



## BORDER HEALTH NEWSLETTER – April 2017

### Welcome!

Hi Everyone. As the weather continues a generally downward trend towards winter sample numbers have continued to decrease across the country. A brief weather respite for Auckland has led to a spike in interceptions which should hopefully become less frequent over the coming months. Malaria is the hot topic this month especially with WHO pilot trial for a vaccine.

Some of you may have already heard! Julia Kasper has moved on her dream job at Te Papa and we wish her well for the future. We look forward to a new relationship with Te Papa's Entomology department. We warmly welcome Dr Mariana Musicante to our team, Mariana is a skilled and experienced entomologist, with a strong Hymenoptera and ecology skill set. We hope you welcome her too and enjoy a refreshed approach to the lab over the coming months.

### SAMPLES

During April 798 samples were collected by staff from the 12 DHBs with 217 positives, which is a significant decrease from last month. The numbers of *Culex quinquefasciatus* larvae are in keeping with the previous year with the large amount of rain recently clearing many of Auckland's cesspits after last month's high numbers.

Recently we have been seeing an increase in the number of *Aedes antipodeus* being found particularly in Tauranga.

Species	Adults		Larvae	
	April 17	April 16	April 17	April 16
<b>New Zealand Mosquitoes</b>				
<i>Aedes antipodeus</i> (winter mosquito)	14	43	Nil	Nil
<i>Ae. australis</i> (saltwater mosquito)	Nil	Nil	Nil	24
<i>Ae. notoscriptus</i> (striped mosquito)	181	885	1524	2637
<i>Coquilletidia iracunda</i>	4	Nil	Nil	Nil
<i>Coq. tenuipalpis</i>	Nil	Nil	Nil	Nil
<i>Culex asteliae</i>	Nil	Nil	10	Nil
<i>Cx pervigilans</i> (vigilant mosquito)	32	20	595	867
<i>Cx. quinquefasciatus</i> (southern house mosquito)	236	546	4392	4826
<i>Culiseta tonnoiri</i>	1	Nil	Nil	Nil
<i>Maorigoeldia argyropus</i>	Nil	Nil	Nil	122
<i>Opifex fuscus</i> (rockpool mosquito)	Nil	5	68	244



## INCURSIONS/INTERCEPTIONS

During April there were 14 suspected interceptions have been recorded. Exotic species have red text.

Date	Identification	PHU	Site	Location	Circumstance
03.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, ITB	Found alive at X-ray scanning area
03.04.2017	1 Live Female <i>Culex pervigilans</i>	Auckland	POE	Auckland Airport, ITB	Found alive in Green Lane
05.04.2017	4 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, ITB	Found alive in Green Lane
06.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, ITB	Found alive in Green Lane
	1 Live Male <i>Culex quinquefasciatus</i>				
07.04.2017	1 Live Female <i>Culex pervigilans</i>	Auckland	POE	Auckland Airport, ITB	Found alive at MPI Search Bench
	1 Live Female <i>Culex quinquefasciatus</i>				
08.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, ITB	Found alive in Chief Office
08.04.2017	2 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, ITB	Found alive at MPI Search Bench
11.04.2017	1 Live Male <i>Culex quinquefasciatus</i>	Auckland	TF	Turners and Growers, MPI Room	Found in room with pallet of fruit from Chile
21.04.2017	1 Dead Female Unidentifiable	Hutt	POE	Wellington Airport, Customs	Found in tent from Australia
24.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, Cargo Hold	Found alive in cargo hold of flight HX21
26.04.2017	1 Dead Male <i>Culex sp.</i>	Auckland	TF	MG Marketing, MPI Room	Found in container of bananas from Ecuador
26.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	TF	Fresh Max, MPI Room	Found alive in empty MPI room
27.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	POE	Auckland Airport, ITB	Found alive at X-ray scanning area
27.04.2017	1 Live Female <i>Culex quinquefasciatus</i>	Auckland	TF	Fresh Direct, MPI Room	Found in container of coconuts from Samoa



## News articles from around the world

### **World Malaria Day, 25th April**

World Malaria Day is an international observance that recognizes global efforts to control malaria. Globally, 3.3 billion people in 106 countries are at risk of malaria, the best prevention put on place to reduce the malaria cases are the use of treated mosquito nets. This net form a protective barrier around people sleeping under it. The insecticide in it not only kills mosquitoes, which carry the malaria parasites and other insects, but also repels mosquitoes. With treated mosquito nets, the number of mosquitoes, as well as their life span, is reduced. The WHO has organized a few thousand treated nets to be distributed around poorest communities in Nigeria as one of their activities for World Malaria Day.

Read more: <https://guardian.ng/features/world-malaria-day-mosquito-nets-as-most-effective-way-to-prevent-malaria/>

### **Frugal scientist offers malaria tools**

Manu Prakash is a bio-engineer from Stanford University who has been known for design cheap tools that can make difference in the poorest parts of the world. His last invention is a cardboard centrifuge (Paperfuge) that can spot malarial parasites in blood. He also launched a citizen science project to identify disease-carrying mosquitoes by the sound of their wings beating.



Manu Prakash with his cardboard centrifuge "Paperfuge".

Read more: <http://www.bbc.com/news/technology-39657500>



## Second type of mosquito may be able to carry Zika virus

Fragments of Zika RNA have been found during genetic testing of Asian tiger mosquitoes (*Aedes albopictus*) collected in Brazil; this does not prove that they can transmit Zika to people but makes clear the importance of research into possible carriers of the virus as this mosquito is found worldwide, has a wide range of host so his role in Zika virus transmission needs to be assessed.



Photo credit: Susan Ellis, Bugwood.org

Read more: [http://www.upi.com/Health\\_News/2017/04/14/Second-type-of-mosquito-may-be-able-to-carry-Zika-virus/6071492186085/](http://www.upi.com/Health_News/2017/04/14/Second-type-of-mosquito-may-be-able-to-carry-Zika-virus/6071492186085/)

## Florida releases experimental mosquitoes to fight Zika

20,000 males *Aedes aegypti* mosquitoes infected with the Wolbachia bacteria were released in an area of the Florida Keys for a field trial that will last 12 weeks, in hopes of an innovative approach to control the disease-carrying female *Aedes aegypti* mosquito, which transmits Zika virus, Dengue fever and Chikungunya.

Read more: <http://kfor.com/2017/04/20/florida-releases-experimental-mosquitoes-to-fight-zika/>



## Cost of Zika virus surveillance in USA increase

A new budget in Miami-Dade county is showing the cost of fighting the Zika Virus as another 5 million is requested to carry on the control work which includes testing of mosquitoes for the virus as well as treatment of drains in the area to stop populations of mosquitoes in urban areas. This coincides with many other regions of America starting their own mosquito control treatments from the start of April.

Read more: <http://abcnews.go.com/US/wireStory/costs-zika-fight-rise-30m-miami-dade-county-47177711>

## Yellow fever vaccine is in low supply

The U.S. Centre for Disease Control is working to find alternatives for the yellow fever vaccine as production issues with the current supplier mean there will be massive shortfalls in the required volume of vaccine in areas affected by Yellow Fever. The manufacturer of the vaccine has stated supplies will run out mid-2017 and the new production will not start till mid-2018.

Read more: <http://abcnews.go.com/Health/cdc-working-yellow-fever-vaccine-supply-running/story?id=47087938>

## First Malaria vaccine receiving a pilot programme

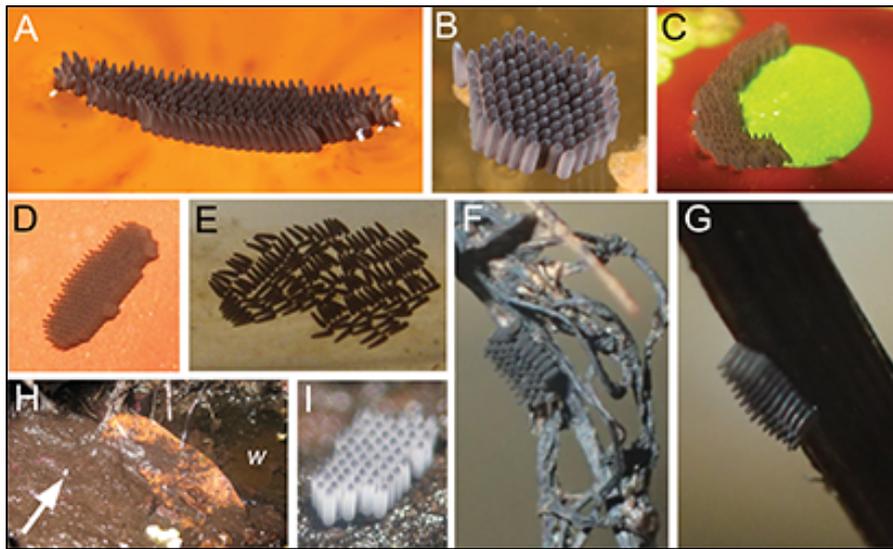
The World Health Organisation is setting up a pilot programme in Ghana, Kenya and Malawi to test a vaccine that has been having clinical trials between 2009 and 2014. Areas of each country with high levels of Malaria will be selected for the trial and a national immunisation programme will be instituted to monitor the distribution of the vaccine. The results of this programme will help to determine the wider potential the vaccine has. If positive results are seen from this test then potentially many young children can be saved from malaria's most deadly form.

Read more: <http://www.afro.who.int/en/media-centre/pressreleases/item/9533-ghana-kenya-and-malawi-to-take-part-in-who-malaria-vaccine-pilot-programme.html>



## Mosquito egg hunt: many *Culex* species prefer alternatives to standing water

Research into diverse subgenus *Melanoconion* shows that many, if not most, mosquito species in the subgenus do not lay their eggs in standing water as believed for many of the *Culex* mosquitoes, instead they lay their eggs on a variety of surfaces, and above nearby water. These findings are against the scientific generalization about *Culex* mosquitoes egg-laying habitats and can be a struggle for mosquito control professionals.



Diversity of egg-laying behaviours from mosquitoes in the genus *Culex*, subgenus *Melanoconion*.  
Photo credit: Nathan D. Burkett-Cadena, Ph.D.

Read more: <https://entomologytoday.org/2017/04/12/mosquito-egg-hunt-many-culex-species-prefer-alternatives-to-standing-water/>

## Disease Outbreaks

To find out where the latest disease outbreaks have occurred.

Read more: <http://www.who.int/csr/don/archive/year/2017/en/>

Read more: [https://surv.esr.cri.nz/index.php?we\\_objectID=4559](https://surv.esr.cri.nz/index.php?we_objectID=4559)