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TORTOISES AND TURTLES

Spanish Terrapin

Mauremys leprosa

Mauremys leprosa is a diurnal, semi-aquatic turtle from the Iberian Peninsula, southern France and north-western Africa. The shell is typically 12-18 cm long, and young animals often have clear yellow and red markings. The species tolerates many kinds of water and needs a large, filtered aquarium or a secure outdoor pond with a basking area and UVB.

Family: Geoemydidae Former name: *Emys leprosa; Clemmys leprosa*

KEY FACTS

THE ANIMAL

Adult size	**12-21 cm** total length incl. tail
Lifespan	**20-30 years**
Active	**By day**
Lifestyle	**Semi-aquatic**
Habitat	**Wetland**
Difficulty	**Intermediate**

CARE

Min. enclosure	**120 × 60 × 60 cm** L × W × H for 1 adult
Temperature, day	**22-28 °C**
Basking spot	**30-35 °C**
Temperature, night	**15-20 °C**
Humidity	**50-80%**
Water	**Aquaterrarium** depth 30-35 cm
Water temperature	**20-26 °C**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, complete diet, plants, vertebrates and worms/snails**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**3-16 eggs**
Incubation	**65-75 days** at 27-30 °C

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Not Evaluated (NE)**

About the species

Mauremys leprosa is a small to medium-sized freshwater turtle. The shell (carapace) is oval and low, in young animals often with red to orange markings, while older animals become uniformly green-brown. The neck and head have fine yellow stripes. All measurements in the text are shell length. Most adults are 12-18 cm, and large females can reach about 21 cm. In many wild populations the majority of animals are under 12 cm.

The species name *leprosa* is Latin for "leprous" and probably alludes to the worn, spotted shell that many older animals have.

Two subspecies are recognised: *M. l. leprosa* from Iberia and north-western Africa and *M. l. saharica* from the southern and eastern parts of Morocco, Algeria, Tunisia and Libya. The species emits a foul-smelling secretion when picked up.

The species is calm, loves water and is active by day, and it often basks. In captivity it is not fussy, but it requires a large setup and a filter that can cope with its waste. Lifespan is probably 20-30 years, as in related *Mauremys* species.

Distribution and habitat

Mauremys leprosa lives in the western Mediterranean region: southern and eastern Spain and Portugal, southern France and north-western Africa from Morocco, Algeria and Tunisia to western Libya. *M. l. saharica* occurs furthest south and east. The species is most numerous in the southern half of the Iberian Peninsula. There are also records from Western Sahara and Mauritania, and the species is reported from several countries further south in West Africa, including Niger, Gambia, Benin and possibly Senegal.

The species has been introduced on Mallorca. The map shows only the native range.

> **Native range:** Spain, Portugal, France, Morocco, Algeria, Tunisia, Libya, Mauritania and Western Sahara.

HABITAT

M. leprosa is found in many types of water: fast-flowing mountain streams, deep rock pools by streams, ponds, lakes, canals, irrigation ditches and brackish coastal lagoons. The species tolerates acidic, alkaline and saline water and even heavy pollution, and it is less fussy than many other aquatic turtles.

In spring the water temperature in southern Spanish mountain streams is 12-16 °C, and the water is strongly alkaline (pH around 8). The animals bask on large stones from about 10 o'clock and dive into dense aquatic vegetation at the slightest disturbance. In North Africa many ponds dry out in summer, and the animals then aestivate during the hottest months, when the temperature can reach 47 °C. In the northern parts the species hibernates, while animals in southern Morocco are active all winter.

The diet consists of filamentous algae, aquatic plants and insect larvae, earthworms, snails, tadpoles and small amphibians, and the species readily takes carrion.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Keep the animal in an aquarium, a large tub or a closed outdoor pond, not in an ordinary terrarium. The tank must be at least five times as long as the shell and half as wide as it is long, with the land area counted as part of the floor area. The water must be at least twice as deep as the shell is wide. A box measuring 120 × 60 × 60 cm is the minimum for an adult of up to 21 cm and gives a water section of 80 × 60 cm with 35 cm of water (about 170 litres) and a land section of 40 × 60 cm. A larger setup is always better.

The land section must be large enough for the whole animal to climb completely out of the water and dry completely. Build it as a beach or shelf with a rough ramp and a large, flat stone as a basking spot. The lamp and UVB sit directly over the basking spot. The edge around the land section must be at least 25 cm high. A female needs a box of soil or sand as a laying site.

The species is used to dense aquatic vegetation and dives to hide, so provide cover under water from roots or stones that cannot shift or trap the animal, and let plants grow in the tub if you like. Stones and driftwood must lie stably. Water is heavy: 170 litres weighs 170 kg, so place the setup on a floor that can bear it.

An outdoor pond is suitable in summer. The pond must be completely escape-proof: fencing that goes at least 30 cm into the ground, and netting over the top against predators. The species tolerates a wide temperature range, but it must be brought indoors when the water turns cold in autumn.

Preferably keep one animal. Several males can be aggressive towards each other, and females can be bitten on the face and neck during mating.

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

TEMPERATURE

The surface of the basking spot must be 30-35 °C, measured with an infrared thermometer a couple of hours after the lamps are switched on, and the room air 22-28 °C by day. The heat lamp must sit at the same distance from the basking spot as the UVB tube. The basking spot temperature and the UVB zone are borrowed from related species.

The water must be 20-26 °C. A setup kept all year round in a room or outdoors must not fall below 18 °C in winter, and in summer the water should not get warmer than about 26 °C. Set the water heater to a low temperature, so there is a gradient between the cool water and the hot basking spot, and use a heater with a plastic guard and automatic cut-off.

At night the lamps are switched off, and 15-20 °C is suitable. In the wild the species hibernates in the northern parts, while animals in southern Morocco are active all winter. Temperature and duration for hibernation in captivity are not documented, so hibernation should not be forced. If the animal is kept above 18 °C all winter, it continues to eat and be active.

Read more: Brumation and the seasons

HUMIDITY AND WATER

For a turtle the humidity is the water itself, so the humidity of the air is not decisive; 50-80 % in the room is suitable. What is decisive is the cleanliness of the water and a land section where the animal can dry completely.

The animal passes its faeces in the water, so the water quickly becomes dirty. Use a powerful filter, change part of the water regularly, and remove food remains with a net after feeding. The species tolerates poor water better than many other turtles, but that does not make it healthy: poor water causes shell and skin infections.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water is the animal's living space, so it must be deep and clean. The water must be at least twice as deep as the shell is wide, and 30-35 cm suits adults. The temperature is 20-26 °C (see Temperature).

The species tolerates acidic, alkaline and slightly saline water, but the limit of tolerance is not a target: in captivity the water must be clean, with no measurable ammonia. Choose an external canister filter rated for at least 2-3 times the water volume, which filters both mechanically and biologically. A UV-C filter can keep algae growth down and reduce the number of microbes in the water. Rinse the filter media in water from the tub, not from the tap, so that the bacteria are preserved, and never use soap or chemicals. Connect all electrical equipment near the water to a residual-current device (RCD).

LIGHTING AND UVB

UVB is essential. Use a T5 HO tube with a reflector over the basking spot, so the animal gets UVB when it dries off. The species belongs to Ferguson zone 3, and the UV index at the basking spot must be 3.0-4.0. Elsewhere in the setup the UV index must be lower, so the animal can choose. Follow the tube manufacturer's recommendation for the distance to the animal's back.

Plastic and glass block UVB completely, and dense mesh blocks a large part, so there must be nothing between the tube and the animal. UVB tubes lose strength and must be replaced regularly. UVB gives the animal vitamin D3, which the turtle needs in order to absorb calcium.

The light must be on for 11-13 hours a day. Do not use coloured light at night.

Read more: Calcium, vitamins and supplements

FEEDING

In the wild, *M. leprosa* eats a mixture of plants and animals: filamentous algae, aquatic plants, insect larvae, earthworms, snails, tadpoles and small amphibians, and it readily takes carrion. The turtle eats in the water, so throw the food into the tub.

In captivity the diet can consist of prepared food for aquatic turtles, snails, worms, shrimp, fish and greens. Feed no more than three days a week: more frequent feeding causes too rapid growth and burdens the water. At least one meal a week can be dried food soaked in water with calcium and vitamins. The food soaks up the supplement, so it is not washed off in the water. Greens: dandelion, clover, chickweed, lettuce and duckweed can float in the tub. Juveniles need more animal food than adults, and the animals initially live on insect larvae.

Wash plants from the wild, and use only those that have not been sprayed and are positively identified.

BEHAVIOUR AND HANDLING

M. leprosa is diurnal and shy in the wild: it dives at the slightest disturbance, but curiosity often makes it poke its head up after a moment. Most animals do not like being touched. When handled, the species gives off a foul-smelling secretion. Feed with tweezers, not with the fingers, because the species has a sharp beak.

If the animal has to be lifted, take it from underneath with the palm of your hand and hold the shell with both hands. Wash your hands before and after, and do not let children under 5 handle the animal.

The animal thrives alone. Males can be aggressive towards each other, and females can get serious bites to the face and neck in the mating season, so pairs are kept only in a large set-up with hiding places and under supervision. Do not keep the species together with other species of the genus, because *Mauremys* species hybridise readily.

Breeding

SEXUAL MATURITY AND SEXING

Sexual differences and age or size at sexual maturity are not documented in detail for the species. In general, males in the genus have a longer and thicker tail and a slightly concave plastron, and the female grows larger. In related *Mauremys* species, sexual maturity follows size, not age.

MATING

Mating normally takes place under water, but can also happen on land. The female can get serious bites to the face and neck, so she must be kept under supervision and have room to get away. The season and any need for a cooler period are not documented in detail for captivity.

EGG-LAYING AND CLUTCHES

A female typically lays 5-10 eggs per clutch, slightly more than the closely related *Mauremys caspica*, and large females can lay up to 16. The eggs measure about 36 × 22 mm, and large females lay larger eggs. The number of clutches per year and the interval are not documented. Give the female a box of soil or sand on the land section, even when she is kept alone, so that she has somewhere to dig.

INCUBATION

The eggs are incubated at 27-30 °C and 75-90 % humidity in a substrate with medium to high moisture. At these temperatures they hatch after 65-75 days. Whether the sex depends on temperature is not documented for the species.

REARING THE YOUNG

The young are carnivorous at first and eat mainly insect larvae. Give them water with hiding places, a basking spot and animal food, and switch gradually to prepared food and greens. Juveniles must have a basking spot they can easily climb onto. If several juveniles are kept together, they must be the same size, and all must get food.

Health and common mistakes

Turtles hide illness, so watch for changes. Weigh and measure the animal once a month and keep a log of weight, appetite and behaviour. A sudden weight loss is often the first sign of illness.

Typical problems and mistakes in care: - Poor water quality: causes shell, skin and ear infections. - Shell rot, if the animal cannot get completely out of the water and dry off. - Lack of UVB or calcium: causes bone disease with a soft, deformed shell and lethargy. - Overfeeding: causes too rapid growth and burdens the water. - Parasites: have a faecal sample examined by a vet when the animal is new.

All reptiles can be symptom-free carriers of Salmonella and infect humans. Wash your hands before and after contact with the animal, water and equipment, and do not let children under 5 handle the animal. After a bite, rinse the wound under running water for about five minutes and clean it with mild soap; see a doctor for deep, bleeding or infected wounds.

See a vet with reptile experience if the animal loses weight, does not eat, has its mouth open or seems lethargic.

Read more: Quarantine and hygiene

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/tortoises-and-turtles/mauremys-leprosa