

Honey Bees and Pollination

What's the Buzz Newsletter

March – April 2017

Upcoming Events

ATTTA is organizing a bee workshop for Saturday, May 27th at the Curryville Centre in Albert County, NB. Foods of the Fundy Valley is the group coordinating this. It is tentatively being held from 10 am -3 pm. At this workshop, bee biology, spring management (spring dwindle, common pests and diseases, preparing for pollination, splitting hives, spring feeding, swarm management, etc.), and some summer management will be touched on. A local beekeeper is going to bring a couple of hives for an inspection demo.

NBBA/NSBA Meeting

The first week of March was capped off with an eventful joint New Brunswick Beekeepers Association and Nova Scotia Beekeepers Association annual meeting held at Crandall University in Moncton. Beekeepers from all over the Maritimes met together to discuss the state of the industry in their provinces and the Maritimes as a whole and later separated into separate NB and NS business meetings. Attendees were also treated to three special guests: Christy Curran, Karen Thurlow, and Randy Oliver.

Randy Oliver

ATTTA, NSBA and NBBA were fortunate to be able to bring Randy to Moncton to give several great lectures on beekeeping. Randy is a well-known commercial beekeeper from the Sierra Foothills of California and runs the website www.scientificbeekeeping.com which he regularly updates with thoughtful and informative entries about the biology and management of beekeeping. He does not endorse products and refrains from recommending specific management tactics to beekeepers and instead promotes thinking for one's self and making educated management decisions based on a thorough comprehension of honey bee biology. Of course, not every beekeeper has access to or the time to explore the myriad of scientific literature that has been published to this date. As a biologist himself, Randy summarizes the literature on certain aspects of apiculture and translates data into more digestible formats.

In addition to managing bees, Randy and his sons conduct applied research of their own. Randy's first lecture, given at the Dalhousie Agricultural Campus in Bible Hill which preceded the NBBA/ NSBA meeting, entitled *Research Tips for Beekeepers* touched on this aspect of his operation. We found this lecture to be perfectly suited for our own tech transfer team as one of ATTТА's mandates is to conduct applied research. This lecture introduced many themes of his subsequent lectures, like the idea that, 'most assumptions in beekeeping turn out to be false when tested'. One such assumption he alluded to is that infection of honey bees with the microsporidian *Nosema ceranae* causes dysentery while there is no evidence to support this claim. Dysentery is caused by other factors like poor nutrition but can exacerbate an infection of nosema by acting as a medium through which spores are spread in a colony. Many beekeepers rely on methods that they have either learned from other beekeepers or that are repeated throughout several books/online guides. Many of these methods are tried and true but every beekeeper possesses the ability to assess a claim's validity on their own. Randy suggests "Asking the bees," for information instead of other beekeepers.

How then do we get a colony of social insects to tell us what is best for them? One of Randy's lectures at Crandall University, *Reading the Comb*, addressed this idea. For example, predicting when to supplement a hive with pollen substitute can



be difficult. Local beekeepers may have conflicting opinions and beekeeping manuals do not necessarily reflect what is most appropriate for local conditions. One who is armed with an observant eye and a knowledge of honey bee biology can make an educated decision about the right time to feed. Randy taught us that nurse bees will feed developing larvae a surplus of jelly during times when there is plenty of natural pollen available and the bare minimum during a dearth. It only takes a glance at the young larvae in a brood frame to decide whether the colony can use a boost of protein or if it's faring fine on its own. Beekeepers risk wasting money by simply applying pollen patties at the same time every year because it is 'that time of year again'.

Randy warns against the dangers of adhering to a specific management schedule simply out of routine. Every management decision should be thoughtful so that one doesn't find themselves applying quick-fix or 'band-aid' treatments or promoting the development of resistance in populations of pests and pathogens. It came as a surprise to hear that despite running a relatively large commercial beekeeping operation in California, Randy has not applied a synthetic pest or pathogen treatment to any of his hives in decades. He does not refuse synthetic treatments as an ideological principle; his thoughtful management decisions and selection of hygienic stock afford him this ability. After listening to all five talks Randy gave during his trip to The Maritimes, it is clear he is an advocate for smart beekeeping. 'Smart' however, does not imply that advice from the top honey bee academic beekeepers is necessarily the best. Smart means exercising careful consideration and paying attention to the details of what is happening inside a hive.

Karen Thurlow

We were also pleased to see Karen Thurlow, a master beekeeper from Maine, again at the joint meeting. Twice so far, ATTTA has invited Karen to lead a workshop wherein participants learn to dissect samples of their bees to analyze their gut and tracheal contents under a microscope to determine infection with nosema and tracheal mites. These simple dissections can be done out in the bee yard with a portable battery powered microscope to give beekeepers a real sense of whether treatment is warranted. It is possible, that treatment for nosema occurs more or less than is actually needed in a particular operation because, other than the field method taught by Karen in her workshops, there is no quick and easy way to monitor for nosema like there is for varroa mites, for example.

Karen brought some of her portable microscopes to Crandall University and some prepared slides with nosema and tracheal mites so beekeepers could get a sense of what these microscopic entities look like and what they might expect if they were to employ this method of monitoring in their own operations. We look forward to seeing Karen again and hosting more of her valuable workshops.

Christy Curran

All the way from Beaverlodge, Alberta travelled Christy Curran, the research projects coordinator of The National Bee Diagnostic Centre, to update us on some of the results from the National Bee Health Survey that ATTTA collected in 2016. It was interesting to learn about the differences in disease and pest profiles between the Maritime provinces and western provinces. For example, varroa mites seem to be more prevalent in the Prairies than they are in Atlantic Canada, whereas the opposite is true for fungal pathogens. Although the survey results presented in Moncton were aggregated by province, beekeepers will be receiving personalized detailed breakdowns of their apiaries' disease and pest profiles later this spring. We look forward to participating again in the 2017 round of the survey, especially since a new set of wax samples will be taken to be analyzed for pesticide residues, which was not done in 2016. Thank you to the beekeepers who participated in the survey in 2016!

Speaker Christy Curran and Randy Oliver with ATTTA apiculturists Cameron Menzies and Robyn McCallum



Spring Turnover Management

Once winter's reign of consistently sub-zero temperature is interrupted with milder weather, Atlantic Canadian beekeepers and their colonies alike will begin to spring back into action. Late winter/early spring marks the arrival of occasional warm days which afford bees the chance to carry out cleansing flights. These same days also provide beekeepers opportunities to check their hives' food stores. Colonies facing the challenge of making it through the elements brought on by Atlantic Canadian winters are not out of the woods once milder weather reappears. The transition of winter to spring is a critical time in the seasonal development of a colony as it is at risk of dwindling and failing.

Overwintering queens will begin egg-laying as days consistently above 4°C return, even if the nights are still cold. The long-lived 'winter bees' now get to perform the duty they have been surviving for months waiting to accomplish: rearing the next round of short-lived 'summer bees', a process known as 'spring turnover'. In order to do so, they must feed the developing larvae a source of protein and sugar. Natural colonies of *Apis mellifera* that evolved in more temperate European and Asian climates would have access to natural pollen outside the hive in these early spring months. In Atlantic Canada however, there is often a critical gap between the recommencement of brood rearing and the first available natural pollen from early flowering trees like alder and maple. Starved colonies in March and April experiencing nutritional stress are more susceptible to diseases like EFB and chalkbrood and risk collapsing. If there is not enough protein stored in the hive in the form of bee bread in cells or within the bees themselves, colonies will have to be fed a pollen substitute. The same may be needed for a source of sucrose; as brood rearing begins again, the rate of consumption of stored honey in a hive increases. An appropriate spring sugar feed to stimulate brood rearing is a 1:1 sugar solution. If the bees are still in cluster formation, the pollen or sugar feed must be placed in close proximity to the cluster because bees will not be able to access feed some distance away in the hive. See ATTTA's February *What's the Buzz* newsletter on the 'baggie method' of feeding. If the cluster is loose and bees are walking more freely around the hive, a frame feeder can be used to deliver the nectar substitute.

Beekeepers may choose to remove their winter wraps at this time of year as well. The advantage to doing so is to avoid overstimulating brood rearing while natural pollen resources are not available, necessitating costly feeding. Of course, this is a gamble because weather is highly variable in early spring in Atlantic Canada and hives risk being exposed to the same conditions in March and April that they faced in January and February if a cold snap arrives. Experience and monitoring hives on mild days in the early spring will put beekeepers in a better situation to making the right call.

For more information on spring colony management, consult ATTTA's *Spring Management Guide* expected to be published soon at www.perennia.ca.

Bee Line

The pollination season of lowbush blueberries in Atlantic Canada is also fast-approaching. Blueberry growers in Nova Scotia seeking hives for pollination and beekeepers seeking pollination contracts can consult the Bee Line at <http://www.perennia.ca/fieldservices/honey-bees-and-pollination/beeline/>.

Ordering Bees

New beekeepers or existing beekeepers looking to expand their operations do not want to miss out on their chance to order queens/packages or nucs. Consult your local beekeeping association website for postings on local beekeepers selling nucs and packages and instructions and the regulations around ordering queens from outside the country.