



V 49 Role of *Argas persicus* Ethiopian soft ticks as disease vectors

Sally Cutler^a, Haileyesus Adamu^b, Alemseged Abdissa^b, Tadele Tolosa^b,
Abebaw Gashaw^b

^a University of East London, London, UK

^b Jimma University, Jimma, Ethiopia

Argas persicus were first described in 1818 by Lorenz Oken and are now established as having a worldwide distribution, particularly effecting warmer regions. They are known as vectors of avian spirochaetosis caused by *Borrelia anserina* and more recently, have been described as harbouring other potential pathogens ranging from *Mycobacteria*, *Mycoplasma*, *Pasteurella*, *Salmonella*, and West Nile virus. They are generally believed to feed from poultry where they result in anaemia, anorexia, and decreased egg productivity, thus are important economically where poultry are an important source of protein. They reside in cracks and crevices close to where poultry are kept. We describe a village in Ethiopia where an overwhelming abundance of *A. persicus* was evident. Here, these ticks were located around poultry areas, but also under the bark of many trees. These ticks were found feeding on other livestock and importantly on humans dwelling in this village. Ticks were recovered from cracks and crevices within traditional human dwellings were the occupants reported regular bites during the night.

Preliminary screening of these ticks for pathogens revealed that among 40 DNA-extracted pools 28 (70%) were positive for *Rickettsia* using a real-time PCR for the citrate synthase gene. Furthermore, one of these pools positive for *Rickettsia*, was additionally positive for *Borrelia* (2.5%). None of these pooled DNA extracts were found to harbour *Coxiella burnetii* using IS1111 as a gene target. A total of 16 pooled DNA extracts from hard ticks (predominantly *Amblyomma variegatum*) collected from this village and elsewhere in Ethiopia, were also found positive with the above primers, with 4 (25%) yielding evidence of *Rickettsia* and 2 (12.5%) with *Borrelia* (one dual infection).

The regular exposure of the human population to rickettsial antigens is likely to complicate use of conventional serological diagnostics in this population.