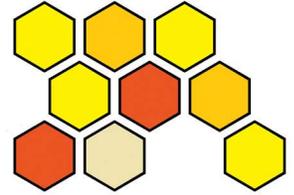


Pride and Propolis

(The RIBA Newsletter)



January 2020

Happy New Year! Here is my first attempt at filling the very capable shoes of my predecessors, Cindy Holt and Scott Langlais, as editor of your newsletter. I hope to receive a lot of great content from a wide variety of RIBA members over the coming months. Publication dates will be roughly first week of January, April, July, and October, at least for now. I hope to be publishing this before the Jan. 12 membership meeting. For this meeting, we're going to try something new – 6 RIBA members will do a short show-and-tell of a piece of beekeeping equipment that is somewhat out of the ordinary. We think that this will be educational and



entertaining, and it gives a number of members a chance to speak to the club, however briefly. They are: Ed Szymanski - Cloake board; Sara Michaud - Ross Rounds super; Jayne Devol - swarm collector; Calvin Alexander - uncapping plane; Scott Langlais - pollen trap; Tom Chapman - frame rest/ergonomic assist.



As I write this, winter is off to a pretty mild start, although we know that's not likely to be the case for long. Marian and I just had our yearly New Year's Day ritual of planning the gardens and ordering seeds. The days have just started getting longer and three of our hens are laying eggs already. You never know what's going to happen when homesteading in New England, but there's always a few surprises.

I hope your bees are healthy, well-fed and mites are under control, so they stand a good chance of surviving our winter, and let's hope for mild weather, pollen, and nectar to return soon!

I welcome any feedback and ideas you may have to help me make this a newsletter that you all will enjoy reading.

-Ed Szymanski

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Accompanying photos are by the respective authors, except where noted

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Photography: Emily Langlais

Programs: Ed Szymanski

EAS Director: Cindy Holt

Newsletter Editor: Ed Szymanski

Contributors to This Issue:

Ed Szymanski, Sara Michaud, Tina McDonald, Emily Langlais, Scott Langlais



The RIBA LIBRARY

80+ Titles and growing!

RIBA is constantly adding to its collection of beekeeping literature, comprised of the most up-to-date works on a wide variety of subjects. These books are free to borrow for any valid RI library card-holder.

The books you want can be picked up from whatever branch is most convenient for you. Simply navigate to <https://catalog.oslri.net/> to begin your search. Enter keyword “RIBA” and narrow the focus to Greenville.

Honeybee Democracy (Seeley) – Another Seeley masterpiece, this book goes into great detail about how the bees make collective decisions, especially relative to swarming, and helps us to understand why bees do what bees do, which can only help us with our management.

HONEY

Two Million Blossoms (Traynor) – A guide to the medicinal benefits of honey. Covers history of medicinal use of honey, mechanisms of healing, and practical applications for medicinal honey use. You can hone your farmer's market sales pitch by explaining the wonders of honey to prospective customers, or just learn for your own edification.

The Honey Handbook (Flottum) – Looks at honey differently than the book above. Covers honey plants, how bees process honey, extraction, bottling, sales, and more.

STORIES ABOUT BEEKEEPING

Beeing (Thomas) – The story of a woman's excursion into beekeeping after making a life change and how the bees further change her life forever. A switch from the "technical" reading.

Bee Time (Winston) – Mark Winston is a scientist and professor, but wrote this collection of stories that thoughtfully embrace our relationship with our bees. A favorite of mine.

BEE PLANTS

Victory Gardens for Bees (Weidenhammer) – We have most all of the bee plant books, and this one is our favorite. Information about different types of bees, planting guides, and garden planning.

Garden Plants for Honey Bees (Lindtner) – A field guide and reference manual of bee plants with ratings as to suitability and preference as nectar and pollen sources for bees. Full of photographs.

The Bee Friendly Garden (Frey/LeBuhn) – How-to guide to planning and creating pollinator gardens.

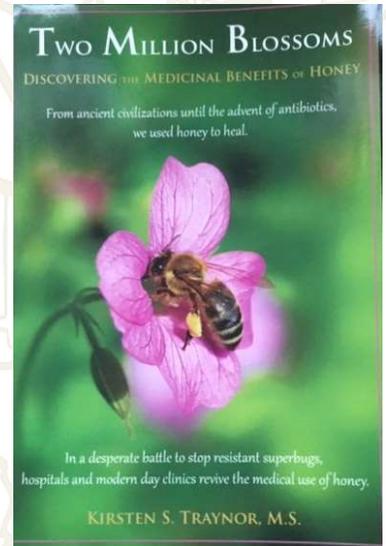
TEST PREP

Honeybee Biology and Beekeeping (Caron/Connor) – Dewey Caron puts together the written tests for the EAS Master Beekeeper program, enough said.

What Do You Know (Collison) – Clarence Collison is a Professor of Entomology. He put together this book of tests on every aspect of honey bees. It would be more aptly named "What Don't You Know?" because that's what it demonstrates. Answers with explanations at the end of each chapter. Absolutely essential for Master Beekeeper test prep.

BIOLOGY/GENETICS

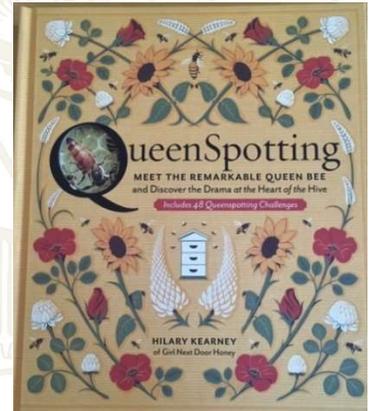
Mating Biology of Honey Bees (Koeninger/Ellis/Connor) – The comprehensive bee sex manual. Good distillation of very complex material.



The Biology of the Honey Bee (Winston) – a comprehensive explanation of honey bee anatomy and physiology. Very technical but also readable.

FUN

Queenspotting (Kearney) – A Christmas gift I love. 48 fold-out pictorial pages of queen spotting challenges, increasing in difficulty. People have also found varroa mites, yellowjackets, and possibly multiple queens. It's a blast.



What Do You Know (Collison) – In case you like taking tests just for fun.

FOR NEWBEES/REFRESHERS

Bee-Sentials (Connor) – A field guide to all things beekeeping.

Queenspotting (Kearney) – In between the picture puzzles, there's a lot of good basic info about bees and queens in particular.

SWARMING AND PREVENTION

Swarm Essentials (Repasky) – Steve Repasky is a Master Beekeeper, great speaker, and swarm catcher. Great guide to swarm prediction and management

There's also the journals - Bee Culture and American Bee Journal, state and county club newsletters, and Kirsten Traynor's new quarterly magazine, also called Two Million Blossoms. This should get you through the winter. Remember, RIBA has a well-stocked library at the Greenville Public Library so you don't have to buy them all.

Happy reading!

-Ed Szymanski

Meeting Recaps

SNEBA

SNEBA was held this year on November 23rd in Groton, Ct and featured Kim Skrym, David Tarcy and Larry Connor. Each presenter did two presentations.

The morning started with Dr. Kim Skrym (Mass. Chief Bee Inspector) giving us the "Buzz about Bumble Bees." Although Kim now works with honey bees her doctoral work was with Bumble Bees and her passion for all bees shows! While there are some similarities to honey bees there are many differences. Only the queen overwinters and in the spring starts the colony herself from scratch. The queen is very particular about where she begins the nest. They will typically look for someplace warm and pre-made such as in a birdhouse, hay bale, vole hole, etc. The entire colony will only live 3-6 months with the goal of producing several queens to overwinter.

They do produce honey but you will only find 1-2 tablespoons in their nest. Interestingly, they can be reared indoors but require specific temperature, humidity, light and feeding requirements (and you would have to catch a queen without pollen on her legs first). To help Bumble Bees plant a variety of plants that bloom in April for those queens waking up to start a nest.

Up next was Dr. David Tarpy of NC State. His first presentation was about the Quality of Commercial Queens. He discussed experiments designed to measure the quality of queens and looked at physical characteristics (body size, parasitism, etc), insemination quality (sperm count and viability), and mating quality (number of drones, colony diversity). First in detail experiments were design to look at physical qualities. Physical size showed that there were more variations within a single queen producer than among the producers (All queen breeders make good and some bad queens). Measuring number of ovarioles, level of vitellogenin, testing for Nosema and Tracheal mites, and number of drones a queen mated with all were not issues with commercially produced queens. Sperm counts in a queen's spermatheca found that on average the queens held about 4 million sperm. 5-7 million is considered good. 19% of the queens held under 3 million and 80% under 5 million. Perhaps an issue? There were some ideas that shipping temperatures would effect the sperm viability, queens that got cold would have less viable sperm. Temperature probes were installed around bee packages that were being shipped with some being warmer in the center of the truck and some colder on the outside. 25% of the queens failed in 2 months. However there was no correlation to the temperature while being shipped of the failed queens. The overall conclusion was that there are no queen producers that are better than others. They all produce good queens and bad queens, but queens are not living as long and reasons remain unknown.

The final presentation before lunch was Dr. Larry Connor who presented on the History of Queen Rearing. He began discussing some of the earliest attempts at queen rearing and the issues. Early anatomical knowledge left out the valvifold that blocks sperm from entering the spermathecal. In early queen instrumental insemination some attempts were unsuccessful because the valvifold was in the way. As knowledge progressed so did the tools that were used. These tools allowed the sperm to pass the valvifold and enter the spermathecal. Dr. Connor presented many images of the early tools and how many of the current tools are very, very similar.

After lunch, Dr. Kim Skyrn gave her Fight Back: Varroa IPM presentation. She discussed the phoretic and reproduction stages of mites. Previously, it was thought that only one female mite would enter a cell to reproduce but now it is known that multiple females can occupy one cell. This is an advantage for the mites for genetic reasons. When a female mite enters a cell the first egg laid is male. The female is then able to lay up to 3 female eggs (in a drone cell). Those females will then mate with their brother. If more than one adult female mite enters a cell her daughters can mate with the male from another mite rather than their brothers. She discussed many of the IPM options such as reducing population density (spacing colonies 10' or more, manage smaller colonies), supporting social immunity (swap out old frames, leave propolis, screened bottom boards), maintaining genetic diversity, using non-chemical tools (brood breaks, drone brood removal) and chemical mite controls. It was emphasized to follow the instructions given for each of the chemical tools! Additional resources were presented such as the Bee Informed Partnership Varroa guide, Cornell guide for Varroa, and a workshop at UMASS-Amherst on May 2nd on mites.

Dr. Tarpy's second presentation was on Diagnosing Queen Problems. Dr. Tarpy presented on an array of research looking at all the many ways that good queens can go bad. It turns out it isn't always the queen's fault! There were 4 categories looked at: biological, chemical, management and environmental. A few of the most interesting points were that the environment the queen is in made a big difference. In one study they took queens from hives that were laying poor brood patterns and queens from hives that were laying good brood patterns and switched them. They found that queens that were laying bad brood patterns began laying good brood patterns and the queens that were laying good brood patterns began laying poorly! Another study, they gathered drone laying queens and put them in different hives. 60% of those queens ended up laying worker brood with a good pattern! A few practical tips were discussed. First, queens made from older larvae will be poor queens. If you are doing a walk away split, go in 5 days after the split and remove all the capped queen cells (they were made from older larvae). All the remaining uncapped queen cells were made from young larvae. And final tip and conclusion, before re-queening a colony one needs to fully assess the colony wide symptoms, the issue may not be the queen herself but something else that re-queening won't fix!

The day concluded with Dr. Connor presenting on Evaluating the Sustainability of Biodynamic Beekeeping. He presented the many aspects of biodynamic beekeeping. First, discussed use the use of natural comb and using popsicle sticks as starter strips avoiding the use of wax from the start. Some limitations are regarding stability of the wax frames, although ideal for cut comb, and that more of a colony's resources each season would need to go into comb building. Smaller cell size is often promoted for purposes of helping to control mites as it is thought smaller bees will develop faster limiting mite reproduction. However, there is no research to support this. There are a few no-no's in biodynamic beekeeping: no plastics (including bottling honey), no syrup or pollen substitute feeding (nectar and pollen only), no queen wing clipping, no re-queening, no instrumental insemination, no grafting, no pesticides or antibiotics, no bee packages or nucs (swarms only). Each of these have their own advantages and disadvantages!

Overall, SNEBA is a local conference with great speakers, good company, lunch provided and vendors who will gladly sell you what you need for your bees. They announced that they are working on getting Dr. Tom Seeley, Sue Cobey and Dr. Dewey Caron. Sure to be great again in 2020!

-Sara Michaud

Upcoming Events

- **January 12:** General Membership Meeting, Guy Lefebvre Community Center, Coventry, RI; speaker: Gadget show-and-tell, 6 RIBA members
- **February 9:** General Membership Meeting, Guy Lefebvre Community Center, Coventry, RI; speaker: Garry Casabona USDA State Biologist
- **March 8:** General Membership Meeting, Guy Lefebvre Community Center, Coventry, RI; speaker: Mary Blue, Farmacy Herbs
- **March 14:** Mass Beekeepers Association Spring meeting, Topsfield Fairgrounds, Topsfield, MA
Speakers: Tom Seeley, Kirk Webster

Are You RIBA's Next Master Beekeeper?

"There is a need for competent bee masters to provide education and assistance to beginning beekeepers and serve in other capacities in the community as experts in beekeeping. The Master Beekeeper program has been developed to certify qualified beekeepers to serve this need." –EAS website

There are a number of different master beekeeper programs throughout the country. Some are offered by beekeeping clubs, or regional organizations (like the Eastern Apicultural Society). Several universities offer certification; these programs are often available online. If you want to take your beekeeping to the next level, a MB program may be just the ticket for you. Each program has its differences, but a wide ranging knowledge of all aspects of bee keeping will be a common component among them. Likewise, all of these programs can be expected to be quite challenging; passing is not a guarantee.

Photo ; Emily Langlais

Currently I am only aware of six RIBA members with Master Beekeeper credentials—3 through EAS, 1 through Cornell University, and 2 through University of Montana. Considering our association boasts over five hundred members, this is really a very small minority. I want to encourage all members to consider one of these programs. You may not be ready today, but if you think you're up to the challenge, now is the time to start preparing, particularly if you want to



try for the EAS certification. EAS 2020 will be held in Orono, ME; in 2021 it will be hosted by UMass Amherst. This presents a unique opportunity for Rhode Islanders to access these tests without the onus of painfully long drives or airline travel (the last two conferences were held in South Carolina ('19) and Virginia ('18) for instance).

Your particular learning style should be a prime consideration in choosing a program. If you favor a relatively traditional format of regularly scheduled lectures and periodic quizzes, one of the university programs may be right for you. University of Florida's new program is relatively unique in that it does not require ANY previous beekeeping experience. The entire process takes five years to progress through various levels (Apprentice, Advanced, Master, and Master Craftsman). This program is still being developed. University of Montana also has successive levels that must be passed (Apprentice, Journeyman, and Master), each in a separate online class, with a fee for each class. These classes can count for academic credit toward a university degree with an optional fee. An interesting feature of the Oregon State University program is that at the Master level they require 100 hours of community service, in addition to the usual testing and other requirements.

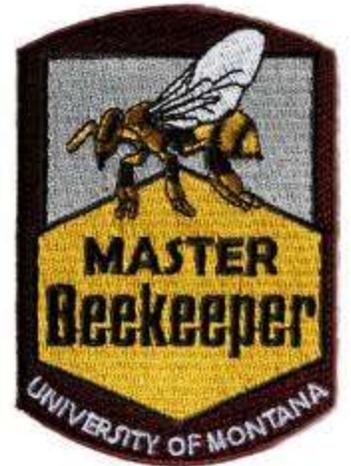
Cornell University has just completed its second year of MB certifications. Their program is 15 months in duration, comprised of four online courses. The final testing is done in person at the Dyce Lab for Honey Bee Research, in Ithaca, NY. 3 years of beekeeping experience is required. This is one of the more “fast-tracked” of the university programs and may be a good fit for those who already have a great deal of experience and personal bee education, as opposed to some of the other multi-class/multi-year certificates. A 2018 practice test I saw was extremely rigorous, on a par with the legendarily difficult EAS written test.



Unlike these class-based programs that offer specific instruction on the areas you will be tested on, EAS expects that its candidates will complete their studies independently, in whatever manner they see fit. This open-endedness can be challenging; you will have to be prepared for almost any question pertaining to ALL aspects of bees and beekeeping: biology, behavior, pollination, honey, hive products, disease, etc. The four part test (written, oral, lab, and field test) is offered over the course of a few days only once a year during the annual conference.

Most applicants do not pass all four sections in the same year, but you only need to retake the sections you failed to complete the certification. This program dates back to 1980, and was originally designed by Dr Roger Morse of Cornell University. Their website offers lots of resources for potential candidates—recommended reading lists, past years' tests, and other tips. A minimum of 5 years of experience is required, as well as a letter of recommendation.

The RIBA library collection, housed at the Greenville branch of the public library, was designed to be a resource for potential MB candidates. The book list was initially based on the EAS recommendations and grew from there. RIBA will also offer a one-time reimbursement for the cost of testing (limitations apply). Those of you who follow the Facebook group may have seen a practice test that was posted as a study aid. We plan to continue to post practice quizzes and are continually looking for new ways to help those who want to pursue their certification. Those of us who have gone through the testing can certainly offer tips on how best to prepare. Ed Karle's detailed recommendations were invaluable to my own testing at EAS 2018.



What I find most attractive about these programs is the emphasis on serving as a resource to the community. These are not intended to simply be certificates that you hang on a wall. OSU has codified this by writing a public service requirement into their certification, but it is a common expectation among all the programs that I've seen. A Master Beekeeper is intended to not only be a reliable source of information, but an ambassador for the entire beekeeping community and the public in general.

-Scott Langlais

RIBA Master Beekeeper Practice Quiz 01

1. List two conditions under which drones would be reared in worker-size cells.
2. List four factors that could negatively effect introduction of a new queen.
3. What is the name given to the dusty appearance that can occur on beeswax products?
4. Define anther dehiscence.
5. Swarms prefer bait hives ____ feet off the ground.
6. What are the three dominant sugars found in almost all nectars?
7. This disease generally kills larvae 2-4 days old; occasionally death occurs during the pupal stage.
8. How many days does it take for a female varroa egg to hatch into an adult?
9. What is the most abundant monosaccharide in honey?
10. The angle of the waggle in the waggle dance corresponds to what?
11. Name three factors that can influence development time from egg to adult.
12. What is the name for the refuse from melted combs after wax is removed?
13. Where in the hive would chalkbrood be most prevalent?
14. Movement of colonies to California for almond pollination typically occurs in what month?
15. What is the scientific name for the small hive beetle?
16. At what moisture content will honey not normally ferment?
17. Will capped queen cells inhibit worker ovaries in a queenless colony?
18. Name four diseases that produce spores.
19. Bees begin to form their winter cluster at what temperature
20. Larvae are no longer susceptible to American foulbrood after they are ____ hours old.

Some of the better known programs:

- **EAS** <http://www.easternapiculture.org/master-beekeepers.html>
- **Cornell University** <https://pollinator.cals.cornell.edu/master-beekeeper-program/master-beekeeper-corner/>
- **University of Montana** <https://www.umt.edu/sell/programs/bee/>
- **University of Florida** <https://entnemdept.ifas.ufl.edu/honey-bee/extension/master-beekeeper-program/>
- **Oregon State University** <https://extension.oregonstate.edu/mb>

-Scott Langlais

BEE KEEPERS ASSOCIATION

HOPE

Apimondia 2019

Montreal! Our destination for those of us who attended the 46th International Apicultural Congress this past September. Beekeepers, scientists, exhibitors and all manner of friends of bees gathered to share ideas, products, experiences and visions for the future. It is held every 2 years hosted by different countries: the 2017 congress was held in Turkey, 2015 was in South Korea, and the 2021 congress will be hosted by Russia. The fact that Apimondia was coming so close to home in neighboring Canada was an opportunity I definitely didn't want to miss! I was not alone, as I recognized a few faces from RI among the 5,000 registered participants from all over the world.



This year's main theme was "Beekeeping together within agriculture". Over 100 speakers from 25 different countries presented over 4 days on topics with 7 general themes ("Apimondia Standing Commissions"). These are: beekeeping economy, bee biology, bee health, pollination and bee flora, beekeeping technology and quality, apitherapy, and beekeeping for rural development. There were several key note speakers who presented to everyone, but otherwise attendees had to choose between multiple speakers and topics being presented simultaneously. Because of that, the bulk of the presentations I attended were centered around my passion: apitherapy 😊. There were also an unbelievable number of poster presentations which changed daily, also organized by the 7 general themes. The world wide interest in honey bees was staggering.

It was easy to get information overload while attending the multiple lectures, and the Apiexpo created a much needed diversion as well as a forum to get hands on information. 241 exhibitors shared the huge space to promote their organizations, businesses and products. Organized by country, it was completely fascinating to experience what each region had to offer. Topics ranged from industrial beekeeping equipment to cosmetics, nutrition, art, non-profits and everything in



between. You could wander around for days (which I did, on and off) and I met some really interesting and inspiring people while doing it! There were lots of freebies and samples being passed around, too. This area also was home to the world beekeeping awards. Entries were on display in categories such as honey, beeswax, mead, cosmetics, medicines, artistic exhibits, and apiculture inventions. It was truly quite stunning.

One of the highlights of the closing and awards ceremony for me was the presentation of the first Dr. Bodog F. Beck award. Dr Beck, born in Hungary and practicing for a time in New York, was an early pioneer of bee venom therapy. This award was founded by Michael Simics, world-renowned bee venom expert, and was awarded by the Hungarian Apitherapy Association. The award was presented posthumous to Charles Mraz, and accepted by his daughter Marna Mraz. Charles Mraz, the Vermont beekeeper is known by many as the dean of the therapeutic use of bee venom in the US. Mraz was the co-founder of the American Apitherapy Society (www.apitherapy.org) which continues to carry on his legacy by educating the public and health care community and promoting science and research on all apitherapy related topics. Pretty cool stuff.

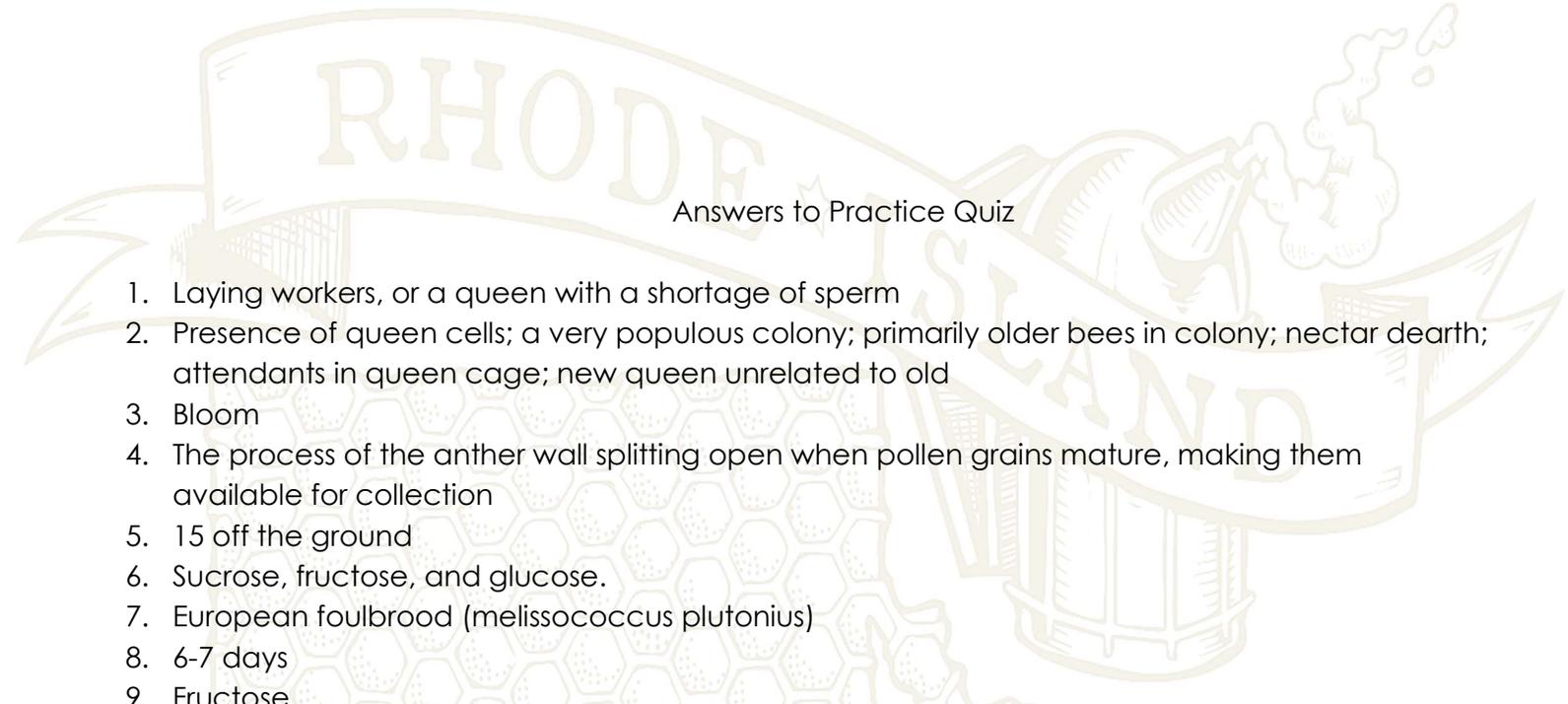


I extended my stay in Canada to attend an exciting tour focused on apitherapy. There were many different optional tours to choose from, literally something for everyone! Our group visited Happy-Culture (www.happycultureinc.com) and had a tour of a small structure with several langstroth hives with a unique design built for beehive air therapy. This multigenerational family were not only beekeepers, but also worked as a family to produce the most delicious maple syrup on their property that I have ever tasted! We also had the opportunity to visit a small scale commercial apiary, Miel Fontaine (www.mielfontaine.ca) in Monteregie, Canada. They shared various techniques for maintaining their 100 hives, as well as providing samples and demonstrations of preserving their hive products including mead, honey, propolis, fresh pollen and royal jelly. Trust me, the people attending the tour with me were just as interesting as the tour itself! It is here that I met Dr. János Körmendy-Rácz, president of the Hungarian Apitherapy Association and speaker at Apimondia, in general a very entertaining person with a wealth of apitherapy and beekeeping knowledge. I also met the coolest beekeeper from Kazakhstan. He didn't speak a lick of English, but luckily for me he was traveling with people who could translate: I learned he was a commercial beekeeper with over 1,000 hives, providing honey for Sun Bee, a large company in Central Asia. He found it pretty funny to learn I had 4 hives myself! He shared his honey with me and we had fun checking out what our favorite pollinators were doing in Canada.



Overall, this was an incredible experience- I am so happy I went! I got my first passport, discovered that I still remembered some French from high school, ate several helpings of poutine, and realized my love for honey bees and their medicine is shared across the world. I have been inspired by Apimondia- many thanks! Hope some of you will consider attending in the future ☺

-Tina McDonald



RHODE ISLAND

Answers to Practice Quiz

1. Laying workers, or a queen with a shortage of sperm
2. Presence of queen cells; a very populous colony; primarily older bees in colony; nectar dearth; attendants in queen cage; new queen unrelated to old
3. Bloom
4. The process of the anther wall splitting open when pollen grains mature, making them available for collection
5. 15 off the ground
6. Sucrose, fructose, and glucose.
7. European foulbrood (*Melissococcus plutonius*)
8. 6-7 days
9. Fructose
10. The angle of the sun to the food source.
11. Broodnest temperature; nutrition; genetics (race of bee)
12. Slumgum
13. On the outer fringes of the broodnest where sufficient nurse bees are unavailable to maintain temperature.
14. February
15. *Aethina tumida*
16. 17.1%
17. No, queen cells will inhibit worker ovaries in a queenright colony however.
18. American foulbrood, nosema, chalkbrood, stonebrood
19. 57 degrees F
20. 53 hours old



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