

DISEASE WATCH | IN THE NEWS

Chronic debate about CFS

A report published in 2009 implicating the xenotropic murine leukemia virus-related virus (XMRV) in chronic fatigue syndrome (CFS) continues to be controversial. Three studies published in 2010 reported an inability to detect XMRV in CFS patients, dampening enthusiasm for the initial findings. But now news has leaked of an as-yet-unpublished study by a US National Institutes of Health researcher, Harvey Alter, which seems to indicate that his group has evidence to confirm the findings of the 2009 study. Providing a further wrinkle to the story is another study from researchers at the CDC, published in *Retrovirology*, which once again failed to find a link between XMRV and CFS. The contradicting results have not stopped the AABB (formerly known as the American Association of Blood Banks) from recommending that blood banks ask people with CFS not to donate blood, to prevent the potential spread of XMRV.

Science/Nature News/Retrovirology

Worm meets bacterium

The eggs of a gut worm rely on the bacterial microflora to hatch, found researchers from the University of Manchester, UK. Worms from the parasitic nematode *Trichuris muris* infect around one billion people. Infection occurs following the ingestion of embryonated eggs, which hatch in the large intestine. *In vitro*, mixing *T. muris* eggs with either caecum explants or *Escherichia coli* at 37°C, but not at 30°C, caused the eggs to hatch. Examination of the egg-*E. coli* mixture showed that the bacteria are closely associated with the eggs where the larvae emerge; further investigation identified

bacterial type 1 fimbriae as the mediators of this close contact, but their target on the parasite remains to be identified. This unique worm-bacterium interaction is likely to be an adaptation that prevents the eggs from hatching in an inappropriate place. *Science/The Scientist*

Gene therapy against HIV?

A new approach to fighting HIV infection using gene therapy of haematopoietic stem cells has been tested in patients. In this trial, which involved HIV-positive patients who were receiving stem cell transplants to treat AIDS-related lymphoma, three different RNAs were introduced into the stem cells: one that interferes with the production of the HIV co-receptor CCR5, and two that prevent replication of the virus. After 2 years, the genetically altered cells were still detected in the recipients and had differentiated into different types of immune cells, but the expression levels of the RNAs were very low. However, this study shows that it is possible to introduce genetically engineered stem cells that can resist HIV infection. Further studies may improve on the expression levels of the RNAs to provide higher levels of protection against viral entry and replication.

Nature News/Science/Sci. Transl. Med.

Ebola fossils

New research shows that filoviruses, a family that includes pathogens like Ebola virus and Marburg virus, have been infecting mammals for a much longer time than previously thought and that ancient versions are integrated into the genomes of bats, rodents and other mammals. Many of the identified genes have mutations, but in



some cases transcripts of the genes could be detected. The viral fragments identified are nearly identical and are integrated at the same place in the genome, indicating that the integration took place in an ancestor and was maintained during evolution. Phylogenetic analysis suggests that integration took place at least 12–24 million years ago. As filoviruses are non-retroviral RNA viruses, integration was probably a rare, and possibly unique, event and must have been promoted by a reverse transcriptase from another source. *BMC Evol. Biol./Science*

Whooping cough outbreak

The state of California, USA, has declared an epidemic of whooping cough. More than 900 cases of this highly contagious disease have been diagnosed in 2010 to date, with another 600 suspected cases recorded — together, a fourfold increase over the same period in 2009 — and the deaths of 5 children have been reported. With the peak season now starting, the number of cases is likely to rise in the coming months. Although nationwide the total number of cases of whooping cough in the United States is lower than at the same time in 2009, several other US states, including Michigan, Texas and Ohio, are also seeing a higher number of cases. Whooping cough is a serious illness that can be prevented by vaccination but, owing to the contagiousness of the disease, a high percentage of the population must be vaccinated to block its spread. *NYTimes/AAFP News Now*

In the News was compiled with the assistance of David Ojcius, University of California, Merced, USA. David's links to infectious disease news stories can be accessed on Connotea (<http://www.connotea.org>), under the username NatureRevMicrobiol.

