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FROGS

Yellow Mantella

Mantella crocea

Mantella crocea is a small, diurnal frog of 18-24 mm from the forests of east-central Madagascar, yellow, khaki-brown, bronze or green with a chocolate-brown face mask. The species has a very small range and is vulnerable in the wild. It must be kept cool and breeds readily in captivity when the seasons are imitated.

Family: Mantellidae

KEY FACTS

THE ANIMAL

Adult size	**18-24 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	**20-24 °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	**12-18 months**
Eggs per clutch	**12-30**
Hatching	**3-12 days**
Larval period	**56-100 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 crocea is a small, compact frog that varies in colour. Most animals in captivity are yellow, khaki-brown or bronze, while animals from, among other places, Ambohitantely and Zahamena are green. The colour is broken by a black to chocolate-brown mask that runs around the face and down the sides, and often by brown spots on the back and limbs. The back may have a faint X-shaped or diamond-shaped pattern, and the hind legs have red spots. The females reach up to 24 mm from snout to vent, while the males can be sexually mature at about 18 mm. The species was described in 1990 by Pintak and Böhme.

M. crocea is genetically very close to *Mantella milotympanum*, and the two may be one species. It belongs to the family Mantellidae, which is found only in Madagascar.

Like other species in the genus, *M. crocea* has alkaloids in the skin as a defence against predators. The substances come from the diet in the wild, and in captivity the frogs of the genus lose the poison over time. Wild-caught animals may therefore have a mild skin poison, while captive-bred animals are regarded as non-poisonous. Avoid contact, and always wash hands after handling.

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

Distribution and habitat

Mantella crocea lives only in Madagascar, in a few forests by swampy areas in the east-central part of the island, among other places in Zahamena, and in a small patch of forest at Ambohitantely in the highlands north-west of Antananarivo. The range lies close to *Mantella aurantiaca* and *Mantella milotympanum* and is very small.

The species is listed as Vulnerable (VU) on the IUCN Red List. It is threatened by habitat loss, and collection for the pet trade may also be a threat.

> **Native range:** Madagascar.

HABITAT

Mantella crocea lives in humid tropical forest bordering swamps. The genus is most active in the rainy season from December to February, when the males call and defend territories, and the females eat ants, mites and other small arthropods. The eggs are laid on land in damp hollows, and the rain washes the tadpoles into nearby pools. In the cool dry season the frogs are less active and live hidden in the leaf litter.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Mantella crocea is easy to keep, as long as it is kept cool. Enclosure size, humidity, clutch and lifespan are borrowed from the closely related *Mantella aurantiaca*, which lives in the same part of Madagascar and has the same requirements for cool conditions and humidity.

Four adults need an enclosure of at least 45 × 45 × 30 cm, and more animals require more floor area. The species lives on the ground, so floor area is more important than height. The males are territorial, so a large enclosure with many visual barriers is better than a small one.

Build up the base with a drainage layer of expanded clay pebbles, a piece of mesh and on top damp sphagnum or a soil mix with coconut fibre. Spread leaf litter over the substrate, and provide many hides such as cork bark, roots and coconut shell caves. A simpler setup with damp kitchen paper makes it easier to keep an eye on the animals, but the substrate must then be changed often. A mesh lid gives good ventilation.

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

TEMPERATURE

During the day the temperature should be 20-24 °C and at night 16-18 °C. The species is particularly sensitive to heat: wild-caught animals must not be allowed above 25 °C for any length of time. Captive-bred animals tolerate more and cope with brief periods of up to 28 °C, but they do best in the same cool range. Extra heat is seldom necessary in a living room. Place the enclosure somewhere cool and out of direct sun, and measure the temperature down at the base.

For breeding, a cool dry period is provided in winter with temperatures below 22 °C (see Mating).

HUMIDITY AND MISTING

Humidity should be 70-100 %. Mist the enclosure daily, and let the surface dry out a little between mistings so the air does not become stagnant. Use reverse osmosis water, rainwater or tap water treated against chlorine, chloramine and heavy metals. During the dry period mist only every fifth to seventh day.

WATER AND WATER QUALITY

There should always be a shallow water bowl in the enclosure. The species of the genus are poor swimmers, so the water must be so shallow that the frogs can easily get out. An exact depth is not documented. Use the same type of water as for misting, change the water often, and scrub the bowl with hot water without soap. Amphibians absorb substances through the skin, so soap and hand cream must be kept well away.

LIGHTING AND UVB

The light is primarily for the plants. A UVB requirement is not documented for the species, but a weak UVB tube in Ferguson zone 1 with shade in the rest of the enclosure is an option. Provide 10-12 hours of light a day and about 10 hours in the cool period.

Read more: Lighting and UVB

FEEDING

Mantella crocea is an insectivore that feeds on ants, mites and other small arthropods. It takes relatively large prey for such a small frog, for example crickets as long as its head is wide. Week-old crickets and wingless fruit flies (*Drosophila melanogaster*) can make up most of the diet, supplemented with springtails, termites, small cockroach nymphs, small spiders, lesser mealworm larvae and small waxworms. Use several kinds of feeder insects to avoid deficiencies. Dust the food with a vitamin and mineral supplement.

Feed the adults every other day, and in the cool period a small portion once or twice a week is enough. Feed in several places in the enclosure so that weak animals are not kept away from the food.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Mantella crocea is diurnal and thrives in groups. The males are bold, often sit out in the open and call with short clicks to defend their territory, while the females are shyer and hide under bark or in the leaves. The females do not call, so a call means the animal is a male.

Avoid handling the frogs: the skin is thin and is damaged by grease, soap and the warmth of the hands. If a frog has to be moved, coax it into a clean plastic tub, and wash your hands before and after.

Breeding

SEXUAL MATURITY AND SEXING

The females are larger and more heavily built than the males. The males are slimmer and are the only ones that call. Age at sexual maturity is not documented for the species; 12-18 months is borrowed from *Mantella madagascariensis*. The easiest way to get a pair is to buy a group of juveniles and let them grow up together.

MATING

Mantella crocea breeds readily in captivity when the two seasons of Madagascar are imitated and the animals are fed heavily in the artificial rainy season. From December to March the enclosure is kept cool and dry with temperatures seldom above 22 °C, misting every fifth to seventh day and only a little food. When spring approaches and the temperature rises, return to daily misting and plentiful, varied food. The males then begin to call, and the females swell with eggs.

A group with more males than females gives the best results in the genus; starting with six to eight males and three females is a good point of departure, but pairs and trios can also succeed. Keep the animals under observation in the cool period.

EGGS AND TADPOLES

The eggs are laid on land in dark crevices or hollows, for example under a piece of cork bark above a clump of damp moss. Clutch size is not documented for the species; 12-30 eggs is borrowed from *M. aurantiaca*, and the genus lays from a few dozen to over 100 eggs. There is no parental care. After a few days fertilised eggs look as if they are splitting in the middle, while unfertilised ones become discoloured and misshapen.

The eggs are carefully dug up and placed in a closed container with a couple of millimetres of water at the bottom. When the tadpoles hatch over the following week, the water level is raised gradually. They are reared in an aquarium with water at 18-20 °C and fed daily with fish flakes, algae tablets, shrimp pellets, daphnia and powdered spirulina and chlorella. Leftovers are siphoned off the next day.

METAMORPHOSIS

The tadpoles hatch after 3-12 days; the figure is borrowed from *Mantella madagascariensis*. At a water temperature of 20 °C the first tadpoles metamorphose after about two months, and the rest follow over the next four to six weeks. When the front legs appear, they are moved to a container with a little water and Java moss so that they do not drown. When the tail is almost gone, the little frogs are moved to a simple setup with kitchen paper or sphagnum.

REARING THE YOUNG

The newly metamorphosed juveniles are under 12 mm and have a large appetite. The first food is springtails, wingless fruit flies and crickets 1-2 days old. The juveniles are dull in colour and acquire the adult coloration over the following year. They are kept apart from the adults so that they do not compete for the food.

Health and common mistakes

Mantella crocea is sensitive to wrong conditions, and problems arise quickly. Typical mistakes are:

- Heat above 25 °C for any length of time, which weakens the animals quickly. Keep the enclosure cool.
- Drying out from too little misting or dry air without access to water.
- Deficiency diseases from a monotonous diet or too little supplement.
- Parasites, especially in wild-caught animals. Quarantine new animals.
- Emaciation during the cool period. Move an animal that loses a great deal of weight to an enclosure of its own.

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