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A message from the Mosquito Control Research Laboratory,

Who knows what advancements will have been made in mosquito control and reduction or even eradication of mosquito borne diseases by the time you open the time capsule.

Since 2000 and now in 2015 huge advancements were made in whole genome research in mosquitoes of medical importance such as the major sub-Saharan African malaria vectors (*Anopheles gambiae, An. coluzzii, Anopheles arabiensis),* and South American malaria vector (*Anopheles darlingii*) and the major dengue and chikungunya virus vector *Aedes aegypti.* We have now reached the post genomic era, and beginning to work on what information the genome provides us in terms of gene functions and expression related to behavioral and ecological adaptations and selection/evolution of insecticide resistance. We know very little and it is a wide open field.

This year marked the third year of dealing with the invasion of *Aedes aegypti* in the Central Valley locations of Clovis and Madera cities. Huge efforts were undertaken in the past two summers to try to eradicate this mosquito. But to no avail and the winter conditions in the Central Valley were certainly not harsh enough to kill overwintering populations. Serious thoughts are now being given to using Wolbachia as biological control agent. Ethics and very limited funding are currently hampering these efforts.

The use of border collies to sniff out *Aedes aegypti* is now also being considered to locate the cryptic breeding sites. My dog, Letaba (Lettie, 8 months old) will be trained in the next year to sniff mosquitoes. The use of sniff dogs as control "agents" was initiated by Bart Knols in Aruba.
West Nile continues to plague our urban environments largely due to the transmission by *Culex qunquefasciatus.*

Another urbanized mosquito that is proving hard to control. Perhaps the underground trunk lines are serving as major breeding sources of this mosquito? Robots to inspect and drop larvicide pellets are what is needed?
In the world scene, Malaria is in decline due to huge efforts by governments and NGOs. Six hundred thousand deaths were reported last year, globally. Challenges we are now facing to make further inroads into eliminating malaria are 1) An. arabiensis adapting to biting people at sunset outdoors rather than later at night outdoors b) An. coluzzii becoming highly resistant to pyrthroids and c) spread of malaria parasite genotypes resistant to artemisin derived drugs.

Dengue unfortunately is increasing worldwide and last year for the first time ever, more people contracted dengue than malaria. Chikungunya is also spreading worldwide and we expect in 2015 to experience epidemics in South America and southern United states.

Release of genetically modified mosquitoes carrying sex lethal genes has been approved on a relatively small scale in a few countries. I wonder if this method of control will be better perceived in the future and become the norm?

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