Greetings from Norfolk, VA! I’m writing the introduction to this volume of the RIBA newsletter while waiting for our flight home to RI from the 2018 Eastern Apicultural Society conference. This is a week-long event that brings together some of the most famous researchers working today, beekeepers from all over the globe, writers, and experts on pesticides, pollination, community outreach, and more. Among this year’s roster of luminaries were such well known figures as Randy Oliver, Mike Palmer, Dr Jamie Ellis, Dr Dewey Caron, Kim Flottum, Dr Kirsten Traynor, Dr Sam Ramsey, and many many others. It’s an amazing opportunity to immerse yourself in bees and keep your knowledge up to date, as well as being just plain fun.

Hopefully your bees are doing well and your summer honey harvest has been abundant. It has been our best year since we first started in 2011, with approximately 175 lbs extracted from three hives, lots of newly drawn comb, and more honey still left in the supers. The last four days have shown almost a 41-lb total weight gain according to the digital hive scale installed at the RIBA Apiary in Johnston. Here’s hoping that’s the start to a good fall flow as the season winds down and we assess our colonies for overwintering.

-Scott Langlais
A First Timer’s View of EAS – Keith Salisbury

2018 was the year that I finally made time to go to my first EAS. What is EAS? Every year the Eastern Apicultural Society members gather for their convention. This year the EAS Convention was held in Virginia. By all accounts it was one of the best attended conferences that EAS has ever had. If you are into beekeeping, or just into bees, EAS really should be a must attend event at least once. This year was made even more special since I had two friends taking the test for their Master Beekeeper Certification. Both passed their extensive exams and are now Master Beekeepers.

Since I had never been to an EAS convention before, I pretty much went for the speakers and the seminars. I got to spend multiple hours listening to and speaking with the likes of Randy Oliver, Jamie Ellis, Brian Drebber, Erin Forbes, Toni Burnham and many more. The topics ranged from management of hives, treatment options, hive configurations and mead tasting and judging. There were hives on hand for live bee workshops. There were even classes on how to teach grade school children and keep them entertained and engaged.

After each day at the conference when we got back to our house we got to compare notes on the day. It was a total immersion into the honey bee for a week straight. I do wish that I had taken part in the honey exchange and the honey judging competition. But that will have to keep until next year.

I can’t explain how much I enjoyed the week. I fully enjoyed myself and I’d like to think that I ended the week a better beekeeper than I started. This is now an annual event for me. I will do everything I can to ensure that I don’t miss another. I encourage you all to give the EAS convention a try.

Rhode Island’s New Master Beekeepers

Rhode Island’s roster of certified Master Beekeepers welcomes its three newest members—Sarah Michaud of Charlestown, Cindy Holt of Providence, and Scott Langlais of Johnston. As near as I can tell, the only others (both certified by EAS) are Ed Karle of Newport and a gentleman from Cranston who was certified in 1981, but who no longer keeps bees. Master beekeeper programs are intended to not only test one’s knowledge of bees and beekeeping, but also the ability to communicate effectively, and to act as ambassadors for bees and the beekeeping industry. The goal is to train beekeepers who can then act as a resource for their communities; education,
outreach, and mentorship are very heavily encouraged. In other words, the certification isn’t for your personal glory, it’s a tool to make you a better public servant and steward to bees in general.

**Eastern Apicultural Society**

This grueling exam is held only two days every year and consists of four parts: a written test, an oral examination, a lab, and field test with live bees. Two RI beekeepers took the exam this year, Cindy Holt and myself, and I’m proud to say we both passed, swelling the ranks to about 173 total living EAS MBs. There is no syllabus or coursework leading up to the event; you simply show up (after your application is accepted) and take the test. Identification of diseases and pests, identification of specialized equipment, history, pollination, pesticides, native bees, identification of bees’ internal organs under a microscope, honey labeling, candle making, queen rearing, bee biology, anatomy, and more; all are fair game for the test writers. According to the test administrator, Dr Debbie Delaney of the University of Delaware, 59% passed the written exam, 67% passed the lab, and 78% passed the oral and field.

**Cornell University**

Cornell University in Ithaca, NY, also debuted their Master Beekeeper program this year. Sarah Michaud was in the inaugural group of applicants. Interestingly, the EAS program was originally designed by Dr Roger Morse of Cornell, so there’s a definite connection there. Sarah describes the experience: “The Cornell program consists of four online courses each being two and a half (intense) weeks long. In the two and a half weeks an assignment is due every other day and a final project due by the end of the course. Each section of the course also has discussion questions where each student posts their response to the questions and then also responds to other students. There are no courses during the beekeeping season to allow time to practice the new skills in the apiary.”

Course 1: Honey Bee Evolution, Biology and Behavior  
Course 2: The Science and Art of Beekeeping  
Course 3: Managing Pests and Diseases  
Course 4: The Rewards and Contributions of Beekeeping

“I was in the first round that this program was offered. 50 students total (some international, New Zealand, South Africa, Tanzania, Sweden), 37 took the exam this year. The rest are deferring until next year. I was told one person (from New Zealand) took the written and field exam, but is delaying doing the presentation. Cornell is now in the middle of the second round of the course and has even more international students! I don’t know how many passed or failed but the high, low and median grades are available.”

Oral Presentation: Median 87.6 High 98 Low 71  
Field Exam: Median 81.1 High 94 Low 53  
Written Exam: Median 83 High 97 Low 62

For those who think they might like to pursue a master beekeeper certification, EAS has a suggested reading list on their website:  
[http://www.easternapiculture.org/master-beekeepers/certification/certification-resources.html](http://www.easternapiculture.org/master-beekeepers/certification/certification-resources.html)

The RIBA book collection, housed at the Greenville branch of the public library, was largely based on this list (and expanded with further selections).
Test Yourself!

These are ten real questions from the EAS and Cornell written exams. Answers appear at the end of the newsletter.

1. Which hive pests are entomopathogenic nematodes used to control? And how are they applied to control this pest?
2. List three endocrine glands located in an adult honey bee worker’s head. What do they secrete and what is the function of the secretion?
3. Name the two hormones involved in honey bee growth and development. How do they interact to control molting from larval instars to pupa to adult?
4. The common name for *Apis florea* is the ________ and they make an open nest consisting of one comb that is protected by a layer of ________.
5. Some honeys act like a solid gel in the comb but are liquid once extracted and stirred. This kind of honey is called ________. The best known honey exhibiting these characteristics is ________ honey from several places in Europe.
6. What method of queen rearing requires grafting larvae?
7. Clipping a queen’s wing effectively prevents a colony from swarming. (True or False)
8. Scratch marks on the ground are indicative of what predator?
9. Because *Apis mellifera* evolved in Asia, it has been unable to adapt to the relatively cold (temperate) winters of North America. (True or False)
10. Match the pheromones with the locations you would expect to find them in high concentrations.
   - Dufour’s Gland pheromone On the body of the bees returning with nectar
   - Nasonov gland pheromone Near the sting site of a predator
   - Alarm pheromone On the young larva
   - Queen pheromone At the entrance of the hive
   - Forager pheromone At the tip of the queen’s abdomen
   - Brood pheromone On the queen’s body and mouths of her retinue
Clockwise: EAS Honey Show Entries, An Interesting Auction Item, Novel Products in the Vendor Area (E & S Langlais)
June/July/August Almanac

RI beekeepers enjoyed an exceptional summer thus far. Claims of record honey harvests from the earlier part of the summer were common. Plan to put aside 3 1-lb jars now to enter in our honey show at the December meeting! Catalpa, sumac, clethra, holly, privet, milkweed, winterberry, borage, bee balm, mountain mint, goldenrod, and purple loosestrife contributed to bee forage. Japanese knotweed is in bloom starting around the last week in August, and along with goldenrod, is still blooming into September.

Many have been reporting dearth conditions locally for the past month or so. Still others are experiencing continued ample forage. Hives should be monitored for stores and fed when appropriate to avoid starvation and build up for winter. Info from our Arnia hive scale indicates a strong flow in Johnston beginning around Sept 3.

Reported mite counts have generally been low, with many finding 0-1 mites in 300-bee alcohol washes in June and July. I want to urge you all not to get complacent in light of this good news*. Mite counts will continue to rise over the summer, with varroa populations peaking in the fall. This is an extremely critical time for the health of your hives. Varroa counts hit their population peak as the bee population is waning. Drone rearing largely ceases and adult drones are evicted from the hive. Varroa, which prefers reproducing in drone brood, is now transferred to the worker population. These are the workers that you need to take your hive through the winter; if they are compromised by mite-vectored viruses it will greatly reduce their ability to survive. Even if you choose to treat at this point, you may be able to reduce the amount of varroa in the hive, but the damage to your winter bees will already be done. Please continue to stay on top of your mite counts all season long and don’t delay treatment when necessary.
In our home hives, 3 of 5 exceeded treatment thresholds during a Sept 1 test. The three hives each only had 1 mite in a 300 count sample on 7/29. On 9/1 those counts jumped to 10, 7, and 8.

The first reported bear sighting was April 1 in Ashaway. Further reports came from Exeter, Warwick, East Greenwich, South Kingstown/Wakefield, Charlestown, Scituate and elsewhere in the state. In some of these incidents hives were damaged or outright destroyed, others were merely sightings within the vicinity.

Our June general meeting was held June 10 at Snake Den State Park in Johnston. The guest speaker was Jessica Kern, CNMT, LMT. Jessica has been published in American Bee Journal and also works at Warm Colors Apiary in Deerfield, MA. Her topic was staying injury free in the bee yard. The July meeting was the fourth annual RIBA Field Day at Salisbury Farm in Johnston, RI, featuring a variety of RIBA members presenting on diverse topics and leading live bee demonstrations. It was decided not to hold an August meeting due to the extreme heat, as well as the timing of EAS.

June presenter, Jessica Kern (Emily Langlais)

Member News

Presentation chair, John Rodzen, has stepped down. Congratulations to Calvin Alexander for taking on this important position, coordinating speaking requests from the public with RIBA volunteers. Education and outreach are the core of RIBA’s mission statement so being able to provide speakers when requested is the essence of what we do as a club. The past few months have seen RIBA members appearing at the State House, the Newport Flower Show, Roger Williams Zoo, schools, and farmers markets.

Programs chair, Liying Peng, has also retired from her post. Malinda Coletta has assumed the role for the interim until a permanent replacement can be found. Malinda has already gotten commitments from an exciting slate of guest speakers for the upcoming year, but I won’t steal her thunder by letting the cat out of the bag prematurely. Trust me, you will be impressed!

A fire at the home of Steve Burke and Molly Therrien in July required the removal of their half dozen or so hives. The bees survived despite heat that charred and blistered hive bodies, and melted Styrofoam hive top feeders. A team of RIBA members relocated the bees to an alternate site and are providing care for them. Thankfully no injuries were reported in the fire, but it was an extremely heartbreaking situation to witness.

Congratulations to Betty Mencucci of Burrilville for her winning entries in the EAS Honey Show. Beyond just honey, the Honey Show has categories for mead, beeswax, gadgets, photography, and much more. Betty took home three ribbons in total, all in the photography classes: a 1st place in the scenic category (shown below), a 4th place in the portrait...
category, and a 6th place in the macro/close up category. Betty also presented a slideshow on “30 Years of EAS” on the final day of the conference. **Scott Langlais** won a 2nd place ribbon in the macro/close up class of the photography category of the show.

![Betty’s 1st place photo (Betty Mencucci)](image)

**State Wide Mite Count**

As a club, we promote testing for varroa mites and treating as necessary. This year we would like to make a coordinated effort to test hives throughout the state at the same time, in order to make a determination of areas that are experiencing high (or low) mite counts. This is an informal effort but based on a belief that it will raise awareness, as well as make us all better stewards of our bees.

![Varroa-actual size is not much bigger than a poppy seed (Scott Langlais)](image)
This is what we are proposing:
Those who wish to participate will perform an alcohol wash for mites on or about:
- July 29 - Aug 5
- Sept 2 - 9
- Sept 30 - Oct 7

The first round of testing yielded 164 individual entries, a great response. In general, results were encouraging, with most hives experiencing mite levels well below treatment thresholds. There were some isolated hives with quite high numbers (41 mites being worst). It’s too early to try to find trends in this data, but you can be sure many are eagerly awaiting further results. The second round of testing is just getting under way as I write this; hopefully the response to this round will be even better than the first. This is a very simple, but we hope meaningful, way that we can all take a role in ensuring the health of Rhode Island’s entire honey bee population. If we can better pinpoint when mite populations are spiking, and effectively treat them in a timely fashion, it will hopefully make it possible for us to become less dependent on multiple treatments, as well as increasing the chances of winter survival.

Remember, we want to know your counts even if they are 0. Your names will not be publicized. If your mite counts are high, it is not a reflection on your beekeeping skills, in fact the biggest and strongest hives are likely to hive higher mite counts than their smaller neighbors. Lots of brood means lots of potential varroa.

Thank you to all RIBA members who submitted results already. Special thanks to Lynn Carlson and Ann Bissonette who did the data entry and GIS mapping for this project.

If you need help deciding the best strategy for dealing with your particular mite situation, the Honey Bee Health Coalition has an excellent free guide available that compares the various options:

RIBA Apiary Update – Cindy Holt

It has been a quiet summer at the yard, thankfully. We are currently at 7 hives, including a swarm we caught while at that yard which was conveniently hanging from a branch. All of the hives are doing well, and we hope to get them through the winter as we will need healthy hives for all of the things we have on the burner for next year.

Emily and I have taken 4 rounds of samples for the Sentinel Apiary program. For those of you that are new to the club, we take a half cup of bees, place them in jars of salt water and send them to be tested for varroa mites and Nosema at the University of Maryland. We receive results within a few weeks and so far, the hives have all maintained a count of 0
for varroa in the samples. Two hives showed slightly elevated Nosema levels in June and July. The first hive resolving to low levels the following month and we are currently waiting for the next round of results to come in for the second hive. Both hives appear to be healthy and thriving with no obvious symptoms.

For the three hives that are not a part of the Sentinel Apiary, we completed alcohol washes when we returned from EAS. One hive showed elevated mite levels so we took advantage of the week of cooler temps to treat with MAQS. We will retest along with the RIBA statewide testing that is going on and post results up there.

Some loosestrife nectar has been observed coming into hives, with its distinctive green color in August. Some hives have better food supplies than others, but we have noted that hives are beginning to go through their stores, so we are supplementing with syrup and small amounts of pollen substitute. We are currently running 4 of the 7 hives with 3 deeps with a plan of taking the frames of honey/syrup and dividing them amongst all hives for winter feed. We hope to be finished with the equalizing of food stores by Columbus Day and plan on a last round of alcohol washes around that time in addition to the Sentinel apiary testing that continues until October.

We have some exciting plans for next season. There will be plans to graft queens again. In addition, we will also be working to make the RIBA yard a source for educating members in order to help them become more self-sustaining in their own apiaries. It is the hope that we will be making some videos to share and open the yard to RIBA members for small workshops. The yard is also in the process of seeking out a small number of dedicated volunteers to help with the day to day upkeep between all of the fun stuff. Stay tuned!

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**Use of the Snelgrove Board – Cindy Holt**

I confess to being on a bit of a self-sustainability kick lately. I absolutely love the idea of Rhode Island grown bees that do well in our ridiculous climate. I also love the idea of putting the power of obtaining good bees and queens into the hands of the beekeepers themselves. There are really few things more satisfying than the first time seeing a thriving hive that originated from a queen that you grafted, or a series of healthy hives that came from the split you made or even the swarm that you caught with your own hands. The intricacies of genetics and selecting for certain behaviors can be pretty intimidating, especially to the newer beekeeper but anybody can appreciate the prospect of an ongoing supply of bees, acclimatized to your specific area. Especially if you can do it in such a way that is easy, practical in design, cost effective as well as doable for those without a lot of space.
This is why I loved Roland Sevigny of Worcester County’s presentation on “The Many Uses of the Snelgrove Board.” I had the pleasure of attending his talk on June 16th at the UMASS Agriculture Center in Amherst, MA for the 2018 Massachusetts Beekeepers Association Field Day. The day consisted of four sessions about an hour long with a variety of speakers to choose from during each time slot. The technique he presented for the Snelgrove board covered my bases of easy, practical, cost-effective and doable. A Snelgrove board is made of thick board (about 1 ¼” high), similar to an inner cover made to fit over a 10 frame or 8 frame Langstroth hive. It has double screen in the middle (hence, it’s other name-the double screen board) and multiple entrances on 3 (or 4, depending on manufacturer) sides that can be opened and closed to allow access to the top or bottom. It runs for about $20-$25 and can be found in all of the bee catalogues under the name Snelgrove Board or “Double Screen Board.” I summarized Roland’s presentation below. Try to follow along and if you end up just as excited as I did to try out some of his techniques with your newly purchased bee toy, I added some further reading at the end.

**Hive body configuration for use as a double queen system or swarm prevention**

- Box A contains the queen, frames of empty comb, coiled older brood and capped brood
- Box B young larvae, eggs and any frames with queen cells
- So it goes-Box A-then queen excluder-honey supers (2ish)-Snelgrove board-open 1 door (top of honey supers)-Box B
- Flying bees return to Box A
- New queen emerges in Box B-nurse bees become foragers and use side entrance
- 3-4 weeks hive begins to fill with brood and nectar
- Close top, bottom open. Open opposite top REMEMBER TO DO THIS-field bees from top box will bring forage back to supers below instead of box B
- Exchange honey supers in middle to maintain space in between if needed.
- Switch doors once you notice congestion-always remember to open an opposite door once you close a door. Neglecting to do this will trap the bees in the top box.
- Keep switching doors as you notice an increase in traffic to the upper box (every 5 weeks or so), switch out filled supers so the hive below has room.
Raising queens or making nucleus colonies

Using a deep with grooves cut into the inside walls, you can create partitions (Box B) Each section contains a queen cell or eggs/really young larvae-open top door for each entrance and make sure each section has a snug inner cover. This may be good during swarm season, when you find an abundance of queen cells.

End of the season, (for us this would be August) reunite the colonies and either pinch or find a new place for the old queen. You can also make 2 separate colonies to go into Winter.

You can run two hives during the winter with a Snelgrove board in between, which may be beneficial for smaller colonies that can share the rising heat, but it may be difficult to help the bottom colony should they need emergency feed or other care.

Some further links:


https://honeybeesuite.com/how-to-over-winter-a-nuc/

https://honeybeesuite.com/uses-of-a-double-screen-board/

http://pinkpages.chrisbacherconsulting.com/Imirie_Requeening_Method.html

(Editor’s Note: The September 2018 issue of American Bee Journal also has an excellent article, with diagrams, on using the Snelgrove board for queen rearing.)
Upcoming RIBA Events

RIBA FALL BANQUET AND SILENT AUCTION
Sun Oct 28th 5:00pm - 9:00pm
Quidnessett Country Club
950 North Quidnessett Road, N Kingstown RI

Speaker: Dan Conlon from Warm Colors Apiary
Subject: Fall Management

MALINDA IS LOOKING FOR HELP WITH THE AUCTION. IF YOU CAN HELP
PLEASE CALL HER AT 401-749-3312

Final Meal selections must be made by Friday October 19th
Dinner Choices:
Filet Mignon and Diver Scallop $40
Vegan $30
Vegetarian $30

Each meal comes with:
Seasonal Mixed Greens with Balsamic Vinaigrette Dressing
Baked Potato with Sour Cream
and Sautéed Peas & Pearl Onions
Lemon and Cream Layer Cake with Raspberry Sauce.

GO TO http://ribeekeeper.org/store to order your meal

ABSOLUTELY NO MONEY TAKEN AT THE DOOR!
If paying by check it must be postmarked by OCTOBER 15th
Mail Check to:
RIBA
c/o Malinda Coletta
41 Lookout Ave
North Providence RI 02911

NOVEMBER GENERAL MEMBERSHIP MEETING
Sunday, Nov 11th, 2:pm – 4:pm
Coventry Rec Center
1227 Main St, Coventry RI 02816
General Elections
Speaker: Mary Duane, Master Beekeeper and former
President of Worcester County Beekeepers Association
Topic: Preparation for a honey show

DECEMBER GENERAL MEMBERSHIP MEETING
Sunday, Dec 9th 2:00pm - 4:00pm
Coventry Rec Center
1227 Main St, Coventry RI 02816
Speaker: Betty Mencucci, Director of RIBA Bee School
Topic: EAS report
Holiday Market place: bring your bee related crafts
and goods that you have for sale
Honey Judging....ribbons will be awarded!!
JANUARY GENERAL MEMBERSHIP MEETING
2019 Sunday, Jan 13th 2:00pm - 4:00pm
Coventry Rec Center
1227 Main St, Coventry RI 02816
Speaker: Max Weagle, Worcester County Beekeepers Association
    Board of Directors member
Topic: Monitoring Hive Temperatures in Winter

FEVERUARY GENERAL MEMBERSHIP MEETING
2019 Sunday, Feb 10th 2:00pm - 4:00pm
Coventry Rec Center
1227 Main St, Coventry RI 02816
Speaker: Matthew J. Tetzner, FMP Director, Culinary Operations
    College of Culinary Arts
    Johnson & Wales University, Providence Campus
Topic: Cooking with Honey Demo

MARCH GENERAL MEMBERSHIP MEETING
2019 Sunday, March 10th 2:00pm - 4:00pm
Coventry Rec Center
1227 Main St, Coventry RI 02816
Speaker: Angela Roell of Montague, MA is the owner of Yard Birds Farm Yardbirdsfarm.com.
    Angela is an educator, evaluator, facilitator, organizer and beekeeper.
    Topic: Apiary Planning

Other Upcoming Events

American Apitherapy Society Inc
2018 Charles Mraz Apitherapy Course And Conference
    October 26-28, 2018
    The Hotel Providence, 139 Mathewson Street Providence, RI 02903
    http://www.apitherapy.org/about-aas/coursesconferences/cmacc/

CT Back Yard Beekeepers Association
    Norfield Church Community Room,
    64 Norfield Rd, Weston CT
    Sept 25: Richard Cowles
    Oct 30: Dewey Caron
    Nov 27: Bill Hesbech
    http://backyardbeekeepers.com/wp/

Mass Bee Fall Meeting
    8:00 AM – 3:30 PM, Bristol County Community College, Fall River, MA
    Nov 17: Dr Jamie Ellis & Dr Sam Ramsey
    www.massbee.org

Southern New England Beekeeper's Assembly (SNEBA)
    Groton Inn, Groton, CT
    Registration $55/Late Registration $75
    Nov 17: Dr Jay Evans, Dr Rebecca Masterman, Dr Larry Connor
    www.sneba.com/conference/
Anyone who wishes to submit photos for the **2019 RIBA calendar** should have them submitted no later than October 15th. I will be choosing photos from the submissions and compiling the calendar in order to have it in and ready to go for the holiday party.

Send submissions to Cindy Holt holtcindy@gmail.com

*Thank you!*

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**Answers to the quiz:**

1. **Which hive pests are entomopathogenic nematodes used to control? And how are they applied to control this pest?**
   
   *Small hive beetles. They are applied to the ground around the base of the hive.*

2. **List three endocrine glands located in an adult honey bee worker’s head. What do they secrete and what is the function of the secretion?**
   
   - **Mandibular gland:** milky secretion rich in lipids, used to make brood food/royal jelly. Also produces 2-Heptanone, an alarm pheromone.
   - **Hypopharyngeal gland:** clear secretion rich in proteins, used to make brood food/royal jelly. Also produces invertase, used in the conversion of sugars during honey ripening.
   - **Post cerebral gland:** salivary secretion used to soften things that need chewing, cleaning surfaces, and dissolving sugary foods.

3. **Name the two hormones involved in honey bee growth and development. How do they interact to control molting from larval instars to pupa to adult?**
   
   - **Ecdysone** regulates each stage of larval molting.
   - **Juvenile hormone** levels trigger the final eclosion from pupa to adult.

4. **The common name for *Apis florea* is the dwarf honey bee and they make an open nest consisting of one comb that is protected by a layer of bees.**

5. **Some honeys act like a solid gel in the comb but are liquid once extracted and stirred. This kind of honey is called **thixotropic**. The best known honey exhibiting these characteristics is **heather** honey from several places in Europe.**

6. **What method of queen rearing requires grafting larvae?**
   
   *The Doolittle Method*

7. **Clipping a queen’s wing effectively prevents a colony from swarming. False**

8. **Scratch marks on the ground are indicative of what predator? Skunks**

9. **Because Apis mellifera evolved in Asia, it has been unable to adapt to the relatively cold (temperate) winters of North America. False**

10. **Match the pheromones with the locations you would expect to find them in high concentrations.**
   
   - **Dufour’s Gland pheromone** At the tip of the queen’s abdomen
   - **Nasonov gland pheromone** At the entrance of the hive
   - **Alarm pheromone** Near the sting site of a predator
   - **Queen pheromone** On the queen’s body and mouths of her retinue
   - **Forager pheromone** On the body of the bees returning with nectar
   - **Brood pheromone** On the young larvae