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FROGS

Baron's Mantella

Mantella baroni

A small, diurnal frog from the eastern forests of Madagascar, black with orange and black tiger stripes on the hind legs and pale green spots at the limbs. *Mantella baroni* grows to about 3 cm, is one of the largest in the genus and feeds on ants and other small arthropods. It is easy to keep when the enclosure is cool, but does not tolerate heat.

Family: Mantellidae

KEY FACTS

THE ANIMAL

Adult size	**2-3 cm** snout-vent length
Lifespan	**5-10 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	**Beginner**

CARE

Min. enclosure	**45 × 45 × 30 cm** L × W × H for 4 adults
Temperature, day	**21-24 °C**
Temperature, night	**16-18 °C**
Humidity	**60-80%**
Water	**Water dish**
UVB	**Optional** Ferguson zone 1
Diet	**Small invertebrates (springtails, fruit flies)**
Kept	**In groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**On the ground**
Sexually mature	**12-18 months**
Eggs per clutch	**50-130**
Hatching	**3-12 days**
Larval period	**42-56 days** from hatching to metamorphosis
Larval diet	**Algae/plants and complete diet**
Parental care	**None**

PROTECTION AND PAPERWORK

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

About the species

Mantella baroni is a small, boldly marked frog with a black back and strongly coloured limbs. The forelimbs and thighs are yellow to greenish, and the colour continues up the sides in a large, round patch. The hind legs are orange with irregular black stripes reminiscent of tiger fur, and a light line runs from the snout over the eyes. The colours vary greatly from animal to animal, from pale green to strong orange and yellow on the forelimbs. It is a warning coloration: the frog is poisonous to predators.

The species reaches about 3 cm from snout to vent and is one of the largest in the genus. The females are slightly larger and much plumper than the males. The females reach 23-34 mm and the males 24-32 mm, and the difference becomes clear when the animals are 10-12 months old. The species was described in 1888 and is named after the English botanist and missionary Richard Baron, who collected it in Madagascar. An older name is *Phrynomantis maculatus*.

M. baroni is easily confused with *M. madagascariensis*, which has almost the same pattern. The surest difference is the throat: *M. madagascariensis* has a sky-blue, horseshoe-shaped marking, while *M. baroni* has a single patch on the chin or an entirely black throat. In *M. baroni* the red on the hind legs also stops at the joint, whereas in *M. madagascariensis* it runs right through the thigh. Animals in the trade are therefore often mixed up, and *M. cowanii* and *M. pulchra* are also sometimes mistaken for it.

The frogs take up toxins (alkaloids) from the ants and mites they eat and do not produce them themselves. Toxicity varies with diet and locality. The poison is not particularly dangerous to humans, but contact should be avoided, and hands washed after any contact with animals or enclosure. In animals fed on cultured feeders the poison appears to disappear over time. Average lifespan is not documented, but wild-caught animals have lived over 5 years in captivity, and the species can probably live considerably longer.

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

Distribution and habitat

Mantella baroni is found only in Madagascar, where the whole genus is native. The range is relatively large and elongated in east-central Madagascar, inland from the east coast, from Fierenana in the north to the Andringitra massif in the south. Ranomafana National Park lies in the area.

The species is listed as Least Concern on the IUCN Red List because the range is large, but the population trend is in fact unknown. The forests are under pressure from clearance for agriculture, logging and settlement. The species is on CITES Appendix II.

> **Native range:** Madagascar.

HABITAT

The frog lives on the forest floor in humid tropical and subtropical forest, both in the lowlands and in mountain forest, most often at 600-1,200 metres above sea level, and it is also seen in disturbed forest and along streams. It stays among leaf litter, stones and moss and is active during the day.

The year is divided into a rainy season and a cooler dry season. The genus is most active in the wettest period from December to February, when the males call loudly to defend territories, and the females feed themselves up on ants, mites and other small arthropods. When the rain stops and the cooler, dry months arrive, the animals become less visible and live hidden in the leaf litter. The eggs are laid on land close to water, and heavy rain washes the developed tadpoles into the water. Day and night are relatively cool, and the enclosure should imitate this.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

A pair can be kept in a terrarium of about 40 litres. Four adults need an enclosure of at least 45 × 45 × 30 cm, and more animals require more floor area. The frog lives on the ground, so floor area is more important than height, and a height of 30 cm is enough. Outside the breeding season the animals are largely peaceful towards each other, but the males defend territories, and adult females may fight in the breeding season, so choose a larger rather than a smaller enclosure with many visual barriers.

A simple setup is a base of wet sphagnum or a thin damp soil mix, some pieces of cork bark, artificial or live plants and a small, shallow water dish. If the base is damp kitchen paper, it must be changed often, sometimes daily. For a living enclosure, first lay a drainage layer of gravel or expanded clay pebbles, then a mesh, and on top several centimetres of soil and leaf litter. Do not use ordinary garden soil with fertiliser, and rinse the plants thoroughly for pesticides. Provide many hides in the form of bark, driftwood or half flowerpots, so that all animals can retreat. The lid must fit tightly enough to retain humidity, but part of it must be mesh so the air does not stand still.

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

TEMPERATURE

Mantella baroni thrives at ordinary room temperature, 21-24 °C during the day, and at night the temperature may fall to 16-18 °C. The species is easily stressed at temperatures above 27 °C, and heat should be avoided at all costs: in the genus, over 27 °C can quickly become fatal. The night temperature is not documented for the species itself, but borrowed from *M. aurantiaca*.

Most living rooms are suitable all year round, but a south-facing windowsill is not. Be careful with lamps over the enclosure, especially if there are live plants: use LED or other light that does not give off heat. Measure the temperature with a digital thermometer at the animals' level. The description of the rainy and dry seasons in the wild suggests a cooler and slightly drier period for some months, but a proper winter rest is not documented for the species.

HUMIDITY AND MISTING

The species tolerates a wide range of humidity, but does best at 60-70 % day to day and up to 80 % in the breeding season. Mist the enclosure daily with decalcified water, heavily in warm weather and a little less when it is cold. The substrate should be damp, but not waterlogged. Put glass or plastic over parts of the mesh lid to hold the humidity, and make sure that part of the air can still move.

Some months of drier conditions followed by heavy misting trigger breeding behaviour (see Mating). If the air is too dry for a longer time, the skin dries out and the animals lose weight. The shallow water bowl ensures that the frogs do not dry out when the air is drier.

WATER AND WATER QUALITY

Place a shallow water bowl in the enclosure, and keep it full at all times. The frogs are poor swimmers, so the bowl must be so shallow that they can easily get out, and it must not take up much of the floor. The depth is not documented for the species itself, but at most a couple of centimetres is plenty.

Amphibians absorb water and substances through the skin, so use only rainwater, reverse osmosis water with added minerals or tap water treated against chlorine, chloramine and heavy metals. Change the water every day or every other day, and scrub the bowl clean when there is a film. Use no cleaning products.

LIGHTING AND UVB

No UVB requirement is documented for the species. It is, however, active in partial sunlight in the wild, so a weak UVB light (Ferguson zone 1) is probably an advantage, provided there is shade and plants so the animals can choose. Light for the plants should not give off heat. Keep the light on for 10-12 hours a day, and keep it dark at night.

Read more: Lighting and UVB

FEEDING

The frog is an eager hunter and as an adult can eat larger prey than most other species in the genus. In the wild it feeds mostly on ants and on beetles, spiders and mites. In the enclosure it is fed small arthropods, and most take food of up to about 6 mm: crickets of 3-6 mm, springtails, woodlice, small black soldier fly larvae, cultured wingless fruit flies, aphids, small cockroach nymphs, termites and lesser mealworm larvae. Very small waxworms can be used for variety. Variety prevents deficiencies.

Give 5-15 feeder insects per frog every other day, or small portions daily, and adjust according to how plump the animals are. In cool weather one feeding a week is enough. Spread the food in several places, otherwise weak males are chased away from the food by the strong ones. Dust the feeder insects with a good calcium and vitamin powder at every second or third feeding, and at every feeding for juveniles. The amounts are borrowed from related species. Fruit flies and newly hatched crickets are seldom available in ordinary pet shops, so they should be cultured yourself or ordered from a large supplier.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Mantella baroni is diurnal and can be seen patrolling its territory and hunting for food for most of the day. The males call with short, single clicks during the day to defend the area and attract females, and they may wrestle with one another. The animals are best kept in a small group with many hiding places and space.

Frogs should as far as possible not be handled. The skin is delicate and absorbs substances from the hands, and the animals are poisonous to predators. If a frog has to be moved, for example during cleaning, use a small, clean plastic container, and do not touch it with dry hands. Newly bought, wild-caught animals are often emaciated and have parasites, so they must be quarantined for several weeks or months in a simple enclosure. Preferably choose captive-bred animals.

Breeding

SEXUAL MATURITY AND SEXING

The males are smaller and slimmer than the females and are recognised by their call. The females grow about a fifth larger and much plumper, and the difference shows after about 10-12 months. Sexual maturity is assumed to occur at about 12-18 months, but the age is not documented for the species itself. A group of seven or more animals with more males than females breeds most easily.

The surest way to get both sexes is to buy a small group of juveniles and let them grow up together.

MATING

Mating follows the rainy season, and in the wild the males call most in the wettest part of the year. Breeding in captivity requires patience and an artificial dry season: misting and feeding are halved for 3-4 months, while clean water is available at all times in a shallow bowl. This is followed by about six months of daily misting and plentiful food. The dry season can be a strain, so keep an eye on the animals' weight, and end it if some look poorly.

Within a few days of increasing the misting, the males begin to call, and females that are ready swell with eggs.

EGGS AND TADPOLES

The female lays the eggs on land, in damp hollows or crevices close to water. A clutch can hold more than 50 and up to about 130 eggs. Often only some of the eggs are fertilised, and sometimes none are. The eggs are not pigmented.

The eggs are taken up and placed on damp sphagnum in a closed container. When small, whitish-grey tadpoles can be seen wriggling in the jelly, water is poured on so that the egg mass is flooded and the tadpoles swim freely. After a couple of days they are moved with a pipette to an established aquarium with a sponge filter. There is no parental care. For the first few days the tadpoles live off the yolk. After that they are fed daily or every other day with algae such as spirulina and chlorella, fish flakes, bloodworms and daphnia. Rear them together in large plastic containers with a clump of Java moss or a piece of pothos, which gives cover and keeps the water clean. For the first few weeks the water should be 3-5 cm deep, later up to about 10 cm. At about 23 °C the tadpoles feed eagerly. The water temperature should be 18-26 °C without large fluctuations, and the water must be treated against chlorine and heavy metals. Do not overfeed, because the water then deteriorates.

METAMORPHOSIS

The tadpoles are ready to leave the egg about 3-12 days after laying, and the timing is borrowed from related species. At about 23 °C they develop legs after 6-8 weeks (42-56 days) and begin to leave the water. Tadpoles from the same clutch develop at different rates, and in cooler water it takes longer.

When the front legs appear, the tadpole is moved to a container with at most 1 cm of water and a tight-fitting lid. As soon as the tail is being absorbed, the little frog is moved to a land enclosure with damp kitchen paper, and with a hiding place of, for example, a pothos leaf, a dry oak leaf or a crumpled damp napkin.

REARING THE YOUNG

The newly metamorphosed frogs are very small (7-10 mm in *M. aurantiaca*) and need plenty of small arthropods. For the first few weeks they live mostly on newly hatched springtails, and at 2-3 months of age they measure about 13 mm and take small fruit flies and crickets of 3 mm. Fruit flies and newly hatched crickets are taken by most, but are too large for the smallest, which get springtails, aphids or a clump of damp compost from the garden with small animals in it. Keep them singly in small containers or in groups of two to five in containers of about 13 × 13 × 8 cm. Always give a little food, and dust it with calcium and vitamins at every feeding.

When they are 2-3 months old, they can be moved to a larger enclosure with moss or soil, bark and plants. The young animals are cared for like the adults. The fully developed colours typically come after 3-8 months.

Health and common mistakes

In captivity *Mantella baroni* is sensitive to heat and dryness, and most problems come from wrong climate or food. The typical mistakes are:

- Too high a temperature. Above 27 °C causes stress and poor appetite and can quickly kill the animals. Keep the daytime temperature at 21-24 °C.
- Air that is too dry or misting that is too infrequent, which dries out the skin. The animals lose weight.
- Lack of calcium and vitamins because the feeders are not dusted. This causes poor growth and crooked legs.
- Weak animals that are chased away from the food by the strong males. Feed in several places and separate the animals if some are badly bullied.
- A dirty substrate and stagnant air, which cause bacteria and fungus. Change the substrate and clean the water dish regularly.
- Wild-caught animals, which often arrive emaciated and with parasites. Quarantine and a vet are necessary.

A healthy animal has clear eyes and a plump body and is active by day. See a vet with amphibian expertise if the animal loses weight, does not eat for several weeks, or has sores or swellings.

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.