



Parasite Forecast

Issue 03

July – September 2017

Welcome

Welcome to the ESCCAP UK & Ireland quarterly newsletter. Over the past 3 months, ESCCAP UK & Ireland have continued to work with its partners from academia, industry, human medicine and Government to raise awareness of the very fluid nature of companion animal parasitic disease and the potential for zoonotic disease that they may bring.

The concept of 'One Health' is talked about so much, it has almost become a cliché! Yet it is vital for awareness to be raised and data shared across industries to build a clear picture of biosecurity and health risks - also highlighting the knowledge gaps that remain.



The One Health Triad



The chances of obtaining parasitic disease control is optimised by organisations from different sectors working together. Only then can we maximise efforts to prevent exotic disease from entering the UK. This information cannot be gathered and control achieved without the continued tireless hard work and dedication of veterinary professionals working in practice who submit data to SAVSNET, Public Health England (PHE) and ESCCAP UK & Ireland.

As a Europe wide organisation, ESCCAP was pleased to be presenting lectures on these very topics at the WSAVA/FECAVA conference in Copenhagen at the end of September, as well as discussing the vital issues of Canine vector borne disease and drug resistance. On a national level we have been pleased to support conferences and CPD days at vet schools as well as working with our medical partners at PHE and Lyme Disease Action (LDA).

Domestically, great work is being carried out by SAVSNET and Liverpool University to highlight, generate and collate data on fly strike in rabbits. This completely preventable, but severe, disease continues to be a significant welfare concern in the UK. However there is relatively little data showing prevalence, disease incidence, risk factors or the species of fly involved so it is great to see strides forward being taken to correct this.

In this issue of Parasite Forecast, as well our latest news section and summary of queries to ESCCAP UK & Ireland, we have a case summary regarding an unusual flea infestation in the South of England. We also have the quarterly parasite forecast, summarising which parasites may represent an increased risk 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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While every care is taken to ensure accuracy, ESCCAP UK & Ireland cannot accept liability for errors or omissions.

Front cover photo: *Linguatula serrata* adult courtesy of Pedro Serra and NWL labs.

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Autumn 2017 Parasite Forecast

Managing exotic diseases risks in imported dogs from Eastern and Southern Europe – There has been another two reported cases of the canine oriental eyeworm, *Thelazia callipaeda*, now making three known imported cases in the UK (read more about these cases in the Veterinary Record: <http://veterinaryrecord.bmj.com/content/181/13/346>). Due to the ongoing risk that imported parasites represent to individual pets, owners, the wider public and UK biosecurity as a whole, 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.



Thelazia callipaeda

Fleas bedding down for winter

As autumn fast approaches and people start turning the central heating on in their homes, we are providing the perfect winter sanctuary for fleas. Centrally heated homes allow fleas to survive indoors throughout UK winters; mild winters can also allow fleas to survive in outdoor environments on wildlife reservoirs and untreated pets. The current UK climate is perfect for the propagation of fleas and the Met office is forecasting that the current trend for warm and wet weather will likely continue, with the next five years falling between 0.28°C and 0.77°C hotter than the 1981 – 2010 average. The last three months have continued to be warm and wet and veterinary professionals should therefore be prepared to see increasing cases of flea infestations if adequate control measures are not in place, especially as we begin to heat our homes for colder weather. Depending on the level of challenge, live fleas may still be seen on pets even if adequate flea control is in place as outdoor adult fleas emerge from pupae and look to feed. This should not be confused with insecticide resistance.

Angiostrongylus vasorum

Despite occurring year-round, the cooler, damper weather in the autumn and early winter favours slugs and snails, which are intermediate hosts for *Angiostrongylus vasorum*. Climate change that is supporting flea propagation is also likely to favour intermediate host numbers and transmission of *Angiostrongylus vasorum* all year round. High numbers of cases have continued to be reported in UK dogs over the summer and this is consistent with the most recent prevalence study in UK foxes which found 18.3% to be infected, with 50% prevalence in the South East and 7.4% in the north of England and Scotland. Veterinary professionals should therefore continue to be vigilant for cases of lungworm in their area and advise preventative treatment for high risk dogs (those previously infected; living in close proximity to other cases; ingesting slugs, snails, grass and amphibians).

Tick-borne disease

Recently published data has continued to support the view that the current UK climate allows questing and feeding of *Ixodes* spp. ticks all year round. This means that owners and veterinary professionals should always be aware of potential tick attachment to pets and owners and subsequent Lyme disease transmission. Checking for ticks and removing any found within 24 hours and using a 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. Decorated ticks removed from pets or people should be sent to PHE for identification as part of their tick surveillance scheme. There has been a new confirmed case of *Babesia canis* in an untraveled dog in Hertfordshire. Although there have been no further cases in Essex since those reported in Romford in 2016, a recent paper by PHE demonstrates that the potential for infection is still present (<https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-017-2178-5>). *Babesia canis* was found in *Dermacentor reticulatus* ticks collected from the field in Harlow where the outbreak originated, but also in one tick from an endemic focus of *Dermacentor reticulatus* in Wales. This demonstrates the potential for fresh outbreaks to occur wherever there are endemic pockets of *Dermacentor reticulatus*. Babesiosis should now be considered as a differential for immune-mediated hemolytic anemia (IMHA) in untraveled UK dogs and tick prevention used for high risk pets.



Hunting Dogs

The autumn and winter months are well known as hunting season. Hunting dogs will be especially at risk from contracting *Taenia* spp. tapeworms as well as *Echinococcus granulosus* tapeworms if the dog is eating fallen stock or raw offal. As these helminths occur in all seasons, cats and dogs that hunt should be treated for tapeworms and roundworms year-round. In addition to the risk from worms, hunting dogs and cats may acquire ticks from the environment. Owners should be advised to remain vigilant and check their pets at least every 24 hours and remove any ticks using a suitable tick removal device.

Harvest Mites

The harvest mite, *Neotrombicula autumnalis*, is common in late summer. Larvae parasitise a variety of hosts before dropping off to continue their development as free-living mites in the environment - only the larval stage of harvest mites is considered parasitic. Infestation with harvest mites is pruritic and typically produces a localised dermatitis in the areas where the mites feed.



Neotrombicula autumnalis

They appear bright orange, often in small clumps, and are commonly found around the feet and between the toes of hosts. There are no treatments specifically licensed to treat harvest mite infestation although fipronil spray has been reported to be effective.

Fly Strike in Rabbits

Data from SAVSNET has recently been published, highlighting the high-risk months for fly strike in rabbits (<https://www.liverpool.ac.uk/savsnet/news/articles/scientists-warn-seasonal-increase-flystrike>). June - September has been highlighted as the months of highest fly strike incidence, but *Lucilia* spp. green bottles (which are the principal cause of rabbit fly strike in the UK) favour warm, low wind conditions. If these weather conditions persist then the flystrike season may be extended beyond this peak, so rabbit owners need to be particularly aware of the ongoing risks. Liverpool University is carrying out research to try and establish which *Lucilia* spp. are contributing to fly strike in rabbits. Dr John McGarry at the Liverpool Vet School would welcome submissions of rabbit maggots with a short clinical history and geographical location to help build up a picture of the situation nationwide (www.liverpool.ac.uk/contacts/).



Toxocara canis adult worms (courtesy of Ian Wright)

Toxocara canis

There remains no current data on the prevalence or incidence of human toxocarosis in the UK. However, recorded prevalence of patent infection in untreated UK adult cats and dogs continues to be high (5% dogs, 26% cats). Due to the zoonotic risk this represents and the potential for all cats and dogs to be infected, ESCCAP UK & Ireland continues to advise that all UK cats and dogs are treated for *Toxocara* infection at least every three months to reduce egg shedding. High risk groups (those cats and dogs on raw unprocessed diets; that hunt; that live with children or immunocompromised adults) should be treated monthly.

Case report

The summer has brought many 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. A less common but often overlooked factor, however, is when the fleas are not cat fleas at all! In which case it is purely an environmental problem, rather than a failure of pet treatment. This is highlighted by the following case.



Poultry fleas in a Southampton household

Two domestic cats had been treated continuously with selamectin in a household in Southampton for a period of 12 months. During this time, owners had received suspected flea bites around the ankles and fleas had been found sporadically in the house. The vet treating the infestation had been thorough in investigating possible causes for flea control breakdown and treatment failure.

These included:

- **Compliance** – treatment was applied every 4 weeks, originally by the owners and then in the face of possible flea control breakdown, by a veterinary nurse to rule out mis-application.
- **Untreated pets** – no other pets entered the household, including stray cats, or those from other households.
- **Lifestyle** – the cats went outside, presenting the possibility of clients seeing fleas due to exposure before the fleas were killed by the selamectin. This did not explain the bites, however, as household control would still be maintained.

ESCCAP UK & Ireland were contacted to seek advice and fleas were requested for identification. These were sent in a sealed container and subsequently identified as bird fleas by the absence of a genital comb and proximal leg hair. Bird fleas can invade homes from abandoned nests in attics, guttering and house walls. In this case it was found that the owners kept chickens outside but adjoining the house. These were subsequently found to be infested, explaining the source of the household infestation.

This case demonstrates the need to identify the type of flea in question if control breakdown is perceived to be occurring. Bird fleas can invade homes, presenting an environmental problem entirely independent of the pets living there, or can be associated with poultry or pigeons kept by the owners. Similar infestations can also occur with rodent fleas if nests are abandoned close to, or inside, houses. They may also be introduced through wildlife casualties such as hedgehogs.

Latest news from ESCCAP UK & Ireland

ESCCAP UK & Ireland launch deworming advice sheet for download

Hot on the heels of the 'Four Pillars' download for treating imported pets comes a deworming frequency advice sheet for domestic cats and dogs.

This can be used as a handout leaflet or poster and summarises ESCCAP UK & Ireland's risk based approach to deworming. Both downloads are available in the resources area of the ESCCAP UK & Ireland website (www.esccapuk.org.uk).

Deworming Frequency Advice

Toxocara spp.

All cats and dogs should be routinely treated due to risk of infecting humans, with puppies and kittens providing the largest source of potential infection:

- Treatment of puppies should start at two weeks of age, repeated at 2 weekly intervals until two weeks post weaning, then monthly until 6 months old. This is to eliminate *Toxocara canis* egg shedding from trans-placental and trans-mammary infection and prevent significant populations establishing in the intestine.
- Kittens should be treated in the same way as puppies, but the first treatment can be given at three weeks old as there is no trans-placental transmission.
- Autoinfection can occur in the bitch and queen during lactation and so they should be treated at the same time as the puppies and kittens.

Minimum recommendations in cats and dogs:

- It has been demonstrated that use of an effective anthelmintic every three months significantly reduces *Toxocara* spp. ova shedding in cats and dogs and there is no evidence that less frequent deworming frequencies will have any effect on egg output.
- Three monthly *Toxocara* spp. worming frequency should be a minimum recommendation in dogs and cats.
- Even indoor pets may have reactivation of arrested larval stages from puppy and kitten hood and should therefore be treated at least four times a year.

Monthly treatment:

- Use of a monthly anthelmintic will reduce egg output by over 90% and whether this is necessary will depend on the pet's lifestyle. Those pets hunting, in regular contact with young children/immunocompromised individuals or being fed offal or an unprocessed raw diet should be dewormed monthly.

For cats and dogs living in the UK

Lungworm (*Angiostrongylus vasorum*)

Lungworm is easily prevented and all dogs should be treated preventatively for lungworm.

- *Angiostrongylus vasorum* is now thought to be endemic throughout the UK but distribution is not uniform with some areas still remaining free of infection.
- Knowledge of local cases, use of case distribution maps and screening of suspected cases will help to build up a picture of whether *Angiostrongylus vasorum* is prevalent in a particular location.

Monthly treatment:

- Due to the potentially severe impact of infection in dogs and increased risk of bleeding during surgery, monthly use of a product effective against *Angiostrongylus vasorum* should be employed for dogs at high risk in the absence of other strategies to effectively reduce transmission due to the ubiquitous nature of the mollusc intermediate host.

Risk assessment:

- Dogs present in known endemic high prevalence foci are at high risk.
- Dogs living in areas where cases have been reported and those that deliberately eat slugs and snails or serially eat grass which may contain small slugs are at high risk.
- Dogs that have previously been infected should also be routinely treated monthly as there is no lasting protective immunity to lungworm and lifestyle is likely to lead to re-exposure.

WSAVA/FECAVA meeting in Copenhagen

ESCCAP had a lecture stream at the WSAVA/FECAVA conference in Copenhagen at the end of September, concentrating on the rapidly evolving parasitic threats facing the continent.

The first joint meeting of FECAVA'S Canine Vector-Borne Disease working group with ESCCAP was also held at the conference, where the joint paper on parasite resistance was discussed.

Details of all the ESCCAP activities at the conference will be in the next newsletter.

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Latest news from ESCCAP UK & Ireland

ESCCAP UK & Ireland support VetEd and Lyme Disease Action (LDA) conferences

On 7-8th July 2017, ESCCAP UK & Ireland were pleased to support VetEd 2017 – the annual Veterinary Education Symposium. Hosted by a different Veterinary School each year, this time it was held at Liverpool.

The symposium is unique among veterinary conferences by focusing on the education and future careers of vet and vet nurse students. Addressing topics such as 'Gamification – can we make learning fun?' and 'Curriculum interventions to support professional reasoning', the symposium includes poster sessions, workshops and key note speakers. As well as being one of the sponsors of the event, ESCCAP UK & Ireland had a booth at the exhibition and were pleased to meet so many people who will make up the future of the profession. We recognise how important it is to support the veterinary profession from students right through to practice owners and beyond so we would like thank Liverpool for hosting such a great student orientated event.

We were also invited to present a lecture at the Lyme Disease Action (LDA) conference on the 8th July 2017.



Ian Wright talked about Lyme disease in pets and the epidemiological and clinical similarities and differences when compared to the disease in people. ESCCAP UK & Ireland continues to cooperate with LDA in promoting Lyme disease awareness and control for pets and people alike as part of a 'One Health' approach.

Nottingham Vet School Companion Animal Diagnostics CPD day

ESCCAP UK & Ireland was happy to support Nottingham Vet school for its inaugural companion animal parasite diagnosis CPD day.



Lectures from Hany Elsheikha and Ian Wright covered the different techniques for parasite diagnostics and the principals of parasite control plans before Hany treated the delegates to a practical lab *tour de force* in the afternoon, demonstrating how easy and useful it is to implement faecal flotation and the Baermann technique in practice.

Feedback from attendees has been excellent so hopefully this will be the first of many, promoting the advantages of cheap, rapid and accurate diagnosis that can be achieved by in house diagnostic tests for parasites.

Bristol University launch updated Tick identification website in association with ESCCAP UK & Ireland

The University of Bristol Tick ID website has now been updated in association with ESCCAP UK & Ireland (www.bristoluniversitytickid.uk).

This is a fantastic resource to aid with tick identification which is so vital both for tick surveillance and to help establish which tick-borne diseases pets, owners and the wider public may have been exposed to.



ESCCAP UK & Ireland Enquiries

ESCCAP UK & Ireland have received a wide range of enquiries from veterinary professionals and the public over the past three months (July - September).

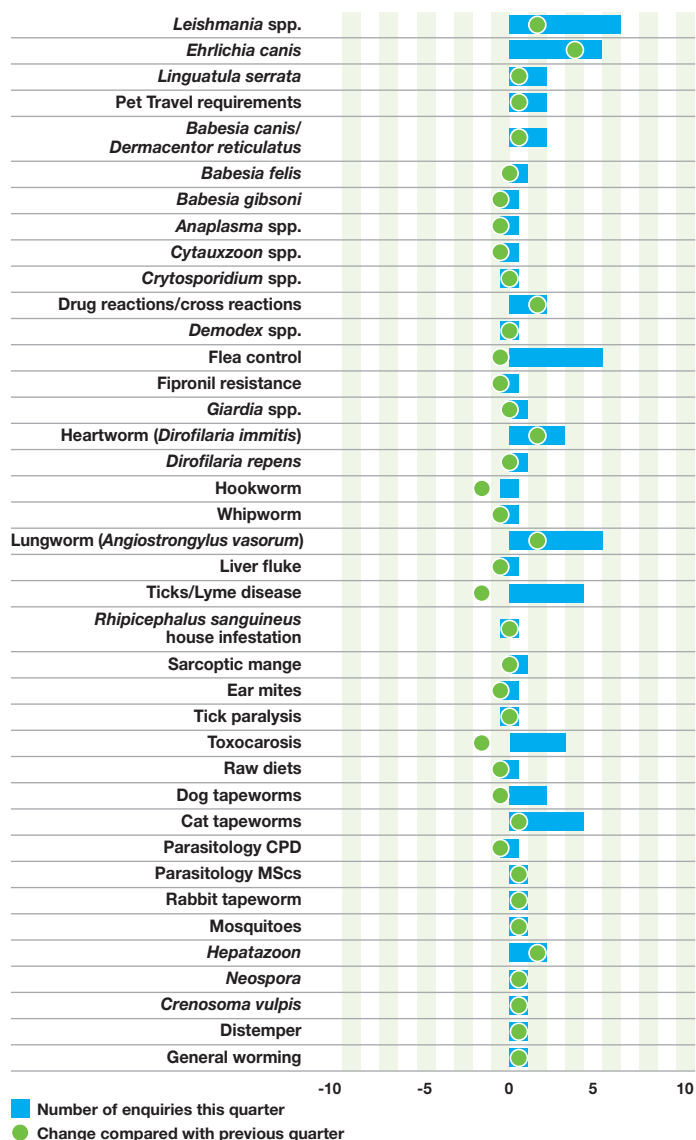


The majority of enquiries this quarter have been related to parasites exotic to the UK; all the exotic tick-borne disease and *Leishmania* spp. enquiries have been regarding cases in imported pets. Even a distemper case was reported in relation to an imported dog, emphasising the wide variety of pathogens, old and new, that may be present in pets brought into the UK from abroad.

This highlights the need for vigilance in imported pets and the implementation of ESCCAP UK & Ireland's 'Four Pillars' concept to limit disease risk.

Interest in domestic parasites such as fleas, *Toxocara* spp. and lungworm also remains high with another warm, humid summer leading to high flea numbers.

Media campaigns to both veterinary professionals and the general public have been highlighting the risk of parasites in domestic pets.



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