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GECKOS

Chameleon gecko

Carphodactylus laevis

Carphodactylus laevis is a slender, nocturnal gecko from the rainforests of north-eastern Queensland. It has long, thin legs, claws on the toes, a crest along the back and a carrot-shaped tail, and is built quite differently from most geckos. Captive-bred animals are hardy and breed readily, but the species is still rare in captivity.

Family: Carphodactylidae

KEY FACTS

THE ANIMAL

Adult size	**11-13 cm** snout-vent length
Lifespan	**10-15 years**
Active	**At night**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Rainforest and montane forest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**50 × 35 × 70 cm** L × W × H for 2 adults
Temperature, day	**22-28 °C**
Temperature, night	**16-22 °C**
Humidity	**75-100%**
UVB	**Not required**
Diet	**Insects**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**24-36 months**
Clutch size	**2 eggs**
Clutches per year	**4-6**
Incubation	**90-133 days** at 21-27 °C

PROTECTION AND PAPERWORK

CITES	**Appendix III**
EU annex	**Annex C**
IUCN	**Least Concern (LC)**

About the species

Carphodactylus laevis is a slender, laterally compressed gecko with long, spindly limbs and narrow toes with distinct claws. The toes lack the broad adhesive lamellae that most geckos climb with. A thin crest runs along the back from the neck to the tail. The body is light brown with dark and pale spots, and a broad black patch in front of the eye makes the large black eyes look even larger. The eyelids cannot be moved.

The species grows to about 13 cm from snout to vent, and the tail is 8-10 cm, so shorter than the body. The tail is carrot-shaped: broad at the base and quickly tapering. The original tail is velvet black with four to five narrow white bands and ends in a small knob that is barely visible. The tail is dropped easily and only at the base, and wild animals most often have a regrown, brown-spotted tail. A regrown tail can make a squeaking sound as it writhes after being dropped.

The males always look thin, and this is entirely normal as long as the spine and pelvis do not stand out. Only gravid females look sturdier. Lifespan is not documented; 10-15 years is borrowed from *Saltuarius cornutus*.

The species was described in 1897 by Albert Günther and is the only species in the genus *Carphodactylus*, which in turn is the type genus of the family Carphodactylidae. The genus name means roughly "twig-finger" and refers to the spindly toes. The species name *laevis* is Latin and means "smooth". The closest relatives are the leaf-tailed geckos of the genera *Saltuarius* and *Phyllurus*, which it resembles in its way of life. Wild animals are shy and nervous, while captive-bred animals are calm and adapt to captivity without difficulty.

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

Distribution and habitat

Carphodactylus laevis occurs only in the rainforests of north-eastern Queensland in Australia, from Tully in the south to Cooktown in the north. The type locality is the Bartle Frere mountains.

Most records are from the rainforest of the uplands, but the species also occurs lower down, for example at Mossman Gorge in the Daintree area. The map is based on recorded finds.

> **Native range:** Australia.

HABITAT

Carphodactylus laevis lives in cool rainforest at roughly 400-1,400 metres' elevation and also uses disturbed forest. At night it sits head down on thin trunks of young trees, usually less than a metre above the ground, and waits for hours for prey passing on the ground. Larger trunks and fallen trees are also used. By day it hides in the leaf litter on the forest floor, in hollow branches, in rotten logs or among epiphytes.

The rainforest in the area is humid for most of the year, and the uplands are cooler than the lowlands. The species is common, but so secretive that it is rarely seen.

Care

THE ENCLOSURE

Carphodactylus laevis needs a tall enclosure that gives the animals room to keep out of each other's way. A pair can be kept in at least 50 × 35 × 70 cm (length × width × height), and more is better if there are several animals. If you can care for *Saltuarius cornutus* or *Hypsilurus boydii*, you can care for this species too.

The substrate must hold moisture: coconut fibre, fine sand or a mixture, preferably covered with a layer of leaf litter. Fine sand does not cause impaction. Put hides on the ground, for example pieces of bark, hollow branches or upturned saucers with an entrance cut in the side; the species uses hides on the ground more than leaf-tailed geckos do. Stand pieces of bark upright against the back wall and fit branches 2-5 cm in diameter vertically or at a slant, so that the animals can also use the height.

A low box, for example 25 × 25 × 7 cm, with constantly moist substrate, partly covered by a hide, provides both a humid resting place and a place to lay eggs. Live plants help keep the humidity up. Good ventilation is essential: mesh openings low down and high up in the enclosure, so that the air is constantly changing. Otherwise the high humidity leads to bacteria and fungus.

Read more: Humidity, misting and ventilation

TEMPERATURE

Carphodactylus laevis has low heat requirements. By day the enclosure should be at 22-28 °C, and at night the temperature drops 5-6 degrees, to around 16-22 °C. There is no need for a hot spot, and the animals do not seek out a weak bulb. In winter night temperatures as low as 8-10 °C are tolerated.

Adults briefly tolerate around 30 °C as long as the humidity is high and the heat does not last for several days in a row. Young can die after a few days of heat. Keep the enclosure out of direct sun, mist on warm days, and measure with a digital thermometer.

HUMIDITY AND WATER

Humidity is critical for *Carphodactylus laevis* and must stay at 75-100 % at all times. Mist the enclosure thoroughly with lukewarm water every day, and pay particular attention to humidity in hot, dry weather. An automatic misting system that runs in short intervals is ideal. Water the egg-laying box 2-3 times a week in hot weather and once a week the rest of the year, so that it is always moist. The substrate in the rest of the enclosure must not be constantly wet.

Humidity that is too low shows up as problems with shedding, especially around the toes and head. Always keep a small bowl of fresh water available.

LIGHTING AND UVB

Carphodactylus laevis is nocturnal and lives hidden by day, so UVB is not necessary. Daylight from a nearby window is enough; otherwise a weak LED light or fluorescent tube. Let the day length follow the seasons: about 14 hours of light in summer and 10 hours in winter. Keep the enclosure dark at night, and do not place it in direct sun. Activity begins a few minutes after the light goes out.

Read more: Lighting and UVB

FEEDING

Carphodactylus laevis is not fussy once it has settled into captivity. Crickets can make up almost the whole diet, preferably supplemented with cockroaches. Feed 2-3 times a week. The species is not greedy: males rarely eat more than 2-3 crickets at a time, while animals with a good appetite in summer can take 3-5 large insects every second or third day. The insects should be no larger than the animal's head.

Dust the food with calcium and vitamins once a week in the breeding season and every second to sixth week the rest of the year. The females become plump when gravid, while the males always look slender. Remove uneaten insects the next morning.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Carphodactylus laevis is quiet and hidden by day and becomes active a few minutes after nightfall. It then settles on a branch or piece of bark and often stays there for hours. If disturbed, it freezes or runs quickly into hiding. Young and captive-bred animals can stand high on their legs and wave the tail as a threat display. Handling should be kept to a minimum, and never grab the tail.

Wild-caught animals are very nervous, especially the males, and can take a long time to start eating; they should be kept singly and undisturbed at first. Settled and captive-bred animals can live together all year: the males are more lightly built than the females, but they live peacefully together by keeping apart.

Breeding

SEXUAL MATURITY AND SEXING

The males of *Carphodactylus laevis* have distinct hemipenal bulges under the tail base and are more lightly built than the females. The sexes can be told apart from 12-14 months of age. The males become sexually mature after at least two years and the females probably after at least three years, so breeding only begins once the animals are fully grown.

MATING

Mating has not been observed, but it takes place early in spring: in Australia around September-October, with the first eggs in September-November. In the northern hemisphere the season shifts by half a year when the animals follow the local day length. Settled animals are easy to get to breed and are surprisingly productive. A proper winter rest is not necessary, but a cooler winter with shorter days is natural.

Gravid females are easy to recognise: the eggs show as cream-coloured spots high up in the flanks from about halfway through development.

EGG-LAYING AND CLUTCHES

The female always lays two eggs per clutch in moist substrate, 1-6 cm below the surface. The eggs measure about 25 × 14 mm and weigh about 2.8 g. A well-nourished female can lay 4-6 clutches a year without noticeable loss of condition. The eggs are very prone to drying out and must always be kept moist.

Place a low laying box with constantly moist substrate, for example half sand and half coconut fibre, in the enclosure, partly covered by a hide. Give the female extra calcium and insects during the season.

INCUBATION

Remove the eggs of *Carphodactylus laevis* from the laying box and place them in a small closed box with moist sphagnum from which most of the water has been squeezed out. Make two small depressions in the surface for the eggs. Incubate at relatively low temperatures, around 24 °C (21-27 °C). At 24-26 °C the eggs hatch after 90-120 days, at a slightly lower temperature up to 133 days. Leave the lid on throughout incubation, so that the humidity is retained. The effect of temperature on sex has not been studied.

Read more: Incubating eggs

REARING THE YOUNG

The young measure 41-50 mm from snout to vent and weigh 1.7-3.1 g when they hatch. They shed a few hours after hatching. Keep them singly or in pairs in small, tall boxes, for example 20 cm in diameter and 25 cm high, with fine sand, a little bark to hide under and constantly high humidity; the young grow fastest when kept singly. After about a week they begin to eat crickets of 3-4 mm.

Feed twice a week with 2-3 small crickets per young, dusted with calcium and vitamins 1-2 times a week. The young are not greedy and grow relatively slowly. After 6-8 months they are moved to larger enclosures. Avoid heat above 28 °C, because young tolerate heat less well than adults.

Health and common mistakes

No particular diseases have been described in *Carphodactylus laevis*. The main risks are:

- Humidity that is too low, which causes problems with shedding, where bits of skin stick to the toes and head. Mist more often.
- Heat. Adults briefly tolerate around 30 °C, but young can die after a few days. Keep the enclosure cool and shaded.
- A constantly wet substrate and stagnant air, which cause bacteria, fungus and skin problems. Ensure good ventilation.
- Dried-out eggs. Keep laying substrate and incubation boxes moist.
- Stress in newly bought and wild-caught animals, which can stop eating for a long time. Provide quiet and cover.

The males naturally look slender, so judge the animal by whether the spine and pelvis stand out. Seek a vet experienced with reptiles if the animal loses weight, does not eat or seems lethargic.

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.