In This Issue

AUSTRALIAN HEALTH AND WELLBEING

Kingsley and Thomas explore how to best integrate ecological and human concerns within governance structures. Their article highlights challenges to wellbeing discourse in research and policy frameworks and presents a case study from Australia that demonstrates complex social-ecological health problems in the region. They advocate for the need to reshape governance institutions to better engage with complex social-ecological health problems and to highlight that Australia offers an international relevant case study to address this task.

INSIGHT INTO ZIKA AND EMERGING VIRUSES

Despite global viral diversity, most viruses receive minimal attention until a public health emergency. Lack of knowledge in the basic biology and ecology of an emerging virus makes predicting a future threat difficult. Weber et al. suggest using a pathogen phylogenetic framework with infected host species for insight into which may serve as reservoirs. For flaviviruses closely related to Zika virus, the phylogenetic framework suggests initial animal surveys for potential reservoirs should focus on New World monkeys as the most likely candidates. Mammals such as livestock in close proximity to humans have increased opportunities for pathogen exchange, and this analysis suggests these should also be evaluated.

PARASITES IN ARGENTINA

Lavallén et al. evaluate enteroparasitoses and toxocarosis in children of peripheral and urban communities from Mar del Plata. A higher number of peripheral compared to urban children were parasitized. Toxocara canis IgG was more prevalent in peripheral children, seemingly caused by inadequate hygienic maintenance after direct contact with animals. A Parasite Vulnerability Index was established using socio-environmental variables to assess the risk of parasite infection in families. The peripheral communities showed higher frequencies of families with high and medium parasite vulnerability associated with enteroparasitoses and toxocarosis.

BRUCELLOSIS AT HOME AND ABROAD

Serological data are one of the primary sources of information for disease monitoring in wildlife species. However, the duration of antibodies is often unknown for many free-ranging host species. Bendavides et al. used a Bayesian statistical approach to infer brucellosis infection, antibody loss, and recovery rates of elk in the Greater Yellowstone Ecosystem. Results suggest that seroprevalence declined above the age of ten due to antibody loss without further re-infection and that around half of the population requires vaccination to eradicate the disease. Beauvais et al. analyzed policies in relation to brucellosis in Kazakhstan and found that high livestock densities on farms may play a key role.

BIRD FLU BIOSECURITY IN BANGLADESH

Rimi et al. conducted observations, in-depth interviews, and group discussions with poultry farmers and feed sellers from in Bangladesh to understand the biosecurity conditions and the perceptions of avian influenza biosecurity. Some farmers used measures that involved additional cost or effort to protect their flocks. The survey results suggest...
that small commercial farmers could be motivated to maintain biosecurity with interventions that protect their investment and maintain profitability by keeping their flock safe from diseases they consider harmful through the involvement of local vendors they value.

**Malaria in Africa**

Malaria cases in South Africa’s Northern Province of Limpopo have surpassed those reported in nearby provinces where it is endemic. Komen applied statistical methods to understand the timing and duration of malaria outbreaks. The onset of rainfall was shown to trigger a ‘malaria season’. The author recommends that cost-effective Malaria control programs and an early warning system should be implemented prior to annual rainfall. Kibret et al. review the impact of dams on malaria across Sub-Saharan Africa. While dams are economically important infrastructures, their potential impact on malaria needs special attention in the planning, implementing, and operating of dams. The authors found that dams increase malaria in semi-arid areas, where malaria transmission is seasonal.

**Old World Bats**

Most emerging infectious diseases seem to result from an increased contact zone between wildlife and humans. Seltmann et al. tested whether habitat disturbance is indeed associated with the occurrence of astroviruses and coronaviruses in eight bat-species in a paleotropical forest with ongoing anthropogenic landscape modification. While the authors could not find evidence of any association, the detection rate of astroviruses was higher during the rainy season and in individuals with poor body condition. The identification of seasonality as an important factor for increased viral shedding may help in the prevention of viral spillovers from bats to other animals including humans.

**Global Bd**

Although the role of *Batrachochytrium dendrobatidis* (*Bd*) in the decline of the relict leopard frog (*Rana onca*) remains hypothetical, Jaeger et al. detected *Bd* in *R. onca* and in other anurans within its historical range. However, when they were infected with two hypervirulent *Bd* isolates, survivorship was unaffected and most frogs being capable of clearing infections. The authors propose that *R. onca* either has inherent resistance to *Bd* or has recently evolved such resistance. Parrott et al. screened specimens of salamanders representing 17 species inhabiting the Smoky Mountains, the Swiss Alps, and the Peruvian Andes for *Batrachochytrium salamandrinivorans* (*Bsal*) and *Bd*. *Bsal* was not detected and *Bd* was absent except for one location in the Andes.

**Fertilizer from Above**

Canadian geese (*Branta canadensis*) are able to produce up to 1.5 lbs of fecal material each day, which may contain a variety of pathogenic bacteria. Thapaliya et al. examined fecal samples from *B. canadensis* for the presence of *Staphylococcus aureus*, a bacterium that can cause a variety of disease in humans. They found that *S. aureus* was present in 7.1% of goose samples, suggesting that geese may play a role in transmission of this bacterium into the environment.

**Spoiled Meat**

Cunha et al. surveyed 55 scavenger vultures including Eurasian griffons and Eurasian black vultures from several regions in Portugal where these species qualify as endangered. Pathogenic and opportunistic mycobacteria were detected in the oropharynx of nine vultures exclusively in hotspot areas for animal tuberculosis. Genetic relatedness between the *Mycobacterium bovis* strain found in vultures, with bovine and deer strains from the same region raise questions about infection source, transmission risk, and suitability of current vulture feeding methods.

**Mangy Muts**

Saito and Sonoda evaluated the effects of landscape factors on the distribution of sarcoptic mange in raccoon dogs along an urban gradient. High occurrence probability of mange in raccoon dogs appeared in non-forest and intermediate forest landscapes, indicating that an urban landscape has an important role in the occurrence of sarcoptic mange in raccoon dogs.
**MU in Waterbugs**

Some studies assume that Naucoridae and Belostomatidae insects have symbiotic relationships with *Mycobacterium ulcerans* (MU) the causative agent of Buruli ulcer. Other studies assume that MU can be transmitted to any animal that lives in ecological settings where MU accumulates, such as a river dam. Ebong et al. examined these possibilities through phylogenetic comparative analysis in 10 regions of Cameroon. Their results suggest that MU infects animals living in the aquatic vegetation and through the trophic network. They also show that Naucoridae and Belostomatidae insects may have symbiotic relationships with MU.

**Influenza’s A Coming**

Harris et al. carried out a literature review to identify scientific publications with evidence of epidemiological risk factors for influenza A viruses transmitting between animals and from animals to humans. They identified a knowledge-gap regarding these risk factors and particularly a lack of studies that included a statistical measure of risk factors. With reference to animal to human transmission in particular, most studies involved various influenza strains, but these risk factors may not directly correlate to viruses less adapted to poultry, which could still present equivalent or higher public health threats.

**Leptospirosis in Southeast Asia**

Leptospirosis is emerging as an important zoonotic disease in Malaysia and in Southeast Asia as the number of cases recorded and outbreaks increases following heavy rainfall or flooding. Garba et al. stressed the necessity of Malaysian government intervention in reducing the number of cases and generating public awareness for leptospirosis.

**Wild Malaysian Meat**

The wildlife trade for food poses zoonotic infection risks to hunters in contact with animals or carcasses and consumers of wild meat, which threaten the health of individuals and human populations. Cantlay et al. provide a database of zoonotic information that identifies viral, bacterial, and parasitic pathogens that are potentially transmissible to people from wildlife species traded in Malaysia. This evidence could aid targeted epidemiological monitoring and surveillance of harvested wildlife and at-risk human populations in Southeast Asia.