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FROGS

Sambava Tomato Frog

Dyscophus guineti

Dyscophus guineti is a stout, round, semi-burrowing frog from the eastern rainforest of Madagascar. The female is red-orange and up to 10 cm, the male smaller and more yellowish. By day it lies buried, at night it hunts, and it is calm and robust to keep when temperature, humidity and hygiene are in order.

Family: Microhylidae

Mild skin toxins

KEY FACTS

THE ANIMAL

Adult size	**6-10 cm** snout-vent length
Lifespan	**6-10 years**
Active	**At night**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Rainforest and wetland**
Skin toxins	**Mild** Wash your hands after contact and keep your fingers away from your eyes and mouth
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 35 × 35 cm** L × W × H for 3 adults
Temperature, day	**22-27 °C**
Temperature, night	**18-21 °C**
Humidity	**60-80%**
Water	**Water dish**
UVB	**Optional** Ferguson zone 1
Diet	**Insects and worms/snails**
Kept	**Singly, in pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**In water**
Sexually mature	**9-24 months**
Eggs per clutch	**200-3,000**
Hatching	**2-4 days**
Larval period	**28-45 days** from hatching to metamorphosis
Larval diet	**Complete diet**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
IUCN	**Least Concern (LC)**

About the species

Dyscophus guineti is a heavy, round-bodied frog in the family Microhylidae. The dorsal skin is smooth, and a fold runs along each side of the back. Females are clearly larger than males: about 9-10 cm from snout to vent against the males' 6-7 cm. The female is red-orange on the back, often with fine net-like markings and usually a dark, diamond-shaped pattern, while the male is yellowish to a more subdued orange. The belly is whitish, and a darker band runs from the eye down the flank. Juveniles are light brown and only acquire the warm colours as they grow. Colour is also linked to diet: carotenoids make the frogs distinctly more intensely coloured.

The species was described in 1875 as *Kaloula guineti* and is named after Guinet, a French merchant in Sambava who obtained the first specimen. It closely resembles *Dyscophus antongilii* and is told apart mainly by colour and the flank band. It is *D. guineti* that is most often found in the trade, occasionally sold in error as *Dyscophus insularis*. Captive animals live on average about 6 years and can reach 10.

When threatened, the frog puffs itself up, and if it is grasped, the skin secretes a thick, white, sticky secretion. In the genus the secretion has a numbing effect on the eyes and mouth of an attacker, and it has occasionally caused allergic reactions in humans, though never dangerous ones. Juveniles sitting close together can poison each other through the skin. Skin toxicity has therefore been set to mild: avoid handling, wash any secretion off your hands at once, and do not touch your eyes or mouth until your hands have been washed thoroughly.

Distribution and habitat

Dyscophus guineti lives only on Madagascar, in the eastern rainforest belt. Most records lie in east-central Madagascar between Antsihanaka at Lake Alaotra and Fierenana, with a few isolated records further south, at Vondrozo and Soavala. The type locality of Sambava in the north-east has not been confirmed since the description.

The frog lives concealed and probably occurs in more places than the records show. In some places it lives side by side with *D. antongilii*.

> **Native range:** Madagascar.

HABITAT

Dyscophus guineti lives in rainforest at 150-900 metres elevation and appears to prefer flat terrain with slow-flowing or standing water. It is also found in swamps and marshes and in heavily degraded former forest. By day it lies in the leaf litter on the forest floor and becomes active at night. In the rainy season it breeds in swamps and flooded areas along watercourses.

The climate is warm and humid with heavy rain in late spring and summer, and breeding is closely tied to the rain. The species is locally common and listed as Least Concern (LC) by the IUCN, but it tolerates only limited habitat degradation and is threatened by slash-and-burn agriculture, logging, charcoal burning, overgrazing and eucalyptus plantations.

Care

THE ENCLOSURE

A pair or three animals need a terrarium of at least 60 × 35 × 35 cm (length × width × height). Floor area matters more than height, because *D. guineti* lives on the ground and burrows. Juveniles do best two by two in a smaller terrarium of about 40 litres, where they find their food more easily.

The substrate is the most important choice. Coconut fibre or a soil mix without fertiliser, pesticides and weedkillers is best, because the frog can burrow into it and it holds moisture without rotting quickly. Lay at least 5 cm, preferably more, and cover with a layer of dry leaves, for example from *Terminalia catappa* or magnolia, which the frog hides under and which reduce the risk of it swallowing substrate. Avoid spruce bark and fine gravel.

Driftwood and cork bark provide hides and something to climb on at night. Robust plants such as pothos can be used, but small and slender plants get trampled or dug up, so artificial plants are a good alternative. A mesh lid provides the ventilation the species needs; cover part of it with glass if the terrarium dries out too quickly. Replace the whole substrate every other month, and remove faeces and food remains continuously.

TEMPERATURE

Dyscophus guineti tolerates a wide temperature range and thrives at ordinary room temperature. By day it should be 22-27 °C and at night 18-21 °C. The frog tolerates a single night down to 15 °C, but temperatures well above 27 °C can kill it. The species does not need a warm hotspot.

Use an accurate thermometer and measure in several places, including down at the bottom where the frog stays. In a large terrarium it can be warm under the lamp and too cold in the opposite corner. Cool, wet and dirty conditions are one of the most frequent causes of illness. If heat is lacking, a weak heat lamp or a thermostat-controlled heat mat under part of the terrarium can help.

A regular winter rest is not necessary, but a cooler and drier period can be given in winter, especially for *D. antongilii*, and it is also used to get breeding going.

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity should be 60-80%. Mist lightly once a day or every second or third day, depending on how quickly the enclosure dries out, and use a hygrometer. Moisture in the substrate is the most important: it should be damp but not wet, and when the substrate is right, the humidity usually is too.

A constantly wet substrate and stagnant air cause bacterial and fungal infections and respiratory problems, so ventilation must never be sacrificed for humidity.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

Provide a water bowl with dechlorinated water, large enough for the frog to sit in, and at least as deep as the frog is tall. Most frogs bathe in the bowl at night, so change the water every morning. Treat tap water with an aquarium conditioner that removes chlorine and chloramine. The frog absorbs water through the skin, so the bowl must never be cleaned with soap.

For breeding, the frogs need access to a large body of water or a rain chamber; see under mating. The tadpoles are very sensitive to water quality: tap water that has stood for a day can work well, while water from a different waterworks can kill a whole clutch within ten days. If your tap water is poor, reverse-osmosis water may be a solution, but it has not been tested for the species.

Read more: Rearing tadpoles

LIGHTING AND UVB

The species is nocturnal and does not need UVB, but a low-output UVB light (roughly Ferguson zone 1) does no harm and can be provided. For live plants, use a daylight tube as for aquariums.

Keep the light on for about 12 hours a day, controlled by a timer. The frog spends most of the day buried or under leaf litter and must always be able to hide from the light.

Read more: Lighting and UVB

FEEDING

Dyscophus guineti eats only live food. The mouth is smaller than the round body suggests, so feeder insects should be about as big as the distance between the eyes or slightly smaller: crickets and small dubia roaches of no more than 13 mm for adults and about 6 mm for juveniles. Earthworms are an excellent food and can be cut up for smaller animals. Adults can be fed almost exclusively on earthworms and slugs; the soft food probably gives better condition and can trigger breeding. Juveniles prefer crickets and only take earthworms at 4-5 cm. Waxworm larvae, mealworms, soldier fly larvae and fly maggots are treats given now and then.

Adults get 3-6 crickets several times a week or earthworms twice a week, juveniles daily. If crickets are still running around after a couple of hours, the frog is getting too much. Dust the food with a vitamin and mineral supplement at every second feeding for adults and at every feeding for juveniles, and consider a carotenoid supplement for the sake of colour. Feed in a dish, or in water, so the frog does not swallow substrate together with the prey.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Dyscophus guineti is calm and secretive. It lies buried for most of the day and comes out at night. Adult animals can become somewhat tame, but at best tolerate handling, so pick it up only when necessary. Oil and soap residue on human skin can harm the frog, so rinse your hands thoroughly before and after. If you see the white, sticky secretion, the frog is stressed.

Several animals can be kept together when there is enough room; the males are rarely aggressive outside the breeding season. Keep only animals of the same age and size together, and do not mix *D. guineti* with other species: it causes stress, can transmit diseases and parasites, and the secretions of some frogs are lethal to other amphibians.

Breeding

SEXUAL MATURITY AND SEXING

Sex is easily determined by size: adult females reach up to 10 cm, males seldom more than 6-7 cm. Females are also redder, males more orange or yellowish, and in males the reproductive organs can often be seen as two white lines under the skin of the belly.

The young grow quickly and can reach adult size within a year. In the genus the animals become sexually mature at 9-14 months, but a female should be at least two years old before she is used for breeding. A precise age for *D. guineti* is not documented.

MATING

Dyscophus guineti is difficult to breed without hormones, and hormone treatment has long been the usual route. The recommended method without hormones is a long dry period followed by gradually increasing humidity and generous feeding, after which the animals are moved to a rain chamber where it rains artificially.

This is not enough in itself, however: rain can bring pairs into amplexus without any eggs being laid. The diet is decisive: almost exclusively earthworms and slugs, fed in water. The males call at night, especially after rain. In mating the male grasps the female from behind, and the eggs are fertilised in the water.

EGGS AND TADPOLES

The eggs are laid in water, in the wild in swamps and flooded areas. The female lays several hundred eggs, 1,000-1,500 in captivity, but the number varies widely: a clutch can give from about 40 to over 3,000 tadpoles. Laying all the eggs can take over 50 minutes. There is no parental care, and the adults are removed so the eggs and tadpoles are left in peace.

The tadpoles hatch after about three days. They do not have fully developed mouthparts and can eat neither algae, pellets, flakes nor meat, not even dead siblings. Instead they swim around and filter their food from the water. Grind fish food to a very fine powder, for example in an old coffee grinder, and stir it into the water in small portions. Water quality is critical; see under water. Keep the water clean, and divide large clutches between several tubs.

METAMORPHOSIS

Most tadpoles have metamorphosed after 4-6 weeks. In the closely related *D. antongilii* it takes 45-60 days.

When the front legs appear, the young must be able to climb out of the water. Lower the water level, and add floating plants, stones or sloping bark so that they do not drown. Move the metamorphosed young to a moist rearing terrarium. How long the tadpoles stop eating for, and how large the young are at metamorphosis, is not documented for the species.

REARING THE YOUNG

The newly metamorphosed froglets are light brown and are kept in a simple enclosure with damp coconut fibre or damp kitchen roll, hides and a shallow water dish. The young are not cannibals, but they develop skin toxins and can poison each other when they sit in heaps. Poisoned froglets become lethargic and do not turn over when laid on their backs, so rinse the froglets regularly when they huddle together. Do not keep them too densely, change the substrate often, and always ensure good ventilation.

Feed daily with crickets of about 6 mm and other small insects, always dusted with supplements. The young grow quickly and acquire the red colours as they become sexually mature. Remember that the young are covered by CITES, and that it takes time to obtain paperwork before they can be sold.

Read more: Calcium, vitamins and supplements

Health and common mistakes

Dyscophus guineti is robust, and most problems are caused by the environment or hygiene. The typical mistakes are:

- Cool, wet and dirty conditions. These cause bacterial infections, which can show as red or pink areas on the belly and legs, bloating or unsteady movements, where the frog tips over onto its back.
- Too high a temperature, well above 27 °C, can kill the frog.
- Stagnant air, which causes respiratory problems.
- Lack of vitamins and minerals. Dust the food.
- Overfeeding. The frog is greedy and easily becomes fat.
- Parasites and poor condition in wild-caught animals. Preferably buy captive-bred animals.

- Chlorine, chloramine or soap residue in the water and on hands.
- Odontomas, tumours arising from the teeth, can occur in the species.

A healthy frog is round, has clear eyes and buries itself during the day. A healthy adult can go a week without food with no problem. Isolate a sick frog in a clean enclosure with the right conditions, and see a vet with amphibian experience if it is lethargic, unsteady in its movements, bloated or stops eating.

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.