

## FEEDING PREFERENCE OF *ANOPHELES DARLINGI* IN MALARIA ENDEMIC AREAS OF RONDÔNIA STATE – NORTHWESTERN BRAZIL

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Extensive studies performed in the Amazon region, Brazil in the 1930s and 1940s, have shown that *Anopheles darlingi* was the only important primary regional vector of human malaria, except along the coast, where *An. aquasalis* also contributed for the transmission (N. Davis, 1932, *Riv. Malariol. Rome*, 10: 1-11; R. Shannon, 1933, *Proc. Entomol. Soc. Washington*, 35: 117-143; A. Galvão et al., 1942, *Arq. Hig.*, 12: 51-111; O. Causey et al., 1946, *Am. J. Hyg. Monogr. Ser.*, 18: 58 p; L. Deane, 1947, *Rev. Serv. Esp. Saúde Publ.*, 1: 1-60; L. Deane et al., 1948, *Rev. Serv. Esp. Saúde Publ.*, 1: 793-808).

All those publications mention the endophily and anthropophily of *An. darlingi*, whose preference for human blood was emphasized in another paper (L. Deane et al., 1949, *Rev. Serv. Esp. Saúde Publ.*, 2: 793-808). These studies were of great importance for the successful anti-malaria campaigns in the 1950s-1960s which led to the impression that eradication was in sight, and the resulting optimism was accompanied with a decrease of research on malaria vectors.

In the 1970's, the implementation of agricultural projects by the Federal government and mining activities in the Amazon region attracted individuals, mostly from malaria free areas, to this region and the consequent uncontrolled migration and environmental changes have contributed for the great increase of malaria in these areas.

This new malaria situation led recently to comprehensive studies on the regional vectors and their role in the process of malaria trans-

mission (M. Arruda et al., 1986, *Am. J. Trop. Med. Hyg.*, 35: 873-881; R. Lourenço-de-Oliveira et al., 1990, *Mem. Inst. Oswaldo Cruz*, 84: 501-514; J. Oliveira-Ferreira et al., 1990, *Am. J. Trop. Med. Hyg.*, 43: 6-10). In spite of such studies the anthropophily of *An. darlingi* in the new situation needed to be better evaluated.

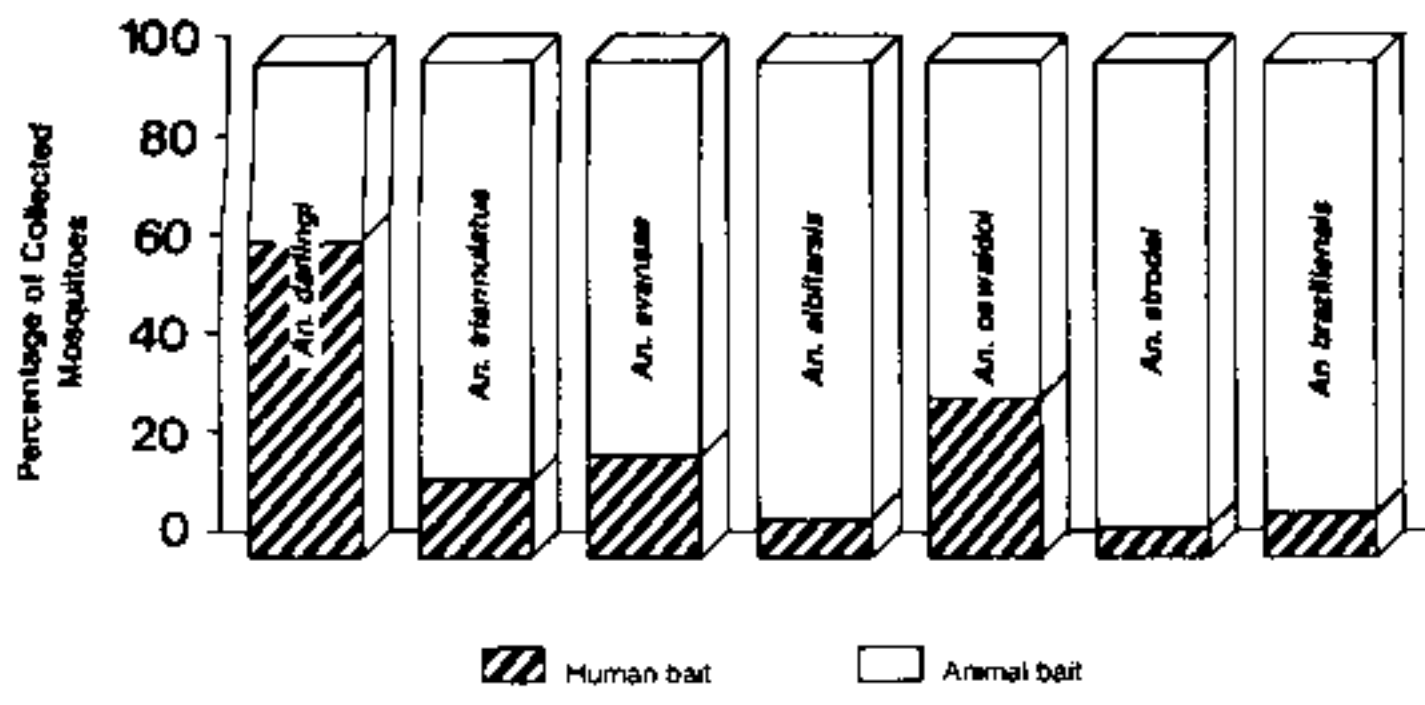
During an entomological survey performed in the municipality of Ariquemes, Rondônia state, western Amazon Region, two or three times a year, from 1985 through 1988 (see R. Lourenço-de-Oliveira et al., *loc. cit.*, for details) comparative captures were carried out simultaneously on human and animal baits, in open terrain, at sunset (18:00-21:00). The animal bait was always a cow, except in one capture when a horse was used. Mosquitoes were aspirated directly off the baits, with an intermittent flashlight, man and animals standing about 4 m apart.

A total of 2574 *Anopheles* were collected, 908 on human bait and 1666 on animal bait. Comparing the frequency of species collected on human bait, *An. darlingi* was predominant 71.5% (649) followed at a great distance by *An. triannulatus* 10% (91), *An. evansae* 6.4% (58), *An. oswaldoi* 4.9% (45). On animal bait the frequency of the species was well distributed and *An. triannulatus* was the most frequent species 28.2% (470) followed by *An. darlingi* 21.5% (358), *An. evansae* 13.3% (222), *An. albitarsis* 10.4% (173) and *An. strodei* 10% (167). Results seen on Figure show that the frequency of each species on human and animal bait simultaneously; *An. darlingi* maintains its feeding preference for humans, as 65% of the specimens were caught on man. In contrast, all other anopheline species – *An. albitarsis*, *An. braziliensis*, *An. oswaldoi*, *An. strodei* and *An. triannulatus* –, although also feeding on humans, were seen to be decidedly

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zoophilic. These results added to previous work (R. Lourenço-de-Oliveira et al., *loc. cit.*; J. Oliveira-Ferreira et al., *loc. cit.*) indicate a high degree of anthropophily of *An. darlingi* and emphasize its importance in malaria transmission in the state of Rondônia since other species prefer to bite on a non susceptible host.