



Parasite Forecast

Issue 02

April – July 2017

Welcome

Welcome to the second issue of the quarterly ESCCAP UK & Ireland Parasite Forecast. Following the general election we have a new UK government and Brexit negotiations are high on the agenda.



Brexit provides renewed opportunities to re-examine the Pet Travel Scheme rules and legislation surrounding movement of pets in and out of the UK.

ESCCAP UK & Ireland continues to support calls to widen the parasite control component of the scheme including reintroduction of tick controls and raising the minimum age that puppies can travel. However, these measures will only work as part of a coordinated effort to raise awareness of the need for parasite protection before, during and after travel.

Increased cooperation in disease and parasite surveillance will be vital to track how the distribution of parasites is changing. It is pleasing to be able to report data from a number of sources in this newsletter, including the Big Tick Project, a tick paper form SAVSNET and lungworm incidence data from Bayer. Each piece of prevalence and incidence data are part of a wider parasite distribution jigsaw and are all invaluable in helping to ascertain where parasites are and how great the risk of exposure might be.

In this issue of Parasite Forecast we present a case summary, courtesy of Bayer, regarding an unusual presentation of lungworm infection outside of its traditional UK heartlands. We also take another look at the analysis of enquiries received by ESCCAP UK & Ireland and provide the parasite forecast for summer 2017.

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



Parasite Forecast
Issue 02 / April – June 2017

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

Front cover *Taenia* photo courtesy: John McGarry.

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Summer 2017 Parasite Forecast

Exotic disease in imported dogs from Eastern Europe

At least two more cases of the nasal pentastomid *Linguatula serrata* have been reported in dogs imported from Romania. One case was confirmed in Oxford and the other in Surrey. There has also been a case *Dirofilaria repens* from a Romanian dog being diagnosed in Birmingham that was brought to ESCCAP UK & Ireland's attention.

These are likely to be a small proportion of the total number of cases being imported.

Heartworm, the eye worm (*Thelazia callipaeda*) and *Rhipicephalus sanguineus* ticks are now endemic in Eastern European countries such as Romania and Hungary. Exotic parasitism must be considered in pets imported from these countries presenting with any combination of lymphadenopathy, conjunctivitis, fever, rhinitis, upper respiratory tract, cardiac and dermatological signs.

Angiostrongylus vasorum (lungworm)

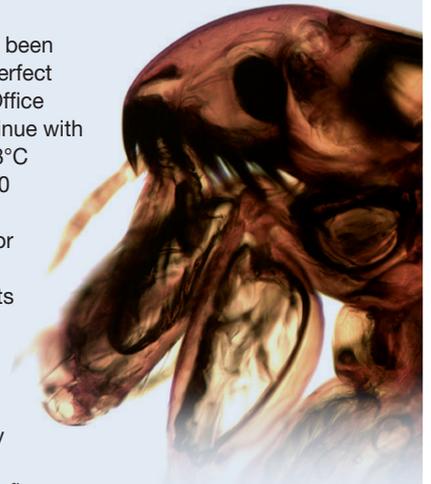
Since February, 84 cases of lungworm have been reported as part of Bayer Animal Health's 'Act Against Lungworm' campaign. These include six fatal cases. Although the majority of these cases were in the south of England, cases were reported as far north as Scotland. In the absence of compulsory reporting of *Angiostrongylus vasorum* infection, most disease reporting data in domestic dogs comes from voluntary reporting. However, these figures are 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.

Climate change is likely to be favouring intermediate host numbers and transmission of *Angiostrongylus 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).

Fleas

In general, the past three months have been warm and wet. These conditions are perfect for the propagation of fleas. The Met Office forecasts that this trend will likely continue with the next five years falling between 0.28°C and 0.77°C hotter than the 1981 – 2010 average. A warm and wet climate with mild winters increases the possibility for fleas to thrive in outdoor environments on wildlife reservoirs and untreated pets and veterinary professionals must be prepared to see increasing cases of flea infestations if adequate control measure are not in place. 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.



Tick-borne disease

There is now evidence to support the view that the current UK climate allows for the 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 vector borne disease transmission (such as Lyme disease). Data recently published by SAVSNET¹ has also confirmed that ticks have been found on pets throughout the year in most parts of the country, but with marked seasonal peaks through the summer. Cats also appear to experience a second marked seasonal peak in the autumn.

Infection rates in cats are found to be very comparable to dogs - this confirmed by data which has been released from the 'Big Tick Project' whereby 601 of 1855 cats sampled were found to be carrying ticks.

A 6.6% prevalence of cats infested with ticks was found and confirms that significant numbers of cats as well as dogs are infested. Checking for and removing ticks within 24 hours and using a product that will rapidly kill or repel ticks will greatly reduce the risk of disease transmission for pets and owners. Pets with a previous history of tick exposure should always be treated as it is likely their lifestyle will expose them to ticks again in the future. There have been no further cases of *Babesia canis* in Essex since the two cases reported in Romford in August 2016, but veterinary professionals should still be alert to the possibility of cases throughout this summer. Decorated ticks removed from pets or people should be sent to Public Health England (PHE) for identification as part of their tick surveillance scheme.

Toxocara canis

There remains no current data on the prevalence or incidence of human toxocarosis in the UK. Due to the zoonotic risk from *Toxocara 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 and environmental contamination. High risk groups (those cats and dogs on raw unprocessed diets; that hunt; that live with children or immunocompromised adults) should be treated monthly.



Taenia segments (courtesy of John McGarry)

Taenia spp. tapeworm

Over the past three months the Isle of Wight has experienced at minimum of 5% liver condemnations due to parasitic infection from each load of approximately 100 slaughter lambs. In the worst case, 25% of livers were condemned due to cysts from the tapeworm *Taenia hydatigena* (data taken from 960 lambs). This is reflective of the whole UK which saw the FSA record 548,000 liver condemnations in 2015 and represents a significant and preventable economic loss to the sheep farming industry. There is also added concern as *Echinococcus granulosus* tapeworm has similar risk factors for transmission in dogs. Work carried out by the FSA on behalf of the Welsh Government found that the incidence of *Echinococcus granulosus* was 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.

In 2015, FSA data showed the incidence of hydatid cyst rejections in sheep and cattle offal to be 0.12% in cattle and 0.3% in sheep across England and Wales. While there is the possibility that some of these condemnations may have been misidentified *Taenia hydatigena* cysts, these figures still present a risk that dogs will be exposed to infection through offal fed directly in hunts, kennels, farms and through unprocessed diets. Outside of known *Echinococcus granulosus* endemic areas (Wales, the Welsh border, Herefordshire and the Western Isles of Scotland) these dogs should be treated with praziquantel at least every three months. In known endemic areas, or in dogs that are producing *Taenia* spp. tapeworm segments, treatment should be at least every six weeks. Correct treatment combined with the promotion of responsible disposal of dog faeces, carcass clearance from fields and keeping dogs on leads in livestock pasture will reduce both meat and offal condemnation and the risk to public health.

¹ Tulloch, J., McGinley, L., Sánchez-Vizcaíno, F., Medlock, J. & Radford, A. (2017) 'The passive surveillance of ticks using companion animal electronic health records' *Epidemiology & Infection*, In press. Available from: [PDF] <https://www.cambridge.org/core/services/aop-cambridge-core/content/view/9753C56C9AC3EE2D499C5CDF12A8D98D/S0950268817000826a.pdf/passive_surveillance_of_ticks_using_companion_animal_electronic_health_records.pdf> [Accessed 26 June 2017].

Case report

Following Bayer Animal Health's recently published *Angiostrongylus vasorum* case recordings from around the country, this issue's case report focuses on an unusual case of *Angiostrongylus vasorum* in a dog from the West Midlands.

This case demonstrates the need for rapid intervention in lungworm cases, with prognosis being much improved with early initiation of treatment.

Given the varied and potentially serious nature of resulting clinical signs, preventative treatments should be advised for dogs whose lifestyle puts them at risk, especially in known endemic areas. Over half of vets in the West Midlands (52%) revealed they had a confirmed lungworm case in their practice in the last 12 months and according to the 'Act Against Lungworm' campaign map, there have been over 204 reported lungworm cases in the Solihull area in the last year.

This case is courtesy of Bayer Animal Health and Willows Veterinary Centre and Referral Service.

Angiostrongylosis in a dog from Birmingham

A one-year-old Cockapoo, Minnie, was admitted at Willows Veterinary Centre and Referral Service, Solihull, West Midlands for an ultrasound scan after she had become withdrawn and lethargic. Minnie was subsequently found to have a number of neurological problems including ataxia and blindness.



Angiostrongylus vasorum (courtesy of Bayer Animal Health)

These neurological signs were suspected to be due to a CNS lesion, likely bleeding. Routine lungworm testing confirmed *Angiostrongylus vasorum* infection and a presumptive link established.

Georgina Allsopp, Primary Care Clinician at the Willows surgery, said: "Minnie has the worst case of lungworm I've ever seen and the symptoms she displayed were not typical of the infection, which is why it was not our first thought. As lungworm can present itself in so many different ways it can be tricky for vets to diagnose."

Minnie was started on anthelmintic treatment for lungworm infection but deteriorated further so treatment for clotting defects was also initiated. Response to the combined treatment was excellent, with neurological signs resolving in days and some vision being regained after two months.

When treatment is initiated early a full recovery can be expected in many cases, including where vision is affected, as long as there is no permanent damage from thromboembolism or aberrant migration.

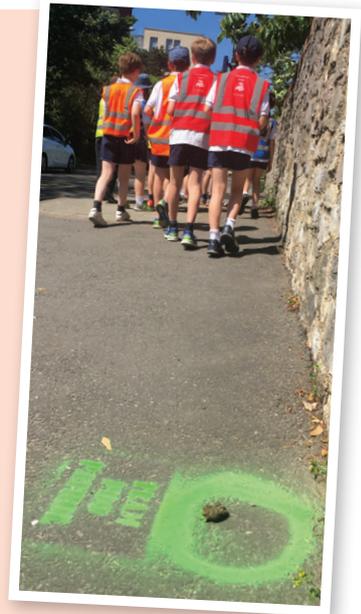
Poo Patrol Big Spray Day paints Bristol red

On 26th May, Primary schools and community groups in Bristol joined forces with the University of Bristol, Bristol City Council and ESCCAP UK & Ireland to make their mark on the problem of dog fouling in the city.

Co-ordinated by Sustainable Learning, 25 schools got involved and took up free workshops and lesson plans around the issue of dog fouling and specifically the life cycle of *Toxocara* spp. worms. This was followed by going out onto the streets with teachers and spraying offending deposits with degradable chalk paint, also leaving educational messages of their own design using stencils. Children with pet dogs took home ESCCAP UK & Ireland leaflets on worm control. Community networks linked with Bristol City Council and postgraduate students from the University provided reinforcements. More than 400 instances of fouling were tagged and mapped using the ReportAll app. Return visits two weeks later showed a 50% reduction in level of fouling in target areas. Team Poo Patrol researchers will now take stock and plan to

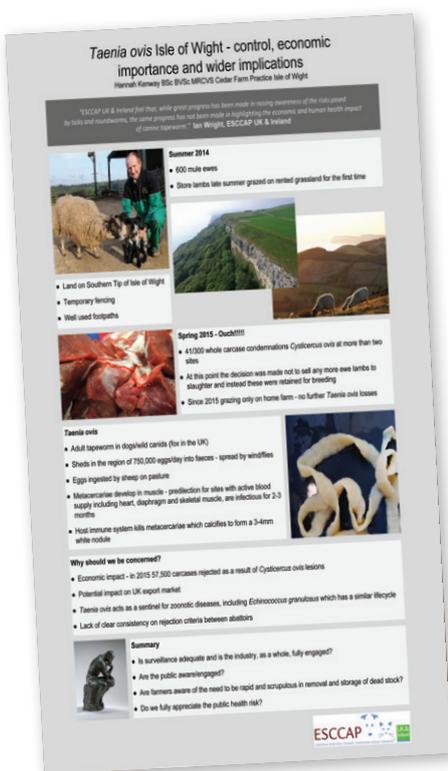
upscale efforts to include other cities and show how effective community-led action can reduce health risks by encouraging responsible dog ownership. Participating children highlighted dog fouling as an obstacle to outdoor play, devised imaginative ways of engaging with the public on the issue and had fun: they are taking control of their environment and have ESCCAP's full support.

While many approaches have been tried in the past to reduce dog fouling, the most successful have resided in increased social cohesion and publicity to make dog fouling socially unacceptable and increase social pressure for it to stop. By engaging school children, community groups and volunteers, this project is a fantastic first step towards further achieving this.



Support for Isle of Wight vet raising awareness of dog meat and offal condemnation issues

In response to increasing meat and offal condemnation due to *Taenia ovis* and *Taenia hydatigena* on the Isle of Wight, vet Hannah Kenway has presented a poster at the 9th International Sheep Veterinary Congress to highlight the problem and the need to educate the public and farmers regarding simple control measures. ESCCAP UK & Ireland supported the poster as well as working with Hannah and County Councils to highlight this issue and other parasite related health risks associated with dog fouling, such as toxocarosis and hydatid disease. Our next project with Hannah will be to produce a poster alerting dog owners to the link between tapeworm, dog fouling and access to fallen livestock.



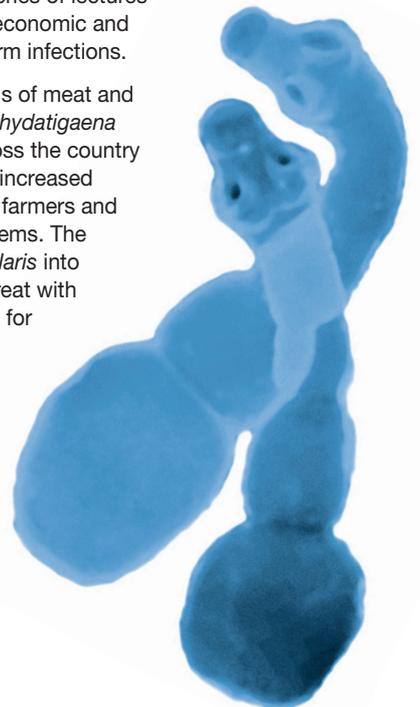
VPHA and AGV conference raises awareness of tapeworm public health issues in dogs

On 17th and 18th March 2017 the Veterinary Public Health Association (VPHA) and Association of Government Veterinarians (AGV) held their Spring Conference 'Controlling Tapeworms: Established and Emerging'. This was generously sponsored by Bayer Animal Health and aimed to consider the economic and zoonotic threats posed by canine tapeworm infections.

In the spirit of the 'One Health' agenda, organisations from across the veterinary and public health professions were represented including ESCCAP UK & Ireland, BVA, BSAVA, BVZS, the School of Tropical Medicine and Salford University. Chief Veterinary Officers Nigel Gibbens (UK) and Sheila Voas (Scotland) were also present.

The Friday programme was based around a series of short summary presentations by key sectors which set in train a lively discussion drawing on the experiences of a very well informed audience. The remit was to review the levels of current knowledge about the management of these parasites and explore potential future threats and control measures. This was followed by a series of lectures on the Saturday discussing in further detail the economic and zoonotic problems presented by canine tapeworm infections.

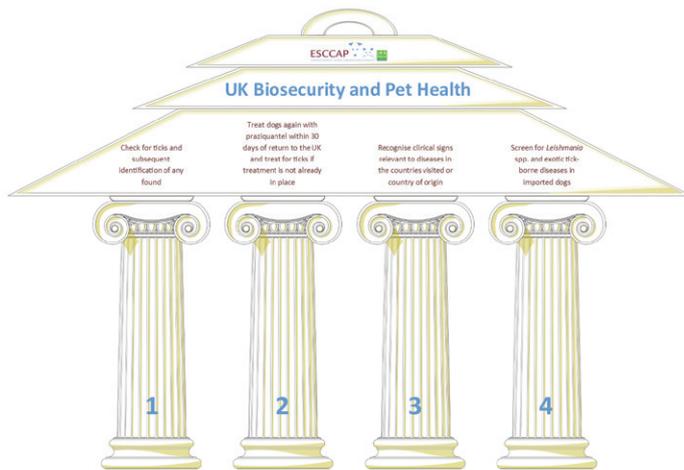
The main concerns identified were the high levels of meat and offal condemnation from *Taenia ovis* and *Taenia hydatigena* and the re-emergence and potential spread across the country of *Echinococcus granulosus*. It was agreed that increased cooperation, surveillance and education of both farmers and pet owners was required to address these problems. The possible introduction of *Echinococcus multilocularis* into the UK was also recognised as an increasing threat with potentially disastrous human health implications for the UK population in the long term if it becomes established. It was agreed that while the compulsory tapeworm treatment had proved vital to keep *Echinococcus multilocularis* out of the UK so far, it would also take additional measures such as treating dogs again once they have returned to the UK to maintain the country's *Echinococcus multilocularis* free status in the face of increasing pet travel and importation. It is hoped that a consensus document and summary articles will be published following the conference.



Launch of the pet import concept 'Four Pillars'

ESCCAP UK & Ireland are promoting 'Four Pillars' of action to maintain UK biosecurity and ensure pet and owner health. Veterinary professionals must action these 'Four Pillars' when dealing with imported and travelled pets arriving into the country. They are:

- Checking for ticks and subsequent identification if any found
- Treating dogs with praziquantel within 30 days of return to the UK (in addition to the compulsory treatment pre entry) and treating for ticks if a tick treatment is not already in place
- Recognising clinical signs relevant to diseases in the countries visited or country of origin
- Screening for *Leishmania* spp. and exotic tick-borne disease in imported dogs



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 and carry out effective disease surveillance. ESCCAP UK & Ireland are promoting these principals through their CPD around the country, starting with the Nationwide Lab Lancashire meeting in May and the BSAVA Southern regional meeting in June. The latter meeting is sponsored by Bayer Animal Health.

Bristol University continue vital pet travel survey work

ESCCAP UK & Ireland member Eric Morgan and the University of Bristol are carrying out important survey work to find out where UK pet owners are travelling abroad with their pets and for how long they are travelling.

There is currently very little data to suggest where people are taking their pets and so potential contact with exotic parasites is hard to quantify. The survey can be found at www.surveymonkey.com/r/petravel2017

Please help by completing the survey and passing it on to colleagues and clients. The more people respond, the more reliable the data will be, which is vital in assessing potential exotic disease risk to the UK and in aiding surveillance.

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FECAVA and ESCCAP join forces in the fight against vector-borne diseases

FECAVA and ESCCAP are joining forces to increase cooperation in the fight against vector-borne diseases in cats and dogs.

"Most companion animal veterinarians are insufficiently informed about these emerging diseases, and FECAVA has great potential to spread information on the distribution, diagnosis, treatment and prevention of these diseases to practitioners in all parts of Europe", commented Nenad Milojkovic, chair of the FECAVA working group on canine vector-borne diseases (CVBD).

In order to issue consistent, science-based recommendations, the federation has decided to join forces with ESCCAP.

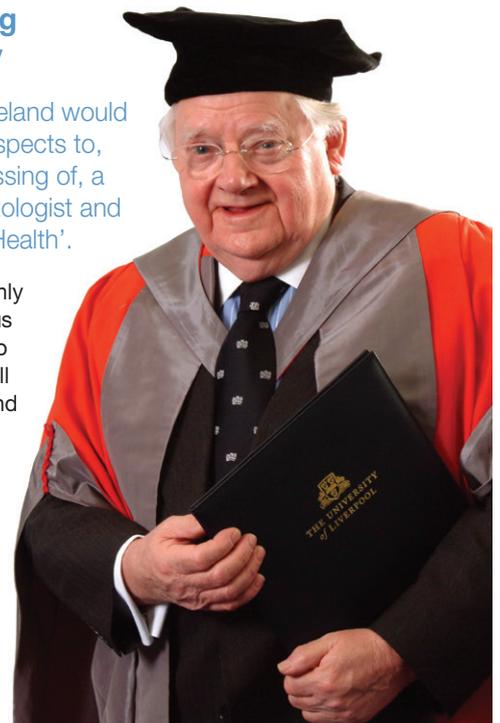
The first joint meeting of the two organisations will be held during the WSAVA/FECAVA congress in Copenhagen in September, at the second meeting of FECAVA's CVBD working group. The aim is to discuss strategies in raising awareness of the common threats these diseases pose across Europe. Tools to be developed for veterinary practitioners by the working group include tables, algorithms and travel advice for clients.

The two organisations will also co-author a paper on parasite drug resistance which is a defining issue in livestock, equine and human parasite control. While resistance has been much slower to emerge in parasites of cats and dogs, there are knowledge gaps as to how widespread it might be and how likely it might be to develop in the future. The aim of the paper is to provide a review of current knowledge and highlight the data gaps so they can be filled by directing future research.

Remembering Lord Soulsby

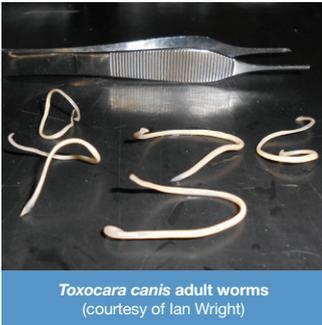
ESCCAP UK & Ireland would like to pay our respects to, and mark the passing of, a truly great parasitologist and pioneer of 'One Health'.

Lord Soulsby not only leaves a tremendous legacy, but was also a lovely man. He will be sorely missed and our sympathies go out to his friends and family.



ESCCAP UK & Ireland Enquiries

Over the past three months (April - June), ESCCAP UK & Ireland have received enquiries from veterinary professionals and the public regarding a wide range of subjects.



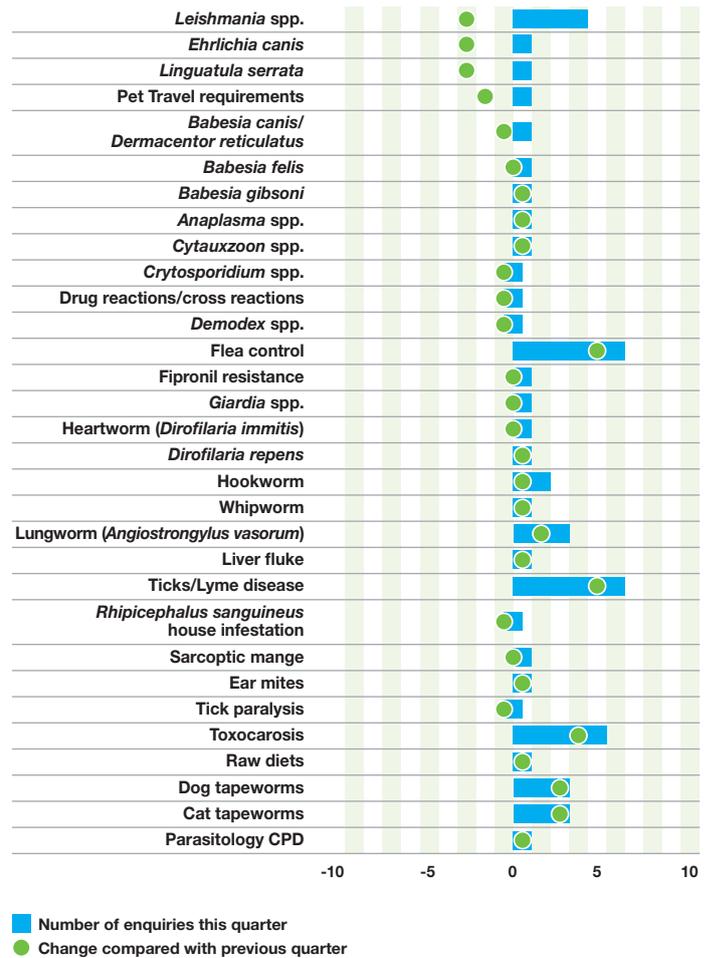
Toxocara canis adult worms
(courtesy of Ian Wright)

Notable changes compared with the previous quarter were a renewed interest in domestic parasites such as fleas, *Toxocara* spp. and lungworm. Continued mild weather has seen flea numbers rise and this has likely fuelled interest in their control. Media campaigns surrounding lungworm has also brought this serious issue for canine public health to the fore.

There has also been increased interest in ticks and tick-borne diseases. Some enquiries have been in relation to the 'Big Tick Project' but have also been with regard to pet travel and travel to increasingly exotic destinations.

The *Babesia gibsoni* and *Babesia felis* queries came from pet owners who were visiting South Africa and required advice regarding the exotic piroplasm organisms that are endemic.

This highlights the need for veterinary professionals to be prepared to field questions about increasingly diverse parasites.



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