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FROGS

Marojejy Mantella

Mantella manery

Mantella manery is a small, diurnal frog from the forests of northern Madagascar, dark brown with a white stripe on the side of the head. It is a close relative of *Mantella laevigata*. The species is vulnerable in the wild and known from few records, and little is known about its care, so the figures here are borrowed from related species.

Family: Mantellidae

KEY FACTS

THE ANIMAL

Adult size	**2-3 cm** snout-vent length
Lifespan	**4-8 years**
Active	**By day**
Lifestyle	**Terrestrial**
Habitat	**Rainforest 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	**20-26 °C**
Temperature, night	**17-22 °C**
Humidity	**80-100%**
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	**12-18 months**
Eggs per clutch	**12-30**
Hatching	**3-12 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	**Vulnerable (VU)**

About the species

Mantella manery is a small frog in the genus *Mantella*, which is found only in Madagascar. The body is dark brown, and a white stripe runs along the side of the head between the snout and the eye. The species resembles its closest relative, *Mantella laevigata*, and the two together form a species group in the genus. Precise measurements and differences between males and females are not documented; the size in the box, 2-3 cm from snout to vent, is borrowed from *M. laevigata*. In the genus the females are slightly larger and plumper than the males.

The species was described in 1999 by Miguel Vences, Frank Glaw and Wolfgang Böhme. The species name is Malagasy and means "forced": the describers felt compelled to describe the species so that it would not be described inadequately elsewhere.

The frogs of the genus take up toxins (alkaloids) from the ants and mites they eat and do not produce them themselves. This has not been studied for this species, but the poison is mild for humans. Hands should be washed after any contact with animals or enclosure. In animals fed on cultured feeders the poison disappears over time. Lifespan is not documented; 4-8 years is borrowed from the genus.

Read more: Feeder animals: keeping and breeding

Distribution and habitat

Mantella manery is found only in Madagascar, in the northern part of the island. The species is known from the Marojejy massif at about 300 metres above sea level and from the western part of the Tsaratanana reserve at about 700 metres, and there are only a few records.

The species is listed as Vulnerable (VU) on the IUCN Red List. The threat is loss of habitat, because the forests are being cleared. The species is on CITES Appendix II along with the rest of the genus.

> **Native range:** Madagascar.

HABITAT

The species lives on the forest floor in humid, tropical lowland forest, also in undisturbed forest near streams, and is found along streams, swamps and pools that dry out at times. It is a ground-dwelling frog, unlike *M. laevigata*, which climbs.

The genus is most active in the rainy season from December to February, when the males call to defend territories and the females feed up on ants, mites and other small arthropods. The rest of the year the animals stay more hidden in the leaf litter. In the genus the eggs are laid on land close to water, and the rain washes the tadpoles into the water. The species' own daily and seasonal rhythm is not documented.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Little is known about keeping *Mantella manery*. The habitat is leaf litter by water in low-lying forest in northern Madagascar. Temperature and humidity are borrowed from *Mantella laevigata*, which lives in the same part of the island and at the same elevation. The enclosure follows that for the ground-dwelling species such as *Mantella aurantiaca* and *Mantella baroni*, because the species lives on the ground.

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 defend territories, so a larger enclosure with many visual barriers is better than a small one.

The base is wet sphagnum or a thin, damp soil mix with a layer of leaf litter. Add cork bark, live or artificial plants and a shallow water dish. For a living enclosure, a drainage layer of gravel or expanded clay pebbles goes at the bottom, then a mesh and several centimetres of soil. Do not use ordinary garden soil with fertiliser, and rinse the plants thoroughly. Provide many hides in the form of bark, driftwood or half flowerpots. 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 20-26 °C during the day and 17-22 °C at night. The figures are borrowed from *M. laevigata*, which also comes from the lowlands and tolerates somewhat more heat than most species in the genus. The temperature must not exceed 27 °C for any length of time.

A south-facing windowsill and lamps that give off heat should be avoided. Use LED or other cool light. Measure the temperature with a digital thermometer at the animals' level. A proper winter rest is not documented for the species.

HUMIDITY AND MISTING

Humidity should be 80-100 % (borrowed from *M. laevigata*). 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 to hold the humidity, and make sure that the air can move. If the air is too dry for a longer time, the skin dries out and the animals lose weight.

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, but at most a couple of centimetres is plenty.

Amphibians absorb water and substances through the skin. 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

The UVB requirement is not documented for the species. A weak UVB light in Ferguson zone 1 is an advantage when there is shade and plants so the animals can choose for themselves. 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 genus takes prey of up to about 6 mm. Give newly hatched crickets, wingless fruit flies, springtails, small woodlice, aphids, small cockroach nymphs, lesser mealworm larvae and termites. Very small waxworms can be used for variety. Variety prevents deficiencies. Juveniles start on springtails and small fruit flies.

5-15 feeder insects per frog every other day is a good starting point, adjusted according to how plump the animals are. In cool weather one feeding a week is enough. Spread the food in several places so that weak animals are not kept away from the food. Dust the feeder insects with calcium and vitamins at every second or third feeding, and at every feeding for juveniles. The amounts are borrowed from the genus. Fruit flies and springtails are easy to culture yourself.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

The frogs of the genus are diurnal. The males call to defend territories and attract females, and they may wrestle with one another. The species' own behaviour is not documented. The animals are best kept in a small group with many hiding places and plenty of space.

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, use a small, clean plastic container. Newly bought animals are quarantined for several weeks in a simple enclosure.

Breeding

SEXUAL MATURITY AND SEXING

In the genus the males are smaller and slimmer than the females and are recognised by their call, while the females are larger and plumper. Sexual maturity occurs in the genus at 12-18 months, but the age is not documented for the species itself. A group 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. The method is not documented for the species, but in the genus a cool, dry period of two to four months is introduced: misting and food are halved, daylight is about 10 hours, and the temperature is below 22 °C, while clean water is still available. After that, light, temperature and food return to normal, and the enclosure is misted heavily. The males call after a few days, and the females swell with eggs within a few weeks. The period can be a strain, so keep an eye on the animals' weight, and move animals that look poorly.

EGGS AND TADPOLES

The breeding biology is not documented for the species. In the ground-dwelling species in the genus the female lays the eggs on land, in damp hollows close to water, and that is what is described here. *M. laevigata*, by contrast, lays single eggs at water-filled holes in trees and bamboo. The figure in the box, 12-30 eggs per clutch, is borrowed from *M. aurantiaca* and *M. madagascariensis*. Often only some of the eggs are fertilised.

The eggs are placed on damp sphagnum in a closed container. When small tadpoles can be seen in the jelly, water is poured on so that the egg mass is flooded. After a couple of days the tadpoles 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 and daphnia. The water is 3-5 cm deep for the first few weeks and later up to about 10 cm, 18-26 °C without large fluctuations and treated against chlorine and heavy metals. Do not overfeed, because the water then deteriorates.

METAMORPHOSIS

The tadpoles are ready to leave the egg after 3-12 days, and the timing is borrowed from the genus. At about 23 °C they develop legs after 6-14 weeks (42-98 days), and in cooler water it takes longer. Tadpoles from the same clutch develop at different rates.

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 of, for example, a pothos leaf or a dry oak leaf.

REARING THE YOUNG

The newly metamorphosed frogs are very small and need plenty of the smallest arthropods. For the first few weeks they get newly hatched springtails and the smallest fruit flies, later newly hatched crickets of 3 mm. Keep them in groups of two to five in small containers of about 15 × 15 × 10 cm with a damp substrate and hides. Always give a little food, and dust it with calcium and vitamins at every feeding. After 2-3 months they can be moved to a larger enclosure and cared for like the adults.

Health and common mistakes

Mantella manery is probably sensitive to heat and dryness like the rest of the genus, 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 20-26 °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 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 Read more: Buying animals: captive-bred, wild-caught and transport

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.