D-33 Multiple blood feeding in *An.tessellatus* and body size of mosquitoes

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The total number of bites a vector mosquito makes during its lifespan is an important factor which determines the transmission of the malaria parasite.

Anopheles tessellatus mosquitoes obtained from larvae reared under different conditions of larval crowding were studied with the objective of relating body size of mosquitoes and their fecundity with their ability to blood feed more than once in each gonotrophic cycle.

Larvae of *A. tessellatus* from the laboratory colony were reared at 3 densities *viz.* 100 (L100), 200 (L200) and 400 (L400) larvae/ 2 l water/tray. Mosquitoes resulted from L100, L200 and L400 were blood fed on rabbits on the 4th day after emergence. 24 h after the blood meal, mosquitoes were exposed to a human hand (for a second blood meal).

The mosquitoes resulting from L400 were smaller in size compared to those emerging from L100 and L200 ($p<0.01$). Differences in the proportions of mosquitoes taking a second blood meal between L100 and L200 were not statistically significant ($X^2=3.13, p<0.05$). The increase of 50% in 2nd blood meal takes in L400 compared to L200 ($X^2=8.1$, $p<0.01$) and 168.4% in L400 compared to L100 ($X^2=11.2$, $p<0.05$) was statistically significant. Larger mosquitoes (L100) had increased amount of body reserves compared to smaller mosquitoes (L400). The second blood meal did not increase the fecundity of mosquitoes from L100, although the fecundity was increased in L400 mosquitoes with 2 blood meals ($t=2.6$, $df=27$, $p<0.01$).

In *Anopheles* nutrients from a blood meal are used initially to build up maternal reserves and then for oocyte maturation.. The results show that the smaller mosquitoes with low reserves probably require to build up reserves, more than larger mosquitoes. In the short term the ability to take more than one blood meal in a gonotrophic cycle could be a strategy to promote the co-existence/ survival of both the vector and malaria parasites.