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GECKOS

Mauritius lowland forest day gecko

Phelsuma guimbeaui

Phelsuma guimbeaui is an emerald green day gecko from Mauritius with red spots and stripes on the back and tail. It grows to at most 15 cm and does well in a relatively small enclosure, but it is threatened in the wild, so animals in vivaria therefore have value as a reserve population.

Family: Gekkonidae

KEY FACTS

THE ANIMAL

Adult size	**11-15 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Dry forest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**40 × 40 × 60 cm** L × W × H for 2 adults
Temperature, day	**24-30 °C**
Basking spot	**30-42 °C**
Temperature, night	**16-22 °C**
Humidity	**40-80%**
UVB	**Optional**
Diet	**Insects, fruit, nectar and complete diet**
Kept	**In pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**12-24 months**
Clutch size	**1-2 eggs**
Incubation	**45-113 days** at 23-31 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Endangered (EN)**

About the species

Phelsuma guimbeaui is a medium-sized day gecko with a short, compact body. When the animal is at its best colour, the back is emerald green and the neck often bluish, and on the back and tail there are red to orange-red spots, streaks and crossbands. The tail tip may be turquoise. The underside is whitish to beige, and on the throat there are two or three dark V-shaped marks, which may however be very faint or missing altogether. The animal can darken strongly within a few minutes, so it looks almost black, and lighten again. In enclosures with too little light the red markings often fade to brownish or pale orange.

Males grow to 15 cm including the tail, but are often smaller. Females grow to 11-12 cm. The tail makes up slightly more than half of the length. The sexes have the same colours and markings, but adult males are longer, stronger and have a distinctly broader head. In males there is a row of enlarged scales with pores on the underside of the thighs and in front of the vent, and the hemipenal pouches can be seen as bulges at the base of the tail. Adult females often have calcium sacs behind the ears, which they use to store calcium for the eggshells.

The young look completely different. They are dark brown or grey with fine light and dark spots, and during the first year of life they change colour, usually beginning with yellow rings around the eyes. After 12-15 months they look like the adults.

Phelsuma guimbeaui was described by Robert Mertens in 1963 from animals from Mauritius. The species name honours the collector of the type specimen, B. Guimbeau. Until 2004 the south-eastern *Phelsuma rosagularis* was regarded as a subspecies, but genetic studies showed that the two are so distantly related that each is a species in its own right. The species is not shy in the enclosure, but in the wild it is cautious and is hunted by many birds.

Read more: Calcium, vitamins and supplements

Distribution and habitat

Phelsuma guimbeaui is found only on the island of Mauritius in the south-western Indian Ocean, about 870 km east of Madagascar. The original range covered the lower parts of the whole western side of the island from Port Louis to Baie du Cap in the south. The type locality is Pailles a few kilometres south-west of Port Louis, and today Chamarel, Tamarin and Grande Rivière Noire, among others, are mentioned as places with populations.

The range is heavily fragmented. One study found 30 separate subpopulations of 44 to 167 animals, and only 12 of them were considered viable. The largest continuous areas lie in the south, partly in Black River Gorges National Park. There is also an introduced population on the island of Oahu in Hawaii. It is not part of the original range.

> **Native range:** Mauritius.

HABITAT

Phelsuma guimbeaui is a forest dweller that is tied to continuous, open tree vegetation. It is found in the dry and warm part of Mauritius and is not restricted to lowland forest: it has been found all the way up to the top of Piton du Canot at 540 metres. Adult animals live high up in the trees, where they are well camouflaged among green leaves, while the young stay close to the ground in dry bushes and scrub, where their grey-brown colour hides them.

In the warmest areas the temperature can reach 35 °C in January and fall to 12 °C on cold nights in June. The animals have taken to introduced trees such as mango, eucalyptus and Terminalia, but they do not cope in a tidy cultivated landscape, and buildings and banana and coconut plantations cannot replace the forest. Density is low everywhere: most often you see single animals or one male with one or two females in the same tree. Males' territories are 32-158 m² and hardly overlap, while females' are smaller, 2-68 m², and overlap more. The animals eat arthropods, but also pollen, nectar, tree sap and the sugary secretions of aphids.

Care

THE ENCLOSURE

A pair of *Phelsuma guimbeaui* can be kept properly in an enclosure of at least 40 × 40 × 60 cm (length × width × height), but bigger is better if there is room. Height is important, because the species lives in trees. A pair is the safest way of keeping them. One male can also be kept with several females, but the females often do poorly with each other, especially if there are only two. In a larger enclosure it is therefore better to have three to four females to one male.

Furnish it as for other day geckos. Bamboo canes of different thicknesses and smooth branches provide walkways and hiding places. Ordinary green plants from the garden centre, for example Schefflera, Anthurium, Sansevieria and Rhoeo, are suitable, and the large leaves are also used as climbing surfaces and sleeping places. Ficus pumila, small ferns and moss can make the area near the bottom more natural.

Hydroponic clay pellets work as substrate, with the plants set directly in. It is easy to maintain, because the droppings act as nutrition for the plants, and the moisture level can be read from a water level gauge. Alternatively, a mixture of soil and sand or unfertilised potting soil can be used. The enclosure must be well ventilated, especially if it stands close to sunlight.

TEMPERATURE

During the day the enclosure for *Phelsuma guimbeaui* should be 24-30 °C. Under a spotlight there should be a basking spot where the temperature can locally reach up to 42 °C, and which the animals must be able to use several times a day. The lamps can be HQI, HCI or CDM. The animals must be able to get away from the heat again, so there must also be cooler and shaded branches.

At night the temperature may fall to room temperature, about 18-22 °C, and in winter to 16-18 °C, which is healthy, especially for the females. In good weather the animals can be kept outdoors for periods in a mesh or gauze enclosure with shade, where night temperatures down to 15 °C are tolerated. If longer periods of bad weather or too cold nights arrive, they must go back indoors. Glass enclosures without good ventilation become too hot in the sun and should not be used outdoors.

Read more: Heat and temperature

HUMIDITY AND WATER

Mist the enclosure for *Phelsuma guimbeaui* once a day with demineralised water. The animals lick some of the water, and it does not harm them. After misting, the humidity temporarily rises to 70-80 %, and during the day it may fall to about 40 % in the upper part of the enclosure. This is normal.

For drinking water, a bird drinker with a reservoir, attached to the glass with a suction cup, is a good choice, because the animals can then drink all the time. A water bowl is accepted, but is often used as a toilet. The need for water can also be covered by the daily misting, but then the water must not be demineralised, and depending on the hardness of the water you must expect limescale spots in the enclosure.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Strong, full-spectrum light is important for the colours of *Phelsuma guimbeaui*. Natural sunlight is best. The enclosure can be lit with LED light bars or ceramic spot lamps (HQI, HCI, CDM), and metal halide lamps with a UV share are also an option. UV radiation is an advantage, but not strictly necessary if the animals get vitamin D3 with their food.

The red markings become only pale yellow or brown spots if the light is too weak. Under very strong enclosure light they become orange-red, and the colours develop best of all in the open air. Keep the light on for up to 14 hours a day in summer. In winter the lighting is gradually reduced to 7-9 hours for a few weeks, so the animals, especially the females, get a rest period.

FEEDING

The staple food for *Phelsuma guimbeaui* is crickets. For variety, give waxworm larvae, mealworm beetles in the larval stage or other small insects, and very rarely mealworms. Fruit purée, flower pollen and baby food purée can also be served, because in the wild the species also eats pollen, nectar and tree sap. Commercial prepared diet for day geckos can be used now and then. Adults are fed every other day in summer and about twice a week in winter, while the young get as much as they eat straight away, every day.

Feeding can advantageously be done with tweezers. Females have an increased need in the breeding season, males easily become too fat, and males can be aggressive towards the female during feeding, so she withdraws and does not get enough. The insects are dusted with a vitamin and mineral supplement: for females every time, for adult males once a week is enough. The calcium from the powder is not enough for the females, so a small dish of crushed cuttlebone must always be available. The females take what they need, and they normally do not get permanently oversized calcium sacs.

Females can occasionally be poor eaters. A fatty yoghurt with fruit is almost always accepted and can be given by letting the female lick it off a wooden stick or a spoon handle. The fat helps the absorption of vitamin D3. Purée should only be given in small amounts, because it is energy-dense and easily makes especially the males overweight.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Phelsuma guimbeaui is diurnal and lives strictly in trees. The species is not particularly shy in the enclosure and is an animal to watch, not to handle. It can lose its tail, and many wild animals have lost it, so never grab the tail. Keep handling to a minimum.

Males' territories hardly overlap in the wild, so two males should not be kept together. A pair is ideal. The male can be pushy towards the female, especially during feeding, so there must be many hiding places and plants. There is often unrest between females, especially two females with a male, and in larger enclosures three or four females are better. Adult animals chase the young and readily eat them, so the young must be moved out as soon as they hatch.

Breeding

SEXUAL MATURITY AND SEXING

Adult *Phelsuma guimbeaui* can be sexed by the male's broader head, larger body and the distinct pores on the underside of the thighs and in front of the vent. In the young, males can be recognised by the pores when they are three to four months old, but this requires experience, because some young females also have small pores. In females the pores are limited to the area in front of the vent and disappear with age. In males they extend onto the thighs and become distinctly larger.

The species grows more slowly than other day geckos. Many are sexually mature after a year, and in females the first eggs are seen, but females should only be put to breeding when they are one and a half and preferably two years old, so they are big and strong enough to cope with egg-laying and an eager male. Females breed in the enclosure up to about ten years of age, and the number of clutches falls with age.

MATING

On Mauritius, *Phelsuma guimbeaui* lays most clutches between October and February, but a few clutches can occur all year round. In the enclosure a seasonal rhythm is created by changing the lighting period and letting the temperature fall a little in winter. The females then take a break from egg-laying and can recover, and the mating eagerness of males and females is brought into step. This is important for the health of the females and should always be allowed.

After mating, the female begins to take more cuttlebone. You can tell that she is gravid from the rounder body and from the translucent eggs in the belly, especially just before laying. The male is constantly eager to mate, so the female must have plenty of food and hiding places.

EGG-LAYING AND CLUTCHES

Phelsuma guimbeaui lays eggs, usually two at a time. With age, more single eggs appear. A female may lay up to six clutches in a season. The eggs are glued to a surface, and if the female does not get a suitable place to lay, they end up in an inaccessible spot or on the glass.

Therefore offer a laying site in good time: horizontally placed bamboo tubes with a diameter of about 25 mm, lined with paper so the clutch is easily removed. Wait about two days before taking the paper out after laying, because the female checks the clutch during that time. If it is removed too early, she may avoid the tube next time. The females have a great need for calcium and vitamins throughout the season. Deficiency can cause rickets or loss of eggs.

INCUBATION

In *Phelsuma guimbeaui*, the sex depends on the incubation temperature, as in other day geckos. At constant temperatures up to 29 °C, for example 22, 24 or 28 °C, almost only females hatch. Higher constant temperatures should not be used, because young that get too hot often die. Instead, a higher temperature with a distinct drop at night is used. With 30.5 °C (plus/minus 1 degree) for six hours a day and 23 °C (plus/minus 1 degree) for the other 18 hours, about half males and half females are obtained.

The eggs are preferably moved to an incubator. The incubation time depends on the temperature and varies from 45 to 113 days. Incubation in the enclosure can also succeed if the temperature conditions are right, but it is harder to control. If the eggs cannot be moved, they must be secured with a cover, so the young can be moved at once when they hatch. The adults will chase the young.

Read more: Incubating eggs

REARING THE YOUNG

The newly hatched young of *Phelsuma guimbeaui* are about 4 cm long. They are first placed singly in one-litre plastic boxes with mesh in the lid and side. The furnishings are two slanted bamboo sticks or twigs and a bird drinker with a reservoir. No substrate is used, because the young can swallow soil or sand when they try to catch food.

The young get vitamin-dusted feeder insects every day for the first months, but only as many as they eat straight away, because feeder insects running around in the box stress them. The smallest crickets and mealworm beetles are suitable, and a little fruit purée or prepared diet for day geckos can be given now and then. When the young are 6-8 weeks old, they are moved to an enclosure of 30 × 30 × 50 cm or preferably to a small outdoor aviary of insect mesh in the summer half of the year. Damp kitchen roll in a dish serves as drinking water in the aviary. The sex ratio is often skewed if the eggs are incubated at a constant temperature, so see the section on incubation.

Health and common mistakes

Phelsuma guimbeaui is relatively easy to keep, but slightly more demanding than some other day geckos. The typical problems are:

- Calcium and vitamin deficiency in the females, which can cause rickets and loss of eggs. Dust the food, and keep a dish of crushed cuttlebone available at all times.
- Obesity, especially in the males, if they get too much prepared diet or fruit purée.
- Weak colours and pale markings, caused by too little light. Use strong light and preferably sunlight.
- Skewed sex ratio if the eggs are incubated at a constant temperature. Use the temperature variation described under incubation.
- Exhausted females after many clutches. Rest and time outdoors in good weather help.
- Lost tail after handling or fights. The tail does not grow back in the same form.

See a vet experienced with reptiles if an animal loses weight, stops eating or looks limp.

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.

The full guide with map and updates: herpy.org/en/geckos/phelsuma-guimbeaui