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SALAMANDERS AND NEWTS

Chinese Fire-bellied Newt

Cynops orientalis

Cynops orientalis is a small, slender aquatic newt of 6-10 cm with a black back and a bright orange to red belly with black spots. The species comes from eastern China, prefers cold, calm water and is one of the most common salamanders in aquariums. It is easy to care for when the water is kept cool, and the female lays the eggs singly in the leaves of aquatic plants.

Family: Salamandridae Former name: *Hypselotriton orientalis; Triturus orientalis* **Mild skin toxins**

KEY FACTS

THE ANIMAL

Adult size	**6-10 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**By day and at night**
Lifestyle	**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	**Beginner**

CARE

Min. enclosure	**60 × 30 × 30 cm** L × W × H for 3 adults
Temperature, day	**14-20 °C**
Temperature, night	**12-18 °C**
Humidity	**70-90%**
Water	**Aquaterrarium** depth 15-25 cm
Water temperature	**14-20 °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	**12-36 months**
Eggs per season	**10-236**
Hatching	**13-24 days** at 15-23 °C
Larval period	**90-150 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	**Not Evaluated (NE)**

About the species

Cynops orientalis is a small aquatic newt of 6-10 cm. The back is black, dark brown or greyish, and the underside is red to orange with irregular black spots. The colour often continues as a red band on the underside of the tail. The tail is laterally compressed and is used for swimming. The skin is relatively smooth, the tail has a rounded tip, and the parotoid glands behind the head are distinct. Some animals periodically turn pale, grey, beige or faintly reddish-brown, often with a faint orange dorsal stripe and dark marbling on the sides. The change lasts from hours to months and has no known explanation. Some animals become permanently pale.

Males grow to under 8 cm and are slimmer and more angular in cross-section than females. They have a shorter tail with a slightly taller fin edge and a swollen cloacal region, which is most pronounced in the breeding season. Females are larger and more rounded. Life expectancy in captivity is not well documented; 10-15 years is an estimate.

The belly colour comes from carotenoids in the food and is not produced by the animal itself. Captive-bred animals that do not receive carotenoid-rich food become yellow or cream-coloured on the belly. This has no bearing on health.

The species resembles *Cynops pyrrhogaster* and is often confused with it. *C. orientalis* is smaller, has smoother skin, a flatter back and a rounder tail tip. Two subspecies have been described, *C. o. orientalis* and *C. o. qianshan*, separated by the Yangtze River, but they differ hardly at all from each other, and without a known collecting locality they cannot be distinguished. In 2009 the Chinese species were moved to the genus *Hypselotriton*, but most now regard *Hypselotriton* only as a subgenus.

The skin secretes a mild poison consisting mainly of tetrodotoxin. It can cause numbness or irritation on skin contact, especially on mucous membranes, and is dangerous only if swallowed in larger amounts. Wash your hands before and after touching the animals or the water, and do not touch your eyes and mouth.

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

Distribution and habitat

Cynops orientalis is native to eastern China and is found in the provinces of Jiangsu, Zhejiang, Jiangxi, Anhui and Hubei. It is relatively common and widespread in the lowlands and in mountain regions, and there are no known introduced populations included here.

> **Native range:** China.

HABITAT

C. orientalis lives in cold, still or weakly flowing fresh water: ponds, wells, ditches, rice paddies and terraced fields as well as small streams and flooded fields in mountain valleys. The water is often shaded by grass and has a muddy or sandy bottom with plant remains and dense vegetation. The animals often swim up towards the surface and dart actively back and forth.

The species breeds from March to July, mostly in April and May, when the water is 15-23 °C. In winter it hibernates. Whether adults in the wild also spend longer periods on land is not known. The newly metamorphosed young are terrestrial.

Care

THE ENCLOSURE

An aquarium of 60 × 30 × 30 cm (about 50 litres) is enough for a pair or a small group of three adults. Larger is better, especially if the animals are kept in a group. The aquarium must be densely planted with submerged plants, moss and floating plants, which the animals greatly appreciate, and have many hides of stone, roots and wood. The bottom can be bare or covered with very fine sand. Gravel is unsuitable, because the animals can swallow it and suffer intestinal blockage.

A land area is necessary, even though the species is almost purely aquatic. Stacked stones, a floating piece of cork or a planted land section that breaks the water surface is enough. Some animals go onto land regularly, especially at night. If an animal stays out of the water for a very long time, the water is often too warm or dirty, or the animal is ill; lower the temperature, and check the water quality. Newly bought animals may refuse to enter the water for a while, which is often due to stress. A land area with only 1-2 mm of water or a place where the animals cannot dry off completely usually makes them return to the water.

The lid must fit tightly, because salamanders get out through the smallest openings. Do not keep the species with larger, aggressive amphibians.

TEMPERATURE

The water should be kept at 14-20 °C. The species tolerates up to 25 °C briefly in summer, but the water should not exceed 23 °C and must never exceed 26 °C. Many problems with the species are caused by keeping it too warm. Place the aquarium in the coldest room, in a cellar or in a room with cooling, and if necessary use fans or an aquarium chiller.

In winter the temperature must drop to 5-15 °C, preferably with shorter day length. True hibernation is not necessary, but the cold period clearly promotes mating behaviour. The night may be slightly cooler than the day. Animals that stay on land for a long time are often a sign of water that is too warm or dirty.

Read more: Brumation and the seasons

HUMIDITY AND MISTING

The species lives almost entirely in water, so the humidity above the water is not critical and has not been measured for the species. Under a tight lid with a land area it is high, about 70-90 %. The land area must not dry out completely; keep it damp with moss and plants, so animals that go onto land do not desiccate. Misting is not necessary.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water level is 15-25 cm. This provides enough depth to swim and a cool body of water, but the animals must always have easy access to a land area. The water must be clean, and the temperature 14-20 °C. Use tap water that has been treated with a chlorine remover.

A filter is optional, but is recommended to be set as gently as possible, because the species comes from still water and does not cope with a strong current. A sponge filter driven by an air pump is suitable. Without a filter the plants do much of the cleaning, and part of the water must be changed regularly, in addition to topping up. Remove uneaten food quickly, as it degrades the water quality.

LIGHTING AND UVB

The species does not need any particular lighting, and UVB is not necessary. Ordinary aquarium light is only necessary if the aquarium has live plants, and it must not make the water warmer. Shorter days in winter are part of the cool period. The animals are active both day and night.

Read more: Lighting and UVB

FEEDING

The species is not fussy and eats anything that moves. The diet is based on earthworms, brine shrimp and thawed bloodworms. Vary with freshwater shrimp, tubifex, waxworm larvae and live mosquito larvae. Crustaceans such as freshwater shrimp and daphnia are especially important, because they provide carotenoids, which maintain the red belly colour; bloodworms do so only to a small extent. The animals vomit up slugs because of the slime. Some animals take commercial food for salamanders, many do not.

Adults are fed two to three times a week, less in winter. Remove uneaten food. Newly bought animals may refuse food for several days, which is normal.

BEHAVIOUR AND HANDLING

The species is active, and the animals can be kept together in pairs or small groups. During feeding they become strongly food-motivated and may bite each other's limbs and tails. Therefore give food in several places in the aquarium, and make sure that all of them get to eat. Outside feeding, the animals are not territorial.

The animals should preferably not be handled. The skin is delicate and gives off a mild poison. Some animals are periodically terrestrial, especially newly bought ones, but most return to the water once they have settled.

Breeding

SEXUAL MATURITY AND SEXING

Males are smaller and slimmer, with a shorter tail and a distinctly swollen cloacal region in the breeding season. Females are larger and rounder. The animals become sexually mature after 1-3 years, and the young live on land during that time.

MATING

The species breeds from March to July, when the water is 15-23 °C. A drop to 5-15 °C in winter, combined with shorter days, triggers mating behaviour in spring. Actual hibernation is not necessary. Many animals do not breed because they are kept too warm.

The male chases the female, waves his tail towards her and occasionally bites. The female then picks up the male's spermatophore.

EGGS AND LARVAE

The female lays the eggs singly on aquatic plants and, where possible, folds the leaf over the egg so that it is hidden. She lays on average just under three eggs a day and over the season 10-236 eggs, on average about 96. About 74 % hatch. The eggs take 13-24 days to hatch at 15-23 °C.

Move the eggs to a separate tank of about 5 litres, as the adults will otherwise eat eggs and larvae. Leaves with eggs can be placed directly in the tank. The larvae hatch with external gills and must be fed live food: daphnia and other small aquatic animals. When the larvae are about 2 cm, they often take thawed food, but this is not certain.

METAMORPHOSIS

The larvae grow in water for about 3-5 months; the figure is borrowed from *C. pyrrhogaster*. Metamorphosis shows itself as the gills shrink and the animal leaves the water. Keep the larvae in the water for as long as possible, because the animals shrink during metamorphosis, and the larger the larva, the larger and easier to raise the young become. Newly metamorphosed animals are usually about 3 cm, but some are as small as 2 cm.

When the forelimbs have appeared and the gills disappear, the animals must have a land area or a low water level, so they do not drown. Newly metamorphosed animals are often water-shy and refuse food for a few days while metamorphosis is completed.

Read more: Rearing tadpoles

REARING THE YOUNG

The small young are delicate and not good hunters. Rearing can take place on land or half in the water. On land they are kept in a natural terrarium with a damp soil layer, moss and leaf litter, where springtails and isopods breed and are always available, or on kitchen paper, where you can follow each animal and hand-feed with tweezers. Change the paper when it becomes dirty.

Half in the water they are kept in a small tank with 1-3 cm of water, many aquatic plants such as Java moss and easy access to land. This can speed up growth, but not all animals get used to it, and there is a risk of drowning. Never force young to live in water.

Feed daily until the animals are about 4 cm, and then every other day. Suitable food is springtails, fruit flies, white worms, small earthworms, tiny crickets and isopods. In water they take daphnia and other small crustaceans. Sort the animals by size, as the largest can eat the smallest.

Read more: Feeder animals: keeping and breeding

Health and common mistakes

The species is hardy when the water is cool and clean. The most common problems are:

- Temperature too high. This causes stress, poor appetite, fungal and bacterial infections and can be fatal.
- Poor water quality. Rotting food and old plants cause bacterial and fungal infections on the skin.
- Intestinal blockage after swallowing gravel. Use a bare bottom or fine sand.
- Animals that stay on land and refuse to go into the water. Check the water and temperature, and provide a land area where the animal cannot dry off completely.

The species can, like Asian salamanders in general, carry Bsal (*Batrachochytrium salamandrivorans*), a fungal disease that is fatal to many salamanders, without showing signs itself. Quarantine new animals for several weeks, use separate equipment for each aquarium, and wash your hands between aquariums. Never release animals or water into the wild. See a vet with amphibian expertise if animals become emaciated, develop sores or white coatings, swell up or behave 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.