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FROGS

Black-eared Mantella

Mantella milotympanum

Mantella milotympanum is one of the smallest frogs in the genus, under 23 mm, from a few swamp forests in east-central Madagascar. It is uniformly red to orange-red with a black patch above each eardrum. The species is critically endangered in the wild and is kept like its close relatives: cool and humid.

Family: Mantellidae

KEY FACTS

THE ANIMAL

Adult size	**18-23 mm** snout-vent length
Lifespan	**4-8 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Rainforest, montane forest and wetland**
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	**20-23 °C**
Temperature, night	**16-18 °C**
Humidity	**70-100%**
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	**12-14 months**
Eggs per clutch	**12-30**
Hatching	**2-12 days**
Larval period	**42-98 days** from hatching to metamorphosis
Larval diet	**Algae/plants and complete diet**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
IUCN	**Critically Endangered (CR)**

About the species

Mantella milotympanum is one of the smallest species in the genus and reaches 18-23 mm from snout to vent. It is uniformly red to orange-red, apart from a black patch above each eardrum, and the skin is granular. In some places green animals also occur, but they are usually under a quarter of the population, and golden and lime-green animals are also known, whose status has not been resolved. The species was described in 1996 by Marc Staniszewski from animals in the pet trade and for a long time was regarded as a colour variant of *Mantella aurantiaca*, from which it differs in its smaller size, granular skin and black eardrums.

Genetically the species is very close to *Mantella crocea* and is probably the same species. Populations north and south of the known localities have colours and patterns intermediate between the two.

As in other mantellas, the colour is a warning coloration. The frogs take up toxins from small arthropods in the wild and do not produce them themselves, and in captivity the poison appears to disappear over time. Wild-caught animals may therefore have a mild skin poison, while captive-bred animals are regarded as non-poisonous. The poison is not particularly dangerous to humans, but hands should be washed after any contact with animals and enclosure. The males are usually smaller than the females.

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

Distribution and habitat

Mantella milotympanum is found only in Madagascar, and only in a few places: in small areas of swamp forest and gallery forest near swamps around the town of Fierenana in the east-central part of the island. The altitude is not documented.

The species is listed as Critically Endangered (CR) on the IUCN Red List, and no part of the habitat was protected in 2017. The threats are deforestation, burning, timber and charcoal production, agriculture, grazing, introduced species and settlement. Collection for the pet trade has previously been heavy. The species is on CITES Appendix II.

> **Native range:** Madagascar.

HABITAT

Mantella milotympanum lives on the forest floor in swamp forest and in small pockets of gallery forest by swamps, where it keeps among leaf litter, moss and plants. It is active during the day.

Most of the year is dry, and the animals are then inactive and hide. Under extreme conditions they go dormant until the weather improves. When the rain arrives in November and December, they become active again and eat large quantities of ants, mites and other small arthropods, and the males call to defend territories. The eggs are laid on land close to water, and the rain washes the tadpoles into the water.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Little is known about the care of *Mantella milotympanum*. It is kept like its close relatives *Mantella aurantiaca* and *Mantella crocea*, which live in the same part of Madagascar, and most of the figures in this guide are borrowed from *M. aurantiaca*. Wild-caught animals are no longer exported, and captive-bred animals are only occasionally available.

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 matters more than height. The males are territorial, so use many hides and visual barriers of cork bark, roots and plants. Build up the base with a drainage layer of expanded clay pebbles or pea gravel, a piece of mesh and on top damp sphagnum or a soil mix without fertiliser, with leaf litter over it. Rinse the plants thoroughly for pesticides. A simpler setup with damp kitchen paper or a thin layer of moss makes it easier to keep an eye on the animals, but the substrate must then be changed often. The lid must retain humidity and have mesh so the air does not stand still.

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

TEMPERATURE

During the day the temperature should be 20-23 °C, and at night 16-18 °C. The species must be kept cool: avoid temperatures above 26 °C, because they cause heat stress, and longer periods of heat cause disease and can kill the animals. In an artificial dry season the temperature may fall to 15 °C. The day and night temperatures are borrowed from *Mantella aurantiaca*.

Extra heat is seldom necessary in a living room. Place the enclosure somewhere cool and out of direct sun, use light that does not give off heat, and measure the temperature with a digital thermometer down at the base. A proper winter rest is not documented.

HUMIDITY AND MISTING

Humidity should be 70-100 %. Mist the enclosure daily with rainwater, reverse osmosis water or tap water treated against chlorine and heavy metals, heavily in warm weather and less when it is cool. The substrate should be damp, but not waterlogged. Put glass or plastic over parts of the mesh lid to hold the humidity, but let the air move. Weeks or months of

drier conditions followed by heavy misting trigger breeding behaviour.

WATER AND WATER QUALITY

There should always be a shallow water bowl in the enclosure. Mantellas are poor swimmers, so the bowl must be so shallow that the frogs can easily get out, and it must not take up much of the floor. The depth is not documented for the species itself. Amphibians absorb water and substances through the skin, so use rainwater, reverse osmosis water or tap water treated against chlorine, chloramine and heavy metals, and use no cleaning products. Change the water often, and scrub the bowl with hot water.

LIGHTING AND UVB

A UVB requirement is not documented. A weak UVB light in Ferguson zone 1 is probably an advantage, provided there is shade and plants so the animals can choose. The light should not give off heat. Keep the light on for 10-12 hours a day.

Read more: Lighting and UVB

FEEDING

Mantella milotympanum is an insectivore and, like the rest of the genus, can take relatively large prey up to about 6 mm. Week-old crickets and wingless fruit flies can make up most of the diet, supplemented with springtails, aphids, small cockroach nymphs, termites, lesser mealworm larvae and small waxworms. Alternate between several kinds of feeder insects to avoid deficiencies.

5-15 feeder insects per frog every other day is a good starting point, adjusted according to the frogs' body condition. Dust the food with calcium and vitamins at every second or third feeding for adults and at every feeding for juveniles. Spread the food in several places so that weak males are not kept away from the food. The amounts are borrowed from *Mantella aurantiaca*.

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

BEHAVIOUR AND HANDLING

Mantella milotympanum is diurnal and bold for such a small frog. It hunts and patrols its territory for most of the day. The males call persistently with short clicks after heavy misting and may wrestle over territories, and, unlike in many other species in the genus, the females are also fairly bold. The animals are best kept in a small group with many hides.

Avoid handling the frogs. The skin is thin and absorbs substances from the hands. If a frog has to be moved, coax it into a clean plastic tub. New animals must be quarantined for several weeks in a simple enclosure.

Breeding

SEXUAL MATURITY AND SEXING

In *Mantella aurantiaca* the animals become sexually mature after 12-14 months, and the figure is borrowed for *Mantella milotympanum*. The sexes are recognised by the males being smaller and slimmer and calling eagerly in the rainy season, while the females are larger and more pear-shaped. The easiest way to get a pair is a small group of juveniles that grow up together.

MATING

The species is only occasionally bred in captivity. Mating follows the rainy season. In captivity a cool, dry period of two to four months is provided with less misting, about 10 hours of light, halved feeding and 15-22 °C, while clean water is still available. After that return to daily misting and plentiful food, and the males begin to call after a few days. The period is a strain, so keep an eye on the animals' weight, and move an animal that loses a great deal of weight to an enclosure of its own.

EGGS AND TADPOLES

The females dig small hollows under driftwood, in piles of moss and under dry leaves and lay the eggs there. In *Mantella aurantiaca* a clutch is 12-30 eggs, and the figure is borrowed for *Mantella milotympanum*. Often only some of the eggs are fertilised. There is no parental care.

The eggs are taken out after about three days and placed on damp moss in a closed container so that they just touch the water's edge. When the tadpoles can be seen in the jelly, water is poured on so that they can swim freely. The tadpoles are reared together in large plastic tubs with Java moss, for the first few weeks in 2-5 cm of water, later up to 10 cm, at 18-26 °C without large fluctuations. For the first few days they are not fed. After that they are given spirulina, chlorella, fish flakes and daphnia every day or every other day, but never so much that the water deteriorates.

METAMORPHOSIS

The tadpoles hatch from the eggs 2-12 days after laying, and metamorphosis takes 42-98 days. Both figures are borrowed from *Mantella aurantiaca* and are not documented for the species itself. Tadpoles from the same clutch develop at different rates. When the front legs break through, the tadpole is moved to a container with at most 1 cm of water and a tight-fitting lid. When the tail is disappearing, the little frog is moved to a land setup with damp kitchen paper and a hide.

REARING THE YOUNG

The newly metamorphosed juveniles are very small. The size is not documented for the species itself; in *Mantella aurantiaca* they are 7-14 mm. The first food is springtails, aphids and small fruit flies, and there should always be a little food present, dusted with calcium and vitamins at every feeding. At two to three months of age the juveniles can be moved to larger containers with damp moss or soil and hides and cared for like adult animals, only with more frequent feeding.

Health and common mistakes

Mantella milotympanum is a sensitive animal, and problems come from wrong climate or food. Typical mistakes are:

- Heat above 26 °C, which stresses the animals and leads to disease. Keep the enclosure cool.
- Drying out from too little misting or dry air.
- Deficiency diseases and poor growth from a monotonous diet or too little supplement.
- Parasites, especially in wild-caught animals. Quarantine new animals.
- Weak animals that are kept away from the food by stronger males.

See a vet with amphibian expertise if an animal is lethargic and emaciated or develops sores on the skin, or if several animals become ill at the same time.

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.