A-12: Preliminary studies on an immunohistochemical test to detect the host blood meal of *Aedes aegypti* vector of dengue fever

Priyanie H Amerasinghe[1], Wijitha Somapala[1], Thomas W Scott[2]
([1]Dept of Zoology, Faculty of Science, Univ of Peradeniya, [2]Dept of Entomology, Univ of MD, USA)

An immunohistochemical test was developed to detect host immunoglobulins, in the blood meal of Aedes aegypti. Paraffin sections of human or non-human (chicken) blood fed, laboratory reared mosquitoes were used initially, to compare 3 different fixatives on the preservation of the antibodies found within the gut. A direct assay for the human system and an indirect assay for the non-human system, gave specific signals with minimum background colour. Carnoy's fixative gave the best signal for both detector systems. The detector conjugate used was an alkaline phosphatases. Peroxidase conjugates could not be used due to very high endogenous activity exhibited by the blood meal itself.

Both human and non-human antibodies were present always in the periphery of the blood meal and sometimes around the red blood cells, soon after the meal was taken.

This was due to the fact that the serum component of the meal was being extruded very rapidly away from the cellular parts of the meal. However, this feature disappeared between 6-24 hours and the antibodies were
located in the midgut epithelium. The other tissues like the fat body, thoracic muscles or the haemocoel, did not show the presence of antibodies with this assay. In some instances the oocyte tissues picked up the staining, but this was not consistent. Ingested human antibodies were detected in field collected Aedes aegypti as well. However, these were located only in the periphery of the meal and the mid gut epithelium.

Multiple feeding during a single gonotrophic cycle in *Aedes aegypti* has been already established. This technique enables the detection of the human host feed, which is an important aspect of the epidemiology of the disease.