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SALAMANDERS AND NEWTS

Pygmy Marbled Newt

Triturus pygmaeus

Triturus pygmaeus is a newt from the south-western Iberian Peninsula and the smallest species in the genus, at 10-13 cm in total. It is recognised by its green, black-marbled pattern, the thin orange stripe down the back and the pale belly with dark spots. The species is cool-loving and thrives in a cool aquaterrarium with aquatic plants and good hides.

Family: Salamandridae

Mild skin toxins

KEY FACTS

THE ANIMAL

Adult size	**10-13 cm** total length incl. tail
Lifespan	**15-25 years**
Active	**At dusk and at night**
Lifestyle	**Terrestrial and semi-aquatic**
Habitat	**Wetland and temperate woodland and meadow**
Skin toxins	**Mild** Wash your hands after contact and keep your fingers away from your eyes and mouth
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 30 × 30 cm** L × W × H for 2 adults
Temperature, day	**12-20 °C**
Temperature, night	**8-15 °C**
Humidity	**70-95%**
Water	**Aquaterrarium** depth 10-25 cm
UVB	**Not required**
Winter rest	**6-10 °C** 6-10 weeks
Diet	**Insects and worms/snails**
Kept	**In pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Larvae in water**
Egg-laying site	**In water**
Sexually mature	**24-36 months**
Eggs per season	**200-350**
Hatching	**14-21 days** at 12-15 °C
Larval period	**56-70 days** from hatching to metamorphosis
Larval diet	**Small aquatic invertebrates (daphnia, mosquito larvae)**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Near Threatened (NT)**

About the species

Triturus pygmaeus is the smallest species in the genus *Triturus*. Adults reach 10-13 cm in total, and females are slightly larger than males. The back is yellowish to light green with irregular patches or bands of black and dark brown, and a thin orange line runs from the head to the tip of the tail. In males the line becomes indistinct with age. The underside is creamy white with dark spots, which sets the species apart from *T. marmoratus*, whose belly is dark.

The pattern varies between populations. In Huelva and Cádiz in Spain it resembles that of *T. marmoratus*, whereas elsewhere the animals have black spots or streaks on a green background. Some populations in Portugal and Spain have bronze tones, especially in the breeding season. In the breeding season the male develops a wavy crest with black cross-bars from the head to the tip of the tail. The crest is lower than in *T. marmoratus* and has no indentation between body and tail. The female has no crest, and the stripe along her back stays unbroken orange. In the closest relatives the pattern is less distinct in aquatic animals than in terrestrial ones.

The species was long regarded as a subspecies of *T. marmoratus* and was separated as a species of its own in 2001 on the basis of genetic differences. The skin has poison glands. The poison has not been measured in *T. pygmaeus* itself, but the skin secretion of its relatives can irritate mucous membranes. Wash your hands after handling. Lifespan, egg numbers, incubation period and larval period have not been measured in the species itself; the figures are borrowed from *Triturus marmoratus*.

Read more: Incubating eggs

Distribution and habitat

Triturus pygmaeus lives only in the south-western part of the Iberian Peninsula: in southern and central Portugal and in south-western Spain. To the north the species follows the Portuguese coast all the way up to the lagoon at Aveiro. Further inland its range borders that of *T. marmoratus*, and the boundary largely follows the watershed between the rivers Douro and Tagus. The climate is Mediterranean, with mild, rainy winters and dry summers. The species is assessed as near threatened because its habitats are disappearing.

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

HABITAT

Triturus pygmaeus lives in oak woodland and Mediterranean scrub, on farmland and in gardens, and it breeds in ponds, ditches, canals and other still waters. Many of the breeding waters dry out in summer, and the animals then stay on land, hidden under stones, wood and leaf litter where it is damp.

The species breeds in the wet part of the year, when the ponds are full. The larvae swim freely in open water and are vulnerable to fish. The species is threatened by the loss and pollution of small ponds and by introduced fish and crayfish.

Care

THE ENCLOSURE

Triturus pygmaeus can be kept all year round in an aquaterrarium, and many adults readily stay in the water. An enclosure of 60 × 30 × 30 cm suits two animals, and a larger one gives more peace. The water section takes up half the floor or more, is 10-25 cm deep and is densely planted with fast-growing aquatic plants such as Canadian waterweed, hornwort and cabomba, which the female can fold her eggs into. The land section is a floating platform, a stone or a broad root with moss and cork, so the animals can climb in and out themselves. The substrate is bare or fine sand.

The animals are good at climbing glass and squeeze through small gaps, so the enclosure needs a tight-fitting lid with ventilation. Newly metamorphosed young and juveniles live entirely on land until they are sexually mature after 2-3 years. They need an enclosure with at least 90 % land and a water area no more than 2 cm deep, otherwise they can drown.

The enclosure should stand cool, out of direct sun. Heating is not necessary; a water heater should be avoided.

TEMPERATURE

Triturus pygmaeus is cool-loving. The daytime temperature is 12-20 °C and the night-time temperature 8-15 °C. Temperatures above 22 °C for long periods should be avoided, as the animals become sluggish and lose their appetite. The animals tolerate low temperatures and are active down to about 5 °C. In hot summers a fan over the water, a cooler or a cool room can help.

For breeding, about 15 °C suits after a cool period. The winter rest lasts 6-10 weeks at 6-10 °C, either in the water or on land in damp moss, in a cool, frost-free room, and the temperature must not drop below 5 °C. The temperature should fall and rise gradually, as sudden changes stress the animals.

HUMIDITY AND MISTING

The skin dries out quickly, so the humidity over the land section must be 70-95 %. Mist the land section with dechlorinated water once or twice a day, and let moss and soil hold the moisture without the substrate becoming sodden. A layer of moss also gives the animals something to creep under. Ventilation in the lid prevents mould and stale air.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water section is 10-25 cm deep and 10-20 °C. Dechlorinated tap water that has stood for a few days suits well, as the chlorine must be gone, but water quality is otherwise not critical. A small filter with a gentle flow keeps the water clean and is optional; without a filter part of the water is changed regularly, and uneaten food is removed. The substrate is bare or fine sand with grains of no more than 1 mm, never gravel, which can be swallowed. Amphibians absorb substances through the skin, so soap, cleaning products and hand cream must be kept away from the water.

LIGHTING AND UVB

UVB is not necessary for the species, which lives hidden and is nocturnal. Ordinary LED light for 10-12 hours a day gives the aquatic plants what they need, and more light and a higher temperature in spring help bring the animals into breeding condition. The lamp must not heat the water, and plants and hides provide shade.

Read more: Lighting and UVB

FEEDING

Triturus pygmaeus is voracious and eats any small animal it can swallow. In the water it is given earthworms, mosquito larvae, tubifex, daphnia, shrimps and dry food from the bottom; molluscs and small fish are also taken. On land it is given fruit flies, small woodlice, springtails, crickets, earthworms, snails and waxworms, the last two only in small amounts. Unmoving food is seldom taken on land, so the food must be live or be moved.

Juveniles are fed every other day, adults once or twice a week. The species easily becomes overweight, so portions are small. Appetite falls in hot and cold periods, and the animals can then go without food for a few days.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

The species is calm and can be kept in pairs or in a small group. In the breeding season a group with more females than males is a good choice, so the females are left in peace. Animals of the same size can be kept together, but small salamanders and larvae are eaten by the adults. Fish do not belong in the enclosure. Avoid handling; if an animal must be moved, use wet hands, a small net or a cup.

Breeding

SEXUAL MATURITY AND SEXING

In the breeding season the male is recognised by the wavy, black-barred crest and the swollen cloaca. The female has no crest and an unbroken orange stripe along her back. Outside the breeding season the sexes are harder to tell apart; males are usually smaller and more slender than females, and a hint of the crest may still be seen. Juveniles cannot be sexed. The animals become sexually mature after 2-3 years, and in the wild usually later. A pair, or a group with more females than males, ensures that the females are mated.

MATING

The breeding season is triggered by rising temperature, more light and extra food after a cool period. The animals are moved to the water section, or they stay in the water if they are aquatic. The ideal breeding water temperature is about 15 °C. The males acquire their breeding dress within a few days. Mating follows the same pattern as in the other relatives: the male takes up position in front of the female and displays with his tail in a clear dance, so that scent drifts towards her. If she is receptive, he deposits a spermatophore, which she takes up with her cloaca.

EGGS AND LARVAE

The female lays the eggs singly and folds each egg into a leaf of an aquatic plant over days to weeks. A female lays 200-350 eggs per season. Adults eat eggs, so the eggs or the adults are moved to a separate tank. The eggs are very delicate: fertile eggs are at first half white and half black, while infertile ones quickly turn white and opaque and are removed before they go mouldy.

The larvae hatch after 14-21 days at 12-15 °C. For the first 2-3 days the larvae live on the yolk and should not be disturbed. After that they are predators and will take only live food: first infusoria, newly hatched daphnia and artemia, later larger daphnia, mosquito larvae and white worms. They are fed daily, and the water is changed in small amounts, no more than 10-20 % at a time, because sudden changes in the water are dangerous for young larvae. The larvae are sorted by size so that they do not eat one another.

METAMORPHOSIS

The larvae metamorphose after 8-10 weeks, depending on temperature and food. When all four legs have developed, the gills recede and the juvenile colours appear. Lower the water level then, and put out stones, cork or floating plants so that the metamorphosed animals can leave the water without drowning. The small young go onto land and are moved to a land enclosure. In relatives some young can be forced to stay in the water and be raised aquatically, but this is not documented for this species.

REARING THE YOUNG

The newly metamorphosed young live on land until they are sexually mature. Keep them in a damp, cool enclosure with a layer of soil, turf or moss, bark and leaves, and with water in a shallow dish or a thin film of water. The food animals are small: aphids, wingless fruit flies, springtails, white worms and small woodlice. Keep the young sorted by size. Once they are sexually mature, they can move into an aquaterrarium, and they can stay in the water all year round.

Health and common mistakes

The main problems in care are:

- Heat: temperatures above 22 °C for a long time stress the animals, cause poor appetite and can lead to disease and death. Keep the enclosure cool.
- Drying out: the skin is delicate and dries out quickly if the land section is not kept damp.
- Fungal infections and skin sores, often after poor water quality or too many animals. Use clean, dechlorinated water, and change it regularly.
- Constipation: gravel can be swallowed. Use a bare floor or fine sand.
- Larvae floating belly-up because they have swallowed air, often through underfeeding or overcrowding. Place the larva in a dish with so little water that it cannot turn over, and give plenty of food until the air is gone.
- Infection that spreads through a group. Animals with swelling, lethargy, bleeding in the skin or loss of appetite are moved to a separate tank at once.

The fungus *Batrachochytrium salamandrivorans* (Bsal) is fatal to many salamanders, and *T. pygmaeus* has lost animals during an outbreak in captivity. New animals are quarantined before they are put with others, each enclosure has its own equipment, and hands and tools are cleaned between enclosures. Animals, water and tools must never come into contact with wild amphibians. Captive-bred animals carry diseases and parasites less often than wild-caught ones. Consult a vet with knowledge of amphibians if an animal falls ill.

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

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.