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FROGS

Haraldmeier's Mantella

Mantella haraldmeieri

Mantella haraldmeieri is a small, diurnal frog of 21-27 mm from the south-eastern forests of Madagascar, light brown on the back with black flanks, copper-coloured hind legs and red markings on the underside of the legs. The species is threatened in the wild and only rarely kept, so very little is known about its care. It is kept like the other species in the genus: cool, humid and never warm.

Family: Mantellidae Former name: *Mantella madagascariensis haraldmeieri*

KEY FACTS

THE ANIMAL

Adult size	**21-27 mm** snout-vent length
Lifespan	**5-10 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Rainforest**
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 × 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	**Endangered (EN)**

About the species

Mantella haraldmeieri is one of the smaller and more subdued species in the genus. The back is light brown with several dark markings: a triangular patch, sometimes shaped like a Y, over the shoulders, a large heart-shaped patch in the middle of the back and two smaller ones near the vent. The flanks are black. The outer sides of the limbs are yellowish brown to copper-coloured with faint bands, and the upper arms may have a minty green tinge. The inner sides of the shin and foot are red, and the belly is black with bluish white spots. The species lacks the horseshoe-shaped marking on the throat that characterises *M. madagascariensis*.

The species reaches 21-27 mm from snout to vent. Differences between the sexes are not documented for the species itself; in the genus the females are slightly larger and plumper than the males. *M. haraldmeieri* was described in 1981 by Klaus Busse as a subspecies of *M. madagascariensis* and has since been raised to a species in its own right. The name honours Harald Meier. The species belongs to the same species group as *Mantella cowanii*, *Mantella baroni* and *Mantella nigricans*, and whether it really differs from *M. baroni* or is merely a colour variant of it has not been settled.

The species in the genus get their skin toxins (alkaloids) from the ants and mites they eat and do not produce them themselves. The strength of the poison has not been studied for this species, but it is mild in the genus: it irritates mucous membranes, so hands should be washed after contact with animals or enclosure. Captive-bred animals fed on cultured feeders are not poisonous. Lifespan, weight and sexual maturity are not documented for the species itself; the figures in the specifications are borrowed from *M. baroni*.

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

Distribution and habitat

Mantella haraldmeieri is found only in Madagascar, in the far south-eastern part of the island. The species lives in the Anosy Mountains at 300-950 metres above sea level. The type locality is Tolagnaro (Fort-Dauphin), and records are concentrated in the forests around Nahampoana, Manantantely, Marosohy and the Andohahelo reserve, with a few records further north at Vevembe near Vondrozo.

The species is Endangered (EN) on the IUCN Red List. The range is small and fragmented, and the forests are under pressure from clearance for agriculture and charcoal. The species is on CITES Appendix II along with the rest of the genus.

> **Native range:** Madagascar.

HABITAT

The frog lives on the forest floor in humid tropical rainforest, often along streams, and it is active during the day. It stays among leaf litter, stones and moss and hunts ants and other small arthropods.

The genus is most active in the wettest period from December to February, when the males call and defend territories. In the cooler, dry months the animals live more hidden in the leaf litter. The eggs are laid on land close to water, and rain washes the tadpoles into streams and ponds. The enclosure should imitate a cool, humid forest climate.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Very little is known about keeping *Mantella haraldmeieri*, because the species is only rarely kept. The figures here are borrowed from *Mantella baroni*, its closest relative, which is far better known in captivity and a better place to begin if you are new to the genus.

Four adults need a low enclosure of at least 45 × 45 × 30 cm (length × width × height), and more animals require more floor area. The frog lives on the ground, so floor area is more important than height. The males are territorial, so choose a larger rather than a smaller enclosure, and provide many hides so that all animals can retreat.

A simple setup is a base of damp sphagnum or a thin, damp soil mix, some pieces of cork bark, plants and a small, shallow water dish. Damp kitchen paper can be used instead, but must be changed often. 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. The lid must 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

The temperature should be 21-24 °C during the day and 16-18 °C at night, corresponding to a cool room. Heat should be avoided: over 27 °C can quickly become fatal for the genus. The figures are borrowed from *M. baroni*.

A south-facing windowsill is too warm. Use LED or other light that does not give off heat, especially over live plants, and measure the temperature with a thermometer at the animals' level. A proper winter rest is not documented for the species.

HUMIDITY AND MISTING

Humidity should be 60-70 % day to day and up to 80 % in the breeding season (borrowed from *M. baroni*). Mist the enclosure daily with decalcified water, heavily in warm weather and a little less when it is cool. The substrate should be damp, but not waterlogged. Cover parts of the mesh lid with glass or plastic to hold the humidity, and make sure that the air can still move. If the air is dry for a longer time, the skin dries out and the animals lose weight.

A period of drier conditions followed by heavy misting can trigger breeding behaviour.

WATER AND WATER QUALITY

Place a shallow water dish in the enclosure, and keep it full at all times. The frogs are poor swimmers, so the dish 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 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 dish without cleaning products.

LIGHTING AND UVB

No UVB requirement is documented for the species. The genus is 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. The light must not give off heat. Keep it on for 10-12 hours a day and off at night.

Read more: Lighting and UVB

FEEDING

Mantella haraldmeieri is fed small arthropods: springtails, wingless fruit flies, newly hatched crickets, small woodlice, aphids and lesser mealworm larvae. The genus takes prey of up to about 6 mm. Variety prevents deficiencies.

Give 5-10 feeder insects per frog every other day, and adjust according to how plump the animals are. Spread the food in several places so that weak animals also get something to eat. Dust the feeder insects with calcium and vitamin powder at every second or third feeding, and at every feeding for juveniles. Fruit flies and newly hatched crickets are seldom available in pet shops, so they should be cultured yourself or ordered from a large supplier. The amounts are borrowed from the genus.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The frog is diurnal and patrols its territory when hunting. The males call, defend territories and may wrestle with one another. The genus is best kept in a small group with many hiding places and plenty of space, and outside the breeding season the animals are largely peaceful.

Frogs should as far as possible not be handled. The skin is delicate and absorbs substances from the hands. If a frog has to be moved, for example during cleaning, use a small, clean plastic container. Wild-caught animals often arrive emaciated and with parasites and must be quarantined for several weeks in a simple enclosure. Choose captive-bred animals.

Breeding

SEXUAL MATURITY AND SEXING

Differences between the sexes and sexual maturity are not documented for the species itself. In the genus the males are smaller and slimmer than the females and are recognised by their call, and sexual maturity occurs at about 12-18 months. The surest way to get both sexes is to buy a small group of juveniles and let them grow up together.

MATING

Breeding of *M. haraldmeieri* has not been described. In the genus, mating follows the rainy season: a drier period of a few months with less misting and food is followed by heavy daily misting and plentiful food. Then the males begin to call, and females that are ready swell with eggs. The dry period can be a strain on the animals, so their weight is monitored, and the period is ended if some look poorly.

EGGS AND TADPOLES

The female lays the eggs on land, in damp hollows close to water. The number is not documented for the species; the box shows 50-130 eggs, borrowed from *M. baroni*. Often only some of the eggs are fertilised.

The eggs are taken up and placed on damp sphagnum in a closed container. When the tadpoles can be seen moving in the jelly, water is poured on so that they swim freely. They are then moved with a pipette to an established aquarium. There is no parental care. The tadpoles are fed daily or every other day with algae such as spirulina, fish flakes and daphnia. For the first few weeks the water should be 3-5 cm deep, later up to about 10 cm, and 18-26 °C without large fluctuations. Do not overfeed, because the water then deteriorates.

METAMORPHOSIS

The eggs hatch after 3-12 days, and at about 23 °C the tadpoles develop legs after 6-8 weeks (42-56 days). In cooler water it takes longer. The figures are borrowed from *M. baroni*. 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 a hiding place, for example a pothos leaf or a crumpled damp piece of kitchen paper.

REARING THE YOUNG

The newly metamorphosed frogs are only a few millimetres long and need plenty of the smallest feeders: newly hatched springtails, then very small fruit flies and crickets of 2-3 mm. Always give a little food, and dust it with calcium and vitamins at every feeding. Keep them in small containers, singly or two to five together, until they are 2-3 months old, and then move them to a larger enclosure. After that they are cared for like the adults.

Health and common mistakes

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

- Too high a temperature. Over 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. 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.