

# The Paratuberculosis Newsletter

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ISSUE 3 | SEPTEMBER 2017

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The official publication of the International Association for Paratuberculosis



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## Note from the Editor

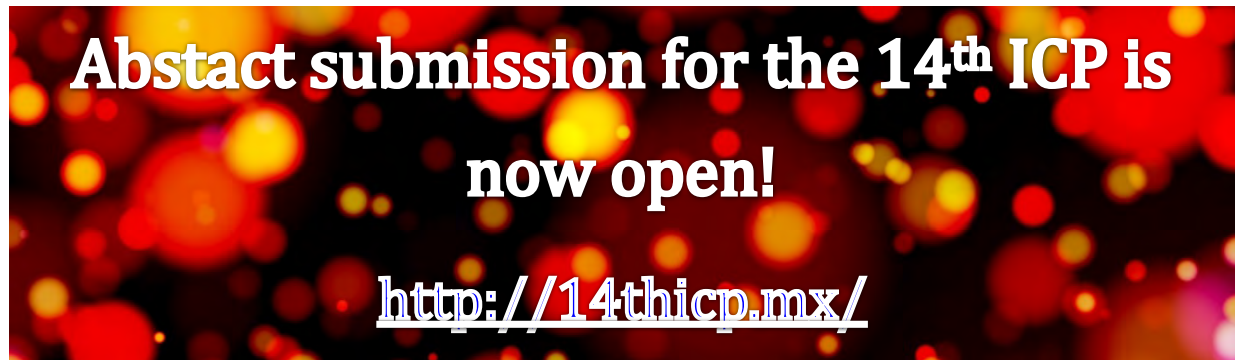
I would like to thank Ramon Juste for his tribute to Marie Françoise Thorel, one of the founding members of the IAP, who passed away recently.

The wheels are well in motion for the next ICP with abstract submissions now open. Make sure you get them in on time!

Read on to find out about a previously unknown host for our favourite microbe!

*Kumi de Silva*

## IAP business



## Confirmed Speakers

### Ramon A. Juste

Servicio Regional de Investigación y Desarrollo

### Rodrick J. Chiodini

Montana State University

### Claus D. Buergelt

University of Florida

### Jeroen De Buck

University of Calgary

### Dr. Richard Whittington

The University of Sydney

## Important Dates

Abstract submission deadline **November 15th 2017**

Early bird registration ends **2 March 2018**

## Sessions

Diagnostics, Immunology and Host Response

Control Programs and Epidemiology

Pathogenomics and MAP Biology

Public Health and MAP environment

## Tribute to Marie Françoise Thorel

A few days ago, our fellow member Dr. Laura Boschiroli informed us that Dr. Marie Françoise Thorel passed away on the 4<sup>th</sup> of July. This news hit hard on me since I had a special appreciation for her.

After reading some of her papers in 1982 to assemble information on how to manage the first fully recognized case of bovine paratuberculosis in Spain, I learned that half a dozen of fecal samples from that case had been sent to France by the farmers who wanted to confirm the diagnosis, since the farmer had contacts in France where she had bought her Limousin selected cattle and there was no laboratory in Spain offering that service. Supported by a colleague with some veterinary contacts in France, I undertook my first scientific journey outside Spain driving from Bilbao to Paris and showing up in Marie's laboratory one Monday of June 1984 without any previous warning. She kindly received us and gave all explanations on how she had processed the samples and what was her view of the case. I must say that, at that time, I could not speak any English, and had just a few notions of mainly theoretical French from high school. Her patience was infinite in front of a babbling young unknown with some aggressive questions on paratuberculosis.

My next contact with Marie Françoise was in an European Community meeting a few years later when I already could handle some English, but still was easier for me to talk in my broken French. Marie was the younger of the old European paratuberculosis scientific authorities that attended that meeting. The others were the Dane Jorgen Jorgensen and the Scottish Neil Gilmour. Dr. Jorgensen developed



the first paratuberculosis ELISA, did several studies on MAP in farms and ran important projects on vaccination in cattle, and still accepted an invitation to come to Bilbao one year later, shortly before his death. Dr Gilmour had run a series of experimental work in sheep that laid the grounds of Johne's disease pathogenesis and vaccine protection but whom I met never again.

After that, there was the Paris meeting where I had only brief contact with her. Then the IAP was founded and we kept periodic contact at the colloquia until she retired. It was in 2005 when, after my nomination, she was granted the second IAP Emeritus award at the Copenhagen colloquium. It was the last meeting she attended. I still had a last brief contact with her when an EU research project meeting was convened at Maisons-Alfort. Then she was in contact with Laura and I learned she was caring for her ill father, but still staying in contact with her former laboratory for some social activities. It was not possible to contact her for the Nantes meeting in spite of efforts by Laura to do so.

Marie retired in 2003 from her post at the Maisons-Alfort AFSSA laboratory after a long career (30 years) in the paratuberculosis research field, being one of the participants in the mythic first International Colloquium on Paratuberculosis held in Ames, Iowa in 1983. She was the organizer of the second Colloquium in Paris in 1988 from which the International Association for Paratuberculosis started. She also was a co-founder of the IAP and Director representing France for several years.

She wrote over 90 scientific papers on paratuberculosis that date back to the first reports on the bacteriological characterization of *Mycobacterium avium* subsp. *paratuberculosis*, as well as many articles on the isolation and culture of these bacteria. Her most important contribution was, probably, the numerical taxonomy study that, following a description of Map to the *M. avium* species by Finn Saxegaard, the first Emeritus award recipient, established the relevant differences that prompted its classification as a subspecies.

She has also written highly relevant reference works on the diagnosis of

paratuberculosis like the French reference protocol for Map isolation, and the OIE Manual section on paratuberculosis. She has taken part in different advisory committees like the European Commission *ad hoc* committee on possible links between Crohn's disease and paratuberculosis.

Dr. Thorel finished her professional career as Senior Research Officer and Deputy Director of the AFSSA at Maisons-Alfort (France), where she also was Head of the National Reference Centre for Mycobacteria, Head of the National and OIE Reference for Bovine Tuberculosis and Paratuberculosis, and Head of the FAO Collaborating Centre on Mycobacteria.

Marie Fraçoise was a figure that made a notable imprint in Science. The paratuberculosis community has lost one more of its founding parents.

Rest in peace.

**Ramon Juste**

## **Ireland launches Johne's disease eradication program**

The decline in milk prices globally has meant that dairy producers are looking for alternate products and infant milk formula is becoming big business globally. On-line prices for Australian brands of infant formula are almost double the retail price and some [dairy processors are actively looking to get into the game.](#)

Recent reports of MAP in infant formula suggest the need to keep this pathogen out of the food chain. Ireland which produces about 10% of the global infant milk formula supply is taking this seriously. Their [dairy industry has launched an ambitious program for disease eradication.](#)

## Canine paratuberculosis

The Journal of the South African Veterinary Association has recently published a [case report](#) describing clinical paratuberculosis in a dog. The 2-year old dachshund was lethargic, had reduced appetite and an abnormal gait. Ultrasound and histological investigations revealed that the animal had granulomatous inflammation consistent with mycobacterial infection. Antibiotic treatment did not improve its condition. Lesions in the spleen and severe granulomatous enteritis were found at necropsy. Importantly, acid-fast filamentous bacteria were found within macrophage and Langerhans cells in the ileum, spleen and kidneys.

Although unconfirmed, it is suggested that this dog is likely to have been exposed to MAP via ingestion of faeces from an area which had been known to have sheep with paratuberculosis.

Spectacular images of the splenic lesions and cells of the mesenteric lymph node have been included in this Open Access article.



## Upcoming events

- The [14<sup>th</sup> ICP](#) will be held in Cancun, Mexico from **June 4-8 2018**



- The 15<sup>th</sup> ICP will be held Dublin, Ireland in 2020



- The first African Society for Paratuberculosis meeting will be held at the Animal Reproduction Research Institute, Giza, Egypt, March 5-7, 2018

This organization which was formed in February 2017 will serve as a platform for cooperation, to share and to knowledge, experiences, materials on Paratuberculosis among African Researchers and stakeholders on Paratuberculosis control.

- The [30<sup>th</sup> World Buiatrics Congress](#) will be held in Sapporo, Japan from 28 Aug – 1 Sept 2018. The Scientific program will cover issues on cattle health and reproduction. Topics will include a wide range of production diseases, major infectious diseases, calves and new-born diseases, tropical epidemiology, public health and food security and other animal health and management problems.
- The [6<sup>th</sup> European Veterinary Immunology Workshop](#) (EVIW) will be held from 5-7 September 2018 in Utrecht, the Netherlands. Plenary and concurrent session topics include: Innate immunity, Adaptive immunity, Infection and immunity, Vaccination, Clinical immunology, Allergy, Mucosal immunology and the microbiome in relation to immune responses



## Recent publications

Acharya KR, Dhand NK, Whittington RJ, Plain KM. 2017. [Detection of Mycobacterium avium subspecies paratuberculosis in powdered infant formula using IS900 quantitative PCR and liquid culture media](#). Int J Food Microbiol 257:1-9.

Albarrak SM, Waters WR, Stabel JR, Hostetter JM. 2017. [WC1+ gammadelta T cells from cattle naturally infected with Mycobacterium avium subsp. paratuberculosis respond differentially to stimulation with PPD-J](#). Vet Immunol Immunopathol 190:57-64.

Bannantine JP, Etienne G, Laval F, Stabel JR, Lemassu A, Daffe M, Bayles DO, Ganneau C, Bonhomme F, Branger M, Cochard T, Bay S, Biet F. 2017. [Cell wall peptidolipids of Mycobacterium avium: from genetic prediction to exact structure of a nonribosomal peptide](#). Mol Microbiol 105:525-539.

Beaver A, Sweeney RW, Hovingh E, Wolfgang DR, Grohn YT, Schukken YH. 2017. [Longitudinal relationship between fecal culture, fecal quantitative PCR, and milk ELISA in Mycobacterium avium ssp. paratuberculosis-infected cows from low-prevalence dairy herds](#). J Dairy Sci 100:7507-7521.

Begg DJ, Purdie AC, de Silva K, Dhand NK, Plain KM, Whittington RJ. 2017. [Variation in susceptibility of different breeds of sheep to Mycobacterium avium subspecies paratuberculosis following experimental inoculation](#). Vet Res 48:36.

Bonelli F, Fratini F, Turchi B, Cantile C, Ebani VV, Colombani G, Galiero A, Sgorbini M. 2017. [Evaluation of clinical pathology parameters in fecal PCR-positive or PCR-negative goats for Johne's disease](#). Trop Anim Health Prod doi:10.1007/s11250-017-1351-3.

Botaro BG, Ruelle E, More SJ, Strain S, Graham DA, O'Flaherty J, Shalloo L. 2017. [Associations between paratuberculosis ELISA results and test-day records of cows enrolled in the Irish Johne's Disease Control Program](#). J Dairy Sci 100:7468-7477.

Cossu D, Yokoyama K, Hattori N. 2017. [Conflicting Role of Mycobacterium Species in Multiple Sclerosis](#). Front Neurol 8:216.

Cossu D, Yokoyama K, Tomizawa Y, Momotani E, Hattori N. 2017. [Altered humoral immunity to mycobacterial antigens in Japanese patients affected by inflammatory demyelinating diseases of the central nervous system](#). Sci Rep 7:3179.

de Kruijf M, Lesniak ON, Yearsley D, Ramovic E, Coffey A, O'Mahony J. 2017. [Low genetic diversity of bovine Mycobacterium avium subspecies paratuberculosis isolates detected by MIRU-VNTR genotyping](#). Vet Microbiol 203:280-285.

De Silva KR, Eda S, Lenhart S. 2017. [Modeling environmental transmission of MAP infection in dairy cows](#). Math Biosci Eng 14:1001-1017.

Dernivoix K, Roupie V, Welby S, Roelandt S, Viart S, Letesson JJ, Wattiez R, Huygen K, Govaerts M. 2017. [Field performance of six Mycobacterium avium subsp. paratuberculosis antigens in a 20h interferon gamma release assay in Belgium](#). Vet Immunol Immunopathol 189:17-27.

Goswami PP, Chand G, Prasad NS, Deb R, Basagoudanavar SH. 2017. [Recombinant 20.8-kDa protein of Mycobacterium avium subsp. paratuberculosis-based sero-diagnosis of paratuberculosis](#). 3 Biotech 7:156.

Hahn N, Failing K, Eisenberg T, Schlez K, Zschock PM, Donat K, Einax E, Kohler H. 2017. [Evaluation of different diagnostic methods for the detection of Mycobacterium avium subsp. paratuberculosis in boot swabs and liquid manure samples](#). BMC Vet Res 13:259.

Husakova M, Dziedzinska R, Slana I. 2017. [Magnetic Separation Methods for the Detection of Mycobacterium avium subsp. paratuberculosis in Various Types of Matrices: A Review](#). Biomed Res Int 2017:5869854.

Kasbohm E, Fischer S, Kuntzel A, Oertel P, Bergmann A, Trefz P, Miekisch W, Schubert J, Reinhold P, Ziller M, Frohlich A, Liebscher V, Kohler H. 2017. [Strategies for the identification of disease-related patterns of volatile organic compounds: prediction of paratuberculosis in an animal model using random forests](#). J Breath Res doi:10.1088/1752-7163/aa83bb.

- Khol JL, Braun AL, Slana I, Kralik P, Wittek T. 2017. [Testing of milk replacers for Mycobacterium avium subsp. paratuberculosis by PCR and bacterial culture as a possible source for Johne's disease \(paratuberculosis\) in calves.](#) *Prev Vet Med* 144:53-56.
- Kirkeby C, Graesboll K, Nielsen SS, Toft N, Halasa T. 2017. [Epidemiological and economic consequences of purchasing livestock infected with Mycobacterium avium subsp. paratuberculosis.](#) *BMC Vet Res* 13:202.
- Mathevon Y, Foucras G, Falguières R, Corbière F. 2017. [Estimation of the sensitivity and specificity of two serum ELISAs and one fecal qPCR for diagnosis of paratuberculosis in sub-clinically infected young-adult French sheep using latent class Bayesian modeling.](#) *BMC Vet Res* 13:230.
- Mobius P, Nordsiek G, Holzer M, Jarek M, Marz M, Kohler H. 2017. [Complete Genome Sequence of JII-1961, a Bovine Mycobacterium avium subsp. paratuberculosis Field Isolate from Germany.](#) *Genome Announc* 5.
- Nowotarska SW, Nowotarski K, Grant IR, Elliott CT, Friedman M, Situ C. 2017. Mechanisms of [Antimicrobial Action of Cinnamon and Oregano Oils, Cinnamaldehyde, Carvacrol, 2,5-Dihydroxybenzaldehyde, and 2-Hydroxy-5-Methoxybenzaldehyde against Mycobacterium avium subsp. paratuberculosis \(Map\).](#) *Foods* 6.
- Oken HA, Saleeb PG, Redfield RR, Schimpff SC. 2017. [Is Mycobacterium avium paratuberculosis the Trigger in the Crohn's Disease Spectrum?](#) *Open Forum Infect Dis* 4:ofx104.
- Parrish N, Vadlamudi A, Goldberg N. 2017. [Anaerobic adaptation of Mycobacterium avium subspecies paratuberculosis in vitro: similarities to M. tuberculosis and differential susceptibility to antibiotics.](#) *Gut Pathog* 9:34.
- Pesqueira MN, Yus E, Factor C, Mato I, Sanjuan ML, Eiras C, Arnaiz I, Dieguez FJ. 2017. [Short communication: Correlation between within-herd antibody-prevalence and bulk tank milk antibody levels to Mycobacterium avium ssp. paratuberculosis using 2 commercial immunoassays.](#) *J Dairy Sci* 100:7544-7548.
- Rangel S, Arango-Sabogal JC, Labrecque O, Pare J, Fairbrother JH, Buczinski S, Roy JP, Cote G, Wellemans V, Fecteau G. 2017. [Evaluation of a PCR assay on overgrown individual fecal samples cultured for Mycobacterium avium subsp. paratuberculosis.](#) *J Vet Diagn Invest* doi:10.1177/1040638717724837:1040638717724837.
- Ravva SV, Harden LA, Sarreal CZ. 2017. [Characterization and Differentiation of Mycobacterium avium subsp. paratuberculosis from Other Mycobacteria Using Matrix Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry.](#) *Front Cell Infect Microbiol* 7:297.
- Ricchi M, Bertasio C, Boniotti MB, Vicari N, Russo S, Tilola M, Bellotti MA, Bertasi B. 2017. [Comparison among the Quantification of Bacterial Pathogens by qPCR, dPCR, and Cultural Methods.](#) *Front Microbiol* 8:1174.



- Rossi G, Grohn YT, Schukken YH, Smith RL. 2017. [The effect of \*Mycobacterium avium\* ssp. paratuberculosis infection on clinical mastitis occurrence in dairy cows](#). J Dairy Sci 100:7446-7454.
- Schwarz DGG, Lima MC, Barros M, Valente FL, Scatamburlo TM, Rosado N, Oliveira C, Oliveira LL, Moreira MAS. 2017. [Short communication: Passive shedding of \*Mycobacterium avium\* ssp. paratuberculosis in commercial dairy goats in Brazil](#). J Dairy Sci doi:10.3168/jds.2017-12918.
- Souriau A, Freret S, Foret B, Willemsen PTJ, Bakker D, Guilloteau LA. 2017. [Identification of new antigen candidates for the early diagnosis of \*Mycobacterium avium\* subsp. paratuberculosis infection in goats](#). Res Vet Sci 115:278-287.
- Stanitznig A, Khol JL, Lambacher B, Franz S, Wittek T, Kralik P, Slana I, Vasickova P. 2017. [Prevalence of \*Mycobacterium avium\* subspecies paratuberculosis and hepatitis E in New World camelids in Austria](#). Vet Rec 181:46.
- Trangoni MD, Gioffre AK, Cravero SL. 2017. [A Closed-tube Loop-Mediated Isothermal Amplification Assay for the Visual Endpoint Detection of \*Brucella\* spp. and \*Mycobacterium avium\* subsp. paratuberculosis](#). Methods Mol Biol 1616:221-229.
- Velasova M, Damaso A, Prakashbabu BC, Gibbons J, Wheelhouse N, Longbottom D, Van Winden S, Green M, Guitian J. 2017. [Herd-level prevalence of selected endemic infectious diseases of dairy cows in Great Britain](#). J Dairy Sci doi:10.3168/jds.2016-11863.
- Zarei M, Ghorbanpour M, Tajbakhsh S, Mosavari N. 2017. [Comparison of rapid diagnostic tests to detect \*Mycobacterium avium\* subsp. paratuberculosis disseminated infection in bovine liver](#). Trop Anim Health Prod 49:1195-1200.

Deadline for next issue: 15 November 2017

All contributions should be sent to [editor@paratuberculosis.net](mailto:editor@paratuberculosis.net)

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