

The Bee Cause



Volume 13, Issue 3

March 2016

Next general meeting is 7:30 Tuesday, 9 March 2016 at the **The Elmwood Legion 920 Nairn avenue , Winnipeg.**

Speaker:
spring management

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“A state-of-the-art laboratory offering comprehensive diagnostic services to the Canadian beekeeping industry and research community.”

Dear beekeepers,

We wish you a prosperous and exciting season in 2016. This past year presented itself with many opportunities for the staff of the NBDC-TAC to interact directly with you at your operation, at your association AGM, over the phone and certainly at our (your) lab in Beaverlodge. We have been pretty busy this fall processing your samples and those from the several research projects in progress.

During our several working trips in the Peace Country and beyond we have heard beekeeper concerns about pathogens affecting their colonies. In this issue you will find details of our research on Nosema and Deformed Wing Virus (DWW) in over wintering colonies, and how the information generated could help you. The NBDC-TAC is constantly looking into new ways to serve the industry better, and here we introduce the chemical residue analyses available to all Canadian beekeepers thanks to an agreement with the Alberta government Agri-Food Laboratories Branch, in Edmonton.

In this issue, we share the results of the 2015 Inter-Laboratory Proficiency Tests conducted by the EU Reference Laboratory on Honey Bee Health at ANSES Sophia-Antipolis, France that the NBDC-TAC took part of. Training and outreach are important components of our commitment to all stakeholders, this spring we are delivering the '3rd Honey Bee Diagnostic Course' where participants will acquire hands-on experience on diagnostics using microscopy, microbiology and molecular techniques. The NBDC-TAC staff was very active last fall presenting in several association meetings and talking directly to local beekeepers, here is a summary of those working trips.

Our research with queens in the last 3 years has enabled us to develop, test and establish a protocol for queen health evaluation. These analyses have evolved into a new service for queen producers that will be available very soon. New equipment has made its way to the NBDC-TAC thanks to additional support from NSERC, a Next Generation Sequencer will significantly enhance our capacity to identify new pathogen strains.

Sincerely,
Carlos Castillo
Applied Scientist Manager
National Bee Diagnostic Centre - TAC

Chemical residue analysis

On April 29TH 2014, Grande Prairie Regional College signed a 'Memorandum of Agreement' with the Ministry of Agriculture and Rural Development of Alberta (currently Ministry of Agriculture and Forestry) to initiate and develop cooperation between the NBDC-TAC and the Agri-Food Laboratories Branch (AFLB), respectively.

Under this agreement AFLB provides chemical analytical testing services to NBDC-TAC. All our clients have access to this service in confidence as their samples are labelled

(Continued on page 5)

2015 Executive**President: Waldemar Damert**

Ph 204-755-2340
 Box 15 Grp. 150
 Beausejour, MB R0E 0C0
 Email: wdamert@yahoo.ca

1st Vice President: John Badiuk

Ph .204-943-0166
 128 Victoria Ave W
 Winnipeg, MB R2C 1S5
 Email:honeyb@mymts.net

2nd Vice President: Armand St Hilaire

Ph 204-427-2757
 P0 Box 93
 Roseau River, MB. R0A 1P0
 Email: asthil@mymts.net

Secretary: Art Quanbury

Ph 204-489-6994
 35 Cordova St.
 Winnipeg, MB R3N 0Z9
 Email: quanbury@shaw.ca

Treasurer: John Speer

Ph 204-222-3007
 Box 16, Group 555, RR 5
 Winnipeg, MB R2C 2Z2
 Email: jurness@outlook.com

MBA Delegate: Margaret Smith

Ph 204-254-4509
 1051 Porcher Rd
 St Andrews, MB R1A 3N4
 Email: margshoney@gmail.com

RRAA web site administrator:

Duane Versluis
 Ph 204-268-4223
 Box 12
 Tyndall, MB R0E 2B0
 Email: rraaweb@gmail.com

Newsletter Editor:

Ken Rowes
 Ph 204-755-3427
 Cloverleaf Box 758
 RRI Anola, MB R0E 0A0
 Email: Roweskd@mymts.net

Presidents Comments for March, 2016

Greetings to all fellow beekeepers,

The MBA beekeeping convention is over and was a great success. Comments will be made at the March 9 th meeting.

Bees have had a milder winter with less snow which can affect their survival.

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Hope you are checking to see what your are. At the last meeting a frame box tor was shown with the intent to reduce moisture and fungal build up in dead- is merely a old hive box cut in half with a inch computer fan with a converter in- at one end. It seems you could force an air flow through honey supers when re- moisture content in the summer.

Club apiaries are well under way with much to do. Further info will be in the newsletter as we progress. For a starter we are have two theoretical workshops on raising queens with the expectation to rear the queens in the club yards so as each participant will have a queen at the end. He first February 29th and the second March 28th.

At the last meeting the Provincial apiarist encouraged the registration of ones beekeeping practice as it is a legal requirement. He also encouraged all beekeepers to put up signage at the apiary site so as inspectors who have the permission to inspect at will any bee yard. With signage they can get back to you if you have problems needing immediate attention. Signage would mean the contact name, address and phone number and / or e-mail address.

During last meeting the use of bee swarm trap nuc boxes was discussed. The frames needed just a little starting comb 3/4—1 inch to encourage bees to draw comb. It was important to have these boxes 6 to 8 feet off the ground to be more successful in having a swarm locate and stay. Also an additional stimulant is the essence of an old crushed queen. When replacing queens in the spring or summer crush the queen and put her in a dark vial of alcohol. Use a few drops of this emulsion on the entrance of the swarm nuc to draw bees to it. I suspect the swarm season begins in May so it is good if you have your action plan and equipment ready.

The editor for the president.

Looking forward to see you all!

Your president

Waldemar

Red River Apiarist's Association

Minutes of the Regular Meeting

February 9, 2016

Chairman: Waldemar Damert

Recording Secretary: Art Quanbury

Approval of the Minutes of the previous general meeting

Motion: That the minutes of the general meeting held on January 12, 2016 be accepted

Moved: Tim Kennedy

Seconded: Victor Dyck

Carried

Financial Report

John Speer reported that the association over \$4800.00. Membership fees are approximately half paid for the new year (35/70).

MBA Report

Margaret reported that applications to Dept. of Agriculture can be made for financial assistance to purchase queen rearing equipment but the applicant must have taken a biosecurity workshop. Deadline is March 1. Advance registration for the convention must be paid by this Friday. From the Canadian Honey Council report, a workshop will be held in Edmonton to determine the correct wording of applications for workers to be hired to work at apiaries. The Minister of Agriculture has not proclaimed May 20 as our Bee Days but there is an attempt to coordinate all the provinces to have the same day.

President's comments

RRAA Bee Yard

Waldemar reported that there was not much new to comment on re: the bee yards. The signup sheet for volunteers to work in the two yards was circulated again for more signatures. John Russell has agreed to head up the operation of the Zoo bee yard. The dates of classes on queen rearing were announced: February 29 and March 28 at the Legion, beginning at 7:30. The cost will be \$20.00/person but the individual will hopefully get a queen if all goes well.

BeeMaid has a tentative price list for queens (\$24.00) and packages of bees (\$205-\$220 depending on where they are from). New Zealand apparently has some disease problems and bees are not available from there. These prices are high considering that the price of honey is so low.

RRAA has a library that is maintained by Ron Rudiak but it was felt that the material in it was old and not of much interest any more.

It is still too soon to open hives and add food but the ideal conditions are when the temperature is -2 degrees, weather is cloudy and there is no wind. Patties should be added as quickly as possible and time not spent checking the hive. If dead colonies are encountered they can be dried out using the fan idea that Waldemar mentioned last month. The dead bees can then be shaken out of the frames.

Information about bee health can be learned from the nature of their "poop". Droplets indicate poor health but stringy is good. It has to do with the metabolic water retained by the bees. If there is not enough ventilation in the hive the moisture level can build up and result in the retention of metabolic water.

Guest Speaker

Melissa provided an update of her experience of keeping hives on a rooftop courtyard at University of Winnipeg. She started in 2013 and will be entering her 3rd year of operation. Before starting she contacted beekeeping clubs at other universities keeping bees and did some fundraising to purchase equipment. A number of students (15) have volunteered with the work involved and at least one now keeps bees on his/her own. It took one year for the administration to give approval. They were concerned about: damage to property, swarms, liability issues (student volunteers had to sign a waiver), safety of maintenance staff when working on the roof, safety of students. Any incidents are handled on a case by case basis. A number of logistical issues needed to be addressed: access to roof via elevator and then stairs, removing 10 supers of honey in the fall, proper exposure of hives to sun but not too much, access to water (used pails with brick inside so they wouldn't blow away, most water was from rain water but tap water was necessary sometimes), how to handle splits, moving bees (would have to be carried through library), dealing with honey production. Honey seemed to be mainly goldenrod. Mosquito spraying was not an issue because the hives are high up. The colonies did have mites (maybe) because they were not treated in the spring.

There has been considerable media attention (TV, newspaper) and this has been used to help educate the public about the role of bees in agriculture. The honey is used in fundraisers for the university. Melissa did not know how long the activity would last.

Loonie Draw

Ken Fehler, book, Jim Uttley, sausages, Murray Smith, small packages, Dini Borst, bread, Carol Anderson, bread, Keith Bamford, jar of relish, Keith Bamford, sausages, Gilles LaMontaigne, tea, Christos Argiriou, fish.

Next Meeting

The next meeting will be on March 8, 2016.

Chairman: Waldemar Damert

Recording Secretary: Art Quanbury

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MBA Report February 2016

Margaret Smith, RRAA MBA Representative
Margaret is away. MBA report in next issue.

IARC glyphosate cancer review fails on multiple fronts

Items for beekeepers, PO Box 397, Selah, Wa 98942

Academics Review | Mar 23, 2015 | 0 comments

Failing Grade for IARC Glyphosate Cancer Review

The International Agency for Research on Cancer Monograph evaluation of certain insecticides and herbicides earns an F grade for failure to consider all the available studies, placing weight on weak and discredited studies (*several in the advocacy community are already using this report claiming it is a vindication of the discredited Serlini GMO cancer claims*), and most importantly failure to consider if glyphosate is a carcinogen at the doses to which consumers would normally be exposed.

It would require doses of hundreds or even thousands of times higher throughout a lifetime—a highly unlikely event—for even a single case of cancer to be caused by glyphosate. Many commonly encountered substances including coffee would fall into the same carcinogenic category if evaluated using the IARC flawed approach to this report. Experts around the globe have objected to IARCs reclassification of glyphosate.

The greater concern here is that it appears that IARC has been unduly influenced by anti-chemical activists who have persuaded it to take a politically popular hazard-based decision which is inconsistent with the weight of evidence and the underlying science. Agencies like IARC have an important role to play. It is shameful when that role is undermined by special interests for political objectives.

See also: Debunking pseudo-science risk claims about glyphosate.

What others are saying about the IARC pesticide monograph:

- Canadian toxicologist pans UN IARC glyphosate report claiming they made critical error interpreting his research data.
- Drexel University College toxicologist writing on Dr. Oz's website points out discrepancies in IARC's classification of glyphosate as a possible carcinogen, claiming agency should confer with regulatory bodies and revisit their decision; says most farmers and their families whose urine was tested for glyphosate fell below Allowable Daily Intake levels

- Harvard Microbiology and Immunobiology Curriculum Fellow blogs for Scientific American on GMOs, he believes GE technology is still the best means of feeding the world, points out that glyphosate is not as risky as the alternatives
- University of Wyoming plant scientist conducts literature review to better understand IARC classification of glyphosate as probable carcinogen, argues data doesn't support decision
- GMO Answers points out many flaws in the recent IARC review which lists glyphosate as a probable carcinogen
- Forbes – Henry Miller questions methodology behind IARC classifications of glyphosate, four other pesticides as possibly or probably carcinogenic due to evaluation of potential hazard versus actual risk of toxicity; previews review of three more pesticides in June
- EurActiv criticizes the recent IARC publication on glyphosate as an “anti-industry witch-hunt,” pointing to the large body of research which demonstrates glyphosate is not harmful to humans
- University of Edinburgh plant physiology professor, Scientific Alliance Scotland member explains IARC glyphosate classification refers to occupational exposure, claims effect is marginal
- Genetic Literacy Project Andrew Porterfield criticizes IARC report that lists glyphosate as a probable carcinogen, believes the IARC report is not any cause for alarm, reaffirms the relative safety of glyphosate for humans
- Scientific Alliance member argues absence of public alarm suggests IARC glyphosate carcinogen classification is unimportant, likely affirmed preconceived notions of pesticide risks
- Gizmodo contributor says IARC did not find evidence of links between glyphosate and cancer despite ruling of chemical as ‘probable’ carcinogenic, noting scientific criticism of decision
- American Council on Science and Health criticizes Mark Bittman's “rant” on GMO labeling and glyphosate's updated IARC classification
- Reason.com predicts IARC's ‘scientifically misbegotten’ ruling that glyphosate is a probable carcinogen will spur additional efforts from anti-biotech activists due to the chemical's use on GM crops
- Real Agriculture criticizes recent media coverage of IARC pesticide carcinogenicity review, encourages readers to explore the full context before jumping to conclusions

Filed Under: Grading Science News

Tags: cancer, glyphosate, IARC

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and recorded in our database and send to AFLB with a unique identifier. Results are expected to be reported back within 3 weeks.

Residues of antibiotics such as Fumagillin, Tetracycline and Tylosin, commonly used for colony treatment, can be determined in honey. Pesticides used in agriculture crops of the Carbamate, Neonicotinoid, Organophosphate and Pyrethroid groups, as well as synthetic acaricides medicated directly into hives can be detected as residues in bees, pollen, propolis and honey.

You can collect samples from your hives to be analyzed for chemical residues, requiring a minimum of 10g of pollen, 10g of propolis, 20g of honey or 200 bees. Detection limits are between 1 to 20 ppb (part per billion) depending on the compound to be analyzed. If you have questions about this service or require more information, do not hesitate to contact us.

Inter-Laboratory Proficiency Test Results

This past year the NBDC-TAC participated as a third country laboratory in the annual Inter-Laboratory Proficiency Test for honey bee diseases organized by the European Union Reference Laboratory for Honey Bee Health, Unit of Honey Bee Pathology at Sophia-Antipolis, France. The tests are aimed to evaluate the analytical competence of the labs to obtain the expected results. The program consisted of two ring tests 'Detection and quantification of CBPV genome in bee homogenate samples' through a quantitative PCR method, and 'Identification of *Nosema* species by PCR in crushed samples' through a PCR method.

We received the samples and performed the diagnostics within the specified time frame, employing our current detection/quantification protocols. Results in the first test exceeded the proficiency test criteria of 'Specificity' 'Sensitivity', 'Trueness' and 'Precision'. In the second test we detected all the *N. ceranae* and/or *N. apis* positive samples, including two samples with mixed infections. However, we detected *N. apis* in samples that were identified to be only *N. ceranae* or negative for both species. We believe the difference is in the sensitivity of the primers used for the amplification reaction. The NBDC-TAC is conducting further work to establish the limits of detection of our primers, while evaluating other analytical protocols.

Applied Research: *Nosema* and DWV in winter colo-

nies

Nosemosis is a common disease in honey bees, microsporidian fungi whose spores infest and replicate in the insect gut. Two species of *Nosema* are extensively studied and described in the literature, *N. apis* identified in *Apis mellifera* the European honey bee, and *N. ceranae* originally discovered in *A. cerana* the Asian honey bee. Both species are now affecting western honey bees worldwide.

Nosema spores are found in bees all year round with peaks in the spring and fall when the disease is usually treated with antibiotics. Almost a simultaneous treatment with synthetic acaricides or organic acids is applied to the hives for the control of Varroa mite. The mite damages the colony by feeding from brood and adult bees and by vectoring several viruses including Deformed Wing Virus (DWV) that weakens the colony even further and may play an important role on a possible collapse.

In this research project, we are evaluating the levels of *Nosema* and DWV infections in indoor over wintering colonies. Mites were controlled with anti-varroa strips in all hives, while Fumagillin treatments for *Nosema* were applied to an equal number of colonies each as a drench or as an open barrel feeder or control colonies not treated at all. Hives were sampled monthly from October to February collecting adult bees from the cluster and debris from the bottom boards. Relative quantification of *Nosema* and DWV from adult bees was carried out by real time PCR, while *Nosema* quantification in debris is currently in progress.

Results from this research will help us to understand how *Nosema* infection varies in over wintered bees after a fall treatment with Fumagillin. It may lead to identify an early sample time and level of *Nosema* that could predict a spring outbreak, giving opportunity to plan any control measures ahead. If a significant correlation is established between *Nosema* levels in adult bees and hive debris, a less invasive sample procedure, not disrupting the winter bee cluster can be employed. In addition, DWV levels in adult bees are quantified to obtain a clearer picture of its development in the colony during winter.

We want to thank Medivet for providing most of the funding for this project, as well as the Canadian Honey Council through the Canadian Bee Research Fund (CBRF), and the Inter-American Institute of Cooperation on Agriculture (IICA-Canada) through the Research and Internship Assistant Program (RIAP).

Training and outreach: 3rd Honey Bee Diagnostic Course

This spring up to 6 students will have the opportunity to learn and experience diagnostics at the NBDC-TAC. This one week intensive workshop '3rd (continued on Pg 7)



Editor's Note & musings by Ken Rowes

Well its March and we have had the spring thaw now temperatures are dipping in the teens. It appears the winter losses are up and there has been an increase in mice, skunks and mites.

February is a time to complete new equipment assemblies or repairs. Its time to make up spring paddies to feed bees as the March temperatures rise above zero.. And yes it is worth digging out the bees and checking for activity, so as you know of potential losses!

It seems important to remove the snow from on top or when it melts it can freeze the



cover box to the palette.

The hassle of income tax processes can take your time so it is worth having your activities scheduled for timely focused completions.

It seems the winter months is the time to hone your skills in bee diseases and pathogen problems. I have just received a note from Nick Holmes in Britain where they have just had a microscopy course as we have. Its like a micro approach to insect medicine wouldn't you say. I shall have my office complete and microscopes set up in the honey house any time soon.

Our first RRAA theoretical queen rearing course will have taken place at 7:30 February 29th . Many members have been raising their own queens so a instructional presentation with question opportunities will enhance our knowledge and skills.. A second will take place March 28th same time and place. Remember white is the queen mark this year.

See you at the meeting March 9th

CLASSIFIEDS

1 For Sale: Plastic queen excluders \$3.50 each.
Contact, Lance W. Phone # 712-6783, Email; lancewld@gmail.com

2 For Sale: Nuc with 4 frames full of bees. Lots of brood on 2 of them. All nucs have 2015 raised queens from winter hardy, mite tolerant, own local stock. No foul brood in my apiary. Price TBD. 2) New inner covers 7/8" x 7/8", pine rimmed with 3/8" solid plywood. \$10.75 each
Contact Ted Scheuneman: 204-338-6066

3. For Sale: NEW Bee Cozies with insulation pad , 4@ \$15 each . NEW Mann Lake 3" Pro Feeders with cap & lad-

The Bee Cause is the official publication of the Red River Apiarists' Association for distribution to its members and their colleagues in the bee-keeping industry. It is published eight times a year on a monthly basis except December and the summer months of June, July, and August when membership meetings do not occur.

Articles can be best submitted in word documents as email attachments. Though they may be edited for spelling and basic grammar, no changes will be made to their contents, message and opinions. They are those of their originator and not of the Red River Apiarist Association.

Deadline for any submission to this newsletter is the second Saturday preceding the membership meeting to allow for publishing and mailing delays. Regular membership meetings are normally scheduled 7:30 PM on the second Tuesday of every month at the **Elmwood Legion 920 Nairn Avenue** in Winnipeg except the months as noted above.

The Red River Apiarists' Association, formed in 1963, represents the beekeepers of the Red River Valley and environs in southern Manitoba. The association provides a forum for the promotion of sound beekeeping practices through education, networking opportunities, meetings, field days, workshops, presentations by local apicultural experts, as well as the dissemination of this monthly newsletter.

We are on the web!
www.beekeepingmanitoba.com

der , 2 cases of 5 feeders -@ \$25 /case. See Mann Lake web site for details on feeders.

Much other beekeeping equipment available later -not presently accessible , perhaps at spring or Feb. thaw .

Contact Charles_polcyn@ymail.com or Charles 204-284-7064 Wpg. Or farm 204-348-2506.

4. Wanted: Honey contact: John at

204-943-0166 Email:honeyb@mymts.net

5. For Sale: Three frame nucs for sale with new Carniolan queen ; can deliver to Winnipeg. Price is \$180, deposit required ; **paul@interlakeforageseeds.com, Interlake Honey Producers Ltd. 204- 372-6920**

6. For Sale: Four frame nucs after mid May; contact **Chris Argiriou at 204-296-4848 or e-mail christos-a@shaw.ca**

7. For Sale: Four frame nucs with young local queens. Queens available in July contact: **Waldemar Ph 204-755-2340 or Email: wdamert@yahoo.ca**

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(from Pg 5) Honey Bee Diagnostic Course' will be offered April 25th to 29th 2016, comprising more than 35 hours of lectures, field sampling, lab work, observations, evaluations and discussions. Participants are required to have some laboratory experience and during the course will be introduced to light microscopy for *Nosema* counting and tracheal mite detection, to fluorescence microscopy for sperm viability and pathogen localization, to microbiology techniques for AFB culture and antibiotic resistant testing; to molecular techniques employing DNA and RNA for *Nosema* species identification, viral detection and quantification.

At the end of the course students will have a good understanding of the main diseases, pests and parasites affecting honey bees and the diverse array of techniques available for their identification and quantification. They will acquire first-hand experience on sampling, processing and analyzing bees, will access and operate state-of-the-art equipment and will learn how to process data and interpret results.

For further information on the course and registration please contact GPRC-Continuing Education-Registration Assistant at ce@gprc.ab.ca, P: 1-780-539-2975 or Toll free: 1-888-539-4772.

Beekeeper's AGMs tour in Canada

This last fall the NBDC-TAC staff traveled around Canada to be closer to you and to listen to your concerns, ideas and experiences this past season. From Courtenay on Vancouver Island to Levis in Quebec our trips have been full of excitement and passion. We had the honour of sharing the stage with some of the best bee researchers in the country to present results from our several projects, and talk to you at our booths, over breakfast, lunch or dinner in a more relaxed atmosphere.

Attending your AGMs allow us to learn what interests you the most, to explain how our diagnostic services can help in your success and to spark curiosity and participation in research. We encountered a great receptiveness and interest to participate in the 'Canadian National Honey Bee Health Survey' project the NBDC-TAC is conducting for the industry. This coming season the project is becoming truly national with samples being collected in all ten provinces from BC in the Pacific to NL in the Atlantic. This is the best chance to produce a baseline data on pests and diseases af-

fecting honey bees in Canada.

This February we are coming to Winnipeg to present the 'Honey Bee Health Survey' data to Manitoba beekeepers and in March we are attending the spring meeting of BC Beekeepers in Kamloops

New service: Queen Health evaluation

Queen health is a main concern among Canadian beekeepers that in recent years have observed a decrease of their queens' productive life span. Queens used to last up to three seasons while nowadays they need to be replaced after one year or even sooner. Several research groups are investigating the causes of such decline considering aspects such as exposure to chemicals, diseases, transportation conditions, mating deficiencies, inbreeding and other circumstances. It is estimated that a queen needs a minimum of 3 million viable sperms to head a colony for a year, while a well mated queen should bear 5 million or more viable sperms. Our studies show that 85% or more of viable sperm is found in queens from good colonies, while queens from failing colonies have less than 60% viable sperm.

The NBDC-TAC, during the last three years as part of our applied research, has been analyzing queen health and productivity of local and imported stock. We measure the number and viability of sperm from the spermatheca and diagnose the presence/absence of diseases in the queen and her attendants. These analyzes have been developed, evaluated, tested and established as standard protocols in our laboratory. We are now in a position to offer such analyses as a new service for queen breeders, queen exporters/importers and beekeepers who want to evaluate the health of their own stock. More details will be available this spring.

New equipment to enhance our research capacity

The NBDC-TAC purchased two new pieces of equipment that will enhance our diagnostic and research capacity. Thanks to an Applied Research Tools and Instruments grant from NSERC our laboratory acquired a Next Generation Sequencer (NGS) and a Sequencing Library Preparation machine. Both pieces of equipment are at the front edge of its class and will provide our lab with the additional capacity to not only detect, quantify and locate pathogens in bees but to fingerprint them based on nucleic acid sequences.

Different strains of the same pathogen may affect honey bees quite distinct, some are virulent enough to collapse a colony in a short time, while others remain covert infections with no immediate visible symptoms. Leaving other conditions influencing the health of a colony aside, the presence or absence of an overt disease infection will depend on which strain is present or predominant in a region and how well the honey bee stock it is adapted (resistant or susceptible) to that particular strain. It has been reported that one particularly virulent DWV variant is selected when the disease is transmitted by varroa mites, in detriment of other less lethal strains. The widespread presence of varroa among **(cont'd on pg 8)**

(from pg 7) Canadian apiaries may have produced a similar predominance of one or a few DWV strains.

Our lab now has the capacity to look after those strains based on detailed genetic data and map their prevalence from samples coming nationwide. This is a step towards understanding regional variances on disease presence/absence and their effect on honey bee colonies.

Our mailing address is:

National Bee Diagnostic Centre
Box 1118
Beaverlodge, Alberta
T0H 0C0

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Bee Disease Workshop Timely

The recent Honey Bee Diseases & Pests Monitoring and Diagnostic Workshop proved a timely topic for about a dozen participants from across Manitoba last month.

The Monitoring and Diagnostic Workshop took place in the Emergency Operation Centre (EOC) of the Agricultural Services Complex building at 545 University Crescent, in Winnipeg the afternoon of January 15, 2016.

Twelve beekeeping community members gathered to hear about things to watch for when checking hives throughout the year.

Rheal Lafreniere, Industry Development Specialist – Provincial Apiarist, Manitoba Agriculture, Food and Rural Development, led the workshop. Through a power-point presentation, Rheal showed pictorial examples of various pests, pathogens, and parasites affecting the health of Honey Bees. He started the workshop by dealing with some minor diseases meanwhile, stressing the need to diligently check for diseases and other situations in all hives, weak or strong.

The audience consisted of several Red River members, plus some from much larger commercial operations. In addition, participants ranged from beginners to those with many years of experience. All were interested in the topics covered, as often bee health can be impacted unless beekeepers are familiar with what, and how, to observe intricacies of situations impacting bee health and development.

The presentation went from minor diseases such as sacbrood viral disease, chalkbrood fungal disease, to the more problematic bacterial disease, American Foulbrood (AFB). For the later part of the workshop, issues surrounding Varroa, Small Hive Beetle (SHB), Virus, and Nosema took on a more serious tone leading to the hands-on segment. Participants were invited to take an up-close look at SHB samples, plus brood frames containing AFB scales. The third part of the practicum segment focused on a sampling method to collect and analyze for Nosema microsporidian presence. Here Rheal demonstrated a method to prepare a Nosema sample and then a way to use a microscope to investigate which type of spore was present.

Several participants took turns looking through the microscope as well as investigating the AFB scales, and expressing appreciation for the timely and practical workshop hosted by MAFRD, in conjunction with other government sponsors.

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Downtown Winnipeg Bees Approved

At a recent City of Winnipeg Council meeting, the recommendation for permitting Bees in the Downtown area of Winnipeg was approved.

At their council meeting on Wednesday 24 February, 2016, the members dealt with a text amendment to Downtown Winnipeg Zoning By-Law No. 100/2004. The recommendation was to pass the Text Amendment By-Law, which basically allows for keeping bees on roof tops as well as backyards in the central area of the city.

In forwarding the “Pass” recommendation to Council, the Executive Policy Committee concurred at their meeting of 17 February, with an amendment made by the Standing Policy Committee on Property and Development, Heritage and Downtown Development. The amendment resulted from a request from delegations presented at the public hearing on Tuesday 16 February 2016.

At their meeting on Tuesday, the Standing Committee on Property and Development, Heritage & Downtown Development agreed to forward the Urban Bee Bylaw Proposal to Executive Policy Committee (EPC). In accepting the Downtown bylaw amendment recommendation, Councillor Gerbasi, proposed an amendment to change from “Conditional Use” to “Permit”. This would allow a lower user cost than the Conditional Use fee of over \$1000. This change could make it easier for interested individuals to get started at a lower fee so the downtown could be used as a pilot for expansion at a later date.

Councillor Wyatt raised the issue of city wide change, yet committee recognized that approval falls under a different bylaw, and the public notice was limited to downtown.

After the public hearing, Chris Kirouac was interviewed by CTV, and several other media. CTV carried an article at noon and again at 6:00 p.m. news cast. Media posed lots of questions to Chris since it was an unprecedented move to change from a “Conditional Use” to a “Permitted Use”. Chris addressed the permit cost issue, as he had done earlier to a councillor question about the cost to get started in beekeeping.

Meanwhile, at the public hearing, Jim Campbell echoed Chris' comments for supporting the bylaw change, plus the fee issue change request. Jim noted Edmonton, who approved city wide bees in April 2015, considered a fee, yet rejected the idea to ensure beekeepers didn't operate underground. He commented that RRAA, a local bee club, is available to **(cntd on pg 9)**

(from Pg 8) welcome new members, offer a liability insurance option, plus provide mentors, if needed. After the hearing, Jim was interviewed by CJOB radio.

Since it appeared the public hearing mood was favourable to supporting the bylaw proposal, James Patterson and John Russell opted to forego comments. There was no opposition voiced at the public hearing.

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Johns Hopkins Research at the Lyme Center

300,000 people become infected by Lyme disease every year in the US. About 80% have a good outcome when antibiotics are given promptly after the tick bite. Note, that the remaining 20% progress to chronic disease which is extremely difficult to treat using present CDC guidelines.

All the best, Ron Rudiak

10 February 16

The Problem Lyme disease makes hundreds of thousands of people sick every year. It is the most common tick-borne infection in the United States and one of the fastest growing infectious diseases. As the Lyme disease epidemic continues to spread across the nation, the number of cases is increasing, and many productive, highly functioning individuals are disabled. The impact on quality of life is significant and costs the medical system over a billion dollars per year.

Problems with Diagnosis and Treatment Some people miss the chance to diagnose the characteristic rash of Lyme disease and do not get treated for the disease at its earliest stage: either they don't notice the rash or don't go to their doctor, or the doctor doesn't recognize the diagnostic Lyme rash. Some people infected by Lyme disease never have early symptoms or they may mistake the fever and aches for a summer virus. Lyme can be hard to diagnose because many of its symptoms are non-specific and occur in many other diseases. Lyme disease can infect several parts of the body, such as the joints and nerves, producing different symptoms at different times. There is currently no vaccine to prevent Lyme disease. Without treatment, Lyme disease can become more and more debilitating.

The Needs

There is an urgent need for research into the complex problem of chronic Lyme disease. Physicians need new tools to identify and treat patients who have persistent symptoms even after antibiotic therapy.

*Better diagnostic tests and treatments can **only** be developed through research and expanded knowledge.*

The Need for Research

Lyme disease can permanently change a person's health. Currently, doctors lack the clinical tools to deal with the epidemic of Lyme disease and are searching for answers to help their patients.

- Diagnostic tests cannot yet accurately identify the earliest stage of Lyme disease when making the diagnosis is crucial. Because of this as well as the inconsistent ability to identify the hallmark rash, early Lyme disease is difficult to diagnose in a community practice

setting.

- No objective test to confirm cure and eradication of infection is available.
- Treatment options for patients with persistent symptoms after standard therapy have not been successfully tested or approved by the FDA.
- The lack of research into the cause of persistent symptoms has severely limited the ability of physicians to treat and restore health to Lyme sufferers.
- There is an urgent need for research leading to clinical tools that can improve the care of patients with Lyme disease.

The Solution

The Johns Hopkins Lyme Disease Clinical Research Center is a national leader in the search for solutions to the Lyme disease epidemic. Our mission is to promote research leading to the improved understanding of Lyme disease and its varied manifestations. At our center, we focus on translating research into clinical practice and we strive for a future where accurate diagnosis and effective treatment will bring better outcomes and new hope to Lyme disease patients and their families.

Research Mission

Our mission is to develop a translational research program that bridges basic science investigation to the clinical aspects of Lyme disease-related illness.

The Center focuses on the long recognized and newly defined group of individuals with post-treatment Lyme Disease syndrome. Our research aims to better understand the role of inflammation and immune dysfunction and its relationship to tick-borne infection both before and after initial antibiotic treatment. The goal is to clearly define and understand the cause of disabling symptoms these patients suffer and improve their diagnosis, treatment, and health outcomes.

Research Goals

The goal of our research is to discover an improved blood test that will allow for a more accurate diagnosis of Lyme Disease. These newly discovered tests will predict progression or relapse of the disease and allow us to test patients to see if they are cured. They will also allow us to develop new drug treatments for Lyme Disease.

Our long term goal is to develop interdisciplinary models for understanding the social, psychological, and biological aspects of all stages of Lyme Disease and tick-borne illnesses.

Publications

We have 15 manuscripts published in peer-reviewed journals across a range of disciplines, including infectious diseases, rheumatology, dermatology, sex and gender-based medicine, public health, and quality of life research.

Development of a Multiantigen Panel for Improved Detection of *Borrelia burgdorferi* Infection in Early Lyme Disease. Lauren J. Lahey, et. el. *Journal of Clinical Microbiology*. Volume 53, Issue 12, December 2015.

The article shows that a newly developed 10-antigen panel can improve sensitivity of blood testing in early Lyme disease.

Living in Limbo: Contested Narratives of Patients with Chronic Symptoms Following Lyme Disease. Alison W. Rebman, et. el. *Qualitative Health Research*. December 1, 2015.

Similar to other contested or medically unexplained syndromes, semi-structured interviews suggest that the social sequelae of PTLDS/CLD can be equally protracted as the physical effects of this illness.

Quantification of *Borrelia burgdorferi* Membrane Proteins in Human Serum: A New Concept for Detection of Bacterial Infection. Crystal S. F. Cheung, et. el. *Analytical Chemistry*. Volume 87, Number 22, November 2015.

This collaborative proof of concept report shows that a new method can accurately identify a major *B. burgdorferi* lipoprotein in a small sample of patients with early Lyme disease.

Health Care Costs, Utilization and Patterns of Care following Lyme

Disease. Emily R. Adrion, et. el. . PLoS ONE. Volume 10, Issue 2. February 4, 2015. Healthcare claims study shows Lyme disease costs upward of \$1.3 billion to treat.

Lyme disease and post-treatment Lyme disease syndrome: the neglected disease in our own backyard. Lauren A. Crowder, et. el.. Public Health. Volume 128, Issue 9. September 9, 2014. The need for further understanding and communication presents an opportunity for public health research and education in Lyme disease and the sequelae of PTLDS.

Characteristics of seroconversion and implications for diagnosis of post-treatment Lyme disease syndrome: acute and convalescent serology among a prospective cohort of early Lyme disease patients. Alison W. Rebman, et. el.. Clinical Rheumatology. June 13, 2014. The lack of seroconversion in a subset of patients, highlights the limitations of using serology alone in identifying early Lyme disease.

Serum Inflammatory Mediators as Markers of Human Lyme Disease Activity. Mark J. Soloski, et. el.. PLOS ONE. (2014) The levels of serum chemokines and the levels of expression of their respective chemokine receptors on T cell subsets may prove to be informative biomarkers for Lyme disease and related to specific disease manifestations.

Development of a foundation for a case definition of post-treatment Lyme disease syndrome. John N. Aucott, et. el.. International Journal of Infectious Diseases 17 (2013) This article describes the initial findings of the SLICE Study, showing results from the first prospective controlled study in the United States designed to specifically measure symptom and health related quality of life outcomes after the antibiotic treatment of early Lyme disease.

Atypical Erythema Migrans in Patients with PCR-Positive Lyme Disease. S.E. Schutzer, et. el.. Emerging Infectious Diseases www.cdc.gov/eid Vol. 19, No. 5, May 2013. This report re-emphasizes that the majority of proven cases of erythema migrans do not have the text book "bull's eye" appearance and therefore may be harder for patients and physicians to recognize as a sign of early Lyme disease.

Direct Molecular Detection and Genotyping of Borrelia burgdorferi from Whole Blood of Patients with Early Lyme Disease. Mark W. Eshoo, et. el.. PLoS ONE | www.plosone.org — May 2012 | Volume 7 | Issue 5 | e36825. This research col-

laboration shows that new state of the art methods can accurately detect the minute amount of DNA of the bacteria Borrelia burgdorferi in the blood stream of patients with early untreated Lyme disease.

Bull's-Eye and Nontarget Skin Lesions of Lyme Disease: An Internet Survey of Identification of Erythema Migrans. John N. Aucott, et. el.. Dermatology Research and Practice, Volume 20. The results of this survey demonstrate that individuals are unfamiliar with the atypical skin manifestations of early Lyme disease.

Probable late lyme disease: a variant manifestation of untreated Borrelia burgdorferi infection. John N. Aucott, et. el.. BMC Infectious Diseases 2012, 12:173. This review of patients seen in the community practice of medicine shows that some patients with untreated late Lyme disease may have only chronic symptoms and do not have the classic objective findings of Lyme arthritis or nerve damage.

Post-treatment Lyme Disease syndrome symptomatology and the impact on life functioning: is there something here? John N. Aucott, et. el.. Quality of Life Research. Published online: February 1, 2012. This study aims to describe a cohort of participants with early, untreated Lyme disease, and characterize post-antibiotic treatment symptoms and functional impact of post-treatment Lyme disease syndrome over time.

Sex Differences in the Clinical and Serologic Presentation of Early Lyme Disease: Results From a Retrospective Review Alison Schwarzwald, MPH et. el.. Gender Medicine. Volume 7, Issue 4, 2010. This paper shows for the first time that women's antibody responses used to diagnose Lyme disease may not be equivalent to those seen in men.

The Utility of "Google Trends for Epidemiological Research: Lyme Disease as an Example. Ari Seifter, et. el.. Geospatial Health 4(2), 2010, pp. 135-137. Article examines the potential of the Internet for monitoring epidemics of disease such as Lyme.

Unusual Presentation of Lyme Disease: Horner Syndrome with Negative Serology Candis Morrison, et. el.. J Am Board Fam Med 2009;22:219 -222. This article highlights an unusual presentation that most physicians would not consider to be a result of Lyme disease.

Diagnostic Challenges of Early Lyme Disease: Lessons from a Community Case Series John Aucott, et. el.. BMC Infectious Diseases 2009, 9:79 Accepted: 1 June 2009. This manuscript describes the variability in the presenting symptoms of Lyme disease and difficulty with its diagnosis in the community-based practice of medicine. It shows physicians' current, widespread difficulty in making accurate diagnosis and treatment decisions in early Lyme. -/-

**Red River Apiarists' Association - Winnipeg, Manitoba
2016 MEMBERSHIP APPLICATION**

I apply for membership in the Red River Apiarists' Association. Membership includes one-year subscription to the newsletter "The Bee Cause" (8 issues)

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