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SALAMANDERS AND NEWTS

Chuxiong Fire-bellied Newt

Cynops cyanurus

Cynops cyanurus is a newt of 8-10 cm from Yunnan and Guizhou in south-western China. The colour ranges from dark brown to golden, the belly is yellow to orange with black spots, and a yellow or orange mark just behind the eye is characteristic of the species. It is almost entirely aquatic, tolerates ordinary room temperature and eats readily. Larvae and juveniles, however, are sensitive to cold.

Family: Salamandridae Former name: *Hypselotriton cyanurus* **Mild skin toxins**

KEY FACTS

THE ANIMAL

Adult size	**8-10 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day and at night**
Lifestyle	**Aquatic**
Habitat	**Montane forest and wetland**
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 3 adults
Temperature, day	**16-24 °C**
Temperature, night	**16-20 °C**
Humidity	**70-90%**
Water	**Aquaterrarium** depth 15-30 cm
Water temperature	**16-24 °C**
UVB	**Not required**
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	**12-24 months**
Eggs per season	**100-150**
Hatching	**21-28 days**
Larval period	**150-180 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

Cynops cyanurus is a newt of 8-10 cm. Females are slightly larger than males, and the species is slightly larger than *Cynops orientalis* and smaller than *Cynops pyrrhogaster*. Body colour varies greatly: from dark brown through medium brown and yellow to entirely golden. An indistinct orange line often runs along the dorsal ridge. The belly is yellow to orange and often mottled with black. Wild animals are usually red-orange, while animals raised in captivity are yellow or light orange. A yellow

or orange mark just behind the eye is always present and is the clearest feature distinguishing it from *C. orientalis*. In the breeding season males develop distinct blue tones on the tail; in young males the blue may be absent, and it becomes stronger with age.

Animals in the trade belong to a group of closely related forms that also includes *Cynops chenggongensis* and *Cynops yunnanensis*, and many have been sold under the name *C. chenggongensis*. Without a known collection locality it is usually impossible to say which form an animal belongs to. An older captive line with a uniformly dark brown colour is difficult to breed: the animals are hardy and long-lived, but the offspring are delicate, with many infertile eggs and high mortality. Animals imported since about 2004 are lighter, healthy and fertile for several generations, and make up by far the majority of animals in captivity today. The advice in this care guide applies to them.

The skin has toxin glands; the toxin has not been studied for *C. cyanurus*, but as in the other *Cynops* it can irritate mucous membranes. Wash your hands before and after contact with the animals and the water, and do not touch your eyes or mouth. The animals should not be handled unless necessary. Lifespan is not documented; 10-15 years is an estimate based on related species.

Distribution and habitat

Cynops cyanurus occurs in Guizhou and Yunnan in south-western China, especially on the Yunnan plateau. The species lives at altitudes of 1,800-2,400 m. Very little is known about its distribution, and most descriptions are in Chinese. The species is listed as Vulnerable (IUCN: VU), partly because of loss of habitat.

> **Native range:** China.

HABITAT

Cynops cyanurus lives in ponds, marshes and irrigated fields on the Yunnan plateau. The plateau has a very mild climate with a monsoon and heavy rain in summer. In winter the average lowest temperature is about 2 °C, and from April to September the average highest temperature is about 24 °C. It is regarded as a species of still water without a strong current. The water temperature at individual sites is not documented.

Care

THE ENCLOSURE

Cynops cyanurus is almost entirely aquatic and is kept in an aquarium. Three adults suit an aquarium of 60 × 30 × 30 cm with a water level of 25 cm, and more animals need more space. Dense planting, such as Java moss and hornwort, and hiding places of roots and stones suit the species. The bottom is bare or fine sand; gravel can be swallowed and lodge in the gut.

As with all newts, there must be an island or floating board so the animals can leave the water, but a large land area is wasted space. The species lives in still water, so a filter with a strong current is harmful; use a sponge filter or a filter with a gentle flow. The lid must be tight, because the animals escape through small openings.

TEMPERATURE

Adults thrive and breed at 21-24 °C in summer and 16-18 °C in winter, so they are well suited to an ordinary home. Healthy adults tolerate down to 10 °C and up to 27 °C briefly, but not for long at a time. At night 16-20 °C is suitable.

Eggs, larvae and juveniles are sensitive to cold: below 18 °C the eggs hatch very slowly and the larvae do not grow. Keep larvae at 20-22 °C; that may require a heater on its lowest setting. Juveniles in their first year become sluggish below 18 °C. Animals shipped with cold packs may arrive sluggish and need time to recover before being put in the water.

HUMIDITY AND MISTING

The species lives in water, so humidity is not critical. Under a tight lid it is high, about 70-90 %. Misting is not necessary. Any island or land section should be damp, but a large land area is not needed. Good ventilation under the lid prevents the air from becoming stagnant.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water level should be 15-30 cm. For three adults, 40-50 litres of water is suitable. Use dechlorinated water, change a quarter of the water weekly, and remove uneaten food. The filter should give a gentle flow; sponge filters with an air pump are well suited. The water should stay at 16-24 °C all year. Newly metamorphosed juveniles drown easily, so at first give them 5-10 cm of water, increased as they grow.

LIGHTING AND UVB

The species does not need special lighting, and UVB is not necessary. Ordinary aquarium lighting that suits the plants is enough, and the days are shortened in winter.

Read more: Lighting and UVB

FEEDING

The species is a very good eater and takes almost anything suitable that moves. Offer chopped earthworms, blackworms, bloodworms, daphnia and white worms. Most adults can be trained to take soft carnivore pellets, such as salmon pellets or shrimp pellets, and eat them with great appetite. Variety is important.

Adults are fed two to three times a week. Remove uneaten food.

BEHAVIOUR AND HANDLING

The species is calm and can be kept in a group. Make sure every animal is eating. Adults eat eggs and small larvae of their own species, so the offspring are kept separately. Newly metamorphosed juveniles spend some time on land, but quickly learn to look for food in the water.

Breeding

SEXUAL MATURITY AND SEXING

In the breeding season males are recognised by the blue tones on the tail and are slightly smaller than females. The animals become sexually mature after 1-2 years, and young animals may begin to breed less than a year after metamorphosis.

Read more: Rearing tadpoles

MATING

Breeding succeeds easily if the animals are given a summer and a cool winter: 21-24 °C in summer and 16-18 °C in winter. The breeding season extends from early spring through the whole summer and into autumn. Courtship is similar to that of other *Cynops*: the male displays to the female and fans his tail, deposits a spermatophore on the bottom and lures the female across it so that she picks it up with her cloaca. Fertile eggs are often found in an aquarium where no courtship has been seen and the males do not appear to be in breeding dress; the males can probably mate outside the season.

EGGS AND LARVAE

The female lays her eggs singly on plants and other surfaces in the water. A well-fed female lays more than 100 eggs in a season. A large share of the eggs may be infertile, but this is offset by the large number. The eggs hatch after 3-4 weeks at 20-22 °C; if the water is cooler than 18 °C, it takes much longer. Move the eggs to a separate container, because the adults eat them.

The larvae can vary greatly in colour, from almost black to almost white. They are predators and take only live food: first newly hatched brine shrimp and microworms, later daphnia, white worms and blackworms. The larvae eat large amounts of food in a day and become plump. Keep the larvae in water at 20-22 °C, and sort them by size so the large ones do not eat the small ones.

METAMORPHOSIS

From hatching to metamorphosis takes 5-6 months, longer than in the other *Cynops*. The larvae are therefore often large at metamorphosis, sometimes over 5 cm. The gills are resorbed, and the animal begins to go on land. Newly metamorphosed juveniles are still semi-aquatic: they come out of the water a little, but quickly learn to enter the water when food is offered there. Provide a floating board or an island so they can climb out.

REARING THE YOUNG

Keep juveniles in 5-10 cm of water at first, and increase the depth as they grow. Keep them at 18 °C or above, because in their first year they are sensitive to cold. Feed them daily with small live food, such as white worms, daphnia, blackworms and chopped earthworms, according to size. Sort the animals by size, and keep them apart from the adults.

Health and common mistakes

Cynops cyanurus is hardy as long as the water is clean and suitably warm. The typical problems are:

- Cold in larvae and juveniles: below 18 °C the larvae do not grow and the juveniles become sluggish.
- Prolonged heat above 27 °C, which stresses the animals and makes them prone to infection.
- Poor water quality, with fungal and bacterial skin infections, often after uneaten food.
- Gut blockage after swallowing gravel.
- Drowning of newly metamorphosed juveniles in water that is too deep.

The fungus *Batrachochytrium salamandrivorans* (Bsal) is fatal to many salamanders, and Asian salamanders can carry it without showing signs themselves. Quarantine new animals for several weeks, give each aquarium its own equipment, and clean hands and tools between aquariums. Never release animals or water into the wild. Contact a vet with amphibian experience if an animal wastes away, develops sores or white patches, swells up or behaves unusually.

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.