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CAECILIANS

Cayenne Caecilian

Typhlonectes compressicauda

Typhlonectes compressicauda is a fully aquatic, legless amphibian from the Amazon and the Guiana Shield with a long, dark, velvety body and a compressed dorsal fin towards the rear. The species gives birth to live young and is kept in a warm, soft-water, well-filtered aquarium with a heavy, tight-fitting lid.

Family: Typhlonectidae Former name: *Typhlonectes cunhai* **Mild skin toxins**

KEY FACTS

THE ANIMAL

Adult size	**26-80 cm** total length incl. tail
Lifespan	**10-14 years**
Active	**By day, at dusk and at night**
Lifestyle	**Aquatic**
Habitat	**Rainforest 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	**100 × 45 × 45 cm** L × W × H for 3 adults
Temperature, day	**24-30 °C**
Temperature, night	**24-30 °C**
Humidity	**100%**
Water	**Aquaterrarium** depth 30-35 cm
Water temperature	**24-30 °C**
UVB	**Not required**
Diet	**Insects, complete diet, vertebrates and worms/snails**
Kept	**In groups**

BREEDING

Reproduction	**Live-bearing**
Development	**Live-bearing**
Sexually mature	**16 months**
Litter size	**1-8 young**
Gestation	**170-210 days**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Least Concern (LC)**

About the species

Typhlonectes compressicauda is a caecilian, that is, a legless amphibian (order Gymnophiona), that looks like an eel but is related to frogs and salamanders. Females grow to 29-80 cm in length and males to 26-59 cm. The body is dark grey to almost black or dark brown with a slightly paler belly and often looks more velvety than in *Typhlonectes natans*. It is divided into transverse rings, and a low, compressed fin runs along at least the rear third of the body; the height of the fin can vary in the same animal. The eyes are small and covered with skin.

The species is easily confused with *T. natans*. The most reliable distinguishing feature is the cloacal disc: its front half is divided into five sections in *T. compressicauda* and four in *T. natans*. The name *Typhlonectes cunhai* is a synonym.

Weight is not known for wild animals. The species lives at least 10 years in captivity; the upper limit in the specification box is borrowed from *T. natans*.

The skin secretes large amounts of mucus when the animal is handled. Mucus in the eyes and in wounds causes a burning sensation, and prolonged contact causes a tingling sensation in the hands; this is why the skin toxicity is listed as mild. The mucus is toxic to predatory fish, which the species lives alongside. The species has venom glands at the teeth of the lower jaw, but it does not bite and is not dangerous to humans. Wash your hands after handling.

Distribution and habitat

Typhlonectes compressicauda lives in the rivers of the Guiana Shield and the Amazon basin, from the east coast of Brazil to the eastern slopes of the Andes in Peru and Colombia. The species is known from Brazil, Peru, Colombia, French Guiana and Guyana.

The species is not threatened (IUCN: LC) because of its large range and an assumed large population. The assessment is old, and deforestation and hydroelectric dams are putting pressure on a growing part of the range.

> **Native range:** Brazil, Peru, Colombia, French Guiana and Guyana.

HABITAT

Typhlonectes compressicauda lives in permanent rivers, ponds and swamps, mostly in lowland forest. The animals hide in water-filled burrows and in cavities in sunken tree trunks. The water at the habitats is 25-28 °C, very soft and acidic (pH 5.5-6.2).

The young eat worms, small aquatic and terrestrial animals, and frog eggs and tadpoles; the adults eat shrimps, arthropods, small fish and carrion and gather around fish offal. The animals forage at night, in both shallow and deeper water.

Read more: Rearing tadpoles

Care

THE ENCLOSURE

Typhlonectes compressicauda is kept in an aquarium. Three adults need at least 100 × 45 × 45 cm (about 200 litres) with a large external filter. The larger the volume of water, the more stable the water quality.

The lid is the most important piece of equipment: it must be heavy and fit completely tight, including around cables and hoses. The animals squeeze through small gaps, and an animal that escapes quickly dries out and dies.

Provide a small, wet land area, for example a floating piece of cork bark or a dense mat of floating plants, where the animals can lie with the body partly out of the water. If the animals spend a lot of time on the land area, it is a sign of poor water or the wrong temperature.

A substrate is not necessary, but a thin layer of fine sand or fine gravel lets the animals dig, and they like to lie buried. A thick layer of sand can produce toxic hydrogen sulphide. Hides made of PVC pipe, stones, driftwood or terracotta with narrow gaps give security; rough edges help with shedding, but they must not be sharp. Do not tie plants down with fishing line, because the animals can get caught in it. Rooted plants are often dug up, so floating plants are a better choice.

TEMPERATURE

The water temperature should be 24-30 °C, and a natural seasonal variation within that range is good. Around 32 °C causes heat stress, and newborn young are more vulnerable to fungal infections below about 26 °C.

The animals often lie coiled around heaters and can suffer serious burns. Therefore use heaters with protective guards or an in-line heater on the filter hose, and preferably two heaters, so that a failure does not cause a sudden drop in temperature. The air under the lid is at the same temperature as the water. There is no brumation.

Read more: Brumation and the seasons

HUMIDITY AND MISTING

Air humidity is irrelevant, because the animal lives in the water. The air under a tight-fitting lid is saturated with moisture, and that is why the specification box says 100 %. What counts is the quality of the water; see the section on water.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

Caecilians absorb substances through the skin, so water quality is crucial. The filter must be cycled before the animals go in. Tap water is treated with a water conditioner, aerated and left to stand for a day at the aquarium temperature before it is added. Pure reverse-osmosis water and pure rainwater are too pure and disturb the animal's salt balance; use them only remineralised or mixed with tap water.

The water should be soft and stable, below about 6 °dH as for *Typhlonectes natans*. A pH of 6-7 is suitable. The species tolerates acidic water, but a sudden change from very acidic to neutral water causes skin problems and can kill the animals, so adjust the pH slowly. Tannin from dead oak leaves, peat or driftwood lowers the pH and has a mild antibacterial effect, but test afterwards: too much tannin can push the pH below 5. Stable values are more important than perfect ones.

Test ammonia, nitrite, nitrate, pH and hardness every week. Change 10-20 % of the water regularly, preferably after feeding, so that remains are removed before they rot. The water must be deep enough for the animals to swim freely and reach the surface without losing contact with the bottom, plants or hides; 30-35 cm is suitable.

The species is messy when it eats and often sheds its skin, so the filter must be large. An external filter or a large, air-driven sponge filter is best; an internal box filter is only enough for juveniles. All openings to the filter must be closed with mesh or silicone, and the inlet and outlet must have a strainer tied firmly in place, because the animals crawl into filters and can be injured or drown. Rinse the filter media in aquarium water, not in tap water.

LIGHTING AND UVB

Ordinary aquarium lighting for 12 hours a day is enough. The animals prefer darkness, so there must always be dark hides. The need for UVB is not known, and UVB lighting makes no detectable difference to the bones of related species, so it is not necessary. Healthy plant growth helps to keep the water clean.

Read more: Lighting and UVB

FEEDING

Typhlonectes compressicauda eats almost any meaty food: earthworms, crickets, beetle larvae, shrimps and other crustaceans, mussels, bloodworms, thawed fish, newborn mice and prepared foods for amphibians. The food should lie on the bottom or on branches and hides, because the animal finds food by scent and does not notice food that drifts or floats. Earthworms and insect larvae are taken live, but fish and other vertebrates must be dead.

Feed two to three times a week, and juveniles in the first year of life at least three times a week. Vary the food: cyprinid fish contain the enzyme thiaminase, which breaks down vitamin B1, and salmonids are very fatty. Vitamin supplements are difficult to give in water, so a varied diet is the best protection against deficiencies.

Place the food in several places, or give it with tweezers, so that all the animals get some; the largest eat fastest. Remove leftovers, and change the water after feeding.

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

BEHAVIOUR AND HANDLING

The species is peaceful and likes to gather in hides and on floating plants, including the young around the mother. During feeding the animals can bite one another in their eagerness for the food, and in the breeding season the males can be aggressive towards each other. Do not add a new male to a group with both sexes in the breeding season.

In the aquarium the animals are active both day and night. They come up regularly to breathe, and you can hear a small squeak when the air is drawn in. *Typhlonectes compressicauda* can be kept together with *Typhlonectes natans*. Fish are not recommended: dead and weakened fish are eaten, mucus from stressed caecilians can kill fish, and fish from other regions can carry diseases.

Handle the animal as little as possible; it is slippery, slimy and wriggles. Use a firm container rather than a net, which can wear off the mucus layer and cause skin infections.

Breeding

SEXUAL MATURITY AND SEXING

The sexes can only be told apart reliably in sexually mature animals: the male has a larger, more rounded rear end and a broader cloacal disc, while the female's cloacal disc is more elongated and slit-shaped. In this species the cloacal disc is particularly large. The animals reach sexual maturity after about 16 months and continue to grow afterwards. The female's

reproductive cycle is two years, so she gives birth at most every second year.

MATING

In the wild the species mates in the rainy season, from February to May. Fertilisation is internal: the male has an eversible copulatory organ and coils around the female or lets her drag him around, and mating can last several hours. The species breeds in captivity without a dry period on land. Stable conditions and a settled group promote breeding.

EGGS AND LARVAE

Typhlonectes compressicauda does not lay eggs. The foetuses develop in the female's oviducts, first on the yolk and later on nourishment from the lining of the oviducts, which they scrape with special foetal teeth. They have large, transparent, leaf-shaped gills. Gestation lasts 24-30 weeks in captivity and about six months in the wild, where the young are born at the beginning of the dry season, while the water level is still high.

The female gives birth to 1-8 young over several days, most often 3-4. The young are 10-14 cm long and can measure 40 % of the mother's length. Birth can cause complications, so a gravid female is monitored closely.

METAMORPHOSIS

There are no free-living larvae and no metamorphosis in water. The young are born fully developed with external gills, which fall off within a few hours, leaving a small depression in the neck. After that they are small versions of the adults.

REARING THE YOUNG

The young gather in a group around the female and can stay with the adults. Provide extra floating plants, cork bark and branches so that the young can rest at the surface, because they swim poorly and can drown. The water must be at least 26 °C.

It can be several weeks before the young begin to eat. After that they are fed more often than the adults, with smaller pieces of the same foods. Have a plan for the young before the animals are allowed to breed.

Health and common mistakes

Aquatic caecilians are hardy in stable, clean water. The most common problems are:

- Skin inflammation: white, cottony patches from fungi or bacteria, often after injuries, poor water or too low a temperature. Skin diseases are the most common cause of death in aquatic caecilians in captivity and require a vet.
- Kidney disease, especially in older animals.
- Burns from unguarded heaters: even small burns easily become infected and can kill the animal.
- Escape and injuries in filters: the animals crawl into filters and out of the aquarium. Mesh and tight lids are necessary.
- Redness at the cloacal disc and lethargy: signs of septicaemia, often after poor water.
- Parasites under the skin, which cause swellings and white coatings.
- Complications in pregnancy and birth.

The chytrid fungus *Batrachochytrium dendrobatidis* (Bd) occurs in caecilians both in the wild and in captivity, also in animals without symptoms. New animals are quarantined and tested, and nets, equipment and hands are washed between aquariums. *Batrachochytrium salamandrivorans* attacks salamanders and newts, and caecilians are thought to be resistant.

Go to a vet with amphibian expertise if the animal does not eat, has white coatings, sores or redness, or lies out of the water for a long time.

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.