New Directors Join the PDS Board

By: Marilyn Jonas, CEO, PDS

PDS has 12 individuals on the Board of Directors with four representative directors from the PDS member organizations and 8 independent directors from industry, client and stakeholder groups associated with the laboratory. Each director serves a 3 year term.

Moving off the Board in the fall of 2010 was Dr. Grant Royan, a veterinary consultant from Regina who has spent many years in the bovine and equine industries and Dr. Allan Preston, Assistant Deputy Ministry with Manitoba Agriculture. Dr. Preston has been a director with PDS since its inception. We would like thank both Grant and Al for their significant input and time commitment to the organization during their terms.

Moving on to the Board of Directors as two of the eight “independent” directors on the PDS Board is Dr. Craig Dorin, who is part of a two person feedlot service in Airdrie, Alberta and Dr. Harold Fast, founder of Fast Genetics (now a subsidiary of HiTech).

Also moving onto the Board to fill vacant “representative” director positions are Dr. Doug Freeman (Dean, Western College of Veterinary Medicine) and Godwin Pon, a Livestock Policy Analyst with the Ministry of Agriculture.

Dr. Richard Florizone, Vice-President of Finance and Resources will be replacing Dean Freeman as the “member” representative from the University so that Dr. Freeman can participate at the Board level. He and Alanna Koch, Deputy Minister of Saskatchewan Agriculture typically meet annually with management and the representative members of the Board at PDS’s Annual meeting. It is these members that the Board of Directors is appointed by and is responsible to.

Other members of the Board include Board Chair, Dr. Neil Shantz (Warman Veterinary Clinic); Secretary/Treasurer, Judy Yungwirth (Director of Corporate Administration, U. of S); Vice-Chair, Paul Johnson (Livestock Branch, Ministry of Agriculture); Dr. John Berezowski (Alberta Agriculture); Dr. Maria Just (24 Hour Animal Care, Regina); Dr. Ted Leighton (Executive Director of Canadian Cooperative Wildlife Health Center); Owen Pekrul (livestock producer, Grenfell SK); and Dr. Sandra Stephens (Saskatchewan Veterinary Medical Association).

We would like to thank all of these individuals for their continued contributions to PDS.

PDS Launches a New Logo and Brand!

PDS is updating its image as a reflection and celebration of over 10 years of service to each of you as clients. It also celebrates our new internationally recognized status as an ISO 17025 approved diagnostic laboratory facility.

The updated logo retains the “signature” V denoting our Veterinary focus. It surrounds the Asclepius medical symbol topped with a microscope. The more pronounced PDS acronym recognizes how we are best known by many of you, while our full corporate name, denoting our prairie focus is retained. The addition of two maple leaves represents our Canadian roots as well as the increasingly global nature of our business.

The most important part of our update is the addition of a brand that we think best symbolizes how we feel about our relationship with you, as clients. “Part of your Practice” signifies that we see our Continued……
Canine parasitic (verminous) tracheitis due to *Oslerus osleri*

By: Chris Wojnarowicz, Veterinary Pathologist, PDS and Chantal McMillan, Instructor, Small Animal Medicine, University of Calgary, Veterinary Medicine

Parasitic (verminous) tracheitis due to *Oslerus (Filaroides) osleri* appears to be rare in dogs living in the prairie provinces. Only two cases were found when PDS pathology reports from 1998 to the present were reviewed. This brief report describes the classic clinical and pathological presentation of canine parasitic tracheitis due to *Oslerus osleri*.

A two year-old, spayed female, miniature poodle cross dog was presented to a referral clinic in southern Alberta for a three month history of a dry, nonproductive cough. The dog was born in Banff, Alberta and there was no history of travel outside this region. Thoracic radiographs, performed by the primary care veterinarian, revealed multiple nodules within the distal tracheal lumen. A complete blood cell count, serum biochemistry panel and urinalysis were unremarkable. Zinc fecal flotation, submitted to a local laboratory, was negative for parasites.

Physical examination at the referral clinic revealed a bright and alert dog that was in good body condition. An expiratory wheeze was detected on thoracic auscultation. Tracheoscopy was performed and multiple nodules were visualized in the distal tracheal lumen (Figure 1). The nodules extended into the main stem bronchi. Nodules were biopsied and submitted to PDS for histopathological evaluation. Following biopsy larvae were seen extruding from these nodules into the tracheal lumen. Two additional fecal examinations (i.e. routine zinc flotation and the Baerman method) were both negative.

Histopathologically, each nodule was covered by ciliated, columnar, respiratory epithelium with multifocal exocytosis of moderate eosinophils and occasional lymphocytes. The lamina propria contained numerous, tightly packed nematodes that were surrounded by a thin fibrous wall (Figure 2). The nematodes were sectioned at a variety of angles but all conformed to the classical pattern of “a tube within a tube” typical of nematodes (1). All sections showed abundant developing eggs and larvae. The lamina propria separating the nematodes was filled with a large number of lymphocytes, plasma cells and eosinophils.

Adult *Oslerus osleri* are barely 5-15 mm long. Transmission can occur directly or indirectly. In the direct method the mother infects the puppies with coughed up L1 larvae during grooming or regurgitative feeding (2, 3). The indirect method necessitates the ingestion of infective L3 larvae contained in feces of chronically infected dogs. For this infection to succeed the coughed up L1 larvae must be swallowed, find its way into the vascular bed and finally cross onto the respiratory passage. The prepatent period is about 10 weeks.

The source of infection in this case was not clear. Wild canids often present with parasitic tracheitis (3). It is speculated that this dog may have come in contact with larvae-containing feces of a coyote due to the region in which it lived.

Infection with *Oslerus osleri* can be diagnosed by fecal flotation—the zinc sulfate method is preferred over the Baermann method. **However the most efficient diagnostic procedure is direct visualization followed by biopsy for histopathological examination.** Multiple drugs have been reported to be effective for the treatment of *Oslerus osleri* including thiacetarsamide sodium, diethylcarbamazine, levamisole, fenbendazole, albendazole, and invermectin.(2,4)

This brief report is a valued reminder that parasitic (verminous) tracheitis/tracheobronchitis does occur in Western Canada and should be considered a differential diagnosis in young dogs presented for chronic cough.

The authors wish to thank Brent Wagner (Department of Veterinary Microbiology, WCVM) for his assistance with this case.

Figure 1: Nodules in the distal tracheal lumen viewed on tracheoscopy
Figure 2: Oslerus osleri nematodes, larvae and eggs in tracheal nodules (H and E; 40X)

References:

Real Time PCR test for Johne’s disease now available at PDS: An old, diagnostically challenging disease tackled by a new and quick test

By: Musangu Ngeleka, Veterinary Microbiologist, PDS

Johne’s disease is caused by Mycobacterium avium subspecies paratuberculosis (MAP), a debilitating intestinal disease of cattle, small ruminants and other animals, including wildlife. The disease is characterized by chronic diarrhea and weight loss, despite good appetite. The diagnosis is based on clinical signs and postmortem and histopathological examination. Sensitivity and specificity of postmortem or histopathologic examination are reported to be 90-95% and 100%, respectively. Confirmation of the postmortem diagnosis requires isolation of the bacterium by culture. To date, laboratory analysis for confirmation of the postmortem or antemortem diagnosis of Johne’s disease relies on culture of the organism from intestine or feces using solid media, such as Herrold’s Egg York (HEY) agar or liquid media, such as Trek ESP, BACTEC diagnostic systems. Culture in liquid media is usually followed by demonstration of acid fast organism presence and confirmation of MAP by polymerase chain reaction (PCR). However, for any culture technique, recovery of the organism from intestine or feces remains time consuming and can take 5 to 12 weeks to detect a positive animal and up to 16 weeks before signing off a negative result. With a sensitivity and specificity of approximately 65% and 100%, respectively, culture using HEY agar has been considered the gold standard for the antemortem laboratory diagnosis.

The ELISA test (enzyme-linked immunosorbent assay test sensitivity ~ 35% and specificity ~ 99%), offers an alternative to culture probably due to cost and shorter turn-around-time; however the test is recommended for herd screening, a preventive measure for controlling the disease. The test has been used commonly, but wrongly, for diagnosis. Nonetheless, a positive ELISA result needs confirmation by culture.

AGID (Agar Gel Immunodiffusion test, sensitivity ~ 60%, specificity ~ 92%) is also available and used for detection of diseased animals with high antibody levels.

PCR test on intestinal contents or feces to diagnose Johne’s disease was introduced in the late 90’s; however, initial testing had its limitation, especially due to the inhibitory effects of intestinal materials on test performance.

The new generations of PCR in house tests, especially Real Time PCR, or commercial kits, such as Applied Biosystems and Tetracore, have improved the detection of the agent directly from feces, reducing the cost and turn-around-time for diagnosis of individual animals or for surveillance testing on pooled fecal samples. The use of internal control in this new generation of PCR has been helpful in confirming the validity of the PCR reaction on any sample submitted for examination. With a sensitivity and specificity of approximately 65% and 97%, respectively, the Real Time PCR test (accuracy 90%) appears comparable to culture method using solid or liquid media (accuracy 91% and 93%, respectively).

At PDS, we have evaluated intestinal and fecal samples submitted for Johne’s disease diagnosis by culture using HEY agar and Real Time PCR using commercial kits. Based on our observations, we are pleased to offer to our clients a Real Time PCR test using a commercial kit for diagnosis of Johne’s disease directly on intestine or fecal samples. This test offers a better turn-around-time of 24 to 48 h, depending of number of samples and time of submission; the cost of the test is $35.00 for diagnosis of individual animals or $40.00 for a pool of 5 animals, mostly used for surveillance or eradication programs. Note that sample pooling must be done in the lab only. If you have any questions, please contact Dr. Musangu Ngeleka (306-966-7250) or Anju Tumber (306-966-7329).

Quote: Life is not a Final. It’s filled with daily pop quizzes – Author Unknown
New ELISA test kits for PRRS and Johne’s disease in use at PDS:
By: Dale Godson, Veterinary Microbiologist, PDS

The Serology Lab at PDS has begun using two new formats of ELISA kits produced by IDEXX. In the past year, IDEXX began promoting a new ELISA kit for the detection of PRRS antibodies. The company claims that the Herdcheck PRRS X3 test has sensitivity and specificity values of 99.9% and 98.8% respectively, with the major advantage of this new kit over the currently used PRRS 2XR kit to be a reduction of about 90% in the false positive rate. Both kits detect antibodies directed to the nucleocapsid of both North American and European genotypes of PRRSV, and both kits report the results similarly; sample/positive (S/P) ratios of less than 0.400 are considered negative for antibody to PRRSV (S/P ratios >0.400 are considered positive). The cost of the new test is slightly higher, so our price rose accordingly from $8.50 to $9.00/sample. IDEXX also released a new Mycobacterium paratuberculosis (Johne’s disease) Antibody Test Kit. This kit has better sensitivity and specificity than the previous kit and is approved for use with milk samples, in addition to serum and plasma. For this test, the reference intervals have changed from the previous kit, so be sure to compare your results to the reference intervals printed on the diagnostic report. This kit is approved by the USDA, and our lab has completed the Johne’s diagnostic test proficiency panel provided by the National Veterinary Services Lab, Ames, IA (USDA) using this kit. The cost for this test remains the same as previously (i.e. $8.50/sample).

Fructosamine testing at PDS
By: Gloria Patry, Head Technologist, Clinical Pathology Laboratory, PDS

We are currently establishing an in-house fructosamine assay at PDS and need your help. When you submit samples from your feline patients for fructosamine testing, currently a send-out test, we would appreciate it if you could include an additional 20 ul of blood for the PDS Clinical Pathology Laboratory—this will help us to validate our fructosamine assay. In return, PDS will absorb the courier costs to IDEXX—your client will still need to pay any courier fees for the sample to be sent to PDS and the IDEXX cost of the fructosamine test. If you have any questions please call the PDS Clinical Pathology Laboratory at 306-966-797. Thanks for your help!

Update for parathyroid hormone related protein (PTHrP) testing:
The following update was posted on the website for the Michigan State University Diagnostic Center for Population and Animal Health (MSU DCPAH; 4125 Beaumont Road, Lansing, MI 48910-8104 517-353-1683) regarding PTHrP testing: PTH AND PTHrP: We are back in business! Specimens are now being accepted for Parathyroid Hormone Related Protein (PTHrP) testing (Order Code 20004) or our Malignancy Profile (Order Code 20030). Assays are done on Monday and Thursday with results available on Tuesday and Friday. Parathyroid Hormone testing - PTH & Ionized Calcium (Order Code 20033) and Vitamin D Profile (Order Code 20035) are back to their regular processing schedule.

Addendum to ‘2010 Retrospective Study Detects Rabies in a Feedlot Steer Case from 2001’ (Animal Health Perspectives, Feb 2011, Volume 7, Issue 1)
By: Brendan O’Connor, Veterinary Pathologist, PDS

In my article I proposed that “if I had reported the case as suspicious for rabies and requested that the Public Health Agency of Canada (PHAC) assess whether it should be tested at the CFIA laboratory in Lethbridge, it would not have qualified for testing because of the absence of (this) human exposure.” Dr Betty Althouse, Veterinary Program Specialist, Disease Control, CFIA, assures me that this is incorrect and CFIA will, in fact, test the brains of domestic animals with a suspicion of rabies based on clinical signs and/or pathological findings, whether or not there is known human exposure. I apologize for the misunderstanding and my unintended misinterpretation of the current CFIA policy on rabies testing.

New Manager of Animal Protection Services
In February 2011, Kaley Pugh joined the Saskatchewan Society for the Prevention of Cruelty to Animals (Saskatchewan SPCA) as the full-time Manager of Animal Protection Services. Kaley Pugh attended the University of Saskatchewan, where she earned a Master of Science and a Bachelor of Science in Agriculture. Most recently she was a Lab Manager and Research Technician at the U of S, where she was involved in molecular genetic research in beef cattle. Her career experience also includes work in a variety of livestock operations, including hog barns, large horse boarding stables and chicken production facilities.

Pugh looks forward to developing collaborative relationships with all levels of government as well as producer and stakeholder groups. Priorities for the next year including building an enhanced awareness of the role that the Saskatchewan SPCA plays in the protection and promotion of animal welfare in the province.

Readers’ Feedback
The Animal Health Perspectives editorial team (Dr. Moira Kerr, Crystal Wagner and Kathryn Ross) invite readers’ comment on any material published in the newsletter or questions on material submitted by contributors. Submit your comments or concerns to Dr. Moira Kerr (email: moira.kerr@pds.usask.ca) and they will be forwarded appropriately. To be added to the distribution list for the electronic link, email: crystal.wagner@gov.sk.ca