

DISEASE WATCH | IN THE NEWS

Arrival of an amphibian assassin

Contact between previously isolated populations of the fungus *Batrachochytrium dendrobatidis* may have led to recombination events that resulted in the generation of the hypervirulent strain implicated in current mass amphibian extinctions. *B. dendrobatidis* is a pathogenic fungus found throughout the world and has emerged as the primary cause of global loss of amphibian biodiversity. However, little is known about its origins and spread. Using comparative population genomics, Matthew Fisher and colleagues identified three deeply diverged fungal lineages associated with amphibians, two of which have been spread to multiple continents by the amphibian trade. They found that isolates from one lineage (*BdGPL*) are hypervirulent and have emerged across at least five continents during the past century. Importantly, they identified hallmarks of genetic recombination in *BdGPL* which suggest that it arose following a meeting between previously genetically isolated allopatric populations. *Proc. Natl Acad. Sci. USA/ New York Times*

Turning the tide against AIDS?

Both the number of AIDS-related deaths per year and the number of new HIV infections per year have decreased by more than 20% since their respective peaks in 2006 and 1997, according to the latest UNAIDS report. The decreases are mainly the result of better access to treatment, with the biggest advances seen in sub-Saharan Africa, where improved access to antiretroviral drugs has been supported by changes in sexual behaviour and increasing acceptance of male circumcision. The report also highlights exceptions to the global trend, with the number of new HIV infections still increasing in the countries of the former Soviet Union and in Central Asia. Furthermore, new data from the Health Protection Agency in the United Kingdom show an increase in the number of infections, with 91,500 people living with HIV in 2010, up 5,000 on the previous year. Although the total number of HIV-infected individuals worldwide now stands at over 34 million, a record level, according to the UNAIDS report the latest figures suggest that, although the epidemic is not over, it is certainly conceivable that “the end might be in sight if countries invest smartly”.

However, with news that the Global Fund to Fight AIDS, TB and Malaria will award no new grants until 2014, the international financial situation might undermine the advances made in tackling HIV infections in recent years. The Global Fund provides about one-quarter of the funds for fighting HIV and AIDS, but when it asked international donors for \$20 billion, it received just \$11.5 billion.

BBC/Washington Post/Guardian

Lolli-pox idea widely panned



A posting on the social media website Facebook offering to sell lollipops infected with varicella-zoster virus (which causes chicken pox) has brought attention to the ongoing practice of ‘pox parties’ and drawn concern amongst scientists and health care professionals. The lollipops were thought to have been contaminated with saliva from children infected with the virus and were priced at US\$50 each. The posts have now been removed from the site, and there is no evidence that any lollipops were actually bought. Infections transmitted to children through sharing of contaminated items are believed by many parents to provide their children with stronger immunity while avoiding the perceived hazards associated with vaccines. However, public health experts have warned that not only is the practice likely to be ineffective for transferring varicella-zoster virus, which requires living cells to survive, but also it will

increase the risk of transmitting hepatitis B virus and group A streptococcal infections.

Science /New York Times/Los Angeles Times

Early-bird antibiotics

Treatment of filariasis with antibiotics was known to lead to a reduction in the burden of microfilarial nematode worms, interrupting their transmission, but how this occurred was something of a mystery. Now, a paper from Mark Taylor and colleagues reveals how using antibiotics to target and deplete the bacterial endosymbiont *Wolbachia* results in antifilarial activity. They found that antibiotic-mediated depletion of *Wolbachia* from adult *Brugia malayi* worms led to extensive apoptosis in the adult germline and in the somatic cells of embryos, microfilariae and fourth-stage larvae, resulting in long-term sterilization. Interestingly, the cells that undergo apoptosis do not contain the bacteria, suggesting that factors released from *Wolbachia*-infected cells in the hypodermal chords upon antibiotic treatment induce apoptosis in a non-cell-autonomous manner.

PLoS Pathog.

Outbreak News

Influenza. In the past 3 months, ten people in the United States have been infected by a new swine flu variant. The new strain, termed S-OtrH3N2, combines the H3N2 influenza A virus that circulates in North American pigs with the H1N1 virus that caused the 2009 swine flu outbreak. In the first seven infections, either the patients or their close associates had been in contact with pigs. However, the three most recent cases were in children in Iowa, none of which had any recent exposure to pigs. According to the CDC, a sample of the virus that would be suitable for production of a human vaccine has been developed and sent to vaccine manufacturers. *Bloomberg/ABC News*

Polio. There has been a four-fold increase in the number of cases of polio in Nigeria, with 43 reported cases this year compared with just 11 last year. Cases have also been reported in Mali, Niger and Ivory Coast, suggesting that the outbreak has spread from Nigeria to neighbouring countries. *BBC*

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 his Twitter page (@Ojcius).