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GECKOS

Northern leaf-tailed gecko

Saltuarius cornutus

Saltuarius cornutus is a large, nocturnal leaf-tailed gecko from the rainforests of north-eastern Queensland in Australia. The skin resembles lichen-covered bark and is studded with pointed tubercles, the tail is broad and leaf-shaped, and the toes have claws instead of adhesive lamellae. It needs cool conditions and is a species for the experienced keeper.

Family: Carphodactylidae Former name: *Phyllurus cornutus; Gymnodactylus cornutus*

KEY FACTS

THE ANIMAL

Adult size	**14 cm** snout-vent length
Lifespan	**10-15 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest and montane forest**
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 40 × 80 cm** L × W × H for 2 adults
Temperature, day	**20-24 °C**
Temperature, night	**15-19 °C**
Humidity	**55-100%**
UVB	**Not required**
Winter rest	**10-16 °C** 8-13 weeks
Diet	**Insects**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**18-48 months**
Clutch size	**1-2 eggs**
Clutches per year	**2-4**
Incubation	**90-110 days** at 21-28 °C

PROTECTION AND PAPERWORK

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

About the species

Saltuarius cornutus is a large, flattened gecko with a triangular head, a narrow neck and long, thin limbs. The back is covered with pointed tubercles, which the species name alludes to: *cornutus* means "horned" in Latin. The pattern of grey, brown and greenish patches resembles lichen-covered bark, and the animal is hard to spot when it sits still on a trunk. The tail is broad and leaf-shaped. Unlike most geckos, the species has claws on its toes and no adhesive lamellae.

The body grows to about 14 cm from snout to vent, and the tail can be about 8 cm wide. The species was described in 1892 as *Gymnodactylus cornutus* and has since been placed in the genus *Phyllurus*, before it received its present genus *Saltuarius* in 1993. The genus name can be translated as "guardian of the forest". The species name has been used for a collection of several populations, which are now divided among other species, so older descriptions may concern animals that today belong to other *Saltuarius* species.

When threatened, the gecko arches its back, raises its tail and waves it from side to side to draw attention away from the head. It can also open its mouth and attack with a hissing sound. The tail is easily shed and grows back, but the new tail is broader and flatter, with a different colour and a short tip.

The species is rare in captivity, and there is no documented care guide for *S. cornutus* itself. The care sections here are therefore based on experience with close relatives, namely *Saltuarius salebrosus* and *Phyllurus platurus*.

Distribution and habitat

Saltuarius cornutus lives in north-eastern Queensland in Australia. The type locality is the Bellenden Ker Range near Cairns, and the species has also been described from the area around Mount Bartle Frere. The core of the range lies in the tropical rainforests of the Wet Tropics area between Cooktown and Townsville.

Older overviews mention four separate populations, including on the Cape York Peninsula and all the way down to Stanthorpe and south-eastern Queensland. Those populations are now divided among other species, and the same applies to information about New South Wales. The map therefore shows only the northern area. Records outside it may be misrecordings or animals identified to species under the older, broader concept of *S. cornutus*.

> **Native range:** Australia.

HABITAT

Saltuarius cornutus is a nocturnal tree-dweller in the rainforest. It sits on tree trunks and rocks, where the skin makes it almost invisible, and it is active at night and in cool conditions, when many other reptiles rest. Older descriptions, which also include the southern populations, give tropical and warm-temperate rainforest and humid sclerophyll forest, typically above 750 metres. How much of that elevation range applies to the Wet Tropics population has not been resolved.

In the mountain forests it is cooler than in the lowlands, and the air is humid for most of the year. The precise temperature and humidity rhythm at the species' habitats is not documented. The gecko eats large arthropods such as cockroaches, woodlice and spiders. The females lay one or two parchment-like eggs in a shallow nest covered with leaves and soil, and in a communal nest up to 14 eggs from several females have been found.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

A pair of *Saltuarius cornutus* needs an enclosure of at least 60 × 40 × 80 cm (length × width × height), and preferably larger, because the animal is large and lives on trunks.

Furnish it with vertical pieces of stiff bark and some branches, so the animal can move around the whole enclosure. The geckos sit on branches or bark, and hides on the ground are not necessary. As substrate, 1 cm of fine sand or sand mixed with coconut fibre is enough, but for females that are to lay, there must be a deep egg-laying substrate (see breeding). The enclosure needs good ventilation with openings both at the top and at the bottom, so the air moves and does not stand still and turn musty.

TEMPERATURE

The species comes from cool mountain forest. Keep the enclosure at 20-24 °C by day and 15-19 °C by night.

Heat is the greatest danger. Prolonged heat in the high 30s is fatal to the genus, and *S. cornutus* probably tolerates less. A weak heat source is only necessary if the room is cold; it may give no more than 32 °C and must be switched off at night in the cool period. Keep the enclosure out of direct sun, and mist on warm days so the temperature falls a degree or two.

A cool rest period is a fixed part of keeping the species. See breeding.

HUMIDITY AND WATER

The humidity must fluctuate. Mist the enclosure thoroughly in the evening, at least three times a week, so the humidity rises towards 100 %, and let it fall to about 55-60 % between mistings, so bark and substrate can dry out. During the rest period the enclosure is misted every evening, so the animals can drink the water droplets and the humidity does not fall too low.

The substrate must not be constantly wet, because that causes mould and skin problems. Poor humidity can cause shedding problems, to which all species of the genus are prone.

Read more: Common diseases and signs of illness

LIGHTING AND UVB

The species is nocturnal and lives hidden by day, so UVB is not necessary for *Saltuarius cornutus*, but a weak light during the day with a fixed daily rhythm is natural. Do not use strong spotlights or coloured night lighting, and keep the enclosure dark at night. The enclosure must have shaded areas, and direct sun must not reach it.

If you do have a weak UVB light, always give the animal the chance to withdraw into shade.

Read more: Lighting and UVB

FEEDING

The species eats large arthropods such as cockroaches, woodlice and spiders, and in captivity ordinary feeder insects such as crickets and cockroaches work. Feed three times a week outside the rest period; during the rest period the animals do not eat (see breeding). The insects must be no larger than the animal's head.

Dust the food regularly with calcium and multivitamin, and give only two to three insects per animal at each feeding, so they do not become too fat. The tail is used to store fat and is a good sign of the animal's condition. Remove leftovers the next morning.

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

BEHAVIOUR AND HANDLING

Saltuarius cornutus is a calm, secretive and nocturnal species, which sits still on bark during the day. It is not an animal to be handled, and it can become stressed when picked up. Keep handling to a minimum and never by the tail, which it sheds.

In the wild the animals are often seen alone at night, but several may share the same crevice by day. Keep the animals in pairs or small groups with only one male per enclosure. Keep an eye on the animals, and separate them if one grows larger or dominates the other.

Breeding

SEXUAL MATURITY AND SEXING

The males have a distinct hemipenal bulge at the base of the tail, which the females lack. The animals mature after 18 months to 4 years. The species grows slowly, so rather count on the long end, and breed only fully grown animals in good condition.

MATING

Breeding is triggered by a cool rest period of two to three months. First starve the animals for a week at unchanged temperature, and then lower the daytime temperature by 2-3 degrees a day to 10-16 °C. Mist daily during the rest period; the animals do not eat. After the period, the temperature is raised over a week to normal, and feeding resumes.

Take an animal out of the rest period if it loses more than a few grams. Matings are rarely seen.

EGG-LAYING AND CLUTCHES

The female lays one or two eggs at a time, most often two, and 2-4 clutches per season with about a month in between. Egg laying begins only late in the season. The female digs a nest in damp substrate, lays the eggs in the middle and covers them.

Give the female a deep egg-laying substrate of damp peat or coconut fibre, 8-10 cm deep, that clumps but is not wet. It must never dry out. The female may sit on the nest and guard it. She looks thinner after laying, and the two white ovals that can be seen through the belly are gone.

INCUBATION

Remove the eggs from the nest and incubate them in a mixture of perlite and water in the ratio 1:1 by weight. Incubate at 21-28 °C, preferably at the cool end below 25 °C, because high temperature can kill the embryos.

The eggs hatch after 90-110 days depending on temperature. The influence of temperature on sex has not been established.

REARING THE YOUNG

The young shed their skin almost immediately after hatching. Keep them in a small enclosure, e.g. 15 × 15 × 25 cm, furnished like the adults', with kitchen paper as substrate and a piece of cork bark as a hide. Mist every other day, and offer the first food 2-3 days after hatching; some young do not eat until about ten days.

Give small insects, no larger than the animal's head, dusted with calcium and multivitamin, and only two to three per animal. The young eat little in the first weeks and then thrive. Siblings that hatched together can usually be kept together, but separate them if one grows larger or dominates. The species grows slowly.

Health and common mistakes

Most problems are caused by the climate. The typical mistakes are:

- Temperatures that are too high, especially on warm summer days. Prolonged heat in the high 30s is fatal to the genus, and *S. cornutus* probably tolerates less. Keep the enclosure cool and in shade.
- Air that is too dry, which causes shedding problems, where pieces of skin stay stuck on the toes and tail tip.
- A constantly wet substrate and stagnant air, which cause mould and skin problems.
- Calcium deficiency, if the food is not dusted with calcium and vitamins.
- Weight loss during the cool rest period. Take an animal out of the period if it loses weight, and build it up again.

The tail is a good sign of the animal's condition, because it stores fat. Consult a vet with experience in reptiles if the animal loses weight, does not eat or looks 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.