The Paratuberculosis Newsletter

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International Association for Paratuberculosis

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All contributions should be sent to saxmose@sund.ku.dk

Søren Saxmose Nielsen
Editor

1. IAP Business

International Association for Paratuberculosis

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Financial Report--Quarter 3 2013

	Checking	Money Market	PayPal	Total
Open (1/1/13)	$12,740.08	$35,019.48	$ 189.10	$ 47,948.66
Q1 (3/31/13)	$29,178.87	$14,157.44	$ 96.41	$ 43,432.72
Q2 (6/30/13)	$27,106.09	$14,159.20	$ 96.41	$ 41,361.70
Q3 (9/30/13)	$27,053.89	$14,160.99	$ 96.59	$ 41,311.47

INCOME

	Q1	Q2	Q3	Total
Dues	$ 161.81			$ 161.80
Interest	$ 4.96	$ 1.76	$ 1.79	$ 8.51
Book Sales	$ 310.00	$ (32.71)		$ 277.29
ICP-Australia	$15,980.03			$ 15,980.03
Total	**$ 16,456.80**	**$ -30.95**	**$ 1.79**	**$ 16,427.64**

EXPENSES

	Q1	Q2	Q3	Total
CreditCard/PayPal	$ 140.74	$ 71.30	$ 52.02	$ 264.06
12ICP advance	$ 20,832.00			$20,832.00
Webmaster		$1,968.77		$ 1,968.77
Total	**$20,972.74**	**$2,040.07**	**$ 52.02**	**$23,064.83**

Respectfully Submitted,

Raymond W. Sweeney, VMD
Secretary-Treasurer

Open Access publication subsidy

The appearance of the Open Access publication system can help the IAP to better fulfill its main objective of promoting and spreading the knowledge on paratuberculosis. Although this system has increasingly become a business that is posing a higher pressure to publish on researchers with some risk of decreasing the quality of the material being published, it still is a way to make research available to less wealthy societies that should help their scientists to stay current in the continuous flux of newly generated information. This perspective is fully in line with other IAP policies like the Helping Hand awards and has been approved by the Board of Directors, as well as discussed in the last General Membership meeting. In order to take advantage of this system regarding the costs of maintaining the highest possible scientific standards while putting to work the funds collected by the IAP, the following rules have been established.

IAP can pay one Open Access publication fee for papers on paratuberculosis according to the following terms:

1) The paper has been accepted by a peer-reviewed Open Access journal in English and both a copy of the paper and of the invoice is sent to the IAP. Priority will be given to journals in order of last published impact index.
2) Only one paper per group and year will be subsidized. A paper will be considered from a different group in the same year if it has: a) different senior author (generally the one signing last, with the higher number of papers and/or with higher position in the institution), and b) no more than half the authors signed a previously funded paper.
3) At least one among the first, second or the senior authors must be a member of the IAP in good standing.
4) Applications are accepted until an IAP fund of US$10.000 per year is exhausted in a first come, first serve schedule with a maximum of US$1000 per paper.
5) A Selection Committee will make the decision on each submitted paper and will establish new rules and policies on any aspect not specified in this guideline. Initially this Committee will be constituted by the Officers of the IAP: President, Vice-president, Secretary-Treasurer and Editor-in-Chief.
6) The evaluation will be a continuous process that will be applied to all the applications submitted every three months until exhaustion of the provided fund.
7) Since these publications' copyright remain in the hands of the authors, the IAP might chose to include the subsidized papers in the Paratuberculosis Newsletter. At least the full bibliographic reference of all the subsidized papers will be published in it.
8) The IAP would require the following disclaimer to be added to any publication of the winning papers in its own media (The Paratuberculosis Newsletter): The IAP financial

support of the Open Access publication does not mean IAP official endorsement of the published contents.

9) The call is open since its publication in The Paratuberculosis Newsletter and until otherwise noted in The Paratuberculosis Newsletter. Periodic reminders will also appear in its pages.
10) Submission must be sent by email to the Editor-in-Chief of the IAP (saxmose@sund.ku.dk) and must include a letter of application, a pdf copy of the published paper or its electronic address and a pdf copy of the publisher invoice.

Ramon A. Juste
President of the IAP

12th International Colloquium on Paratuberculosis

The 12th International Colloquium on Paratuberculosis will take place in Parma 22-26 June 2014. Visit the official website at: http://www.icp2014.eu/

IAP Book Purchases

The association has a number of past International Colloquium proceedings available for distribution. We currently have the following in stock:

8ICP Proceedings – Book
8ICP Proceedings – CD-ROM
7ICP Proceedings – Book
6ICP Proceedings – Book
5ICP Proceedings – Book
4ICP Proceedings – Book

Proceedings are available FREE to members, but shipping charges of $15 (USA) or $35 (outside of USA) will apply. Non-members may purchase the Proceedings for $25 plus shipping costs.

Furthermore,

The History of Paratuberculosis compiled by Rod Chiodini

is available for 50 USD + shipping for members, and $125 +shipping for non-members.

To order please send an e-mail to Secretary-Treasurer Ray Sweeney at:
rsweeney@vet.upenn.edu

and include the following information:

- Item and no. of each
- Shipping address
- Preferred method of payment
- E-mail address

The number of proceedings is limited so we operate by first-come-first-served principle. Please place your order no later than 1 April 2012.

Also note that the 7th, 8th, 9th, 10th, and 11th Proceedings are available on-line at www.paratuberculosis.info.
Starting with the 9th ICP, a print version of the Proceedings are no longer produced by IAP. However, print versions of 9th, 10th, and 11th ICP can be purchased at
http://www.proceedings.com/6219.html

2. Short scientific reports

Educating Canadian dairy producers about Johne's disease through whiteboard animations and social media

Steven Roche, David Kelton, Ann Godkin

University of Guelph, Canada

Recently, research on Johne's disease (JD) in Ontario (ON), Canada has focused on addressing JD control through the most important animal on the farm, the farmer. Research from Steven Roche, a graduate student working under Dr. David Kelton at the University of Guelph, is evaluating how agricultural extension, education, and communication can be used to improve on-farm compliance of JD recommendations.

Their work on perceptions and attitudes is showing that many producers seem to question their ability to effectively control JD through on-farm management practices; more specifically, they appear to question the practicality and efficacy of veterinary recommendations. Furthermore, their research is showing that producers who engaged in a self-directed, participatory-based learning process, Focus Farms, were more likely than non-participants to implement on-farm changes to address JD. Part of the success of this process seems to stem from the fact that producers value producer-to-producer communication when learning and considering on-farm changes.

So… how can we use a peer-to-peer format to communicate with thousands of Canadian dairy producers and convey the practicality and efficacy of JD recommendations?

Whiteboard scribing may be one method…this tool is used to relay a simple, concise message through a narrated script, which is cued to a series of whiteboard drawings that have been recorded and sped up to match the speed of the narration.

Using this tool we can approach producer education from a new perspective; one that is engaging, has been shown to increase retention rates, and can be widely disseminated with relative ease. Dissemination through social media (e.g. Twitter, Facebook, etc.) allows us to capitalize on the benefits of producer-to-producer communication without asking producers to miss time away from their herd for an in-person meeting.

The Ontario Johne's team has recently obtained funds to develop three whiteboard videos. Currently one of three videos is complete and publicly available on YouTube. This first video, titled 'Johne's disease in Canadian dairy herds: What it means for farmers', focuses on explaining JD and how producers can address it on their farms.

The first whiteboard scribing video is available here: http://bit.ly/HJhnjv

The Ontario Johne's team is also seeking feedback here: http://svy.mk/1e3UUsY

In early 2014 two more videos will be released; one will focus on JD from a farm advisor's perspective, while the other will address JD from an industry/policy perspective.

Stay tuned! For more information please contact johnesboard@gmail.com

3. Comments and Opinions

The cow is out of the barn

Gilles R. G. Monif, M.D.

Infectious Diseases Incorporated

In 2001, the Office International des Epizooties (OIE), later renamed the World Organization for Animal Health (OIE), had listed Johne's disease/paratuberculosis as a disease of major global importance. Paratuberculosis was categorized as a List B in terms of socioeconomic and/or public health importance.

In 2012, the World Organization for Animal Health (OIE) has proposed removing paratuberculosis (diseases in animals caused by Map) removed as a disease entity from the Terrestrial Animal Health Code. The rationale put forth by OIE to validate this action was that "because Map infection is so widespread, continued recognition of Map as an animal pathogen would only cause economic losses through the restrictions in international animal trade (1)."

What has caused this drastic reversal of policy in little over a decade?

The United States Department of Agriculture (USDA) is a government agency whose *raison etre* is to advance the interests of agriculture and agriculture-related businesses. Government agencies such as USDA and the Food and Drug Administration (FDA) theoretically operate within the public trust.

By 1996, scientific data suggested that viable *Mycobacterium avium* subspecies *paratuberculosis* (Map) organisms were not only present in raw milk, but in pasteurized milk as well (1). In rebuttal, investigators at USDA published a paper in which they claimed that high temperature, short exposure pasteurization effectively destroyed Map in milk (2). By breaking apart frozen Map organisms, the investigator significantly biased the outcome of the experiment. The paper was openly criticized (3, 4).

In May of 1999, the National Institute of Allergy and Infectious Diseases (NIAID) published its research agenda in which it targeted an infectious cause of Crohn's disease (5).

In 2000, the Centers for Disease Control (CDC) reputedly requested funding to identify risk factors in animals for human disease.

In 2000, the European Commission's Report of the Scientific Committee on Animal Health and Animal Welfare released its findings on possible links between Crohn's disease and paratuberculosis (6). The conclusion to this 76 page document stated *"The current available evidence is insufficient to confirm or disprove that Mycobacterium avium subspecies paratuberculosis is a causative agent of at least some cases of Crohn's disease*

in man" and that *"There are sufficient grounds for concern to warrant increased and urgent research activity to resolve the issue"*. The report also contains the following statement; "The complete destruction of all viable Map in milk pasteurized at 65 degrees for 30 minutes or 72 degrees for 15 seconds may not be assured. Viable map has been identified in pasteurized milk".

In June 2001, the United Kingdom Food Standard Agency issued its report for food standards (7). The conclusion states *"There is undoubtedly sufficient cause for concern (relative to Map as being the cause of Crohn's disease) for further action to be taken urgently to determine what the available data mean …… This question can be divided into two areas: What action should be taken to reduce exposure to Map even though the causal link is not established; and what action can be taken to increase the knowledge base so that future decisions may be based upon more information".*

In 2000 and 2001, the United States Congress held hearings on the issue of whether or not Map constitutes a public health hazard (8). In these hearings, another government agency, the Food and Drug Administration (FDA) is said to have testified as to the effectiveness of current pasteurization in the United States and introduced into evidence a scientifically discredited USDA paper that had claimed that high temperature, short duration pasteurization effectively destroyed Map in milk. Scientific papers repudiating the methodology used by the USDA investigators were not submitted into evidence. Analysis as to whether Map constituted a potential public health hazard was diverted away from the NIH and the CDC. Congress conferred stewardship of the Map zoonotic issue to USDA along with substantial funding.

In dealing with Map, USDA has demonstrated limited significant progress from the concept of test-and-cull that had been successful in dealing with Mycobacterium bovis in cattle and brucellosis in sheep. In both instances, USDA's interventions preserved the underlying agribusinesses.

Even using flawed diagnostic technology, it was apparent that the number of infected animals was numerous. A mandatory destruction of infected animals and herd mates would be devastating to the milk-related industries and would require extensive funding to compensate for the obligatory removal of animals from production. To meet the congressional mandate to determine whether Map constituted a hazard to the public welfare, USDA initiated its five year Voluntary Bovine Johne's Disease Control Program. The effectiveness of this program to address the zoonotic question asked by the U.S. Congress is answered by the consequences of the enacted policies.

Since 2001, the presence of Map in milk and milk-products has become a non-arguable issue. Map has been cultured from approximately 2% of milk taken from the shelves of grocery stores as well as in soft cheeses, yogurt, and baby formula (9-18).

Having been awarded the stewardship of the zoonotic Map issue, USDA imposed certain precepts that would govern subsequent research. Once Map's genetic code became known, without a solid scientific foundation, USDA made three important decisions:

1) Map being deemed the sole organism of a chronic granulomatous enteritis in herbivores. USDA mandated that Map diagnostic tests have tight specificity,
2) Map ELISA serological tests are to be a statement of the probability of an animal developing disease rather than being a true measure of the presence or absence of antibody to Map, and
3) Unlike another zoonotic bovine pathogen, Mycobacterium bovis, an animal's certificate of health would not require a statement as to its Map antibody status (USDA is responsible for standards for animal product warranty).

The net effect of primarily these three decisions is that USDA effectively masked the true prevalence of Map within dairy herds. A negative commercial Map ELISA test does not address the issue of whether or not a given animal has ever been infected by Map. The decision by USDA to have the Map ELISA tests represent a statement of probability rather than a valid measurement of the amount of antibody present permitted infected cows to be transported across state lines and national borders. The net result was not only the introduction of infected animals into uninfected herds, but an overall increased prevalence of Map infection in the national herds. The United States is the, or one of the, principle exporters of Map infected animals. Fifty-four percent of diseased animals detected by the Japanese Animal Quarantine Service originated in the United States (19). By its insistence on immunological specificity based upon the IS900 insertion sequence, USDA precluded identification of other related mycobacteria that can cause infection and disease in dairy cows.

In 2002, 20-30% of all U.S. dairy herds had infected animals. In 2007, USDA acknowledged that an estimated 70% of U.S. dairy herds then contained infected animals (20). By 2012 over 90% of large dairy herds had one or more Map infected animals. In some cases, the number of Map infected animals rivals that of the non-infected herd mates.

After 2002, a strong circumstantial case for Map being significantly involved with Crohn's disease was documented. Map is detected more frequently in diseased tissue obtained from Crohn victims than control specimens (21-31). Sechi et al have identified Map DNA in 83.3% of the biopsies from patients with Crohn's Disease and 10.3% of control patients (23). Map has been demonstrated in the breast milk of women with Crohn's disease (26). Naser and others (including the Center for Disease Control and Prevention) have demonstrated the presence of Map predominantly in the blood of individuals with Crohn's disease (27, 29). That a broader spectrum of potential Map/gastrointestinal interaction exists has been inferred (29).

In April of 2008, the American Academy of Microbiologists published its report on "*Mycobacterium avium* subspecies *paratuberculosis*: Infrequent Human Pathogen or Public Health Threat" (30). The executive summary states: "*the association of MAP and CD (Crohn's disease) is no longer in question. The critical issue today is not whether MAP is associated with CD, but whether MAP causes CD or is only incidentally present.*"

Whether Map is causally involved with Crohn's disease will not be resolved in the near future. The Food and Drug Administration's working guidelines state that to label a substance as a potential health hazard, there has to be "*credible evidence of, or reasonable grounds to suspect, adverse biological effects*". This doctrine requires conclusiveness by total consensus. A single paper stating "lack of scientific consensus or inconclusiveness of data" shelves the decision as to whether Map is a public health hazard for potentially decades. Given the prevailing USDA and FDA posturing, the question of causality defies a bureaucrat answer. Whether or not Mycobacterium avium subspecies paratuberculosis is directly or incidentally linked to Crohn's disease may be left in limbo for lack of complete scientific consensus.

Nevertheless the very real hypothetical can't be ignored. To quote Karel Hruska, "*A risk, even a hypothetical risk, has to be treated as a risk*" (31). Addressing the threat is not governed by the demand for conclusive proof.

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