herpy

SALAMANDERS AND NEWTS

Azarbaijan Mountain Newt

Neurergus crocatus

Neurergus crocatus is a slender mountain stream newt of 16-18 cm from the border region between Turkey, Iraq and Iran, dark with round yellow spots and a yellow-orange belly. The species is rare in captivity and needs cool water, a cold winter rest and an experienced keeper. It is vulnerable in the wild.

Family: Salamandridae

Mild skin toxins

KEY FACTS

THE ANIMAL

Adult size	**16-18 cm** total length incl. tail
Lifespan	**12-15 years**
Active	**At dusk and at night**
Lifestyle	**Terrestrial and semi-aquatic**
Habitat	**Rocky terrain and temperate woodland and meadow**
Skin toxins	**Mild** Wash your hands after contact and keep your fingers away from your eyes and mouth
Difficulty	**Experienced**

CARE

Min. enclosure	**60 × 30 × 45 cm** L × W × H for 4 adults
Temperature, day	**10-20 °C**
Temperature, night	**8-15 °C**
Humidity	**60-80%**
Water	**Aquaterrarium** depth 15-30 cm
UVB	**Optional**
Winter rest	**4-5 °C** 4-12 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	**48-60 months**
Eggs per season	**20-60**
Larval period	**90-120 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	**Vulnerable (VU)**

About the species

Neurergus crocatus is a slender aquatic newt that grows to about 16-18 cm including the tail. The tail is longer than the body, the head flat and the snout rounded. The back is dark brown to black with round, slightly irregular yellow spots that continue onto the tail. The belly is orange-red in males and yellowish in females. The body is almost round with no dorsal crest, and the tail is flattened from the sides towards the tip with moderate fin folds.

Young animals metamorphose after three to four months, and the animals reach sexual maturity only after four to five years. The species can live to 12-15 years in captivity.

Like other newts, the species has poison glands in the skin, but the toxin has not been studied in *N. crocatus*. Wash your hands after contact, keep your fingers away from your eyes and mouth, and handle the animals only when necessary.

Distribution and habitat

Neurergus crocatus lives in the mountains of the border region between south-eastern Turkey, north-eastern Iraq and north-western Iran, west of Lake Urmia. The species is found in the northern part of the Zagros Mountains and breeds at elevations from about 1,500 to 2,000 metres.

The individual populations are isolated by dry areas that the animals cannot cross, so a vanished population cannot be recolonised. The habitat is shrinking, partly because dams are being built and farming methods are changing. The species is vulnerable in the wild, and the animals are often killed by local people, who regard them as poisonous. The animals in captivity descend from a few imported animals, and because the region is politically unstable, the captive population can hardly be replenished from outside.

> **Native range:** Turkey, Iraq and Iran.

HABITAT

The species lives in steep mountain streams and springs with cool, fast-flowing water. The bottom consists of pebbles and sand, and there are almost no aquatic plants, but at the springs watercress, oregano and nettles, among others, grow. In the breeding streams that have been measured, the water is 10-15 °C, slightly alkaline (pH 7.7-8.5) and of good quality. Many streams lie in villages, where piled stone walls along the water give the animals shelter.

Winters are cold with a lot of snow, and the meltwater causes heavy floods in March and April, when the streams are uninhabitable. When the water calms down, the males and later the females enter the water to breed. Eggs and larvae must develop quickly, because many streams dry out in summer. Afterwards the males leave the water first, then the females and finally the young, and they seek shelter between stones, where they presumably spend the hot season and the winter at low activity.

Care

THE ENCLOSURE

Little is known about the care of *Neurergus crocatus*, and the species is rare in captivity. The figures are therefore partly borrowed from the closely related *Neurergus strauchii* and *Neurergus kaiseri*, which live in similar streams and have the same requirements. The species is suited to experienced keepers.

The animals often stay in the water for most of the year, but a spell on land during the year gives the best breeding success and suits the species' natural life. Four adults need at least 60 × 30 × 45 cm, for both the aquatic phase and the terrestrial phase. The aquarium for the aquatic phase may be larger. The terrarium for the terrestrial phase, on the other hand, need not be more than 100 cm long for a group of 4-5 animals: the animals move very little on land, and in a terrarium that is too large they have difficulty finding enough food.

Fit it with limestone, piled stones and cork that give crevices to crawl into, and make the hides easy to look into so that the animals can always be checked. The water is 15-30 cm deep. For the terrestrial phase, use soil or foam rubber under the stones, kept damp. The animals are good at escaping, so the terrarium needs a tight but ventilated lid.

TEMPERATURE

Neurergus crocatus likes cool conditions. By day 10-20 °C suits, and at night 8-15 °C, as in *Neurergus strauchii*. In the breeding season the water should be 12-15 °C. The temperature must not exceed 20 °C for any length of time, because heat stresses the animals and can trigger disease, so they are best kept in a cool room or a cellar.

In winter the animals need a winter rest at 4-5 °C for four to twelve weeks; the duration is borrowed from *N. strauchii*. This is best done in a refrigerator, where each animal sits alone in a plastic box with ventilation holes in the lid, several layers of damp kitchen paper on the bottom and a piece of limestone as a hide. If the temperature is higher, the metabolism does not fall enough, and the animals lose weight. Check the boxes regularly, because they dry out easily, and dampen the paper as needed. Remove droppings and shed skin.

HUMIDITY AND MISTING

The species tolerates drought fairly well, but humidity must be checked regularly. 60-80 % suits. Humidity is best maintained by stacking the stones over damp foam rubber, which holds moisture for a long time and cannot drown the animals. Alternatively, mist the terrarium, or keep a few millimetres of water on the bottom. The bottom must never dry out completely.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water is 15-30 cm deep. It should be alkaline and hard, as at the habitat, and limestone in the aquarium helps keep it that way. Use dechlorinated tap water.

A powerful filter whose outlet splashes over the surface is necessary. The current may be so strong that the animals have to work against it, but there must also be calm zones for mating and egg laying. Change part of the water every week.

LIGHTING AND UVB

The species does not need any special lighting. Daylight or fluorescent tubes are enough, with a day length that follows the seasons. UVB is not necessary. Always provide shade and hides.

Read more: Lighting and UVB

FEEDING

The amount of food is smaller than for many other salamanders, because the animals grow slowly. The food should therefore be varied and nutritious. Insects and their larvae are preferred, for example crickets. Feeder animals should be well fed and dusted with calcium and vitamins. Earthworms are readily taken in water, but animals on land often refuse them. Animals in water also take tubifex, bloodworms and daphnia.

Feed regularly throughout the year, except during the winter rest in the refrigerator. Females should be well fed in the run-up to the breeding season. Crickets are not suitable in the cold period.

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

BEHAVIOUR AND HANDLING

Neurergus crocatus is most active at dusk and at night. Animals in water are lively and move a great deal, while animals on land move little and can be shy. The animals can be kept in groups of 4-5. They escape through even small gaps. If the animals need to be moved, use wet hands or a damp net.

Breeding

SEXUAL MATURITY AND SEXING

The animals become sexually mature after four to five years. The sex ratio should be roughly equal. The male has an orange-red belly, the female a yellowish belly.

MATING

After the winter rest, the animals are put in an aquarium at 12-15 °C. The males enter the water first, and the females follow. Use piled stones and stone slabs that give crevices the animals can just slip through, and overhangs. As in *Neurergus strauchii*, the male deposits a spermatophore, which the female picks up. Captive breeding is difficult and rare.

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

EGGS AND LARVAE

The female glues the eggs into crevices or under overhangs of stone, often all in the same place, so that a kind of nest forms. A female lays at most about 50-60 eggs in a season, often fewer. Adults eat eggs, so the eggs are moved regularly to another container. The water in the hatching container is kept moving with a filter, because in the wild the eggs develop in flowing water. Cover the filter intake or use a sponge filter so that the larvae are not sucked in.

METAMORPHOSIS

The hatching time is not documented for the species; in *Neurergus strauchii*, the eggs hatch after 15-34 days. The larvae begin to eat a few days after hatching and take first artemia or cyclops, later larger food. After three to four months they metamorphose and are moved to land.

REARING THE YOUNG

The newly metamorphosed young are kept on land in a small terrarium and fed small, varied food. Survival is a serious problem: shortly before sexual maturity the young suddenly become weak and often die within a few weeks. The cause is unclear, but *Aeromonas* bacteria have been found. Captive-bred young should therefore be kept separately and checked daily.

Health and common mistakes

Diseases and husbandry errors in the care of *Neurergus crocatus*:

- Heat: the species does not tolerate heat. Keep the terrarium cool.
- Desiccation: a floor that dries out is deadly. Check humidity regularly.
- Acidic water: avoid water below pH 7 and acidic materials such as moss and peat.
- Ranavirus has been found in wild-caught animals of the species and causes red skin, sores, oedema, loss of appetite and death. Chytrid (*Batrachochytrium dendrobatidis*) and Bsal (*Batrachochytrium salamandrivorans*) can also be fatal to salamanders and newts and can be carried by animals without symptoms.
- Chlamydia-like bacteria are suspected of causing sores on the tail that do not heal, and of killing whole groups. Heat above 20 °C can trigger the disease.
- Intestinal inflammation with many flagellates causes loss of appetite, emaciation and a swollen body. Early treatment and better husbandry help.
- Metabolic bone disease is caused by too little calcium. Dust the feeder animals with calcium.
- Keep new animals in quarantine for at least six weeks, preferably have them tested, use separate equipment, and never move water, plants or equipment between enclosures without cleaning.
- Animals that will not eat, have sores that do not heal or are swollen need a vet who knows amphibians.

Read more: Quarantine and hygiene 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.