

The BEAT

PEOPLE FASHION

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The toad Trinis love to hate...

The contentious crapaud

WHILE Trinidadians do not traditionally celebrate Halloween, if we did, we certainly would have had a rich palette of characters from which we could choose a trini-styled costume. Our wildlife, in particular, abounds with interesting subjects and there is one animal that is especially well suited. So what goes bump in the night, can kill your pet dog and is generally abhorred by all but the most ardent nature lovers? The crapaud of course!

The crapaud (*Rhinella marina*) or cane toad is a very common amphibian (formerly classified as *Bufo marinus*). The word crapaud is actually a French term for any large toad. Also known as the crappo, marine toad or cane toad, they can be found in a wide range of habitats, including forests, swamps, savannahs and even urban areas. Like most amphibians, they are not fond of saline environments but their tadpoles (and presumably the adults as well) are capable of surviving in brackish environments.

The crapaud is native to Trinidad and Tobago, as well as much of Central and South America, but has been introduced all around the world as a means of pest control. These toads were brought into many countries to feed on cane beetles (*Dermolepida albobirtum*) which were agricultural pests in sugar-cane plantations. Unfortunately, they feed on a wide range of animal matter and, outside of their native ecosystem, quickly became a threat to a much wider range of species than just cane beetles.

These toads are not picky eaters. Their diet includes living and non-living items

such as insects, small birds, rodents, reptiles and other amphibians, as well as dog chow and rice. Such a voracious appetite, combined with their high rate of reproduction, makes the crapaud a dangerous invasive species in other countries and a real threat to their native species.

As young zoologists, we dissected quite a number of these toads in our undergraduate years. I guess you can say we knew the features of the then *Bufo marinus* inside and out! Perhaps the most fascinating features of these toads for me were the parotid glands - swollen areas just behind the eyes - that exuded a milky white neurotoxin that can kill your dogs if left untreated. The fastest solution is to quickly wash the dog's mouth with lots of water and rub salt on your dog's tongue as soon as you can, if not, your pet will start foaming or frothing at the mouth and then gradually die of heart failure.

Many years later, I learnt that some people enjoy toad licking just as much as eating psilocybin mushrooms to get high. Some toads, plants and mushrooms contain psychoactive compounds or entheogens that promote an elevated state of being. Entheogens are used to generate the "divine" within, and are used by shamans, and other spiritualists, to induce altered states of consciousness.

The Chinese have used dried toad venom in their

folk remedies, Huachansu, to stop the spread of various cancers in patients.

Since the 1970s the Chinese Food and Drug Administration have approved clinical trials of toad venom in treating patients with liver, lung, colon and pancreatic cancer. More recently there have been promising signs for its use in the treatment of prostate cancer. The bufotoxin is sometimes used to lower the heart rates of cardiac patients undergoing surgery.



THE TRINIDAD AND TOBAGO FIELD NATURALISTS' CLUB

In South America, the Embera-Wounaan (formerly the Choco in Panama), a semi-nomadic indigenous people, use the bufotoxin as poison for their arrow heads. In Peru, the cane toads may sometimes be consumed after removing the toxic parotid glands and skin.

In Japan, one of the neurotoxic compounds, bufotenin, is used as an aphrodisiac and hair restorer.

In the 20th century, cane toads were even used by some as a pregnancy test; if the urine of a woman was injected into the lymph sacs of the toad and spermatozoa were seen in the toad's urine, it meant that the woman was pregnant.

Toad venom or bufotoxin may contain one or more of the following steroid lactones: bufotenin, bufalin, bufagin, bufotalin, bufothionine, epinephrine, norepinephrine and serotonin. These compounds are found in the eggs and tadpoles of the cane toads, thus making them toxic to predators and humans.

As the toads develop and grow, the venom remains in the parotid glands and the skin and are released as a defence mechanism when the toads feel threatened.

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THE crapaud (*Rhinella marina*) is a very common amphibian in TT.
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ENVIRONMENT

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They are resilient and relentless. I have a distinct recollection of after having dissected my specimen, with all his innards spilling out of his abdomen, my toad miraculously resurrected, lifting hands and feet, dissecting pins and all, and just sat on my dissecting board. Amazed, I sought help to administer another dose of chloroform and continue with our day's physiology experiment.

Many years later, I recall driving along the Aripo Savannas, looking for these toads on a dark, rainy night, with another postgraduate friend of mine, who was studying the intestinal parasites of these amphibians. Many of them had tumours in addition to parasites and as such provide scientists with information regarding the state of health of the environment and the effects of pollution on our ecosystems.

Some of these may not have been destined to be frog princes, but they certainly are excellent natural bio-indicators of the environment.

But they are not just subjects for laboratory experiments. As predators of a wide range of terrestrial invertebrates, the crapaud no doubt performs an important function by controlling pest populations thereby supporting agriculture. Driving along some of the roads in Germany, I was amazed to see road signs that promoted the protection of frogs. How totally opposite to the attitude that prevails here in Trinidad and Tobago, where frogs are routinely killed on sight.

Frogs and toads face numerous challenges globally. In addition

to the chytrid fungal infections that some amphibians, such as the Dominican mountain "chicken", are succumbing to, there is now a Ranavirus outbreak in Spain, which threatens the frogs, newts and salamanders there. It was observed that snakes eating these virus-infected frogs were also contracting the infection. Needless to say, this does not bode well for reptiles and amphibians globally.

Some studies indicate that although some frog populations have been declining, others are making a re-appearance, while more still are doomed to becoming extinct.

The Germans are onto something. We need to keep our biological control agents alive. While they can cause severe problems when introduced to places like Australia, in their native habitat, frogs and toads eat flies and other insect pests, making human life more comfortable and supporting agriculture and natural ecosystems. As disease, pollution and global warming threaten the very existence of these remarkable animals, it is our duty to try our best to conserve them.

So the next time you come across one of these interesting toads, spare a thought for how important it is. And spare its life.

Today's feature was written by Natasha Mohammed. For more information on our natural environment, you can contact the Trinidad and Tobago Field Naturalists' Club at admin@ttfnc.org or visit our website at www.ttfnc.org. The Club's next monthly meeting will be held on November 13 2014 at St Mary's College, PoS.

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