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POISON DART FROGS

Cauca Poison Frog

Andinobates bombetes

Andinobates bombetes is a small, diurnal poison dart frog of 17-19 mm from the cloud forests of Colombia's Andes. It is black to dark brown with red or orange markings on the front of the body and depends on water-filled bromeliads. The species is Vulnerable in the wild, and little is known about its care.

Family: Dendrobatidae Former name: *Ranitomeya bombetes; Dendrobates bombetes; Minyobates bombetes*

KEY FACTS

THE ANIMAL

Adult size	**17-19 mm** snout-vent length
Lifespan	**5-10 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**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	**45 × 50 × 60 cm** L × W × H for 5 adults
Temperature, day	**22-25 °C**
Temperature, night	**18-21 °C**
Humidity	**80-100%**
Water	**No water dish**
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	**1-2**
Hatching	**16-24 days**
Larval period	**108-112 days** from hatching to metamorphosis
Larval diet	**Algae/plants and complete diet**
Parental care	**Carries the tadpoles**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
IUCN	**Vulnerable (VU)**

About the species

Andinobates bombetes is one of the smallest poison dart frogs: the male measures about 18 mm and the female about 19 mm from snout to vent. The base colour is black or dark brown. Red or orange markings run from the snout part of the way down the back, and the head has a red or orange spot. The flanks are black with yellow or yellow-green spots, the forelegs are the same colour as the markings on the back, and the underside is black with green, yellow or blue-green markings that differ from animal to animal. The eyes are so dark brown that the pupil can hardly be seen.

The species was described in 1980 by Charles Myers and John Daly as *Dendrobates bombetes* and has since been placed in *Minyobates* and *Ranitomeya*. It is the type species of the genus *Andinobates*, which differs from *Ranitomeya* in that the 2nd and 3rd vertebrae are fused and in that the legs lack a reticulated pattern. The male is recognised by his call, a buzzing sound, and by a faint blue tinge on the vocal sac.

The skin contains toxins, which poison dart frogs take up from their prey in the wild. Animals raised on cultured feeder insects are free of toxins. The potency of the toxins in this species has not been studied, so wash your hands after working in the enclosure.

Distribution and habitat

Andinobates bombetes occurs only in Colombia, in the western and central Andes around the Cauca valley, especially in Valle del Cauca and also in Risaralda, Quindío and Caldas. Records range from about 700 m to 2,300 m, most of them between 950 and 1,800 m.

The species is Vulnerable because the forest is being cleared for agriculture, cattle farming and logging, and because fertiliser and pesticides harm the frogs. It also occurs in the international pet trade.

> **Native range:** Colombia.

HABITAT

The habitat is humid mountain forest and cloud forest, but the species also occurs in dry tropical forest along watercourses in the lower parts of its range. The frogs live on the forest floor in the leaf litter and depend on bromeliads, whose leaf axils collect rainwater. The bromeliads are essential for breeding, and the species also persists in disturbed forest as long as bromeliads grow there. The climate in the mountain forest is cool and humid, with mist and frequent rain.

Care

THE ENCLOSURE

Little is known about the care of *Andinobates bombetes*. What is known is based on the habitat, a cool and very humid mountain forest with thick leaf litter and bromeliads, and on captive breeding in Colombia. The lifespan is borrowed from the better-known small poison dart frogs *Ranitomeya reticulata* and *Ranitomeya variabilis*. *Andinobates opisthomelas* lives in the neighbouring mountains and has the same requirements.

An enclosure of 45 × 50 × 60 cm suits a group of up to five animals. Set it up with a drainage layer of clay pebbles, a substrate of coconut fibre and forest soil, and a thick layer of dead leaves, kept damp. Cover the back and side walls with cork or coconut fibre board, and plant densely with climbers, moss and bromeliads that hold water. Also add bark and flat, damp hiding places on the ground. Ventilation is necessary, because stagnant air causes fungus; a ventilation strip in the top and one low on the side are enough.

Read more: Terrarium construction and bioactive substrate Read more: Buying animals: captive-bred, wild-caught and transport

TEMPERATURE

The daytime temperature should be 22-25 °C, and at night it may fall to 18-21 °C as in the mountain forest. Keep the temperature below 27 °C. Place the enclosure out of direct sun, use lighting that does not give off heat, and provide good ventilation; a fan in the room helps on hot summer days. Heating is rarely necessary in a heated living room. The species has no winter rest period.

HUMIDITY AND MISTING

Humidity should be 80-100 % and never below 70 %. Spray twice a day, morning and afternoon, or use a fogger or rain system with reverse osmosis water or rainwater. Excess water must be able to drain away through the drainage layer, so that the substrate is damp but never waterlogged. The surface may dry slightly between sprayings, and the leaves should be wet so that the frogs can drink the droplets. If the air is too dry, the frogs hide and the skin becomes dull.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

A water bowl is not needed; the frogs drink droplets from plants and spray water. For the tadpoles, use bromeliads with water in the leaf axils or small plastic cups with 2-3 cm of water. Use reverse osmosis water, rainwater or dechlorinated tap water, and change the water in the cups when it becomes cloudy. Avoid soap, cleaning products and chlorinated water, because amphibians absorb substances through the skin.

Read more: Rearing tadpoles

LIGHTING AND UVB

The light is primarily for the plants: plant lighting for 10-12 hours a day provides a daily rhythm and growth. UVB is hardly necessary, but a weak UVB source (zone 1) over part of the enclosure does no harm, provided there is shade under the plants. The lighting must not give off heat, because heat from lamps is the most common cause of excessive temperatures.

Read more: Lighting and UVB

FEEDING

The food is small arthropods: springtails, small fruit flies (*Drosophila melanogaster*), small isopods and newly hatched crickets. Newly metamorphosed froglets take only springtails. Feed every day or every other day with what the frogs eat in an hour, and dust the feeder insects lightly with calcium and vitamins 2-3 times a week. Keep your own cultures of springtails and fruit flies so that there is always food.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Andinobates bombetes is diurnal and stays low in the enclosure, in the leaf litter and by the bromeliads. The males call mainly in the morning. The most eggs and the best fertilisation are obtained with more females than males, for example two males and three females. The frogs are shy, and many hiding places make them feel more secure and therefore more visible. They should not be handled, because the skin is delicate; when cleaning, move them with a small cup.

Breeding

SEXUAL MATURITY AND SEXING

The male is recognised by his call and by the faintly blue vocal sac, and the female is slightly larger. Each animal has its own pattern on the underside, so the animals can be told apart. The age at sexual maturity has not been documented. A pair is easiest to find by keeping a small group and following the animals that call and mate.

MATING

The male calls and chooses the egg-laying site. How fertilisation takes place is not certain: the male possibly deposits sperm at the site before the female lays the eggs. The female lays about every third week, but the interval varies greatly. What triggers mating has not been documented.

EGGS AND TADPOLES

The female lays 1-2 eggs at a time, most often only one, and the eggs are about 4 mm in diameter. They are preferably laid on damp forest soil, more rarely on bark or in dead leaves, and not in film canisters or plastic tubes. The eggs are hard to find, so a shallow dish of damp forest soil makes them easier to keep an eye on. About two out of three eggs are fertilised. The male visits the eggs and carries the tadpoles on his back to water in bromeliads.

The tadpoles feed on fine particles, small insects, rotifers and algae in the water and also take mosquito larvae. They can be raised individually in cups with 2-3 cm of water at room temperature and grow fastest on fish flakes, given in very small amounts so that the water does not become cloudy.

METAMORPHOSIS

The eggs hatch after 16-24 days, and the tadpoles metamorphose after 108-112 days on fish flakes. Other food can extend the larval period to 150-190 days. The whole development from egg to frog thus takes about 130 days. When the front legs appear, lower the water level to no more than the height of the tadpole, and add a piece of bark or a leaf edge so that the little frog can easily get onto land.

REARING THE YOUNG

The newly metamorphosed froglets measure about 12 mm. Place them in a small, humid box with damp kitchen paper, a piece of bark and a damp hiding place, and spray twice a day. For the first two weeks they take only springtails, and after that also the smallest fruit flies and newly hatched crickets. Dust the food with calcium and vitamins, and move them to a larger enclosure once they are eating well and have grown.

Health and common mistakes

Typical mistakes with small poison dart frogs from a cool climate:

- Heat above 27 °C causes stress and loss of appetite and can in the worst case kill the frogs.
- Air that is too dry or stagnant causes dull skin, fungal infections and weight loss.
- Food without calcium and vitamins causes weak bones, especially in females that lay eggs.
- Intestinal parasites are common in wild-caught animals; a vet with knowledge of amphibians can examine a faecal sample.

A healthy frog has smooth, colourful skin and a rounded belly. Sick animals are isolated in a humid box, and a vet with knowledge of amphibians is contacted quickly.

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.