Newsletter - August 2010

Hi everyone. Finally the last newsletter for winter, roll on summer! With all this cool, wet weather the mosquito numbers are still reduced, but as things warm up the populations will soon be on the increase. We hope our Cantabrian colleagues are starting to get sorted following the big shake.

SAMPLES

During August, a total of 489 samples were collected by staff from 11 public health services, with 36 positive. Sampling numbers were about the same as last month and up on this time last year. The specimens received were as follows:

Species	Adults	Larvae
Ae. notoscriptus	0	570
Culex pervigilans	2	151
Cx. quinquefasciatus	3	69
Opifex fuscus	0	3
Exotics	0	0
TOTAL	**5**	**793**

INCURSIONS/INTERCEPTIONS

Adult mosquito specimens were found in a devanned 20 foot container ex Noumea. The specimens were 1 female and 2 male *Culex quinquefasciatus*.

Remember when responding to an interception to use the profiles available on our website www.smsl.co.nz you'll find all the NZ BioSecure information under 'Services', simply click on the Exotic Mosquitoes category to expand and view the species profiles. These profiles can provide valuable information regarding where to look for potential habitats, how far species tend to fly etc.

WEB AND EMAIL CHANGES

We've put up a new website and thank you for your patience while all the links were re-established. The website contains all the information previously held and an online shop for you to purchase your mosquito surveillance supplies. Public health services are able to use the purchase order options for orders. Have a look at the shop and let us know what you think. http://www.smsl.co.nz/shop.html

With the new website, the emails have been streamlined and the individual name@nzbiosecure.net.nz emails are no longer active. For general laboratory enquiries please direct to taxonomy@nzbiosecure.net.nz or enquiries@smsl.co.nz

To contact one of us directly, please phone the Laboratory (04 586 2140).

2010 MINISTRY OF HEALTH NATIONAL BORDER HEALTH TRAINING COURSE

From 26 to 30th July for 5 days the 2010 Border Health Training Course was conducted at the Blue Skies Convention Centre in Kaiapoi, Christchurch.

The Course Director was John (JR) Gardner, DCTO Ministry of Health and the Senior Instructor was Wellington entomologist Mark Disbury. The course was attended by 15 Health Officers and Technicians from nine of the District Health Boards Public Health Units and the NZ Defence Force. This course also provided an opportunity for a further 13 MOHs and HPOs from around the country to attend, on the second day, a comprehensive Point of Entry (POE) Assessment Workshop.

The directing staff, conducting the procedures over the 5 days were very pleased by the enthusiasm of the students attending this year's course. Throughout the course it was felt that the 2010 group was attentive and engaging and the syndicates worked well together producing very good results. The feedback from the attendees was very positive and some of the suggested additions to the training programme will be under consideration when planning commences for the next years national course. There were numerous very encouraging responses to the course validation completed by all students which demonstrated overall this Ministry sponsored course, for the

vast majority, was a fulfilling and beneficial training activity.

With the introduction of the IHR POE workshop this year, many students' focus for learning appeared to favour this subject matter over much of the technical mosquito related subjects that have been the predominant sessions over the past decade. The comments received from those who attended only the workshop predominantly asked for more time allocation to cover the roles and responsibilities for public health practitioners at the POE. Attendees who sought more "hands on" technical and response activities were advised that training in monitoring and surveillance work is covered at the MoH Advanced Mosquito Surveillance Workshop held annually in October.

Bryn Gradwell
Course Manager
SMS NZ BioSecure

INTERESTING ARTICLE

MOSQUITOES AS FLYING VACCINATORS?!

A recent article by Yamamoto *et al.* 2010 (full reference below) reports that they have successfully used transgenic anopheline mosquito females, modified so they contain the Leishmania vaccine candidate SP15 attached to one of their salivary proteins, to bite mice which have then produced anti-SP15 antibodies. This shows that the potential vaccine has been transferred with it's capability intact, thereby making possible the theory of flying vaccinators.

There are however, medical safety issues and concerns about informed consent which mitigate the use of the 'flying vaccinator' as a method to deliver vaccines.

Ref: Yamamoto DS, H. Nagumo and S. Yoshida. 2010. Flying vaccinator; a transgenic mosquito delivers a Leishmania vaccine via blood feeding. *Insect Molecular Biology* 19(3): 391-8.

OVERSEAS INCURSIONS

AEDES MOSQUITOES, IMPORTED – NETHERLANDS (NORTH BRABANT):

Source: Dutch News.nl 2 Aug 2010, reported on ProMED Mail 3 Aug 2010 [edited]

Efforts have begun to eradicate 3 sorts of exotic mosquito which have been identified in Brabant and which could pose a risk to public health. Adults and larvae of the Asian tiger mosquito [*Aedes albopictus*], the American rock pool mosquito [probably *Aedes* (reclassified as *Ochlerotatus*) *atropalpus*], and the yellow fever mosquito [*Aedes aegypti*] have been found in used tyres imported by several different companies in the region.

None of the insects found in the Netherlands were carrying diseases [viruses] such as dengue, West Nile fever and yellow fever, according to the RIVM [Dutch National Institute for Public Health and the Environment].

French experts, who have years of experience in eradicating alien mosquitoes, have been brought in to help eliminate the adults and larvae using insecticides. People living and working in the affected areas will be informed, health minister Ab Klink told MPs.

Location of North Brabant in the south of the Netherlands (ex http://www.amsterdam.info/netherlands/provinces/north-brabant/)

Checks on bamboo imports have been stepped up since 2006 because of the risk of importing tiger mosquitoes.

[*Aedes albopictus* has become established in the Mediterranean coast of Europe, and as climate change occurs, is predicted to spread farther north (see reference below). *Aedes aegypti* is a tropical and subtropical species and would not be come established in the Netherlands. *Aedes atropalpus* is found from Labrador, Canada south to the Florida border along the eastern seaboard of the United States, southward in Mexico and Central America, and has been found in Italy.

All 3 species can breed in water in tyres, and eggs can be transported in them to other continents in shipments of tyres.]

MOSQUITO-BORNE DISEASES

WEST NILE VIRUS - ISRAEL

Source: Haaretz 2 Aug 2010, reported on ProMED Mail 3 Aug 2010 [Edited]

West Nile fever is spreading in Israel, although the number of cases remains low. 12 cases of the disease, which generally surfaces in the summer, have been confirmed and another 12 patients are thought to be suffering from the illness. The disease is spread to humans by mosquitoes, which are infected with the virus by birds. Incidence of the fever has been centered in the Tel Aviv area.

LA CROSSE ENCEPHALITIS - USA (MINNESOTA)

Source: LaCrosse Tribune, 31 July 2010, reported on ProMED Mail 6 Aug 2010

A 6-year-old Caledonia, Minn., boy has become the year's 1st confirmed case of La Crosse encephalitis in the region. The onset of the mosquito-borne [virus] disease was reported 11 Jul [2010], and the boy was hospitalized in Rochester, Minn., until last week, said Dave Geske, La Crosse County Health Department mosquito control officer.

[*Aedes*] *triseriatus*, the mosquito that carries La Crosse encephalitis [virus; LACV], was found in water on a tarp and in open bins close to the boy's home, Geske said. The boy's home also is near a woodland area within 50 yards of traps set up by Geske's staff to catch mosquitoes, he said. "Houston and Winona counties are hotbeds for [*Ae*] *triseriatus* in Minnesota," Geske said.

The risk for La Crosse encephalitis has increased this year, he said. As La Crosse endures its 3rd-wettest summer on record, "the potential is great for a bad encephalitis year," Geske said.

"Anything that collects water outside is filled with water... Normally this time of the year, containers are dry," he said. [Basal tree holes in hardwood trees are protected and replenished by summer rains so usually retain water throughout the summer, and are ideal and very common breeding places for *Ae. triseriatus*.]

The La Crosse area averages 4-6 encephalitis cases every summer, with the peak months in August and September. La Crosse encephalitis affects the nervous system and causes acute inflammation of the brain, with a 5 to 20 percent death rate among children. [CDC reports that fatal cases are rare, less than 1 percent. Neurological sequelae in encephalitis survivors have been reported in some cases.]

While it's a bit early to have a 1st encephalitis case, Geske said he has seen June cases in past years. The 1st 2009 case came in mid-August.

"The important thing now is to make sure anything, from traps to containers, needs to be emptied," Geske said. "We can't have water standing around." [Emptying water catchments near areas of human dwellings and activity is helpful, especially discarded tires. However, finding and emptying basal trees holes in extensive woodland areas is logistically impossible in this area.]

Mozzie Photo of the Month

Adult female *Aedes triseriatus*

Photo ex http://www.ent.iastate.edu/imagegal/diptera/culicidae/ae-tris-f.html

See LaCrosse Encephalitis article above for information on this mosquito.