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POISON DART FROGS

Santander Poison Frog

Andinobates virolinensis

Andinobates virolinensis is a small, diurnal poison dart frog of up to 19 mm with a scarlet head and forebody and a brown hindbody. It is found only in the cloud forest of the eastern Andes in Colombia. The species is vulnerable in the wild and is hardly ever kept, so its care is based on the cool, humid mountain climate of its habitat.

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

KEY FACTS

THE ANIMAL

Adult size	**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 × 45 × 60 cm** L × W × H for 3 adults
Temperature, day	**19-23 °C**
Temperature, night	**15-19 °C**
Humidity	**85-100%**
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**
Eggs per clutch	**1-2**
Hatching	**16-24 days**
Larval period	**108-152 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 virolinensis is a small poison dart frog in the genus *Andinobates*, a group of small frogs from the Andes that were formerly placed in *Ranitomeya*. Adults reach up to 19 mm from snout to vent. The head and the front two thirds of the body are a deep scarlet red, and the colour shades into brown towards the vent. The tympanum and the upper surfaces of the fore and hind limbs are brown. Sexual differences have not been described.

The species was described in 1992 by Ruiz-Carranza and Ramírez-Pinilla and has previously been listed as *Ranitomeya virolinensis*, *Dendrobates virolinensis* and *Minyobates virolinensis*.

The tadpoles are reddish brown on the back and cream-white underneath. Temperament and lifespan in captivity are not documented; the lifespan given in the care sheet is borrowed from related small poison dart frogs.

Skin toxicity: poison dart frogs do not produce their own toxins but take up alkaloids from small arthropods in their diet, especially ants and mites. The potency of the toxin in *A. virolinensis* is not documented. The species in the genus are regarded as mildly toxic, so the frogs should not be handled, and you should wash your hands after working in the enclosure. Captive-bred animals fed only fruit flies and springtails lack the toxins.

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

Distribution and habitat

Andinobates virolinensis is found only in Colombia, on the Cordillera Oriental, the easternmost range of the Andes. The range includes the departments of Santander and Cundinamarca, and there are also records from Boyacá. The great majority of records are from Santander.

The species is assessed as Vulnerable (VU) on the IUCN Red List because it occurs in only a few places and because its forest is threatened by agriculture and logging. Where it lives, it is common.

> **Native range:** Colombia.

HABITAT

Andinobates virolinensis lives on the floor of cloud forest from about 1,300 to 2,400 m above sea level. The frog is diurnal and stays in the leaf litter. Several adults may share the same bromeliad, so the species is probably not territorial. It breeds all year round.

The diet consists of small arthropods such as mites, springtails, ants and insect larvae. Temperature and humidity have not been measured in the species' habitat, but cloud forest at this altitude is cool and very humid, with fog or rain for most of the year.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Little is known about the care of *Andinobates virolinensis*, and the species is hardly ever kept in captivity. Its care is based on the habitat: cool, humid cloud forest with a thick layer of leaf litter and bromeliads. The closest species with captive experience is *Andinobates bombetes*, which also lives in cool mountain forest in Colombia; the figures for breeding and rearing are borrowed from it. *Andinobates tolimensis* lives in the same kind of forest on the Cordillera Central. The better known bromeliad dwellers *Ranitomeya variabilis* and *Ranitomeya imitator* come from warmer regions and need several degrees more heat.

An enclosure of 45 × 45 × 60 cm is suitable for 3 animals. Furnish it with a drainage layer, a moisture-retaining substrate of, for example, coconut fibre and forest soil, and a thick layer of leaf litter, which is the frogs' main living space. Plant densely with moss and small bromeliads, and add branches and pieces of cork bark so that there are plenty of hiding places. Bromeliads with water in their leaf axils provide places for the tadpoles, and a shallow dish of damp forest soil is a good place for the eggs. Ventilation should keep the air moving without letting the humidity escape.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

The temperature has not been measured in the species' habitat. 19-23 °C by day and 15-19 °C at night suit cloud forest at 1,300-2,400 m. Frogs from cool mountain forest tolerate heat poorly, so the enclosure must be kept cool, without sun from windows and without heat lamps. If the room gets warmer than 24 °C, the enclosure must be cooled, for example with a fan or by standing it in a cooler room.

Winter rest is not documented, and the seasonal difference in temperature is small in the tropical highlands.

HUMIDITY AND MISTING

Humidity should be 85-100 % with damp leaf litter all year round. Mist at least twice a day or use a misting system so that the leaves and plants stay damp, and let the surfaces dry out a little between mistings so that mould does not develop. Use reverse osmosis water, rainwater or dechlorinated water. Still, wet air causes mould and skin infections; gentle, even ventilation helps.

WATER AND WATER QUALITY

The species does not need a water section. The water is found in the leaf axils of the bromeliads, where the tadpoles grow up, and it must be changed regularly so that it does not turn cloudy. Use reverse osmosis water, rainwater or dechlorinated tap water. Amphibians absorb substances through the skin, so never use soap or cleaning products in the enclosure; rinse with hot water instead.

LIGHTING AND UVB

A. virolinensis lives on the shaded forest floor, so the light is primarily for the plants. Provide 10-12 hours of light a day with LED or fluorescent tubes and darkness at night. It is not documented that the species needs UVB. If a weak UVB source is chosen, there must be plenty of shade.

Read more: Lighting and UVB

FEEDING

The diet is small arthropods: springtails and fruit flies (*Drosophila*) in the smallest size, and small woodlice. Feed 3-4 times a week, and always keep live feeder insects in the enclosure. Dust the food with calcium most of the time and with a vitamin powder at 1 feeding a week. In the wild the species eats mites, springtails, ants and insect larvae, so a varied diet is an advantage. The young get the same feeder insects in the very smallest size.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Behaviour in captivity is not documented. In the wild several adults share the same bromeliad, so the species presumably tolerates company and can be kept as a pair or a small group. The frogs should not be handled, because the skin is sensitive and absorbs substances; when cleaning, the animals are moved to a clean, damp container.

Breeding

SEXUAL MATURITY AND SEXING

Age and size at sexual maturity are not documented, and sexual differences have not been described for *Andinobates virolinensis*. In the closely related *Andinobates tolimensis* and *Andinobates dorisswansonae* the males are smaller than the females, and in *A. tolimensis* the males have visible vocal slits. In *Andinobates bombetes* the males are recognised by their call and a faintly bluish throat.

MATING

Mating and calling are not documented for *Andinobates virolinensis*. The species breeds all year round in the wild, so there is no fixed season or rest period. In *Andinobates bombetes* the male lures the female to the egg-laying site, and a group with slightly more females than males, for example 2 males and 3 females, gives the most eggs.

EGGS AND TADPOLES

The female lays the eggs in the leaf litter, and the male carries the tadpoles up into bromeliads, where they grow up. The number of eggs per clutch has not been documented for the species. In *Andinobates bombetes* the female lays 1-2 eggs at a time, preferably on moist forest soil.

The tadpoles can grow up in the bromeliads or be raised individually in small cups of clean, dechlorinated water. They are fed fish flakes in small amounts, so that the water does not become cloudy.

METAMORPHOSIS

Incubation and larval period are not documented for the species. In *Andinobates bombetes* the eggs hatch after 16-24 days, and the larval period is about 110 days with fish flakes as food and up to 150 days or more on other food. When the front legs appear, the water is lowered to no higher than the height of the tadpole, so that the little frog can easily climb onto land.

Read more: Incubating eggs

REARING THE YOUNG

The newly metamorphosed young probably measure about 12 mm. Keep them in a small, damp box with kitchen paper or leaf litter, a piece of bark and a plant, mist twice a day, and ensure good air exchange. For the first few weeks they eat springtails; after that they can have the smallest fruit flies. Dust the food with calcium. Only after several months can they be moved to a larger enclosure.

Health and common mistakes

There is no species-specific knowledge about diseases in *Andinobates virolinensis*. The most likely problems are the same as in other small poison dart frogs from cool regions:

- Heat above 25 °C causes stress and can be fatal. Do not place the enclosure in the sun or near heat sources.
- Still air and over-wet leaf litter cause mould and skin infections. Ensure ventilation, and let the enclosure dry out a little.
- Feeder insects without calcium and vitamins weaken the bones, especially in females.
- An animal that stops eating, becomes lethargic or develops red, cottony areas of skin should be taken to a vet with knowledge of amphibians.

The species is vulnerable and occurs only in a small area, so animals must never be taken from the wild.

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.