitfalls are:

- Overheating. Temperatures above about 28 °C are dangerous. Measure the temperature at the frogs' level.
- An enclosure that is too dry. Small frogs dry out quickly. Mist daily, and keep the leaf litter moist.
- Lack of calcium and vitamins. Dust feeder insects from cultures with a supplement.
- Stress and aggression. Separate animals when there is chasing and wrestling.
- Poor water and unclean tools. Use clean tools, and change the water in tadpole containers often.

Contact a vet with amphibian experience if a frog stops eating, loses weight, sits lethargically or has sores or discoloured skin. Keep newly bought animals separate for 30-45 days.

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/adelphobates-castaneoticus