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Ecoepidemiology of Rickettsia parkeri in the Paraná Delta, Argentina

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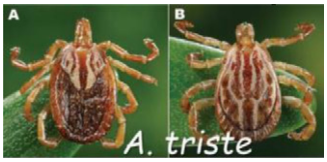
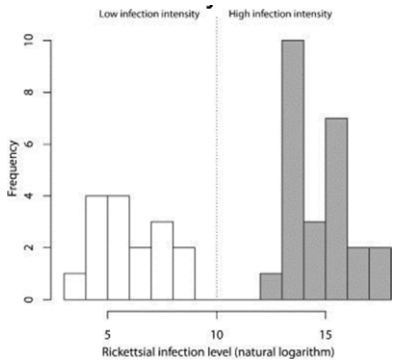
Background: In South America, several cases of human rickettsiosis caused by *Rickettsia parkeri* were documented in Uruguay, southern Brazil and the Paraná River delta of Argentina. There, the main tick vector is *Amblyomma triste*. Adults of *A. triste* seek blood meals from large mammals (including humans), whereas immature stages feed on small rodents.



Methods & Materials: With the aim of shedding light on the ecology of this emerging disease, we conducted field studies at sites of the Paraná River delta, which consisted of systematic collection of ticks and blood samples from rodents (Fig. 2) and cattle, and also questing ticks from the vegetation. Sampling sessions were carried out monthly during 2011 and 2012 at 16 points that differed in their exposure to cattle and vegetation type (natural or implanted forest).

Results: Prevalence of infection in adult questing ticks was high (20.4%). Interestingly, the distribution of *R. parkeri* infection intensity observed in *A. triste* ticks was distinctly bimodal, with approximately 60% of the infected ticks presenting high rickettsial loads (Fig. 3). Questing ticks were more frequently found in natural grasslands than in implanted forests, and prevalence of infection were greater in those from grasslands (26%) than in forested areas (8.3%). The dominant rodent species were *Akodon azarae* and *Oxymycterus rufus*. In both, the seroprevalence to *R. parkeri* was greater in those captured in grasslands than in implanted forests. The presence of cattle had a significant positive effect on the burdens of ticks on rodents and the abundance of questing ticks in the vegetation. Most cattle (90%) were seropositive, and the seasonality of the titres of antibodies against *R. parkeri* matched that of the tick infestation on cattle.



Conclusion: The risk of human exposure to *R. parkeri* infected ticks in the Paraná River delta is high. Our results suggest that the silvopastoral activities that are on the rise in the region affect the dynamics of infection of *R. parkeri*. Cattle appear to favour the occurrence of the pathogen, whereas forestation seems to reduce it.

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A survey of human and animal casualties resulting from bites of stray dogs in the municipal area in Palakkad district, Kerala

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Background: Recent estimates suggest there are nearly 1,197 stray dogs in the municipal area of Palakkad district in Kerala. It is also estimated that when no stray dog control measures are undertaken by the various civic bodies, there could be up to 25 per cent yearly increase in the numbers of stray dogs. Increasing numbers of stray dogs pose significant safety threat to both humans and domestic livestock and hence, mass killings of stray dogs by the public happen at times. At the same time, in recent years, there has been a huge outcry in the social media, especially by the various animal welfare organisations, against such killings of stray dogs in Kerala.

Methods & Materials: We intended to examine the magnitude of threat to public safety from the bites of stray dogs in the municipal area in Palakkad district. For the same, we undertook a survey and collected data from print and visual media on all reported cases of stray dog bites from January 2015 till date. We also undertook one-to-one questionnaire surveys with medical and veterinary doctors working with medical and animal husbandry department in the area and the general public.

Results: Over the last ten month period, nearly 3800 humans and 459 domestic animals were reported to have suffered stray dog bites in the municipal area. In humans, males (60%) suffered more bites than females (40%). Compared to humans, in animals, the number of reported bite cases is severely underestimated, mainly