Red River Apiarists' Association

The Bee Cause

Volume 9, Issue 3 March 2012

- Next general meeting is 7:30 Tuesday, March 13**th** at the **River Heights Community Centre, 1370 Grosvenor Ave., Winnipeg.**
- **(in room right of main-door)**
-

Speaker: David Ostermann on Spring Management

Inside this issue:

Following our discussion articles. in the February's RRAA newsletter we have learned there are multiple routes of pesticide (chemicals) exposure for honey bees living near agriculture fields; they are multifaceted with environmental and chemical roots. To understand ourselves in this inter play of colony impacts we can take a closer look at the bee research.

Compiled By Ken Rowes February 2012

It is not new that behaviour is influenced by genes, the environment and the interactions between the two. Genes never act alone, acting in an environment where they code for proteins that participate in many systems in an organism. Genes depend on many of the proteins for replicating DNA and linking together amino acids, which are the fundamental units of proteins. Note here the fragility in the well being of honeybees if these proteins or amino acids are impacted.

To properly appreciate the influence of genes on behaviour, behavioural studies demonstrate – at the molecular level - the influences of genes, environment and their interactions. Social behaviour is ideally suited for this. In many cases these influences are mediated by specific social signals communicated between individuals thus permitting an experimental study.

Honey bees are ideal for social behaviour due, like humans; they experience behavioural development – passing through different life stages as they age and their genetically determined behaviour responses to environmental and social stimuli change in predictable ways.

Behaviour expression:

Thomas Seeley, a biologist at Cornell University (2) researched the decision-making power of honeybees connecting it to what scientists call swarm intelligence. This phenomenon is similar to swarming locusts, schools of fish and flocks of birds. More specific Seeley has explained that the honeybees have specific built-in guidelines for housing. A scout bee coming back from an ideal cavity will dance with passion, making 200 circuits or more and waggling violently all the way. But if she inspects a mediocre cavity, she will dance fewer circuits. Enthusiasm translates into attention. The subsiding dancing reduces the colony's chances of making less desirable choices.

Carl Simmer in the Smithsomian magazine March 2012 (2) quotes Jeffrey Scall, a neuroscientist at Vanderbilt University, remarking that all bees are to hives as neurons are to brains". Neurons chemically compute a decision similar to the antics of honeybee to finalize decisions. Simmer compares a single visual neuron like a single scout reporting about a tiny patch of what we see, just as a scout dances for a single site. Making the choice right or wrong, neurons run an evaluation where temporary alliances are made with more neurons activated to their interpretation of the reality, like scout bees recruiting more bees. What Simmer and Seeley explain is that bees have a flexible union allowing all ideas into their decision play. In this case, a swarm 'home finding' is a colony's single unified goal. A honeybee quorum finally resolves the decision. Interestingly, to achieve a quorum they head-butt to shift the focus to the dance for the more popular site thus reduce those dancing for other locations. Seeley has found once the scouts reach a quorum of 15 bees all dancing for the same location, then they start to head-butt one another, silencing their own side so that the swarm can prepare to fly.

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Presidents Comments – March 2012

Charles Polcyn is out of the country so it falls upon me to script the "presidents message" for this months news letter. As I write this, my earlier visions of an early spring have vanished under an all to thick blanket of snow. Just last week we were out checking colonies for dead-outs with a stethoscope, dreaming of a quick melt, and early blooms. Here's hoping next week temperatures puts us back on that track. We have had a fairly easy time this winter, and it's hard not to daydream of that perfect early spring, with warm days and early splits.

I received a notice from my glass supplier telling me of another price increase in the cost of glass and plastic containers. Gas prices in some parts of the country topped over 1.40 a liter and minimum wage is due for another increase. With all of these rising expenses, it will be a challenge to keep ones books in the black regardless of how many colonies one has, even with a good year for production. Diligent monitoring to keep mites in check, analyzing winter losses to learn from any mistakes becomes more and more important to protect ones investment.

The recommended honey house price was 2.50 per pound. I myself have always considered these recommendations too low for quality Manitoba honey, and have found the market more than willing to pay At least 50 cents more for bulk, and depending on your choice of containers, up to a dollar more honey in jars.

It's important to recognize the worth of what you make, and charge accordingly if your goal is to turn a profit, or to keep your hobby self sustaining in the seasons to come.

I'd like to take a moment to thank all of those involved in helping get our new logo developed. If I understand correctly a few new up-dated drafts will be presented for examination at our next meeting on (insert date).

I've mentioned it before, and I'll always stress how important it is to get this accomplished. Using a logo for our website, newsletter, pamphlets, and honey show signage is crucial to promoting our as-sociation and making it easy for the general public to identify us as the available resource for beekeeping hobbyists. Every organization needs to grow if it is to last, and the membership deciding on our new logo will help us gain more public recognition and attract new membership.

Regards!
John Russell —//\\—

Minutes of the RRAA General Meeting
River Heights Community Club – February 14, 2012

7:30 PM: Brian Smith opened the February meeting.

Minutes: Moved by Margaret Smith and seconded by Ken Rowes to approve the minutes as circulated in the Bee Cause. No changes were required.

Bee Cause Newsletter: February was the first issue of the Bee Cause that was mailed both electronically for members who used PC's and the remaining members received mailed paper copies. The good news; everyone received the copy that they requested. Even electronic copies received on dial-up came through at a reasonable speed. Marg Smith noted that electronic copies are easier to read if the articles run continuously rather than those that are continued on other pages.

Announcements: About a year ago the RRAA executive decided that we should have an updated logo that better reflects our association. Jim was able to find one of the original round logos that we used many years ago. While it was nice, members who saw this old decal generally agreed that we need an update. Subsequently, RRAA member, Alex Lloyd, went to work and came up with several design samples. He provided some colour copies of this work for us to look at and discuss. Several suggestions were made for changes regarding colour and shape. An ideal logo would be one that would look good at any size and still have a reasonably small computer file size. For example we may want to our logo to look good on a lapel pin or association correspondence.

MBA Report: - Jim Campbell reported that a committee of the MBA is scheduled to meet informally with the Manitoba Farm Products Marketing Council. Jim will report on this meeting at a later date..

Coffee Break: Coffee and cookies.

Program: Rhéal Lafrenière reviewed the presentations with us that were made at the recent CHC – MBA Conference in Winnipeg. Some of the presentations will be available to see on the MBA website. Other presentations consisted of the preliminary work on projects that are now underway. A number of these will be published in bee magazines in detail when the projects are complete.

Albert Anderson and Brian Little recently attended the North American Beekeeping Conference and Tradeshow in Las Vegas. The conference, organized by the ABF (American Beekeeping Federation), was well attended from around the country. Albert described a special drone frame that he saw which was divided with wax foundation only at the top. These were used to control varroa. Brian attended a session entitled "Serious Sideliner" The object of one presentation he attended was the intensive management of colonies to provide a payback of up to $500/hive.

Loonie Draw: There were a number of prizes for the Loonie Draw. Marty McIlwain received a honey poster and Glenn Lower got the jar of unique honey. Both Gilles Lantagne and Ted Rebenchuk received copies of a recent ABJ magazine. Duane Versluis, Ken Fehler, Keith Bamford, Stan Grysiuk, Albert Anderson, Glenn Lower, Ted Rebenchuk and Alex Lloyd each received a current copy of Hive Lights. This month the Loonie Draw added $20.25 to our account.

Ron Rudiak, recorder – RRAA —//\\—

MBA Report March 2012

Jim Campbell, MBA Representative

Manitoba Beekeepers' Association (MBA) continues meeting with other groups.

On February 29, MBA met with its' supervisory board, The Manitoba Farm Products Marketing Council at their meeting in Neepawa. The purpose of the meeting was to present an overview of the Association, its' roles and responsibilities, an overview of the Honey Sector, plus present the regulation Amendment for approval. The meeting proved quite productive as Council learned about Honey Bees and what is happening within the industry. Following the presentation, members of Council quizzed the board on several aspects of the industry. The session culminated in the proposed Regulation Amendment that would see producers pay a fee of $0.13 per colony on any colonies over 1000. The amendment follows a guiding Resolution approved at the MBA Annual General Meeting last November.

MBA is now preparing to meet with the Manitoba Agricultural Services Corporation board on 12 March in Portage la Prairie. MBA meets annually with their board to hear about the previous years performance results, and to present suggestions for future programs. During the March meting, MBA will be presenting suggestions for improvements to the Winter Bee Mortality Insurance program. MBA members voiced concerns for timing of application deadline, timing of spring inspections and other items.

In other areas, MBA was pleased at attendance for the 2012 Convention/Symposium, and are working on plans for Workshops or Field Day talks in the following months. MBA may be conducting a survey to determine desires of members in this area, to ensure meeting needs of the industry.

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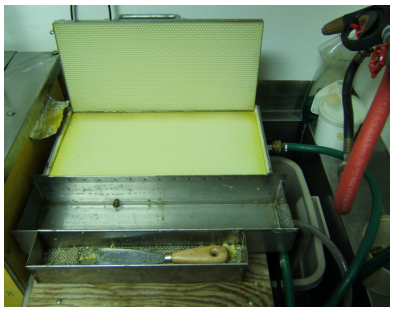
Spring management means 1 Check bees if you can.
2 Checking past records for spring conditions and Old problems.
3 Setting action plans for the potential problems and/or feed/ medication programs, preparing equipment and making sure you have what you need on hand for when the bees are brought out or unwrapped.. 4 Feed if required.

Wax Foundation

Process of Ted Scheuneman

In January I had the pleasure of observing the sheet wax, foundation process of Ted Scheuneman. The Unique reuse of your own beeswax from cappings has grown in popularity in response to reducing the transfer of disease and other pathogens in the wax from other sources. Ted Scheuneman, an advanced beekeeper and RRAA long standing member, has under taken the reuse approach to foundation wax renewal.

With a small wax press and a wax melter he has improved his hive development and well being.



Ice water is run through a water jacket to cool the wax in the press.

Bees have a greater tendency to build comb on new wax foundation.

Hot wax is poured onto the Teflon type mould with a ladle with just the correct amount of liquid wax to provide a full sheet with a small amount of overflow.

The mould is closed and held for a minute or so.

The press is cooled by running ice water through a water jacket using a small sump pump.

The sheets are pealed away from the mould and flattened then stacked in sets of 10s between light tissue paper.

Johannes Mehring of Germany developed the sheet wax foundation technique and later in 1921 Dadant & Sons introduced the wire reinforcement.

Reinforcement wire is embedded latter.

A sheet of wax will weigh approximately 8.5 grams.

Red River Apiarists' Association

Editor's Note by Ken Rowes

I've reviewed RRAA issues I have published and I am still committed to providing RRAA members with newsletters that will quicken the conscience by pertinent articles, feed the mind of the interested beekeeper, and possibly purge the imagination by new insightful ideas, methods and technologies. And yes I am still improving I pray in putting the newsletter together. With the February issue I feel we managed getting over a prairie mountain in providing an e-mail edition. I am trying to make the articles flow for easier reading requested.

Insects, bees in particular hold a special fascination for me. As we day reach preparing for our tomorrows - spring summer fall bee business the RRAA newsletter hopefully gives you moments to relax in an interesting read some new innovative ideas you can incorporate into you beekeeping that is affordable.

With the current chemical concerns of bee impacts this issue targets a more in depth look at the areas in the bee biology and its interpersonal communications in the hive - wherein their whole body is a sensitized receiver / transmitter open to an enormous volume of input, and alteration.

Nice the see our RRAA Logo getting attention, check out pg 9 and provide comments.
Spring management; bees will be out with in a month so BEE PREPARED—come to our March meeting.

The Bee Cause is the official publication of the Red River Apiarists' Association for distribution to its members and their colleagues in the beekeeping industry. It is published eight times a year on a monthly basis except December and the summer months of June, July, and August when membership meetings do not occur.

Articles can be best submitted in word documents as email attachments. Though they may be edited for spelling and basic grammar, no changes will be made to their contents, message and opinions. They are those of their originator and not of the Red River Apiarist Association.

Deadline for any submission to this newsletter is the second Saturday preceding the membership meeting to allow for publishing and mailing delays. Regular membership meetings are normally scheduled 7:30 PM on the second Tuesday of every month at the River Heights Community Centre located at 1370 Grosvenor Avenue in Winnipeg except the months as noted above.

The Red River Apiarists' Association, formed in 1963, represents the beekeepers of the Red River Valley and environs in southern Manitoba. The association provides a forum for the promotion of sound beekeeping practices through education, networking opportunities, meetings, field days, workshops, presentations by local apicultural experts, as well as the dissemination of this monthly newsletter.

We are on the web!
www.beekeepingmanitoba.com

CLASSIFIED

1 **For sale**: 1 complete D.E. Hive. Includes, brood chamber, super, queen excluder, bottom board, inner cover and ventilated top covers. Perfect for the back yard beekeeper. $100 OBO. Contact, **Lance W. Phone # 712-6783, Email; lancewld@gmail.com**

2 **Wanted:** honey sump or clarifier. Contact information is: **Jonathan Hofer (204) 981-6562 jonhofer1984@gmail.com**

3 **For sale**: Stainless Steel storage tank. Cylinder, 45" diameter and 55" high. Tank holds over 300 Canadian Gallons or about 4500 pounds. Tank stands 65" high. Located near Starbuck. **Phone: Jacob Hofer (204) 799-2433**

4 **For Sale:** Maxant 600-5 Double Wall S.S. Botling/Storage Tank with two 1800 Watt Immersion heating elements. Elements powered by 120v/110v. Tank previously used as wax melter, hence the two elements. Tank in very good condition, with thermometer and a sightglass. Tank holds 42 gallons or about 500 pounds of honey. **Ph (204) 981-6562 or e-mail jonhofer1984@gmail.com**

5. **For Sale: - Strong 4 frame nucs, with laying queens**. Will accommodate 3 or 5 frame nucs. Available approximately May 15 weather permitting. Ph **Chris Argiriou 296-4848 (cell) or 885-4588 (home)**

6. **For sale: - Spring nucs ready for May 15th weather permitting.** 3 frame $100; 4 frame $125; 5 frame $150, may also have single hives available. call **Dennis Ross 878-2924, cell 782-7838**

7. **For sale:** Manitoba Hygienic Bees for sale in Spring 2012. Nucs available late May, 3 or 4 Frames with young laying Queens .Single Bee-Hives available as well. Manitoba Raised Queens available late May through summer **contact Wally at 1 204-266-2276**

8. **For sale:** Strong 4 frame nucs, ready in May, with local young queen from last year. Contact: **Lance W. Phone: 712-6783; Email: lancewld@gmail.com**

9. **Wanted:** Looking for a small 2 frame honey extractor, can be manual or electric. Can be used or new.
contact: **Mary Louise Chown, 204-489-6994, mlchown@shaw.ca**

International Honey Market Report

February 21, 2012

Ron Phipps CPNA International, Ltd.

The current international honey market is approaching two fundamental changes. Firstly, the two tiered market based upon a flood of laundered Chinese honey may be collapsing. Secondly, there is an impending serious shortage of both white and dark honey due to reduced crops in North America, serious problems with the honey crops in Vietnam and Argentina and a dramatic decline in exports of "Indian" honey. Florida has reported the worst drought in half a century. While as this article is being written, we are still waiting official U.S. Department of Agriculture statistics, the general impression is that the 2011 U.S. honey crop is among the lowest, if not the lowest, in recorded history. The current market is being driven by a confluence of factors including: 1) volatility in global weather patterns, 2) the eruption of non-tariff trade barriers, 3) curtailment and prosecution of circumvention and fraud and 4) currency changes and the debt that underlies currency volatility.

Argentina

The Argentine crop will be the decisive factor, barring circumvention of Chinese honey through third countries, that will determine the price of white honey. The Argentine crop began with ideal weather and high expectations for a bumper crop. Those expectations were quickly dashed by intense heat and prolonged drought. Argentina's neighbour Chile suffered extensive wild fires that arose from the same drought conditions. According to Dr. James Hansen of NASA, which has more access to satellite data than any other scientific laboratory in the world, solar activity is on the upswing and the next El Nino, due within the next 3 years, will increase tropical Pacific temperatures. The warmest years on record were 2005 and 2010 in a virtual tie (NASA Headquarters release No. 12-020).

In the 4th quarter of 2011, the market was manipulated by several factors. When the indictments came from Florida for circumvention of Chinese honey, a huge amount of cheap honey was taken off the market. That factor prompted an assiduous attempt to manipulate the market to obtain cheap honey needed to fulfill contracts that were predicated on a steady flow of Chinese honey that was entering through false customs classification. The second factor was the concern with the rigid non-tariff trade barrier in Germany that threatened to preclude any honey that contained more than 1% pollen from GMO plants. Both the health risk and the scientific testing modalities attending such determinations put the European market in a state of passivity. The attitude was, until the EU clarifies this issue, we cannot buy honey. As the European economy entered a deeper financial crisis and the Euro weakened, European packers also wanted lower U.S. dollar prices because it took more and more Euros to buy honey at any given US dollar price level. As the drought in Argentina developed and inventories became significantly reduced, the German packers started saying "since the EU has not clarified their position, we can buy." The packers also realized if this issue was not resolved in a favourable way, they would simply change the labels to indicate the honey may contain pollen from GMO plants. They would not and need not reduce their business by the drastic amount that would be required if they could only market honey free of GMO pollen. By January and February the demand on Argentine honey from Germany itself was 400-500% greater than the supply of honey.

By late January, the equivalent of the end of July in the northern hemisphere, there was some additional late rain, but those rains affected only sunflower honey which produces ELA, not white honey. The short crops of white honey from the US and Canada deeply intensify the demand for white honey. Argentine exporters' main concern as Spring approaches is whether they will be able to fulfill the existing contracts with the quantity, quality, colours and prices which they entered speculatively with high hopes of a great crop.

Mexico

Many of the producing areas have experienced devastating drought and cold conditions, with 33 cold fronts that negatively affected honey production. *The New York Times* reported in an article titled "Food Crisis as Drought and Cold Hit Mexico".

Vietnam

Vietnam has been a major supplier of industrial grades of darker honey for the US market. The fact that exports of Vietnamese honey to the European Union have not hithertofore been authorized has caused Vietnam to concentrate its expanding honey production on exports to the US. In 2011, Vietnam exported about 59,500,000 pounds of honey to the world, approximately 95% of which was Light Amber for the US market. The continuation of such a level of exports to the US in 2012 is seriously jeopardized by the emergence of the fungicide carbendazim. Not only Vietnamese honey but the large volume exports of orange juice from Brazil are being affected by a non-tariff trade barrier of zero tolerance levels for carbendazim residues. Both Vietnamese honey and Brazilian orange juice have been rejected by the FDA, even though the US Environmental Protection Agency affirms that residues in orange juice of 80 ppb or below do not pose a health risk. The European Union standard for imported orange juice is below 200 ppb. The Brazilian government, knowing the US Environmental Protection Agency's position, has requested a grace period to cease the use of this fungicide in Brazilian orange groves. Vietnamese farmers typically use the fungicide on major crop sources of honey such as coffee, cashew and rubber plantations to prevent mold on these important agricultural cash crops. Vietnam has become the second largest producer of coffee and the number one exporter of cashew nuts in the world.

Concern about carbendazim residues has resulted in the curtailment of exports of honey to the US and efforts to obtain authorization for export to the EU. Because of the gravity of this problem there was a national meeting in early February in Vietnam. The USFDA is visiting Vietnam to inspect honey production and processing and meeting with the Vietnamese ministry of Agriculture and representatives of beekeepers. During his February visit to Washington, Vietnam's Vice-Premier Vu Van Ninh has made an official request to US Senators and the US Administration to facilitate Vietnamese trade in products including honey.

A new honey floral source from an area without applications of carbendazim is becoming available. The Vietnamese are trying to solve the problem by 1) opening up other markets than the US, 2) working with the farmers who tend the important cash crops to prevent use of carbendazim, 3) developing honey sources from crops without the fungicide, 4) working with the US FDA to get a reasonable tolerance level or a grace period, and 5) sending the bees to honey sources only if, and after, carbendazim applications have ceased.

Failing a solution of this problem, the market price for industrial grades of honey, just as white grades of bottling honey, is poised for a dramatic increase as demand will exceed supply. The Vietnamese beekeepers collect honey, but cannot sell it. One exporter indicated that if they cannot sell to the US, and the EU does not authorize Vietnamese honey imports, then the Vietnamese exporters could be bankrupt by the second half of the year. At the minimum, this problem has created enormous pressure on availability of Light Amber honey in the North American market. At the close of 2011, approximately 1,000,000 pounds of Vietnamese honey was sent back to Vietnam by US government authorities.

In the long term, the major consuming countries like the US and Germany will have to remove or reduce both tariff and non-tariff trade barriers if there will be adequacy of supply, reasonableness of price and availability of the variety of qualities that these mature markets demand.

(continued pg 7)

(from pg 6)
India
White honey imports from India during 2011, to everyone's surprise, exceeded those from Argentina:
White Honey- US imports for 12 months 2011
India 25,344,769 pounds
Argentina 20,857,065
Canada 12,555,838
(Source: Department of Commerce, U.S. Census Bureau, Foreign Trade Statistics)
India was the largest honey exporter at 58,862,000 pounds. This volume is about double the quantity shipped by India in 2001 (26,700,000 pounds). Indian academics have expressed astonishment that India could increase their honey volumes 3,000% in a decade. It is especially astonishing in light of the fact that the major and most experienced honey producers in the world, such as the U.S., Argentina and Canada, are finding significant reductions in their crops. Those reductions are due to global volatility in weather patterns, stress on the bees, conversion of pasturelands to production of biofuels and soybeans for export to India and China, and migration of rural populations to urban centers.
The Indian explanation for large amounts of white honey production was "the rapid cultivation of sources of white honey such as eucalyptus." Eucalyptus honey, whether produced in Australia, Uruguay or Argentina, is universally dark honey. Is it really a coincidence that the explosion of white honey from India followed within months of Homeland Security's dramatic success in stopping the circumvention of Chinese white honey through Indonesia and curtailing honey from Malaysia?
India passed a law prohibiting blending and export of Indian honey with foreign imported honey. National governments do not pass laws unless they are trying to correct a problem. Even the Chinese apiculturists have expressed in writing that Chinese honey has been sent to India and Thailand in order to avoid antidumping duties.
Shipments from India made in January 2012 amount to about 1,850,000 pounds. Last year, India's export volumes exploded in April and May. The Indian honey industry began signalling in early 2012 that they will have a very poor crop, and the conditions are unfavourable for the bees. How much this projected shortage and decline in honey exports reflects reality and how much it reflects all the attention that developed in 2011 concerning the enormous surge of Indian honey that reached about 18,000,000 pounds for 1 month and how much is due to discussions between the U.S> and Indian governments about the curtailment of circumvention of honey through India remains to be seen. The fact that the EU has lifted the ban on Indian honey allows both Indian and Chinese honey to go to the EU. Both countries have huge numbers of GMO crops, as does Europe. But filtration and ultra-filtration may make this a moot issue if the pollen content is removed.
It should be noted that during the 2012 State of the Union address, President Obama set up a task force to stop violations of international law with an explicit focus on China. Vice President Biden is in charge of this task force. During the February visit of China's President designate Xi Jinping, Vice President Biden spent 20 hours with the vice premier. We can presume that they discussed the importance for the Chinese government to become part of the solution in preventing corruption in international trade. It behooves both India and China, as 2 very large and important developing economies, to strictly adhere to the rule of law in international trade. In the long term India and China will both benefit by upholding their national reputations.
Global Standards
While the world talks of various forms of economic and energy independence, the reality is that the thrust of human history leads to greater networks of economic interdependency and collaboration. That being the case, there has to be greater international cooperation to establish standards, both protecting bees and assuring the safety of honey, that are based upon sound science and legitimate health risks. To protect the ability of beekeepers to give the essential support for agricultural production, including production of fruits and vegetables with essential antioxidants and phyto-nutrients, is vital. This will require, sooner rather than later, ways to both protect bees and the safety of the human food supply. Establishing such standards will require international scientific cooperation.
If the anticipated market changes take place, then the March to Monopoly predicated upon cheap, circumvented, illicit Chinese honey may morph into a March to Bankruptcy as supplies are drastically curtailed and the arm of the law reaches those who have gained market share based upon collusion to circumvent U. S. antidumping orders. The industry may also find that the Masters of Market Manipulation, who sought to depress the market to compensate for the loss of circumvented honey, may preside over unfulfilled contracts. The low prices, large quantities, light colours and qualities under speculative contract may prove to be a phantom.
The end of a two tiered market will allow the integration of the incentive to produce and the incentive to consume, and the establishment of a fair market place of mutual benefit to beekeepers, exporters, importers and packers.

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Calling All Young Beekeepers

This summer Switzerland will host the **international competition and meeting of young beekeepers**. This will be the third such event since it's inception in the Czech republic in 2010. Last year the event was held in Austria with participants from 16 countries.
The goal of this event is to foster interest and enthusiasm for beekeeping among young people. Open to beekeepers up to 15 years old (not 16 before December 31 2012). This four day event will test the both hands-on and theory beekeeping. Main languages will be English and German.

I am passing on this information on behalf of the organizing committee in Switzerland. Please distribute this e-mail as you see fit.

This years event is in it's planning phase currently, for more information please contact: robertleuenberger@rogers.com
or
Heinrich Leuenberger
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3462 Weier i / E
Tel. 079 200 07 35
E-Mail: leuenberger@vswi.ch

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Sincerity

Sincerity is being as genuine on the inside as we appear to be on the outside. Honey Bees demonstrate a special sincerity in an unusual skill in communication. Using body language and uniquely formulated scents called pheromones, to convey reliable messages describing danger, work assignments, and food sources.

Makes you think about ourselves.

(from pg 1)
Within this principle of flexibility they have documented change. Once a scout finds a site, she travels back and forth from site to hive. Each time she returns, she dances to win over other scouts. But the number of dance repetitions declines, until she stops dancing altogether. Seeley and his colleagues found that honeybees that visit good sites keep dancing for more trips than honeybees from mediocre ones.

The Genetic connection:

Basic to honeybee behaviour is Fact 1, colonies live with overlapping generations, Fact 2, caring for their own offspring cooperatively, and Fact 3, they maintain a reproduction division of labour. Subdivisions exist as in the worker bee whose adult life span is just four to seven weeks, they under go further transitions spending first few weeks maintaining the hive and the last few weeks foraging. During the hive phase she cell cleans for a few days, cleaning out cells where bees have immerged or were honey cells are cleaned for new. Next she may serve as a nurse, caring and feeding larvae. Nearing the end of her hive phase a worker may process and store nectar converting it to honey, reduce moisture in the honey as well as creating new comb, guarding the hive and removing corpses. Lastly the worker transitions to a forager learning navigation, collections and communication skills. Robinson (1) affirms that behavioural development in bees is a powerful system for integrated analysis and that from the wealth of knowledge learn over the years that the natural social life of the honey bee can be extensively manipulated with unparallel precision.

As Seeley above showed, Robinson affirms again that bees can accelerate, retard or even reverse their behaviour development in response to changing environmental and colony conditions. Birth rate may accelerate in favourable conditions in late spring reducing foragers for more nurses or the hive phase may be shortened so that young bees become precocious foragers. Swarm transition may be retarded so some may be overaged nurses their hypopharyngeal glands continue to produce food for larvae.

The challenge Robinson and his colleague's had, was to understand the mechanisms of integration that enable individual bees to respond to fragmentary information with actions that are appropriate to the state of the whole colony.

Robinson discovered that the juvenile hormone produced in the corpora allata gland near the brain, influences the insects development, helping to time the pace of behavioural maturation. He states that the indirect evidence for this hormone's role exists in the fact that younger bees have lower levels than older foragers and found that removing the corpora allata delays development a few days from becoming a forager. He found by manipulating colonies that bees reverted from foraging to nursing with lower levels of juvenile hormone.

Inhibitory Interaction

Robinson and his colleagues found that the rate of endocrine-mediated behavioural development was influenced by inhibitory social interactions. From isolation studies he proved that older bees inhibit the behavioural development of younger bees. As well younger bees foraged later than normal when the colony's foragers stayed in the hive for several days such as when making the colony think it was raining.

Robinson (et al) suggests that the modulator of behavioural development appears to come from the workers themselves. This inhibition that comes from worker-worker interactions might stem from a pheromone exchange. When they removed the glands they felt that that may have eliminated the inhibition because it removed the source of the pheromone or it simply blocked the pheromone flow from another location.

Brain Remodelling

Researching further Robinson and colleagues found that the "mushroom bodies" essentially in the middle of the bee's brain thought to be the centre of learning and memory increase 20% in volume as the worker bees matured. They also found that this increase was unstoppable that it takes place in bees reared in social isolation and in complete darkness. They suggest that these bodies may need to increase brain space for a bee to learn from inside hive activities to outside hive activities. They also found that these bodies increase more rapidly in precocious foragers than in nurse bees. Because neuron development at the time (1998) is undetectable the increase in volume is still a mystery, although he suggests that proliferation of neuronal branches would likely impact the processing of information in the mushroom bodies.

Sociogenomics

Robinson and colleagues have studied the differences in social behaviour – within and between individuals – finding correlation with variation in gene-transcription regulation, gene structure and both. Studying the role of the period (per) gene in the honeybee behavioural development they found links between bee division of labour and circadian behavioural rhythms. Foragers have pronounced circadian rhythm activity exhibited by being more active by day. Monitoring individually tagged bees every three hours in glass walled observation hives they discovered no evidence of circadian rhythmicity or shift work. Thinking that genetic factors appear more flexible in a honeybee's behavioural development and its circadian rhythm they found that workers of some genotypes, are more likely to constantly mature rapidly and forage precociously, even in different social environments and other genotypes are more apt to develop into overaged nurse bees. More specifically they found that fast-genotype bees
(continued on pg 9)

(from pg 8)
developed circadian rhythm of locomotive behaviour in the laboratory at younger ages and they also had a faster periodicity to their circadian rhythm.

In the final analysis quantitative genetic studies indicate strong correlations between genetic variation and variation in social behaviour among individuals.

Thought provoking

So where are we in the interpretation of what we do and what chemicals are impacting our bee colonies? With such intricate connections chemicals can block, disrupt, reverse or convert communication with in a bee – with in a colony. Yes and kill. Is there a factor why bees are not foraging when they should? Are the chemicals brought to the hive delaying age related behavioural development or accelerating aging and burning out the forages at a faster rate? We know our manipulation changes the colony's behaviour when a queen is taken or introduced and when we add icing sugar or some other chemical that mask or interrupts the pheromones roles in the well being of the hive.

References

1 Gene E. Robinson. The American Scientist Vol. 86 pgs 456-462 September-October 1998. A combination of environmental, genetic, hormonal and neurobiological factors determine a bee's progression through a series of life changes.

2 Carl Zimmer. Smithsonian, magazine, March 2012. The Secret Life of Bees; The world's leading expert on bee behaviour discovers the secrets of decision-making in a swarm. —//\\—

Bee Club Logo Designs
Jim Campbell, Exec member

At different times over the past few years RRAA Executive discussed reviving a logo for our group.

The newsletter carried a skep design to link beekeeping to the club. Yet the ancient bee hive was a free ware, easily obtainable for computer systems. The skep first appeared in March 2001 (until Dec 2003), when Doug Henry became editor. Up to that time, Ron Wayne used a bee logo. It reappeared in its current format in February 2007 until now.

At the November 8, 2011 RRAA meeting, John R Badiuk called for logo suggestions. He displayed the original 1967 design (Honey Bee in Yellow Circle) and asked members to reaffirm this, or develop a new one. Alex Lloyd took up the challenge and presented samples at the February 14th meeting.

Feedback from members acted as a catalyst to renew efforts at developing a new logo. Alex will present more options at the March meeting. Hopefully RRAA will be able to celebrate its' 50th year in 2013 with a new design.

These two examples abeing considered. Perhaps we may want a real colourful design for larger displays such as Honey Show Posters, and then a much simpler design for letterhead, lapel pins, or whatever. What do you think?

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