

## IN BRIEF

**EPIDEMIOLOGY****Anthrax threatens wildlife**

Anthrax is a bacterial disease that affects wild and domestic animals, as well as humans. Although outbreaks have mostly been reported in arid ecosystems of the African savannahs, lethal anthrax-like cases in wild chimpanzees were reported in a rainforest habitat, and the causative agent was identified as *Bacillus cereus* biovar *anthracis* (Bcbva). Hoffmann, Zimmermann *et al.* investigated the epidemiology of Bcbva by analysing isolates retrieved from flies, and the bones and carcasses of animals that were collected at rainforest sites over three decades. Mortality levels were comparable to those of classic anthrax, whereas the host range was broader and a seasonal effect on incidence was not always evident. In addition, simulations showed that this pathogen has the potential to cause the decline and extinction of local chimpanzee populations. Understanding disease dynamics will aid infection control and contribute to wildlife conservation.

**ORIGINAL ARTICLE** Hoffmann, C., Zimmermann, F. *et al.* Persistent anthrax as a major driver of wildlife mortality in a tropical rainforest. *Nature* <http://dx.doi.org/10.1038/nature23309> (2017)

**MICROBIOTA****Tell me who you are and I'll tell you what you eat**

The gut microbiota of *Drosophila melanogaster* mainly comprises *Acetobacter* spp. and *Lactobacillus* spp., and their relative abundance changes at the individual level and throughout development; however, how the microbiota is assembled is not well understood. Chun-Nin Wong *et al.* manipulated the fly gut microbiota and carried out behavioural and chemosensory assays that showed that the composition of the host microbiota can influence not only microbial acquisition but also nutritional preferences. These findings support the notion that the gut microbiota can modify host responses. Moreover, the data suggest that microbial acquisition and foraging decisions are driven by chemosensory responses.

**ORIGINAL ARTICLE** Chun-Nin Wong, A. *et al.* Gut microbiota modifies olfactory-guided microbial preferences and foraging decisions in *Drosophila*. *Curr. Biol.* <http://dx.doi.org/10.1016/j.cub.2017.07.022> (2017)

**BACTERIAL PATHOGENESIS*****Vibrio* enters 'sleep mode' to survive**

*Vibrio cholerae* is a water-borne pathogen that can cause cholera, an acute and severe gastrointestinal infection. A recent study by Silva-Valenzuela *et al.* investigated how this bacterium adapts to, and survives in, fresh water, which is an environment that is crucial for human dissemination. By using a high-throughput transposon mutant screen, the authors found that mutants that were tolerant to osmotic shock had a slower metabolism or growth rate, and/or generated a greater abundance of persister-like cells. The most common class of mutants found was associated with the inhibition of tRNA synthetase activity and with the increased production of the alarmone guanosine pentaphosphate ((p)ppGpp), which, in turn, activates the stringent response under conditions of stress. In addition, they showed that persister-like cells that were generated during infection were crucial for the colonization of infant mouse and rabbit intestines. Therefore, persister-like cells contribute both to the pathogenesis of *V. cholerae* and to its survival in the environment.

**ORIGINAL ARTICLE** Silva-Valenzuela, C. A. *et al.* Growth arrest and a persister state enable resistance to osmotic shock and facilitate dissemination of *Vibrio cholerae*. *ISME J.* <http://dx.doi.org/10.1038/ismej.2017.121> (2017)