



## BORDER HEALTH NEWSLETTER – OCTOBER 2013

### WELCOME!

Hi everyone. Hope you are all enjoying the longer days as we lead into summer. Guy Fawkes turned out to be a stunning night in Wellington, a welcome break from all of the October winds & great for fireworks displays.

In contrast to September, it has been a very dry month for much of the North Island, (less than 50% of October normal rainfall) though wet in parts of Southland, Tasman, Central Otago and west of the Southern Alps (150% above normal). Temperatures were average across much of New Zealand, although well above average in parts of Hawkes Bay & North Canterbury (1.2°C above the normal October average for the north Island).

**If you would like to see NIWAs full outlook for your area you will find it here:**

<http://www.niwa.co.nz/climate/sco/seasonal-climate-outlook-october-december-2013>

### INCURSIONS/INTERCEPTIONS

There was one interception event during October, involving one adult non mosquito found at a transitional facility in Otahuhu.

### SAMPLES

During October, 835 samples were collected by staff from 11 District Health Boards, with 109 positive. Samples collected were higher than last month and also than this time last year. Of the positive samples found, numbers were more than last month and also than this time last year. The specimens received were as follows:

Species	Adults	Larvae
<b>NZ Mozzies</b>		
<i>Ae. notoscriptus</i>	2	1464
<i>Culex pervigilans</i>	20	820
<i>Cx. quinquefasciatus</i>	9	0
<i>Opifex fuscus</i>	0	19
<b>Exotics</b>	0	0
<b>TOTAL MOSQUITOES</b>	<b>31</b>	<b>2303</b>

### WEBSITE

Mozzie Stop BTI mosquito dunks have been popular over the last few months which is a sure indication activity is starting to pick up, Mozzie Stop also comes in BTI bits or granules which are proving effective in drains, tree drip lines and other small areas where the dunks are not suitable. We have the standard range of sampling supplies including light trap stockings,

pipettes and sample tubes available and all PHS are able to use the Purchase order option for payment.

Don't forget newsletters and reports are all able to be downloaded from the website and if you can't find something please let us know. Mosquito species profiles can be downloaded from

<http://www.smsl.co.nz/Services/New+Zealand+BioSecure/New+Zealand+Mosquitoes.html>.

We hope you are finding this on-line service useful and are always happy to address any enquiries or matters you may wish to discuss. Please feel free to contact us through the website, or email us directly at [enquiries@smsl.co.nz](mailto:enquiries@smsl.co.nz) or [taxonomy@nzbiosecure.net.nz](mailto:taxonomy@nzbiosecure.net.nz).

### INSECT-BORNE DISEASES

#### Promising Malaria Vaccine on the cards

A vaccine against [malaria](#) could be introduced in the world's worst-hit countries in 2015, after the latest trial of a treatment produced by Britain's biggest drug company reduced the number of cases of the disease experienced by babies.

The results of trials published on Tuesday in Durban, South Africa, showed that the RTS,S vaccine developed by [GlaxoSmithKline](#) nearly halved the cases of malaria experienced by children aged between five and seven months



NEW ZEALAND BIOSECURE

Entomology Laboratory



and cut the number of cases in babies aged 6 to 12 weeks by a quarter.

The treatment's protection lasted for 18 months, although it waned slightly over time, and while that is not the sort of efficacy that parents in Europe or the US are used to getting in the vaccines given to their children, the malaria vaccine would make a significant difference to the outlook for those in areas where the tropical disease is rife.

Every year, around 660,000 people die from malaria, most of them small children under the age of five. There are about 219m cases of the disease a year worldwide, and children who survive the serious illness can suffer damage to their health and development in their lifetime afterwards.

Inventing a malaria vaccine has involved breaking new medical ground. This is the first-ever vaccine against a parasite, said Learmouth. There are other novel vaccines in development, such as one from the US that involves injecting patients with weakened parasites, but Learmouth insisted GSK was not rushing to get a licence because it feared competitors.

"We're really not. I think the nearest vaccine is still in phase one – there is a huge long way to go. This is a very complex area. I don't expect a competitor vaccine for a very long time," he said.

Source: The Guardian  
<http://www.theguardian.com/society/2013/oct/08/malaria-vaccine-trial-children-babies>

### Yellow Fever Vaccine Shortage

[British] travellers planning visits to the tropical parts of South America and Africa are finding it increasingly difficult to obtain the yellow fever jabs considered necessary due to a worldwide shortage of the vaccination.

Since late July [2013] a growing number of British hospitals and health centres have reported dwindling supplies of the vaccine, which is strongly recommended for travel to winter sun destinations such as Brazil, Cape

Verde, and Gambia.

Travel health specialists are warning that in the run-up to Christmas [2013] obtaining the yellow fever yellow fever jab is likely to get even more difficult as fresh supplies are not anticipated until the beginning of next year [2014].

Should another shortage arise next year [2014] it could affect the tens of thousands hoping to head to Brazil for the World Cup. "We are getting lots of people coming in who have been unable to obtain the yellow fever jab at a number of places and are getting quite nervous about it," said Dr Richard Dawood of the Fleet Street Clinic in London. "At the moment we still have supplies but I fear we too may run out. I would advise anyone planning to go away to affected countries over Christmas to try to get the jab now. It is only going to get more difficult."

Yellow fever is an extremely serious disease which kills up to 60 per cent of people infected. It is prevalent in tropical area of Africa, South America, and parts of the Caribbean where mosquitoes are present. Humans and monkeys are the species most frequently affected.

According to Dr Dawood, the shortage has come about because there is only one manufacturer of the vaccine -- and because it is inherently difficult to produce.

His advice to travellers was echoed by Greg Lawson, head of retail at the travel insurance specialist Columbus Direct. "Vaccination is the single most important preventative measure against this deadly disease. If travelling to regions where yellow fever is found, it is recommended that you seek advice from a health professional at a registered yellow fever vaccination centre at least 6-8 weeks in advance to ensure it is available."

Immigration authorities in countries at risk from yellow fever importation, because they have the urban vector *Aedes aegypti* and



endemic dengue, should be aware that an unknown number of travelers, particularly from some African countries and India, have purchased fake certificates (yellow cards) without being vaccinated. They are especially dangerous to public health of the recipient countries. - (Source: Promed)

### Yellow Fever: History in America

The Human Cost of Yellow fever in America: A Chronology

1793 to 1900 - An estimated 500,000 cases of yellow fever occurred in the United States. 1693 to 1905- An estimated 100,000 to 150,000 died of yellow fever in the United States. These figures included 14,217 deaths in Philadelphia during 1699 to 1803.

1904 to 1914 - The death rate among American personnel involved in constructing the Panama Canal was 15.8 per 1,000.

Chronology:

1668 - Yellow fever was first reported in North America – including 370 fatal cases in New York City

1803 - 606 fatal cases were reported in New York City.

1856 - 538 fatal cases were reported in New York City.

1793 - An outbreak (4,044 fatal cases - 10% of the population) was reported in Philadelphia.

1794 - An outbreak (360 fatal cases) was reported in Baltimore, Maryland.

1798 - Outbreaks were reported in Philadelphia, Pennsylvania (3,506 fatal cases) and New York City.

1800 - An outbreak (1,197 fatal cases) was reported in Baltimore, Maryland.

1803 - Outbreaks (606 fatal cases) were reported in New York City and Philadelphia, Pennsylvania.

1838 to 1839 - An outbreak was reported in Charleston, South Carolina.

1839 - An outbreak (250 fatal cases - 5% of the population) was reported in Galveston, Texas.

1852 - An outbreak was reported in Charleston, South Carolina.

1853 - An outbreak (4,858 fatal cases) was reported in New Orleans.

1855 - An outbreak was reported in Virginia.

1862 - An outbreak was reported in Wilmington, North Carolina.

1867 - An outbreak (1,150 fatal cases - 5% of the population) was reported in Galveston, Texas.

1877 - An outbreak was reported in Port Royal, South Carolina.

1878 - An outbreak (13,000 fatal cases) was reported in the Mississippi Valley. 4,046 fatal cases were reported in New Orleans, Louisiana.

1888 - An outbreak was reported in Mississippi.

1905 - The last outbreaks [in the USA] were reported in New Orleans, Louisiana (8,399 cases) and Pensacola, Florida.

1910 - A case of yellow fever was identified in a ship arriving to Hawaii, with secondary infection of a quarantine guard.

1911 - The last indigenous case of yellow fever in the United States was reported.

1924 - An imported case was reported.

1996 - A traveler from Brazil died of yellow fever in Tennessee.

1999 - A fatal case (non-vaccinated American tourist returning from Venezuela) was reported in California.

2002 - An American traveler died of yellow fever in Texas following return from Brazil.

Some famous American Yellow fever victims: [3]

1704 - French explorers Pierre-Charles Le Seuer (first European to explore the Minnesota River valley) and Henri de Tonti (explorer with La sale) died of yellow fever in Alabama.

1790 - Samuel Nicholas, first Commandant of the United States Marines, died of yellow fever in Philadelphia.

1798 - John Fenno, prominent journalist, dies of yellow fever in Philadelphia.

1820- Benjamin Latrobe, designer of the United States Capitol, died of yellow fever in New Orleans, Louisiana.

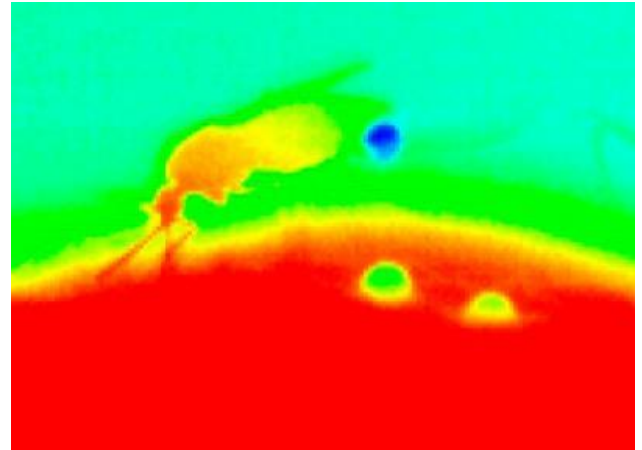
1835 - Dr. David Hosack, the doctor who attended Alexander Hamilton, died of shock (possibly yellow fever) in New York City.

1844 - John Conrad Otto, noted physician, died





### Photo of the Month



The mosquito performs evaporative cooling. The retention of the fluid drop attached to the abdomen end leads to a fall of the abdomen temperature causing a clear temperature gradient along the mosquito body. N.B., the colour of the droplet does not reflect the real temperature, because of the difference in the emissivity between the cuticle of the mosquito and the drop surface. Credit: Lahondre et al. Current Biology. Read more at: <http://phys.org/news/2011-12-blood-sucking-mosquitoes-cool.html#jCp>

of yellow fever in Philadelphia. 1862 - Ormsby Mitchel, astronomer and Civil War general, died of yellow fever in South Carolina.

1863 - Theodore Judah, designer of the first Trans-continental Railway (fatal infection, contracted in Panama)

1867 - Michael O'Laughlen, a conspirator in the Lincoln assassination, died of Yellow fever in the Florida Keys.

1879 - General John Bell Hood died of yellow fever in New Orleans, Louisiana.

1888- Richard A. Proctor, a pioneer in Martian astronomy, died of yellow fever in New York.

1900 to 1901 - Dr. Jesse William Lazear and nurse Clara Maass died of yellow fever after allowing themselves to be bitten by infected mosquitoes in Panama [as an experiment].

1902 - Thomas Nast, political cartoonist, died of yellow fever in Ecuador.

1929 - Dr. Paul A. Lewis, a noted yellow fever researcher, died of the disease in Brazil.

Americans who survived yellow fever have included:

Benjamin Rush (physician and signatory to the Declaration of Independence)

Anson Jones (President of The Republic of Texas)

Jack London (author)

Cyrus McCormick (inventor of the mechanical reaper)

Donald Meek (movie actor)

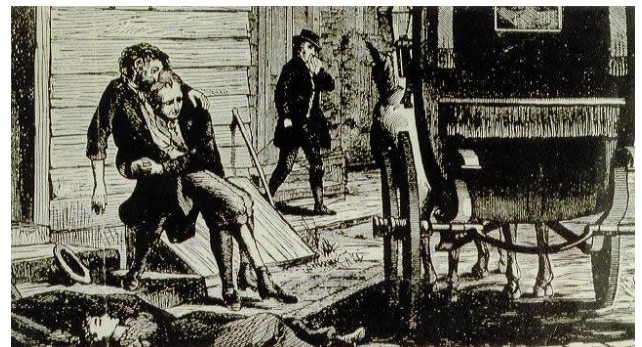
Philip Syng Physick ("the father of American surgery").

Zachary Taylor (American President), contracted Yellow fever while serving with the Army in New Orleans, Louisiana (ca. 1809)



Benjamin Latrobe: America's First Architect is a story of triumph and tragedy, the compelling saga of the man who designed much of official Washington, including the central portions of the United States Capitol and the iconic porticos of the White house. He died of Yellow Fever in 1820 (Source: <http://www.kunhardtmcgee.com/films/benjamin-latrobe-americas-first-architect>)

\*With the Aedes aegypti mosquito (the vector for yellow fever and dengue viruses) rampant in Florida and spreading in California, and dengue introduced into Florida with autochthonous cases occurring in the state (see ProMED archives below), there is an obvious risk of the re-introduction of yellow fever to the USA by an infected traveler arriving from an endemic zone in South America or Africa. (Source: Promed)



Volunteers collected the dead and dying from Yellow Fever. Over 5,000 residents of Philadelphia died in 1793 from the great epidemic of 1793. (Source: <http://pabook.libraries.psu.edu/palitmap/YellowFever.html>)