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GECKOS

Striped day gecko

Phelsuma lineata

Phelsuma lineata is a small day gecko from Madagascar with a green body, a broad dark stripe along each side and red spots on the back and head. It climbs in plants and bamboo, feeds on insects, nectar and fruit purée, and needs warmth, UVB and high humidity. It is for anyone who wants to watch their animals rather than handle them.

Family: Gekkonidae Former name: *Phelsuma lineatum*

KEY FACTS

THE ANIMAL

Adult size	**10-15 cm** total length incl. tail
Lifespan	**8-15 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Rainforest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**30 × 30 × 45 cm** L × W × H for 1 adult
Temperature, day	**25-29 °C**
Basking spot	**28-32 °C**
Temperature, night	**20-24 °C**
Humidity	**50-80%**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, fruit, nectar and complete diet**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**12-18 months**
Clutch size	**1-2 eggs**
Incubation	**40-90 days** at 24-28 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Phelsuma lineata is a slender, diurnal gecko of 10-15 cm including the tail. The males are medium green with many small red dots on the lower part of the body and a red marking on top of the head. A thick brown to black stripe runs along each side, the belly is pale, and there may be blue on the tail and the neck. The females are more subdued in colour. The snout is pointed, the eyes are round and have no eyelids, the toes have adhesive lamellae, and the skin is fine and velvety.

The species was described in 1842 by John Edward Gray. The species name comes from Latin *linea*, "line" or "stripe", and refers to the stripe along the side. The name probably covers a collection of several different forms. Three subspecies are recognised, *P. l. lineata*, *P. l. bombetokensis* and *P. l. elanthana*, and several forms that formerly belonged to the species have been raised to full species, for example *Phelsuma dorsivittata* and *Phelsuma punctulata*. The species gives its name to a group of closely related day geckos, the *Phelsuma lineata* group. In captivity it is a fairly hardy day gecko, especially when the animals are captive bred.

It is fast and delicate and is best suited as a display animal. The skin tears easily, and handling stresses the animal. With good care it can live for up to 15 years.

Distribution and habitat

Phelsuma lineata occurs naturally on Madagascar. The species lives in the humid northern and eastern parts of the island, in the lowlands and at mid elevations along the east coast. The subspecies *P. l. bombetokensis* is found in the north-west at Bombetoke Bay and *P. l. elanthana* in central Madagascar. Forms from the area around Perinet and Moramanga in the east and from southern central Madagascar have been described as separate subspecies, but are now often considered to belong to the nominate form.

The species has also been introduced to Réunion. That population is not counted as part of the native range.

> **Native range:** Madagascar.

HABITAT

The species prefers humid, subtropical to tropical forest areas and occurs both in the lowlands and at mid elevations along the east coast. In the wild it lives mainly in trees, bushes and other plants and stays high above the ground. It is seen especially at open, sunny forest edges, where it can bask and hunt insects.

It is active by day. It eats insects and other small invertebrates, flower nectar and fruit juice. The east coast of Madagascar is warm and humid all year round, and it is this combination of warmth, light and dew or rain that you imitate in the enclosure.

Care

THE ENCLOSURE

A single adult needs a tall enclosure of at least 30 × 30 × 45 cm (length × width × height), and bigger is better. A pair needs at least 45 × 45 × 60 cm so that the animals can get away from each other. The species lives up in the vegetation, so the enclosure should be tall rather than wide, with many plants and bamboo canes.

Furnish with branches, lianas, cork tubes and bamboo at all heights so that the animal can climb, hide and find both light and shade. Live plants such as dracaena, sansevieria, pothos, philodendron and bromeliads provide cover, hold the humidity and are places where the female lays her eggs. Artificial plants are less suitable. For substrate, use a moisture-retaining mix of coconut fibre and topsoil in a layer of about 5 cm, preferably with leaf litter on top. The substrate cushions a fall and helps keep the humidity up.

The enclosure needs good ventilation, otherwise mould quickly grows. Remove droppings daily and replace the substrate every three to four months. The animals like to walk upside down on the mesh, so heat sources must hang above the lid and not lie directly against the mesh.

Read more: Humidity, misting and ventilation

TEMPERATURE

During the day the enclosure should be 25-29 °C. Under a heat source at the top of the enclosure there should be a basking spot of 28-32 °C, e.g. on a branch directly under a small white heat bulb. At night the temperature may fall to 20-24 °C.

The warmest zone must be at the top and the coolest at the bottom, so that the animal can choose for itself. Use digital thermometers with probes both at the basking spot and at the bottom. If the basking spot is too hot, dim the lamp or switch to a weaker bulb. Temperatures that are too high or too low stress the animals and can, at worst, kill them.

Read more: Heat and temperature

HUMIDITY AND WATER

The humidity should average 50-80 %, measured in the middle of the enclosure. It is natural for it to be lower in the heat and higher at the cooler end, and for it to rise at night and fall during the day. Mist the enclosure with a pressure sprayer every morning and, if necessary, also in the evening. The animals lick the droplets from the leaves and the walls.

In addition, provide a shallow, stable bowl of fresh water, ideally on a holder up in the enclosure, and change the water daily. The bowl should be washed thoroughly every week. Constant moisture without ventilation causes mould and skin problems.

LIGHTING AND UVB

The species is diurnal and needs strong light, a basking spot and UVB in order to absorb calcium and show its best colours. For UVB, use a UVB tube or a compact UVB bulb, and at a basking spot under the lamp the UV index should be about 3-4 (Ferguson zone 3). The distance between lamp and animal determines the strength, so measure with a UV meter if you can. The bulb or tube must be replaced every 6-12 months because its output declines.

Also provide ordinary, bright light with a colour temperature of about 6500 K so that the animals become more active. The day length is about 13 hours in summer and 11 hours in winter, with gradual transitions between. It must be dark at night.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

FEEDING

The species is omnivorous. In the wild it feeds on insects, nectar and fruit juice. In captivity the diet consists of live insects and a sweet mixture, either a ready-made food for fruit-eating geckos mixed with water or finely mashed baby food with fruit. The insects can be crickets, small cockroaches, grasshoppers, small earthworms, silkworms and wingless fruit flies for the smallest animals. Mealworms and waxworms are fatty and poor in calcium, so they are given only as treats.

Young animals get insects daily and the sweet food every other day. Adult animals get insects two to three times a week and the sweet food once a week. Insects should make up about 90% of the diet so that the animal does not become too fat. The sweet food is best offered in a small dish on a wall or branch high up in the enclosure, and fresh fruit or baby food must be removed after a day.

The insects must be smaller than the distance between the animal's eyes, and they are dusted with calcium before each feeding. Calcium with vitamin D3 is used twice a week if no ready-made food with added D3 is given. Variety is important: alternate between several insect species and flavours.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

The species is fast, delicate and nervous. It is better suited to being watched than to being picked up, and handling should be kept to a minimum. The animal can hang on the glass by a single toe, and the skin tears easily. If it is necessary to move the animal, support the body, and never grab the tail. After moving in, the animal should be left in peace for at least two weeks. Gradually most animals get used to your presence and no longer flee.

The animals can be kept in pairs. This is the usual way of keeping them for those who want to breed. If you do not want to breed, it is best to keep a single animal or a group of females only. Never keep two males together. Use an enclosure larger than the minimum size, with many hiding places. If bite marks or torn skin are seen, the animals must be separated.

New animals should be quarantined before they are put together with others.

Breeding

SEXUAL MATURITY AND SEXING

Males are recognised by well-developed femoral pores, which look like scales with distinct dots and often sit in a V-shaped pattern. In females they are undeveloped or fainter. Females often have large calcium sacs at the sides of the neck, but this is occasionally seen in males too, so the femoral pores are the safest method. The males are also the most colourful. The animals should be at least a year old before they are bred, and they should be healthy and in good body condition.

MATING

The species can be bred fairly easily if it is given suitable food, hiding places, places to lay eggs and the right lighting conditions. Before the season the animals can be given shorter days and a lower temperature, for example 10-12 hours of light and 18-20 °C for 6-10 weeks in winter. The rest period is described for day geckos in general and is not documented specifically for the species. During that period the animals eat less. Then the temperature, amount of light and food are gradually raised back to normal.

The male bites the female firmly on the neck during mating, and the bite marks may be visible afterwards. Keep an eye on the animals for the first few days. If fighting breaks out, they must be separated. It can help to wait a few weeks and set up a new, densely planted enclosure before putting them together again. A breeding pair can often stay together all year.

EGG-LAYING AND CLUTCHES

The female usually lays two eggs at a time, and after the first laying a new clutch follows every three to six weeks for several months of the season. In small day geckos like this one, the eggs can be seen as two white ovals through the abdominal wall when they are nearly ready. The eggs are glued to a surface, e.g. the inside of a hollow bamboo tube or a piece of cork bark, or hidden between the leaves of the plants.

Place a piece of hollow bamboo or a cork tube in the enclosure so that the female has a suitable place. Give her plenty of calcium and insects throughout the season so that the calcium sacs are full.

INCUBATION

The eggs can stay in the enclosure or be moved. If they are to be moved, place them in a small tray in a plastic box with air holes in the lid, with a layer of damp vermiculite at the bottom (two parts vermiculite to one part water). The eggs are delicate and must not be turned or squeezed. Mark the upper side before they are moved.

The eggs hatch after about two months. Keep them at a stable temperature of 24-28 °C. They tolerate fluctuations from 18 to 31 °C and can therefore also hatch in the enclosure. The incubation temperature has not been documented specifically for the species.

Read more: Incubating eggs

REARING THE YOUNG

The newly hatched young are very small and need their own small box with small hiding places, leaf litter, plants and a slightly raised water dish or regular misting. They need the same light and the same temperatures as the adults. Give them small feeder insects daily, such as wingless fruit flies and small crickets, dusted with calcium, and a sweet prepared diet or baby food every other day.

Keep the young singly or in small groups of the same size, and separate them if they begin to fight. The young should be at least a year old before they are used for breeding. Growth is not documented for the species, so weigh and look at the animals regularly.

Health and common mistakes

The species is hardy, but small mistakes in care quickly cause problems:

- Temperatures that are too high or too low stress the animals and can be fatal. Use thermometers at the basking spot and at the bottom.
- Burns, if the animal climbs upside down on the mesh right under a heat lamp. Hang the lamp above the lid.
- Calcium deficiency and bone disease from too little UVB, calcium or vitamin D3. Use UVB and dust the insects.
- Mould and skin problems from poor ventilation and a constantly wet substrate.
- Shed skin remnants on the toes and tail base if the humidity is too low. Check the animal at every shed.
- Worms and mites, which are treated with powder or drops from a vet.

See a vet experienced with reptiles if the animal is lethargic, stops eating, has changed droppings, has bleeding, paralysis, abnormal swellings or fractures, or if it has ingested something toxic. Do not wait: small geckos weaken quickly.

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.