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ANGUIDS

Slow Worm

Anguis fragilis

Anguis fragilis is a legless, glossy lizard of 40-50 cm that lives hidden under stones, wood and dense vegetation in western and central Europe. It looks like a snake, but has eyelids and can shed its tail. It feeds on slugs and earthworms, gives birth to live young and can live to a great age. It needs a cool, humid enclosure or outdoor set-up with a deep substrate, many hiding places and a proper brumation.

Family: Anguidae

KEY FACTS

THE ANIMAL

Adult size	**40-50 cm** total length incl. tail
Weight	**20-100 g**
Lifespan	**20-30 years**
Active	**By day and at dusk**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**80 × 40 × 40 cm** L × W × H for 2 adults
Temperature, day	**18-24 °C**
Basking spot	**25-30 °C**
Temperature, night	**10-15 °C**
Humidity	**60-80%**
Water	**Water dish**
UVB	**Optional**
Winter rest	**4-8 °C** 16-20 weeks
Diet	**Insects and worms/snails**
Kept	**In pairs or one male with several females**

BREEDING

Reproduction	**Live-bearing**
Sexually mature	**36-48 months**
Litter size	**6-12 young**
Clutches per year	**1**
Gestation	**80-100 days**

PROTECTION AND PAPERWORK

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

About the species

Anguis fragilis is a smooth, legless lizard in the family Anguidae. The body is tubular and stiff, because the scales have small bony plates beneath them, and there is no distinct neck. The scales are small, smooth and overlap like roof tiles, and the skin has a glossy, almost metallic sheen. The tail continues smoothly from the body and is as long as the body or longer.

Adults are typically 40-45 cm long, and a few exceed 50 cm. The weight is 20-100 g. The species is told from snakes by the eyelids, the small scales on the belly, the broad, slightly notched tongue and the stiffer movements; in the hand it feels hard and rigid. Males are uniformly grey, brown, reddish or copper-coloured, some with blue spots, and have a larger head than females. Females usually have a dark stripe down the back and dark flanks. Juveniles are silvery grey to golden yellow above with a black midline and jet-black flanks and belly.

Anguis fragilis can shed its tail when a predator grabs it. The tail keeps writhing for a while and distracts the attack, but it regrows only as a short stump. The species lives to a great age for a lizard: about 30 years in the wild, and more than 50 years has been recorded in captivity.

The species was formerly regarded as a single species ranging over most of Europe, but is today split into five. *Anguis fragilis* in the narrow sense lives in western and central Europe and in the north-western Balkans. *Anguis colchica* replaces it to the east, *Anguis veronensis* lives in Italy, and *Anguis graeca* and *Anguis cephallonica* in Greece. The species look very much alike, so animals of unknown origin may belong to one of the close relatives.

Distribution and habitat

Anguis fragilis lives from northern Spain and Portugal across France, Great Britain, the Benelux countries and large parts of central Europe to the south coast of Norway and Sweden. To the south-east it reaches across the Alps to the north-western and central Balkans, from Slovenia along the Dinaric Alps to North Macedonia. In Denmark it is found in most of the country.

To the east it is replaced by *Anguis colchica*. The boundary is not sharp: from the Gulf of Gdańsk to north-eastern Greece there is a broad zone where the two species meet and can hybridise, including in Poland, the Czech Republic and Slovakia.

> **Native range:** Norway, Sweden, Denmark, United Kingdom, Netherlands, Belgium, Luxembourg, Germany, France, Spain, Portugal, Switzerland, Liechtenstein, Austria, Czechia, Poland, Slovenia, Croatia, Bosnia & Herzegovina, Montenegro, Serbia and North Macedonia.

HABITAT

Anguis fragilis lives hidden and half buried. It is found at woodland edges and in open woodland, on heaths, dry grassland and in bogs, on railway embankments and in semi-natural gardens, especially where there is dense vegetation, fallen tree trunks, stones and compost heaps to hide under. It prefers places with damp soil and a dense mosaic of basking spots and cover.

The species rarely basks in the open. Instead it lies under stones, bark and other objects that the sun has warmed. Pregnant females need a higher body temperature and lie in direct sun in late summer. Active animals have a body temperature of about 22-26 °C. The animals are most often out in the morning, at dusk and after rain, when slugs and earthworms are about.

In winter the animals lie dormant in frost-free holes in the ground, mouse runs and cavities under tree roots, often several together and together with other reptiles and amphibians. Dormancy lasts from mid-October or early November to late March or April.

Read more: Brumation and the seasons

Care

THE ENCLOSURE

Care of *Anguis fragilis* is only sparsely documented, but the species is hardy and breeds readily when conditions are right. The figures here are based on the species' way of life and climate. The species does best outdoors in a secure enclosure or a cold greenhouse with good ventilation, where it follows the seasons. An outdoor enclosure needs at least 50 cm of loose soil, so that the animals can dig down below the frost line, and must be covered with netting against cats and birds.

Indoors, a pair needs an enclosure of at least 80 × 40 × 40 cm, and a male with two or three females at least 100 × 50 × 40 cm. The substrate must be at least 10 cm deep, loose and slightly damp, for example garden soil or forest soil mixed with leaf litter, and the top is covered with moss. The animals quickly dig a network of tunnels. Lay flat hides directly on the substrate: bark, flat stones, cork sheets and boards that the animal can lie under. There must be hides in both the warm and the cool end, and the substrate under several of them must be slightly damp.

The enclosure must have tight corners and a tight lid, because a slender, legless lizard escapes through very small gaps. Ventilation must be good. Remove food remains and droppings regularly, and change the substrate as needed.

TEMPERATURE

The species does not tolerate strong heat. The daytime temperature should be 18-24 °C. Under a flat stone or a piece of slate that a lamp heats, there can be a warm spot of 25-30 °C, so that the animal can warm itself indirectly, as it does in the wild. Active animals in the wild maintain a body temperature of about 22-26 °C. The animal must always be able to choose between

warm and cool. At night the temperature falls to 10-15 °C, and the heat is switched off. An enclosure in direct sun behind glass quickly becomes too hot.

Brumation is a fixed part of the annual cycle and a prerequisite for breeding. The animals become sluggish and stop eating in late October. Stop feeding about two weeks before brumation, and lower temperature and day length gradually, so that the gut is empty. Then keep the animals at 4-8 °C for 16-20 weeks in loose, slightly damp soil with moss, ideally several together. The temperature must never reach freezing point. In an outdoor enclosure with deep soil the animals manage brumation themselves. From mid-March the temperature is raised over a few days. It can take one to two weeks before the animals start to eat, and drinking water is particularly important during that period. Sick and underweight animals should not be brumated.

HUMIDITY AND WATER

Humidity should be 60-80 %. The substrate should be slightly damp at depth, but never wet, and the top layer may dry out a little between mistings. Mist lightly every day or every other day, and keep the moss damp. The animal must be able to choose between damp and dry places, and the air must change, so that mould does not grow.

A shallow, stable water bowl with fresh water should stand in the enclosure at all times. The animals also drink droplets from moss and leaves. Change the water often. A substrate that is wet all the time causes skin problems and mould.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is most active in the morning and at dusk and mostly basks indirectly. UVB is therefore not necessary, but a weak UVB tube (Ferguson zone 1) over one end gives the animal the option, as long as there are many hides. This is an estimate. In an outdoor enclosure the animals get natural daylight.

Light and heat are on for 12-14 hours in summer and reduced to 8-10 hours in autumn, so that the animals follow the seasons. A timer makes this easy.

Read more: Lighting and UVB

FEEDING

Anguis fragilis feeds on slow-moving prey and prefers small grey field slugs above all else. It also takes other slugs, earthworms, leatherjackets, maggots, spiders and small snails. Some animals eat mealworms, others refuse them. The species finds its food by smell and takes it best when it moves.

Slugs and earthworms must come from places free of slug pellets and fertiliser. Sprinkle the food with a multivitamin and calcium powder now and then. Feed adults 2-3 times a week with the amount they eat in a short time, and remove leftovers. Tweezers or a shallow dish prevent the animal from swallowing substrate.

A healthy animal stops eating for a few days before shedding and starts again afterwards. If the animal does not eat for a longer period outside brumation, or loses weight, it should see a vet.

Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Anguis fragilis is calm and spends most of its time in the substrate or under cover, often with only the head sticking up. New animals writhe violently when picked up, but quickly calm down and coil around your fingers to hold on. Never lift the animal by the tail, because it is shed easily. The animal almost never bites and is not venomous.

The species is not territorial outside the breeding season, but males fight in spring and can inflict serious wounds on each other in an enclosure. Keep one male with one or more females, or separate the males during the breeding season. The species can share a large, humid enclosure with peaceful small lizards of the same size, but the simplest approach is to keep it alone. Like all reptiles it can carry salmonella, so wash your hands after contact with the animals, the enclosure and the food.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

The sexes are told apart by colour in adults: males are uniformly coloured, some with blue spots, and have a larger head, whereas females usually have a dark dorsal stripe and dark flanks. Sex cannot be determined in juveniles. The species becomes sexually mature at 3-4 years of age. Breed only fully grown animals in good condition, and only after a brumation.

MATING

Mating takes place in spring after brumation, most often in May and overall from late April to June. Males fight over the females, and during mating the male bites into the female's neck. The female may get bite marks. Breeding is not difficult when the animals have had a proper brumation. Keep watch on the animals, and separate them if the female is injured.

EGG-LAYING AND CLUTCHES

The species gives birth to live young. Gestation lasts about three months, and the young are born from late July to September or early October, depending on the warmth of the summer. A litter is typically 6-12 young, but can be 2-28, and large females have more. The female usually gives birth only every other year.

Pregnant females need a warmer spot and like to lie basking. Move the female to a separate enclosure furnished like the main one when she is clearly pregnant, so that she can give birth undisturbed by the males. Provide plenty of food and fresh water.

INCUBATION

There are no eggs to incubate. The young develop inside the female's body and are born in a thin, transparent membrane, which they break straight away or after a few minutes. The female's body temperature governs development, so she must have access to a warm spot throughout gestation. The gestation of about three months is the figure in the specification box.

REARING THE YOUNG

Newborn young are 6-9 cm long and weigh a little over half a gram. They are lively and like to dig in loose, warm soil. Keep them apart from the adults in an enclosure with a damp, loose substrate, moss, many small hides and a small warm spot.

Rearing is the difficult part, because the young need very small prey. They prefer tiny field slugs and small earthworms, and small spiders and larvae are also taken, whereas fruit flies, small crickets and small mealworms are often ignored. A handful of compost in the enclosure every day provides many small invertebrates. Therefore raise only a few young at a time. The young grow fastest in their first year and reach about 10 cm from snout to vent, after which they grow slowly. They should brumate from their first winter.

Read more: Feeder animals: keeping and breeding

Health and common mistakes

The species is hardy and long-lived when temperature, humidity and food are right. Little information exists on diseases in captive animals. The typical problems are:

- Overheating if the enclosure stands in the sun or there is no cool hide.
- Dehydration and skin problems if the substrate is too dry or the animal has no damp hide.
- Mould and bacteria in a substrate that is constantly wet.
- Deficiency diseases from a one-sided diet.
- Parasites and mites, especially in new animals. Quarantine new animals.
- Weight loss and death during brumation if the animal was not healthy and in good condition, or if the temperature fluctuates too much.
- Lost tail: it regrows only as a stump, but this is not dangerous in itself.

A healthy animal is glossy, has a firm body and eats. Contact a vet with experience in reptiles if the animal loses weight or stops eating outside brumation.

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.

The full guide with map and updates: herpy.org/en/anguids/anguis-fragilis