NEW ZEALAND BIOSECURE
Entomology Laboratory
A DIVISION OF SMS SOUTHERN MONITORING SERVICES LIMITED

BORDER HEALTH NEWSLETTER - SEPTEMBER 2012

WELCOME!

Hi everyone. I hope you've had a chance to get out mozzie hunting and enjoy some of the lovely weather that has been turning up in various parts of the country. The mozzie numbers are yet to show any real increase, but I'm sure we will see a change soon as the warmer temperatures speed up their development from now on.

This issue of our newsletter includes a couple of articles on West Nile Virus which is continuing to cause major problems in various parts of the world.

INCURSIONS/INTERCEPTIONS

On the 7th September an adult female *Culex sitiens* was caught after it flew out of a consignment of pineapples ex Philippines at the Ports of Auckland. The specimen collected was not in great condition so a photograph of another adult female found on the internet has been included as the Photo of the Month below.

Culex sitiens has been intercepted in New Zealand on several occasions as both larvae and adults. It is a coastal species which breeds in brackish water and is a common inhabitant of piers, harbours and beaches in populated areas. It's a nocturnal biter feeding on a variety of hosts including humans and other mammals as well as birds.

This species is a serious pest in some coastal parts of Australia and is a competent vector of Ross River, Kunjin and Japanese Encephalitis viruses in the laboratory. Wild caught specimens have been found containing Ross River and Kunjin viruses but as yet there is no known role in the natural cycle of Japanese encephalitis. *Culex sitiens* also plays a secondary role in the transmission of filariasis.

Photo of the Month

Photo ex http://medent.usyd.edu.au/arbovirus/mosquit/mosqphotos/culex_sitiens.jpg

SAMPLES

During September, 368 samples were collected by staff from 12 District Health Boards, with 39 positive. Sampling numbers were about the same as last month and up on this time last year. The specimens received were:

Species	Adults	Larvae
NZ Mozzies		
Aedes australis	0	3
Ae. notoscriptus	2	654
Culex pervigilans	1	33
Opifex fuscus	0	24
Exotics		
Culex sitiens	1	0
TOTAL MOSQUITOES	**4**	**714**

MOSQUITO-BORNE DISEASES

WEST NILE VIRUS CASES ACCELERATING IN THE USA

Source: Athens Daily Review [edited] 9 Sep 2012 reported on ProMED Mail 11 Sep 2012
http://www.athensreview.com/breakingnews/x2056631575/West-Nile-virus-cases-accelerating-in-U-S
The number of West Nile virus cases reported in the United States through early September [2012] is the highest year-to-date total since the mosquito-borne disease was 1st detected in this country in 1999, federal officials said Wednesday [5 Sep 2012]. The number of fatalities had jumped by nearly 1/3rd from the previous week, they said.

Texas continues to be the state hit hardest, accounting for about half of all reported U.S. cases this year [2012]. Aerial spraying of insecticide in some areas has reduced the population of mosquitoes that carry the virus, officials there said. But the number of human cases is expected to rise through October 2012 because of the lag time between infection and reporting of the illness.

As of Tuesday [4 Sep 2012], a total of 1993 cases nationwide, including 87 deaths, had been reported to the U.S. Centers for Disease Control and Prevention, a 25 per cent increase in the number of cases and a 32 per cent increase in deaths from the previous week.

For Texas, 2012 is "the worst year ever for West Nile virus," the state health commissioner, David Lakey, told reporters during a conference call. The state had 1013 confirmed cases and 40 deaths.

More than 70 per cent of the cases this year [2012] have been reported in 6 states: Texas, South Dakota, Mississippi, Oklahoma, Louisiana and Michigan.

Most people who become infected have no symptoms. In Texas, 89 people found out they had been infected during routine screening for blood donation, Lakey said. A spokeswoman for the American Red Cross said volunteer blood donors are routinely screened for West Nile virus. As of Wednesday [5 Sep 2012], more than 200 would-be donors in 28 states had tested positive this year [2012] for West Nile [virus], and the numbers are expected to rise, Red Cross spokeswoman Karen Stecher said. Blood infected with the virus is destroyed or used for research, she said.

Public health experts said it is hard to know for sure what is behind this year's [2012] large outbreak or why Texas -- particularly the Dallas area -- has been hit so hard. But this summer's heat waves and record temperatures are likely factors, said the CDC's Lyle Petersen, director of vector-borne infectious diseases. "We know that West Nile virus [infection] tends to occur when temperatures are above normal," he said.

The record number of U.S. cases for a full year was reported in 2003, with 9862 cases and 264 deaths, but the most West Nile deaths were reported in 2002, with 284.

Mosquito-borne outbreaks have always been difficult to predict, experts said. A complex set of environmental factors is involved in West Nile transmission, said Katherine Feldman, Maryland's public health veterinarian. The virus circulates in the blood of birds, and mosquitoes spread it to people and horses.

There is no vaccine for humans [but there is for equine animals. - Mod.TY]

The extent of an outbreak is influenced by the number of mosquitoes and how infectious they are, the population of susceptible bird species, rainfall and temperature. Bringing "all these things together in the right combination at the right time facilitates that the virus goes faster and to a greater degree in certain areas of the country," said Roger Nasci, chief of arboviral diseases at the CDC. "The hotter it is, the mosquitoes tend to be more infectious, and it also affects how long a mosquito may live,"

Petersen said. Floods wash out mosquito breeding sites. But the right amount of rain can produce ideal breeding conditions.

Robert Haley, director of the epidemiology division at the University of Texas Southwestern Medical Center at Dallas, said he suspects that particular local weather conditions made Dallas ground zero for West Nile virus this year [2012]. A mild winter allowed more female mosquitoes to survive. West Nile infection among birds was relatively mild last year [2011], meaning more birds would be susceptible this year. Haley, who lives in North Dallas, said he suspected that something was amiss when he saw 2 dead bluejays in his yard in July 2012. Bluejays and crows are among those species that tend to die from the virus [infection], he said. Dallas also had a hot, dry summer with rain every 3-4 weeks that replenished the stagnant pools in which mosquitoes breed, he said.

West Nile disease can vary in severity. The onset of symptoms can take from a few days to 2 weeks. People 50 or older have the highest risk of severe illness. About 80 per cent of people who are infected will not develop any illness. About 20 per cent will develop West Nile fever. Symptoms include fever, headache, tiredness and body aches. Occasionally, there will be a skin rash and swollen lymph glands.

The most severe type of infection causes inflammation of the brain or of the tissues surrounding the brain and spinal cord. In those cases, symptoms include headache, fever, stiff neck, muscle weakness and paralysis.

Of the West Nile disease cases reported to the CDC this year, 1069, or 54 percent, were considered severe.

Health officials say residents should use insect repellent when outdoors, especially at dusk and dawn, when mosquitoes are most active. Residents should also eliminate mosquito-breeding areas by emptying birdbaths, flowerpots, buckets and barrels where rainwater collects.

[The number of confirmed cases of West Nile virus (WNV) infection in the USA has gone from 1993 with 87 deaths as of 4 Sep 2012 to 2636 with 118 deaths as reported above, as of 11 Sep 2012, just a week later. One hopes that the comment that numbers of cases peaked late last month (August 2012) proves correct. Meanwhile, the public is well advised to avoid mosquito bites until the transmission season ends with hard frosts in autumn. Owners of equine animals should be sure that the vaccinations against WNV are current. There are no commercially available WNV vaccines for humans.] - Editor ProMED Mail 15 Sep 2012

WEST NILE VIRUS - EURASIA: BALKANS

Source: The Guardian [edited] 20 Sep 2012
http://www.guardian.co.uk/world/2012/sep/20/five-die-west-nile-virus-balkans?newsfeed=true

At least 5 people in the Balkans have died from West Nile virus [infections] and several dozen others have been taken to hospital in the past 4 weeks, according to health authorities in Serbia, Kosovo, Macedonia and Croatia.

Map of Eastern Europe ex
http://goeasteurope.about.com/od/introtoeasteuropetravel/ig/Maps-of-Eastern-Europe/Map-of-Eastern-Europe.htm

West Nile virus is a mosquito-borne disease usually found in temperate and tropical regions. While many cases are mild and have no symptoms, severe disease symptoms can include headaches, high fever, neck stiffness, coma, tremors, convulsions, muscle weakness and paralysis.

Kosovo confirmed its 1st death on Wednesday, saying the victim was a woman from central Kosovo who died on 14 Sep [2012]. Macedonia's health officials said on Thursday [20 Sep 2012] one woman had died and 2 other people were infected with the virus.

A spokesman for the Kosovo health ministry told Reuters 2 other people who died recently were also suspected of having the same virus, but the cases had not been confirmed with laboratory blood tests.

In Serbia, 3 people have died and 35 taken to hospital since mid-August.

"This is the 1st time the West Nile virus [WNV] has been officially registered in Serbia," the country's department for public health said in a statement.

All the infected people were over 50 and had other chronic diseases, it said. Serbia's western neighbour Croatia has registered five probable cases of the virus but no deaths.