herpy

FROGS

Chacoan Horned Frog

Ceratophrys cranwelli

Ceratophrys cranwelli is a broad, nocturnal ambush hunter from the Gran Chaco in South America. It lies buried with only its eyes and mouth showing and snaps up anything that fits into its mouth. The species grows to 8-13 cm, must live alone and is robust enough to be a good first frog, provided you can live with the fact that it is not to be picked up and bites hard.

Family: Ceratophryidae

KEY FACTS

THE ANIMAL

Adult size	**8-13 cm** snout-vent length
Weight	**117-202 g**
Lifespan	**10-15 years**
Active	**At dusk and at night**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Savanna and dry forest**
Skin toxins	**None known**
Difficulty	**Beginner**

CARE

Min. enclosure	**45 × 45 × 30 cm** L × W × H for 1 adult
Temperature, day	**24-28 °C**
Temperature, night	**22-24 °C**
Humidity	**50-70%**
Water	**Water dish**
UVB	**Optional** Ferguson zone 1
Winter rest	**16-20 °C** 6-12 weeks
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**In water**
Sexually mature	**18-24 months**
Eggs per clutch	**900-2,000**
Hatching	**2-4 days** at 24-26 °C
Larval period	**21-41 days** from hatching to metamorphosis
Larval diet	**Other tadpoles**
Parental care	**None**

PROTECTION AND PAPERWORK

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

About the species

Ceratophrys cranwelli is a stout, almost spherical frog with a large head and a mouth almost as wide as the body. Above each eye sits a small, pointed flap of skin like a horn. Adults typically grow to 8-13 cm from snout to vent. The female can weigh almost twice as much as the male, about 200 g against 120 g. Wild animals are green to brown with darker spots, and in captivity there are many bred colour forms, including albinos in yellow and orange and green and bluish lines.

The species was described by Barrio in 1980 and is named after the Argentine herpetologist Jorge A. Cranwell. It is closely related to *C. ornata* and was formerly regarded as the same species. *C. cranwelli* is slightly smaller and often more brownish, takes food over a wider range of temperature and humidity and is today by far the most common species of the genus in the trade. Crosses between the two species are sold as so-called fantasy frogs. They are normally sterile, and crossing the species is discouraged.

The frog is a pronounced ambush hunter. It buries itself so that only the eyes stick up and waits until prey comes close enough. Then it lunges with a single strike. The bite force is unusually large for a frog. The upper jaw has a row of sharp teeth, and the lower jaw two tooth-like projections that hold on to the prey. A bite from a large frog hurts and often draws blood.

Toxic skin is not known in *C. cranwelli*, and the skin is therefore not regarded as toxic. The real risk is the bite. Wash your hands after contact with the animal, the water and the substrate.

Read more: Humidity, misting and ventilation

Distribution and habitat

Ceratophrys cranwelli is endemic to the dry Gran Chaco in South America: northern Argentina, Bolivia, Paraguay and a small area in Brazil. Records lie mainly in Argentina, Bolivia and Paraguay. One known locality is Formosa Province in northern Argentina.

The Gran Chaco is a large, flat lowland plain with dry forest, scrub and savanna. The species is a typical Chaco species, and records far outside the region come from captive animals or misidentifications.

> **Native range:** Argentina, Bolivia, Paraguay and Brazil.

HABITAT

Ceratophrys cranwelli lives on the ground in the dry forests, scrub and open savannas of the Gran Chaco. In the summer rainy season it is hot, often over 35 °C, and the humidity is over 70 %. The winter dry season is cooler and dry, and night frost can occur. For most of the year the frog lies buried. After heavy summer rain it comes up, eats and breeds in temporary rain pools, but never in permanent ponds.

During periods that are too dry or too cold, the frog goes into dormancy. It forms a cocoon of several layers of shed skin, which limits evaporation. When dormancy is over, it pushes the cocoon off with its legs and often eats it.

Read more: Brumation and the seasons

Care

THE ENCLOSURE

An adult needs a horizontal enclosure of at least 45 × 45 × 30 cm. The rule of thumb is a floor area of 8-10 times the animal's size, and height matters less, because *Ceratophrys cranwelli* sits on the ground and does not climb. Larger is better for a big female, but a young frog in a large enclosure with few feeder insects may struggle to catch anything. Always keep the animals separately.

The most important thing is a deep, loose substrate layer that the frog can bury itself completely in: 10-15 cm for adults. A mixture of coconut fibre, a little sphagnum and fine, composted orchid bark holds moisture, aerates well and does not smell. A bioactive forest-floor substrate is a good alternative, because pure coconut fibre easily dries out and sticks to the skin. Avoid gravel and pebbles, which are swallowed with the food and can cause impaction. Place leaf litter or moss on top and a few pieces of cork bark or half flowerpots where the soil stays a little damper. Robust plants such as pothos, *Aglaonema* and ferns can stand in pots buried in the substrate so that they do not get dug up.

Sift the substrate for droppings, and replace it completely when it smells or becomes slimy. If several enclosures stand side by side, put screens between them, because the frogs throw themselves at the glass at animals on the other side and can injure their snout and jaws.

Read more: Terrarium construction and bioactive substrate

TEMPERATURE

During the day the enclosure is kept at 24-28 °C and at night at 22-24 °C. Young frogs eat poorly if it is much below 25 °C. A heat mat should be on the side of the enclosure, not under the bottom, because a frog that digs down to get away from the heat will otherwise end up digging towards it. Always use a thermostat, and measure the temperature down at the substrate for a few days before the frog moves in. Over 30 °C or under 18 °C for a longer time can be fatal for the genus.

If it gets too cold in winter, the frog may go into dormancy. At a steady temperature of about 26 °C this does not normally happen. For breeding, the animals get a deliberate cool and dry period at 16-20 °C for 6-12 weeks (see Breeding). Only healthy, well-nourished animals should undergo dormancy.

Read more: Heat and temperature

HUMIDITY AND MISTING

Humidity is kept at 50-70 %, lower than for most other South American frogs, because the Gran Chaco is a dry region. *C. cranwelli* tolerates humidity falling during the day, as long as the substrate is moist. Mist lightly in the evening, just enough to keep the soil moist but not wet. Provide both damper and drier areas in the substrate, and let young frogs have it a little damper than adults.

Use tap water treated with a water conditioner against chlorine and chloramine, or rainwater. If the substrate dries out completely for a longer time, the frog risks going into unwanted dormancy or drying out.

WATER AND WATER QUALITY

Always provide fresh water in a shallow, heavy bowl that the frog cannot tip over when it digs and that is large enough for the whole animal to lie in. The water should reach no higher than the frog's mouth, so that it can rest with its head above the water. The exact depth in cm is not documented, but depends on the size of the animal.

The frog often relieves itself in the water, especially when it is warm, so check and change it every day. It also uses the bowl when shedding its skin, and the shed skin must be removed. Amphibians absorb water and dissolved substances through their skin, so clean the bowl without soap and rinse it thoroughly.

LIGHTING AND UVB

UVB is not necessary for *Ceratophrys cranwelli*, but the frog does get a little UV in the wild, and a weak UVB tube (Ferguson zone 1) can be an advantage. If so, provide plenty of shade with broad-leaved plants and the opportunity to bury itself. Albinos are sensitive to light and should not have UVB.

Ordinary LED lighting gives a day-night rhythm with 12 hours of light, and at night it must be dark. The frog is most active at dusk and at night and lies buried for most of the day.

Read more: Lighting and UVB

FEEDING

Ceratophrys cranwelli eats almost anything that moves and fits into its mouth. In the wild it eats other frogs, among other things. The staple diet should be insects and worms: crickets, roaches, locusts and earthworms, preferably varied with silkworms, prawns and a little fish. Mice should be given only rarely and only to large females, because the frog can become so fond of them that it refuses insects, and the fatty food causes obesity.

Young animals are fed daily with as much as they will eat at a time. They grow quickly and can be fully grown after 6-9 months. Adults are fed only every few days or once a week. Overfeeding is one of the most common mistakes. An adult frog in good condition is slightly longer than it is wide, and it can go for months without food. Never force-feed a frog that will not eat.

Feed the feeder insects well 1-2 days beforehand, and dust them with calcium and a multivitamin with D3 at every second feeding for juveniles and less often for adults. Use tweezers, and do not let the frog swallow large amounts of substrate.

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

BEHAVIOUR AND HANDLING

Ceratophrys cranwelli is a calm, sedentary frog that can lie in the same place for weeks. It is nocturnal and rests with its eyes open. Young frogs sometimes use a hind foot as a lure to trick other frogs and lizards close, but this is rarely seen in enclosures.

Always keep the animals separately. Both juveniles and adults eat each other if they can get their mouth around a conspecific, even when they are almost the same size.

Avoid handling the frog. If it has to be moved, grip it from behind, and keep your fingers away from the mouth. If it bites, wait until it lets go by itself, because if you pull your hand away, the projections of the lower jaw can tear a deeper wound. The males call loudly, almost like a distressed duck, often after misting. The females are silent.

Breeding

SEXUAL MATURITY AND SEXING

Females grow significantly larger and heavier than males, have a larger head and are silent. Males have loose skin in the throat, where the vocal sac sits, and a nuptial pad on the innermost finger. In young animals the sex is hard to see.

The species becomes sexually mature at about two years of age. Do not let the animals breed until they are fully grown and in good body condition.

MATING

Breeding is difficult in an ordinary living room and follows the species' natural rhythm: a cool, dry period and then artificial rain. The procedure below is described for *C. ornata* and is also used for *C. cranwelli*. Feed the animals well for a month, and stop feeding two weeks before the dormancy, so that the gut is empty. Then lower the light to about 8 hours and the temperature gradually to about 20 °C, mist less, and when the animals have buried themselves, to 16 °C. Let them rest for 6-12 weeks with fresh water available, the shortest time for the youngest animals.

Wake them again with gradually higher temperature and humidity, and feed them up for a week. Then place them in a rain chamber with water at about 25 °C, deep enough that they can stand on the bottom with the head above water, and mist heavily several times a day or use a rain system. Several males to one female increases the chance. The males begin to call, and the eggs often come 3-4 days after the rain has begun.

Breeding can also be triggered with hormone treatment: the male calls after a quarter of an hour, the pair is in amplexus after a few hours, and the eggs are there the next morning. The method is used by researchers and vets, not by private keepers.

EGGS AND TADPOLES

The female lays 900-2,000 eggs in the water, and floating aquatic plants give the eggs something to attach to. Remove the parents as soon as the eggs are laid, otherwise they will eat them. There is no parental care.

The tadpoles are pure predators and readily eat each other. There are two methods: each tadpole in its own small container, or all in one large tank with plenty of floating plants to hide in. Both require a lot of work. Feed several times a day with live food such as tubifex, mosquito larvae and chopped earthworms, and keep the water clean with daily water changes or siphoning. Even with care, losses to cannibalism must be expected. The water is kept at 24-26 °C.

Read more: Rearing tadpoles

METAMORPHOSIS

The eggs hatch within 2-4 days. The tadpoles grow very fast, and the larval period is 3-6 weeks: about three weeks in the wild and up to 41 days at 25 °C in captivity.

When the front legs appear, the tadpoles must have access to land: lower the water level and add floating bark or a sloping rock so that they can climb out. The young measure 30-40 mm at metamorphosis and must be separated at once, because already now they eat each other. Young with a sibling's hind leg sticking out of the mouth are often seen.

REARING THE YOUNG

The newly metamorphosed juveniles must live separately in small containers, for example plastic cups, with a damp substrate and a hiding place. Group rearing causes losses, even when the juveniles look the same size.

The juveniles eat anything that moves. Give small crickets, roaches and earthworms daily, and dust the food with calcium and vitamins with D3 at every second feeding. An earthworm in a thin film of water can get a fussy juvenile to eat, because the movement resembles a tadpole. Move them to larger containers as they grow, and never use gravel on the bottom.

Health and common mistakes

Ceratophrys cranwelli is robust when husbandry is in order. Typical problems:

- Impaction when the frog swallows gravel or pebbles with its prey. Young animals are particularly at risk. The signs are lack of droppings, a bloated belly and lethargy. The vet can treat with a laxative, and in severe cases the gut can become so full that breathing is impaired.
- Obesity from overfeeding, especially with mice and other fatty food.
- Frogs that will only take mice and refuse insects.
- Injuries to the snout and jaws when the frog throws itself at the glass. Put screens between the enclosures.
- Bone disease in young animals when the food is not dusted with calcium and D3, with soft bones and crooked legs.
- Unwanted dormancy from a substrate that is too dry or too cold.

Seek a vet with knowledge of amphibians if the frog has no droppings, has a bloated belly, swells up, has sores or red skin, or seems listless without being in dormancy.

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.