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# Rickettsial infection in domestic mammals and their ectoparasites in El Valle de Antón, Coclé, Panamá

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### ABSTRACT

The present research evaluated the presence of *Rickettsia* spp. on ectoparasites of horses and dogs (using PCR techniques), and their sera (using immunofluorescence assay) in El Valle de Antón town in Panamá. A total of 20 horses and 20 dogs were sampled, finding four species of ectoparasites on dogs (the ticks *Rhipicephalus sanguineus*, *Amblyomma ovale*, *Amblyomma oblongoguttatum*, and the flea *Ctenocephalides felis*), and two tick species on horses (*Amblyomma cajennense* and *Dermacentor nitens*). DNA of *Rickettsia amblyommii* was found in pools of *A. cajennense*, *D. nitens*, and *R. sanguineus*, while *Rickettsia felis* was detected in *C. felis* pools. Overall, 70% (14/20) and 65% (13/20) of the horses and dogs, respectively, were seroreactive (titer  $\geq 64$ ) to spotted fever group rickettsiae. Sera from six dogs and five horses reacted to *R. amblyommii* antigens with titers at least four-fold higher than those for the other antigens tested (*Rickettsia bellii*, *Rickettsia parkeri*, *Rickettsia rhipicephali*, *R. felis*, and *R. rickettsii*). These serological results, coupled with our molecular findings, suggest that these dogs and horses were infected by *Rickettsia amblyommii*. More studies need to be realized afford to identify the *Rickettsia* species responsible for other serological and molecular positive results, and their ecological importance.