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GECKOS

Mossy New Caledonian gecko

Mniarogekko chahoua

A large, moss-patterned and nocturnal climber from the humid lowland forests of New Caledonia, with a short, broad snout and a strong prehensile tail. It is one of the most beautiful of the large New Caledonian geckos, but demands more space and more patience than its famous relative *Correlophus ciliatus*.

Family: Diplodactylidae Former name: *Rhacodactylus chahoua; Platydactylus chahoua*

KEY FACTS

THE ANIMAL

Adult size	**25-31 cm** total length incl. tail
Weight	**50-60 g**
Lifespan	**15-20 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 60 × 90 cm** L × W × H for 1 adult
Temperature, day	**22-26 °C**
Basking spot	**27-29 °C**
Temperature, night	**18-22 °C**
Humidity	**60-80%**
UVB	**Recommended** Ferguson zone 1
Diet	**Insects, fruit and complete diet**
Kept	**Singly or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**15-24 months**
Clutch size	**2 eggs**
Clutches per year	**3-5**
Incubation	**60-120 days** at 22-26 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Vulnerable (VU)**

About the species

The genus name *Mniarogekko* means moss gecko, and it is apt. The pattern is a marbling of grey, green, rusty red and brown patches that makes the animal look like a branch covered in moss and lichen. The head is large and triangular with a short, rounded snout, and the large eyes have vertical pupils and no eyelids. The toes are broad with webbing between them and have lamellae that adhere to smooth surfaces, and the tail is strong and prehensile. Animals from the islands are often paler and more grey-speckled than those from the main island.

The species was described by the French pharmacist and naturalist Arthur Bavay in 1869 as *Platydactylus chahoua*. For many years it was called *Rhacodactylus chahoua* and belonged to the same genus as the other large New Caledonian geckos. In a revision in 2012 it received its own genus, *Mniarogekko*, together with the closely related *Mniarogekko jalu*, which was described at the same time.

Adults measure 25-31 cm including the tail, of which the body makes up up to just under 15 cm. The weight is typically around 50-60 g, but only a few reliable weight figures exist. *M. chahoua* seldom sheds its tail, but if it does, the tail does not grow back.

As a juvenile the gecko is shy and jumpy, and it often becomes calmer with age. It does, however, have a strong bite and is more an animal to look at than to hold. It is a step above the very easy geckos, because it requires a large, tall enclosure, a stable high humidity and extra care with calcium when breeding.

Read more: Humidity, misting and ventilation Read more: Calcium, vitamins and supplements

Distribution and habitat

The species lives only in New Caledonia in the south-western Pacific. On the main island of Grande Terre it is found in scattered populations from Mont Koghis in the south to the Amoa valley north of Poindimié in the north. In the Southern Province it is known from, among other places, Mont Mou and Sarraméa at the foot of the Dogny plateau, and it has been seen in the Rivière Bleue nature park. In the Northern Province it has been found at several places in the Amoa valley. It is also known from the Île des Pins south of the main island and from the Belep Islands in the north.

The range is small and fragmented. The total area in which the species occurs is estimated at about 4,000 km², but it inhabits only about 32 km² of that. Records outside New Caledonia come from captive animals.

> **Native range:** New Caledonia.

HABITAT

The gecko lives in dense, closed forest and in gallery forest along watercourses, from the lowlands up to about 500 metres elevation. It is entirely arboreal and nocturnal. By day it sleeps in crevices and holes in trunks and thick branches, and at night it forages in the canopy. It does, however, stay more in the shaded understorey of the forest than right up in the treetops.

The climate is subtropical, and the forests are humid all year round. The temperature and humidity in the gecko's hiding places have not been measured, but the climate is mild, around 20-28 °C, with high humidity, especially at night. The food is insects and small vertebrates, but also nectar and fruit when the trees flower and bear fruit.

The species is Vulnerable. The greatest threat is rats, which are numerous in the lowland forest and can hunt right up in the canopy. Added to this are feral cats, the invasive ant *Wasmannia auropunctata*, clearing of lowland forest and illegal collecting in places that are easy to reach.

Care

THE ENCLOSURE

An adult needs a tall enclosure of at least 60 × 60 × 90 cm (length × width × height), and larger is better. Height matters more than floor area. Juveniles under about 20 g do best in a small box of about 30 × 30 × 30 cm, where they easily find the food, and are moved up when they are big enough. The small box should have no heat lamp or UVB.

Furnish with many vertical and sloping branches, cork tubes, magnetic ledges and plants at several heights. Unlike *Correlophus ciliatus*, *Mniarogekko chahoua* prefers to rest on the branches themselves rather than inside the foliage, so provide it with solid, horizontal perches and cork tubes high up. A densely planted corner provides extra cover.

A damp mixture of fertiliser-free soil and coco humus works as substrate, ideally with a layer of dead leaves on top or as a bioactive substrate with springtails and woodlice. The substrate retains moisture and cushions the fall if the animal drops. For juveniles, kitchen paper is the safest. Good ventilation is important, so the air does not become stagnant.

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

TEMPERATURE

By day the enclosure should be 22-26 °C, and a resting spot at the top under a weak heat bulb may reach 27-29 °C, preferably at the low end. At night 18-22 °C is suitable.

Heat is the greatest danger. Above 29-30 °C the gecko quickly becomes stressed, so place the enclosure away from south-facing windows, and let all heating be controlled by a thermostat or dimmer. In an ordinary living room only a small heat source is usually needed. Measure with a digital thermometer both at the top and at the bottom.

Read more: Heat and temperature

HUMIDITY AND WATER

Keep humidity at 60-80 %, measured in the middle of the enclosure, and let it be highest at night. Mist thoroughly with lukewarm water every evening and in the morning as needed. The substrate should be damp but never wet, and the air must not become stagnant and clammy. Humidity below 55 % for a long time causes problems with shedding.

Mniarogekko chahoua mostly drinks droplets from leaves and glass, but provide a shallow bowl of fresh water all the same, changed daily. A hygrometer shows whether the rhythm is holding.

LIGHTING AND UVB

The species is nocturnal and can survive without UVB when it gets vitamin D3 through the food, but it does best with a weak UVB light. Use a tube for shade-dwelling animals (Ferguson zone 1), for example a 5 % T8 tube or a weak T5 tube, so that the UV index is 1-2 on the uppermost branches, and ensure shade in the rest of the enclosure. There should be at least 15 cm from the lamp down to the highest branches, and the lamp should preferably sit over a coarse mesh, as a fine mesh greatly dampens the UV light.

Keep the light on 12 hours a day in summer and 10 hours in winter, ideally controlled by a timer. The night must be dark.

FEEDING

Mniarogekko chahoua is omnivorous. The staple diet is prepared powdered diet for fruit-eating geckos, mixed with water into a thick paste and served on a ledge high up, supplemented with live insects. Juveniles under a year get paste every day and insects every other day. Adults get both every other day. Remove leftovers after a day.

Good feeder insects are crickets, dubia roaches and locusts, with waxworms as a treat. The insects must be at most as large as the distance between the animal's eyes, must have eaten well for a couple of days and are dusted lightly with calcium. Use calcium with vitamin D3 only in moderation if the animal also gets UVB, because the prepared diet already contains D3.

Ripe fruit such as banana, mango and papaya can be given as a treat, but not as the main food. Avoid citrus fruit.

BEHAVIOUR AND HANDLING

Mniarogekko chahoua is shy and jumpy as a juvenile and often becomes calmer with age. It has a strong bite and a firm grip. Give new animals two weeks of peace before you begin to handle them. Start with five minutes at a time in the evening, let the animal walk freely from hand to hand, and sit low in case of a jump. Never grab the tail.

It is best kept alone. A male can be kept with several females, but two males must never be kept together, because they can seriously injure each other. If you keep several animals together, they must be the same size, have a hide each and be monitored closely when they first meet. Too few hides or too much heat makes the animals stressed and more aggressive.

Breeding

SEXUAL MATURITY AND SEXING

Males are recognised by a distinct bulge at the base of the tail, enlarged spurs by the vent and a row of pores in front of the vent. The pores can be seen with a magnifying glass when the animal measures about 8 cm from snout to vent. The animals are sexually mature at 15-24 months, but size and condition matter more than age. Females should be at least 18 months old and in good condition before being put to breed, because the eggs drain them of calcium.

MATING

Give the animals a cooler period of a couple of months before the season, for example 20-21 °C by day and 18 °C at night with shorter days, and then gradually raise temperature, day length and humidity. Put the male in with the female, and keep an eye on them the first nights. Sexually mature animals usually mate quickly, and the male can then be taken out again. The female can lay several clutches after one mating, so keep her in good condition with plenty of calcium.

EGG-LAYING AND CLUTCHES

The female lays two eggs at a time at intervals of about five weeks, typically three to five clutches in the season. The eggs have an unusually heavily calcified shell, and that drains the female's calcium reserves. Therefore keep an extra close eye on her weight and the calcium sacs in the palate, and stop breeding if she loses weight.

Place a laying box with damp sphagnum, coco humus or vermiculite in the enclosure, for example a plastic box with a hole in the lid. Some females ignore the box and lay the eggs elsewhere, and some females guard their eggs.

INCUBATION

Take the eggs out as soon as they are found, without turning them. Place them two thirds of the way into damp vermiculite or perlite, about two parts substrate to one part water by weight, in a small box with a couple of air holes. Mark the top with a pencil.

Room temperature of 22-26 °C works well. The eggs hatch after 60-120 days, fastest at the high end of the range. Above 28 °C is risky. Often only about half of the eggs hatch, among other reasons because the thick shells make it difficult to see how the embryo is doing. Discoloured eggs may still be viable, so only discard an egg when it collapses and goes mouldy. Whether temperature determines sex is not known.

REARING THE YOUNG

Take the hatchlings out of the incubator at the latest a day after hatching. Put each hatchling in a small box of about 30 × 30 × 30 cm with kitchen paper as substrate, a couple of branches, cork and a plant. Humidity should be 60-80 %, the temperature 24-26 °C by day and 18-22 °C at night. Mist daily, and provide a shallow water bowl.

The hatchlings live off the remains of the yolk for the first days and begin to eat after three to seven days. Give them the same powdered diet as the adults every day and small, calcium-dusted insects, for example the smallest crickets, every other day. Keep the hatchlings singly, avoid handling in the first weeks, and weigh them regularly. They are fully grown after a year and a half to two years.

Read more: Incubating eggs

Health and common mistakes

Mniarogekko chahoua is robust when temperature and humidity are in order, but mistakes in care can cost the animal dearly. Typical problems are:

- Too much heat, above about 29-30 °C, which causes stress, loss of appetite and in the worst case death.
- Too little calcium and vitamin D3, especially in juveniles and breeding females. It causes soft jaws, bent limbs and tremors. Use a good prepared diet, and dust the insects.
- Humidity that is too low, which causes retained shed on the toes and tail tip. Provide a damp hide, and gently loosen the remains with lukewarm water.
- An environment that is too wet and stagnant, which causes mould, fungus and skin problems.
- Obesity in animals that get too many fatty larvae or too much fruit.
- Egg-laying difficulties in females that lack calcium or a suitable place to lay the eggs. That requires prompt veterinary help.
- Loss of the tail after handling or fights. It does not grow back.

A healthy animal has clear eyes, a plump tail base and a good grip. See a vet experienced with reptiles if the gecko loses weight, does not eat for several weeks 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.