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SNAKES

Rough-scaled Python

Morelia carinata

Morelia carinata is a slender, tree-dwelling python from a small area of the Kimberley in north-western Australia. It is dark brown with pale spots, has keeled scales that feel like sandpaper and unusually long teeth. The species is one of Australia's rarest snakes in the wild, grows to about 2 m in length and is active at dusk and at night. Little documented knowledge of its care exists.

Family: Pythonidae Former name: *Python carinatus*

KEY FACTS

THE ANIMAL

Adult size	**150-200 cm** total length incl. tail
Weight	**600-800 g**
Lifespan	**20-25 years**
Active	**At dusk and at night**
Lifestyle	**Arboreal and rock-dwelling**
Habitat	**Rainforest and rocky terrain**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 100 cm** L × W × H for 1 adult
Temperature, day	**26-30 °C**
Basking spot	**33-36 °C**
Temperature, night	**22-25 °C**
Humidity	**50-65%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**18-36 months**
Clutch size	**6-15 eggs**
Incubation	**55-70 days** at 30-31 °C

PROTECTION AND PAPERWORK

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

About the species

Morelia carinata is a medium-sized, slender and muscular python with a distinctly triangular head set off from a narrow neck. Each dorsal scale has a keel, a small ridge along the middle, and this gives the snake a rough, sandpaper-like feel and its name. The base colour is dark brown with paler brown spots, or pale honey brown with darker reddish-brown markings. The spots become larger towards the tail, so that the pattern seems to swap roles: at the rear the ground colour is pale and the spots dark. The belly is white, sometimes with black spots.

The species has perhaps the longest teeth in proportion to body size of any snake. They probably help the snake to penetrate fur or feathers and hold on until the prey is enclosed in the coils.

Adults grow to about 2 m, most somewhat smaller, but the maximum size is unresolved, because so few animals have been measured. An adult weighs about 700 g. Lifespan is not documented; 20-25 years in the box corresponds to the other species of the genus. The species was described in 1981 under the name *Python carinatus*, and there are no subspecies. It is

distinguished from the other *Morelia* species, for example *Morelia spilota* and *Morelia bredli*, by a large frontal scale and the keeled dorsal scales.

The species is calm and rarely bites. The entire captive population descends from five wild-caught animals, so information about ancestry is important when buying and breeding.

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

Distribution and habitat

Morelia carinata is endemic to Australia and has one of the smallest ranges among snakes. It occurs only in the far north-western part of the Kimberley in Western Australia, in the lower reaches of the Mitchell River and Hunter River, a little inland from the coast. The type locality is Mitchell River Falls. The species has also been found in the Charnley River-Artesian Range Wildlife Sanctuary.

The IUCN rates the species as not threatened, but it is one of Australia's rarest snakes, and very little is known about its way of life in the wild. Australia does not permit the export of wild reptiles for trade, so all animals outside Australia are captive-bred.

> **Native range:** Australia.

HABITAT

Morelia carinata lives in small patches of monsoon rainforest and in sandstone gorges and rock crevices. The species is partly arboreal and climbs in low trees and bushes. The rough scales help it on sandstone and in crevices. It has often been found by fruiting trees, which are probably good ambush sites for plant-eating prey, and close to water that flows all year round.

The snake is active at dusk and at night and hides by day in burrows and rock crevices. Its biology in the wild is almost unknown. Its prey is small mammals and birds, including small rock rodents, and in captivity the species takes mice and rats. The climate in the area is monsoonal, with a rainy and a dry season.

Care

THE ENCLOSURE

Little documented knowledge exists about the care of *Morelia carinata*, because the species is rare and first came into captivity in 2000. The figures here are set from the species' habitat and borrowed from the care of related *Morelia* species, especially *Morelia spilota*.

An adult snake needs an enclosure of at least 120 × 60 × 100 cm (length × width × height). The species is slender and arboreal, so height is a genuine need. Furnish with strong horizontal branches and cork tubes at several heights, at least one hide at the warm end and one at the cold end and a large, stable water bowl that the snake can lie in. Plants and pieces of rock provide cover and imitate the habitat.

The enclosure must have good ventilation and closed doors without gaps, because snakes easily find an opening. The young are kept in a small box of about 30 × 30 × 45 cm, which grows with the snake, so that the temperature gradient can be maintained. Use a hygienic substrate such as kitchen roll or newspaper, or a recycled paper substrate, and change it as soon as it is soiled or wet. Sand and bark can encourage bacterial growth and require frequent replacement.

Read more: Heat and temperature

TEMPERATURE

The enclosure must have a clear gradient: a warm and a cold end, so that the snake chooses for itself. Use a daytime temperature of 26-30 °C, a basking and heat spot of 33-36 °C and a cold end of about 25-27 °C. At night the temperature must not fall below 20 °C, and 22-25 °C is a good aim. The figures are borrowed from related *Morelia* species.

Use radiant heat: a ceramic heater or a heat lamp in the ceiling, always on a thermostat and protected by a guard, so that the snake cannot coil around the source. Heat mats carry a greater risk of burns and are not recommended as the only heat source. The snake will stay sitting on a source that is too hot, so a source without a thermostat can cook it. Measure the surface with an IR thermometer. The young are kept warm around the clock.

A cool winter rest is not documented for the species. Mating takes place in the cool months, but how cool the winter must be is not known. Therefore do not apply a strict winter rest without knowing the species' needs.

HUMIDITY AND WATER

Humidity is kept at 50-65 %, a little above the 40-60 % that suits most *Morelia* species, because the species lives in monsoon rainforest and humid gorges. The figure is an estimate; measurements from the habitat do not exist.

Put a large water bowl in the enclosure, and change the water daily. Mist the enclosure lightly once a day, but let the substrate dry between times. Raise the humidity temporarily when the snake is about to shed, for example by misting the warm end lightly, so that the skin comes off in one piece. Persistent damp combined with poor ventilation causes skin problems and respiratory infections.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is active at dusk and at night. Pythons have long been kept without UVB, but UVB probably benefits their health and is therefore recommended, as for the other *Morelia* species.

Use a UVB tube that covers part of the enclosure over the warm end, so that the snake can choose to come out of the light. The species lives in shade and rock crevices, so Ferguson zone 2 is suitable. Keep the light on for about 12 hours a day and replace the tube at least every six months. Provide a calm, dark period at night.

Read more: Lighting and UVB

FEEDING

Morelia carinata eats whole prey. Use frozen and fully thawed mice and rats, never live animals. Thaw the prey in a closed container and warm it to body temperature. Never heat it in a microwave, and never offer it half-frozen. The prey should be about 10 % of the snake's weight or the size of the head. Use long tongs.

Young snakes are fed every 7 days with small mice, and then every 10 days and every 14 days, as the mice grow. Adults are fed every 14-28 days with a rat, adjusted to the snake's weight. Overfeeding is the most common mistake in pythons and causes obesity. Weigh the snake regularly. The teeth are unusually long, so never let your fingers come near the prey.

What prey the species takes in the wild is little known. Supplements are not documented as necessary when the snake is given whole prey.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Morelia carinata is calm and rarely bites. Leave a new snake in peace for a couple of weeks, until it eats. Then start with short, calm sessions, and avoid the head and tail. Lift the snake under the forebody and under the rest of the body. Use a snake hook if it is nervous about being taken out of the enclosure.

The snake is kept singly. A new snake in the house should be quarantined for at least six months in a separate room, with the vet's test for viruses, before it comes near other snakes. The snake's long teeth can cause deep wounds, so stay calm during feeding and handling.

Breeding

SEXUAL MATURITY AND SEXING

Sexual maturity is not documented for the species. The estimate of 18-36 months is borrowed from related *Morelia* species, where males become sexually mature earlier than females. The female must be fully grown and in good condition before she is used for breeding. Sex is determined by probing, which only an experienced person or a vet should carry out.

MATING

Mating takes place mostly in July and August, in the cool months. The species breeds willingly in captivity. Introduce the male to the female, never the other way round, and supervise the pairing. How the temperature should be managed to trigger mating is not documented.

EGG-LAYING AND CLUTCHES

The female lays 6-15 eggs, most often about ten. She finds a dark, secluded place, in the wild probably an abandoned burrow, and incubates the eggs without eating. Provide a nest box with damp substrate that is large enough for her to coil around all the eggs. When the young hatch, she does not care for them. The number of clutches per year is not documented.

INCUBATION

The eggs can be incubated by the female or in an incubator. In artificial incubation the temperature must be a constant 30-31 °C and the humidity very high. The eggs hatch after 55-70 days.

Read more: Incubating eggs

REARING THE YOUNG

Keep each young snake separately in a small box of about 30 × 30 × 45 cm with a piece of branch, a hide and a small water bowl, and keep it warm around the clock. The first meal is a small mouse after the first shed, and then the young are fed every 7 days. Young snakes shed about eight times a year if they eat well. Keep the young calmly and handle them little at first.

Health and common mistakes

No species-specific health knowledge exists for *Morelia carinata*, so the following is based on pythons in general:

- Obesity from feeding too often. Weigh the snake regularly, and feed adults every 14-28 days.
- Skin infections and respiratory infections from persistent damp and poor ventilation. Signs are wheezing breathing, mucus in the mouth and an open mouth, and they require a vet.
- Poor sheds. Raise the humidity temporarily before shedding, and never remove the skin by force.
- Burns from unguarded bulbs or a heat source without a thermostat.
- Viral diseases, which can be carried by animals without symptoms for months and years. Quarantine new animals for at least six months in a separate room, and have them tested by a vet.

Snakes hide illness, so weight checks and notes on feeding, shedding and behaviour are the best early warning. Contact a vet with reptile experience if the snake loses weight, has breathing problems or does not eat for several weeks.

Read more: Quarantine and hygiene

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.