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MONITOR LIZARDS

Pygmy Mulga Monitor

Varanus gilleni

A small, slender and diurnal tree climber from the interior desert regions of Australia. *Varanus gilleni* grows to only 35-40 cm and is one of the least demanding monitors, but it needs a very hot basking spot, a tall enclosure and a fixed rhythm with a cool winter.

Family: Varanidae

KEY FACTS

THE ANIMAL

Adult size	**35-40 cm** total length incl. tail
Weight	**60-80 g**
Lifespan	**8-20 years**
Active	**By day**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Desert and semi-desert**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 60 × 90 cm** L × W × H for 2 adults
Temperature, day	**26-30 °C**
Basking spot	**40-60 °C**
Temperature, night	**18-20 °C**
Humidity	**40-60%**
UVB	**Recommended** Ferguson zone 3
Winter rest	**18-22 °C** 6-10 weeks
Diet	**Insects and vertebrates**
Kept	**Singly, in pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**1-7 eggs**
Incubation	**84-131 days** at 26-32 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Varanus gilleni belongs to the subgenus *Odatria*, the small Australian monitors. It is slender and long-tailed, with a round tail that can grip branches. The back is brown and turns grey down the sides, and there are narrow, dark crossbands across the back and stripes on the head. The tail is grey with darker scales that form narrow stripes and bands. The pattern is clearest in juveniles and fades with age. The species resembles *V. caudolineatus*, but has a striped head and bands on the back instead of spots, and it differs from *V. eremius* in having smooth head scales.

The adult monitor reaches about 35-40 cm including the tail and weighs 60-80 g. Snout-vent length is up to about 18 cm. Hatchlings are 11-14 cm long and weigh 2-4 g. Growth is slow: snout-vent length doubles in about two years, and over the following six years it grows only about 3 cm. The species was described in 1895, and the species name honours the Australian telegraphist and anthropologist Francis James Gillen.

Most monitors need a great deal of space and food as adults. This one is different. *V. gilleni* can be kept in an enclosure with just under a square metre of floor space, it eats ordinary feeder insects, and it is one of the calmest monitors. In return it needs a very hot basking spot, a tall enclosure with stable branches and a winter rest if it is to breed. Lifespan in captivity is

not reliably documented, but is probably 8-20 years, and an animal with a snout-vent length of 15 cm is over 10 years old. Expect an animal that can stay with you for many years. Adults easily become too fat if fed too generously.

The species is not a beginner's animal, because the temperature of the basking spot, the food and the winter rhythm must be right, but it is a good choice for a keeper with experience of other reptiles.

Read more: Heat and temperature

Distribution and habitat

Varanus gilleni is native to the interior and north-west of Australia. It is found in central and western Western Australia, in the southern Northern Territory, in northern South Australia and in western Queensland. The type locality is in the Northern Territory, between Glen Edith and Deering Creek.

The range is large, and the species is not considered threatened. It can be hard to spot, because it spends a lot of time in tree hollows.

> **Native range:** Australia.

HABITAT

The species lives on dry spinifex plains and in light, open woodland with mulga, myall, eucalyptus and *Allocasuarina decaisneana*. It is arboreal and hides under loose bark and in hollow branches and trunks, but finds a large part of its food on the ground. The eggs are laid in holes dug in the sand.

The climate is hot and dry, with very high daytime temperatures, cold nights and long periods of drought. The species copes unusually well with drought and loses water only half as fast as other Australian monitors. It basks at high temperatures and is diurnal, and that is the rhythm the enclosure should imitate. Winter is cool, and the animals are then less active.

Care

THE ENCLOSURE

For an adult pair the enclosure must be at least 60 × 60 × 90 cm (length × width × height), and larger is better. Height is important, because the species climbs. Juveniles can start in a smaller enclosure with plenty of cover, so that they easily find food, but must quickly move up to adult size.

Furnish with many strong branches at different heights and hollow branches with loose bark as hides. If you cannot get hollow branches, PVC pipes or corrugated drainage pipes work, long enough for the animal to hide both body and tail. The corrugated pipes are easiest to get in and out of. Make a basking spot with a horizontal branch just under the heat source.

Sand or a mixture of sand and soil works as substrate, either in a thin layer or deeper, so that the animal can dig and get a damp microclimate. Both work. For egg-laying there must be a box of damp substrate that the female can get into. The enclosure must have good ventilation and a secure lock. The heat sources must be placed so that the animal cannot touch them, or be shielded with mesh, because monitors climb right up to them and can burn themselves.

TEMPERATURE

Varanus gilleni needs a very hot basking spot. The surface temperature of the branch under the heat source must be 40-60 °C, preferably 50-60 °C, measured with an IR thermometer. The rest of the enclosure is kept at 26-30 °C by day, and there must be a large temperature gradient, so that the animal can choose for itself where to stay.

At night the heat is switched off and the temperature falls to 18-20 °C. Very cool nights below 18 °C should be avoided. Use a spot lamp of about 100 W with a reflector, placed about 30 cm above the basking spot, and a thermostat to control it. Mount the lamp at the top, so that there are also shaded, cooler zones below.

For a winter rest the temperature is lowered by 8-10 °C for a couple of months, see under breeding. For the rest of the year the rhythm is kept stable.

HUMIDITY AND WATER

The species comes from dry regions and does not need high humidity. Keep humidity at 40-60 %, with a dry enclosure as the starting point and a damper corner or deep substrate where the animal can retreat.

Place a shallow dish of fresh water in the enclosure and change it daily. Many animals drink little, but the dish ensures that they can always get water. Ventilation must not be sacrificed to raise humidity, because stagnant air causes mould and respiratory problems.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal and basks in high heat. It can be bred healthily over several generations without UV light, but because it basks a lot and lives in open country with strong light, a UVB tube of 10 % strength, corresponding to Ferguson zone 3, is recommended. The zone is borrowed from related, diurnal monitors and is not documented for this particular species.

Mount a T5 tube over one side of the enclosure, so that the animal can choose between UV light and shade. Keep the light on for 12 hours a day in summer and 10 hours in winter, and switch everything off at night.

Read more: Lighting and UVB

FEEDING

Varanus gilleni eats mostly small arthropods: crickets, grasshoppers, cockroaches, mealworms, spiders and other insects. In the wild it also takes small lizards, especially geckos, and sometimes birds' eggs. The species is not fussy and takes almost all feeder insects. If it is fed too generously, it easily becomes too fat, so adults are fed 3-4 times a week in amounts they can eat in a few minutes. Juveniles are fed every day.

A single newborn mouse or a small piece of meat can be included for variety, but rodents should not be the staple food, because they are fatty and make the animal put on weight. Dust the insects with calcium and a vitamin supplement, and use calcium with D3 at every second or third meal. Make sure the insects are smaller than the distance between the animal's eyes.

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

BEHAVIOUR AND HANDLING

Varanus gilleni is among the calmest monitors. It is far less fast and quick-tempered than, for example, *V. acanthurus* and *V. tristis*. It seldom bites, and even animals that are a little skittish at first soon settle down. Bites are weak because of the animal's size, but the claws are sharp, and the animal may climb up your arm. Stay calm, move slowly and never grab the tail. Wait a couple of weeks after the animal has moved in before you begin handling it, and keep the sessions short.

The same rules apply to handling as for all reptiles: wash your hands before and after, because reptiles can carry salmonella.

The species can be kept singly, as a pair or as a male with several females. Males must not be kept together once they are sexually mature, because they fight by wrestling with all four legs. It seldom ends in bites, but it can escalate, so the animals must be separated. Juveniles can grow up together.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

Sex is difficult to determine. Both sexes have enlarged scales under the vent, and they are largest in the male. The male often has a thicker neck and a broader head, and he may have small spurs at the sides of the vent. Both sexes become sexually mature at a snout-vent length of about 10 cm. Age and weight at sexual maturity are not documented, and females should be fully grown and in good condition before they are bred.

MATING

A cooler winter rest of a couple of months synchronises the animals. The temperature is lowered by 8-10 °C, feeding is cut back and the animals are kept quiet. Then both temperature and food are raised gradually in early spring. Mating typically takes place as soon as the warmth rises. The winter rest is not always necessary, but it helps to get the animals going. A pair can live together all year, but a period apart can be an advantage, and an extra male nearby can also set off mating.

Watch the males if several animals live together, especially when a female is present. Remove the male if they begin to fight hard.

EGG-LAYING AND CLUTCHES

In Australia the first clutch is typically laid in October. A clutch is 1-7 eggs, most often 4-7 in wild females. The female can lay several clutches during the season at intervals of four to five weeks. Place a closed box of damp substrate in the enclosure with an opening the female can get in through. She often digs several trial holes before laying. In the wild the eggs are buried at a depth of about 30 cm.

Remove the male when the female is close to laying, because he may eat the eggs. Give the female extra food and calcium throughout the season. Egg binding occurs and can be fatal, especially if the female does not find a suitable place to lay. A female that digs without laying or becomes lethargic must therefore see a vet quickly.

Read more: Common diseases and signs of illness

INCUBATION

The eggs are carefully moved to an incubator and placed in damp vermiculite or perlite without being turned. At 29-30 °C and a humidity of about 100 %, the eggs hatch after 90-100 days. At 26-32 °C the incubation period varies from 84 to 131 days. Keep the substrate damp but not wet, and check that the eggs do not go mouldy. Eggs that collapse and turn yellow are rarely fertile.

Read more: Incubating eggs

REARING THE YOUNG

The juveniles are 11-14 cm long and weigh 2-4 g at hatching, and they are active and fast within a few hours. It may take up to a day before they have left the egg completely. They are more strongly patterned than the adults, and the pattern fades with age. Keep them in a small faunarium with a warm basking spot, hides and climbing branches, and give them small insects dusted with calcium every day, for example small crickets, waxworms and small grasshoppers. They soon begin to hunt. Juveniles can grow up together, but sort them by size and separate them if any fall behind.

Health and common mistakes

Varanus gilleni is hardy, and most diseases are caused by stress, dirt or incorrect husbandry. The typical faults are:

- Too low a temperature at the basking spot, causing poor digestion and loss of appetite. Measure with an IR thermometer.
- Too close to the heat source without shielding, causing burns.
- Obesity in adults, if they are fed too often or get too much fat.
- Calcium deficiency with soft jaws and bent limbs, if the insects are not dusted with calcium and the lighting is too weak.
- Shed skin stuck on the toes and tail. Remove it carefully with tweezers, or give a lukewarm bath.
- Infection with salmonella and parasites. Always wash your hands and clean bowls and tools.

Animals in the trade outside Australia are captive bred, and that generally means fewer parasites and less stress than in imported wild-caught monitors. Even so, new animals should be kept on their own for a few weeks, and a faecal sample at the vet is a good idea. See a vet with experience of reptiles if the animal loses weight, does not eat for several weeks, has swellings or seems lethargic.

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

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.