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LACERTIDS

Iberian Emerald Lizard

Lacerta schreiberi

Lacerta schreiberi is a robust, green, diurnal lizard from mountain woodland, streams and rocky ground in north-western and central Spain and Portugal. It grows to 40 cm, the male develops a deep blue throat in the breeding season, and it does best in an outdoor enclosure with sun, cool nights and a cold winter rest.

Family: Lacertidae Former name: *Lacerta viridis schreiberi*

KEY FACTS

THE ANIMAL

Adult size	**25-40 cm** total length incl. tail
Lifespan	**8-12 years**
Active	**By day**
Lifestyle	**Rock-dwelling and terrestrial**
Habitat	**Rocky terrain and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**150 × 80 × 100 cm** L × W × H for 2 adults
Temperature, day	**22-30 °C**
Basking spot	**38-45 °C**
Temperature, night	**12-17 °C**
Humidity	**40-60%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Winter rest	**4-6 °C** 12-16 weeks
Diet	**Insects**
Kept	**In pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**6-28 eggs**
Clutches per year	**1**
Incubation	**37-50 days** at 28 °C

PROTECTION AND PAPERWORK

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

About the species

Lacerta schreiberi is a large, sturdy lizard that belongs to the green collared lizards together with *Lacerta viridis* and *Lacerta agilis*. It reaches up to 40 cm in total, but most animals are considerably smaller. The body measures about 14 cm from snout to vent, and the rest is tail.

The male is green with a fine network of black spots, which on the back are almost always larger than on the flanks, and has a brown tail. The belly is spotted. In the breeding season the male gets a deep blue throat and a blue head, but the colour fades quickly once mating is over. Unlike in *L. viridis*, the blue on the throat does not reach all the way to the collar. The female is green or completely brown with large black spots lying close together in longitudinal rows, and with few spots or none on the belly. As in all lizards of this kind, the male has a larger head, stronger femoral pores and a broader tail base than the female. The female has a longer body.

Young animals are greenish brown with white or yellow, dark-edged spots on the flanks. In females the spots can persist through the first years, and pale spots between the eyes and on the upper jaw stay visible longer in the female than in the male. The sex can only be determined reliably after a few months, and the head scales say nothing reliable about sex. The species has eight rows of ventral scales, whereas *L. viridis* has six.

The species can hybridise with *L. viridis* in captivity. Two body types are known in captivity: a slender type with a narrow head and a compact type with a short, thick head. The animals are shy, but get used to fixed routines and to people nearby.

Distribution and habitat

Lacerta schreiberi lives only on the Iberian Peninsula, in north-western and central Spain and in northern and central Portugal. It occurs from Asturias and Galicia through Cantabria and the Central System to the Serra da Estrela and Peneda-Gerês National Park in Portugal.

Most localities lie at 800-1800 m, but the species is also found below 450 m in Peneda-Gerês. Populations are patchy and often not connected.

> **Native range:** Spain and Portugal.

HABITAT

Lacerta schreiberi lives on rocky, densely vegetated slopes in temperate woodland, scrub and grassland, preferably near small streams and watercourses. Most localities lie at 800-1800 m, where summers are warm and winters cold. The animals bask on rocks, walls and tree trunks and often climb into bushes to reach basking spots. By streams they are seen on bare rock close to the water.

The species is not tied to water. It also occurs in dry oak woodland with leaf litter on the ground and on sun-exposed walls far from water. The species needs a certain humidity, but not open water. *Psammodromus algirus*, *Podarcis hispanica*, *Podarcis bocagei*, *Podarcis muralis* and *Timon lepidus* live in the same places.

The males emerge from the winter rest first, on sunny days in late winter, and the females follow a few weeks later. In summer the animals often retreat into hiding for long periods, especially the females, and are seen again in autumn. The young hatch in July-August. The winter quarters are a crevice or a hole in the ground or between rocks.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Lacerta schreiberi does best in an outdoor enclosure in full sun, where the animal gets natural light, cool nights, fresh air and a natural annual cycle. This is by far the safest way to keep it, and the animals are less often ill outdoors. The enclosure should face south and have a sloping back wall so that sun-facing slopes form. An outdoor enclosure for one male and one or two females should have a floor area of at least 150 × 80 cm, preferably 200 × 100 cm, and a height of 70-120 cm. The glass can be removed completely or partly in summer. The floor is hard, with hollows for plants and for egg-laying and with good drainage so that rainwater does not collect.

Furnish with gravel, rock piles and branches, and plant lavender, thyme, marjoram, bay and ivy. The plants need heavy pruning several times a year. For the female, dig a hollow of about 10 cm in the sun, filled with a mixture of peat, soil and sand and covered with flat stones. The female digs and lays her eggs there. The winter quarters are buried pipes or buckets at about 40 cm depth with peat and bark, closed at one end so that groundwater cannot get in, and with a rough surface inside. In frosts below -10 °C, cover with 20 cm of straw, hay or leaves.

Indoors, a pair needs at least 150 × 80 × 100 cm, and one male with two females at least 200 × 80 × 100 cm. A larger enclosure is better, because several climate zones can be arranged in different corners. The floor should be dry and quick-drying, of sand mixed with raw soil and stones, and avoid dense planting, because damp gives mites and ticks good conditions. A buried tray with peat or leaves under a stone or a piece of cork provides a damp corner. The lid must be secure and give strong ventilation. Do not move the animals unless necessary: disturbance upsets mating.

TEMPERATURE

Lacerta schreiberi comes from mountains where the days are warm and the nights cool. By day the enclosure should be 22-30 °C with 38-45 °C at the basking spot, and at night the temperature should fall to 12-17 °C. There are no measurements for the species, so the temperatures, the UVB zone and the winter rest temperature are borrowed from *Lacerta agilis*. Use a halogen spot or a metal halide lamp, and place stones under the heat so that they store it. The animal must always be able to retreat into shade or cool burrows, and it does so in the hottest hours. In an outdoor enclosure or a greenhouse the temperature in sunshine can easily exceed 40 °C.

The winter rest is essential for breeding and for the animal's rhythm. Outdoors, the animals spend a north European winter in the buried winter burrows, from autumn until February-March. Keep burrows and boxes frost-free, and cover them in cold spells. On sunny days at the end of winter the animals can wake too early, stay out at night and freeze to death. Drive them back into the burrow in the evening, or make sure it lies in shade.

Indoors, light and heat are reduced over a couple of weeks, and the animal rests for 12-16 weeks at 4-6 °C in a box with damp leaves or peat. Only healthy, well-fed animals are given a winter rest; young and sick animals are kept awake. Young animals kept warm over winter grow faster and mature earlier, but this upsets the animal's biological rhythm and is not recommended.

Read more: Lighting and UVB Read more: Heat and temperature

HUMIDITY AND WATER

Lacerta schreiberi needs a certain humidity, but not wet surroundings. The humidity in the enclosure should be 40-60 %. Good ventilation and a floor that dries quickly matter more than high humidity, because damp and dense plants give mites and ticks good conditions. Still, provide one damp corner: a buried tray with peat or leaves, covered with a stone or a piece of cork.

The animals drink often and a lot, especially after the winter rest. Fresh drinking water must always be available in shallow dishes, and the water is changed daily if possible. Mist the enclosure lightly in the morning in warm weather so that the animals can drink droplets. Vitamins A and D3 are added to the drinking water. In early spring, while an outdoor enclosure or greenhouse is still closed, mist with vitamin water, because otherwise the animals drink condensation, which contains no vitamins.

Read more: Calcium, vitamins and supplements

LIGHTING AND UVB

Lacerta schreiberi basks for large parts of the day and needs strong light and UVB. Outdoors, UVB comes from the sun, and an enclosure with glass at the front must be opened in summer, because glass blocks UVB. Indoors, use T5-HO tubes with UVB at about Ferguson zone 2 over the basking spot, so that light, heat and UVB cover the same area. Measure with a UV meter, and replace the tubes according to the manufacturer's instructions. The zone is borrowed from *Lacerta agilis*.

Daylength follows the season: about 14 hours in summer, falling to 8-10 hours in autumn, so that the animals fall into rhythm with the winter rest. For young animals, a 25 W spot above the enclosure and 12 hours of light a day can be used.

FEEDING

Lacerta schreiberi is an insectivore. In an outdoor enclosure a large part of the food arrives by itself: snails, spiders, woodlice and flying insects. In addition, give mealworms, crickets, grasshoppers and waxworms. The mealworms are fed wheat germ, dog food and a calcium supplement before they are given to the lizards. Crickets escape quickly and only reappear at night, so they are less suitable as the main food. The species also takes small lizards if it gets the chance.

Dust the food with calcium and a vitamin supplement with D3; for animals without sun or UVB, more often. Extra calcium comes from crushed eggshell or cuttlebone, left out in the enclosure. Vitamins A and D3 are added to the drinking water. Vitamin A strengthens resistance to infections and eye disorders and is good for the skin. Females need plenty of food before and after egg-laying, because they are emaciated afterwards.

Adults are fed daily in the active season. The animals eat little in the weeks after the winter rest, but drink a lot. In autumn they are fattened up before the winter rest, and the last meal is given about three weeks before cooling.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Lacerta schreiberi is a solitary species outside the breeding season. Males are incompatible with each other, and two males in the same enclosure end up fighting. Keep only one male. Females can be kept together in a spacious enclosure, but they can be aggressive towards each other, especially gravid females. Two females is the maximum, and one female is best. Keep an

eye on the animals, and provide many hiding places so that the weaker female can retreat.

Small lizards of other species can be bitten and lose their tails, so the species is not kept with them. The animal is shy and quick and flees into hiding or bushes when startled. It is an animal for observation, not for handling. The animals get used to fixed feeding and to people moving about near the enclosure, and become tame in time. Avoid grabbing the animal, because the tail is shed under stress.

Breeding

SEXUAL MATURITY AND SEXING

The male has a larger and broader head, stronger femoral pores, a broader tail base and a finer net of black spots. The female has larger, more continuous spots on the back and a longer body. The belly is spotted in the male and faintly spotted or unspotted in the female. In young animals the sex can only be seen after a few months. Look at the tail base and femoral pores and at whether there are light spots between the eyes and on the upper jaw, which stay visible longer in the female. The scales of the head are not used.

The animals are fully grown before they are put to breed. The age of sexual maturity is not documented.

MATING

Mating follows the winter rest. The males wake first, in February-March depending on the weather, and the females follow a couple of weeks to a month later. In the first weeks after the winter rest the animals are calm, bask, drink a lot and eat little. After the first shed the male gets a deep blue throat and a blue head and rarely leaves the female's side. He crawls over her and nudges her flanks with his head, and she answers by drumming with her legs and wriggling her tail. If she is not willing to mate, she tries to drive him off by biting. If the male has several females, he often prefers one, but also mates with the others.

Mating subsides in May or early June, and the males quickly lose their strong colours. Place only one male with one or two females, and separate the animals if a female is wounded.

EGG-LAYING AND CLUTCHES

The female lays one clutch a year, in May-June, most often late in the evening or at night. A clutch holds 6-28 eggs, and younger females lay fewer than older ones. The eggs are laid in the filled hollow, and the female buries them under the stone. The female shows a degree of parental care: she may attack when the eggs are removed, and often spends several days trying to rebuild the nest site.

Dig up the eggs as soon as they are laid. In rainy weather the eggs can get fungus and rot, and in warm weather they dry out. Predators also take eggs.

INCUBATION

The eggs are lifted carefully and not turned. Do not clean them, and only separate them if they are stuck together and can be parted without bursting. Fertile eggs are firm and plump with few dents, and a pinkish hue is a sure sign that they are fertile.

The eggs are placed in a plastic container with parts of the base cut out, and the container is placed in an outer container with a layer of water (about 2 mm) and a substrate that is permeable to water and releases no toxins, for example filter material from an air filter. On top go polystyrene sheets with hollows in which the eggs are placed with a little substrate. The lid has ventilation holes so that the eggs do not touch the water. The container stands in an incubator that holds 28 °C. At 28 °C the eggs hatch after 37-50 days. The hatching time can vary greatly within the same clutch. The young hatch in July-August.

Read more: Incubating eggs

REARING THE YOUNG

The young are moved to an indoor glass enclosure with sand mixed with garden soil and a few flat stones as soon as they have hatched. Keep them as dry as possible, with a dish of drinking water as the only wet spot, because mites and ticks do not thrive in dry surroundings. A 25 W spot heats the enclosure, and daylength is 12 hours.

Food is small crickets, buffalo worms and aphids, dusted with calcium, and after a few weeks also freshly moulted mealworms. The drinking water is supplemented with vitamins. The young can bite the tips off each other's tails, so provide tufts of dry grass to hide in. When they are half grown, they are moved outdoors or to a large indoor enclosure. A winter rest

is the natural thing for half-grown and adult animals, but carries a risk of losses; young animals can instead be kept warm if there are only a few.

Health and common mistakes

The animals are hardy, but these problems are the most common:

- Mites and ticks, especially with high humidity and dense planting. Keep the floor dry, and examine the animal regularly. Ants in outdoor enclosures eat mites.
- Vitamin deficiency and metabolic bone disease from a lack of UVB, calcium and vitamins A and D3. Dust the food, and add vitamins to the drinking water.
- Overheating in a closed enclosure or greenhouse without shade. Always provide cool places.
- Deaths during the winter rest: animals that wake too early and freeze, or sick, thin animals that do not survive the rest. Keep sick and thin animals awake and fed.
- Loss of the tail through stress or fights. It only partly regrows.
- Eggs that rot or dry out. Dig up the eggs quickly.

A healthy animal has clear eyes, a plump tail and a good appetite. See a vet with reptile experience if the animal does not eat, loses weight or is lethargic.

Read more: Common diseases and signs of illness

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.