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GECKOS

Box-patterned gecko

Lucasium steindachneri

Lucasium steindachneri is a small, ground-dwelling gecko from the interior of eastern Australia with a pale stripe down the back, broken by dark brown blotches. It is nocturnal, feeds on small arthropods and is easy to keep in a small, dry enclosure, but it is rare outside Australia.

Family: Diplodactylidae Published 16 November 2026

KEY FACTS

THE ANIMAL

Adult size	**4-6 cm** snout-vent length
Lifespan	**5-8 years**
Active	**At night**
Lifestyle	**Terrestrial**
Habitat	**Semi-desert and savanna**
Difficulty	**Beginner**

CARE

Min. enclosure	**40 × 30 × 25 cm** L × W × H for 2 adults
Temperature, day	**22-26 °C**
Basking spot	**28-30 °C**
Temperature, night	**16-20 °C**
Humidity	**30-50%**
UVB	**Optional**
Diet	**Insects**
Kept	**Singly, in pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**12-18 months**
Clutch size	**1-2 eggs**
Incubation	**56-75 days** at 27-30 °C

PROTECTION AND PAPERWORK

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

About the species

Lucasium steindachneri is a small, smooth-scaled gecko with large, round eyes and vertical pupils. The back has a pale stripe from the eyes to the base of the tail with three oval, dark brown blotches, and the flanks are brown with pale spots and flecks. The belly and the undersides of the legs are whitish. The toes end in small, round adhesive pads. The pattern makes the animal hard to spot among stones and fallen leaves. The species name honours the Austrian zoologist Franz Steindachner (1834-1919).

The body measures on average about 45 mm from snout to vent and at most 59 mm. The tail is slender. The weight is not documented, but small ground-dwelling geckos of this size typically weigh 3-5 g. Hatchlings measure 25-26 mm from snout to vent. Among the young, some animals can be darker than others; the difference is probably related to rank and not to sex.

The species was described in 1885 by George Albert Boulenger as *Diplodactylus steindachneri* and was moved in 2007 to the genus *Lucasium*, which was reinstated after a genetic study. Older care advice under the old genus name still applies. When threatened, the species gives a barking or hissing sound, opens its mouth and lunges at the aggressor, and if that does not help, it drops its tail.

Distribution and habitat

Lucasium steindachneri is found in the dry and semi-arid parts of eastern Australia: in the interior of Queensland from the northern part of the state southwards and in the interior of New South Wales down to the areas around the Murray River. A small area in eastern South Australia is also included, and there are a few records from the Northern Territory.

The type locality is given as Sydney, but this is an error; the type specimen was collected at Peak Downs in Queensland.

> **Native range:** Australia.

HABITAT

Lucasium steindachneri is ground-dwelling and nocturnal and lives in dry, open woodland, in mallee and in open country with heavy or stony soil. By day it hides in cracks in the soil and especially in abandoned insect and spider burrows, and it comes out only at night to catch small arthropods on the ground.

The climate in the interior is hot, with hot summers, cool winter nights and irregular rain. The breeding season runs from September to February.

Care

THE ENCLOSURE

Care of *Lucasium steindachneri* is the same as for the ground-dwelling Australian geckos of the genus *Diplodactylus*, to which the species was formerly assigned, and as for *Lucasium damaeum*. Allow at least 40 × 30 × 25 cm (length × width × height) for one gecko or a pair. Floor area matters more than height, and very large enclosures are unnecessary, because the animals use only a small part of the floor. The lid must fit tightly, because the animal can climb smooth surfaces.

Use 1-5 cm of sandy loam as substrate. Provide two or three hides, for example upturned clay saucers, pieces of bark, flat stones or halved plastic tubes pressed into the sand as artificial spider burrows. One of the hides should be damp. Plants are unnecessary, and plastic boxes and small aquariums with a lid work well.

TEMPERATURE

A heat mat or heat tape under one end, controlled by a thermostat, should give 28-30 °C on part of the floor in summer. The rest is kept at 22-26 °C during the day. At night the heat can be switched off, so that the temperature falls to 16-20 °C. Measure with a thermometer at both ends.

In winter the temperature may be lower for a period, down to 15-20 °C. This corresponds to the natural annual cycle and is enough for the animals to breed again.

Read more: Heat and temperature

HUMIDITY AND WATER

Lucasium steindachneri does not need high humidity. Ordinary room air at 30-50 % is enough. Fill one of the hides with slightly damp sphagnum or damp sand, so that the animal can shed its skin. Check it every week so that it does not go mouldy or dry out. The rest of the floor is kept dry. A low dish of fresh water at the cool end is fine. Do not mist the whole enclosure, because the thin film of water spreads bacteria and parasites. Juveniles dry out quickly and must always have a damp hide.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Lucasium steindachneri is nocturnal and does not need UVB or any special lighting, so UVB is optional. Let the daylight in the room set the daily rhythm, or use a timer of 10-12 hours in summer and shorter days in winter. The night must be dark. If you choose UVB anyway, it should be weak, and the animal must always be able to retreat into a dark hide.

Read more: Lighting and UVB

FEEDING

In the wild, *Lucasium steindachneri* eats various arthropods such as insects, spiders and scorpions. In the enclosure it takes crickets, cockroaches, termites, flies, moths and waxworms. Use small crickets, small cockroaches and the occasional small waxworm. Termites are ideal for juveniles, because they are easy to catch. Prey should be about 60 % of the size of the animal's head.

Adults are fed every 4-7 days in summer and every 7-10 days in winter, when short periods without appetite are normal. Juveniles are fed every 2-4 days all year. Lightly dust the food with calcium at every second or third feeding and with a vitamin supplement once a week. Feed the feeder insects greens before offering them. Remove prey that is not eaten after a few hours.

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

BEHAVIOUR AND HANDLING

Lucasium steindachneri is quiet and withdrawn. By day it sleeps in its hide and becomes active as darkness falls. Handling is unnecessary and should be rare and brief; a startled animal may hiss and lunge. Never grab the tail, because it can be dropped.

The species can be kept singly, as a pair or as one male with up to three females, but two males must never be housed together. Separate the animals if there is unrest or biting.

Breeding

SEXUAL MATURITY AND SEXING

Males are recognised by a distinct bulge under the base of the tail and by a group of enlarged, spiny scales, the cloacal spurs, by the bulge. Females can have a slight, smooth bulge without a depression. The sex can usually be determined when the young have reached 60-70 % of adult size. The animals grow quickly and are fully grown after 12-18 months, and they can breed from about 70-80 % of adult size. Wait until the female has reached full size before she breeds.

MATING

The breeding season runs from September to February. A pair or a male with up to three females can be kept together all year. A cool winter at 15-20 °C is enough, and it is not necessary to separate the sexes. The first eggs appear 4-8 weeks after the temperature rises above 25 °C again.

EGG-LAYING AND CLUTCHES

The female usually lays two eggs at a time, sometimes only one. The eggs are about 8 × 14 mm. She likes to lay in a shallow pit in damp sand, but often on open ground, where the eggs quickly dry out. Eggs that have collapsed and are less than a day old can recover if they are placed on vermiculite and covered with wet paper.

An upturned plastic tub with a 1 cm hole in the rim, filled two thirds with damp peat moss and dug in slightly, makes a suitable egg-laying box, and it works particularly well for this species. Give the female extra calcium during the season. The number of clutches per season is not documented for the species.

INCUBATION

The eggs are placed in a box with a tight-fitting lid and a mixture of vermiculite and water at a ratio of 1:1 by weight. At 27-30 °C they hatch after 56-75 days. The eggs grow considerably during incubation and can get an almost transparent shell just before hatching. They "sweat" about a day before.

Read more: Incubating eggs

REARING THE YOUNG

The young are taken out of the hatching box after a day and placed in a small box with the same substrate as the adults. They measure 25-26 mm from snout to vent and about 4 cm in total and need a damp hide. They are fed every 2-4 days with termites or very small crickets.

Health and common mistakes

No particular diseases have been described in *Lucasium steindachneri*, but the usual risks with small desert geckos apply:

- Dehydration, especially in juveniles. Always provide a damp hide.
- Too little calcium and vitamin D3, especially in breeding females. This causes soft bones and problems with egg laying.
- Fine sand that is inhaled or swallowed. Use coarse sand, and clean the substrate often.
- Misting the whole enclosure, which spreads bacteria and parasites.
- Stress from handling or fights between males, which can make the animal drop its tail.

A healthy animal is active in the evening and has a plump tail. See a vet with reptile experience if the gecko loses weight, does not eat 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.