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LACERTIDS

Common Wall Lizard

Podarcis muralis

Podarcis muralis is a slender, fast, diurnal lizard that climbs on rocks, walls and cliff faces across large parts of southern and central Europe. It reaches 15-23 cm including the tail and feeds on insects and other small animals. The species needs sun, UVB, a roomy enclosure with rock structure and a cold brumation, and it does best with an outdoor summer enclosure.

Family: Lacertidae

KEY FACTS

THE ANIMAL

Adult size	**15-23 cm** total length incl. tail
Lifespan	**5-10 years**
Active	**By day**
Lifestyle	**Rock-dwelling and terrestrial**
Habitat	**Rocky terrain and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**100 × 50 × 50 cm** L × W × H for 2 adults
Temperature, day	**22-30 °C**
Basking spot	**40-45 °C**
Temperature, night	**14-18 °C**
Humidity	**40-60%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 3
Winter rest	**4-6 °C** 8-16 weeks
Diet	**Insects and small invertebrates (springtails, fruit flies)**
Kept	**In pairs or one male with several females**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**12-48 months**
Clutch size	**2-12 eggs**
Clutches per year	**2-3**
Incubation	**35-45 days** at 26-28 °C

PROTECTION AND PAPERWORK

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

About the species

Podarcis muralis is a slender, flat-headed lizard with a long, thin tail. The body (snout to vent) reaches up to about 8 cm, and with the tail adults are typically 15-23 cm. The tail makes up about two thirds of the length. The males are normally larger and have a broader head than the females. The young are 5-6 cm long at hatching and weigh less than half a gram.

The markings vary greatly. The upper side is sandy brown, grey or reddish brown with a faint longitudinal band on the back. In the males the band is bordered at the sides by a dark reticulated pattern, often with small blue or rust-brown spots on the flanks. The females are more uniformly ochre to brown and often have pale longitudinal stripes. The underside is white, yellow or orange, often with black spots, and the different colour forms occur side by side in the same populations.

The taxonomy is complicated. A large number of subspecies and local forms have been described, and genetic studies show several deep lineages within what is called *Podarcis muralis*. Animals from different areas should therefore not be mixed in breeding and must never be released. The species has been introduced to, among other places, England, Poland and North America.

The species name *muralis* means "of walls" and suits the species' habit of basking and seeking shelter on walls and stone piles. The temperament is lively and shy. The animals flee quickly, and handling is a strain on them. The tail can be shed when the animal is threatened and grows back, but with a rod of cartilage instead of vertebrae. The species is suited to observation, not to being picked up. Wild-caught lizards are not suitable for enclosures, because they often carry parasites.

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

Distribution and habitat

Podarcis muralis has one of the largest ranges of any European lizard. It lives from northern Spain and France across Belgium, Luxembourg, Switzerland, Liechtenstein, south-eastern Netherlands and western Germany to Italy, Austria, the Czech Republic, Slovakia, Hungary and Romania. In the south it is found in the Balkans from Slovenia and Croatia to Serbia, Bosnia and Herzegovina, Montenegro, North Macedonia, Albania, Bulgaria and Greece (including Corfu and Samothrace), and in the east in Ukraine and north-western Turkey. It is also found on Elba and other small Italian islands.

The northernmost populations live in the Netherlands, Belgium and Germany, many of them in warm places such as railway embankments, vineyards and quarries. Introduced populations occur in, among other places, southern England, Poland, Ohio and Kentucky and British Columbia, but they are not part of the species' native range and are not shown on the map.

> **Native range:** Spain, France, Belgium, Netherlands, Luxembourg, Germany, Switzerland, Liechtenstein, Austria, Czechia, Slovakia, Hungary, Romania, Italy, Slovenia, Croatia, Bosnia & Herzegovina, Serbia, Montenegro, North Macedonia, Albania, Bulgaria, Greece, Turkey and Ukraine.

HABITAT

Podarcis muralis lives where there is sun and stone: rocky slopes, stone piles, dry-stone walls, railway embankments, gravel pits, vineyards, ruins and gardens with masonry. It follows humans more than most lizards and is often found in the middle of towns and villages. In the mountains of southern Europe it goes high up, while in the north it keeps to the warmest, south-facing places.

The species is diurnal and basks in the morning on open rocks and walls. Active animals in the wild have a body temperature of about 28-36 °C, and populations from central and eastern Europe prefer 29-33 °C when they can choose for themselves. When the sun is strong, the animals retreat into crevices, and they use the same crevices as shelter from predators and at night. The climate is temperate with warm summers and cold winters. The animals are active from March-April to September-October and overwinter for several months in frost-free crevices, caves and under stones. Humidity is moderate: the stones dry quickly, but the animals seek shade and damp crevices in high heat.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

An ordinary small glass enclosure is too small for *Podarcis muralis*. A pair needs at least 100 × 50 × 50 cm, and each extra female needs about 20 cm more in length. Better still is an outdoor summer enclosure or a mesh cage in a sunny garden from May to September, where the animals get natural light and temperature swings. In a cool climate a covered section with glass or a small greenhouse gives extra warmth in cool periods, but there must always be a section with mesh, so that the sun reaches the animals directly. The cage must be completely escape-proof (fine wire mesh, covered, with a buried edge) and have both shade and hides, so that the animals do not overheat.

The species climbs and runs, so the enclosure must be longer than it is tall and full of vertical and sloping surfaces: stacked slate slabs, cork, roots and a rock background with crevices the animals can hide in. All hides must be able to dry out. The substrate is a mixture of sand and a little soil, so that the animals can dig, and plants such as heather, herbs and ivy give

cover. Ventilation must be ample, preferably from both bottom and top, because stagnant, damp air causes disease. The males are territorial and can injure each other, so keep only one male per enclosure. Egg-laying females need a deep, slightly moist sand substrate (at least 10 cm) or a pot of moist sand to dig in.

TEMPERATURE

The gradient is the most important thing. The basking spot must be 40-45 °C at the surface, measured with an infrared thermometer, and the rest of the enclosure 22-30 °C by day. The animals can then warm themselves up to the body temperature of about 30-36 °C they seek. Use a spotlight over a flat stone or a piece of cork, and let the animals choose between sun and shade.

At night the temperature must fall to 14-18 °C. In summer, when the animals are outdoors, they follow the weather, and that is an advantage. Strong sun can produce over 35 °C in a closed cage, so shade and ventilation are necessary. Warning signs are animals that gape, lie flat with the mouth open or hide all day (too hot), and animals that do not come out until late morning (too cold).

Brumation is necessary: the females' eggs only mature after a cold period below about 5 °C. From September-October light and heat are wound down over a couple of weeks. Feeding stops, but the animals are kept above 13 °C for at least two weeks after the last meal, so that the gut is empty before the temperature is lowered to 4-6 °C. The animals rest for 8-16 weeks in a dark, ventilated box with a layer of sand and soil, flat stones and slightly moist leaf litter and moss, so that they can bury themselves. The substrate must not go mouldy. At 8 °C the animals become restless and active, and frost is life-threatening, so a refrigerator without a freezer compartment or a cold, frost-free cellar with two thermometers is the safest. Waking is gradual over 1-2 weeks with rising temperature and day length. Only healthy animals in good condition are brumated. See also the theme on brumation.

Read more: Heat and temperature Read more: Brumation and the seasons

HUMIDITY AND WATER

Humidity must be moderate: 40-60 % by day and preferably higher at night in the hides where the animals sleep. The enclosure must dry out completely during the day. A persistently damp enclosure causes skin problems and fungal infections, while a completely dry one causes problems with shedding and thirsty animals.

The animals drink droplets from plants and stones, so mist lightly with water once a day, early, so that everything is dry by evening. Also provide a shallow water dish, which is kept clean. Egg-laying females and young need a moister corner, so keep part of the substrate slightly moist without making the whole enclosure damp.

LIGHTING AND UVB

Podarcis muralis is diurnal and loves the sun. The enclosure needs a powerful heat spot and UVB light. The species belongs to Ferguson zone 3 (UV index about 3-5 at the basking spot), and a T8 tube with 10 % UVB about 30 cm above the animals is a good solution. Supplement with a daylight tube or an LED lamp for the rest of the enclosure. The lamp must be placed so that the animals can approach it but not come closer than the manufacturer's instructions allow.

Day length follows the season: about 10 hours in spring and autumn and up to 14 hours in midsummer. In October the lighting is reduced before brumation. Replace UVB tubes according to the manufacturer's instructions, typically every year. Outdoors the sun provides natural UV light, but glass and acrylic block UVB, so sunbathing must take place through mesh and not through panes.

Read more: Lighting and UVB

FEEDING

Podarcis muralis is an insectivore. The food is small live insects and other small animals: crickets, grasshoppers, flies, fruit flies, mealworms in small amounts, spiders, woodlice and worms. Meadow plankton (swept on an unsprayed meadow) is a good variation. The feeder insects must be small: at most the size of the distance between the animal's eyes. The species eats fruit only very rarely.

Adults are fed every other day with as much as they eat in 10-15 minutes. Young are fed daily with very small animals such as fruit flies, small crickets and springtails. Dust the food lightly with calcium at most feedings and with a supplement containing D3 once every 1-2 weeks. The supplement is especially important for females in the egg-laying season and for growing young. Do not give wild-caught feeder animals if they may have been sprayed.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Podarcis muralis is fast, shy and territorial. The males mark territory with body language and scent trails, and two males in the same enclosure fight until the weaker one becomes stressed, loses weight or gets bite wounds. Keep a pair, or one male with two to four females in a large enclosure. The females tolerate each other when there are plenty of hides and basking spots.

The animals should not be picked up. They flee and shed the tail under stress or capture. If an animal has to be moved, it is caught in a transparent container, not by hand. A large, well-furnished enclosure with many hides makes the animals more visible, because they feel safe, and they get used to being fed from tweezers. Signs of stress are constant hiding, repeated attempts to escape against the glass and loss of appetite.

Breeding

SEXUAL MATURITY AND SEXING

The sex is easy to see in adults: the males have a broader head, stronger jaws, larger femoral pores and a more contrasting pattern, while the females are slimmer and more uniform. In the males the tail base is thicker because of the hemipenes. Young cannot be sexed with certainty.

Podarcis muralis becomes sexually mature at 1-4 years of age, depending on climate and growth; in warm areas already after the first year. Breeding should wait until the female is fully grown and in good condition, so that she is not weakened by egg-laying.

MATING

Mating follows brumation, and without a cold brumation the females' eggs do not mature. After brumation the animals are woken slowly over a couple of weeks with rising temperature and day length, and they must be fed generously. The females are receptive 2-3 weeks after they have come out of brumation, and again after the first and second clutch.

The mating season is March to June. The male chases the female, bites her on the tail or flank and holds on during mating, which lasts 3-5 minutes. A male readily mates with several females. The females must be able to withdraw, otherwise they become stressed.

EGG-LAYING AND CLUTCHES

The female lays the eggs about two weeks after mating. The clutch is 2-12 eggs; young, small females lay the fewest, typically 2-5, and the average in most populations is 4-6 eggs. A female typically lays 2-3 clutches in a season.

The female digs a hole in moist sand and covers the eggs. The eggs are 5-7 × 10-12 mm. The enclosure must have at least 10 cm of slightly moist sand or a pot of moist sand where the female can dig, and females that do not find a suitable place may become egg-bound. Signs of egg binding are a female that is distinctly swollen, lethargic and not eating, and she must then see a vet.

Read more: Common diseases and signs of illness

INCUBATION

Carefully dig up the eggs and place them in a closed container with moist coconut fibre (1 part coconut to 2 parts water by weight) or moist vermiculite and a lid with small holes. Mark the top of the eggs, and do not turn them. The eggs must not lie in water.

At 28 °C the eggs hatch after 35-40 days, and at a lower temperature it takes longer. Eggs left in a warm enclosure and misted lightly every day can also hatch after 35-37 days, but in an incubator the temperature and humidity are easier to control. The eggs take up water and swell along the way; this is a good sign.

Read more: Incubating eggs

REARING THE YOUNG

The young are 5-6 cm at hatching and weigh about 0.4 g. They must go straight into an enclosure of their own, because the adults eat young. An enclosure of 55 × 40 × 30 cm with hides, a basking spot and UVB suits a clutch for the first few months, and young of the same age can go together. The substrate is moist at one end and dry at the other.

First foods are fruit flies, springtails, meadow plankton, small spiders and very small crickets, later small grasshoppers and woodlice. Feed daily, dust with calcium, and provide strong UVB light, so that metabolic bone disease does not develop. The young grow quickly. Small or weak young should not be brumated in their first year, but kept awake and fed.

Health and common mistakes

Most problems are caused by too little heat, too little UVB or an enclosure that is too damp. The typical problems are:

- Metabolic bone disease from too little UVB and calcium. The animals become lethargic and have soft jaws and deformed legs.
- Mites on the skin and in the corners of the eyes. Mites are treated by a vet, and all new animals must be quarantined.
- Intestinal worms and other parasites, especially in wild-caught animals. A faecal sample at the vet reveals them.
- Egg binding in females that have no suitable place to lay eggs.
- Shedding problems and fungal infections from persistent damp.
- Bite wounds and lost tails from stress and fights between males.
- Injuries during brumation: a brumation that is too warm gives active, weakened animals, and frost is life-threatening.

If an animal does not eat for more than a week outside brumation, is lethargic, swollen or has difficulty using its legs, it must see a vet with reptile experience. Brumation is a strain, and only healthy animals in good condition may be brumated.

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.