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SNAKES

Four-lined Ratsnake

Elaphe quatuorlineata

A powerful, calm ratsnake from Italy and the Balkans that as an adult carries four dark stripes along a yellowish-brown to greyish-brown body and reaches 150-200 cm. *Elaphe quatuorlineata* is among the largest snakes in Europe, climbs well and needs a large, tall, escape-proof enclosure and a cool winter rest in order to breed.

Family: Colubridae Former name: *Coluber quatuorlineatus; Elaphis quaterradiatus*

KEY FACTS

THE ANIMAL

Adult size	**150-200 cm** total length incl. tail
Lifespan	**15-20 years**
Active	**By day and at dusk**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Rocky terrain and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 90 cm** L × W × H for 1 adult
Temperature, day	**24-28 °C**
Basking spot	**30-33 °C**
Temperature, night	**20-24 °C**
Humidity	**40-60%**
Water	**Water dish**
UVB	**Optional**
Winter rest	**10-12 °C** 12-16 weeks
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**4-18 eggs**
Incubation	**55-65 days** at 28-29 °C

PROTECTION AND PAPERWORK

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

About the species

Elaphe quatuorlineata is a large, non-venomous ratsnake and among the largest and heaviest snakes in Europe. Adults are pale grey, yellowish-brown or greyish-brown with two stripes on each side of the body. The stripes are brown on the forebody and turn black towards the rear. A black line runs from the eye to the corner of the mouth, and the belly scales are keeled, so the body feels rough. The species name comes from Latin *quattuor*, four, and *linea*, line, and refers to the four stripes.

The young look completely different. They are pale grey to greyish-brown with a row of large, dark spots along the back, smaller spots on the sides and a heavily marked head with a black band across the forehead. The spots slowly merge into stripes, and the adult pattern is only complete after three to four years.

Adults are typically about 150 cm including the tail. Large animals reach up to 200 cm, and a few approach 250 cm. Newly hatched young measure 25-35 cm. Females are larger than males, and size varies greatly between populations.

The species is divided into subspecies, including *Elaphe quatuorlineata muenteri* from the Cyclades, which seldom exceeds 150 cm and is uniformly coloured without stripes as an adult, and the island forms *Elaphe quatuorlineata parensis* from Paros and *Elaphe quatuorlineata scyrensis* from Skyros. The eastern form, which was formerly treated as a subspecies, is now regarded as a separate species, *Elaphe sauromates*. The subspecies classification is genetically unresolved. The snakes are calm and seldom bite, even when caught wild.

Distribution and habitat

Elaphe quatuorlineata lives in central and southern Italy from Tuscany and Umbria south to Sicily and on the west coast of the Balkan Peninsula: Slovenia, the Croatian coast with several islands, Bosnia and Herzegovina, Serbia, Montenegro, North Macedonia and Albania. In Greece it is found over large parts of the mainland and on many islands, including Corfu, Zakynthos, Lefkada, Skyros, Samothraki, Paros, Naxos and Amorgos, and in Bulgaria only in the south-west. The map shows the original range.

In Italy only the nominate form is found. Reports from Romania and Syria concern *Elaphe sauromates* and not this species.

> **Native range:** Italy, Slovenia, Croatia, Bosnia & Herzegovina, Serbia, Montenegro, North Macedonia, Albania, Greece and Bulgaria.

HABITAT

Elaphe quatuorlineata lives in a Mediterranean climate: dry, stony slopes, scrub, woodland edges, open woodland, hedges, fields, stone fences and ruins, often near streams and ponds. It goes up to about 1,200 m above sea level, especially in the southern part of the range. It prefers a warm and slightly humid niche with shady bushes and is seen more often in warm, overcast weather than in strong sun.

The snake is active by day and at dusk at 24-34 °C, and it climbs trees and bushes as well as it moves on the ground. It also swims well. In winter it withdraws into abandoned rodent burrows, and during that period it does not eat. The diet is small mammals such as mice, rats, squirrels, dormice, young rabbits and weasels, and in addition birds and birds' eggs, lizards and young tortoises. Females take more birds than males.

Care

THE ENCLOSURE

Elaphe quatuorlineata is a large, climbing snake and needs a large, tall and well-ventilated enclosure. The minimum size for an adult is 120 × 60 × 90 cm (length × width × height). More floor area and especially more height is an advantage, for example 120 × 80 × 180 cm with shelves of cork bark at several heights, so the snake can choose for itself how warm it wants to lie. The species is kept singly, and male and female are only put together for breeding.

Furnish with a large branch with side branches, which the snake can climb on and rub against when shedding, stones, pieces of cork and a hollow log as a hide. There must be hides in both the warm and the cool end. Pebbles, gravel and coconut fibre are suitable as substrate. Pine and cedar shavings are not used. A large water bowl that the snake can bathe in is necessary.

The snake easily finds a gap, so the lid and doors must fit tightly and be lockable.

TEMPERATURE

There must be a clear temperature gradient. The background temperature is 24-28 °C by day, and under the heat source there should be a basking spot of 30-33 °C, so the snake can warm up. At night 20-24 °C is maintained. The species needs warmth and must have a warm zone throughout the season, especially from April to July, when it prepares for mating and egg-laying. The temperature must not exceed 35 °C at the basking spot for any length of time.

Use a light source or ceramic heat emitter over a flat stone, possibly combined with a heat mat or heat cable, always controlled by a thermostat. Check the temperature with digital thermometers at both ends and with an IR thermometer at the basking spot.

In winter the animals are cooled down (see Breeding). From September light and heat fall, and the animals eat less and often stop altogether.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be moderate, about 40-60 %, in a well-ventilated enclosure. A precise figure has not been documented for the species, but in the wild it prefers warm, slightly humid places with shade. During shedding and at the winter rest the snake must have access to more humid spots; if there is retained skin on the eye caps or tail tip, the air has been too dry.

The water in the bowl is changed daily. The snake readily bathes and often passes faeces in the water, so the bowl should be emptied and cleaned regularly.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Elaphe quatuorlineata is active by day and at dusk and needs a clear day and night, controlled by a timer. The light is gradually reduced in autumn and increased again in spring, so the animal gets a natural seasonal rhythm.

A need for UVB has not been documented for the species, and it manages with ordinary lighting and heat sources. UVB can be offered to a diurnal species, as long as the snake can withdraw into shade. No Ferguson zone has been set.

Read more: Lighting and UVB

FEEDING

Elaphe quatuorlineata eats whole rodents, chicks and eggs and takes frozen and thawed prey without difficulty in captivity. Young and subadults get small and medium-sized mice, adults large mice, small rats, hamsters and day-old chicks. Hens', quail and pigeon eggs are a nutritious alternative for females in the breeding season. The eggs are washed thoroughly and frozen for at least two weeks to reduce the risk of salmonella.

The prey must be no wider than the widest part of the snake. Feeding intervals:

- Young and subadults: every 5-7 days.
- Adults: every 7-10 days, less often if the snake becomes round.

Thaw the prey completely, and warm it to slightly above room temperature just before feeding. Leave the snake in peace after feeding. The species is heavily built and easily becomes too fat, so weigh it regularly, and cut back if the body becomes round. Females need plenty of food in the breeding season and during egg formation, preferably several hens' eggs a week. Males often do not eat during the mating period.

Some young will only eat after the first winter rest. Animals that have not eaten in autumn and winter are not ill.

Read more: Quarantine and hygiene

BEHAVIOUR AND HANDLING

Elaphe quatuorlineata is calm, shy and tame and seldom bites. It is somewhat sluggish and a keen climber, and it is hardy and eats well in captivity. Captive-bred animals are much to be preferred, because wild-caught animals often carry parasites.

Give a new animal a week to settle in, and wait to handle it until it eats regularly. Support the body with both hands, and never grab the tail. The snake is large and heavy and must be supported when lifted.

The species must not be kept together with other snakes. Two animals are only put together for breeding.

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

Breeding

SEXUAL MATURITY AND SEXING

The sexes are hard to tell apart from the outside in young, and sexing with a probe must be carried out by an experienced person or a vet. Females are larger and sturdier than males. The age at sexual maturity has not been documented; breeding can probably begin when the animals are about four years old and adult. The female must be fully grown and in good feeding condition.

MATING

A winter rest is necessary to get the animals to breed. Feeding stops in late August or early September, and over the following four weeks the snakes get only water while light and heat are lowered. They are then moved to a cool, dark rest at 10-12 °C for three to four months (12-16 weeks) in an unventilated, damp box with damp leaf litter. Check them every three to four

weeks, and then let them warm up slowly in steps over several days. After the rest the faeces are checked for parasites.

Mating follows 35-60 days after the rest. Males do not eat during the mating period, and mating itself lasts three to five hours and is repeated after about five days. The female must have plenty of food afterwards. Several males are not put together.

EGG-LAYING AND CLUTCHES

The female sheds 11-16 days before egg-laying and lays in June and July, about 30-60 days after mating. The clutch is 4-18 eggs, each measuring about 60 × 30 mm. Give the female a laying box with damp vermiculite or sphagnum and an opening she can crawl through. After egg-laying she must have plenty of food.

INCUBATION

The eggs are carefully moved to an incubator without being turned and placed in damp vermiculite with high humidity. At about 28 °C they hatch after 55-65 days, typically about 60 days. Temperatures between 27 and 30 °C result in hatching.

Read more: Incubating eggs

REARING THE YOUNG

Newly hatched young are 25-35 cm long, and most take small mice after the first shed, 5-7 days after hatching. Keep them singly in small, secure boxes with a warm section of about 28 °C, a hide and a water bowl. Some young will only eat after a winter rest, and they must not be force-fed. The young grow quickly.

Health and common mistakes

Elaphe quatuorlineata is hardy, and most problems are caused by incorrect heat, humidity or feeding. The typical mistakes are:

- Obesity from feeding too often. Weigh the snake regularly.
- Respiratory infection with a runny nose, wheezing breathing and an open mouth. It is often caused by air that is too humid, poor ventilation or too low a temperature.
- Poor shedding with retained skin on the eye caps and tail tip when the air is too dry.
- Mites, especially in newly acquired animals. Treat at the first sign.
- Internal parasites, especially in wild-caught animals. Hand in a faecal sample at a vet.
- Salmonella from raw eggs. Wash and freeze the eggs, and wash your hands after feeding.

Contact a vet with experience in reptiles if the snake loses weight, has breathing problems or will not eat outside the winter rest.

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.