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SNAKES

Gophersnake

Pituophis catenifer

Pituophis catenifer is a powerful, diurnal colubrid from the prairies, deserts and woodland edges of North America. It grows to 1-2 metres, hunts rodents in their burrows and defends itself by hissing, inflating its neck and vibrating its tail, so that it resembles a rattlesnake. It is robust and easy to keep, but large, strong and an escape artist.

Family: Colubridae

KEY FACTS

THE ANIMAL

Adult size	**100-200 cm** total length incl. tail
Lifespan	**12-15 years**
Active	**By day**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Semi-desert, savanna and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 45 cm** L × W × H for 1 adult
Temperature, day	**24-29 °C**
Basking spot	**28-32 °C**
Temperature, night	**18-24 °C**
Humidity	**30-50%**
Water	**Water dish**
UVB	**Not required**
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**18-48 months**
Clutch size	**2-24 eggs**
Clutches per year	**1-2**
Incubation	**55-75 days** at 26-29 °C

PROTECTION AND PAPERWORK

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

About the species

Pituophis catenifer is a heavily built snake with keeled scales, a relatively large head, a narrow neck and large eyes. The ground colour is light sandy brown to yellow, and along the back there are large, dark brown to black blotches that look like a chain. This fits the species name, which is Latin for 'chain-bearing'. Along the sides there are smaller, dark spots, the belly is whitish to yellowish, and a dark stripe runs in front of and behind the eye. The pattern and colour often follow the surroundings, so animals from sandy regions are lighter than animals from forest.

The species has a very large range, and appearance and size vary with the subspecies. Most forms reach 100-150 cm. Some from Baja California stay at about 105-120 cm, while the subspecies *P. c. sayi* regularly reaches 180 cm and in rare cases over 2 metres. Females are heavier than males, and the largest forms typically weigh 2-3.5 kg. A few subspecies from Baja California are sometimes regarded as separate species, so the number of subspecies is not fixed.

The snake is non-venomous and kills its prey by constriction. It is often mistaken for a rattlesnake because it has the same pattern and can imitate a rattlesnake's defence: it inflates its body, flattens its head, hisses loudly, shakes its tail against the ground and occasionally strikes with a closed mouth. This is mostly bluff. In captivity many colour and pattern varieties (morphs, e.g. albino, striped and patternless animals) have been bred, but this guide is about the species itself.

Captive-bred animals are generally calm and tolerate handling well. They are strong, curious and greedy feeders, and they need a large, completely secure enclosure.

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

Distribution and habitat

Pituophis catenifer has one of the largest ranges among North American snakes. It is found from southern British Columbia, Alberta and Saskatchewan in Canada through most of the western and central USA, from the Pacific coast east to Wisconsin, Illinois and Indiana, and south through Baja California, Sonora and Chihuahua to central Mexico.

The individual subspecies each have their own area. The nominate form *P. c. catenifer* lives along the coast from northern California to southern British Columbia, *P. c. deserticola* in the Great Basin and the dry regions of the western USA, *P. c. sayi* on the prairies of central North America and *P. c. affinis* in the south-western USA and northern Mexico. Several subspecies are island forms, for example on islands off California and Baja California.

> **Native range:** Canada, United States and Mexico.

HABITAT

The species lives in many kinds of open and semi-open country: prairie, scrub, desert shrubland, deciduous and coniferous forest, farmland and woodland edges. It is often found near damp areas, but stays mostly in the open parts such as grassland and woodland edges, where there are rodents to be found. The snake is most active by day, but occasionally hunts at night, and in strong heat it stays in shade and burrows until the evening.

It spends up to 90 % of its time underground in rodent burrows and other shelters, but can also climb and swim. In cold regions it hibernates in winter, and in the hottest period it may aestivate. Mating and egg laying take place in early summer and summer, and the eggs are laid in nests that are occasionally shared by several females.

Care

THE ENCLOSURE

An adult *Pituophis catenifer* needs an enclosure of at least 120 × 60 × 45 cm. Floor area is more important than height, because the species digs and explores, but rarely climbs. The largest animals, especially *P. c. sayi*, need more space. Hatchlings can start in a small box of about 30 × 20 cm and be moved up as they grow.

The enclosure must be lockable. The species is strong, pushes at lids and finds every gap, so all openings must have a lock or a screw lid. Glass enclosures, front-opening cabinets and rack systems with plastic tubs all work.

Use 5-10 cm of dry, loose substrate such as aspen shavings, which the snake can dig in. Avoid cedar and pine, which can be toxic, and corn cob and sand, which can cause impaction if swallowed. The substrate must be dry, because persistent moisture causes scale rot. Place at least one snug hide at each end of the enclosure, so the snake can stay both warm and hidden. Close-fitting hides are used more than large ones. The water bowl should be heavy and large enough for the snake to drink, but not so large that it fills with waste or is used as a nest site. Never feed on loose substrate, but on a flat stone, a board or in a separate box.

TEMPERATURE

The species tolerates a wide temperature range. By day the enclosure should be 24-29 °C, with a warm end of 28-32 °C and a cool end down towards 24 °C, so that the snake can choose for itself, especially after a meal. Forms from the coast manage with a slightly cooler warm end than the desert forms. At night the temperature may fall 3-8 degrees, to about 18-24 °C. If the snake is kept at the same high temperature for weeks on end, it can put a strain on it and reduce fertility in males, so a daily fluctuation and a seasonal rhythm are healthy.

Use a heat mat under a third of the floor, a heat bulb or a ceramic heater, all controlled by a thermostat. The heat mat should not be hotter than about 32-34 °C on the surface. Never use heat rocks, which can cause burns. Bulbs and heat sources must be placed so that the snake cannot touch them.

Too low a temperature can cause poor digestion, regurgitation and loss of appetite. A snake that constantly lies on the heat is too cold. A snake that lies in the water bowl or constantly tries to escape is too hot. Measure with a digital thermometer or an infrared thermometer.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity does not matter much for the species, which comes from dry to moderately humid regions, and a specific figure is not documented. Ordinary indoor air at about 30-50 % is suitable, and the enclosure must be well ventilated so the substrate stays dry.

More humidity is needed only during shedding. Signs of shedding are dull skin, cloudy eyes and withdrawn behaviour. Place a hide box with damp moss or damp kitchen paper in the enclosure, and mist lightly every day. The snake normally sheds in one piece including the eye caps and tail tip. Any remains, especially over the eyes and on the tail tip, must be removed gently with a damp cloth.

Fresh water must be available at all times and changed daily, and the bowl must be washed weekly.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Pituophis catenifer is diurnal, but does not need UVB light to stay healthy and rarely basks. An ordinary day-night rhythm of about 12 hours of light and 12 hours of darkness controlled by a timer is enough. If the enclosure is placed by a window, the short days in autumn may make the snake stop eating, because it takes this as the coming of winter. This can be used deliberately before breeding, but if the animals are kept active all year, there must be light for at least 12 hours a day.

Do not use strong spotlights close to the snake, and place all bulbs so the snake cannot touch them.

Read more: Lighting and UVB

FEEDING

The species lives on rodents, and in captivity it is given frozen or thawed mice and rats. Do not give live rodents, which can bite the snake. The prey should be no wider than the snake at its widest point. It is better to give two small prey items than one large one.

The snake is a voracious eater. Young animals are fed every 5-7 days, and adults are fed 1-2 small, adult rats a week. Switch to rats as soon as the prey is large enough, so the snake does not need 5-10 mice a week as an adult. Offer the food with long tongs, because the snake can lunge at anything that moves as soon as the enclosure is opened. If it is locked in feeding mode, a firm little nudge on the head with the tongs or a snake hook can bring it out of it.

The animals easily become too fat. Obesity increases the risk of egg binding and shortens life. The snake should be round and firm with no visible spine. Vitamin supplements are unnecessary if the prey animals are healthy and well fed, and if they are used, then only lightly at every third or fourth feeding. It is normal for the snake to take a break from food for 3-5 weeks for no apparent reason. If it is otherwise healthy, you can wait it out.

Read more: Calcium, vitamins and supplements Read more: Common diseases and signs of illness

BEHAVIOUR AND HANDLING

Pituophis catenifer is calm and curious, but has a dramatic defence. When threatened it inflates its body, hisses loudly, vibrates its tail and lunges forward with its mouth open or closed. Captive-bred animals mostly show this only as defence of the enclosure and usually calm down when they are picked up. Regular handling makes the snake calmer, especially hatchlings, which are more nervous and may nip. Support the whole body, and do not let the snake hang. Do not handle the snake during shedding or right after a meal, and let new animals settle in before they are handled.

The snake is best kept alone. Although it rarely eats other snakes, problems can arise with animals in the same enclosure at any time, and males may fight in the breeding season. The species is a skilled escape artist and a strong animal, so always check the lock and lid.

Breeding

SEXUAL MATURITY AND SEXING

Males can be sexually mature after 1.5-2 years, while females in the wild are not until about four years. Females should be strong, healthy and preferably at least three years old before they are bred, and growth should not be forced with large meals to reach breeding size faster. The sexes look alike, and sexing requires experience and should be left to an experienced keeper or a vet.

MATING

Breeding normally requires a cool period. In late autumn feeding is stopped until the digestive tract is completely empty, and then light and heat are lowered gradually. Lower the temperature to about 13 °C. In a cool room it is enough to stop feeding and switch off light and heat in winter. Only fresh water is given during the rest period. In spring light and heat are raised again over a few days, and the animals are fed generously.

After the first shed following the rest, the male is put in with the female, preferably in her enclosure, where her scent is. The courtship can be violent, with wild chases around the enclosure, so a spacious enclosure is an advantage during the mating season. When mating is secured, the animals are moved back to their own enclosures.

EGG-LAYING AND CLUTCHES

The female is ready to lay about 6-8 weeks after mating and sheds the week before. After that she needs a nest, for example a large box with damp sphagnum, and the water bowl is replaced with a smaller one, so the eggs are not laid in it. She lays 2-24 eggs, usually at night. There is normally one clutch a year, and a few females lay two.

Fertile eggs are white, large and leathery. Infertile eggs are smaller, yellow and hard. Fertile eggs stick together, so they should be incubated as a clump. If they must be separated, they are carefully cut apart with dental floss, and kept with the upper side up.

INCUBATION

The eggs are moved to a box with vermiculite and water in equal parts by weight. The humidity must be stable, and the medium must not be so wet that water can be squeezed out. The temperature must be 26-29 °C, preferably about 28 °C. If the eggs are collapsed, it is too dry, but too much moisture cannot be corrected, so choose too dry rather than too wet. The eggs hatch after 55-75 days. Let the hatchlings come out by themselves, and do not cut the eggs open too early.

REARING THE YOUNG

The hatchlings are 30-35 cm long at hatching and often hiss and strike from the first day. They shed within a week, and after that they can have their first meal. Most take thawed mice without fuss. Keep them singly in small boxes with a hide and kitchen paper as substrate. Feed 1-2 times a week with whole, suitably sized prey. They grow quickly for the first three years and more slowly after that.

Health and common mistakes

The species is robust, and most problems are caused by the wrong temperature or humidity. The typical mistakes are:

- Too low a temperature, which causes poor digestion, regurgitation and loss of appetite.
- A damp substrate and poor ventilation, which cause scale rot and skin infections.
- Overfeeding, which causes obesity, egg binding and a shorter life.
- Shed remains, especially eye caps and tail tip, which must be removed gently after shedding.
- Mites and ticks. Mites are seen as small black dots on the animal, in the water bowl and on the hands after handling and can cause anaemia. Treat with products from the vet or the pet shop.
- Impaction from swallowed substrate, if the animal is fed on loose substrate.

Signs of illness are lethargy, regurgitation, lack of faeces, changed faeces, heavy or open-mouth breathing, wrinkled skin and mucus from the nose or mouth. See a vet with reptile experience if the snake does not eat for several weeks and also seems ill.

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.