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SNAKES

Giant Madagascar Hognose Snake

Leioheterodon madagascariensis

Leioheterodon madagascariensis is a large, powerful, diurnal snake from Madagascar that can grow to nearly 180 cm. The snout is pointed and used for digging, and when threatened it spreads its neck and hisses. It eats frogs, lizards, eggs and rodents. The snake is rear-fanged with a mild venom; bites are rare but can cause several days of swelling and pain.

Family: Pseudoxyrhophiidae Former name: *Heterodon madagascariensis; Lioheterodon madagascariensis*

KEY FACTS

THE ANIMAL

Adult size	**90-150 cm** total length incl. tail
Lifespan	**15-25 years**
Active	**By day**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Savanna and dry forest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**150 × 60 × 50 cm** L × W × H for 1 adult
Temperature, day	**24-27 °C**
Basking spot	**29-32 °C**
Temperature, night	**22-24 °C**
Humidity	**60-80%**
Water	**Water dish**
UVB	**Optional**
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**7-12 eggs**
Incubation	**60 days** at 27-28 °C

PROTECTION AND PAPERWORK

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

About the species

Leioheterodon madagascariensis is one of the largest and most powerful snakes on Madagascar. Most adults are 90-150 cm long, and the largest can reach 180 cm. In captivity they rarely exceed 100-120 cm. A large male of 150 cm weighs about 1,200 g. Newly hatched young are 15-30 cm. There is no obvious difference in size between males and females.

The ground colour is blackish to dark brown or olive and on the back shades into paler tones of yellowish brown and yellowish with dark, checkered spots along the back and sides. Some animals have a completely black back, and the belly is pale yellow to orange-red. The scales are smooth, the eye is large with a round pupil, and the head is barely distinct from the neck. The snout is pointed and turns slightly upwards, and the large rostral scale is used to dig and to push leaves and sand aside.

The species defends itself with a frightening display: it raises its head, opens its mouth, inflates the skin of the throat and neck, hisses and makes mock strikes. Threatened animals may also regurgitate their prey and release scent secretions and faeces. It almost always stops at the threat, however: the snake chooses to flee as quickly as possible.

Leioheterodon madagascariensis is a rear-fanged snake. At the back of the upper jaw sit two greatly enlarged teeth, about 4 mm long, ungrooved and with a sharp rear edge, separated from the front teeth by a gap. See the section on behaviour for what a bite means.

Distribution and habitat

Leioheterodon madagascariensis lives on Madagascar and is endemic to the island. It is found in both the east and the west and is widespread over most of the island. It is also found on the nearby islands of Nosy Be, Nosy Komba and Nosy Sakatia. It was introduced to Grande Comore in the Comoros at the beginning of the 1900s, and it is uncertain whether the population still exists.

The species is one of the most common snakes on Madagascar and is often seen near people, where it takes rats and eggs.

> **Native range:** Madagascar.

HABITAT

Leioheterodon madagascariensis lives on the ground and partly buried in very varied habitats: dry tropical forest and forest edges, savanna, grassland, coastal dunes and scrub, but also in farmland and around villages. The species is diurnal and uses burrows, cavities under roots and leaf litter as hiding places and as overnight shelters. Several animals may share burrows and nesting sites.

The climate has two seasons, a wet and a dry one. In the cool, dry season the night-time temperature can fall to 5-10 °C, and the animals then seek out insulated burrows and tunnels. In the warm season daytime temperatures average about 27-28 °C.

The prey is wide-ranging: frogs and toads, fish, lizards and other snakes, reptile and bird eggs, nestlings, rodents and other small mammals.

Care

THE ENCLOSURE

Little has been published about keeping *Leioheterodon madagascariensis*, and the species is not common in captivity. On the other hand, it is adaptable and not difficult to keep alive, and the recommendations are based on its biology and on experience with the species.

An adult needs an enclosure of at least 150 × 60 × 50 cm (length × width × height). The length must at least equal the length of the snake, so that it can stretch out fully and move freely. Floor area matters more than height, because the species lives on the ground and only rarely in low vegetation. Juveniles can be kept in an enclosure of 75 × 30 × 30 cm.

The enclosure must be secure and escape-proof, with a lid that closes completely. The species is strong and active.

A thick layer of fine aspen shavings, cypress bark or coconut fibre, or a mixture of sand and bark mulch, is used as substrate so that the snake can dig and root around in the bottom for food. A deep, diggable substrate makes the animals more active and inquisitive than newspaper. Never use pine or cedar. Preferably furnish one side dry and open and the other more humid and densely planted; the snakes spend most of the day in the dense side and explore the open one. Provide several hides of cork, stones, roots and artificial or live plants, a solid water bowl and a humid hide. Clean away faeces and food remains at least once a week, and change the substrate and disinfect the enclosure every 2-3 months.

TEMPERATURE

The enclosure must have a clear gradient. The cool side is kept at 24-27 °C, and the warm side, measured at the surface under the heat source, at 29-32 °C. At night the temperature is lowered slightly, to around 22-24 °C. Heat can come from a heat mat under part of the floor, a ceramic heat emitter or a heat lamp, always controlled by a thermostat.

A small drop in temperature during the winter months can stimulate breeding but is not necessary (see Breeding). The enclosure must still have a warm zone.

Measure the surface temperature and the air temperature with digital thermometers, and check that the snake can choose between warm and cool.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be 60-80%, with a humid hide (a box with damp coconut fibre or sphagnum), which helps during shedding. The substrate may dry out somewhat more for a period corresponding to the dry season, but never completely. The species enjoys misting and readily catches the droplets.

Place a solid, wide water bowl in the enclosure, and change the water regularly. The snake almost never swims but likes to lie in shallow water.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal. The lighting can run on 12 hours of light and 12 hours of dark. UVB is not necessary but can be beneficial for health and wellbeing. The Ferguson zone has not been documented. If UVB is used, there must be shade and hides in the rest of the enclosure. At night it must be dark.

Read more: Lighting and UVB

FEEDING

In the wild *Leioheterodon madagascariensis* eats frogs and toads, lizards, fish, eggs, nestlings and rodents. The species is easy to feed and in captivity takes thawed rats and mice. Many juveniles initially need the prey to be scented, for example by rubbing it with a frog or a fish. Feed frozen and thawed rodents, not live ones, because a live animal can bite and injure the snake.

The prey should be about as wide as the snake's widest point. Offer varied prey, for example eggs, fish or frogs. Use tongs so that the snake does not mistake the hand for food.

How often to feed has not been documented; young animals are fed more often than adults. Follow the weight: the species easily becomes overweight, and snakes can refuse food for several weeks or months, especially in autumn and winter, without it being illness. Make sure that the animal is not losing weight. Whole prey animals usually cover the need for calcium and vitamins.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Leioheterodon madagascariensis is active and energetic and can usually be tamed and handled. Young animals are more nervous and defensive and may hiss, spread the neck, make mock strikes or play dead. Handle the snake calmly and securely, and let it settle after an outburst. It is easily stressed if disturbed a lot and does best when left in peace.

The species is rear-fanged and mildly venomous but rarely bites. Bites typically happen when the snake is held firmly or when a hand is mistaken for food, and the venom enters only with a firm bite involving chewing. Most bites cause only small puncture marks and a little bleeding. A prolonged bite can cause bleeding for several hours, severe local pain and swelling up the forearm, which is greatest after a day and disappears after about five days, while the pain can last for up to a week and a half. Only local symptoms are known, and there have been no deaths. In the close relative *Leioheterodon geayi*, the secretion of the glands breaks down blood cells and paralyses mice; the effect in *L. madagascariensis* has not been investigated in detail. Rinse the wound with soap and water, and seek medical attention for severe swelling, pain or general symptoms.

Keep the animals singly. Males fight each other. Wash your hands after touching the snake and the enclosure, because reptiles can carry salmonella.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

There is no obvious size difference between males and females, so sex is determined by probing, which is carried out only by an experienced keeper or a vet. Age and size at sexual maturity have not been documented.

MATING

Captive breeding is still rare but is becoming more common. A seasonal cycle helps: a cool and slightly drier period with smaller and fewer prey items and a small drop in temperature, followed by a warm and humid period with plentiful food. Males fight when they meet: they coil around each other and try to press the opponent's head to the ground. The timing of mating and the length of the cool period have not been documented.

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

EGG-LAYING AND CLUTCHES

The female lays 7-12 eggs around April and May. Larger clutches occur, but the best results come from smaller clutches with large eggs. In the wild several animals often share a nest site, and the females stay with the eggs. Give the female a laying box with damp coconut fibre or sphagnum when she is clearly thick towards the rear.

INCUBATION

The eggs are placed in damp coconut fibre, vermiculite or perlite in a box with small air holes and kept at a steady temperature of 27-28 °C. The eggs are not turned. The young hatch after about two months.

REARING THE YOUNG

Young are 15-30 cm at hatching and yellowish brown without the distinct black scales that the adults have. Keep each young snake separately in a small, secure enclosure with a hide, a humid hide, a water bowl and a warm end, and offer small, thawed rodents. Many young require the prey to be scented. Feeding interval and growth have not been documented for the species.

Health and common mistakes

Health problems in *Leioheterodon madagascariensis* have not been described systematically. The following are known or follow from the species:

- Obesity: the species easily becomes too fat in captivity if overfed.
- Refusal of food: several weeks or months without food are common in autumn and winter, but it can also be caused by too low a temperature, stress or incorrect furnishing. Weigh the animal regularly.
- Regurgitation when disturbed: the species can regurgitate its food when frightened. Do not touch it for the first while after a meal.
- Stuck shed: provide a humid hide and sufficient humidity.
- Incorrect furnishing: an enclosure that is too small or a substrate that cannot be dug in makes the animal less active and inquisitive; inactivity and a lack of exploration can be signs of poor wellbeing.
- Salmonella and other bacteria can be transmitted from reptiles to humans; wash your hands.
- Bites: see the section on behaviour.

Consult a vet with experience in reptiles if the snake loses weight, will not eat for a long time, has an open mouth or has changed faeces.

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.