Zoonotic risk from exotic companion animal parasites and the role of the OV

THE ESTABLISHMENT IN ESSEX of the exotic tick-borne disease Babesia canis came as a shock in 2016, not only to the pet-owning public but also to veterinary professionals and the public health sector. This was not because B. canis is a zoonosis but because it demonstrated the very real possibility that foreign parasites with zoonotic potential may also become established through their increased distribution abroad, the spread of potential arthropod vectors, increased pet travel and imports.

The most important of these in the companion animal sector is Echinococcus multilocularis, a severe zoonosis, with local and metastatic spread of cysts leading to hepatopathy and potential multiple organ involvement. Despite significant advances in treatment over the past two decades, infected individuals can still expect a significant reduction in life expectancy. The adult tapeworm is carried by various microtine voles acting as intermediate hosts. Despite an abundance of these reservoir hosts, E. multilocularis is not currently endemic due to the compulsory tapeworm treatment for pets before entering the UK. The increase in pet travel and importation across UK borders, however, in combination with the relaxation in the time period allowed between tapeworm treatment and return to the UK, and the spread of the parasite across Europe (Figure 1) threatens this status. It is vital that the compulsory praziquantel treatment before return to the UK remains in future negotiations regarding the Pet Travel Scheme, but it is also important that additional treatment of dogs upon return and monthly treatment abroad is promoted and implemented, if we are to remain free of this life-threatening zoonosis. But E. multilocularis is not alone in being a dangerous zoonosis at risk of landing on our shores…

Tick-borne encephalitis (TBE) is a viral pathogen transmitted by ixodes spp ticks which are already endemic across the UK. Although traditionally considered to be a parasite of Eastern Europe, TBE has spread west and north with a mortality rate of 1%-2% in those people infected. The risk of TBE introduction is a strong argument for reintroduction of the compulsory tick treatment on the Pet Travel Scheme (GETS), but this will only be effective if veterinary professionals and pet owners are also educated to the importance of treating for ticks before, during and after travel, and monitoring pets for them while abroad. A wide range of other zoonotic parasites such as Linguatula serrata (“tongue worm”): Figure 2, Dirofilaria repens (cutaneous worm: Figure 3) and Thelazia calliparae (eye worm) have been diagnosed in travelling dogs in the UK in the past 12 months. The culicine mosquito vector for D. repens is ubiquitous in the UK and the fruit fly vector for T. calliparae is also establishing and increasing its range.

Climate conditions are ripe in the UK for further fruit fly distribution and across Europe, where its vector has thrived, T. calliparae has followed. Legislation, while important, is not possible against all of these parasites so a multi-faceted approach is required to maintain UK biosecurity and protect its native pets and residents from novel disease. Targeted lobbying is required with clear specific objectives. Reinroduction of the compulsory tick treatment would be useful as a tool against foreign tick and tick-borne disease entry, but maintaining the compulsory tapeworm treatment is vital. Controlling illegal importation of puppies is also essential for both long-term biosecurity and animal welfare and increasing the minimal travel age on PETs to six months may be a novel way to achieve this. Increased education and support for OVs is vital as OVs play an essential role in not only checking documentation but also giving accurate advice to pet owners taking their pets abroad and in disease surveillance in pets entering the country.

Early detection of infected pets and ensuring pets leave the UK with the right parasite prevention in place are key in preventing exotic diseases entering the country and keeping pets safe. Increased co-operation between government agencies and the veterinary profession is essential. Disease surveillance, particularly of vectors and reservoir hosts that may allow novel infections to establish, is required to monitor and forecast long-term risk and spread of disease. This will require new levels of co-operation between industry, government agencies such as the Animal and Plant Health Agency (APHA) and Public Health England (PHE), and veterinary organisations such as the BVA, BSAVA and ESCCAP UK & Ireland. This has already taken place successfully to monitor the B. canis outbreak in Essex and can be used as a model for co-operation in future outbreaks.

Engagement of the public is also essential. OVs are the public face of the profession when working with pet owners travelling abroad and importing pets. Only by engaging the public and demonstrating how important tailored parasite protection is while they are abroad will we achieve the compliance and goodwill required to maintain biosecurity and keep pets safe while travelling. The OV is involved in all of these approaches, on the front line of protecting UK borders from exotic disease and improving animal welfare. They must therefore remain well trained, well funded and in sufficient numbers to continue public education and disease surveillance work.

Figure 1. Range of Echinococcus multilocularis in foxes in Europe – ESCCAP map 2014.

Figure 2. Linguatula serrata adult (courtesy of Pedro Serra and NWI).

Figure 3. D. repens adult.