



# Parasite Forecast

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Issue 01

January – March 2017

# Welcome

The status of UK companion animal parasites and their zoonotic significance is rapidly changing; some are increasing their geographic range within the UK, some are gaining notoriety in the media and others are being newly introduced from abroad.



ESCCAP UK & Ireland are publishing quarterly parasite forecasts which will outline the changing parasite activity over the previous three months and forecast which parasites may present an increased risk in the subsequent three months.

Each publication will include:

- The parasite forecast
- An analysis of the topics which ESCCAP UK & Ireland has received enquiries about
- A sample case report outlining a particular parasite or risk
- ESCCAP UK & Ireland's latest news

This issue presents the spring parasite forecast and takes a look at a case report of leishmaniosis in a Boxer dog from Italy.

ESCCAP UK & Ireland welcome any feedback from this first issue, including any suggestions for future topics or case studies to cover. Please email [info@esccapuk.org.uk](mailto:info@esccapuk.org.uk).

To sign up to future editions of the parasite forecast, please email [info@esccapuk.org.uk](mailto:info@esccapuk.org.uk). Each edition will also be published on the ESCCAP UK & Ireland website ([www.esccapuk.org.uk](http://www.esccapuk.org.uk)).

To your parasite control success!

Ian Wright  
Head of ESCCAP UK & Ireland



## Parasite Forecast Issue 01 / January – March 2017

While every care is taken to ensure accuracy, ESCCAP UK & Ireland cannot accept liability for errors or omissions.

Front cover photos courtesy: John McGarry, Laura Stokes and Maggie Fisher.

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## Spring 2017 Parasite Forecast

### Exotic disease importation

The increasing trend of importing rescue dogs from European countries has led to a sharp rise in exotic parasitic disease cases being reported. It is likely that this trend will continue over the next three months and beyond.

ESCCAP UK & Ireland has had seven cases of canine leishmaniosis brought to its attention, alongside cases of ehrlichiosis, babesiosis and *Hepatozoon canis* infection.

In addition, the first confirmed cases of *Thelazia callipaeda* (eye worm), *Dirofilaria repens* (cutaneous worm) and *Linguatula serrata* (nasal pentastomid) have all been recorded. This raises concerns of novel infections being undetected or misdiagnosed, potentially putting pets and pet owners at increased risk.

There is also the potential for some of these parasites to establish endemic foci if not diagnosed and treated quickly. ESCCAP UK & Ireland advises any vets providing health checks on imported pets to perform routine blood testing for tick-borne diseases and *Leishmania infantum*. This will ensure that imported pets are monitored for relevant clinical signs and appropriate parasite control and zoonotic prevention advice can be given.

Veterinary professionals should also be aware of endemic parasites in the pet's country of origin and of their clinical signs so that any cases can be recognised quickly in travelled dogs and prompt action taken.

## Fleas

Central heating enables fleas to survive in the home throughout the UK winter, in close proximity to domestic pets and people. However, a warm and wet climate with mild winters also allows fleas to thrive in outdoor environments on wildlife reservoirs and untreated pets.



Flea dirt (courtesy of Laura Stokes)

The UK climate is increasingly following this trend with UK temperatures in 2015 and 2016 close to 0.5°C hotter than the average temperature between 1981 and 2010.

The Met Office forecasts that the next five years will likely fall between 0.28°C and 0.77°C hotter than the 1981 – 2010 average.

In combination with the limited change in annual rainfall, this will continue to support the proliferation of fleas. Veterinary professionals must be prepared to see increasing numbers of pets infested with fleas, with increased numbers of fleas per pet, if adequate control programmes are not put in place.

## Angiostrongylus vasorum

The changes in climate that are supporting flea propagation are also likely to favour intermediate host numbers and transmission of *A. vasorum*. Veterinary professionals should 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 for the questing and feeding of *Ixodes* spp. ticks all year round. Throughout the spring, owners and veterinary professionals should be aware of potential tick attachment to both pets and owners and subsequent Lyme disease transmission.

Regularly checking for ticks, removal of any within 24 hours of attachment and using a product that will rapidly kill or repel ticks will greatly reduce the risk of disease transmission to pets and owners.

The incidence of babesiosis in endemic countries is highly seasonal and so veterinary professionals should be aware of the potential for further cases to emerge in the UK this spring. Decorated ticks removed from pets or people should be sent to Public Health England for identification as part of their Tick Surveillance Scheme ([www.gov.uk/guidance/tick-surveillance-scheme](http://www.gov.uk/guidance/tick-surveillance-scheme)). The potential for the spread of ticks is high with a *Dermacentor reticulatus* tick recently having been sent to ESCCAP UK & Ireland from a dog in Wolverhampton that had visited an endemic foci in Mid Wales.

## Toxocara canis

There is 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 - most recent figures from Lancashire).



*Toxocara canis* adult worms (courtesy of Ian Wright)

Due to the zoonotic risk from *T. canis*, and the potential for all cats and dogs to be infected, ESCCAP UK & Ireland advises that all UK cats and dogs are treated at least every three months to reduce egg shedding.

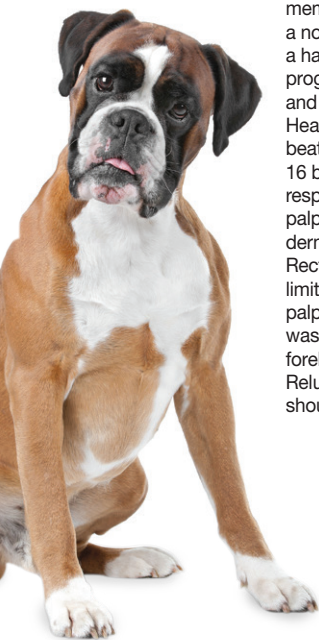
High risk groups (those cats and dogs on raw unprocessed diets; that hunt; that live with children or immunocompromised adults) should be treated monthly.



# Case report

## Leishmaniosis in a Boxer dog from Italy

In light of the high numbers of imported leishmaniosis cases in the past quarter, this issue's case report focuses on a *Leishmania infantum* infected Boxer dog imported from Italy. This case write up is courtesy of the veterinarian who handled the case, Katie Ford from County's End Veterinary Practice.



A one year two month old, male (entire) Boxer dog presented with a history of intermittent forelimb lameness, lethargy and behaviour change. The dog was imported from the Marches region of Italy eight months previously, having spent three weeks in quarantine due to microchip failure. Regular topical ectoparasite therapy was applied in the form of imadacloprid/moxidectin and endoparasite therapy as milbemycine oxime. The owner reported a normal appetite, with a possible increase in water intake; the dog lived alongside two other dogs, making levels difficult to quantify. Left forelimb lameness was noted as intermittent over the past seven months, suspected by the owner to have followed a traumatic incident; this had increased in severity over the preceding two weeks. The behaviour change included aggression towards other dogs in the household.

On clinical examination, the dog was bright, alert and responsive. Body condition score was five (ideal) using a nine-point system (WSAVA, 2013) and a body weight of 38.0kg. Mucous membranes were pink and moist, with a normal capillary refill time of one and a half seconds. Marked mandibular prognathism with protrusion of the tongue and malocclusion of the teeth was noted. Heart rate and rhythm was normal at 96 beats per minute. Respiratory rate was 16 breaths per minute with no increased respiratory noise or effort. Abdominal palpation was unremarkable. No dermatological changes were observed. Rectal temperature was within normal limits at 38.5°C. Lymph nodes were palpably within normal limits. The dog was graded as 4/10 lame on the left forelimb at walk, increasing to 6/10 at trot. Reluctance to fully extend and flex the left shoulder was observed.

The initial observed problem list from presentation and clinical examination were as follows:

- Left forelimb lameness. Initial differential diagnoses in this young dog included osteochondritis dissecans (OCD), soft tissue injury, elbow displasia, biceps tendonopathy. To further differentiate between causes of lameness, radiographs of the limb were scheduled.
- Polydipsia (unconfirmed). This required confirmation, but as water intake monitoring was not possible, differential diagnoses initially included: renal disease (breed based suspicion), urinary tract infection, psychogenic polydipsia. Biochemical testing to further assess renal parameters was planned.

Left forelimb radiographs showed evidence of OCD, the right shoulder joint was also assessed, showing similar changes. A full haematology, biochemistry and urinalysis were performed to assess renal function; symmetric dimethylarginine (SDMA) and creatinine were within normal limits, alongside a urine specific gravity of 1.030 (hypersthenuric). A mild thrombocytopenia was the only detectable abnormality at a level of  $104 \times 10^9/L$  ( $150\text{--}450 \times 10^9/L$ ), this was assessed and confirmed by the external laboratory.

The dog was referred for further assessment and treatment of OCD. Although the reduction in platelet levels was only mild, it was requested that a buccal mucosal bleed time (BMBT) was assessed prior to any surgical procedure. This was found to be prolonged at nine minutes, normally expected at less than four minutes; surgery was postponed.

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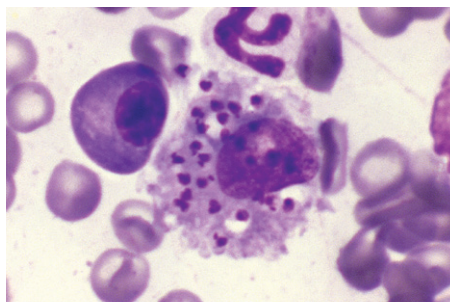
Reports in people and dogs indicate that BMBT is prolonged with thrombocytopenia at concentrations  $<100 \times 10^9/L$  and  $<20 \times 10^9/L$ , respectively (Jergens et al., 1987). In previous studies in dogs, the level of platelets observed in this instance would not usually be deemed to affect BMBT, but in human medicine, prolongation has been observed in patients at this level (Harker & Slichter, 1972); therefore it was deemed appropriate to eliminate common causes of this prior to surgery.

Differential diagnoses included:

- *Angiostrongylus vasorum*. This was less likely due to compliant application of preventatives, but a pet-side antigen blood test was performed. This was negative.
- Von Willebrands disease, a precautionary Von Willebrands factor was within normal limits.
- Heart worm antigen (by enzyme-linked immunosorbent assay (ELISA)): negative.
- Lyme disease (by Borrelia C6 Antibody): negative.
- *Babesia* spp. (by polymerase chain reaction (PCR)): negative.
- *Ehrlichia canis* (antibody by immunofluorescence assay (IFA)): negative.
- *Leishmania* serology (by ELISA): 39.2 test units (TU), where  $>12$  test units is deemed positive.
- *Leishmania* spp. (by PCR): 158 parasites per ml blood.

Following diagnosis the patient was further staged for *Leishmania* spp. by an internal medicine specialist. On abdominal ultrasonography, one of the mesenteric lymph nodes was increased in size and demonstrated increased hypoechogenicity and mild lobulation at its surface. Aspirates were taken of the affected node, spleen and bone marrow; these returned positive for *Leishmania* spp. PCR. Conjunctival swabs also returned positive. Based on the recognised staging scheme for clinical leishmaniosis (Solano-Gallego et al., 2009), the patient had stage II (moderate disease) which is substage a (no abnormalities in renal profile and no proteinuria).

Treatment was initiated as appropriate for the stage of disease (Solano-Gallego et al., 2009), with allopurinol at 10mg/kg twice daily orally for 12 months. Alongside this miltefosine 2mg/kg once daily.



Bone marrow smear showing *Leishmania* infection

Haematology, biochemistry, urinalysis and *Leishmania* spp. PCR testing was repeated at four weeks post initiation of treatment. Renal parameters remained within normal limits, and PCR testing was negative. Repeat BMBT was within normal limits.

Eight months post-diagnosis, the orthopaedic disease was treated without complications and the dog has remained asymptomatic of *Leishmania* spp. Following the formation of xanthine urolithiasis, allopurinol has recently been stopped, with a repeat *Leishmania* spp. PCR test due after four weeks. The owners reported a reduction in aggression following therapy and a generally improved demeanour overall.

This was an unusual case in terms of presentation for *Leishmania* spp., but heightens the need for screening of animals from abroad, with this patient showing widespread disease but minimal clinical symptoms at this stage.

#### References:

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## Latest news from ESCCAP UK & Ireland



### Richard Wall joins ESCCAP UK & Ireland

We are delighted to welcome Professor Richard Wall as a new member. Richard is Professor of Zoology at University of Bristol and deputy head of the School of Biological Sciences. His research focuses on the ecology, behaviour and control of arthropod parasites and disease vectors.

In 2013 he was awarded the prestigious WAAVP/Bayer Prize for Excellence in Research in Veterinary Parasitology. ESCCAP UK & Ireland have collaborated with Professor Wall on various projects over the past few years and we are looking forward to drawing on his expertise in 2017 and beyond.

### MA healthcare and ESCCAP UK & Ireland collaborate on successful Tick-borne disease roundtable and nurse CPD

MA Healthcare's **Companion Animal** journal and ESCCAP UK & Ireland, sponsored by Bayer Animal Health, organised a ticks and tick-borne diseases roundtable on the 17th February 2017, bringing together experts from Lyme Disease Action, the University of Bristol, the University of Nottingham, Public Health England, Animal & Plant Health Agency and ESCCAP UK & Ireland.

The aim was to discuss the current epidemiological situation in relation to these pathogens and their vectors, both from human and animal health perspectives.

This 'one health' approach is vital for parasite control as a whole, but especially in vector-borne disease where distributions of both diseases and vectors are changing rapidly.

Monitoring their spread requires cooperation with surveillance and study of the interactions between animal and human hosts. The event will hopefully encourage further cooperation between veterinary and medical groups; this cooperation has already been very productive following the *Babesia canis* outbreak in Essex in 2016.

Constructive discussions and sharing of information took place on the day and a write up on the event will be published by **Companion Animal**.

Presentations were:

- Distribution of ticks and tick-borne diseases, UK/Europe
- Clinical aspects of canine and feline tick-borne diseases
- Zoonotic tick-borne diseases
- Pet travel and the spread of tick-borne diseases



On the same day, MA Healthcare's **The Veterinary Nurse** journal ran a series of workshops for veterinary nurses. One of the workshops, sponsored by Merial Animal Health, was run in association with ESCCAP UK & Ireland and focused on nurse-led parasite clinics. The workshop was well attended and generated a lot of discussion surrounding the role of these clinics and risk based parasite control advice programs in practice.

### NOAH approve tick consensus statement

In addition to existing supporters, NOAH have given their approval to the ESCCAP UK & Ireland tick consensus statement. This statement provides clear and concise information on ticks, tick-borne diseases and control. The idea was conceived at a roundtable meeting last summer organised by MSD Animal Health and has since gained cross industry support and cooperation, making it an invaluable advice document. The consensus document and a full list of supporters can be found on the ESCCAP UK & Ireland website ([www.esccapuk.org.uk](http://www.esccapuk.org.uk)).

## Improve International and ESCCAP UK & Ireland support Early Day Motion 899 in the House of Commons

ESCCAP UK & Ireland presented at a Parliamentary Reception organised by Robert Buckland MP, Huw Edwards and Improve International, which has led to Early Day Motion 899 being tabled at the House of Commons. Early Day Motion 899 can be found at [www.parliament.uk/edm/2016-17/899](http://www.parliament.uk/edm/2016-17/899) and reads:

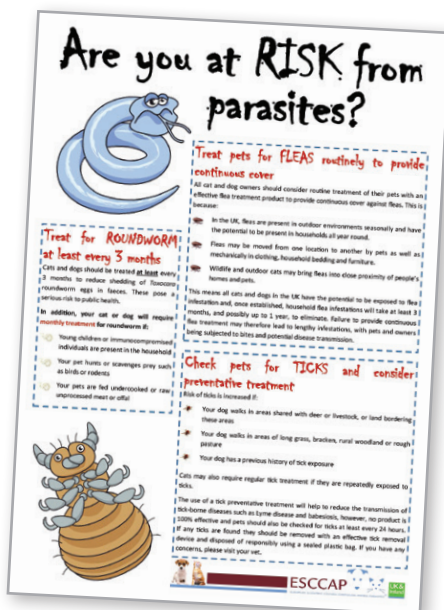
"This House commends the role of all sectors of the veterinary profession in the welfare of domestic pets and livestock and in maintaining public health; recognises the high level of education and training provided by UK veterinary schools and training providers for veterinary surgeons and nurses throughout the world; acknowledges the service delivered by official veterinarians in testing for Bovine TB in cattle and other activities relating to disease surveillance and animal welfare monitoring, including the inspection and authorisation of animals and animal products for export and the management of the Pet Travel Scheme; notes that each year around 50 per cent of veterinary surgeons registering to practise in the UK are from overseas, with the vast majority coming from the EU; and calls on the Government to work with the British Veterinary Association and the Royal College of Veterinary Surgeons to guarantee the rights of EU veterinary surgeons and nurses already living, working and studying in the UK, alongside reciprocal rights for UK veterinary professionals working in the EU."

This motion presents a unique opportunity to highlight the need to improve UK biosecurity, the role of Official Veterinarians and the skill gap that might be created by Brexit. To be successful, the Early Day Motion needs to be signed by as many MPs as possible and ESCCAP UK & Ireland call to any MPs with ties or previous associations to the veterinary profession to consider signing the motion so that these vital issues are raised in Parliament.

## Launch of waiting room materials

As part of a strategy to highlight risk and compliance based parasite control plans, ESCCAP UK & Ireland has launched a waiting room aid to highlight risk factors to pet owners.

Available to download from the ESCCAP UK & Ireland website ([www.esccapuk.org.uk](http://www.esccapuk.org.uk)), this resource can be presented to clients as a flyer or poster and frames risk factors in an easy to understand way.



## Veterinary Prescriber launch lungworm module

Veterinary Prescriber, a provider of independent information on veterinary medicines, has published a module giving an impartial presentation of the facts about lungworm (*Angiostrongylus vasorum*) infection in dogs.

Andrea Tarr, Veterinary Prescriber's founder, said "the unique module is balanced, clear and concise and gives veterinary surgeons the information they need to be able to advise clients confidently about the risks of *A. vasorum* and make informed decisions about the management of the disease in individual dogs." The module is available via subscription at [www.veterinaryprescriber.org](http://www.veterinaryprescriber.org).

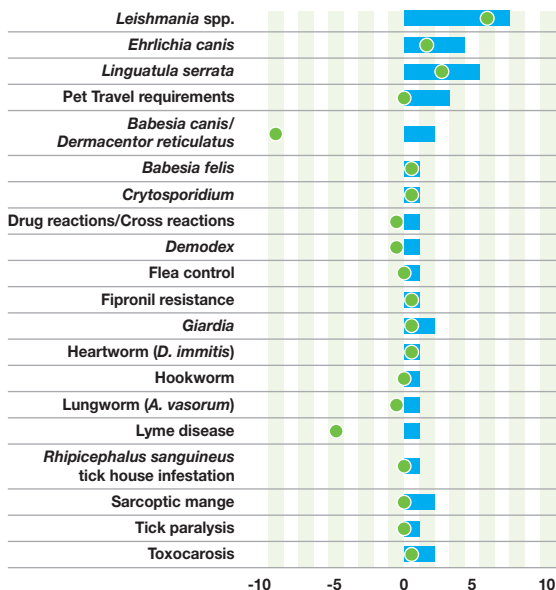
# ESCCAP UK & Ireland Enquiries

ESCCAP UK & Ireland frequently receive enquiries from veterinary professionals and members of the public regarding a wide range of subjects.

Notable changes in the past three months compared with the previous quarter are a big reduction in enquiries regarding Lyme disease and *Babesia canis*. Enquiry numbers were fuelled back in the autumn by another babesiosis outbreak in Romsford and some high profile Lyme disease cases in public figures. The lack of further babesiosis cases over the winter and Lyme disease since being out of the headlines is the likely cause for the reduction in enquiries.



*Linguatula serrata* adult  
(courtesy of Pedro Serra and NWL labs)



■ Number of enquiries this quarter  
● Change compared with previous quarter

The past three months has seen large numbers of imported dogs diagnosed with *Leishmania infantum* and *Ehrlichia canis*. This has led to an increase in enquires about treatment and prevention of these parasites. There have also been several *Linguatula serrata* cases imported from Romania leading to increased interest in this parasite.

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