

# Kiss of death: TT's assassin bugs

By ELISHA TIKASINGH

**KISSING** bugs are also known as assassin bugs and conenose bugs. They are widespread in the Americas and are important group of insects because they carry a parasite which affects the heart muscle and other organs of the human body. The disease is known as Chagas's disease or American trypanosomiasis.

The bugs belong to the family Reduviidae and sub-family Triatominae. Most of the triatomines take a blood meal from vertebrates. Reduviids are generally oval in shape. The head is elongated and cone-shaped, hence the name conenose bugs.

The mouthparts are short, three-segmented and bent backwards under the head when they are not feeding. They are generally black or brown in colour. Females lay from a few dozen to several hundred eggs. Eggs are hatched into nymphs and there are five nymphal moults before reaching to adults. The life cycle is about a year.

Six species of triatomid bugs are known to exist in Trinidad: *Panstrongylus geniculatus*, *Rhodnius pictipes*, *Eratyrus mucronatus*, *Triatoma fasciata*, *Microtriatoma trinidadensis* and *Panstrongylus rufotuberculatus* (CAREC unpublished data, Omah-Maharaj 1984, 1987).

Staff at the Trinidad Regional Virus Laboratory in fact have maintained laboratory colonies of the first three species. Some species such as *P geniculatus* are attracted to light and will fly into homes at night. Such specimens had been collected and brought to my laboratory from residents living in Diego Martin and a specimen was collected from a home on Lady Chancellor's Hill near Port-of-Spain.

Kissing bugs generally are found in forested areas and species like *P. geniculatus* live in animal burrows such as armadillos while some species like *E mucronatus* and *R pictipes* live in palm trees (Maharaj 1987).

In rural Latin America some species are adapted to human habitation where the poorer people live in adobe houses. The bugs live in cracks and crevices in the walls and may also hide behind hanging pictures and under mattresses.



PANSTRONGYLUS GENICULATUS: a TT reduviid. (PHOTO: WIKIPEDIA)

At night when people are sleeping they come out to bite usually in the face and head region (which explains the name 'kissing bug'). The bites of some species are painful, but in others the bite is hardly felt. Some individuals who are sensitive to the bites of these bugs might experience burning sensations with itching and some swelling.

Kissing bugs transmit a parasite called *Trypanosoma cruzi* the aetiological agent of Chagas's disease.

Dr Wilbur Downs (1963), Director of TRVL was the first person to draw attention to the presence of the parasite in Trinidad. At about the same time Dr THG. Aitken found the bug, *Panstrongylus geniculatus* in Trinidad and Fistein (1966) collected *P geniculatus* and noted the infective stage of the parasite was present in the bug.

The infective stage of the parasite is found in the hind gut of the bug and eliminated with the faeces. Staff at TRVL-CAREC have subsequently found that more than 50 percent of *P geniculatus* collected and examined harboured the infective stage of the parasite in the hind gut.

Maharaj (1987) found 42.5 percent of *P geniculatus* and 8.3 percent of *Rhodnius pictipes* infected. During feeding or right after taking a blood meal the bug defecates and the infective stage is eliminated with the faeces.

Transmission of the parasite occurs when an individual itches after a bite by the bug and contaminates one's fingers with the faeces containing the infective stage of the parasite and then rubbing one's eyes with the infected fingers. Soon there will be swelling surrounding the eyelid the first



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sign of Chagas's disease. Symptoms of the disease include fever, enlargement of the lymph nodes and damage to the heart muscles. In some people the digestive tract may be involved as well as the brain.

Dr Omah-Maharaj (1987) examined a number of wild mammals in various parts of Trinidad and found the opossum (*Didelphis marsupialis*) and armadillo (*Dasybus novemcinctus*) naturally infected with the parasite.

A cardiologist, Dr B Fistein during routine clinical investigations found a few of his patients had heart problems suggestive of Chagas's disease. Later, Fistein and Sutton (1963) published the results of a serological study which suggested that the parasite might indeed be affecting humans in Trinidad.

However, a serological study on 512 individuals conducted by Maharaj (1987) found no evidence that people were being infected with Chagas's disease in Trinidad.

The parasite, the vector and reservoir hosts are present in Trinidad, but there has been no conclusive case of Chagas's disease.

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