

# Renowned Global Experts Present New Perspectives on Feline Parasitology

For the 5th time, Vetoquinol hosted the Scientific Roundtable Parasitology – this year in Malta. The annual event once again saw a respected group of global leaders in parasitology, pharmacology, feline medicine and One Health meet and discuss the latest research and thinking. The three-day programme was structured around four key pillars – science and innovation, feline parasitology, feline medicine and behaviour, and One Health and zoonoses. This gave ample opportunity for a spectrum of topics to be covered including building on discussions from the previous meetings.

*'This meeting is a highlight of the year, as it brings together a diverse group of people from lots of countries, allowing stakeholder discussions about really important problems.'*

Séverine Tasker, Veterinary Strategic Lead, iCatCare

From considering the perspectives of different stakeholders, to exploring innovative methods for investigating the parasites themselves, the meeting provided greater understanding of the challenges that exist in feline parasitology. In order to continue this event's mission to advance feline parasitological care, the ultimate aim of all the meeting discussions is to identify the opportunities that exist to tackle these challenges most effectively.

*'As a veterinarian and parasitologist, I think we need more of these meetings. The world of parasitology is changing – in terms of science and human connection. We must always be prepared for challenges.'*

Donato Traversa, University of Teramo, Italy

## Feline Medicine and Behaviour

Numerous feline parasitological challenges stem from the fact that most cats have limited or no contact with veterinarians. Indeed, when asked about their opinion on the biggest challenge in feline parasitology, many of the experts at the meeting said, 'getting the cat to the vet.' Understanding the reasons behind this is an important first step to being able to improve access to parasitological care – to the benefit of the cats, but also the humans living around or alongside them.

*'More cats around the world don't go to the vet than those that do.'*

Séverine Tasker, Veterinary Strategic Lead, iCatCare

Séverine Tasker (Veterinary Strategic Lead, iCatCare) explained how unowned cats have been identified by feline welfare charity, International Cat Care (iCatCare), as a key group to focus on to achieve their mission of improving the lives of cats worldwide. Often acting as reservoirs of parasitic species, these populations are implicated in many feline and, in the case of zoonotic parasites or parasite-transmitted diseases, human health concerns.

Placing more emphasis on the development of preventative strategies and interventions, including neutering, iCatCare have analysed the current situation and attitudes regarding unowned cat populations in four countries with varying feline welfare challenges. The data collected shows differing and

often conflicting perspectives of key stakeholders, but the key message is that upstream action is essential. Rehoming and rescue cannot provide the solutions to managing these populations alone and this requires empathetic collaboration between the many stakeholders. The findings of this research have been turned into short- and long-term strategic frameworks that will not only aid the studied countries, but also those facing similar challenges. Further details can be found at [https://go.icatcare.org/country\\_insights](https://go.icatcare.org/country_insights).

## Key challenges in managing unowned cats, identified in the iCatCare 'Understanding cats, country by country' research:

- Most work is downstream (rescue & response) rather than upstream (prevention & coordination).
- Inconsistency in capacity and funding of municipal support.
- Limited data/visibility, leading to decisions without full information.
- Welfare and conservation tensions.
- Efforts fragmented, so progress is limited.
- Public feeding & more fluid 'ownership,' shaping cat population dynamics.
- Weather & tourism influence how cats live and attitudes to cats.

For pet cats, the cat caregiver is obviously an important gatekeeper of appropriate parasitological care, so their perspective matters hugely. This is a topic that has come up numerous times in previous Roundtable meetings, with important discussions about how to help caregivers access veterinary care – often focusing on the reduction of feline stress. Building on this, Rachel Korman (Cat Specialist Services, Qld. Australia) shared her clinical experience of how to improve feline diagnostics, an area often fraught with conflict of feline and practitioner perspectives. By considering the impact of 'stressor stacking' – the phenomenon of multiple stressors combining to create a cat that is unable to cope and becomes uncooperative – she described simple techniques to minimise stress and consequently improve sampling and imaging success.

*'Taking a more cat friendly approach benefits everyone,'*  
Rachel Korman, Cat Specialist Services, Qld. Australia

## Benefits of a more 'cat friendly,' clinical approach'

- Improved feline welfare
- Higher disease detection rates for improved clinical care and outcomes
- 12% more diagnostics
- 17-20% more revenue per visit
- Lower staff injury rates

## Science and Innovation

Christopher Fernandez Prada (Université de Montréal, Canada) encouraged a new way of thinking about drug



resistance; while we know the way there, what about the way back? Using *Leishmania* as his study subject, he presented fascinating insight into how drug-resistant parasites change after drug withdrawal. Instead of resistance simply ‘fading’, changes in gene expression – particularly those linked to protein and lipid metabolism, and metabolic rate – create an entirely new phenotype, distinct from the original ‘wild type’ and previous resistant parasite. This has implications for the response of these parasites to future treatments (including cross-drug consequences) and the host-parasite interaction.

*‘Two parasites that are morphologically identical may behave in very different ways, raising obvious clinical challenges.’*

Christopher Fernandez Prada, Université de Montréal, Canada on phenotype changes in drug-resistant parasites, following drug withdrawal

The next phase of this research is aimed at studying other parasites and how to make identification of parasite phenotypes more accessible, to help guide the most effective clinical interventions.

As well as questioning how we think about parasites, finding new ways to investigate is an excellent way to gain novel insight. Kathryn Reif (Auburn University, USA) described how the use of electropenetrography (EPG) is being used to visualise the feeding habits of blood feeding parasites via the observation of electric waveform patterns. The team have (and continue to) worked hard to refine the technique for human, rather than plant models, but the data collected has already demonstrated how infection with pathogens alters some parasite feeding behaviour. Intense discussion about the potential applications of this technology ranged from assessing the influence of the skin microbiome or variation in volatile organic compounds on parasite behaviour, to scrutinising the application of study data from lab strain parasites to real-world scenarios.

Another example of an innovative investigative technique came from Andy Moorhead (North Carolina State University, USA), whose team has developed a novel gerbil research model. He described how non-permissive hosts have been used to investigate infection with *Dirofilaria immitis* and the potential future applications of this knowledge.

*‘Our research contributes to understanding about host specificity of *D. immitis*, and eventually potentially other parasites.’*

Andy Moorhead, North Carolina State University, USA

### Feline Parasitology

Climate change, parasite evolution, increased global travel and changing host dynamics were all identified during the meeting as contributors to an ever-changing parasitology landscape. As such, ongoing surveillance is essential to ensure that our understanding of the parasitological landscape is accurate, and that shifts or trends can be identified early.

Many of the presentations at the meeting reported updated prevalence data, helping to add further detail to the picture of risk distribution for many important parasites. Jacques Guillot (Nantes Veterinary College, France) shared recent data on tick prevalence in France, Smaragda Sotiraki (Veterinary Research Institute ELGO-DIMITRA, Greece) did the same for helminths in Greek public parks and Jeba Jesudoss Chelladurai (Auburn University, USA) for helminth and protozoal parasites in South-Eastern USA. All data demonstrated parasite and pathogen prevalences that reinforce the need for regular parasite treatment and pet caregiver education to help protect pet and human health.

*‘Our research emphasises the need for responsible pet ownership, routine deworming programs, and strengthened public health awareness measures to mitigate zoonotic transmission risks.’*

Smaragda Sotiraki, Aristotle University of Thessaloniki, Greece

However, prevalence is only the start of the risk mapping process. Veronica Risco Castillo (Alfort Veterinary School, France) shared research investigating the link between urban wildlife and tick/tick-borne disease risk in cats. As well as perpetuating the continued lifecycle of these parasites, wildlife populations (and the tick populations that they support) also may act as epidemiological reservoirs of pathogen infection.

And while surveillance data is powerful, clinical cases of infection are literal examples of the consequence of parasite risk. Donato Traversa’s (University of Teramo, Italy) presentation on feline lungworm warned about not letting these cases go undetected – both typical and atypical presentations. He stressed that clinical signs often do not correlate with radiographic changes, and in many cats radiographic changes may precede clinical presentations.

*‘The pulmonary damage caused by lungworm infection sometimes can lead to long-lasting or permanent clinical compromise for some cats. Timely treatments are crucial to achieve parasitological and clinical recovery, and prevention is especially important for cats in regions where lungworms are enzootic.’*

Donato Traversa, University of Teramo, Italy



### Signs that should prompt the inclusion of lungworms in the differential diagnosis list:

- Compatible respiratory signs
  - Cough
  - Dyspnoea (including open mouth breathing)
- Neurological signs
- Pulmonary hypertension
- Pulmonary radiographic changes (even in the absence of clinical signs)

It is also important to regularly question what we think we know about parasites to advance diagnostics, treatments and guidelines. Andrei Mihalca's (University of Cluj-Napoca, Romania) presentation of the extra-intestinal nematode species known to affect cats in Eastern Europe highlighted the surprising array of body systems where nematode infection can be implicated. Too often, he says, these parasites are neglected by clinicians, despite their clinical relevance and sometimes zoonotic potential. In Gad Baneth's (Koret School of Veterinary Medicine, Israel) presentation, sensitivity comparisons of various *Leishmania* spp. diagnostic methods in cats showed that the technique used can hugely influence the conclusion of prevalence.

*'It is not always a case of 'one test is better than another'. Instead, a more complex picture often exists, where different test methods provide different aspects of diagnostic value.'*

Gad Baneth, Koret School of Veterinary Medicine, Israel

### One Health and Zoonoses

*'Zoonotic disease often puts the risk presented by parasites into perspective, prompting meaningful action. People need*

*to understand that managing these parasites is about more than the cat – that there are real and present human health risks.'*

Ryan O'Handley, Adelaide University, Australia

Manuela Schnyder (University of Zurich, Switzerland) and Ryan O'Handley (Adelaide University, Australia) both shared data relating to parasitic contamination of food. Presence of parasitic species (including zoonotic species) found in ready-to-eat food products sold in Europe, such as salad, herbs and berries, highlighted inadequacies of commercial washing techniques, as well as the need to assess the source of contamination. While wildlife and/or unowned pet populations are implicated, the role of domestic pets in this problem should be considered. The important role that vets play in managing this risk must also be recognised and championed. Investigation of readily available commercial raw cat food in Australia revealed a 60% prevalence for *Toxoplasma gondii* DNA.<sup>2</sup> With a case example of a pet cat that has never had outdoor access testing positive for this parasite in Adelaide, the risk of transmission via raw food has been demonstrated, raising concerns over the implications for human health.

These examples illustrate just how vitally important the work that parasitologists do in recognising, quantifying and managing the risk of zoonotic parasitic disease. Their clear underlying message is that educational messages for the public and clinical veterinarians must be clear, consistent and loud. Here, guidelines such as those from ESCCAP, TroCCAP and CAPC can be useful, providing easy-to-understand advice about parasite management.

*'The One Health approach is a pertinent example of the need to balance different perspectives. On one hand, any shedding or presence of zoonotic parasites presents*





*a risk to human health, but this must be balanced against the risks of over-treatment of pets, with its potential environmental impact. A risk-based approach is therefore recommended when it comes to treating pets for parasites, based on the regional prevalence of parasite species and their pre-patent periods, alongside pet lifestyle and who is living with the pet."*

Ian Wright, ESCCAP Chairman & Director

#### A Global Perspective – For Now and for the Future

*'Bringing experts from different countries together like this is a special opportunity for us to discuss our research, the importance of the impact that we can achieve – often together through new collaborations.'*

Christopher Fernandez Prada, Université de Montréal, Canada

In an ever-changing field like parasitology, facilitating a global perspective on the key challenges is important to ensure that those challenges can be met and mitigated. Five years on from its inception, this Roundtable meeting is still met with such energy by its attendees – both new and established. This enthusiasm has already seen important topics discussed, inspirational knowledge sharing and collaboration to explore



and address some of the key issues in feline parasitology. Keen to keep the momentum going, Vetoquinol is committed to facilitating continued development of the ideas that the meeting started as part of its commitment to meaningfully advance feline parasitology.

*'Parasitology is a massive and evolving field, with regards to treatments, spread of vector-borne diseases and polarising, emotive topics, such as environmental contamination and developing resistance. As such, KOL meetings where research can be shared are incredibly important.'*

Ian Wright, ESCCAP Chairman & Director

#### Vetoquinol

Vetoquinol is a leading international player in animal health, with operations in Europe, the Americas and Asia/Pacific. Independent and a pure player, Vetoquinol innovates, develops and markets veterinary medicines and non-medicated products for farm animals (cattle, pigs) and pets (dogs, cats). Since its creation in 1933, Vetoquinol has combined innovation and geographic diversification. The strengthening of the product portfolio and acquisitions in high-potential territories ensure hybrid growth for the Group. At December 31 2024, Vetoquinol employed 2501 people.

#### REFERENCES

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#### Katrin Blazejak

Katrin Blazejak studied Veterinary Medicine at the University of Veterinary Medicine, Hannover, Germany. After, she commenced her specialisation in parasitology with a doctoral degree (Dr. med. vet.) and obtained a German veterinary specialisation degree as a certified Veterinarian for Parasitology (Fachtierarzt für Parasitologie) in. Following positions at Bayer Animal Health and Elanco, she joined Vetoquinol in September 2021 as Global Medical Manager Parasitology and is based in Paris, France.



#### Norbert Mencke

Norbert Mencke studied Veterinary Medicine at the University of Veterinary Medicine, Hannover, Germany. After graduation in 1987, he commenced his PhD studies at the Department of Agriculture in Adelaide, Australia. In 1995 he became a certified Veterinarian for Parasitology, and in 2003 a European Veterinary Specialist in Parasitology. He has lectured in veterinary parasitology and tropical veterinary medicine at the University of Hannover since 2003. In 2020, he joined Vetoquinol and holds the position of Global Medical Manager Parasitology.