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GECKOS

Réunion Island day gecko

Phelsuma borbonica

Phelsuma borbonica is a medium-sized, blue-green day gecko from Réunion in the Indian Ocean; one subspecies lives on Agaléga. It is marbled reddish brown on the back and tail, thrives at humid, sunny forest edges and is threatened in the wild. It needs a tall, warm and well-planted terrarium with UVB light, and little is known about its care.

Family: Gekkonidae Former name: *Phelsuma cepediana borbonica; Phelsuma agalegae*

KEY FACTS

THE ANIMAL

Adult size	**13-16 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Rainforest and montane forest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**45 × 45 × 60 cm** L × W × H for 1 adult
Temperature, day	**25-28 °C**
Basking spot	**30-32 °C**
Temperature, night	**20-22 °C**
Humidity	**60-80%**
UVB	**Recommended** Ferguson zone 2
Diet	**Insects, fruit, nectar and complete diet**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1-2 eggs**
Clutches per year	**1-4**
Incubation	**60-90 days** at 26-28 °C

PROTECTION AND PAPERWORK

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

About the species

Phelsuma borbonica is a medium-sized day gecko in which the male grows to 15-16 cm and the female rarely exceeds 13 cm, both measured including the tail. The ground colour is blue-green to dark green. The head is yellowish and finely speckled with brown, and on the back and tail lie brown or brick-red spots that form a network of crossbands. The red spots on the head and neck are smaller and denser than those on the back. The underside is yellowish with brown marbling.

Colour varies from population to population. Some animals have a blue spot on the throat, and the populations that live right down on the coast have a brown mark on the head that is not seen in animals from the highlands. The species' populations are strongly genetically separated from one another, and the exchange of animals between them has historically been low.

Three subspecies are recognised: *P. b. borbonica* from the northern part of Réunion, *P. b. mater* from the eastern part and *P. b. agalegae* from the Agaléga islands. The species name refers to Bourbon, the former name of Réunion. The species was described in 1966 by Robert Mertens as a subspecies of *Phelsuma cepediana*. Together with *Phelsuma inexpectata* it is one of the only native reptile species still living on the island.

P. borbonica is nervous and flees quickly when disturbed. At the same time it is very fond of light and often lies basking in the sun. Like other day geckos it has no movable eyelids. The species is rare in the trade.

Distribution and habitat

Phelsuma borbonica occurs naturally on Réunion in the Indian Ocean. The nominate form *P. b. borbonica* lives in the northern and eastern part of the island, typically in the highlands above Saint-Denis and Sainte-Rose, where the type locality Le Brûlé lies. *P. b. mater* is found further south-east, including in the forests around Basse Vallée. A small population is known right down on the coast at Bois Blanc.

The subspecies *P. b. agalegae* is found on Agaléga, a small island group north of Mauritius, with its type locality on Agaléga. The species is not known from Mauritius itself.

The map shows Réunion. The range is very small, and the species is assessed as threatened, partly because the habitat has shrunk, and because the introduced *Phelsuma laticauda* now lives almost everywhere on the island.

> **Native range:** Réunion and Mauritius.

HABITAT

Phelsuma borbonica lives in open, humid forest and forest edges on the volcanic island of Réunion. It is found in natural forest up to a considerable altitude, but also in degraded forest and in gardens where fruit-bearing trees grow, especially bananas. The animals move about on trunks and leaves, and the coastal population uses screw pines (*Pandanus*) as shelter and breeding sites.

The climate is warm and humid. During the day the temperature is 25-30 °C, and at night it falls to about 20 °C. Humidity varies between 50 and 80 % over the course of the day.

The species eats small insects, spiders and other small invertebrates. It also licks nectar from flowers and sap and fruit pulp from ripe fruit. In this way it pollinates a number of the island's plants, among them the endemic *Trochetia granulata*.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Little is known about the care of *Phelsuma borbonica*. The guide is based on the climate of the habitat and on the better-known day geckos, especially *Phelsuma laticauda*, which lives on the same island. The closely related *Phelsuma cepediana* from Mauritius has similar requirements.

A single animal needs a terrarium of at least 45 × 45 × 60 cm (length × width × height). A pair needs at least 60 × 45 × 90 cm, so that the animals can go their separate ways. Height matters more than floor area, because the species lives on trunks and leaves.

Furnish with live plants with broad leaves, cork bark, bamboo and branches at several heights and angles. The substrate must retain moisture and support the plants, for example a mix of soil and coconut fibre. A bioactive set-up with springtails and isopods keeps the substrate clean. The terrarium must have good ventilation, otherwise the air becomes stagnant and mould appears. Seal gaps where a small animal could become stuck, and keep the terrarium dark at night.

Read more: Terrarium construction and bioactive substrate Read more: Feeder animals: keeping and breeding

TEMPERATURE

Phelsuma borbonica needs 25-28 °C in the terrarium by day. Under a spotlight there must be a warm spot of 30-32 °C, so that the animal can lie basking in the sun. At night the temperature must fall to 20-22 °C.

Make sure the animal can move away from the heat and down into a cooler area. The heat lamp must not warm the whole terrarium, and a thermostat or dimmer on the lamp gives an even climate. Measure with a digital thermometer both at the warm spot and at the bottom of the terrarium.

An animal sitting close to the heat source with its mouth open is too hot. An animal sitting curled up and passive may be too cold.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity in the terrarium for *Phelsuma borbonica* should be 60-80 %, with the highest value at night and after misting and a slightly lower level over the course of the day. This corresponds to the range in the wild, where humidity shifts between 50 and 80 % over the day. A digital hygrometer shows whether the level holds.

Mist the terrarium every morning, so that dew forms on leaves, panes and furnishings, because the gecko drinks the droplets. Preferably repeat in the evening. A misting system or rain system makes it easier to maintain the level. A low water dish can stand as an extra offering, but it does not replace misting.

Live plants help keep humidity stable. Constantly wet conditions, on the other hand, cause mould and skin problems, so the terrarium must dry out a little between mistings.

LIGHTING AND UVB

Phelsuma borbonica is diurnal and very fond of light and needs strong, natural light. Use a UVB tube of strength 5.0, for example a T5 tube, mounted over one half of the terrarium, so that the animal can choose between light and shade. The species lives at open forest edges and basks, so it belongs to Ferguson zone 2.

A full-spectrum daylight tube and a small halogen spot as a warm spot make the colours distinct. Replace the UVB tube according to the manufacturer's instructions, and position the lamp so that the animal cannot sit right up against it.

Keep the light on for about 12-14 hours in summer and 10-11 hours in winter, preferably controlled by a timer. Do not use night light.

Read more: Lighting and UVB

FEEDING

Phelsuma borbonica eats insects, nectar and ripe fruit pulp. In captivity it thrives on a mix of prepared food for day geckos and live feeder insects. The prepared food is stirred into a thick porridge and served in a small dish mounted high up, because the animal is arboreal. Fruit purée with no added sugar can be mixed in.

Offer live insects several times a week. Crickets of a size matching the distance between the gecko's eyes, fruit flies, small cockroaches and black soldier fly larvae are good as a base. Waxworms, butterworms and hornworms are treats that should only be given now and then. The feeder insects must themselves have been fed a good diet before they are passed on.

Dust the insects with calcium. Also give a multivitamin and calcium with D3 once a week, even where there is UVB. Do not give more than the packet says, because overdosing is a problem in small reptiles. Females that lay eggs need plenty of calcium, so that the young get enough nutrition in the egg.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Phelsuma borbonica is nervous and prone to flee. The animal should not be handled, but observed. Fleeing in panic can make it drop its tail, and the tail does not grow back in the same form. Give newly acquired animals time to settle in, and place the terrarium calmly, away from foot traffic and loud noises.

Like other day geckos, the species is territorial. Keep it alone or as a pair, never two males together. A pair needs a roomy, densely planted terrarium with many hiding places, so that the female can get away from the male. Groups are not recommended.

Put a pair together in a clean terrarium in which neither animal has lived, so that it is neutral territory. Chasing, rejection and attacks are signs of aggression, and the animals must then be separated at once. Not all pairs can be kept together.

Breeding

SEXUAL MATURITY AND SEXING

In *Phelsuma borbonica* the male is clearly the largest: he grows to 15-16 cm, while the female rarely exceeds 13 cm.

The age at sexual maturity is not documented for the species. In *Phelsuma laticauda* the animals can breed after about 9 months, but they should only be put to breeding when they are 12-14 months old, and this also applies to *P. borbonica*.

MATING

Breeding of *Phelsuma borbonica* in captivity is not described in detail, so the advice follows the other day geckos. In the wild the breeding season begins in spring and continues through the summer.

Put the male and female together in a clean, neutral terrarium and watch them closely. Nodding and head-bobbing are a good sign, while chasing and attacks mean they must be separated. A cooler and shorter rest period in winter, with a temperature a few degrees lower and 10-11 hours of light, can help the female gather strength. When the days become longer and warmer again, the animals begin to breed. If the female is underweight or ill, mating must be postponed.

EGG-LAYING AND CLUTCHES

A female *Phelsuma borbonica* lays eggs in pairs, two at a time, and can lay up to four pairs of eggs during a season. In the wild the eggs are stuck to the substrate or lie hidden under bark and stones. Several females can share a laying site.

Give the female a bamboo laying tube or dense plants with large leaves, to which she can stick the eggs. She needs plenty of calcium and food while she lays, and peace to lay. The eggs can be moved to an incubator, but they must keep their original orientation. Adults can eat newly hatched young, so the eggs should be moved.

Read more: Incubating eggs

INCUBATION

The eggs of *Phelsuma borbonica* are laid in a small container with air holes and a moist, but not wet, substrate of vermiculite, perlite or sphagnum. The eggs must not roll, and the container is placed in an incubator with a stable temperature.

At about 26 °C the eggs hatch after two to three months (60-90 days), and a higher temperature gives faster development. In day geckos the incubation temperature affects sex, so a stable incubator is important; the thresholds for *P. borbonica* are not known.

REARING THE YOUNG

The size of the young at hatching is not documented. They need a small terrarium with plants, branches and high humidity. Two young can go together at first, but they must be separated within the first month, before they begin to fight.

The young live on newly hatched crickets, fruit flies and fruit purée. Nutrition is crucial, so the feeder insects must themselves be well fed, and all food is dusted with calcium and vitamins. Give food every day for the first three months. Many young die in the first few days if the mother has not had enough nutrition for the egg.

Health and common mistakes

Phelsuma borbonica has the same weak points as other day geckos:

- Aggression between animals. Females and males can bite each other seriously. Separate the animals as soon as there is unrest.
- Lack of calcium and vitamin D3, which causes soft bones and tremors. Dust the insects, and provide UVB.
- Too low humidity, which causes dehydration and skin problems, or too wet conditions without ventilation, which cause mould.
- Stress and loss of the tail in nervous animals, which are frightened by movement close to the terrarium.
- Eye damage, if the UVB lamp sits too close to the animal.
- Getting stuck in gaps in the background and furnishings. Close small holes.

Seek a vet with experience of reptiles if the animal loses weight, stops eating or sits dull and 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.