herpy

FROGS

Golden Mantella

Mantella aurantiaca

Mantella aurantiaca is a small, bright orange frog of 20-26 mm that is found only in a few small areas in eastern Madagascar. It is diurnal, thrives in groups and is not difficult to keep when the enclosure is cool and humid. The species is threatened in the wild, so only captive-bred animals should be considered.

Family: Mantellidae

KEY FACTS

THE ANIMAL

Adult size	**20-26 mm** 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	**20-23 °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	**Endangered (EN)**

About the species

Mantella aurantiaca is a small, compact frog with uniformly yellow, orange or red-orange skin, coal-black eyes and often red patches on the inside of the legs, which may however be missing in captive-bred animals. Adults measure 20-26 mm from snout to vent, and large females can reach about 30 mm. The legs are short, and the fingers and toes have small adhesive discs. The juveniles are bronze, yellow or brown, often with a dark X on the back, and only acquire the orange adult colouring 3-12 months after metamorphosis. The females are larger and more pear-shaped than the males, which are slimmer, more angular and have visible femoral glands on the inside of the thighs.

The species was described by François Mocquard in 1900 from a single male of 21 mm. The species name comes from the Latin aurantiacus, golden or orange. It belongs to the family Mantellidae, which is found only in Madagascar. The resemblance to the American poison frogs is an example of convergent evolution: warning colours, poison from the diet and a similar breeding biology have arisen independently.

In the wild the skin is toxic to predators. The frog does not produce the poison itself but takes up alkaloids such as pumiliotoxins from small arthropods such as mites and ants, just like the poison frogs. Captive-bred animals do not get the prey animals in question and are not toxic. The skin toxicity is therefore set to mild for animals in the wild and none for animals in captivity. Wild-caught animals may still carry poison, so always wash your hands after contact.

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

Distribution and habitat

Mantella aurantiaca lives only in Madagascar, in three separate areas around the town of Moramanga in the eastern part of the island: the communes of Beparasy and Ambohibary, the Torotorofotsy wetland north-west of Andasibe and the area at Ambakoana. It is a highland species and is found at about 900 m above sea level.

The range is extremely small and lies in an area with heavy pressure from people. The species is listed as Endangered (EN) on the IUCN Red List and was previously listed as Critically Endangered. The threats are deforestation, fragmentation of the habitats and collecting for the pet trade.

> **Native range:** Madagascar.

HABITAT

Mantella aurantiaca lives in humid forest with screw pines (*Pandanus*) and on mossy or grass-covered tussocks of plant debris bordering small, shallow pools and marshes that fill in the rainy season. The frog often moves about in sunlit patches among the plants and hunts for most of the day. The climate is humid and temperate.

Life follows the seasons. In the winter months May-October the frogs are largely inactive and hide. When the rain comes and it gets warmer, they emerge, and the males head down to the pools to call and defend territories. Measurements of temperature and humidity at the habitats are not documented; the figures under care are based on experience from enclosures. The species tolerates heat poorly.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Mantella aurantiaca is small but does best with plenty of space, because the males are territorial and fight over breeding and feeding sites. Four adults need an enclosure of at least 45 × 45 × 30 cm, and a group of six to nine adults needs at least 75 × 30 × 30 cm. The more space and the more visual barriers, the better.

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 with coconut fibre. Spread leaf litter over the base, and provide many hides such as cork bark, roots and coconut shell caves. Plants can be set directly in the substrate or stand in pots. The species does not climb much but readily uses low branches and plants. A mesh lid and daily misting give a good balance between humidity and ventilation.

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.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

By day the enclosure is kept at 20-23 °C with a drop to 16-18 °C at night. A few days outside the range do no harm, but longer periods of warmth cause health problems. Above 27 °C the species becomes stressed quickly, far more easily than many other mantellas, so heat must be avoided at all costs.

Extra heat is seldom necessary in a living room. Place the enclosure in a cool spot out of direct sun, and measure with a digital thermometer down at the bottom. For breeding, a cool, dry period of two to four months is introduced, in which the temperature seldom exceeds 22 °C (see Mating).

HUMIDITY AND MISTING

Humidity must be 70-100 %, but the species tolerates a wide range as long as it always has access to water. Mist the enclosure daily, heavily in warm weather and less in cold periods. Let the surface dry out a little between mistings, and ensure air exchange so that stagnant air and mould do not develop.

Use reverse osmosis water, rainwater or tap water treated against chlorine, chloramine and heavy metals. Weeks or months of drier conditions followed by heavy misting can trigger the breeding season.

WATER AND WATER QUALITY

There must always be a shallow water dish or a shallow water area in the enclosure. Mantellas are poor swimmers, so the water must be so shallow that the frogs easily get out, and the water must not take up much of the enclosure. An exact depth is not documented.

Use rain water, reverse-osmosis water or tap water treated for chlorine, chloramine and heavy metals. Amphibians absorb water and substances through the skin, so soap, cleaning products and hand cream must not come near. Change the water often, and scrub the dish with hot water without soap.

LIGHTING AND UVB

The lighting is first and foremost for the plants. A need for UVB is not documented, but since the species in the wild is active in partial sun, a weak UVB tube is probably an advantage. UVB is therefore set to optional. If you choose it, keep it in Ferguson zone 1 with shade in the rest of the enclosure. Give 10-12 hours of light a day, and cut down to about 10 hours in the cool period.

Read more: Lighting and UVB

FEEDING

Mantella aurantiaca are insectivores and can take relatively large prey, up to about 6 mm. Week-old crickets and wingless fruit flies (*Drosophila melanogaster* and *D. hydei*) can make up most of the diet, supplemented with springtails, small woodlice, aphids, small cockroach nymphs, lesser mealworm larvae, small waxworms and termites. Use several kinds of feeder insects to avoid deficiencies. Juveniles start on springtails and small fruit flies. Cultures of fruit flies and springtails are easy to keep yourself.

5-15 feeder insects per frog every other day is a good starting point, adjusted to the condition of the frogs. In cold periods a small portion a week is enough. Dust the food with a good vitamin and mineral supplement at every feeding for juveniles and every second or third time for adults. Feed in several places in the enclosure, so that weak or small males are not kept away from the food.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Mantella aurantiaca is diurnal and thrives in groups. Outside the breeding season the animals are usually peaceful towards each other, but in the breeding season adult females can fight, and the males defend territories by grabbing an intruder around the body or head and pushing it away. A large enclosure with many visual barriers dampens this. In the wild there are about twice as many males as females. The males call with a series of short clicks but are remarkably reluctant to call, especially when it is dry.

The animals are shy and seek cover when disturbed. Avoid handling the frogs: the skin is thin and is damaged by grease, soap and heat from the hands. If a frog has to be moved, lure it down into a clean plastic tub, and wash your hands before and after.

Breeding

SEXUAL MATURITY AND SEXING

The sexes can be told apart when the animals are about 10-12 months: the males are smaller and slimmer, call and have visible femoral glands, while the females are larger and more pear-shaped, especially before egg-laying. The species reaches sexual maturity after 12-14 months. The easiest way to a pair is to buy a group of juveniles and let them grow up together.

MATING

In the wild *Mantella aurantiaca* breeds when there is plenty of food and the first heavy rains arrive. In captivity a cool, dry period of two to four months is introduced: misting is cut to half or a couple of times a week, daylight to about 10 hours, food is halved, and the temperature is kept below 22 °C, while clean water is still available. Then return to daily misting and plenty of food. The males may begin to call after a few days, and the first eggs may appear within two weeks. The females often swell with eggs a couple of weeks after the dry period.

The cool period is a strain, so watch all the animals, and move an animal that loses a lot of weight to a separate enclosure. Breeding succeeds most easily in a group with more males than females, but a group with mostly females can also produce eggs. The mating itself takes place hidden under bark, pieces of wood or stones. The species does not show the usual amplexus: the male simply lies across the female's back.

EGGS AND TADPOLES

The eggs are laid on land in moist moss, crevices or under bark and stones close to water, in the wild so that the rain can wash the tadpoles out into the pool. A clutch is 12-30 eggs with a diameter of 2-3 mm, and often only some of them are fertilised. There is no parental care.

Remove the eggs from the enclosure after about three days, and place them on a tuft of moist moss in a closed container, so that they just touch the water's edge without standing under water. During the next week small white tadpoles can be seen inside the eggs. When they break out, or when they wriggle around in the jelly, water is poured on so that they can swim freely.

The tadpoles are reared together in large plastic tubs with a tuft of Java moss or a cutting of pothos. For the first couple of weeks the water is 2-5 cm deep, later up to 10 cm. The water is kept at 18-26 °C without large fluctuations. For the first few days the tadpoles should not be fed, then they are fed every day or every other day with spirulina, chlorella, fish food flakes, daphnia, mosquito larvae and shrimp pellets, but never so much that the water goes bad.

METAMORPHOSIS

The tadpoles break out of the eggs 2-12 days after egg-laying. The eggs are preferably not sprayed to make them hatch, because the longer the tadpoles stay in the egg, the larger and stronger they are thought to become. Tadpoles from the same clutch develop at different rates: the first get front legs and go onto land 6-8 weeks after hatching, and the rest follow over the next 4-8 weeks.

When the front legs break through, the tadpoles are moved to a container with at most 1 cm of water and a tight-fitting lid. When the tail begins to disappear, the froglets are moved to a land set-up with moist kitchen roll and a hide, for example a pothos leaf or a dry oak leaf.

REARING THE YOUNG

The newly metamorphosed juveniles are 7-14 mm and bronze-coloured. They can be kept individually in small cups or two to five together in small plastic boxes, or grow up in a large enclosure, but then feeding must be very heavy, so that everyone gets food. The first food is springtails, aphids and small fruit flies or newly hatched crickets for those that can manage them. There must always be a little food present, and it is dusted with calcium and vitamins at every feeding.

At two to three months of age the juveniles can be moved to larger containers with moist moss or soil and hides and cared for like adult animals, just with more frequent feeding. Most have acquired the orange adult colour 3-8 months after leaving the water, a few only after 10-12 months.

Read more: Calcium, vitamins and supplements

Health and common mistakes

Mantella aurantiaca is sensitive to errors in the environment, and problems arise quickly. Typical mistakes are:

- Heat above 27 °C for a long time, which stresses the animals and leads to illness. Keep the enclosure cool.
- Desiccation due to too little misting or dry air without access to water.

- Deficiency diseases and poor growth with monotonous food or too little supplement.
- Parasites, especially in wild-caught animals. Keep new animals in quarantine.
- Weak animals that are kept away from the food by stronger males.
- Emaciation during the cool period. Move an animal that loses weight to a separate enclosure.

Seek a vet with amphibian expertise if an animal is lethargic and emaciated or develops sores on the skin, or if several animals fall 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.