

# The Bee Line

Newsletter of the Maine State Beekeepers Association | [mainebeekeepers.org](http://mainebeekeepers.org)

Honey Bee Viruses...	1
From The President's Desk...	3
Keeping Time...	6
Integrated Pest Management...	8
EAS Honey Show...	10
Quiz...	11
Is the Dearth Real?...	12
Annual Meeting...	13
Swarms...Tis the Season...	15

## Honey Bee Viruses

by Jane Dunstan

Honey bee colonies continue to suffer harmful effects from mites and viruses which both adversely affect their health, hardiness and longevity. Much has been written about the necessity of management and timely treatment of the varroa mite when numbers exceed the recommended threshold. However, there is less discussion on the impact that the varroa mite has in spreading viral disease in the hive or, for that matter, how viruses are actually transmitted from bee to bee. There is much yet to be discovered concerning the dynamics of virus transmission and the relationship and interaction between the honey bee as the host and the infectious agent. The purpose of this article is to examine what has been learned about viruses and how they are transmitted to our honey bees.

Varroa destructor has the ability to act as "a viral reservoir, incubator, activator and transmitter resulting in levels of certain viruses that affect the survival of the colony" (Tantillo et al., 2015). Varroa mites are ectoparasites (live on the outside of their host) and primary vectors of viruses which affect the honey bee. It has been shown that the occurrence of both high mite infestation and viral infection is most often associated with the death of honey bee colonies (Brutscher et al., 2016).

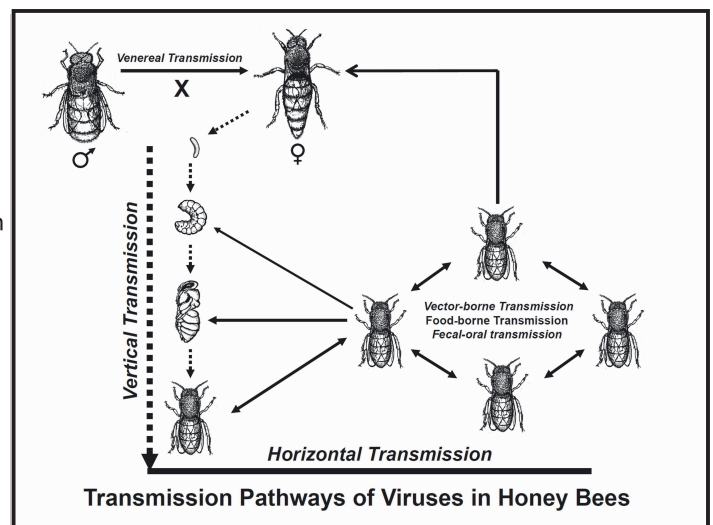
There are several characteristics of viruses which are important to examine. Viruses are found in all living things. They are parasitic, meaning they cannot reproduce without a host. Viruses do not have their own metabolism and are completely dependent upon the life of their host. Once inside the host, the virus completely overwhelms all of the components of the host cell. The virus inserts its own genetic code or blueprint and takes over the functions of the host. Simply put, they move in lock, stock and barrel, using everything that is already present in the host to reproduce their own offspring called virions. In this process, the host is harmed, resulting in disease or death (Chen et al., 2006).

Honey bee viruses are primarily positive sense single-stranded RNA viruses and reproduce themselves in the cell cytoplasm of the host (Chen et al., 2006). There are 24 viruses that have been identified in the honey bee, mainly from the order Picornavirales. Investigations of colonies which were collapsing from high varroa infestations were found to be overwhelmed with high levels of Picornavirales (Remnant et al., 2017).

Viruses transmit infection to all stages of bee development which includes eggs, larva, capped brood and adult honey bees. Virus infections are often dormant or latent without obvious signs of disease,

however can be manifested by physical deformities, paralysis or death of the host. Colonies can have more than one virus in existence at the same time (Chen et al., 2006). Most honey bee viruses have been known to scientists for over 50 years and were relatively common, existing and multiplying within the host without causing obvious symptoms until the problematic arrival of the varroa mite (Moore et al., 2016).

Viruses are transmitted via two primary routes: vertical transmission, horizontal transmission or both. In horizontal transmission, the virus is transmitted among members of the same generation, i.e. worker bee to worker bee and can be further categorized as direct or indirect transmission. Vertical transmission occurs between the queen to her offspring either on the surface of the egg or within the egg itself (Chen et al., 2006).



Transmission of viruses in honey bees. Solid lines represent horizontal transmission and dotted lines represent vertical transmission. Reprinted with permission from the author from "Horizontal and vertical transmission of viruses in the honey bee, *Apis mellifera*". Yanping Chen, Jay Evans, Mark Feldlaufer, March 12, 2006

continued on page 4

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\*Open to all MSBA members for discussion with voting to be done by current BOD members only. Meetings generally held at the Viles Arboretum, 153 Hospital Street, Augusta or via conference call. Please contact a board member for details.



## Call for Advertisers and Content!

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## From the desk of the President

As I write the president's message for this issue of the Bee Line, I find myself wondering when spring will arrive in earnest. I'd really like to have some decent weather to work my bees. I'm sure they've missed me. I know I've missed them. It has been one long winter and an even longer spring with an endless number of cold, rainy events here in the north. There is some good news to report. I think this cold, wet spring has actually helped our overwintered hives recover with many building up and coming through very strong as of mid-May. It would seem that with the lack of flying days, more bees have been in the box to assist with heat generation and brood rearing. In checking my hives here in the mid-coast/central Maine region, many are at 16-18 frames of bees, with some at 20, and my swarm season is about to hit, whether I'm ready for it or not. So the moral of the story is that even when we think the weather is poor, the bees are still strong, know what they are doing and coming through right on time. Are you ready for swarm season? By the time you read this, it will be here.

I have some good news to report from our last board meeting. Bob Foster, Chair of the Information & Education Committee, presented the final outline for a Beginning Beekeepers Course that is now officially adopted by the MSBA. This recommended curriculum provides a set of guidelines for what should be addressed and what students are expected to learn in a beginning beekeeping school anywhere in the state. This is information that has been requested of us as new bee schools are developing and no such guidelines existed. I think it is important to point out that these

are *bare* minimum guidelines, allowing instructors and chapters to be creative and customize them to their needs. It will be posted to our website shortly, and that brings up another topic: a website overhaul.

The website is going to get an overhaul to better meet our organizational needs and those of our members. Vice President and Chair of the Communications Committee, Judith Stanton, has been working all winter on this and presented findings which revealed that our website is out of date, unsecure, not mobile friendly, and has become unmanageable in its' current form. The board, through discussion, agreed and will make a decision in June as to what format to proceed with. Hopefully the new site will be up and running before our registrations open for our annual meeting.

While on the topic of education, don't forget to put the date of October 12, 2019 in your calendar for our annual meeting at Brunswick High School. Our featured speaker will be Dr. Jamie Ellis, a widely sought after national presenter who teaches, lectures and writes for Bee Culture. We will also have our own recently retired Dr. Frank Drummond.

If you are looking to travel for some education, why not try out either the EAS show in Greenville, SC on July 15-19, 2019 or Apimondia International Apicultural Congress in Montreal, Canada on September 8-12, 2019. Apimondia is a worldwide beekeeping organization that was last in North America 20 years ago in Vancouver. If you are interested, look them up online at [www.apimondia2019.com](http://www.apimondia2019.com) and see if this is for you. Many thousands of beekeepers attend from all over the world to talk and learn about bees. It should be a fabulous learning experience for all those who attend.

On the local scene, I'd like to congratulate the Kennebec Beekeepers for holding their first ever Bee School this year. This group is growing and from all the positive comments I have been hearing, a big

CONGRATULATIONS is in order. I am looking forward to what the future brings concerning this group.

Are you looking for something to do which will have an impact on this world? Become involved and be a mentor to a new beekeeper. We can learn the basics in beekeeping class but the real learning takes place in the field and that is where newbees need some assistance. Let's assist them like we were assisted and ensure proper management is being performed statewide. I love hearing stories of how groups of local beekeepers get together and treat their hives regionally at the same time to control the varroa mite. This is one way to increase your odds of success without the problematic late fall "mite bomb" from a neighbor's failing hive. Many times if someone isn't treating, they just don't know any better. Introduce yourself, your chapter, and/or the MSBA and offer assistance. Everyone can always use a mentor. The more we know, it seems like the more we need to learn.

Now don't be afraid, go get that swarm. The bees need you.

Dave

## EAS 2019



Greenville, South Carolina is going to the bees!  
Spread the word!  
Save the date!  
July 15-19, 2019

*continued from page 1*

In looking at the direct pathway for horizontal transmission of viruses, this avenue would include air-borne infection as well as food-borne transmission of infection where bees eat and share food contaminated by virus and then pass the virus in their feces (Chen et al., 2006). In a honey bee colony, horizontal transmission of disease occurs when nurse bees feed royal jelly to developing larva, when worker bees receive and process pollen and nectar from foragers, as well as during the interaction between the queen and her retinue. Studies have documented the detection of several viruses in both pollen and honey which were then transferred to an uninfected queen by her attendants and later detected in the eggs and larva (Brutscher et al., 2016). As a result of the densely populated conditions in a colony structure and frequent contact between members of the colony while sharing food or by chemical communication, the opportunity for transmission of disease is great (Chen et al., 2006).

With vertical transmission, studies by Chen et al. (2006) found that queens can be infected with not only one virus, but multiple viruses and confirmed that eggs can also have viruses from the infected queen. Further research found that when queens were tested and found to be positive for certain viruses, those same viruses were found in all developmental stages of the bee, despite lack of overt symptomology (Chen et al., 2006).

There is also indirect transmission of viruses by the varroa mite and nymph while using their mouth parts to pierce the body wall of bees in different stages of development. Their movement between brood and adult bees perpetrates the occurrence of vector-born viruses. Bowen-Walker et al. (1999) conducted experiments looking at the varroa mite as a vector which "demonstrated that Varroa mites obtained DWV from infected bees and acted as a vector to transmit the virus to uninfected bees, which developed morphological

deformities or died after mites fed on them for certain periods of time" (Chen et al., 2006 p.156). The symptoms of DWV, such as deformed wings, stunted abdomens, pale coloration, abnormalities in behavior and a reduced life span are the most common symptoms. Virus is present in all body parts of the honey bee with greater accumulation in the digestive tract. In drones, higher accumulation of the virus is found in the testes and seminal vesicles while greater viral load is found in the ovaries of the queen. Research also indicated that despite colonies appearing to be without overt symptoms, those same colonies were associated with higher winter mortality (Amiri et al., 2018).

Research has also suggested that the strength and severity of the pathogen can be determined by the manner in which it was transmitted. For instance, horizontal transmission prefers obvious manifestation and expression of the disease and increases the pervasiveness of the infection

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when there are favorable conditions such as high host population and increased pathogen duplication rate. In direct contrast, vertical transmission is a mechanism for long term virus persistence and favors development of less serious infections (Chen et al., 2006).

It was surmised that when colonies are living in healthy conditions without competition for food, space, etc., viruses are present in a dormant state without obvious signs of infection when vertically transmitted. However, in stressful conditions such as when colonies are heavily infested with Varroa mites, have poor food supplies and are plagued by other disease states, there is a reduction in the growth rate and health of the host. This causes the virus to no longer remain latent, but become more infectious and overt in its' symptomology, often leading to the death of the bee hosts and possibly the colony as a whole when transmitted by the horizontal route (Chen et al., 2006). An article by

Dolezal and Toth (2018) examined declines in bee health related to multiple stressors in their environment, most importantly forage/nutrition deficits, parasites, other diseases and pathogens and the feedback loop between poor nutrition exacerbating virus manifestations at the same time that disease and pathogens are adversely affecting honey bee nutrition.

Further cutting edge research continues in honey bee virology as the decline in honey bee health continues. Investigations proceed to determine the role of viruses in bee health which continues to be a global threat. The knowledge which we currently have underscores the importance of regulation of varroa mite populations in our colonies.

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- 1) d
- 2) a
- 3) a
- 4) d
- 5) d
- 6) d
- 7) b
- 8) c
- 9) d
- 10) True



Photo courtesy of Judith Stanton

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## Keeping Time

by Michael Donihue

The wild Coltsfoot (*Tussilago farfara*) blossomed on April 17th this year, emerging through the rocks on the south-east side of the greenhouse in our garden pretty much on schedule – about a week and a half after ice-out on our quarter-acre frog pond. By my calculations when the Coltsfoot bloomed we'd had a total of 10 growing degree day (GDD) heating units this year at our apiary in the northeast corner of Kennebec County. I started recording GDD units last year and matching them with the blooming date of plants and trees friendly to honey bees in our woods and gardens. Despite an early April snowfall, I was hopeful that spring was nearly upon us as it wasn't until April 24th last year that I recorded our first growing degree day heating units. Sadly, springtime in Maine keeps to its own calendar and I recorded virtually no additional GDD until the temperature climbed above 70 degrees for the first time on May 5th. However, the following week temperatures dropped again and by mid-May we experienced just half the GDD total we had last year. There was almost no sign of the first real dandelion bloom in our apiary, while the swollen buds on our fruit trees appeared to be suspended in time.

Tracking GDD is a tool commonly used by those who practice Phenology. Phenology is the observation of regularly occurring plant and animal life cycle events with a goal of understanding the impact of seasonal variations in climate, and the influence of behavioral factors occurring in natural and built environments. Consciously or unconsciously, phenology is an integral part of beekeeping as we anticipate the dandelion bloom each year

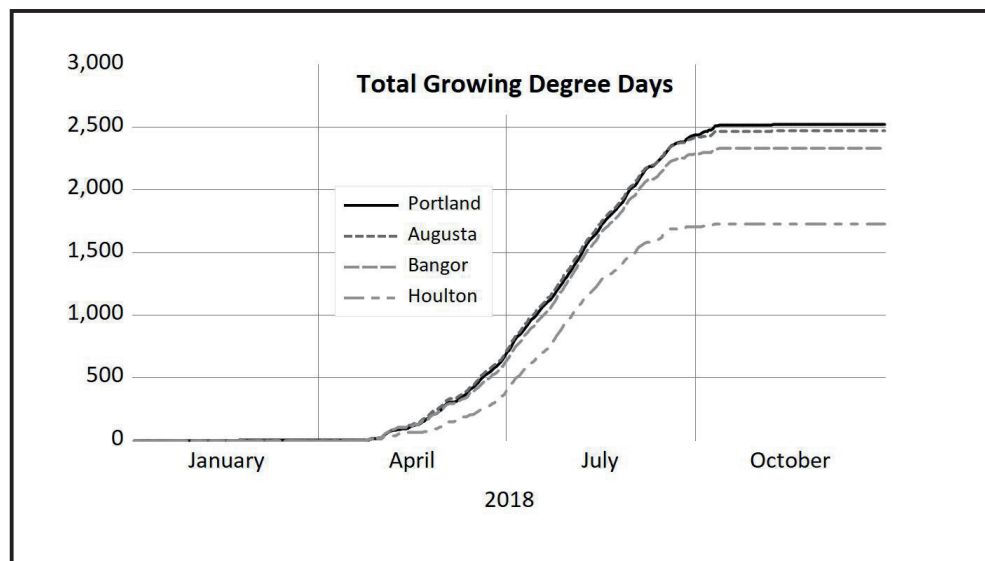
(last year on May 4th @ 57 GDD), follow the blossoming of fruit or locust trees (@ 127 and 303 GDD, respectively), discover honey bees gathering pollen on strawberry (@ 86 GDD) and blueberry (@ 160 GDD) plants, and working the fall asters as summer comes to an end. As beekeepers, we also practice phenology when we decide where to locate a hive, consider the strength of the nectar flow and identify by color the type of pollen observed when doing hive inspections. Tracking GDD can give us a heads-up on when to plan for splits, the likelihood of swarms, the timing of a honey harvest, when to make up nucs, and whether and when to feed our bees in the spring and fall.

Growing degree day units measure the heat accumulation necessary for plant growth and development and can be a useful predictor of when a plant will bloom, peak nectar flows might occur, or a crop is ready for harvest. There are different methods for calculating growing degree days with varying levels of sophistication and data requirements.

I use two calculations for following the gathering of pollen and nectar by our honey bees. The simplest formula is to subtract 50 degrees from the average temperature each day and accumulate GDD units for the year beginning on January 1st.

If the average temperature is at or below 50 degrees then the number of GDD heating units is equal to zero for that day. An average temperature above 50 degrees adds to the accumulated total for the year.

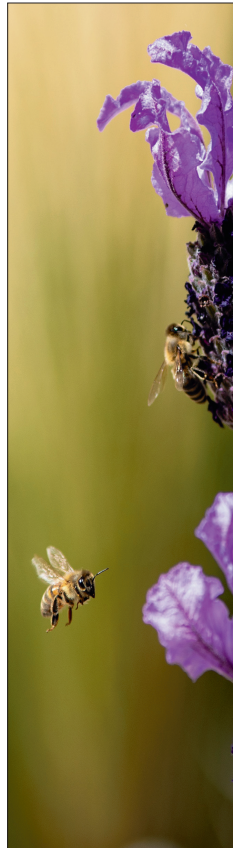
Historic daily maximum and minimum temperatures are readily available from a variety of internet weather apps, often for a specific street address or nearby airport (I use the Dark Sky Time Machine web site when our weather instruments fail). 50 degrees is a commonly used average minimum temperature in GDD calculations and it seems to be consistent with the temperature at which plant development occurs on our property. Technically, the minimum temperature at which plant growth occurs will vary by species, soil quality, location, and a host of other environmental factors, but in general most bee-friendly plants are pretty much dormant at 50 degrees or below. Adding up daily GDD units for the year, and recording the total along with the date when a particular plant you're interested in blossoms, provides a yardstick against which to anticipate the development of bee-friendly plants in the future. Averaging GDD units across years should improve my ability to predict the first dandelion bloom, peak white clover nectar flows, mid-summer St. Johnswort shrub blossoms and the emergence of milkweed and goldenrod flowers that highlight our beekeeping calendar each year.



Here is an example for how a little phenology, combined with a historic record of GDD can be useful for both backyard and commercial beekeepers. Early spring hive inspections generally serve two purposes in our apiary. One is to discover hives that need to be fed and the other is to identify strong hives that might be candidates for splitting. It's been my experience that splits at any time of the year are more successful when there is plenty of forage for the bees. Our honey bees seem to ignore wild Coltsfoot flowers and thus the dandelion bloom is one of the most eagerly anticipated springtime events at our apiary. Typically, I notice the dandelions just before our plum and pear trees blossom. However, like this spring, Maine weather can be fickle. By relying on my memory or a record of the date those first yellow blossoms appeared in past years, it's easy to make the mistake that we've experienced enough warm weather for the dandelion bloom to be on in full force and count on other spring honey bee favorites to follow. Last year the first dandelion blossoms appeared along with flowers on our strawberry plants on May 4th. The temperature that day reached a high of 70 degrees and a low of 50 degrees for an average temperature of 60 degrees which means we realized 10 GDD heating units for the day and an accumulated total of 57 GDD since January 1st. Our plum trees bloomed 4 days later at 86 total GDD and the pears followed 4 days after that at 99 GDD. With spring arriving much later this year, I'll be calculating GDD while watching our honey bees and the swelling buds on our fruit trees and dandelion plants expecting blossoms to begin appearing shortly after we accumulate something in the range of 60 to 90 GDD for the year. A couple more years of data should provide me with a good target for splitting my strong winter survivors in the future in spite of what the calendar might read. By following GDD after making my splits, I can be better prepared to feed should a cold snap occur delaying our fruit tree blossoms and thus improving my success at increasing the size of our apiary and replacing our winter losses.

For more information:

- Bee Culture magazine published an article on phenology in 2015 that is available at [www.bee-culture.com/phenology-and-its-value-to-beekeepers/](http://www.bee-culture.com/phenology-and-its-value-to-beekeepers/)
- You'll find a simple GDD calculator at: [www.greencastonline.com/growing-degree-days/home](http://www.greencastonline.com/growing-degree-days/home)
- Michigan State University's Extension has a good explanation of alternative methods for calculating GDDs at: [www.canr.msu.edu/news/understanding\\_growing\\_degree\\_days](http://www.canr.msu.edu/news/understanding_growing_degree_days)
- A GDD calculator spreadsheet using the more complicated Baskerville-Emin method to account for continuous variations in temperature during a day can be found at: [www.canr.msu.edu/uploads/files/Research\\_Center/NW\\_Mich\\_Hort/gdd\\_web\\_1.xls](http://www.canr.msu.edu/uploads/files/Research_Center/NW_Mich_Hort/gdd_web_1.xls)
- See the Wikipedia entry for Phenology and search for YouTube videos on how to calculate growing degree days.



**Wayne Hodgdon** has been granted a Master Beekeeper certification from the University of Montana. Wayne completed his course of study with approximately 40 other beekeepers from across the US, Canada and England. Wayne especially enjoyed the structured nature of the program with weekly assigned subjects and the utilization of a "group board" where students could both ask and answer questions. He is eager to share his experience in the program and wishes to encourage others to pursue a Master Beekeeper Certification. Wayne is currently a member of the Cumberland County Bee Club and serves as an at large Board member of MSBA.

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<b>CheckMite+®</b>	coumaphos [organophosphate]	contact	plastic strip	
<b>Apiguard®</b>	thymol	fumigant	gel or gel tray	
<b>Api Life Var®</b>	thymol, menthol, eucalyptus oil	fumigant	tablet	
<b>Mite-Away Quick Strips® (MAQS)</b>	formic acid	fumigant	gel strip	
<b>Formic Pro®</b>	formic acid	fumigant	gel strip	
<b>Oxalic Acid</b>	oxalic acid dihydrate	contact, fumigant	vapor or liquid	
<b>Hopguard® II</b>	potassium salt of hops beta acids	contact	cardboard strip	
<b>Screen Bottom Board</b>	cultural, non-chemical options for management		varies depending on management type	
<b>Drone Brood Trapping/Removal</b>				
<b>Brood Interruption</b>				
<b>Re-Queen/Cage Queen</b>				

# (IPM) Options for Varroa Mites

APPLICATION SEASON & TEMPERATURE GUIDELINES	TREATMENT DURATION	KEEP HONEY SUPER ON?	NOTES
Spring, Fall	42-56 days	no	honey supers put on 14 days after strip removal
Spring, Fall [>50°F]	42-56 days	no	mite resistance shown; honey supers put on after strip removal
Spring, Summer, Fall	42-45 days	no	mite resistance shown; do not use for queen-producing colonies
Spring, Fall [60°F to 105°F]	28-42 days	no	Restricted Entry Interval of 48 hrs; honey supers put on after gel removal
Spring, Summer, Fall [64°F to 95°F]	26-32 days	no	honey supers put on 30 days after tablet removal
Spring, Summer, Fall [50°F to 85°F]	7 days or 21 days	yes	penetrates wax cappings; check queen vitality after treatment
Spring, Summer, Fall [50°F to 85°F]	14 days or 20 days	yes	penetrates wax cappings; check queen vitality after treatment
Spring, Fall	varies by application type	no	most effective when broodless
Spring, Summer, Fall	30 days	yes	most effective when broodless
Spring, Summer, Fall, Winter	all year	yes	check mite drop for effectiveness
Spring, Summer, Fall,	14-20 days	yes	remove comb/open drone cells before emergence
Spring, Summer	14-20 days	yes	split hive or allow to swarm; but capture swarm
Spring, Summer	28 days	yes	select mite resistant stock when available

## Get Ready for the EAS Honey Show

EAS 2020 Planning Committee

You've probably heard the "buzz" by now. Maine is hosting the **Eastern Apicultural Society Short Course and Conference** next **August 3-7, 2020 at the University of Maine in Orono**. It's going to be a jam-packed week of informative lectures, hands-on workshops, and fun activities related to honey bees and beekeeping. One of the highlights will be the EAS Honey Show. This event was revived during the 2012 conference in Burlington, VT and has been growing in participation every year since. Maine is planning to host the best show yet.

There are over thirty categories in which to enter. Six place ribbons are awarded in

each category and the first place winner of each category receives a handsome engraved silver plate. Of the blue ribbon entries, one is deemed Best in Show and receives the coveted silver bowl. There is also a Sweepstakes Award given to the entrant who amasses the most total points in the show. More entries mean more possible points and more chances to win!

The competition will be fierce in 2020. We encourage you to develop your skills this summer and perhaps enter a local honey show this fall for practice. Here's a preview of categories with tips and resources to help you prepare:

1) Extracted Honey – The most popular category and the one most people think about when they think of honey shows. It's all about presentation. Three bottles judged on uniform presentation and appearance. Think of it as a beauty pageant for bottled honey.

2) Black Jar – This category is all about taste. Mmm...Maine honey is good. How will it compare to honey from around the US and Canada?

3) Frame of Honey – Won by a Maine Master Beekeeper in 2018. Can we do it again in 2020? Your bees do most of the work, but you'll need to supply a frame display case.

4) Comb, Cut, Chunk and Creamed Honey – Maine beekeepers have taken home silver plates in these categories before. Will we keep up the tradition? Practice this season and learn to make a perfect sample. It's not as easy as it looks.

5) Beeswax Candles and Blocks – This category is about the art of preparing beeswax. Temperature, cleanliness, color, aroma. Candles must be molded or dipped correctly, wicks centered, bottoms properly finished. Experienced beekeepers can teach you the skills. Take a class this year!

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6) Honey Cookery – Breads, cookies, cakes, candies. Most people would like to judge this category! If you've got a delicious honey recipe then get cooking. Winter is ideal for local clubs to host a honey cookery event. Sample, enjoy, and vote on favorites. Bring your best to the Honey Show in 2020. (Rumor has it an MSBA chapter club is vying for a total sweep in this category!)

7) Gadgets – This one's right up our alley here in Maine. Our beekeepers are innovative and great craftsmen. Have an idea for a beekeeping thingamajig? Get into your workshop this season. Build it, test it, and take home the silver in 2020.

8) Mead and Honey Beer – The best meads are aged to perfection. You'll need to start brewing NOW to be ready for 2020.

9) Photography – Always a popular category. How will your photos stand out from the crowd? Specific categories include: close-up, scenic, a beekeeping

procedure or beekeeping story. Bring your camera every time you inspect. You don't want to miss that perfect shot.

10) Arts & Crafts – This is often an underrepresented category. Do you make gift baskets of hive products? Do you knit, sew, paint, carve, weave, weld? If the subject is bees or beekeeping you can enter, and if you do there's a good chance you'll bring home a ribbon.

Honey shows highlight the complementary skills of apiculture while educating others about the benefits of honey bees and beekeeping. Have fun this summer developing your skills and we'll see you next year at the big show in Orono!

*Visit the EAS website for more information on honey shows:*

[www.easternapiculture.org/resources.html](http://www.easternapiculture.org/resources.html)



*Photo courtesy of Peggy McLaughlin*

## QUIZ

1) Which Maine city is likely to have accumulated more total growing degree days on May 15, 2019?

- a. Caribou                      b. Augusta
- c. Jackman                    d. York

2) Which plant is more likely to display its first blossoms of the season after 1000 growing degree days?

- a. Goldenrod                  b. Wild blueberry
- c. Dandelion                   d. Pussy willow

3) Which apple orchard owner is most likely to get a contract for pollination services with a commercial beekeeper who keeps track of year-to-date growing degree day totals?

- a. An owner who knows the average number of growing degree day units when their trees blossom.
- b. An owner who knows the average date when their trees blossom.

- c. An owner who likes honeybees.
- d. An owner who knows the average last frost date for their orchard.

4) Keeping track of growing degree day units at your apiary can be useful for

- a. Anticipating peak nectar flows
- b. Knowing when to feed your honey bees
- c. Determining when to split a strong hive
- d. All of the above

5) Viruses are transmitted to

- a. eggs                              b. larva
- c. adult bees                      d. all of the above

6) What is the mechanism of transmission of viruses from one bee to another?

- a. horizontal
- b. vertical
- c. indirect
- d. all of the above

7) Which statement below is NOT TRUE regarding the common characteristics of viruses?

- a. viruses are parasitic
- b. they have their own metabolism
- c. are commonly found in all living things
- d. can remain dormant over periods of time

8) A dearth typically occurs

- a. early to mid spring
- b. mid summer
- c. end of July into the 1st of August
- d. end of August into September

9) A dearth greatly affects

- a. colonies with recent supercedures
- b. weak colonies
- c. colonies that were split in the spring and may not have built up their bee population or food stores
- d. all of the above

10) A dearth may incite robbing.

- a. True
- b. False

## Is the Dearth Real?

by Rick Cooper  
Master Beekeeper

Is the dearth real?

I say it is. Others will say it is not. What say you?

In the 39 years I have been keeping honey bees, I have experienced the true effects of the dearth only once. It came sometime in the early to mid-eighties when I was relatively new to the art and science of beekeeping. I was very wound up and into my bees back then and trying to learn all I could. I remember going out into my bees and getting stung several times doing exactly what I had always done. I could not figure it out and went home a bit on the

unhappy side. A week or two later I went back to those same bees and was greeted with calm bees going about their business.

I questioned several of the beekeepers I knew about the problem and only one seemed to have any kind of answer at all. He was a grumpy older beekeeper and one of those I would use only as a last resort. His one word answer didn't do me much good at the time but the word he used was "dearth".

The dearth hits Maine usually around the end of July into the first five to ten days of August. This is a time when the summer nectar flow has stopped and the fall flow has not yet begun. In flower terms the vetch and clover have dried up and the goldenrod has not yet started. Pollen is also scarce at this time of year so all those field bees that have so happily been out there gathering resources have nothing to do and are hanging around the hive being cranky. It is a time for cautious management.

I would have to say over the last twenty or so years I have learned to just stay out of my bees at this time of year. Two serious side effects can happen during management at this time of year. One is, as I mentioned above, you get stung. The second is that in any apiary where you have more than one hive you can instigate a robbing situation. The nectar flow has stopped completely so if you are opening a hive at this time of year, the neighboring bees will smell the honey and because you have the entire top of the hive open, will try to sneak in and steal the honey from the open hive. If this is the case, the bees from all hives in the area will start stinging. Ask the KLCB members that were at Dave Spicer's for an open hive a few years back when suddenly everyone was getting stung, especially me.

Even if you are aware that the dearth is upon us, it is wise to take care of those hives that are perhaps on the weaker side. The dearth is a terrible time for bees both in




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temperment and in need. A hive that you created a nuc from in June may not have gotten back to full strength. A hive that swarmed not too long ago and is still recovering, as well as a hive that is superceding a queen are all susceptible to being robbed during the dearth. Good observational skills and an entrance reducer can protect these hives against invaders from much stronger bee hives. Just remember once the dearth is over, pull the entrance reducer and let your bees do what bees do.



## SAVE THE DATE!

### MSBA's Annual Meeting & Conference Saturday, October 12th

The Annual Meeting will once again be hosted by the Sagadahoc County Beekeepers Association at Brunswick High School. This year's event will be in a larger facility with more parking and more vendor space. Guest speakers will be Dr. Jamie Ellis and Dr. Frank Drummond.

Professor of Entomology at the University of Florida, Dr. Ellis is a much-sought after speaker in the US and abroad. His presentations appeal to all beekeeping levels and are laced with humor.

Internationally recognized entomologist Dr. Drummond recently retired as Professor of Insect Ecology and Insect Pest Management from University of Maine.

Jennifer Lund, Maine State Apiarist and Bee Inspector, will also be on hand to talk about the general status of honey bees as observed during her travels around the state, and will also review the results of the 2018-2019 Maine Beekeeper Survey.

Join us for a full day of learning from leading lights of the beekeeping world, a honey tasting contest, auction and raffles, vendors, and good food!

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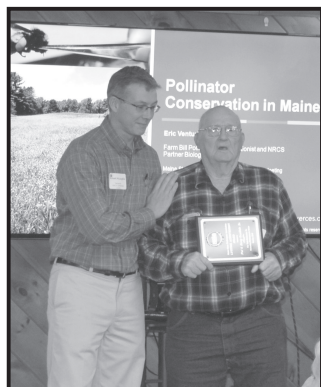
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## Beekeeper of the Year and Lifetime Achievement Award Nominations



Past MSBA President Richard McLaughlin with Roy Cronkhite Sr, 2018 Lifetime Achievement award recipient

The MSBA Beekeeper of the Year Award is given annually to a beekeeper who, over a period of years, has demonstrated and promoted good honey bee management practices, and participated as a volunteer in the beekeeping community.

The candidate must be a current member of the MSBA and can be nominated by a local chapter, a member in good standing of the MSBA or the MSBA Board of Directors. They must also currently own or manage honey bee colonies in Maine.

The nomination letter should outline what the candidate has done to promote beekeeping and educate beekeepers, prospective beekeepers and the non-beekeeping public over a period of time. Activities such as teaching short courses or bee schools, presentations to community organizations, demonstrations at fairs (county, state, horticulture or environmental), volunteering for MSBA and local beekeeping organizations, and media interviews will all be considered.

A **Junior Beekeeper of the Year Award** is also given when suitable nominations are received. That person must also be a member in good standing of the MSBA.

The **Lifetime Achievement Award** recognizes a beekeeper or a beekeeping couple who have over a period of years promoted beekeeping in Maine. Nomination letters should describe how they have reached out to the general public and other beekeepers, and should include examples of supportive activities such as teaching bee school or other instructional venues, speaking to the general public, and mentoring and serving as a source of knowledge to new beekeepers.

A nomination form may be downloaded from the MSBA website's home page, or a PDF can be e-mailed to you by contacting Judith Stanton at 376-7888 or jws77@me.com. Please send to the MSBA president no later than September 12, 2019. Awards will be presented at the Annual Meeting on October 12th.

Completed forms should be submitted to:

president@mainebeekeepers.org or  
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## Swarms...Tis the Season

by Jane Dunstan

Despite the goal of the honey bee to propagate its species, swarms are not the goal of the beekeeper. While reproductive swarms are natural events for the colony, they can be prevented with a few simple hive management techniques. In a "normal" spring season, by late April or early May, there is a dramatic increase in the amount of food for bees to gather. Maple trees are budding, skunk cabbage adorns the banks of vernal streams and wetlands, and crocus and dandelions are in bloom. There is an abundance of pollen and nectar to gather at the same time the queen has increased her egg production. This scenario creates the potential for a perfect storm: plentiful food resources are brought into the hive at the same time the queen has increased her

egg laying, however there is only finite cell space available for both of these valuable commodities.

Preparation for swarming can be recognized 2-4 weeks prior to departure. While queen cups are commonly present, eggs are laid in them only during swarm preparation. The hive is overflowing with adult bees along with young, immature bees and expanding food reserves.

There are several proactive measures which can be taken to reduce hive congestion. Brood chamber manipulation can be performed ensuring there are extra frames of drawn comb on either side of the brood in both boxes as your colony expands. Equalizing your colonies is extremely effective and can serve to both support weaker colonies as well as create additional space in robust colonies. Frames full of capped brood, eggs and larva can be removed from large, congested colonies and added to smaller colonies. Open

frames with drawn comb are then placed into the larger hives where the overcrowded frames were removed. Colony division by creating nucleus colonies provides the opportunity to expand your apiary at the same time it diminishes hive congestion. Lastly, placing one or two honey supers on the hive early in the season provides space to store that surplus nectar.

Tis the season for swarms, however with proactive interventions and strategies to address the expanding colony population and growth, the likelihood of swarms issuing from your hives may be reduced.



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Jane Dunstan, Editor  
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\*Membership is per calendar year (**not** pro-rated) and includes a subscription to *The Bee Line*, the MSBA's newsletter. **Current membership is a pre-requisite for attending the MSBA Annual Meeting.**

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