



BORDER HEALTH NEWSLETTER - APRIL 2013

WELCOME!

Hello again. I hope you've all managed to avoid the first batch of nasty colds and bugs for the winter which have been circulating during April. It's lovely to see the sun after the latest southerly blast has swept through and the new blanket of snow on the Alps makes them particularly stunning at present. The mozzies should be finding a significant change in conditions outside now and be looking for a place to shelter from it all.

INCURSIONS/INTERCEPTIONS

There was only one interception callout during April and that occurred on the 3rd and involved an adult female *Culex quinquefasciatus* found within the declared baggage area of Auckland International Airport. The specimen is suspected to be of local origin.

SAMPLES

During April, 683 samples were collected by staff from 11 District Health Boards, with 116 positive. Sampling numbers and number of positive samples were well down on last month. Sample numbers were up a little and number of positive samples about the same as this time last year. The specimens received were:

| Species | Adults | Larvae |
|-----------------------------|-------------|-------------|
| NZ Mozzies | | |
| <i>Aedes australis</i> | 0 | 23 |
| <i>Ae. notoscriptus</i> | 1754 | 883 |
| <i>Culex pervigilans</i> | 6 | 464 |
| <i>Cx. quinquefasciatus</i> | 137 | 829 |
| <i>Opifex fuscus</i> | 4 | 41 |
| Exotics | 0 | 0 |
| TOTAL MOSQUITOES | 1901 | 2240 |

Photo of the Month



***Ixodes ricinus* female**

http://zoology.fns.uniba.sk/poznavacka/images/11_Ixodes_ricinus.jpg

This species is the primary vector of Lyme Disease in Europe. A photo of *Ixodes scapularis* the primary vector of Lyme Disease in the USA is included at the end of the newsletter.

Happy Mother's Day!





NEW ZEALAND BIOSECURE

Entomology Laboratory



MOSQUITO-BORNE DISEASES

BARMAH FOREST VIRUS - AUSTRALIA: (QUEENSLAND)

Source: Bayside Bulletin [edited] 15 Apr 2013 reported on ProMED Mail 17 Apr 2013

<http://www.baysidebulletin.com.au/story/1432346/mossie-warning-after-rise-in-barmah-forest/?cs=213>

Redland City councillor Wendy Boglary is warning residents to clear up stagnant water in gardens to keep mosquito-borne diseases at bay. Mosquito prevention costs Redland City Council AUD 748 000 [USD 776 500] a year.

Redland City Council is urging residents to clean up their back yards in a bid to crack down on mosquitoes and curb the spread of disease after a rise in cases of Barmah Forest virus.

Council Community and Environmental Health portfolio chairman Cr Wendy Boglary issued the warning after Queensland Health statistics showed a spike in the reported cases of Barmah Forest in Metro South Health district since 1 Jan [2013], compared with the same quarter last year. Compared to 94 cases in all of 2012, 41 cases of the mosquito-borne disease were recorded in the district since January [2013].

In Redland, from July 2012 to March 2013, Queensland Health recorded 19 cases of Barmah Forest, a 16 per cent increase in cases over the last 9 months. Council, which keeps records of all notifiable diseases, said the increase in Redland was "not significant" and coincided with a 35 per cent decrease in overall mosquito-transmitted diseases in the financial year to March 2013. It also said there was no evidence that people with the disease were infected within Redland city limits.

The council clean-up warning came a week after an outbreak of the incurable mosquito-borne virus was recorded on the Gold Coast, where 22 people were infected since mid-March 2013, a rate of almost one person a day.

Symptoms of the virus include fever, rash, joint pain, swelling, headaches and feeling tired. The rise in Barmah Forest virus [infections], named after the northern Victoria town, coincided with high rainfall over summer. Since January [2013], more than 702 mm of rain has been recorded in the Brisbane area, compared with the median rainfall for those 3 months of 397 mm. Point Lookout recorded 763 mm since January 2013.

Metro South Public Health senior medical officer Dr Brad McCall warned residents to avoid mossie-prone areas, use insect repellent and cover up to avoid bites. He said protection against mosquito bites would safeguard against the transfer of mosquito-borne viruses such as Ross River and Barmah Forest. "It is worth noting that the increase in Barmah Forest virus in Metro South is from a low base and that rates of infection in Metro South are still amongst the lowest in the state."

Cr Boglary said council had held 6 aerial spraying treatments this financial year [2013] and was vigilant in its control of mosquitoes and was aware of the threat of diseases being spread. "Residents also play an important role and should check they have no containers lying around yards collecting stagnant water," Cr Boglary said.

[Periods of higher than usual rainfall often bring an increase in mosquito populations, with corresponding increases in transmission of endemic arthropod-borne viruses in those areas. The same situation occurred in 2011 in different localities in Australia.

Although not as serious a human health threat as Ross River virus infections, the morbidity rate can be significant, and the disease can be incapacitating. Mod. TY]



BARMAH FOREST VIRUS - AUSTRALIA: (QUEENSLAND) COMMENT

Source: GIDEON (Global Infectious Disease Epidemiology Network) [edited] 17 Apr 2013 reported on ProMED Mail 18 Apr 2013

<http://www.gideononline.com>

The following background on Barmah Forest disease [BFD] in Australia is abstracted from Gideon <<http://www.GideonOnline.com>> and the Gideon e-book series. [1,2]

Barmah Forest disease virus was 1st isolated from mosquitoes (*Culex annulirostris*) in the Barmah Forest, Northern Victoria in 1974. Human infection was subsequently reported along the south coast of New South Wales during the mid-1980's; in Queensland during 1988 -1989; in the Northern Territory in 1992, and in southwestern Western Australia in 1993. A new focus was described in Gippsland (Victoria) during 1993-1994. The number of localities reporting Barmah Forest disease increased during 1996-1998, and again during 1999-2001.

Disease incidence has increased somewhat since 2000, with most cases reported from Queensland and New South Wales. In the following chart, I have contrasted incidence data for Barmah Forest disease [BFD] with those of a similar illness, Ross River disease [3] <http://cdn.gideononline.com/wp/wp-content/uploads/Barmah.bmp> .

Seroprevalence surveys:

- 6.5 per cent of healthy adults in Queensland.
- 11.3 per cent of horses in Brisbane, 1.2 per cent of dogs, 10.7 per cent of bushtail possums (*Trichosaurus vulpecula*) , 1.5 per cent of cats, 0 per cent of flying foxes [*Pteropus sp.*] (1977-1999).

Vectors:

- The known vectors are *Ochlerotatus vigilax*, *Culex annulirostris*, *Aedes (Oc.) camptorhynchus*, *Ae. normanensis*, and *Coquillettidia spp.*
- *Aedes notoscriptus* is considered an additional potential vector.

- BFD virus has also been recovered from *Aedes vigilax* in eastern Australia (2005-2008). [Isolation of virus does not prove vector competence. - Mod.TY]

Wallabies and kangaroos serve as reservoirs for the virus; however, antibody is also present in cattle and horses.

Related viruses:

- Similar local illnesses have been ascribed to Trubanaman and Gan Gan viruses (Bunyaviridae); and Kokobera, Stratford and Edge Hill viruses (Flaviviridae).
- A single human case of Edge Hill virus infection has been described.
- A case of Kokobera fever was reported from Darwin in 1998.
- Kokobera virus has been isolated from *Culex annulirostris* in the Northern Territory and northern Queensland.
- Kokobera virus was isolated from 18 of 25 351 *Cx. annulirostris* tested in Cape York in 1998.

Notable outbreaks:

- 1992 to 1994 - An outbreak (22 cases) of Barmah Forest disease was reported in the south-west of Western Australia.
- 1995 - An outbreak (135 cases) was reported along the south coast of New South Wales.
- 2002 - An outbreak (47 cases) was reported in Victoria.
- 2002 to 2003 - An outbreak (297 cases) was reported in Queensland.
- 2005 to 2006 - An outbreak (1895 cases) was reported.

References:

1. Berger SA. Infectious Diseases of Australia, 2013. 540 pages, 162 graphs, 3364 references. <http://www.gideononline.com/ebooks/country/infectious-diseases-of-australia/> .
2. Berger SA. Australo-Pacific Arboviruses: Global Status, 2013. 32 pages, 20 graphs, 307 references. <http://www.gideononline.com/ebooks/disease/australopacific-arboviruses-global-status/> .



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3. Gideon Graph Tool, see tutorial at <http://www.GIDEONonline.com/wp/wp-content/uploads/Gideon-Graphs.pps> .

[ProMED thanks Dr. Berger for this interesting summary of Barmah virus occurrence and cases in Australia. Obviously, this virus is endemic in the country, and future outbreaks can be expected when there are periods of higher than usual rainfall, that often bring an increase in mosquito populations, with corresponding increases in transmission of endemic arthropod-borne viruses in those areas. Mod. TY]

TICK-BORNE DISEASES

LYME DISEASE - USA (OREGON, WASHINGTON STATE) INCREASED INCIDENCE

Source: KGW.com Portland Local News [edited] Thu 11 Apr 2013, reported on ProMED Mail 14 April 2013

<http://www.kgw.com/news/local/Lyme-disease-on-the-rise-in-the-Northwest-202554231.html>

Cases of Lyme disease are on the rise in the northwest, and health officials have warned people to look out for ticks. Ticks usually become active in April, and experts said this year [2013] is no exception. As the weather warms up, people head outside more, and they and their animals start getting bitten by the creatures, which carry Lyme disease.

In Washington State, as many as 23 cases are reported each year. In Oregon, the numbers are even higher and growing. The state had 20 reports of Lyme disease in 2006, and that number had grown to 48 cases by last year [2012].

Experts have said expanding tick populations are to blame in part. But they added that people can protect themselves by wearing long pants [and tucking the pant's cuffs under the socks] and long-sleeved shirts when hiking or camping and using repellent when necessary. Light-colored clothing can also help people more easily notice ticks.

Hiker John Christensen said it's a danger for which he's prepared. "I just check myself out very thoroughly when we get home," he said. "You can check yourself, your socks, your shoes, and whatever." Experts also said people should thoroughly check their pets for ticks.

LYME DISEASE - USA: COMMENT

Source: ProMED Mail 18 Apr 2012

The incidence of Lyme disease has increased approximately 80 percent in the United States between 1993 and 2007, although rates vary between states, according to a new study in "CMAJ Open" [Canadian Medical Association Journal online open-access journal]. Latitude and population density were correlated with higher increases, with states in the north seeing increases and southern states seeing stable or declining rates.

Lyme disease and other tick-borne illnesses have been increasing and spreading with ticks moving from warmer areas into more northern latitudes. It is projected that this trend will continue with warmer temperatures associated with climate change.

[Dr Fisman is referring to the following online publication: Tuite AR, Greer AL, Fisman DN: Effect of latitude on the rate of change in incidence of Lyme disease in the United States. CMAJ Open 16 Apr 2013; 1(1): E43-E47. Available at

<http://www.cmajopen.ca/content/1/1/E43.full> .
- Mod.ML]



***Ixodes scapularis* female**

http://bioweb.uwlax.edu/bio203/2010/terp_tiff/