CENTRAL COAST BEEKEEPERS NEWSLETTER

May 2020

ISSUE NUMBER 49

NEXT MEETING MAY 27, 2020

May 27, 2020 Meeting

PLEASE JOIN US FOR OUR NEXT ZOOM BASED MEETING ON SWARMS NEXT WENDESDAY. COMPUTER CONNECTION AND PHONE IN INFO IS BELOW. We will start the meeting with a 15-20 minute social session where each of us can check in about how are bees are doing and then everyone will be asked to mute their line and turn off their video to conserve band width for the presentation. You can turn your audio on when you have questions or use the “chat” function to write your questions which will be forwarded on to the presenter.

Topic: Oregon Central Coast Beekeepers - Swams
Time: May 27, 2020 06:45 PM Pacific Time (US and Canada)

Join Zoom Meeting
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PRESIDENT'S MESSAGE

By Becca Fain

Well, what a spring this has been. One minute the skies are blue and the bees are flying franticly to take advantage of the abundant forage – we are having a bumper crop of trailing blackberries, lavender and rosemary – and the next the black clouds and rain arrive. It will be interesting to hear from everyone at the meeting about their experience so far with swarms and splits as I am hearing that many of us are already in the midst of trying to control our bees! Maybe all this rain will be a silver lining as it keeps the bees inside and provides a bit of a break from swarming.

The corona virus has had a big impact on our beekeeping this year. At one end, with stay at home directives in place, we have been able to spend more time with our bees and hopefully have healthier and happier hives as a result. At the other, we have lost the opportunity to learn more about our hobby and educate others about bees and beekeeping with the cancelation of the Yachats Honey Lover's Festival, the Master Gardeners Plant Sale, the Lincoln County Fair, the Oregon State Fair and the Oregon State Beekeepers Conference. The upside is that all these events will be back in 2021 and will be bigger and better with the additional time spent in planning. Additionally, the Oregon State Beekeepers are planning to explore some form of online learning and connection with some of the planned speakers this year.

I am waiting to hear back from the Newport Library as to when they plan to reopen, but at this time it may not happen for several more months. I would love to have some feedback about our continued use of Zoom as a way to stay in touch and offer important information. Will check in with Jon Sumpter and Jim Parrish about next month's honey extraction demonstration and figure out how to do this on line or send a video to everyone and will check in with Marjie Ehry about her presentation regarding entering honey for judging and how to successfully prepare.

Look forward to seeing and hearing from everyone on our May 27th Zoom meeting!

Microalgae food for honey bees

US Department of Agriculture - Agricultural Research Service

Summary:

A microscopic algae ('microalgae') could provide a complete and sustainably sourced supplemental diet to boost the robustness of managed honey bees, according to new research.

A microscopic algae ("microalgae") could provide a complete and sustainably sourced supplemental diet to boost the robustness of managed honey bees, according to research just published by Agricultural Research Service (ARS) scientists in the journal Apidologie.

Poor nutrition in honey bees is often an underlying factor in colony losses because malnutrition amplifies the detrimental effects of parasites, pathogens, and pesticides. Habitat loss, decreases in flowering plant diversity and large tracts of crop monoculture (cultivation of a single crop over a large area) all can potentially contribute to lessening natural pollen sources, which provide bees essential nutrition.

Now, research by ARS entomologists Vincent Ricigliano and Michael Simone-Finstrom has shown that the microalgae Arthrospira platensis (commonly called spirulina) has a nutritional profile that closely resembles pollen. Spirulina is a part of family of blue-green algae, which are single-celled organisms that exist individually or in chains or groups.

Ricigliano and Simone-Finstrom found that spirulina is rich in essential amino acids and lipids required by bees, with levels matching those found in tested pollen samples.

The two scientists are both with the ARS Honey Bee Breeding, Genetics, and Physiology Research Laboratory in Baton Rouge, Louisiana.

"Our work is a pioneering first look into the nutritional and functional properties of a single microalga and how well it corresponds to what is needed in a complete pollen substitute for the honey bee," explained Ricigliano.

In addition to being rich in essential amino acids necessary for protein synthesis, immune function and colony growth in honey bees, spirulina also contains prebiotics that support the growth of healthy gut bacteria.

Commercial beekeepers have become increasingly reliant on artificial pollen substitute diets to nourish colonies during periods of pollen scarcity as well as to bolster colony size before they fulfill pollination service contracts.

Currently available commercial diets for bees usually incorporate a variety of ingredients such as soy, yeast, wheat, lentils and milk proteins in an effort to supply balanced nutrition. These artificial diets are sometimes deficient in essential macronutrients (proteins, lipids, prebiotic fibers), micronutrients (vitamins, minerals), or antioxidants.

"So the need to scientifically improve the efficacy of pollen substitutes can be considered vital to modern beekeeping and we need to think about how we can do it in a sustainable way," Ricigliano said.

Microalgae can be sustainably grown on a large scale with a minimal amount of water and few chemical inputs. It can even be grown in places where soybeans and other crops cannot be grown.

"All it takes are shallow ponds, nutrient salts and sunlight to produce highly nutritious microalgae," said Ricigliano.

Now, the researchers are testing the microalgae diet in a field setting to make sure the diet is attractive to bees and supports colony growth. The excellent nutrition profile of spirulina suggests that there are likely other microalgae that could serve honey bees well, Simone-Finstrom pointed out.

"We have also begun development of new microalgae strains to address other aspects of bee health, including targeted nutrition strategies," Ricigliano added.

Story Source:

Materials provided by **US Department of Agriculture - Agricultural Research Service**. Original written by Kim Kaplan.

Honey bee colonies from across the UK are increasingly suffering from a viral disease, a new study has shown.

Publishing their findings in the journal Nature Communications, the team led by Professor Giles Budge of Newcastle University, UK, found that the number of honey bee colonies affected with chronic bee paralysis rose exponentially between 2007 and 2017.

Data collected from visits to over 24,000 beekeepers confirmed that while chronic bee paralysis was only recorded in Lincolnshire in 2007, a decade later it was present in 39 of 47 English and six of eight Welsh counties. The scientists also found that clusters of chronic bee paralysis, where disease cases are found close together, were becoming more frequent.

Chronic bee paralysis symptoms include abnormal trembling, an inability to fly, and the development of shiny, hairless abdomens. The disease is caused by a virus known as chronic bee paralysis virus (CBPV), and infected bees die within a week. This leads to piles of dead bees just outside honey bee hives and whole colonies are frequently lost to the disease.

Study lead, Professor Budge, from Newcastle University's School of Natural and Environmental Sciences, said: "Our analysis clearly confirms that chronic bee paralysis has been emerging across England and Wales since 2007 and that apiaries owned by professional beekeepers are at greater risk of the disease."

The study was completed in association with the Bee Farmers' Association, who represent professional beekeepers in the UK. Rob Nickless, the Chairman of the Bee Farmers' Association, said: "We are pleased to be part of this project and welcome these early results. This is the sort of research that brings practical benefits to the industry -- helping bee farmers at grassroots level to improve honey bee health and increase UK honey production."

Professor Budge said: "We do not yet know why colonies of bee farmers are at increased risk from this damaging disease, but many management practices are known to differ significantly between amateur and professional apiarists."

The study also investigated whether disease risk was associated with honey bee queen imports. Honey bee queens head up honey bee colonies and beekeepers use imported honey bee queens to replenish their stocks. The scientists used data from

130,000 honey bee imports from 25 countries to show for the first time that the disease was nearly twice as likely in apiaries owned by beekeepers who imported honey bees.

This work is being completed as a collaboration between Newcastle and St Andrews Universities, the Bee Farmers' Association and the National Bee Unit of the Animal and Plant Health Agency with funding from the BBSRC The researchers highlight the need for further studies focusing on different virus genotypes, which will be completed at the University of St Andrews.

Future work will concentrate on the susceptibility of different honey bee races and comparing the management practices of professional and amateur beekeepers to help discover the reasons behind the current disease emergence. This work will have the potential to reduce or mitigate the damage of this emerging disease to our most important managed pollinator.

Story Source:

Materials provided by **Newcastle University**. Note: Content may be edited for style and length.

Honey bees could help monitor fertility loss in insects due to climate change

New research from the University of British Columbia and North Carolina State University could help scientists track how climate change is impacting the birds and the bees... of honey bees.

Heat can kill sperm cells across the animal kingdom, yet there are few ways to monitor the impact of heat on pollinators like honey bees, who are vital to ecosystems and agriculture around the world.

In a study published in Nature Sustainability, researchers used a technique called mass spectrometry to analyse sperm stored in honey bee queens and found five proteins that are activated when the queens are exposed to extreme temperatures.

The proteins could be used as a tool to monitor heat stress in queen bees, and serve as a bellwether for wider insect fertility losses due to climate change.

"Just like cholesterol levels are used to indicate the risk of heart disease in humans, these proteins could indicate whether a queen bee has experienced heat stress," said lead author Alison McAfee, a biochemist at the Michael Smith Labs at UBC and postdoc at NC State. "If we start to see patterns of heat shock emerging among bees, that's when we really need to start worrying about other insects."

Although honey bees are quite resilient compared to other non-social insects, they are a useful proxy because they are managed by humans all over the world and are easy to sample.

The researchers were particularly interested in queen bees because their reproductive capacity is directly linked to the productivity of a colony. If the sperm stored by a queen is damaged, she can "fail" when she no longer has enough live sperm to produce enough drones and worker bees to maintain a colony.

"We wanted to find out what 'safe' temperatures are for queen bees and explore two potential routes to heat exposure: during routine shipping and inside colonies," said McAfee. "This information is really important for beekeepers, who often have no way to tell what condition the queens they receive are in. That can have a really dramatic impact on their quality and quality of their colonies."

First McAfee established what the threshold for queen "failure" was, and how much heat they could withstand by exposing them to a range of temperatures and durations.

"Our data suggests that temperatures between 15 to 38 degrees Celsius are safe for queens," said McAfee. "Above 38 degrees, the percentage of live sperm dropped to or below the level we see in failed queens compared to healthy queens, which is an 11.5 per cent decrease from the normal 90 per cent."

The researchers then placed temperature loggers in seven domestic queen shipments via ground and one by air. They found that one package experienced a temperature spike to 38 degrees Celsius, while one dropped to four degrees Celsius.

"These findings can help create better guidelines for safe queen bee transportation and help buyers and sellers track the quality of queens," said co-author Leonard Foster, a professor at the Michael Smith Labs at UBC.

While bee colonies are generally thought to be good at regulating the temperature inside hives, the researchers wanted to know how much the temperature actually fluctuated. They recorded the temperatures in three hives in August in El Centro, California, when the ambient temperature in the shade below each hive reached up to 45 degrees Celsius.

They found that in all three hives, the temperatures at the two outermost frames spiked upwards of 40 degrees Celsius for two to five hours, while in two of the hives, temperatures exceeded 38 degrees Celsius one or two frames closer to the core.

"This tells us that a colony's ability to thermoregulate begins to break down in extreme heat, and queens can be vulnerable to heat stress even inside the hive," said co-author Jeff Pettis, an independent research consultant and former USDA-ARS scientist.

Having established these key parameters, the researchers will continue to refine the use of the protein signature to monitor heat stress among queen bees.

"Proteins can change quite easily, so we want to figure out how long these signatures last and how that might affect our ability to detect these heat stress events," said McAfee. "I also want to figure out if we can identify similar markers for cold and pesticide exposure, so we can make more evidence-based management decisions. If we can use the same markers as part of a wider biomonitoring program, then that's twice as useful."

Story Source:

Materials provided by **University of British Columbia**. Note: Content may be edited for style and length.

World’s Tiniest McDonald’s Opens in Sweden, Welcomes Bees as Customers

BY MICHELE DEBCZAK

MAY 22, 2019

ISTOCK/WILLIAM JONES-WARNER

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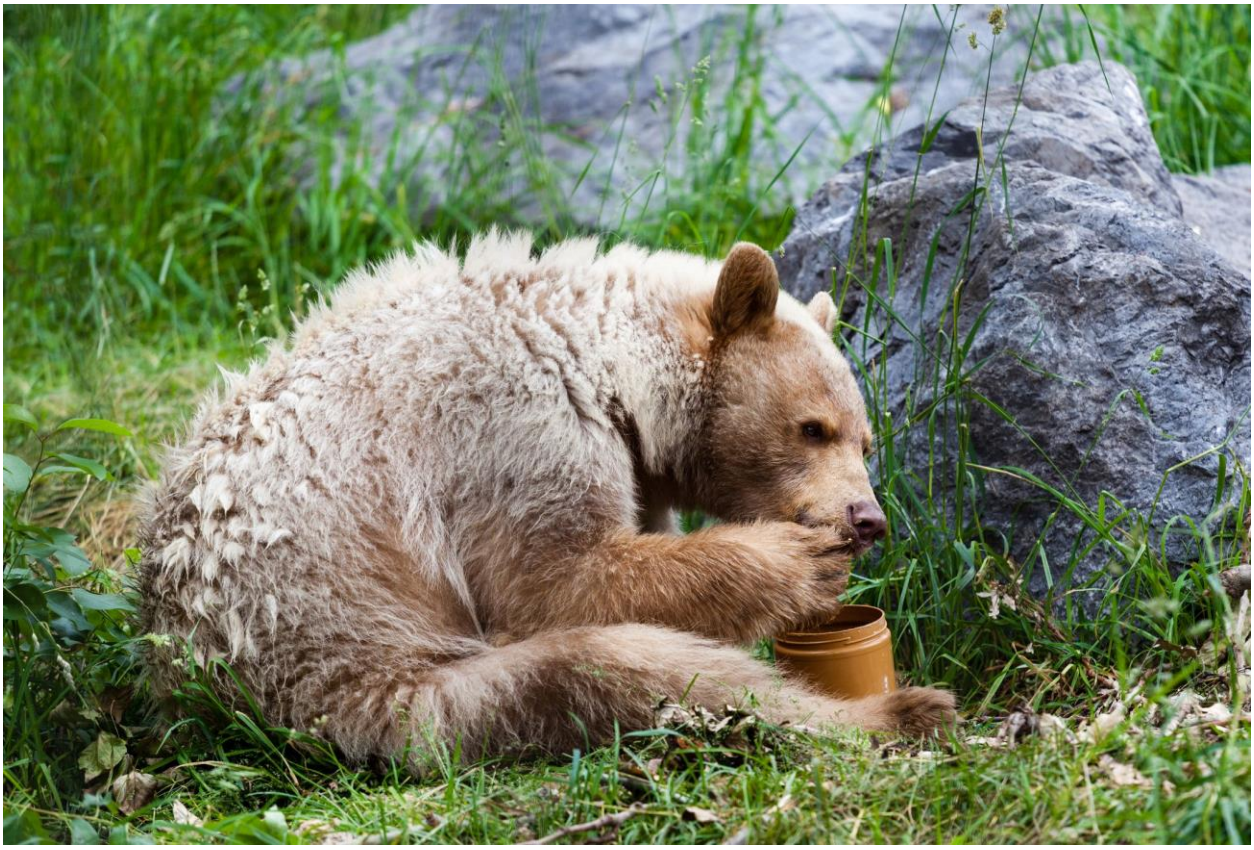
McDonald's has opened stores in an old train car, an airplane, and an oversized Happy Meal box. This new project from the corporation has many of the features of a regular restaurant—down to the posters advertising special menu items—but it's different in a major way. Instead of catering to human clientele, this miniature McDonald's is designed to attract bees.

McDonald's Sweden collaborated with the creative agency NORD DDB to build the branded beehive for World Bee Day on May 20, AdWeek reports. From the outside, the model is a replica of a McDonald's restaurant, with drive-thru windows, outdoor seating, and the golden arches presiding above it all. But instead of a counter and a tables, the interior is filled with frames where bees can build their wax. It's being billed as "the world's smallest McDonald's," but according to NORD DDB, it's still big enough to house thousands of bees.

The fast-food beehive is a nod to an initiative gaining traction at McDonald's in Sweden. Some McDonald's restaurants have installed beehives on their roofs and started replacing the grass on their properties with flowers to attract the pollinators. Global bee populations have declined at alarming rates in recent years due to pesticides, disease, and climate change, and the beehive project from McDonald's Sweden is just one creative way people are trying to give bees a boost.

This particular beehive won't be housed above a burger joint. On May 21, it was auctioned off to raise money for the Ronald McDonald House.



Animal testing: Turkish beekeeper finds thieving bears prefer premium honey

Ibrahim Sedef discovers to his cost that they don't just settle for the bear necessities

Alison Rourke

Thu 29 Aug 2019 01.54 EDTLast modified on Thu 29 Aug 2019 16.05 EDT

A beekeeper in Turkey who was harassed by a particularly persistent group of bears has discovered a profound truth: the animals have very expensive tastes when it comes to honey.

Ibrahim Sedef, an engineer from Trabzon, north-east of Ankara on the Turkey's Black Sea coast, struggled to keep his bee hives out of the hands of local bears, despite building storage houses and metal cages.

Over three years he estimates he may have lost more than $10,000 worth of honey.

Food decoys, including apples, failed to divert the intruders.

So he decided to set up recording equipment to track the bears and inadvertently embarked on animal testing of a different kind.

Sedef set up four bowls; three contained different types of honey – flower, chestnut and Anzer – and one had cherry jam. He wanted to see which one the bears preferred.

The footage revealed they had very expensive taste. Their favorite, Anzer honey, is believed to be the most expensive honey in the world. It is produced from the nectar of 90 flowers that grow only in the mountains of the Anzer plateau.

In addition to being delicious to bears, some believe Anzer honey has healing qualities for a long list of ailments, including stomach pains, hair loss and wound treatment. It can sell for as much as $300 (£250) a kilogram.

Despite his losses, Ibrahim Sedef is philosophical about his hungry visitors. “Despite all this, when I see the footage, I forget all the harm they have done to me, and love them,” he said.

Brown bears are the largest carnivores in Turkey and mainly live near the Black Sea and Eastern Anatolian regions.

Flatten the Curve by Dr. Dewey M. Caron

How many times have you heard/read the term “FLATTEN THE CURVE” in the last month? Well I guess the how many answer depends on how much media/political time you do these days. As with all phrase simplification of a complex concept, Flatten the Curve can mean different things to different people. For beekeepers Flatten the Curve is a useful phrase to convey the two most important managements we might consider doing in our apiary this month.

We DO NOT WANT to FLATTEN THE CURVE of May colony population increase IF we are seeking to harvest honey from our colonies this year (but not all beekeepers keep bees for this objective). It takes bees in the boxes to ensure colonies store surplus honey that we can rob later this summer. We DO WANT to FLATTEN THE CURVE of varroa mite buildup if we want to improve our overwintering success with those same colonies. We need to start now in May before the supers go on to knock down the mite population increase. Now is the time to stay ahead and manage our bees – or they will manage us.

Colonies in May should be rapidly expanding; especially this year with our warmer November, January, first half of March and April weather. It is normal now for colonies to seek to reproduce via swarming. Our task is to determine which colonies are preparing to swarm. Our major clue to swarming is to look for several developing queen cells especially on lower/side comb margins. The easiest way to do this is to split the 2 boxes containing brood (assuming your strongest colonies have expanded into two boxes) and examine the bottom margins of the comb in frames of the top box. Not all cells will be in this position (as for example in a long hive), but it a is simple and rapid inspection technique to detect colonies that need to be further examined for queen cells. If no are cells in this position the probability is low that a colony will swarm for at least another week. You likely will see cups – look for occupied cells

With the bees we want growth to continue – with mites we need to begin to flatten their growth curve in May. This starts with sampling for mites via washing mites from adult bodies with alcohol or powdered sugar shake. If number exceeds 1 or 2% (depending upon how threatening you perceive mites) consider control measures. You don't need a knock-out punch, but you need to slow mite buildup. Essential oil products of Apiguard or ApiLife Var or formic acid (formic Pro) are chemical means of slowing mite buildup; drone brood removal and splitting are good non-chemical alternatives. We need do this before adding supers. Formic acid use can be continued while supers are on the colony.

The term Flatten the curve is likely to be around for quite a while with the covid-19 virus so seriously impacting our (older -aged beekeeper) population. Although not specific for viruses, honey should be seriously considered as a valuable dietary additive to help in preventive measures. Bee colonies storing and beekeepers harvesting surplus honey is one component of reducing the virus' impact. And the principle of flattening mite growth curve is equally as important to insure we have healthy bees following harvest to have colonies continue to do their job another year.

Reading Frames

by Morris Ostrofsky, Lane County Beekeepers Association Member

The bees are telling us the story about what is happening inside the hive. It is our job to read and comprehend what is being said. Reading frames means you have opened and entered the hive. I advocate, “minimally invasive beekeeping.”

Where things should be: Frames have their place in the hive. Starting from one side going to the other they are numbered 1-10. It does not matter whether you start numbering from one side or the other because the right side of the box should be a mirror image of the left side. The #1 frame (same as #10) should contain mostly honey while #2 will usually contain pollen in an established hive. Also, in an established hive the brood is located in frames #3 through #8 with the greatest proportion in frames #5 and #6. What is important about the #3 frame is that it reflects changing conditions within the hive.

The nectar flow is on: White wax on the top bars of the brood chamber tells you that the honey/nectar flow is on. This is a major milepost for both the bees and beekeepers. Why are they making the wax? Because the nectar stimulates wax production. This is the same reason you fed your new package of bee’s sugar water after installing it. You wanted to stimulate wax production so the bees would draw out the frames. Why is the wax white? Answer: it has not had a chance to get travel stained. When 70% of the frames are being used, it is time to add either another brood box or a honey super.

Staying ahead of the bees: An important part of spring beekeeping is anticipating and preventing swarms. Reasons for this are:

1) depletes population
2) possible reduced honey harvest
3) can ruin relationship with your neighbors

By reading frames, one of the things you can anticipate is an impending swarm. The environmental conditions will tell you that the bees are thinking about propagation. The bees are setting the pace and you need to keep ahead of them. One of the first indicators that you need to start doing something is when you see

lots of drone brood. This signals that the bees are thinking about swarming and are preparing to raise queens. The drones come first because of the long time it takes them to become sexually mature. It also takes them 24 days to develop as opposed to the 16 days for the queen.

Aging or poorly mated queens: A queen normally mates with 12 to 15 drones and that results in enough sperm to last a lifetime. The indicators for an aging or poorly mated queen are similar. One big distinction is the time of year you see the indicators. Aging can occur anytime there is brood present. Poor mating occurs in spring. A well mated, performing queen produces an abundance of queen pheromone. When this happens, you will find a strong circle of workers surrounding the queen. You can think of it as the cohesive force of the hive. When it's weak or lacking, the social structure of the hive breaks down. The most immediate response to this situation by the workers is to supersede. This is the reason why five days after a queen is introduced you look for superedure cells in the hive she is being introduced into.

Missing queens: Why would a queen be missing? On a mating fight she may lose her way back to the hive or may have been eaten. If there is a situation where the queen is gone and there are still young larvae in the hive, the bees can make one or more emergency queen cells/queen. If they lose their emergency queen, the bees will run out of resources. Without the queen or brood pheromone the workers take matters into their own hands and lay multiple eggs in the cells. This is called a laying worker colony. The eggs are all unfertilized, so all develop into drones. Such colonies are usually doomed. It is extremely difficult to requeen a hive with laying workers.

Mellifera mysteries: The white spots on the cell walls is guanine, also known as Varroa poop. Hives can be so heavily infested with mites that it can lead to the demise of the hive. Varroa mites also can vector a variety of viruses. Bottom line: Varroa can cause the ultimate disappearance of bees.

If you open up a hive to inspect the honey reserves and you find that all the honey is gone, it was probably robbed out by a neighboring hive. If you see a jagged appearance on the cells and looks chewed up that is definite sign of robbing.

Preparing for the Honey Flow

The two important things you need to know to have a chance at collecting honey is to prevent swarming and have healthy bees. You need to have your hives near their peak population as the nectar flow begins. Swarms will cause a decrease in the hive population by 1/2 for each swarm. Following a swarm, there will be a three to four to five week break in the brood cycle before the eggs from a new queen mature and join the workforce. Be vigilant with swarm control if you hope to collect honey.

Blackberries in our area is the major nectar flow and it usually takes place around June 1st. It might be earlier this year as we have had warmer weather. The honey flow represents a rapid increase in the space bees need in the hive. At a rate of several pounds of new honey per day, a hive with limited space can quickly lead to a colony with thoughts of swarming. An alert beekeeper is aware at all times of the space available in the hive. Be sure to offer the bees more space for the extra nectar being brought in by adding honey supers to reduce the chances of swarming.

What the pollen band can tell us: The brood frame consists of brood, pollen and nectar. As the brood chamber expands the pollen band expands. You need pollen for brood production. Looking at the width and position of the pollen band can indicate the general conditions of the colony.

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