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FROGS

Amazonian Horned Frog

Ceratophrys cornuta

Ceratophrys cornuta is a stout, wide-mouthed frog from the rainforest of the Amazon and the Guiana region, which lies buried in the leaf litter with only its eyes and horns visible and strikes when something edible passes. Females reach up to 15 cm, and the mouth can take prey almost as large as the frog itself. As a rainforest species it needs more humidity than its relatives from the dry plains further south.

Family: Ceratophryidae

KEY FACTS

THE ANIMAL

Adult size	**7-15 cm** snout-vent length
Lifespan	**10-15 years**
Active	**At dusk and at night**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Rainforest and wetland**
Skin toxins	**None known**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 45 × 30 cm** L × W × H for 1 adult
Temperature, day	**25-28 °C**
Temperature, night	**23-25 °C**
Humidity	**75-90%**
Water	**Water dish**
UVB	**Optional** Ferguson zone 1
Diet	**Insects, vertebrates and worms/snails**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Development	**Tadpoles in water**
Egg-laying site	**In water**
Sexually mature	**36-48 months**
Eggs per clutch	**300-1,000**
Hatching	**3-25 days**
Larval period	**28-90 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 cornuta is a large, heavy and almost round frog with an enormous head. The mouth is unusually wide and has long, sharp teeth. Above each eye there is a small, pointed flap of skin resembling a horn, which together with the frog's colours camouflages it among fallen leaves. The skin bears small, pointed warts, the legs are short and sturdy with dark crossbars, and the thighs are brown with faint yellow spots. The belly is grey, and the mouth cavity is white.

Adults measure 7-15 cm from snout to vent. Females are largest. Males are more brightly coloured and shift between tan, lime green and dark green, sometimes all three at once, while females are most often tan. Males have nuptial pads on the toes of the forefeet and a vocal sac in the throat. A few animals can grow larger than 15 cm.

The species was described by Linnaeus in 1758 as *Rana cornuta* and is thus the first-described species in the genus. It was for a long time regarded as the same species as *Ceratophrys ornata* but lives in a different habitat and does not cross with it in the wild. In captivity *C. cornuta* can be crossed with *C. cranwelli* and *C. ornata*, and the offspring are sold as hybrids. Crossings should be avoided if the pure lines are to be preserved.

It is a typical ambush predator that eats almost anything that can get into its mouth: frogs, fish, lizards, mice and other vertebrates, including tadpoles of its own species. Fully grown animals are aggressive and bite hard. The skin has no known toxin, but always wash your hands after contact with the animal, the water and the substrate. The real risk is the bite: the upper jaw has a row of very sharp teeth, and a bite from a large frog hurts and often draws blood.

Read more: Rearing tadpoles

Distribution and habitat

Ceratophrys cornuta lives in the northern part of South America: in the Amazon basin in Colombia, Ecuador, Peru, Bolivia and Brazil and in Venezuela and the Guiana region, that is Guyana, Suriname and French Guiana.

The species lives in lowland rainforest and is not regarded as threatened.

> **Native range:** Colombia, Ecuador, Peru, Bolivia, Brazil, Venezuela, Guyana, Suriname and French Guiana.

HABITAT

The species lives in old, humid rainforest and in open patches in the forest where the leaf litter lies thick on the ground. It stays by freshwater swamps and temporary waterholes, where it breeds. The climate is warm and humid all year with heavy rainfall.

The frog is nocturnal and avoids the heat of the day. It buries itself in leaves and soil with only its head free and waits until something passes. It lives solitarily, and the males defend their territory fiercely. In the breeding season the males gather in larger groups at waterholes and call with a noisy, bleating sound.

Care

THE ENCLOSURE

There is relatively little knowledge about the husbandry of *Ceratophrys cornuta*, because the species is bred far less often than *Ceratophrys cranwelli* and *Ceratophrys ornata*. Husbandry is based on the two close relatives and adjusted for a species from humid rainforest.

An adult needs a horizontal terrarium of at least 60 × 45 × 30 cm. The floor area should be at least 8-10 times the size of the frog, and a large female may well have more. Height matters little, because the frog does not climb and jumps poorly. Keep the animals separately, because the species eats conspecifics, even large ones.

Provide 10-15 cm of loose, damp substrate so the frog can bury itself completely, for example coconut fibre mixed with a little sphagnum and fine bark chips. Lay a layer of leaf litter or moss on top, so the substrate resembles the forest floor, and add a hide of cork or a half flowerpot as well as a low, heavy water bowl. Plants in pots, for example pothos, give cover and help with humidity; leave them in the pots so they are not dug up. Avoid gravel and small stones, which the frog can swallow.

The lid must have good ventilation, so the substrate does not turn sour and mouldy. Remove faeces and food remains at least once a week, and replace the substrate completely when it smells or begins to rot. If several terrariums stand side by side, put screens between them, so the frogs do not throw themselves at the glass and wear down their snouts.

Read more: Humidity, misting and ventilation

TEMPERATURE

By day the terrarium is kept at 25-28 °C and at night at 23-25 °C. The figures are borrowed from the other species of the genus and lie at the warm end, because *C. cornuta* comes from warm rainforest.

Use a heat mat on the side of the terrarium or a heat bulb in the lid and always a thermostat. A heat mat under the substrate dries out the soil. Have two thermometers, one at the warm and one at the cool end. Do not place the terrarium in direct sun. Hibernation or dry-season dormancy is not documented for the species and is not necessary; the temperature can be kept even all year round.

Read more: Heat and temperature Read more: Brumation and the seasons

HUMIDITY AND MISTING

Humidity is kept at 75-90 % all year, higher than for the related species from the Pampas and Chaco, because the species comes from rainforest. Mist the substrate lightly every day, so it is damp but not wet, and keep both damper and drier areas, for example under a hide.

The skin is thin and absorbs water and substances directly, so the substrate must never dry out completely. A constantly wet substrate causes fungus and skin problems. Use water without chlorine and chloramine for misting.

WATER AND WATER QUALITY

Always provide a shallow bowl of fresh, treated water, large enough for the whole frog to lie in, but with the water level reaching no higher than the frog's mouth. The frog swims poorly and must be able to rest with its head above water and get out without difficulty. The bowl must be heavy enough that the frog's digging does not tip it over.

The frog often defecates in the water, so change it every day, and clean the bowl in hot water without soap. Amphibians are very sensitive to insecticides, so never use sprays near the terrarium.

LIGHTING AND UVB

UVB is not necessary, but a weak UVB tube (Ferguson zone 1) can be beneficial. Hang it over one side, so there is always shade in the rest, and omit UVB for albino animals, which are light-sensitive. Keep the light on for 12 hours a day, preferably controlled by a timer, and dark at night. The frog is nocturnal and lies buried most of the day. Low-output fluorescent tubes or LEDs are enough for plants and to give a fixed daily rhythm.

Read more: Lighting and UVB

FEEDING

The species eats almost anything that can get into its mouth. In the wild it eats frogs, fish, lizards, mice and other vertebrates as well as large insects. In the terrarium the staple food should be insects and worms: crickets, grasshoppers, cockroaches and earthworms. Fish can be given for variety. Mice are given only rarely to large animals, because the frog can become dependent on them and refuse insects, and a diet of mice alone causes obesity.

Young frogs are fed daily and can grow quickly, adults every third to sixth day. The frog eats as long as there is food and easily becomes too fat. A healthy adult frog is slightly longer than it is wide. Give several small feeders rather than one large one, and use tongs, so the frog does not swallow substrate. The frog can choke if it tries to swallow something too large. A healthy, well-nourished frog can go for several weeks without food.

Feed the feeders well 1-2 days beforehand, and dust them with calcium with D3 at every second meal together with a multivitamin once in a while. Vary between earthworms, crickets, grasshoppers and cockroaches. If a newly acquired frog refuses to eat, leave it dark, warm and humid and put several large live feeders in the terrarium; force-feeding does more harm than good.

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

BEHAVIOUR AND HANDLING

Ceratophrys cornuta is a sedentary frog that lies buried most of the time and emerges only to eat. Fully grown animals are aggressive and can jump at a hand that comes too close, and the bite hurts. If it bites, wait until it lets go itself, because if you pull your hand away, the sharp teeth can tear the wound open.

The animal is not suited to being picked up. Move it as little as possible, and use a clean plastic box, for example when cleaning. If you must touch it, take hold from behind and keep your fingers away from the mouth. Keep the species singly: it eats conspecifics. The males call loudly with a noisy, bleating sound.

Breeding

SEXUAL MATURITY AND SEXING

Females are largest. Males have nuptial pads on the toes of the forefeet and a vocal sac in the throat, and they are more brightly coloured than females. In young animals the sex is hard to see. The species becomes sexually mature after 3-4 years. Use only healthy, fully grown animals in good condition for breeding.

MATING

Ceratophrys cornuta is rarely bred in captivity. In the wild it breeds seasonally in temporary waterholes, and the males gather and call to the females. Mating takes place as in other frogs with a clasp (amplexus), and fertilisation takes place outside the female's body.

For breeding the same principles are used as in the related species: the animals are fed generously, and the rainy season is imitated by putting them in a shallow tub of water where they can reach the bottom with their feet and climb out, and misting heavily several times a day. Floating aquatic plants give the female something to attach the eggs to. In the related species egg-laying typically comes 3-4 days after the "rain" has begun. Whether a cool, dry rest period beforehand is necessary has not been documented for this rainforest species.

EGGS AND TADPOLES

The female lays up to 1,000 eggs, often 300-600, and winds them around aquatic plants. Remove the parents after egg-laying, because they eat the eggs. There is no parental care.

The tadpoles are carnivores and fight each other and the tadpoles of other species already shortly after hatching. Keep them singly in small containers or in a large tub with plenty of floating plants to hide in, and feed them several times a day with live food such as tubifex, bloodworms and chopped earthworms. The water must be clean and treated.

METAMORPHOSIS

The eggs hatch after 3-25 days, depending on temperature; in the related species it takes only 2-3 days. The tadpoles metamorphose after 1-3 months, most often about 90 days in *C. cornuta*, while the relatives can manage with 3-6 weeks. The time depends on temperature and feeding.

When the forelimbs appear, the tadpole needs shallow water and easy access to land, for example a sloping stone or a floating piece of cork, otherwise it drowns. The tadpoles can go on eating in the middle of metamorphosis. Move the newly metamorphosed young away from the others, so it is not eaten.

REARING THE YOUNG

The young measure 10-13 mm at metamorphosis. Keep each young one separately in a small box with a couple of centimetres of damp soil, a shallow water bowl and a hide, because the young also eat their siblings. Mist daily and keep 25-28 °C.

Give small, live feeders such as springtails, small crickets and earthworms daily, dusted with calcium and vitamins, and move on to larger feeders as the young grow. Weigh or measure them regularly, and move them to a larger terrarium when they become too large for the box.

Health and common mistakes

The species is hardy, but several problems arise in husbandry:

- Obesity and malnutrition. A diet of mice alone causes obesity and vitamin deficiency. Vary the food, and dust the insects with calcium and D3.
- Choking. The frog may try to swallow something too large. Give food of a suitable size.
- Constipation from swallowed gravel or substrate.
- Dirty water and substrate. In a closed, wet terrarium bacteria multiply quickly. Change water every day, and remove faeces regularly.
- Nose injuries. The frog throws itself at the glass at movement outside the terrarium. Put screens between the terrariums, and do not leave live food visible.
- Chemicals. Tadpoles and frogs are very sensitive to insecticides and cleaning agents. Keep the terrarium free of sprays.
- Parasites. Amphibians caught in the wild often have intestinal parasites. Take a faecal sample to a vet with amphibian expertise if the frog loses weight or eats poorly.

If the frog stops eating for several weeks, has swellings, sores or red skin, or yawns without closing its mouth again, contact a vet with amphibian experience.

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.