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COMUNICAÇÃO

OBSERVATIONS ON POTENTIAL TICK VECTORS OF HUMAN DISEASE IN THE CERRADO REGION OF CENTRAL BRAZIL

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The chaging ecology of the Cerrado region through extensive agricultural and human development[3] has meant increasing opportunities for human contact with natural foci of zoonotic tick-borne disease and enhancement of rodent hosts. The existence of Lyme disease has been postulated in Brazil[6]; infection due to *Richettsia richettsii* is well documented[2]. The details of a small study made between March and May 1991 are reported here, and aspects of potential vector epidemiology. The results of arbovirus isolation from ticks brought back to the U.K. will be reported elsewhere.

Collection sites included District Federal (16'S 48'W); Mambai, Goias (14'30"S 46'W); and Uberaba, Minas Gerais (19'S 48'W). Tick abundance in the Cerrado region is highly seasonal[5] from May to a maximum in July coinciding with the hot dry period.

A limited number of *Ixodidae species* were found living in close proximity to man, with 4 genera, *Amblyomma, Anocentor, Rhipicephalus and Boophilus* represented in the collection (Table1). *Anocentor*, represented by the single species *Anocentor nitens* (Neumann) was the most abundant and made up 66% of the 1357 ticks collected. *Amblyomma*, with two species *Amblyomma cajennense* (Fabricius) and *Amblyomma rotundatum* (Koch), made up 6%; the other genera represented by 1 species each, *Rhipicephalus sanguineus* (Latereille) and *Boophilus microplus* (Canetsrini) made up 9% and 19% respectively (Table 1).

A total of 273 animals were examined for ticks. A very high degree of hosts pecificity was found. Of

Table 1 - Ixodid ticks collected.

Genus	N° of species	Adult females	Adult males	Nymphs	Larvae	Total	% of total
Amblyomma	2	34	7	35	-	76	6
Anocentor	1	408	284	199	6	897	66
Rhipicephalus	1	53	64	5	-	122	9
Boophilus	1	211	41	8	2	262	19
Total	5	706	396	247	8	1357	

and this was confirmed with a questionnaire (n=48) in which local people reported tick numbers rising 77 dogs examined, 16 (20%) were found to be infested with *Rhipicepahlus sanguineus*; of 37 horses 34 (92%) had *Anocentor* nitens and 9(24%) also had *Amblyomma cajennense*: of 67 cows (mixed Zebu breed 50 (75%) had a *Boophilus microplus* load; and

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of 27 goats examined *Anocentor nitens* was present in 8 (30%). Wild animals examined included armadillo, deer, fox, frog, tapir, emu and boa constrictor; only the latter were found to have ticks present with heavy infestation of *Amblyomma rotundatum*. No small mammals were caught from a total of 60 trap nights during the study in Mambai. Careful search and partial demolition of 19 chicken houses revealed no Argasidae. Very few free-living or questing ticks were encoutered at the time of the study despite extensive flagging and burrow sampling using a portable vacuum suction device.

The absence of *Ixodes* from the collection is notable given its vector status in Lyme disease, but the presence in Brazil of at least[9] species is recorded[1], and small mammal surveys[4] reveal ectoparasites including *Ixodes* and *Amblyomma species* on *Dephinae* and *Muridae*

The risk of tick bites is seasonal and related to outdoor activities, with farm workers and children at most apparent risk. Low biting rates were obtained during the relatively inactive period during which the study took place, with a positive history (3 month recall) in only 6% of those questionned (n=48). Clinical manifestations following tick bites included only local rashes and fever.

In conclusion, there appears to be a limited seasonal risk of tick bites to the humam population. The Cerrado region is rapidly changing with agricultural development and humam migration, such that little primary cerrado remains. Increased tick-man contact in areas of potential zoonotic foci exists, but this study revealed that a limited number of tick species appear to occur in close proximity to man, and these did not include examples of the genus *Ixodes*.

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