GUILFORD COUNTY BEE KEEPERS ASSOCIATION

BEEKEEPING NEWS

April, May, June, 2012

a local chapter of NORTH CAROLINA STATE BEEKEEPERS ASSOCIATION, INC.

Meetings & Programs

**NO REGULAR TUESDAY MEETING IN APRIL*

Saturday, April 14th, 10:00 a.m.-2:00 p.m.

Field Day at Hagan-Stone Park, Shelter #5.

5920 Hagan-Stone Park Rd., Pleasant Garden, NC http://www.greensboro-nc.gov/index.aspx?page=1200 will link you to the park shelter map.

The club will provide hotdogs, hamburgers and the fixings. Members are requested to bring drinks, side dishes, and desserts to share.

Club members will provide a demonstration of hive manipulations and we will have mini presentations on a variety of subjects.

Field day is a great time of social interaction and fun. This is the perfect opportunity for 2012 beginning beekeepers to compare notes and ask questions about your new beekeeping experiences.

Shelter #5 is a larger shelter than we have had the past 2 years. It seats approximately 112 and has electrical service and bathroom facilities, but you still may want to bring a folding chair.

TUESDAY, May 8, 6:30 p.m. (covered dish meal)

Nancy Ruppert, North Carolina Apiary Inspector for South Central North Carolina will give a presentation on Examining a Hive from an Inspector's Perspective and Diagnosing Deadouts--What she Looks For

TUESDAY, June 12th, 7:00 p.m. (no meal)

**Speaker to be determined

Articles of Interest

Insects Have Personality Too, Research on Honey Bees Indicates

CHAMPAIGN, Ill. — A new study in Science suggests that thrill-seeking is not limited to humans and other vertebrates. Some honey bees, too, are more likely than others to seek adventure. The brains of these novelty-seeking bees exhibit distinct patterns of gene activity in molecular pathways known to be associated with thrill-seeking in humans, researchers report.

.... Now it appears that individual honey bees actually differ in their desire or willingness to perform particular tasks, said University of Illinois entomology professor and Institute for Genomic Biology director Gene Robinson, who led the study. These differences may be due, in part, to variability in the bees' personalities, he said. The study team also included researchers from Wellesley College and Cornell University.

"In humans, differences in novelty-seeking are a component of personality," he said. "Could insects also have personalities?"

Robinson and his colleagues studied two behaviors that looked like novelty-seeking in honey bees: scouting for nest sites and scouting for food.

When a colony of bees outgrows its living quarters, the hive divides and the swarm must find a suitable new home. At this moment of crisis, a few intrepid bees – less than 5 percent of the swarm – take off to hunt for a hive. These bees, called nest scouts, are on average 3.4 times more likely than their peers to also become food scouts, the researchers found.

"There is a gold standard for personality research and that is if you show the same tendency in different contexts, then that can be called a personality trait," Robinson said. Not only do certain bees exhibit signs of novelty-seeking, he said, but their willingness or eagerness to "go the extra mile" can be vital to the life of the hive.

...The researchers found thousands of distinct differences in gene activity in the brains of scouting and non-scouting bees.

"We expected to find some, but the magnitude of the differences was surprising given that both scouts and non-scouts are foragers," Robinson said.

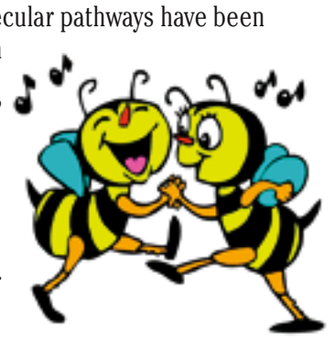
Among the many differentially expressed genes were several related to catecholamine, glutamate and gamma-aminobutyric acid (GABA) signaling, and the researchers zeroed in on these because they are involved in regulating novelty-seeking and responding to reward in vertebrates.

To test whether the changes in brain signaling caused the novelty-seeking, the researchers subjected groups of bees to treatments that would increase or inhibit these chemicals in the brain. Two treatments (with glutamate and octopamine) increased scouting in bees that had not scouted before. Blocking dopamine signaling decreased scouting behavior, the researchers found.

"Our results say that novelty-seeking in humans and other vertebrates has parallels in an insect," Robinson said. "One can see the same sort of consistent behavioral differences and molecular underpinnings."

The findings also suggest that insects, humans and other animals made use of the same genetic "toolkit" in the evolution of behavior, Robinson said. The tools in the toolkit – genes encoding certain molecular pathways – may play a role in the same types of behaviors, but each species has adapted them in its own, distinctive way.

"It looks like the same molecular pathways have been engaged repeatedly in evolution to give rise to individual differences in novelty-seeking," he said.



(You can see more details by searching **Insects have personalities**) Thanks to Rob Jacobs for referring this article.

31 January 2012 Last updated at 19:11 ET

By Mark Ward
Technology correspondent, BBC News

Honey bees use vibration to communicate while inside the hive...

Monitoring devices are being put in bee hives across Scotland as part of a project to keep an eye on their health.

The monitors record temperature and use a microphone to record the hum the bees make while working and resting.

Already the project has started to show the many different hums bees use to co-ordinate their work.

The project is also helping to work out which environmental forces and factors are behind the decline in bees and other pollinators.

The monitor is the invention of Huw Evans, who swapped his former trade of electronic engineering for beekeeping. He said the desire to get a better idea of what was happening inside a colony came to him after a few bad experiences with hives on the verge of swarming.

Mr Evans knew of the work done in the 1950s by BBC sound engineer and beekeeper Eddie Woods, who created a device that analysed the sounds made by bees in a hive.

Mr Woods claimed that more than 90% of the inspections beekeepers made of their hives were unnecessary because, most of the time, the bees were fine. In those cases, all a beekeeper did when he looked through the combs was upset the bees and stunt honey production.

To fine tune his beekeeping, Mr Woods produced a device called the "apidictor" that helped spot when hives needed help because they were sick, running low on stores or close to swarming.

The downside of using the apidictor was that a beekeeper still had to visit a hive and insert a microphone to listen to the hum within.

The varroa mite is one of many pests that sap the health of a colony of bees

Mr Evans' monitor updates the apidictor using modern digital signal processors and algorithms designed to recognise different hums. He has set up a company called Arnia to commercialise the device.

"Every job a bee does inside a hive makes a slightly different noise," he said. "So if we can listen to the mass of sound within the hive and possibly dissect that, we can find out a lot about the inner dynamics within the hive.

"We started off looking for swarm prediction but when we began trawling through the data we noticed some other features. The monitor can give an indication of the strength of the hive, the fitness of the hive, how fast the hive is building, their intent to swarm and other such things." *to read more of this article search the title and these below also!*

Saturday, 17 March 2012 13:33 Written by Horacio Mezziga

By professor Eric Mussen of the University of California Davis

Despite a growing worldwide clamor to ban pesticides linked to honey bee deaths, multiple factors contribute to the declining honey bee population, not just one class of insecticides, says Extension Apiculturist and noted honey bee expert Eric Mussen of the UC Davis Department of Entomology.

Bayer Initiates Global 'Bee Care Program'

Bayer Bee Care Centers to open in Europe and the USA will further promote bee health.

Compiled by staff

Published: Feb 21, 2012

Bayer initiates a global "Bee Care Program" to further promote bee health. As part of the program, two "Bayer Bee Care Centers" are to be established. In Europe, one center is scheduled to open in Monheim, Germany, in mid-summer. A second center, which will focus on North America, is planned for later in the year in North Carolina.

"The Bee Care Program and the establishment of the Bee Care Centers will bring Bayer`s extensive experience and knowledge in bee health under one roof and will ensure that dedicated resources for bee health are available," Plischke said.

USA- HONEYBEE PROBLEM NEARING A "CRITICAL POINT"

Friday, 13 January 2012 18:29 Written by Horacio Mezziga
Article written by Claire Thompson

Anyone who's been stung by a bee knows they can inflict an outsized pain for such tiny insects. It makes a strange kind of sense, then, that their demise would create an outsized problem for the food system by placing the more than 70 cropsthey pollinate -- from almonds to apples to blueberries -- in peril.

Although news about Colony Collapse Disorder (CCD) has died down, commercial beekeepers have seen average population losses of about 30 percent each year since 2006, said Paul Towers, of the Pesticide Action Network. Towers was one of the organizers of a conference that brought together beekeepers and environmental groups this week to tackle the challenges facing the beekeeping industry and the agricultural economy by proxy.

"We are inching our way toward a critical tipping point," said Steve Ellis, secretary of the National Honey Bee Advisory Board (NHBAB) and a beekeeper for 35 years. Last year he had so many abnormal bee die-offs that he'll qualify for disaster relief from the U.S. Department of Agriculture (USDA).

In addition to continued reports of CCD -- a still somewhat mysterious phenomenon in which entire bee colonies literally disappear, alien-abduction style, leaving not even their dead bodies behind -- bee populations are suffering poor health in general, and experiencing shorter life spans and diminished vitality. And while parasites, pathogens, and habitat loss can deal blows to bee health, research increasingly points to pesticides as the primary culprit.

"In the industry we believe pesticides play an important role in what's going on," said Dave Hackenberg, co-chair of the NHBAB and a beekeeper in Pennsylvania.

Of particular concern is a group of pesticides, chemically similar to nicotine, called neonicotinoids(neonics for short), and one in particular called clothianidin. Instead of being sprayed, neonics are used to treat seeds, so that they're absorbed by the plant's vascular system, and then end up attacking the central nervous systems of bees that come to collect pollen. Virtually all of today's genetically engineered Bt corn is treated with neonics. The chemical industry alleges that bees don't like to collect corn pollen, but new research shows that not only do bees indeed forage in corn, but they also have multiple other routes of exposure to neonics.

The Purdue University study, published in the journal PLoS ONE, found high levels of clothianidin in planter exhaust spewed during the spring sowing of treated maize seed. It also found neonics in the soil of unplanted fields nearby those planted with Bt corn, on dandelions growing near those fields, in dead bees found near hive entrances, and in pollen stored in the hives.

Evidence already pointed to the presence of neonic-contaminated pollen as a factor in CCD. As Hackenberg explained, "The insects start taking [the pesticide] home, and it contaminates everywhere the insect came from." These new revelations about the pervasiveness of neonics in bees' habitats only strengthen the case against using the insecticides.

The irony, of course, is that farmers use these chemicals to protect their crops from destructive insects, but in so doing, they harm other insects essential to their crops' production -- a catch-22 that Hackenberg said speaks to the fact that "we have become a nation driven by the chemical industry." In addition to beekeeping, he owns two farms, and even when crop analysts recommend spraying pesticides on his crops to kill an aphid population, for example, he knows that "if I spray, I'm going to kill all the beneficial insects." But most farmers, lacking Hackenberg's awareness of bee populations, follow the advice of the crop adviser -- who, these days, is likely to be paid by the chemical industry, rather than by a state university or another independent entity.

Beekeepers have already teamed up with groups representing the almond and blueberry industries -- both of which depend on honey bee pollination -- to tackle the need for education among farmers. "A lot of [farm groups] are recognizing that we need more resources devoted to pollinator protection," Ellis said. "We need that same level of commitment on a national basis, from our USDA and EPA and the agricultural chemical industry."

Unfortunately, it was the EPA itself that green-lit clothianidin and other neonics for commercial use,despite its own scientists' clear warnings about the chemicals' effects on bees and other pollinators. That doesn't bode well for the chances of getting neonics off the market now, even in light of the Purdue study's findings.

"The agency has, in most cases, sided with pesticide manufacturers and worked to fast-track the approval of new products, and failed in cases when there's clear evidence of harm to take those products off the market," Towers said.

Since this is an election year -- a time when no one wants to make Big Ag (and its money) mad -- beekeepers may have to suffer another season of losses before there's any hope of action on the EPA's part. But when one out of every three bites of food on Americans' plates results directly from honey bee pollination, there's no question that the fate of these insects will determine our own as eaters.

Ellis, for his part, thinks that figuring out a way to solve the bee crisis could be a catalyst for larger reform within our agriculture system. "If we can protect that pollinator base, it's going to have ripple effects ... for wildlife, for human health," he said. "It will bring up subjects that need to be looked at, of groundwater and surface water -- all the connected subjects associated [with] chemical use and agriculture."

USA- SCIENTIST IS REQUESTING A LONGER TIME FRAME TO TEST PESTICIDES THAT COULD BE HARMFUL FOR BEES

Pesticide may actually give honeybee virus an advantage

Keepers use it to kill infectious mites, but it could be helping the demise of U.S. colonies

Haraz N. Ghanbari / AP

Honeybee colonies "have to be as healthy as possible going into the winter to survive and produce the next generation during the spring before dying off," one expert notes.

By Joseph Castro updated 1/27/2012 4:06:54 PM ET

A common pesticide used by beekeepers to kill honeybee-infecting mites temporarily leaves the bees more susceptible to a debilitating virus, new research suggests.

From parasitic flies to numerous viruses, honeybee colonies across the globe have a lot of things threatening their survival, but perhaps no stressor is as disastrous as varroa destructor mites. The tiny vampiric arachnids latch onto bees of all stages of life and suck their "blood." Often in the process, the mites deliver to the bees deformed wing virus — which causes wing disfigurements in developing pupae, resulting in flightless bees that die shortly after their emergence. Both these mites and the deformed wing virus have been implicated in colony collapse disorder, and together they can wipe out an entire honeybee colony within a few years if left untreated, scientists have found.

The most successful weapon against these mites (at least those that haven't developed a resistance) has been pesticides called acaricides. However, scientists know little about the chemicals' effects on honeybee viruses. To find out, Joachim de Miranda, a bee ecologist at the Swedish University of Agriculture Sciences in Uppsala, Sweden, and his colleagues studied the effects of the common acaricide Apistanon levels of several viruses in honeybees.

To their surprise, they found that concentrations of deformed wing virus in treated bee colonies initially increased for a period, before ultimately dropping when more mites died (though the virus levels didn't fall below those seen in untreated colonies until the last week of the six-week treatment used in the study).

If future studies conclusively show that Apistan causes a spike in the virulence of deformed wing virus, the findings could have implications for beekeepers, the researchers say.

"Make sure that you know that you absolutely have to treat before treating with acaricides," de Miranda told LiveScience. "If you don't have a lot of mites, then this treatment will only cause you more damage."

Of mites and viruses

. ..Because the bees need a critical number of members to effectively block out the cold, the colony must be healthy before and during the chilly season."They have to be as healthy as possible going into the winter to survive and produce the next generation during the spring before dying off," de Miranda explained.

Previous studies showed that colonies that were effectively mite-free were still dying over winter, and bees that died had elevated levels of deformed wing virus, said Stephen Martin, a varroa mite expert at the University of Sheffield in the United Kingdom, who was not involved in the current research. "What we suspect is that the virus has now changed — it was initially reliant on varroa, but now virulent forms don't rely on that kind of transmission," Martin said, referring to the fact that over the winters, when the mites are dead, the virus can still be transmitted to other bees through their regurgitated food.

In light of this fact, beekeepers need to know how soon before winter they need to start treating their colonies for varroa mites, to ensure that the bees make it to spring.

A balance of evils

The researchers don't yet know what could have caused the initial spike they saw in deformed wing virus in the pesticide-treated bees, but suspect that Apistan could be working synergistically with the virus against the bees; alternatively, the chemical may be negatively affecting bee immunity, leaving them more vulnerable to the deformed wing virus.

Whatever the case, the study doesn't conclusively show that Apistan had an effect on virus levels, and the results could just be a statistical anomaly, Martin told LiveScience. The researchers are now looking to test how Apistan affects virus levels in the absence of varroa mites.

De Miranda doesn't think beekeepers should be alarmed, because the virus spike wasn't significant enough to cause major damage, though using pesticide to treat bees with just low levels of the mites may not be the best idea. Colonies highly infested with mites need to be treated, he said, adding that "you have to see it as sort of a balance of different evils."

At the very least, the study shows that beekeepers should probably treat their colonies for more than six weeks ahead of chilly weather, because there were still substantial levels of deformed wing virus at the end of the study treatment.

"Beekeepers need to be aware that viruses don't sit still and things are continually changing," Martin said. Fifteen years ago acaricides that killed mites also reduced virus levels, but this is clearly not happening anymore, he said. "Things are not as straightforward as we once believed."

The study was published in the January issue of the journal Applied and Environmental Microbiology.

Beekeepers Newsletter: Scientists launch fight back against mite that is wiping out bees...by making it self-destruct

By DAVID DERBYSHIRE
Last updated at 1:04 AM on 26th December 2010

For 20 years it has ruthlessly attacked Britain's hives - wiping out millions of bees and bringing misery to honey producers. But now scientists have launched the fightback against the invasive, blood sucking varroa mite parasite - the world's biggest killer of bees.
The bug drills a hole in the honey bee's back and drinks its blood while injecting viruses to suppress the bee's immune system leaving it vulnerable to disease.

Attempts tried to wipe it out but they failed as it becomes increasingly resistant to chemicals. Now researchers have developed a new technique that turns off genes in the pest's DNA, forcing the bugs to self-destruct. Although the treatment is still experimental, it could eventually kill the mites without harming bees within years.

The breakthrough won't come soon enough for Britain's beleaguered honey bees - in England alone the population has shrunk by 54 per cent since the 1980s as a result of the varroa mite, pesticides, industrial farming and disease.

A honeybee with a Varroa mite (circled) attached to it. Conservation groups are welcoming a breakthrough in the battle against the deadly.

Farmers say the decline could be disastrous for agriculture because bees are vital for pollinating crops and are worth an estimated £200 million to farming each year.

Dr Alan Bowman of the University of Aberdeen, who led the study, said the technique fooled the immune system of the parasite into attacking itself. 'This can target the mite in the hive,' he said. 'It would be completely selective – it wouldn't target the bees and wouldn't affect any other pollinating insects, such as ladybirds.'

Martin Smith, president of the British Beekeepers' Association, said: 'While this research is at the early stage, we are pleased that work is being undertaken to try to control the varroa mite which remains the largest threat to beekeeping in this country.'We look forward to seeing further work in this area.' The 2mm varroa mite looks like a brown crab and first arrived in Britain in 1992 from the continent.Its rise has been linked to the mysterious 'colony collapse disorder' - where entire hives die off.

Dr Giles Budge, one of the UK's leading bee experts based in York, said the human equivalent of the mite would be having 'an organism on your back that's about the size of a dinner plate, which creates a hole through which it can feed and through which its family can feed', he said. 'The hole doesn't seal up - they drink blood through it and inject viruses into it,' he added.

The new treatment would allow beekeepers to treat the parasites without harming the bees. Currently they have to use pesticides.

Prof Francis Ratnieks, a bee researcher from the University of Sussex, said it could be a long time before it was used on British bees. 'It may be possible to use gene knockout techniques such as RNAi to learn more about the physiology of pests and to use this to develop ways of controlling them, maybe by the development and application of novel pesticides,' he told the BBC.

'But to do this is a huge undertaking involving many years of testing and certification.'
Martin Smith, president of the British Beekeepers Association, said: 'While this research is at the early stage, we are pleased that work is being undertaken to try and control the varroa mite which remains the largest threat to beekeeping in this country. We look forward to seeing further work in this area.'

Read more: http://www.dailymail.co.uk/sciencetech/article-1340791/Scientists-launch-fightback-mite-wiping-bees--making-

Wednesday 29 February 2012

Save our bees: scientists reveal the plants that could halt bee decline

Planting the right kind of flowers in gardens may help to halt the decline of British bees, according to scientists.

By Richard Gray, Science Correspondent

8:10AM GMT 19 Feb 2012

Biologists at the University of Sussex have been analysing how effectively different species of flowers attract foraging insects. Preliminary results have revealed there is a 100-fold difference in the lure that some popular garden plants have for honey bees and bumblebees.

The best plants are the Mexican giant hyssop, which was particularly good for bumblebees, while borage was best for honeybees and lilac sage was second best.

Wild marjoram and Greek Origanum were found to be most attractive to wild solitary bees.

Lavenders such as the white Lavender edelweiss and the blue lavender grossblau were also good for attracting the insects.

In contrast some geranium species, which are a favourite among gardeners, are barely ever visited by the insects and popular types of Dahlia such as the cactus Tahiti and pom pom shaped Dahlia Franz Kafka were found to be poor at providing food for foraging bees.

In the UK honey bee numbers have halved in the past 25 years while numbers of bumblebees have fallen by around 60 per cent since 1970 with three species going extinct and seven suffering serious declines.

The researchers hope their work can help reverse the decline in many bee species by allowing gardeners to choose plants that will ensure bees have a good supply of food in their flower beds.

....Loss of wild flowers and disease are thought to be the main reasons why bee numbers have plummeted in recent years around the world.

Mr Garbuzov, who revealed his early findings in public lecture at the university, has been studying 32 different types of garden plants in an attempt to find those that are best at providing food for insects.

He recorded more than 10,000 visits by insects to plots of flowers on the outskirts of Brighton, Sussex.

(editors note: In doing a brief search for photos of these flowers, borage has some characteristics you may not like. Salvia verticillata and Mexican sage are good choices.)

Our web site, www.guilfordbeekeepers.org is your source for local beekeeping information, questions, and answers. Sign up for our forum board and join the conversation!

- Don Hopkins, State Inspector: (336) 376-8250
- Guilford County Beekeepers Association web site www.guilfordbeekeepers.org
- North Carolina State Beekeepers Association *www.ncbeekeepers.org*

Guilford County Beekeepers Association

A LOCAL CHAPTER OF THE NORTH CAROLINA STATE BEEKEEPERS ASSOCIATION

Norman Faircloth, editor (nfaircloth@northstate.net)