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POISON DART FROGS

Darwin Wallace poison frog

Epipedobates darwinwallacei

Epipedobates darwinwallacei is a small, black poison dart frog of 13-20 mm with orange to yellow spots. It lives in the montane forest around Mindo in north-western Ecuador and is threatened. Since 2024 it has been regarded as a synonym of *Epipedobates espinosai*. Little is known about its care.

Family: Dendrobatidae

KEY FACTS

THE ANIMAL

Adult size	**13-20 mm** snout-vent length
Lifespan	**8-10 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Rainforest and montane forest**
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	**40 × 40 × 40 cm** L × W × H for 3 adults
Temperature, day	**20-24 °C**
Temperature, night	**18-20 °C**
Humidity	**80-100%**
Water	**Water section** depth 2-5 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**
Eggs per clutch	**10-30**
Hatching	**9-14 days**
Larval period	**42-70 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	**Endangered (EN)**

About the species

Epipedobates darwinwallacei is a small poison dart frog in which females measure 13-20 mm and males about 17 mm from snout to vent. The male's third finger is swollen. The skin on the back is finely granular. The base colour is black to dark brown with bright orange to yellow spots that may merge into a net, and the oblique stripe on the side is incomplete and may be unbroken or dissolved into spots. The throat is dark with a pale stripe down the middle, and the belly is dark with large orange spots.

The species was described in 2010 by Diego Cisneros-Heredia and Mario Yánez-Muñoz from the area around Mindo, where the frogs had previously been confused with *Epipedobates boulengeri* and *Epipedobates espinosai*. The name honours Charles Darwin and Alfred Russel Wallace. In 2024 a genetic study showed that the frogs from Mindo do not differ from *E. espinosai*

in their genes, call or tadpoles, and that intermediate forms exist between the two patterns. *E. darwinwallacei* is therefore now regarded as a junior synonym of *E. espinosai*. The name is still used in the trade and in many species lists and therefore has its own page here.

The genus has toxins in the skin, which the frogs obtain from their food in the wild; captive-bred animals are non-toxic. The bold pattern suggests chemical defence, but the toxin has not been documented for the species. Wash your hands before and after contact.

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

Distribution and habitat

Epipedobates darwinwallacei is known only from the western slope of the Andes in the province of Pichincha in north-western Ecuador: from Mindo and from Saragoza by the Río Cinto on the old road between Lloa and Mindo, at an elevation of 1,250-1,390 m.

The IUCN regards the species as Endangered (EN). With the merger the population now belongs to *Epipedobates espinosai*, which is found from Mindo down to the lowlands around Santo Domingo. Brown frogs from Pachijal north-west of Mindo, which have been listed under the name, are a different, as yet undescribed species.

> **Native range:** Ecuador.

HABITAT

Epipedobates darwinwallacei lives in low montane forest on the forest floor: in primary and secondary forest, in bamboo stands (*Guadua*) and on abandoned pastures at the forest edge, always at or in slow-flowing streams and bogs. The frogs are diurnal, move actively between grass and leaf litter and jump into the water when chased. At night they sleep on herb leaves about 5 cm above the ground near the streams.

The climate at an elevation of 1,250-1,400 m is humid and rainy and cooler than in the lowlands, especially at night. Temperature and humidity at the frogs' habitats have not been measured.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Little is known about the care of *Epipedobates darwinwallacei*, and the species is hardly ever kept. The care is based on the climate and habitat around Mindo and on *Epipedobates tricolor*, which lives at the same elevation on the western slope of the Andes and is well known in captivity. The figures for enclosure, eggs, hatching, larval period and lifespan are borrowed from it. See also *Epipedobates espinosai*, to which the species is now assigned.

One male and two females need an enclosure of at least 40 × 40 × 40 cm. The species always lives near water, so give the enclosure a small, permanent water feature at one end and damp, moss-covered land at the other. Build up the land section with expanded clay balls as a drainage layer, a water-permeable screen and soil, moss and coconut fibre, and lay leaf litter on part of the floor. Add cork, roots, dense plants and grass-like plants. Ventilation must keep the glass free of condensation, and the openings are covered with fine mesh.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

Keep 20-24 °C during the day and 18-20 °C at night. This corresponds to the cool end of what suits *Epipedobates tricolor* from the same elevation. It is normally achieved with room temperature and the lighting. Avoid more than 26 °C for long periods, direct sun and local heating. There is no hibernation, but a cooler and drier period in winter gives the animals a break from breeding.

Read more: Brumation and the seasons

HUMIDITY AND MISTING

Humidity should be 80-100 %. Spray several times a day or use a rain system, for example three times a day for 20-60 seconds, preferably supplemented with a fogger. Leaves and furnishings should be dry again about an hour after spraying, and the substrate must not become waterlogged. Use rainwater or reverse osmosis water in the systems. In winter spraying can be shorter and less frequent.

WATER AND WATER QUALITY

Provide a small, permanent water feature with 2-5 cm of water and a gentle slope or ramp so that the frogs can easily climb out. In the wild the species always lives near slow-flowing water, and a small pump without strong current keeps the water moving. Use rainwater, reverse osmosis water or dechlorinated tap water, and change part of the water often. Amphibians absorb water and substances through the skin, so soap, cleaning products and hand cream must not come near.

LIGHTING AND UVB

The light is for the plants: fluorescent tubes or LED bars for about 12 hours a day. The closely related species thrive without UVB, so it is optional. If you wish to provide it, stick to Ferguson zone 1 with plenty of shade and dense foliage.

Read more: Lighting and UVB

FEEDING

The frogs are given live, small prey: springtails and fruit flies (*Drosophila melanogaster*), and adults also take the larger *Drosophila hydei* and newly hatched crickets. Feed adults 2-3 times a week, slightly more often in a rainy season with young, and only as much as they eat in a few minutes. Dust the feeder insects with vitamin and mineral powder for amphibians, and give them good food themselves. Your own cultures of springtails and fruit flies ensure a steady supply. Do not catch feeder insects in the wild; they can carry parasites and pesticides.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

E. darwinwallacei is diurnal and moves openly between grass and leaf litter. The call is very similar to the call of the brown *E. espinosai* from the lowlands. The males of the genus are territorial and call from fixed spots. Keep a pair, one male and two females or a larger group in an enclosure with many visual barriers and hiding places, and separate the animals if one is persistently chased. Frogs should be handled as little as possible, because their thin, moist skin is damaged by salt, grease and cream from the hands. If a frog has to be moved, let it run into a damp plastic tub.

Breeding

SEXUAL MATURITY AND SEXING

The male has a swollen third finger, and females are slightly larger than males. In *Epipedobates tricolor* breeding begins 6-10 months after metamorphosis; the age at sexual maturity has not been documented for *E. darwinwallacei*. The surest approach is to keep a small group and see who calls.

MATING

Mating has not been documented for *E. darwinwallacei*. In the genus the males call with a soft trill, mostly in the morning and after spraying. The male lures the female to a hidden egg-laying site, and mating takes place in head amplexus. Breeding follows the rainy season: a cooler and slightly drier period of about three months in winter, followed by more frequent spraying, gives the animals a break and then sets breeding going.

EGGS AND TADPOLES

Egg laying has not been documented for *E. darwinwallacei*. In the genus the eggs are laid in the leaf litter or on leaves, and in the enclosure preferably in half a coconut shell over a saucer or in the corner of a bromeliad leaf. The male guards the eggs and moistens them with water from his bladder, and when the tadpoles hatch he carries them on his back to water. A clutch is 10-30 eggs.

If you wish to rear the tadpoles yourself, the clutch is moved after a few days to a small, closed container at 22-24 °C with a little rainwater or reverse osmosis water in the bottom, so that the eggs are moist but not covered. The tadpoles are reared singly or together in 1-2 cm of soft, slightly acidic water (pH 6-7), later deeper, and are fed fish flakes, spirulina and daphnia every day.

METAMORPHOSIS

The eggs hatch after 9-14 days, and the tadpoles take 6-10 weeks (42-70 days) to become small frogs, depending on temperature and food. When the front legs appear, there must be a gentle transition from water to land with stones, cork or plants, otherwise the small frogs drown.

REARING THE YOUNG

The newly metamorphosed froglets are very small and are moved to a small enclosure with the same climate, damp moss, leaf litter and small hiding places. Offer springtails and the smallest fruit flies daily, dusted with vitamin and mineral powder. Growth and age at transfer have not been documented for the species.

Health and common mistakes

Diseases have not been documented specifically for the species. What applies to the genus probably applies here too:

- Chytrid fungus (*Batrachochytrium dendrobatidis*), which can wipe out entire populations. Quarantine new animals, have them tested, and disinfect furnishings.
- Spindly leg syndrome in young that develop weak or no front legs. The cause has not been established; the food and too many tadpoles in the same water are suspected.
- Heat above 26 °C for long periods, which causes lethargy and loss of appetite.
- Dehydration at low humidity without access to water.

Contact a vet with knowledge of amphibians if an animal is lethargic, 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.