

## SYLVATIC HOSTS OF *RHODNIUS PALLESCENS* (HEMIPTERA: REDUVIIDAE) NYMPHS IN THE PANAMA CANAL ZONE

**Abstract.** Precipitin tests performed on 200 blood-engorged *Rhodnius pallescens* nymphs collected from Corozo palm trees (*Scheelea zomensis*) in the Panama Canal Zone revealed the following animals as blood meal sources: 91 (45.5%) Didelphidae (opossums), 72 (36%) Myrmecophagidae (anteaters), 15 (7.5%) Bradypodidae (sloths), 9 (4.5%) Echimyidae (spiny rats), 7 (3.5%) Sciuridae (squirrels), 4 (2%) Cracidae (curassows and guans) and 2 (1%) Sauria (lizards).

Minter (1976, *In: Pan Am. Sanit. Bur. Sci. Publ. No. 318*, 410 p.) noted that among *Trypanosoma cruzi* vectors "... no information at all exists for *R. pallescens* ..." in regards to host-feeding patterns. In the same publication, Minter observed that, with the exception of Costa Rica, no blood meal identifications of triatomines are known from Mexico or Central America.

*R. pallescens* is the principal vector of *T. cruzi* in rural areas of Panama, and the only known vector of *T. rangeli* in that country (Pipkin, 1968, *J. Med. Entomol.* 5: 107-24; Sousa & Johnson, 1973, *Am. J. Trop. Med. Hyg.* 22: 18-23). Although no definitive studies have been made previously to determine the blood-feeding habits of *R. pallescens*, insight into the identification of its vertebrate hosts is available through indirect evidence.

Vertebrates known to harbor *T. rangeli* should be considered as blood meal sources for *R. pallescens*. This trypanosome has been reported from the following native mammals: *Didelphis marsupialis* (Common Opossum) and *Proechimys semispinosus* (Spiny Rat) (Sousa, 1972, *Rev. Biol. Trop.* 20: 167-79); *Tamandua tetradactyla* (Collared Anteater) (Walton & Sousa, 1967, *J. Parasitol.* 53: 956-61); *Saguinus geoffroyi* (Geoffroy's Marmoset) and *Cebus capucinus* (White-faced Sapajou) (Sousa, Rossan & Baerg, 1974, *Am. J. Trop. Med. Hyg.* 23: 862-68); and *Choloepus hoffmanni* (Two-toed Sloth) (Christensen & Herrero, 1979, *J. Med. Entomol.* 16: 424-27).

The present work on blood meal analysis of *R. pallescens* nymphs, collected from Corozo palm trees (*Scheelea zomensis*) in the Panama Canal Zone, was facilitated by a recent study of the relationship between vectors of Chagas' disease and palm trees (Whitlaw & Chaniotis, 1978, *Am. J. Trop. Med. Hyg.* 27: 873-81). Our findings corroborate, in part, the indirect evidence implicating the animals cited above as hosts of *R. pallescens*.

Approximately 100 palm trees were felled and their fronds dissected to collect the bugs. Triatomines were found most often in the narrow spaces formed by the trunk and base of the fronds.

Cohabiting animals seen or trapped in the Corozo

palm trees with *R. pallescens* were 4 Common Opossums (*D. marsupialis*), 3 Woolly Opossums (*Caluromys derbianus*), 1 Collared Anteater (*T. tetradactyla*), 1 Sumichrasti's Vesper Rat (*Nyctomys sumichrasti*), numerous birds and bats, 30 lizards and 2 snakes. It was not possible to determine accurately the total number of birds and bats, since they escaped from the trees during the felling procedure.

A microcapillary precipitin method, modified slightly from that developed by Tempelis & Lofy (1963, *Am. J. Trop. Med. Hyg.* 12: 825-31), was used in this study. Class-specific antisera were produced in rabbits. Most of the bird antisera also were produced in rabbits, while the majority of family-specific mammal antisera were derived from chickens; titers of antisera were 1/10,000-1/80,000.

Precipitin tests on 200 *R. pallescens* nymphs revealed the following animals as blood meal sources: 91 (45.5%) Didelphidae (opossums), 72 (36%) Myrmecophagidae (anteaters), 15 (7.5%) Bradypodidae (sloths), 9 (4.5%) Echimyidae (spiny rats), 7 (3.5%) Sciuridae (squirrels), 4 (2%) Cracidae (curassows and guans) and 2 (1%) Sauria (lizards). There were no detectable multiple feedings, and the possibility that several blood meals may have been taken from animals within a single family cannot be confirmed.

The frequency of *R. pallescens* nymph feedings on the various mammals probably reflects host availability in the palm tree ecotope rather than distinct predilection. However, the complete absence of feedings on the numerous bats within this restricted habitat probably indicates nonpreference for chiropterans by the bugs.

All of the mammalian families identified in this study comprise animals listed by Sousa (1972, loc. cit.) as sylvatic reservoirs of *T. cruzi* in Panama. The opossum, *D. marsupialis*, showed the highest incidence of *T. cruzi* and *T. rangeli* and was considered by Sousa to be the most important reservoir of both species.

The detection of squirrels as blood meal sources for *R. pallescens*, in the present study, implicates these animals as possible reservoirs of *T. rangeli*.—**H. A. Christensen**, Gorgas Memorial Laboratory, Panama, Rep. of Panama (mailing address: P.O. Box 2016, Balboa Heights, Canal Zone), **J. T. Whitlaw, Jr** (present address: USAEHA, PMPMD, Aberdeen Proving Grounds, Maryland 21012, USA), **B. N. Chaniotis**, Preventive Medicine Division, USA MEDDAC, C. Z., APO Miami 34004, USA, and **A. M. de Vásquez**, Gorgas Memorial Laboratory, Panama, Rep. of Panama (mailing address: P.O. Box 2016, Balboa Heights, Canal Zone).