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GECKOS

New Caledonian giant gecko

Rhacodactylus leachianus

The largest living gecko in the world, a heavy, nocturnal tree-climber from the forests of New Caledonia. It can grow to more than 40 cm in length and live for more than 20 years. It is calm and curious, but needs a large, tall enclosure and a keeper who is ready for a long life together with it.

Family: Diplodactylidae Former name: *Rhacodactylus aubryanus; Rhacodactylus leachianus henkeli*

KEY FACTS

THE ANIMAL

Adult size	**23-43 cm** total length incl. tail
Weight	**150-500 g**
Lifespan	**20-30 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest and montane forest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 45 × 90 cm** L × W × H for 1 adult
Temperature, day	**22-27 °C**
Temperature, night	**18-22 °C**
Humidity	**50-80%**
UVB	**Optional**
Diet	**Insects, fruit, complete diet and vertebrates**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**36-60 months**
Clutch size	**1-2 eggs**
Clutches per year	**2-4**
Incubation	**45-150 days** at 22-28 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Annex D**
IUCN	**Least Concern (LC)**

About the species

Rhacodactylus leachianus is the largest gecko in the world today. Animals from the main island of Grande Terre can reach 36-43 cm including tail and weigh up to 500 g, while the animals from the small islands around the Île des Pins are smaller, typically 23-30 cm and 150-300 g. The body is heavy, the head broad, and the skin hangs in loose folds along the flanks. The toes are broad with skin between them, and the lamellae beneath give a secure grip on both bark and glass. The eyes have vertical pupils and no eyelids, so the gecko keeps them clean with its tongue.

The colours are pure camouflage: grey, brownish green or olive green with paler spots and marbling, so that the animal almost disappears against a moss-covered trunk. Many adults have lost the original tail and have a short, lumpy replacement. Three subspecies used to be distinguished, but recent genetic studies do not support the division. Instead the animals are kept and sold as locality forms, named after the island or area they come from.

The species was described by Cuvier in 1829 and is related to *Correlophus ciliatus*, but is a completely different animal to keep. It grows slowly and is not fully grown until three to five years. It is calm and can be accustomed to handling, but it bites if it becomes frightened, and a bite from a large animal hurts.

Size and lifespan vary greatly between the locality forms, and the figures in the fact box cover both the small island forms and the large animals from the main island.

Distribution and habitat

The species lives only in New Caledonia in the south-western Pacific. It is found scattered across the southern and eastern parts of the main island of Grande Terre and in a few places in the central mountain range. The northernmost known record is from Mont Mandjélia in the Panié massif. It also lives on the Isle of Pines and on many small islands and islets around it, where the populations are still relatively dense.

The range is fragmented, and there are no reliable figures for the size of the population. It is under pressure from deforestation, introduced rats, cats and pigs, the invasive ant *Wasmannia auropunctata* and illegal collection, especially on the small islands, where the low forest makes the animals easy to catch.

> **Native range:** New Caledonia.

HABITAT

The gecko lives in humid forest: coastal forest, dense rainforest and montane forest. On the main island most records lie between 500 and 1,100 metres altitude, while the island populations live right down at the coast. By day it sleeps in hollows in tree trunks and in crevices, and at night it climbs around in the canopy and forages. A pair often occupies the same hollow tree for a long time.

The diet is mixed: insects, spiders and smaller vertebrates, but also fruit, nectar and plant sap. The climate is mild and humid. At the extremes the temperature can range from about 12 °C on a winter night to 34 °C on a summer day, but for most of the year it is far more moderate. It is this mild, humid climate with cool nights that should be imitated in the enclosure, not tropical heat.

Care

THE ENCLOSURE

An adult needs a tall enclosure of at least 60 × 45 × 90 cm (length × width × height). A smaller enclosure is too cramped for an animal of 40 cm and several hundred grams, and a roomy home gives a calmer animal. A pair should have at least 90 × 45 × 90 cm.

Juveniles and subadults live best in a faunarium or a small, densely planted enclosure, where they feel secure and easily find food and water. They are moved up as they grow. Kitchen paper is a good substrate for the smallest, because you can easily see and remove the droppings.

Furnish with sturdy branches at different angles and heights, large cork tubes and cork bark and dense foliage, preferably live plants such as pothos and rubber plant. The animal must be able to hide high up. A box of moist sphagnum provides a humid hide and an egg-laying site. As substrate, a moisture-retaining mix of coconut coir and unfertilised soil is suitable, preferably as a bioactive substrate. Ensure good ventilation, preferably both low down and high up.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

Rhacodactylus leachianus does best at ordinary room temperature. During the day 22-27 °C is suitable, and at night it may fall to 18-22 °C. The nightly cooling corresponds to conditions in the wild and keeps the animal active. If the room stays above approx. 20 °C, many manage entirely without extra heat.

Heat is the greatest danger. If the temperature stays above 28-29 °C for long, the animal becomes stressed and may come to harm. The species does not need a basking spot. If it becomes too cold in winter, a weak heat mat on the side or a low heat bulb controlled by a thermostat can supply what is missing. Always measure with a digital thermometer.

Read more: Heat and temperature

HUMIDITY AND WATER

The humidity should be 50-80%. Mist the enclosure every evening so that the humidity rises to 70-80%, and let it fall again during the day so the substrate and branches have time to dry out. Constantly wet conditions cause mould and skin problems. You can also mist only one half, so the animal can choose for itself.

The gecko drinks droplets from leaves and glass, but also provide a heavy, stable water dish, and change the water at least every other day and at once if it is dirty. A hygrometer in the middle of the enclosure shows whether the rhythm is holding.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is nocturnal and can live without UVB when it gets vitamin D3 through its food. Light is often needed only for the sake of the plants. If a low-level UVB tube is offered, however, the animals often use it. If you choose UVB, keep it weak, as for shade-dwelling animals (Ferguson zone 1), and make sure the animal can always retreat into shade.

Keep the light on for 10-12 hours a day, preferably controlled by a timer, and keep it dark at night. Avoid strong spotlights and coloured night lights.

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

FEEDING

The staple diet is a prepared powdered diet for fruit-eating geckos, mixed with water into a thick paste and served in a dish, preferably on a holder high up. Pangea and Repashy are widespread brands. Adults get the paste 2-3 times a week, juveniles more often, and leftovers are removed after a day.

In addition, give live insects one or more times a week: dubia roaches, crickets and locusts, with waxworms and silkworms as a treat. The insects must not be wider than the distance between the animal's eyes and must be dusted with calcium with vitamin D3. A small pinkie can be given once a month, especially to breeding females, but it is not necessary. Ripe fruit such as mango, pear and fig can be given as a treat in small amounts.

Hatchlings begin to eat three to five days after hatching and get powdered diet and small crickets 3-4 times a week. Females may go off their food just before laying and then eat extra afterwards. Weigh the animals regularly, so you can follow whether they are gaining weight.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Rhacodactylus leachianus is calm and can become tame, but it is not a pet to be handled every day. It can bite when frightened, and a bite from a large animal hurts and can bleed. Handle it calmly, low down and for short periods, and give new animals a couple of weeks to settle in. Preferably leave hatchlings in peace for the first couple of months. Never grab the tail.

By day it sleeps in a hide. It can growl, bark and click when defending itself or when displeased. As a rule, keep the animals singly. A male and a female can sometimes live together for years if there is plenty of space and many hides, but even a well-functioning pair can suddenly begin to fight, so be ready to separate them. Two males must never be kept together, and attempts with one male and two females most often end in fights.

Breeding

SEXUAL MATURITY AND SEXING

Males have a distinct bulge at the base of the tail and a V-shaped row of pores in front of the vent, so the sex can be recognised at a fairly young age. The animals grow slowly and should not be used for breeding until they are at least three years old, and often four to five years pass. Females from the islands should weigh at least about 120 g and females from the main island over 180 g. A female that is too young or too light risks being drained of calcium or having eggs that become stuck.

MATING

Breeding follows the seasons. Give the animals a cool period from November to February at temperatures at the low end of the normal range, around 21-23 °C, and then raise the temperature a couple of degrees in February and March. This kick-starts the season.

Preferably introduce the animals through a mesh for the first few days, for example by placing the male in a small mesh cage inside the female's enclosure. Pairs that suit each other often rest close together, while incompatible animals bark and try to attack through the mesh. The male bites the female on the neck during mating, and minor scrapes are common. Separate them in case of serious injuries or signs of persistent aggression. The pair can live together throughout the season, or the male can be put in only for mating.

EGG-LAYING AND CLUTCHES

The female usually lays her first clutch about 30 days after mating, and a clutch is usually two eggs, but can be just one. Then new clutches follow at intervals of approx. five weeks. The number varies greatly: two to three clutches per season is normal, but it can be anything from one to six, and a few females lay far more.

Provide an egg-laying box with moist sphagnum or coconut coir, otherwise the female buries the eggs in the substrate. Give her extra calcium and food during the season, and stop breeding if she loses weight. Single females occasionally lay eggs without a male, and in rare cases such eggs hatch.

INCUBATION

Carefully pick up the eggs without turning them, and place them half-buried in damp vermiculite or perlite in a box with small air holes. Put the box in an incubator or somewhere with a stable temperature between 22 and 28 °C.

Temperature governs the duration: at high temperature the eggs hatch after about 45 days, at low temperature it can take up to 150 days. Warm incubation also produces more males, and cool more females, but there are no reliable threshold values for the species. Eggs that collapse and turn yellow or mouldy are usually not fertilised, but leave them until you are sure.

Read more: Incubating eggs

REARING THE YOUNG

The young look like small versions of the adults, and their size depends on the locality form. Move them individually to a small faunarium or plastic box with air holes, kitchen roll as substrate, a hide and a small water dish. Keep them apart, so they do not stress or bite each other.

The young begin to eat after three to five days. Give them powdered diet and small crickets 3-4 times a week, and change the water every other day. Many young are hesitant about insects for the first few months and live mostly on the paste. They grow slowly compared with other geckos and are moved to larger housing as they grow.

Health and common mistakes

Rhacodactylus leachianus is hardy, but certain problems recur:

- Heat above 28-29 °C, for example in an enclosure by a window in summer. This causes stress and loss of appetite.
- Too little calcium and vitamin D3 in young animals and breeding females, causing soft bones, bent limbs and tremors. Use a good prepared diet, and dust the insects.
- A constantly wet substrate and poor ventilation, which cause fungus and skin problems.
- Stuck shed on the toes and tail tip. Provide a humid hide, and gently loosen the remains with lukewarm water.
- Obesity in animals that get too much food and too little exercise in an enclosure that is too small.
- Parasites and infections in newly acquired animals. Keep new animals separate, and have a faecal sample examined.
- Bite wounds after mating or fights, which must be kept clean and monitored.

A healthy animal has clear eyes, a plump tail base and a good grip. Seek a vet with experience in reptiles if the gecko loses weight, does not eat for several weeks, develops swellings or seems 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.