March 2013

OLYMPIA BEEKEEPERS ASSOCIATION

NEWS AND INTEREST FROM THE MARCH 11, 2013 MEETING

Secretary and Treasurer Report, President's Message, Up-coming Program

Reminder: Bee packages will be available for pick-up on Saturday, April 20, 2013. Up-dates at April meeting.

President's Message: As we all are getting into the swing of spring and all things "bees" your newly elected officers are gearing up for planning, events participation and other possibilities that appeal to our membership in the coming year. Abundant thanks to the outgoing officers, including Mark Emrich for his years of service as President of OBA; Kelly Shincke, our outgoing Vice President and Yvonne Dettlaff, serving the club as Secretary. Your hard work and efforts are duly noted and much appreciated.

When I attended my first OBA meeting, I came early so I could attend class. In that one hour of class and the meeting that followed I walked away with more information than I could have imagined, and was inspired to an even greater degree, to get started with bees and beekeeping. I was also taken by how approachable members were and how willing they were to share and help. Thereafter, I availed myself of class before every meeting as well as Bob Smith's additional classes. I learned that beekeeping is an art as well as a science and sought out the "experts" at meetings when I wasn't sure how to handle a problem or wanted to avoid one. I had heard that if you ask 10 beekeepers the same question, you'll get 10 different answers. I found that to be somewhat true, and my beekeeping mantra became "have a really good reason for doing what you're doing, and then just do it". I make the best choices I can based on what's available to me, learning more every step of the way.As a club, we have an incredible resource available to us at each meeting and beyond. Meetings are an opportunity to gather, share notes and experiences and learn something new. Going forward, we want to make sure the club provides our membership with the support, knowledge, encouragement and information necessary to be successful in beekeeping. Advocacy, and helping to educate the public on the importance of honeybees, pollination and what each of us can do to make a difference, whether a beekeeper or someone who is simply interested in learning more about bees is also an important facet of our club.

I feel privileged to be a beekeeper, and to be part of an organization and in the company of so many others who share the love of beekeeping and the experiences that help us all to learn more. We want to know what the membership of our club would like to see as we grow and evolve the organization and will be actively seeking your input to provide programming and meeting features that have value to our diverse group.

I look forward to seeing you at our next meeting on the 8th.

Laurie Pyne
President

March 11, 2012
Beekeeping Minutes
Treasurer's Report:
Checking: $2514.80; Saving $4128.18; and $20 cash on hand (plus extra money from new memberships).
Mentor Chair: We have 12 mentors and 12 wanting mentors. We are seeking mentors that are located in the Shelton and Olympia area.
Bob Smith Class: He estimated 39 students.

Bee order details: pick-up is April 20th between 8am –noon located at Dave's Ragsdale house at 3639 Snug Harbor Rd NE, Olympia, WA.
New Business: Elections.
Laurie Pyne is our new president.
Vice President: Renzy Davenport
Secretary: Rebbeckah Cribbs.

WA State Board Meetings update. Currently there are four house bills. Once of which will allow tax exemption for beekeepers, as they can be considered a business. Bill should pass. Another bill will allow beekeepers to be considered a limited liability business.
Approximately five new members introduced themselves.
Jay W. Foster provided an allergy and anaphylactic shock presentation. Jay is a paramedic for 30 years. He currently works for Medic One.
Mild reaction: Swelling, red skin. May experience irritating itchy sensation, and pain that is more severe than the ordinary.
Extreme reaction: Anaphylactic shock. Your body reacts quickly. Anaphylactic stock can be fatal. Conditions include severe headache, trouble breathing, swollen tongue and nausea. There is usually a warning, but can be quick as five minutes.

Bees Can Sense the Electric Fields of Flowers

by Ed Yong

A bumblebee visits a flower, drawn in by the bright colours, the patterns on the petals, and the aromatic promise of sweet nectar. But there's more to pollination than sight and smell. There is also electricity in the air.

Dominic Clarke and Heather Whitney from the University of Bristol have shown that bumblebees can sense the electric field that surrounds a flower. They can even learn to distinguish between fields produced by different floral shapes, or use them to work out whether a flower has been recently visited by other bees. Flowers aren't just visual spectacles and smelly beacons. They're also electric billboards.

"This is a big finding," says Daniel Robert, who led the study. "Nobody had postulated the idea that bees could be sensitive to the electric field of a flower."

Scientists have, however, known about the electric side of pollination since the 1960s, although it is rarely discussed. As bees fly through the air, they bump into charged particles from dust to small molecules. The friction of these microscopic collisions strips electrons from the bee's surface, and they typically end up with a positive charge.

Flowers, on the other hand, tend to have a negative charge, at least on clear days. The flowers themselves are electrically earthed, but the air around them carries a voltage of around 100 volts for every metre above the ground. The positive charge that accumulates around the flower induces a negative charge in its petals.

When the positively charged bee arrives at the negatively charged flower, sparks don't fly but pollen does. "We found some videos showing that pollen literally jumps from the flower to the bee, as the bee approaches… even before it has landed," says Robert. The bee may fly over to the flower but at close quarters, the flower also flies over to the bee.

This is old news. As far back as the 1970s, botanists suggested that electric forces enhance the attraction between pollen and pollinators. Some even showed that if you sprinkle pollen over an immobilised bee, some of the falling grains will veer off course and stick to the insect.

But Robert is no botanist. He's a sensory biologist. He studies how animals perceive the world around them. When he came across the electric world of bees and flowers, the first question that sprang to mind was: "Does the bee know anything about this process?" Amazingly, no one had asked the question, much less answered it. "We read all of the papers," says Robert. "We even had one translated from Russian, but no one had made that intellectual leap."

To answer the question, Robert teamed up with Clarke (a physicist) and Whitney (a botanist), and created e-flowers—artificial purple-topped blooms with designer electric fields. When bumblebees could choose between charged flowers that carried a sugary liquid, or charge-less flowers that yielded a bitter one, they soon learned to visit the charged ones with 81 percent accuracy. If none of the flowers were charged, the bees lost the ability to pinpoint the sugary rewards.

But the bees can do more than just tell if an electric field is there or not. They can also discriminate between fields of different shapes, which in turn depend on the shape of a flower's petals and how easily they conduct electricity. Clarke and Whitney visualised these patterns by spraying flowers with positively charged and brightly coloured particles. You can see the results below. Each flower has been sprayed on its right half, and the rectangular boxes show the colours of the particles.

ABOUT

Ed Yong is an award-winning British science writer. His work has appeared in Nature, the BBC, New Scientist, Wired, the Guardian, the Times, and more. Not Exactly Rocket Science is his hub for talking about the awe-inspiring, beautiful and quirky world of science to as many people as possible, regardless of their background.

More on bees and pollination from National Geographic:

- Orchid Mimicry Video
- Blog post about the installation of a bee hive on our rooftop.
- A Q&A with Cat Jaffee, a grantee who studies food culture, specifically the role of honey in the Caucus region.

The bees can sense these patterns. They can learn to tell the difference between an e-flower with an evenly spread voltage and one with a field like a bullseye with 70 percent accuracy.

Bees can also use this electric information to bolster what their other senses are telling them. The team trained bees to discriminate between two e-flowers that came in very slightly different shades of green. They managed it, but it took them 35 visits to reach an accuracy of 80 percent. If the team added differing electric fields to the flowers, the bees hit the same benchmark within just 24 visits.

How does the bee actually register electric fields? No one knows, but Robert suspects that the fields produce small forces that move some of the bee's body parts, perhaps the hairs on its body. In the same way that a rubbed balloon makes you hair stand on end, perhaps a charged flower provides a bee with detectable tugs and shoves.

The bees, in turn, change the charge of whatever flower they land upon. Robert's team showed that the electrical potential in the stem of a petunia goes up by around 25 millivolts when a bee lands upon it. This change starts just before the bee lands, which shows that it's nothing to do with the insect physically disturbing the flower. And it lasts for just under two minutes, which is longer than the bee typically spends on its visit.

This changing field can tell a bee whether a flower has been recently visited, and might be short of nectar. It's like a sign that says "Closed for business. Be right back." It's also a much more dynamic signal than more familiar ones like colour, patterns or smells. All of these are fairly static. Flowers can change them, but it takes minutes or hours to do so. Electric fields, however, change instantaneously whenever a bees lands. They not only provide useful information, but they do it immediately.

Robert thinks that these signals could either be honest or dishonest, depending on the flower. Those that carpet a field and require multiple visits from pollinators will evolve to be truthful, because they cannot afford to deceive their pollinators. Bees are good learners and if they repeatedly visit an empty flower, they will quickly avoid an entire patch. Worse still, they'll communicate with their hive-mates, and the entire colony will seek fresh pastures. "If the flower can signal that it is momentarily empty, then the bee will benefit and the flower will communicate honestly its mitigated attraction," says Robert.

But some flowers, like tulips or poppies, only need one or two visits to pollinate themselves. "These could afford to lie," says Robert. He expects that they will do everything possible to keep their electric charge constant, even if a bee lands upon them. They should always have their signs flipped to "Open". Robert's students will be testing this idea in the summer.

Many animals can sense electric fields, including sharks and rays, electric fish, at least one species of dolphin, and the platypus. But this is the first time that anyone has discovered this sense in an insect. And in the humble bumblebee, no less! Bees and flowers have been studied intensely for decades, maybe centuries, and it turns out that they've been exchanging secret messages all this time.

Now, Robert's team is going to take their experiments from the lab into the field, to see just how electrically sensitive wild bees can be, and how their senses change according to the weather. "We are probably only seeing the tip of the electrical iceberg here," he says.

Reference: Clarke, Whitney, Sutton & Robert. Detection and Learning of Floral Electric Fields by Bumblebees. Science http:/dx.doi.org/10.1126/science.1230883

New Officers

President: Laurie Pyne
Vice President: Renzy Davenport
Secretary: Rebbeckah Krebs

BEELINE
Reporting:
Thomas Mani
Sharon Wang
Roy Manicke

Membership Chair and Publishing:
Dana Smith

News from the Washington State Beekeepers Association

Mark Emrich, 2013 President of the WSBA, reported that there are two bills in the State Legislature regarding beekeepers. First, a major bill to prevent beekeepers from having to pay Excise and B&O taxes. The goal is to reclassify beekeeping from a Service to Agriculture or Farming. Second, a bill to insure that Beekeepers are not subject to undue liability by insuring that State Law provides limited liability coverage for Beekeepers which should prevent lawsuits from being filed. Both bills are moving through the legislature and we hope to have an update by the April meeting.

Mark also reported on the success being seen in new wintering techniques used by commercial beekeepers which could some day provide new technologies for all of us for wintering our bees.

There is also a revised WSBA website which everyone is encouraged to visit.

http://wasba.org

March Program:

ANAPHYLAXSIS AND OTHER BEE ALLERGIES

by: **JW Foster**, Thurston County Medic 1 Paramedic

JW was kind enough to present a program on allergic reactions up to and including anaphylaxsis.

He noted that there are a variety of mild to moderate allergic reactions caused by bees, dust, nuts, shell fish, etc. and these may activate our immune system and create mast cells.

All in all, most allergic reactions are mild with swelling or hives.

It is when there are multiple systems involving symptoms, swelling and hives, and respiratory impact that we call it anaphylactic shock and must act.

The Epi-pen is the best initial treatment and anyone who knows they are subject to a severe allergic reaction should obtain an Epi-pen from their physician. Benadryl is also most helpful. Bee stings appear to have a rapid onset of symptoms compared to nuts and shell fish.

Bottom line - be prepared to act and don't forget to call 911.

April Program: Show-And-Tell
Installing a package into a Langstroth Hive - Jack Robertson
Variations on installing a package into a Kenyan Top Bar Hive - Kellie Schinke
Variations on installing a package into a Warre' Top Bar Hive - Ernie Schmidt
A Beekeeper's Tool Box - Doug Herrington
Record-keeping for Apiarist + "The Bee Informed Partnership Project" Thomas Mani

Invitation: To All who attend the OBA meetings:
Please consider presenting a short (about 5 minute) show-and-tell topic at the April OBA meeting. For example, you may:
* review a piece of beekeeping equipment you either constructed or purchased
* recommend a book or video from the club library, or elsewhere
* describe a new twist on an old process for doing something related to bees
* show something you, or someone else, made from a hive product (wax, honey, propolis, royal jelly)
* introduce us to an educational web-resource related to beekeeping
* talk about something else bee-related that our members would find interesting--Bee Creative! Share your Knowledge, Help make our meetings interesting and useful.

Please contact Rich to get on the agenda: rich.beekeeper@gmail.com or leave a message 360.866.1415

Illinois Redneck Hive

Swarm in the tree trunk was capped and relocated. Once home, deep was placed on top.
Hive is doing well and produced good honey in 2012.

Reminder: Apprentice Beekeepers Class is growing so arrive early if you want a seat.

Plants, books, seeds, and other artifacts are always appreciated for the meeting raffle.

And if you have a tasty snack to share, everyone enjoys something sweet.

Beeline Publication

At the March meeting, we also had a side bar to help the out-going Secretary with the Beeline monthly publication.

Thomas Mani, Sharon Wang, and Roy Manicke volunteered to report and prepare content. Dana Smith offered to publish and distribute the Beeline.

The goal is to provide a great newsletter for all the members. If you have suggestions or things to report please contact the aforementioned staff.

We hope you enjoy receiving the Beeline. Goal is to email one week prior to the next monthly meeting.

Feed your Bees

Monthly Meetings: held the second Monday of each month, excluding July and August.

Place: Chinook Middle School, 4301 6th Ave NE, Lacey, WA

Time: 6:00 pm for Beginning Beekeeper's Certification Program, 7:00 pm for the association meeting. Meetings are held in the Cafeteria. Beekeeping class meets in the central hall Science Room.

Agenda: Each meeting is conducted with old and new business, and a program related to beekeeping. Attendees, if they choose, donate a gift for the raffle table. The Treasurer and Membership Chair sell tickets for $1.00 and at the break there is are refreshments available.