

TRITOMA DIMIDIATA LATR., FOUND NATURALLY
INFECTED WITH TRYPANOSOMA CRUZI
CHAGAS IN PANAMA

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On January 8, 1936, one of the laboratory's native helpers presented the writer with two nymphal Reduviids, which had been caught in one of the houses in the town of Chorrera, a community situated 21 miles west of Panama City. The same worker sent in seventeen more specimens of the same species, as follows: on March 3, an adult male and three nymphs; March 7, three adult males; March 18, two adult males; March 24, two adult females and a nymph; April 1, an adult male; and on April 8, two adult males and two females. A specimen sent to H. G. Barber, of the United States National Museum, was identified as *Triatoma dimidiata* Latr.

All of these bugs were captured in the same house; they were taken at night when they came out of their hiding places to feed on the inhabitants of the house. The children were apparently more frequently attacked than the adult members of the family, and the mother pointed out to the author a huge wheal on the scalp of one of the children, which had been caused, she said, by the bite of this bug. The house is typical of those possessed by the poorer class of natives in the interior, with a mud floor, walls of sun-dried clay, and a palm-thatched roof, in which the insects find splendid hiding-places.

Of the nineteen bugs that were received, two nymphs and a female died either before reaching the laboratory or immediately afterwards, and no observation could be made as regards their possible infection with *T. cruzi*. A nymph, a female, and three males died before microscopical examinations could be made of

the stools; the guinea pigs on which they were fed have either died or have not yet showed any sign of infection. Of the remaining eleven, three have so far been found positive for *T. cruzi*, all by stool examination, while one of the three has transmitted the parasites to a clean guinea pig. This bug, a nymph, fed on the guinea pig on March 17, and several times since that date.

On April 2 the pig showed trypanosomes in its peripheral circulation, and the infection has become increasingly severe; at the time of writing (one month after the guinea pig became positive) a thick film contains approximately 100 trypanosomes. Due to exceptionally high mortality among the guinea pigs, no observations concerning the ability of the rest of the bugs to transmit *T. cruzi* have been possible, the guinea pigs having died before the completion of the incubation period.

Blood films, taken from seven members of the family living in the infested house, were negative for *T. cruzi*.

It is surprising that *Triatoma dimidiata* has not been discovered naturally infected with *T. cruzi* in Panama prior to this date. It has been found in all of the Central American countries, and as far north as Mexico; to the south of Panama it has been reported from a number of countries. Champion (1897) includes Panama (Veraguas) in the list of countries known to be the habitat of *T. dimidiata* at the time Volume II of the *Biologia Centrali-Americana* was published.

Hoffmann (1928) believes that *Conorrhinus dimidiatus* Latr. is possibly an invertebrate host of *T. cruzi* in Mexico. Pointing out that there are two subspecies, *C. dimidiatus dimidiatus* Latr., and *C. dimidiatus maculipennis* Stal, he states that the former was rarely encountered in inhabited regions, while *C. dimidiatus maculipennis* was found in crevices in the walls of old houses in Veracruz, and fed on man. Champion (1897) separates *C. dimidiatus* from *C. dimidiatus maculipennis* on the basis of the black spot on the disc of the corium, which, in the former, is very small, while in the latter it is large, "often forming a broad more or less interrupted transverse fascia." All of the adult bugs found in the Chorrera house had a very small black spot on the disc of

the corium; therefore in Panama the typical form will live in houses and feed on man.

Reichenow (1934), who found 29 to 35 per cent of the *T. dimidiata* which he collected in Guatemala to be infected with *T. cruzi*, suggests that a nuptial flight is the only one undertaken. He arrives at this conclusion because of the fact that none of the bugs were encountered out of doors or observed in flight, and because of the reluctance of adults bred from eggs to take blood, while no eggs were ever obtained from these laboratory-bred individuals. A number of larvae have hatched from eggs deposited by the females captured in Chorrera, but as all have several months of development ahead of them before the adult stage will be attained, no observations are possible at present on mating or feeding habits of adults bred in the laboratory. However, two of the bugs from Chorrera, when placed in a small bottle, copulated readily; this took place in broad daylight while the bottle was resting on the writer's desk. The female had been captured in the nymphal stage. This would indicate that a nuptial flight is not essential.

Clark and Dunn (1932) first found *Triatoma geniculata* to be infected. Most of the specimens of *T. geniculata* used by these authors were collected in the Chilibrillo caves, although two individuals were taken from the outside of screened houses in the Canal Zone. Bugs identified as *Rhodnius prolixus* were encountered in native huts. Bugs that were the same as these were later described as new by Barber (1932) and named *Rhodnius pallescens*; Dunn (1933) found this species to be naturally infected with *T. cruzi*, the insects having been captured by inhabitants of a native hut in a small village named *Agua Buenas*. *Eratyrus cuspidatus* was the third vector discovered; a single infected specimen was found in one of the buildings of the Retiro Matias Hernandez Hospital (Dunn, 1934). A second specimen has recently been obtained, and this one was presented to the author by a native living in Las Guacas, a Chagres River village, who said that it had been caught in a house after biting one of the occupants. In addition to the above three, *T. dimidiata* is the

fourth Reduviid proven to be a vector of Chagas' disease in Panama.

SUMMARY

Triatoma dimidiata Latr. has been discovered in Panama naturally infected with *Trypanosoma cruzi* Chagas, and is the fourth Reduviid to be incriminated as a vector of Chagas' disease in this region. It was found living within a primitive native house and feeding on the occupants of the house.

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