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POISON DART FROGS

Sira Poison Frog

Ranitomeya sirensis

Ranitomeya sirensis is a small, diurnal poison frog of 15-25 mm from eastern Peru, northern Bolivia and the far west of Brazil. The species includes the forms that were formerly sold as "lamasi" and "biolat", and most of them are among the easiest poison frogs to breed. The frogs thrive in groups when there is enough space.

Family: Dendrobatidae Former name: *Ranitomeya lamasi; Dendrobates lamasi; Dendrobates sirensis*

KEY FACTS

THE ANIMAL

Adult size	**15-25 mm** snout-vent length
Lifespan	**5-10 years**
Active	**By day**
Lifestyle	**Arboreal and 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	**Intermediate**

CARE

Min. enclosure	**45 × 45 × 45 cm** L × W × H for 3 adults
Temperature, day	**21-25 °C**
Temperature, night	**18-21 °C**
Humidity	**80-100%**
Water	**Water dish** depth 1-2 cm
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	**In leaf axils (e.g. bromeliads)**
Sexually mature	**5-8 months**
Eggs per clutch	**1-8**
Hatching	**10-14 days**
Larval period	**58-80 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

Ranitomeya sirensis is a small, slender poison dart frog with small adhesive discs on its toes, so it climbs well. Adult males measure 15-17 mm from snout to vent. Females are larger: in most forms up to about 25 mm and in the large highland form 25-32 mm. Adult females are clearly broader than males, especially when carrying eggs.

The species is highly variable. Animals from the Sira Mountains are red on the back with turquoise-green legs and a blue-green belly with a red spot, while animals elsewhere are black with yellow or orange stripes. In the hobby the best known are the forms of the former *Ranitomeya lamasi*, e.g. 'Highland' (also called 'Standard') with a black and yellow striped body and

blue and black legs, 'Orange' and 'Panguana', and the former *Ranitomeya biolat*, which is black and yellow with fine gold stripes along the back. Both are now regarded as the same species as *R. sirensis*. The species was described by Aichinger in 1991 as *Dendrobates sirensis*, and the species name refers to the Serranía de Sira, where it was first found.

Temperament varies. Many animals are shy and like to hide in plants and leaf litter, while others, especially in groups, sit out in the open. Lifespan in captivity is usually 5-8 years, but under good conditions the animals can live over 10 years.

Skin toxicity: *R. sirensis* does not make its own toxins. Wild animals take up alkaloids from small arthropods in their diet, probably mainly ants and mites, and store them in the skin glands. In *R. sirensis* these are small amounts of pumiliotoxins, which with careless handling can cause pain and mild muscle cramps. The toxicity is modest compared with the large poison dart frogs. Captive-bred animals fed on fruit flies and springtails lack the toxins, whereas wild-caught animals can retain them for a long time. Do not handle the frogs, and wash your hands after working in the enclosure.

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

Distribution and habitat

Ranitomeya sirensis lives in the western Amazon: in eastern and south-eastern Peru (Loreto, San Martín, Ucayali, Pasco, Junín, Huánuco, Cusco and Madre de Dios), in northern Bolivia (Pando) and in the far west of Brazil (Acre). The species is found in several protected areas, among them the national parks Yanachaga-Chemillén, Manu and Bahuaja-Sonene, the Reserva Comunal El Sira and Tambopata. The highland form comes from the highlands of central Peru, 'Orange' from central Peru and the biolat form from southern Peru around Manu. The centre of the map lies in the middle of the overall range.

The species is assessed as Least Concern (LC) on the IUCN Red List, because the distribution is large and many habitats are protected. The greatest threat is collection for the pet trade, which can make individual forms locally threatened, and deforestation for agriculture. The highland form was once common in disturbed forest, but has presumably almost disappeared from the wild because of overcollection.

> **Native range:** Bolivia, Brazil and Peru.

HABITAT

Ranitomeya sirensis is diurnal and lives in primary and secondary forest on the mountain slopes and in the lowlands, from about 200 to 1,560 m above sea level. Depending on altitude it lives in bromeliads or in bamboo forest, and it is also found in plantations with less intensive crops such as coffee, but not in dense monocultures. The frogs climb and live both in the vegetation and in the leaf litter. The tadpoles grow up in small pools of water in bamboo, bromeliads and other plants, where they eat what they find, e.g. mosquito larvae.

Annual rainfall in the range lies between 1,000 and 7,000 mm. The annual mean temperature is about 25 °C, with an average of about 19 °C in the coldest month and about 29 °C in the warmest. The highland forms live higher up than the lowland forms and presumably have cooler nights. The humidity in the wild is not documented.

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

Care

THE ENCLOSURE

A pair or trio of *R. sirensis* needs an enclosure of at least 45 × 45 × 45 cm. The species benefits from a little extra floor space and dense plant cover, and the large highland form thrives best in a larger enclosure.

Furnish it with a drainage layer, a substrate of e.g. pine bark, lava rock or tree fern fibre and a thick layer of leaf litter. Provide sturdy branches to climb on, and plant densely with Java moss, vines and bromeliads. Place out black film canisters or similar small containers as egg-laying sites and pools of water for the tadpoles. Springtails and small isopods in the substrate clean up and are food at the same time.

The species can be kept in groups for life as long as there is room: allow about 19 litres per frog for most forms and about 38 litres per frog for the highland form. When the animals reach sexual maturity, the mood in the group can change, and the females may begin to eat each other's eggs, even though many females lay eggs in the same film canister without problems. Keep only one form in the enclosure, and never mix forms or species, so that you avoid hybrids.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

Keep the enclosure at 21-25 °C during the day and 18-21 °C at night. The temperature must not exceed 27 °C for any length of time, and above 29 °C is dangerous. Breeding often succeeds better when the night is 3-6 degrees colder than the day, especially with the highland form.

Extra heat is rarely necessary in a heated living room. Never place the enclosure in direct sunlight, because the risk of overheating is high. Measure with a digital thermometer both low down and high up. A proper winter rest is not documented for the species.

HUMIDITY AND MISTING

Humidity should be 80-100 %. The species tolerates down to 50 % only briefly, and only if it has access to water; low humidity without water can quickly become fatal. Mist daily, so the humidity is almost 100 % morning and evening and a little lower in the middle of the day.

Use reverse-osmosis water or rain water, and provide a little air exchange, so there is no stagnant, mouldy air.

WATER AND WATER QUALITY

A shallow water dish or a bromeliad with water in the leaf axils is enough. Keep the water 1-2 cm deep, so the smallest frog can sit in it with its head and upper body above the water. Change the water when it becomes cloudy, and use reverse-osmosis water, rain water 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.

The water in film canisters and bromeliads with tadpoles should be still, but changed regularly, so it does not become murky. The water temperature follows the air temperature.

LIGHTING AND UVB

R. sirensis is diurnal, and the lighting is first and foremost for the plants. Give 12-14 hours of light a day with fluorescent tubes or LED and darkness at night. It is not documented that the species needs UVB. If you choose a weak UVB source anyway, make sure there is plenty of shade, so the frogs can choose for themselves.

Read more: Lighting and UVB

FEEDING

The staple diet is small arthropods: wingless fruit flies (*Drosophila melanogaster*), springtails and small woodlice. Adults also take the larger *D. hydei* and newly hatched crickets. Feed both adults and juveniles daily with exactly so much that it is eaten up by the next feeding. Local ants cannot be used as feeder insects.

Fruit flies and springtails are not a complete diet on their own, so dust all feeder insects with a vitamin and mineral supplement, and follow the manufacturer's instructions. Start the feeder cultures before the frogs move in: the species is so small that it is entirely dependent on a stable supply of fruit flies and springtails.

BEHAVIOUR AND HANDLING

R. sirensis is often shy and likes to hide, so a densely planted enclosure with many hiding places gives the most to look at. The male calls to lure a female to an egg-laying site. Poison frogs do not have true amplexus; if you see two animals in what looks like one, it is often two males or two females in a dispute.

The species thrives in groups when space is ample, but watch for aggression and egg eating when the animals become sexually mature. The frogs should not be handled. The skin is thin and permeable, and soap and cream from the hands can harm them. If a frog has to be moved, lure it into a transparent tub.

Breeding

SEXUAL MATURITY AND SEXING

Adult females are distinctly broader and longer than males, because they lay eggs so often, and only the male calls. Sexual maturity is reached at 5-8 months. Juveniles cannot be sexed, and juveniles are typically sold at 2-3 months old. The surest way to a pair is to start with several juveniles and let them pair up.

MATING

Most forms are among the easiest poison frogs to breed, while the highland form has proved difficult to breed reliably. The species breeds best in groups. The male calls to lure a female to a suitable egg-laying site, often a film canister or a bromeliad, where the eggs are laid and fertilised. In some forms the eggs are also laid in the leaf litter.

Give several black film canisters and bromeliads to choose from, and leave the animals in peace. Stable temperature with a slightly cooler night, high humidity and plenty of food are the most important. A particular triggering signal in captivity is not documented.

EGGS AND TADPOLES

The eggs are laid on a smooth surface, often in a film canister or in the water in a bromeliad. The female lays 1-8 eggs per clutch depending on the form; the highland form typically lays 2-4. The male guards the eggs. The eggs of the highland form are more sensitive than other *Ranitomeya* eggs.

When the eggs hatch, the male carries the tadpoles to separate pools of water, and parental care ends there. Only the male looks after the young. Tadpoles that stay in the enclosure eat dead fruit flies, ordinary tadpole food and unfertilised eggs if they are lying in the water; that the female deliberately feeds them with eggs is not documented. Let the adults handle the eggs and transport, and only then remove the tadpoles. Keep them individually in small containers with clean water, and feed finely ground algae and fish food.

METAMORPHOSIS

The eggs hatch after 10-14 days; the figure is borrowed from the genus. From hatching to metamorphosis takes 58-80 days, at 24 °C about 60-70 days.

When the forelimbs appear, the tadpole stops eating. Give it an easy way out of the water, e.g. a piece of cork on the surface, and move it to a container with a moist land area when the tail is nearly absorbed.

REARING THE YOUNG

Newly metamorphosed frogs are small. Keep them in a small, moist rearing container with dried leaves, cork and a shallow water dish. Feed daily with springtails and the smallest fruit flies, lightly dusted with vitamins and minerals. After 2-3 months the juveniles are about 13 mm long.

Juveniles can go together in a group of animals of equal size, and the species can stay in a group as adults when there is space. Watch for aggression and egg eating when the juveniles become sexually mature after 5-8 months, and split the group up if necessary.

Health and common mistakes

R. sirensis is hardy when temperature and humidity are right, and most problems are caused by husbandry:

- Heat above about 27 °C, e.g. from sun through a window, causes stress, and above 29 °C it can become fatal.
- Low humidity without access to water can quickly become fatal, while an enclosure that is far too wet and stagnant causes skin infections and mould.
- Feeder insects without a vitamin and mineral supplement weaken the bones, especially in females that lay many eggs.
- A thin frog without a round belly is often due to too little food, parasites or competition. Check that all animals get food.
- Fights between animals and females eating each other's eggs, especially in a group without enough space.

A healthy frog has intact skin without sores or red, cottony areas, especially around the vent and on the inside of the hind legs. Isolate the animal, and seek a vet with amphibian experience quickly if it stops eating, becomes lethargic or develops sores or swellings.

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.