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MONITOR LIZARDS

Short-tailed Pygmy Monitor

Varanus brevicauda

Varanus brevicauda is one of the smallest monitors in the world: a brownish, ground-dwelling and diurnal desert dweller from the interior of Australia that reaches only 20-25 cm in length and lives in burrows under spinifex grass. It is rarely kept or bred, and much of its care has to be borrowed from relatives, so the species is only for experienced keepers who are prepared to break new ground.

Family: Varanidae

KEY FACTS

THE ANIMAL

Adult size	**20-25 cm** total length incl. tail
Weight	**8-20 g**
Lifespan	**5-10 years**
Active	**By day**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Desert and semi-desert**
Difficulty	**Experienced**

CARE

Min. enclosure	**80 × 40 × 50 cm** L × W × H for 1 adult
Temperature, day	**28-30 °C**
Basking spot	**38-45 °C**
Temperature, night	**18-20 °C**
Humidity	**30-50%**
UVB	**Recommended** Ferguson zone 3
Diet	**Insects**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**10-22 months**
Clutch size	**1-5 eggs**
Clutches per year	**1-3**
Incubation	**70-100 days** at 29-30 °C

PROTECTION AND PAPERWORK

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

About the species

Varanus brevicauda belongs to the subgenus *Odatria*, the small Australian monitors, and is the second smallest monitor in the world after *Varanus sparnus*. It is elongated and short-limbed, and the tail is short, about as long as the body, as the species name also says: *brevicauda* means "short tail". The tail is round and muscular at the base and more triangular towards the tip. The colour is brown to reddish brown, often with a distinct black net pattern on the back and legs and paler spots on the body, and the head is more greyish. Females and males cannot be told apart by appearance. The species was described in 1898 from animals from the Sherlock River in Western Australia.

The adult monitor is typically 20-25 cm long including the tail and weighs 8-20 g. The snout-vent length reaches up to 13 cm. The smallest sexually mature male in the wild measured 8 cm from snout to vent, and the smallest female with eggs in her body 9 cm. The young are 4-5 cm from snout to vent and weigh 1-3 g at hatching. Despite its size, the species behaves like a real monitor: it hisses, inflates its throat and lunges at a threat.

That the species is small does not make it easy to keep. It is rarely kept and bred, and Australia does not permit commercial export of live animals. Apart from a few details on captive breeding, the care is therefore based on the close relative *Varanus gilleni* and on the species' life in the wild. Lifespan is not documented either; 5-10 years is an estimate. Expect a project for an experienced keeper who must gather knowledge on their own.

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

Distribution and habitat

Varanus brevicauda is found across large parts of the arid interior of Australia. It lives from the coast in Western Australia through the Northern Territory and across north-western South Australia to western Queensland. The type locality is the Sherlock River at Nickol Bay in Western Australia.

The range is large, but the species is almost never seen above ground. Most animals have been found in pitfall traps or by digging up burrows, so the population can be hard to assess. It is not regarded as threatened, but it is listed as rare in South Australia.

> **Native range:** Australia.

HABITAT

Varanus brevicauda lives in dry regions with sandy or gravelly, firm ground and dense tussocks of spinifex grass. It digs its burrows in compact, sandy loam and gravel and is only rarely active on the surface. The female digs a hole for her eggs. Many animals can live close together in a small area, even though each animal lives on its own.

The climate is hot and dry with large differences between day and night and long periods of drought. In dry years, when there is little food, the species does not reproduce at all. An active animal has a body temperature of about 35 °C, roughly 10 °C above the air temperature, because the species warms up in the tussocks and at the burrow mouth. It hunts both actively and lies in wait for prey.

Care

THE ENCLOSURE

An adult needs an enclosure of at least 80 × 40 × 50 cm (length × width × height), and larger is better. The size follows the rule of thumb for ground-dwelling monitors (5 times the snout-vent length in length and 2 times in width and height) with extra room for a deep layer of sand and some margin, because the animal is an active hunter. Young can start in a smaller box with the same elements.

The floor is the most important thing. The species digs and needs a layer of sand of about 25 cm. Use dry, dust-free sand mixed with a little soil, so the tunnels do not collapse, and let part of the floor be slightly moister. Make hiding places with flat stones and cork bark that the animal can dig under, and partly cover with tussocks of dry grass resembling spinifex. Climbing branches are not necessary. Place a stable stone or a piece of bark under the heat source as a basking spot.

The enclosure must have secure doors and good ventilation. All heat sources must be placed so the animal cannot touch them, or be shielded with mesh. The enclosure must be completely escape-proof, because such small animals can squeeze through very narrow gaps.

Read more: Heat and temperature

TEMPERATURE

The species is diurnal and loves heat. The rest of the enclosure is kept at 28-30 °C by day, and the basking spot should reach 38-45 °C measured as surface temperature with an IR thermometer. There must be a large temperature gradient, so the animal can choose between warm and cooler areas, with a cool zone down in the sand.

At night the heat is switched off, and the temperature may fall to 18-20 °C. Use a spot with a reflector at one end and a thermostat. The species hibernates in the wild. Lower the temperature by a further 8-10 °C for a couple of months in winter, as is done for *V. gilleni*.

HUMIDITY AND WATER

Varanus brevicauda comes from dry regions and needs low humidity of 30-50 %. Keep the floor dry at the top, but let one deep corner be slightly moist, so the animal can retreat into moisture when it wants. Mould in the substrate is a sign of too much moisture.

Place a shallow, stable bowl of fresh water in the enclosure and change it daily. The bowl must be so shallow that a young animal can climb out again without trouble.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Varanus brevicauda is diurnal and lives in open country with strong sunlight. The species basks and needs UVB corresponding to Ferguson zone 3, like other diurnal monitors that bask.

Mount a T5 tube over one side of the enclosure, so the animal can choose between UV light and shade, and provide plenty of hiding places under sand and stones, so it can withdraw. 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

In the wild *Varanus brevicauda* eats insects, spiders, scorpions, centipedes and other invertebrates, and also takes small lizards such as skinks and geckos, reptile eggs and occasionally frogs and small snakes. Prey can weigh up to a sixth of the monitor's own weight. In the enclosure the staple food should be small feeder insects: crickets, small grasshoppers, cockroaches, mealworms and wax moths. Everything must be smaller than the distance between the animal's eyes.

Adults are fed 3-4 times a week with what they can eat in a few minutes, and young every day. The close relative *Varanus gilleni* easily becomes too fat, so do not overfeed adults. Dust the insects with calcium, and use calcium with vitamin D3 at every second or third meal. Rodents should not be the main food, and are not necessary for such a small animal.

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

BEHAVIOUR AND HANDLING

Varanus brevicauda is small, but it has the temperament of a real monitor. It hisses, puffs out its throat and lunges if it feels threatened. Bites are weak because of its size, but the claws are sharp, and fast animals can be hard to hold on to. Handle the animal as little as possible, wait a couple of weeks after it moves in, and keep sessions short. The species lives hidden and prefers to be in its tunnels, so it is poorly suited to a keeper who wants to see the animal often. Never grab the tail.

Wash your hands before and after, because reptiles can carry salmonella. Males fight in the breeding season by rising on their hind legs and wrestling, so keep them apart. The species is solitary in the wild, and animals are best kept singly, also because keeping pairs is not documented.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

The sex of *Varanus brevicauda* cannot be determined externally. For monitors in general, reliable sexing requires a vet with experience in reptiles and an endoscopic examination, and probing does not work, because females have a pocket that resembles the male's hemipenis pocket. Males become sexually mature at 7-8 cm snout-vent length and an age of about 10 months, females at 8-9 cm and about 22 months.

MATING

Mating is not documented in captivity. In the wild it takes place in September and October, after the winter rest, and by February the eggs have hatched. Males fight over females by wrestling on their hind legs. In dry years, when there is little food, the species does not reproduce at all in the wild, so expect the animal to mate only if it is in fine condition. A winter rest of a couple of months with a temperature 8-10 °C lower synchronises the animals, as in *Varanus gilleni*.

EGG-LAYING AND CLUTCHES

The female of *Varanus brevicauda* digs a hole for her eggs herself, so give her a deep, damp laying site: a closed box with at least 15 cm of damp sand and an entrance hole. A clutch is 1-5 eggs, most often 2-3, and the largest clutches are found in coastal regions. A female can lay 3 clutches within six weeks. Place the box in the enclosure, and give the female extra food and calcium during the season. The male should be moved out when she is close to laying. A female that digs without laying or becomes lethargic must go to the vet quickly.

INCUBATION

The eggs are carefully moved to an incubator and placed in damp vermiculite without being turned. The incubation time is 70-100 days depending on the temperature. Incubate at 29-30 °C; at that temperature the eggs of the close relative *Varanus gilleni* hatch after 90-100 days. Keep the substrate damp, but not wet, and check that the eggs do not go mouldy.

Read more: Incubating eggs

REARING THE YOUNG

The juveniles of *Varanus brevicauda* are 4-5 cm from snout to vent, 8-10 cm in total length and weigh 1-3 g. Give them a small enclosure with a warm basking spot, sand to dig in and hides, and feed them every day with the very smallest insects, dusted with calcium. In captivity the juveniles' weight can double in a month. Sort them by size, so that the smallest also get food.

Health and common mistakes

Varanus brevicauda is hardy in the wild. Typical problems in small monitors in captivity are:

- Too low a temperature at the basking spot causes poor digestion and loss of appetite. Measure with an IR thermometer.
- Too close to the heat source without shielding causes burns.
- Obesity, if the animal is fed too often.
- Calcium deficiency with soft jaws and bent limbs, if the insects are not dusted with calcium and the lighting is too weak.
- Infection with salmonella and parasites. Always wash your hands.
- A damp floor and poor ventilation cause mould and respiratory problems in a desert species.

Animals in the trade: Australia does not permit commercial export of live animals of the species. International trade in captive-bred animals and in wild-caught animals for research has been recorded, but the species is rarely kept and bred. An animal offered as *V. brevicauda* should therefore be met with scepticism: demand documentation of its origin, and have the species confirmed, as it can be confused with *Varanus sparnus*. New animals must always be kept on their own for at least six weeks, and a faecal sample at a vet is a good idea.

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.