



Parasite Forecast

Issue 05

Spring 2018

Welcome

Welcome to the ESCCAP UK & Ireland quarterly newsletter. Theresa May recently outlined the Governments position on Brexit. This speech took place against a background of new proposed animal welfare legislation, both by the Government and Her Majesty's opposition.



This has shone a light once again on TB, livestock welfare and illegal puppy trading, all of which is to be highly commended. What has slipped largely under the radar however, is that the Pet Travel Scheme (PETS) is also up for consultation once more. This provides an opportunity to negotiate new measures to be introduced to the scheme. Many have been suggested, such as the reintroduction of the compulsory tick treatment, raising the minimum age of pet travel to 6 months old and reintroduction of compulsory rabies serology blood testing post vaccination. If there was ever a time to lobby for change then the time is now, and the profession has a strong voice in lobbying MPs and the Government. As a profession though, we should carefully consider which measures to push for based on their likely effectiveness as the EU is unlikely to want to tighten regulation further unless a very strong case can be made on human health grounds. What is more likely, is that the EU will push for further relaxation, particularly in regard to the compulsory tapeworm treatment. This must be kept in place to protect the UK from *Echinococcus multilocularis*, the introduction of which to the UK would have far reaching consequences for human health. Keeping this requirement must be the primary focus of the profession when lobbying the Government, as it was in 2012 when the scheme was last relaxed.

Meanwhile, exotica continues to enter the UK with fresh cases of *Leishmania infantum*, *Ehrlichia canis* and *Linguatula serrata* infection being reported. This emphasises the need for ongoing vigilance in travelled pets, but also client education regarding the risks associated with pet importation and travel. UK flea and tick numbers demonstrate how important it is not to forget home grown parasite threats. Flea numbers remain high despite the recent cold weather, often infesting centrally heated homes and persisting for surprisingly long periods of time as this edition's case report demonstrates. A paper recently published in the Veterinary Record on line, also demonstrates that tick numbers on cats are likely to start climbing through March and may be present on pets at any time of year so vigilance is required despite the cold weather.

All of these parasites, both home grown, and foreign invaders need to be considered when taking a risk based approach to parasite prevention in UK cats and dogs. ESCCAP UK & Ireland continues to provide advice, support and materials to the veterinary profession and pet owning public to aid parasite control. We welcome discussion on possible changes to PETS that might be lobbied for and to act as a forum to consider their merits. We are also happy to help with clinical cases such as exotic parasites from abroad, or simple but often frustrating flea infestations. Any query, large or small, can be sent to us via our website (www.esccapuk.org.uk).

In this issue of Parasite Forecast, as well our latest news section and summary of enquiries to ESCCAP UK & Ireland, we have a case summary describing a particularly challenging flea infestation in a house in Preston. We also have the quarterly parasite forecast, summarising which parasites may represent an increased risk based on current information.

Parasite Forecast aims to keep veterinary practices, industry and academia up to date with ESCCAP UK & Ireland news and activities. We welcome any feedback, including any suggestions for future topics or case studies to cover. Please email info@esccapuk.org.uk.

To sign up to future editions of Parasite Forecast, please email info@esccapuk.org.uk. Each edition will also be published on the ESCCAP UK & Ireland website (www.esccapuk.org.uk).

To your parasite control success!

 Ian Wright
Head of ESCCAP UK & Ireland



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Front cover photos: *Linguatula serrata* adult (courtesy of Neil Walsh, Avenue Vets)

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Spring 2018 Parasite Forecast

Exotic disease in imported dogs from Eastern and Southern Europe

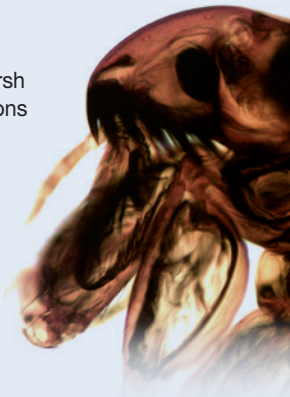
Cases reported to ESCCAP UK & Ireland of leishmaniosis in imported dogs continues to be high. Dogs in the UK imported from Romania infected with *Linguatula serrata* also continue to be a concern with another confirmed case reported in the Vet Record (<http://veterinaryrecord.bmj.com/content/182/4/112>). A further case was reported to ESCCAP UK & Ireland in February. A dog living in Bradford that had been imported from Romania expelled adult *L. serrata* parasites onto the carpet from its nasal passages. Cases such as these emphasise the need for vigilance in all imported cats and dogs for exotic disease. ESCCAP UK & Ireland recommend four key steps (the 'four pillars') when dealing with all imported or travelled pets arriving in the UK:

1. **Check for ticks and subsequent identification of any found.**
2. **Treat dogs again with praziquantel within 30 days of return to the UK and treat for ticks if treatment is not already in place.**
3. **Recognise clinical signs relevant to diseases in the countries visited or country of origin.**
4. **Screening for *Leishmania* spp. and exotic tick-borne diseases in imported dogs.**

Following the 'four pillars' concept will enable veterinary professionals to prepare owners if parasites are present, improve prognosis of clinical cases, minimise the risk of spread of any disease and carry out effective disease/parasite surveillance.

Fleas

Despite the recent harsh weather, flea infestations in UK domestic cats and dogs continues to be high. Veterinary professionals should continue to advise routine year round preventative treatment to prevent house infestations and transmission for vector-borne diseases such as bartonellosis. Care should also be taken when introducing wildlife casualties into the home or practice. A recent study showed 130 wildlife species to be harbouring cat fleas including hedgehogs (<https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-017-2564-z>). This demonstrates the potential for transmission to occur in areas that domestic pets and wildlife share, and for fleas on rescued wildlife casualties to establish infestations in homes and practices.



Angiostrongylus vasorum
(courtesy of Bayer Animal Health)

Lungworm

Reports of *Angiostrongylus vasorum* remain high and veterinary professionals should therefore continue to be vigilant for cases in their area and advise preventative treatment for high risk dogs (previously infected dogs, those dogs living in close proximity to other cases, those eating slugs, snails, grass and amphibians).

Toxocara canis

There remains no current data on the prevalence or incidence of human toxocarosis in the UK. Recorded prevalence of patent infection in untreated UK adult cats and dogs continues to be high (5% dogs, 26% cats, most recent figures from Lancashire, 6% dogs, 32% cats most recent figures from Ireland). Due to the zoonotic risk this represents, and the potential for all cats and dogs to be infected, ESCCAP UK & Ireland continues to advise all UK cats and dogs are treated at least every three months to reduce egg shedding and high risk groups (those cats and dogs on raw unprocessed diets, those that hunt, those living with children or immune compromised adults) should be treated monthly.

Echinococcus granulosus

Echinococcus granulosus is much more widespread in England than previously thought. Post-mortem inspections in abattoirs across Britain have produced positive cases with a particularly high incidence on the Welsh border and North Midlands. HyData UK is a three year (2016-2018) multi-centre collaborative study investigating the national distribution of *E. granulosus* in high-risk dog populations (hunting hounds, farm dogs and pet dogs in rural areas), livestock (cattle, sheep) and horses at slaughter in England, Wales, Scotland and Northern Ireland¹.

Using a molecular epidemiological approach and GIS methodology, the study aims to build the most comprehensive picture of *E. granulosus* geographic distribution in the UK and explore associated risk factors for animal and human infection. Until these results become available, these dogs should be assumed to be at risk of infection through offal fed directly in hunts, kennels, farms and through unprocessed diets. These dogs should therefore be treated with praziquantel at least every three months outside of known *E. granulosus* endemic areas (Wales, the Welsh border, Herefordshire and the Western Isles of Scotland) and at least every six weeks in known endemic areas.

Dogs that are producing *Taenia* spp. tapeworm segments should also be treated with praziquantel at least every six weeks (to reduce offal and meat condemnation). Promoting effective treatment, the responsible disposal of dog faeces, carcass clearance from fields and keeping dogs on leads on livestock pasture will help reduce both meat and offal condemnation and public health risk.

Tick-borne disease

Further recently published data has also continued to support the view that the current UK climate allows questing and feeding of *Ixodes* ticks all year round (<http://veterinaryrecord.bmj.com/cgi/content/full/vr.104649>). This study also demonstrated that numbers of *Ixodes ricinus* found on cats starts to climb in March, sooner than seasonal peaks for *I. ricinus* on dogs and *Ixodes hexagonus*. This means that owners and veterinary professionals should always be aware of potential tick attachment to pets and owners, with the potential for numbers on cats to be climbing earlier in the year than on dogs. Checking for and removing ticks within 24 hours and using an effective product that will rapidly kill or repel ticks, will greatly reduce the risk of transmission for pets and owners walking in high risk areas such as outdoor areas with tall grass, bracken and those shared with deer or ruminants. Pets with a previous history of tick exposure should also be treated as it is likely their lifestyle will expose them to ticks again in the future. *Babesia canis* continues to be endemic in Essex and possibly adjoining counties so tick prevention in dogs with outdoor access living in or visiting these counties remains very important. In addition to the threat of domestic ticks, *Rhipicephalus sanguineus* continues to be found on travelled and imported dogs. Another confirmed case of an infested dog is described in the Vet Record (<http://veterinaryrecord.bmj.com/content/182/1/25.2>). The dog had been imported from a rescue centre in Greece and despite having supposedly having been treated with a licensed product before UK entry had 50+ larval ticks on his body, particularly the feet.



Ixodes ricinus

This case demonstrates that exotic ticks on travelled dogs may be larval and therefore not exhibit all the features seen in nymph and adult ticks (including only having six legs). It also enforces the need for vigilance in imported dogs and that it cannot be taken for granted that a dog will be tick free if it is reported to have had an effective treatment. Some ticks may survive, or the product may not be applied correctly. Therefore, although use of an effective product before, during and after travel/importation is vital, regular examination for ticks, especially on arrival is also key.

Sarcocystis spp. and Toxoplasma gondii

Both of these parasites were found in a recent study in raw meat-based diets for cats and dogs (<http://veterinaryrecord.bmj.com/content/182/2/50>). There are no preventative medications for these parasites in cats and dogs and subsequent cyst shedding carries both zoonotic risk and the potential for economic loss for farmers if oocysts are shed where ruminants have access. The diets the cysts were found in had been frozen prior to sale, deactivating them, but if raw pet food is purchased fresh and prepared at home without freezing then there is the potential risk of these parasites infecting domestic pets. Clients insistent on feeding raw diets should be advised to ensure that products have been adequately frozen to deactivate cysts before purchase.

¹ Collins, M., McGarry, J., Michalopoulou, E., Rogan, M., Brouwer, A. & Jones, P. (2016) The HyData Project: Investigating the distribution of *Echinococcus granulosus* (sensu lato) in the UK [conference lecture] Presented at BAVP, Bristol, 14 Apr 2016.

Case report

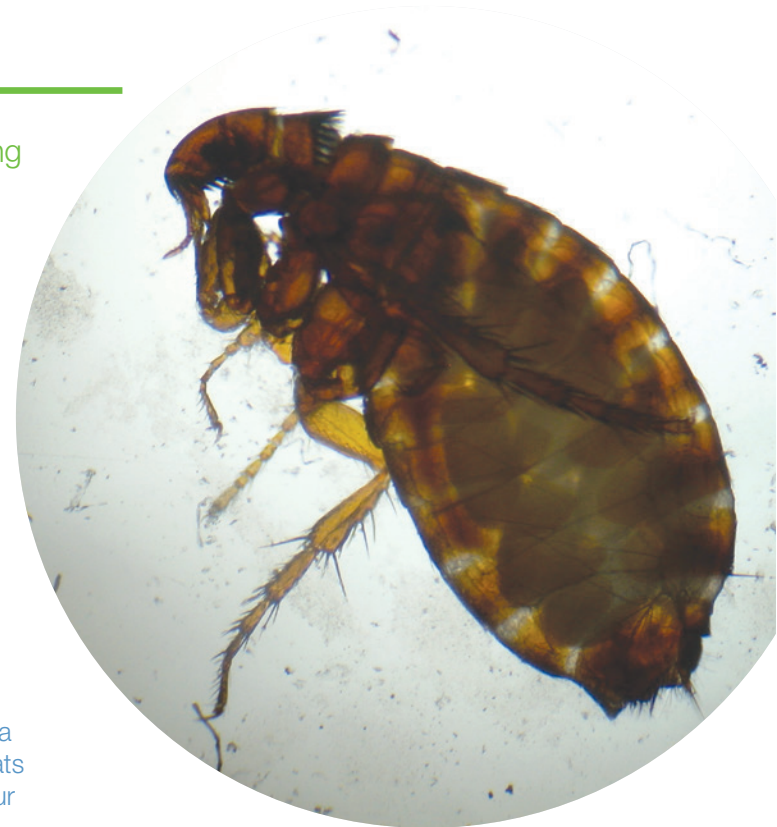
ESCCAP UK & Ireland regularly receives queries relating to flea control and its breakdown in the face of heavy flea challenge. These failures are often linked to poor compliance or lifestyle factors such as pets being shampooed, incorrect or insufficient frequency of application, not all pets being treated or untreated cats and dogs gaining entry to the home.

In some cases, the cause is not initially clear and a methodical approach is required as demonstrated in this case.

Fleas on treated cats in new home, Preston

An owner of two cats presented with concerns over a possible flea infestation in her home. The owner had recently moved into a new house and had started receiving bites on her ankles. The cats were both being treated routinely with a fipronil product every four weeks and there were no visible skin lesions or sign of irritation.

The owner had therefore concluded that her cats were not the source of any infestation. When bites persisted after treatment of the house with permethrin/pyriproxyfen spray, the owner was concerned that “human” fleas (*Pulex irritans*) were present, after research on the internet. To ascertain if this was the case, the owner was advised to try and capture the suspected fleas for identification. She had noticed fleas jumping from the carpet, and so used fly paper at carpet level to catch the fleas. Flea combings of the cats found no adult fleas, but small amounts of flea dirt were present.



The owner was able to bring into the practice a sample of fly paper with fleas attached to it. These proved impossible to extract intact from the paper, so the flea heads were removed using a scalpel blade and examined under a microscope. The presence of combs on the head eliminated *P. irritans* as a possibility and horizontal genal combs confirmed *Ctenocephalides* spp. This meant that adulticide administration on the cats and treatment of the environment should be sufficient to control the infestation. The owner was advised to continue to treat the pets every four weeks with fipronil. At this stage, the adulticide was not changed so resistance could be ruled out as a possible cause of the flea control breakdown if control was successfully re-established. In addition, daily vacuuming of bedding and carpets was advised to try and more rapidly reduce pupal numbers and prevention of other animals entering the home until control was achieved.

The client continued to use fly paper to monitor emergence of adult fleas and none were detected two months after initial presentation at the practice. Flea bites on the owner and flea dirt on the cats also reduced over this two month period and ceased after three months. It was therefore concluded that flea control had been re-established.

The question in this case was why flea control was originally lost. Only cat fleas appeared to be involved and resistance was unlikely as control was re-established without a change in adulticide. Lack of compliance is possible if the fipronil was being applied incorrectly or if treatments were overdue or missed. The most likely explanation in this case however, was an existing flea infestation in the property. The presence of a significant existing reservoir of pupae meant that time was required to regain flea control despite an adequate adulticide already being used. As adults emerged and were killed by the fipronil and overall numbers reduced, control was re-established.

This case is a good example (and one of many existing household pupae reservoirs that ESCCAP UK & Ireland has been alerted to) of needing to consider all possibilities when flea control is lost. It would have been easy to wrongly assume that lack of fipronil efficacy is responsible when it was not a factor and control re-established without a change in adulticide. There would have been nothing wrong with changing adulticide if this maintained client compliance and confidence but if this had occurred in this case without further investigation, it may well have been concluded that drug resistance was the cause.



Latest news from ESCCAP UK & Ireland

MA Healthcare and ESCCAP UK & Ireland collaborate on successful flea roundtable and nurse CPD

Companion Animal journal and ESCCAP UK & Ireland, sponsored by Bayer, organised a flea roundtable on the 9th of February, bringing together dermatology specialists, experts from the Universities of Bristol and Nottingham, RSPCA, iRecall, Bayer Animal Health and ESCCAP.

The aim was to discuss the current epidemiological situation in relation to fleas and the vector-borne diseases they transmit, from both human and animal health perspectives. Control strategies were discussed, including methods for increasing owner engagement and compliance, an essential part of any parasite control strategy.

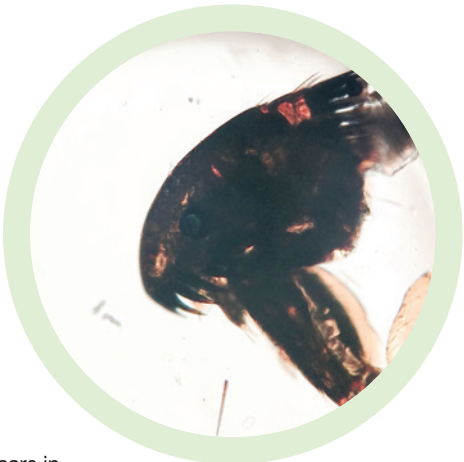
Presentations included

- Fleas: their biology, and why flea problems are increasing.
- Compliance and client engagement.
- Flea-borne diseases.
- Control strategies and efficacy.

Productive discussions and sharing of information took place on the day as to how best maximise the efficacy of flea control strategies.

On the same day, MA Healthcare in association with *The Veterinary Nurse* journal ran a series of workshops for veterinary nurses. One of these in association with ESCCAP UK & Ireland and sponsored by Bayer, focused on current UK parasite threats in cats and dogs. This was well attended and generated a lot of discussion surrounding the rapidly changing distributions of endemic parasites such as *A. vasorum*, ubiquitous threats such as *Toxocara* spp. and fleas, and exotic arrivals from abroad.

Both this session and a consensus statement from the flea roundtable will be published shortly in *The Veterinary Nurse* and *Companion Animal* journals respectively.



ESCCAP UK & Ireland Plans for 2018

Activities and plans for 2018 are well underway and new materials will be posted onto the website soon. Work on the Bayer sponsored Travelling Pets Timeline is progressing well and the Timeline is due for launch for the upcoming pet travel season. Other activities include:

FAQs on the website

The most frequently asked questions will be posted on the website with answers for veterinary professionals and, where appropriate, pet owners.

Informational videos

Filming has already been completed for short information videos that will be posted on the website over the coming year including instructional videos on how to look for fleas and ticks and how to remove and identify ticks. There is also a description of tick habitat, parasite exposure and how to protect pets and people enjoying the outdoors.

Ectoparasite ID materials

Flea and tick identification posters and CPD will be made available for download on the website to help assess which fleas and ticks may be involved in specific infestations.

Equine

The launch of the ESCCAP equine guideline is due in summer 2018 and the plan remains to serialise it in the journal *Equine Health* along with associated content and an equine ‘parasite wheel’ – similar to the ones currently available for cats and dogs.

Risk based approach to parasite control materials

Downloadable material will continue to help practices engage in a risk based approach to parasite control.

Informative materials about exotic disease risk from imported pets

Downloads, printed materials and blogs for use on practice websites will be produced to help educate owners regarding the risks of importing pets from abroad.

Veterinary school research support

Results of ESCCAP UK & Ireland funded studies will be summarised and highlighted on the website as they are published. New individual projects will also be considered, starting with Nottingham Vet School’s investigation into the prevalence of *Toxocara* spp. eggs in public sandpits in the UK, degree of contamination and the risk it may pose to public health.

Tick surveillance scheme data published

ESCCAP UK and Ireland and PHE have collaborated to publish tick surveillance scheme data outlining the different species of tick found on cats and dogs but also the locations on the body where they were found.

<http://veterinaryrecord.bmj.com/content/early/2018/02/26/vr.104649>

Data on the bite site location of ticks on pets aids veterinary professionals and parasite advice groups to better guide clients as to where to look for ticks on their animals. Coupled with knowledge of peak pet-tick exposure periods, this will increase detection of feeding ticks, potentially reducing the risk of tick-borne disease transmission, and may also encourage pet owners to think about their own health by making them tick aware. On dogs, 79.4% were *Ixodes ricinus*, 18.9% *Ixodes hexagonus* and 1.7% other species (*Dermacentor reticulatus*, *Haemaphysalis punctata* and *Ixodes canisuga*).

Of the 149 records from cats, 51.7% were *I. ricinus*, 46.3% *I. hexagonus* and 2% other species (*I. canisuga* and *Ixodes ventralis*). These results were comparable to other recent studies identifying ticks found on dogs and cats.

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ESCCAP UK & Ireland Enquiries

ESCCAP UK & Ireland received enquiries from veterinary professionals and the public regarding a wide range of subjects in the last three months.

The most queries this quarter have regarded *Leishmania infantum*, all of them travelled cases that had been subsequently diagnosed with clinical leishmaniasis. In one case, two years after travel. This emphasises the need for close vigilance and serology screening for pets that have been imported from, or spent time travelling in endemic countries.

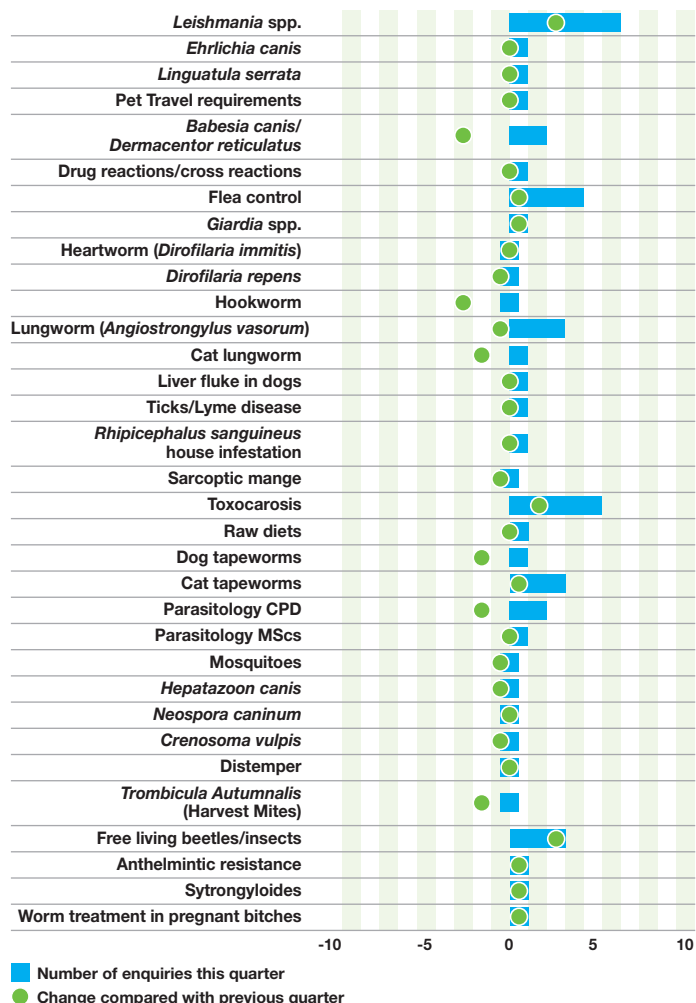


Book lice



Free living beetle

Interest in domestic parasites such as fleas, *Toxocara* spp. and lungworm also remains high. The cold and humid weather also appears to be driving queries about free living household pests masquerading as parasites. Samples of book lice and free living beetles have been sent for identification, found gathering around food bowls and pet bedding. It is important to identify these infestations to establish if treatment of pets is also required.



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