THE BUZZ

The official newsletter of the Gold Coast Amateur Beekeepers Society Inc. Est. 1979
Website: gcabs.net.au Gold Coast Amateur Beekeeping Society

If we could see through the eye of a bee...

How bees see colour...page 8

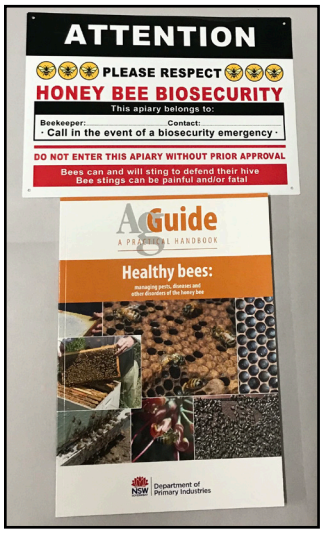
DATE SAVERS

Please note that as COVID regulations change, our planned events sometimes change also. If so, you will be notified via our Facebook pages & email.

- **Sat/Sun Oct 10th & 11th** - Beginning in Beekeeping Course. Fully Booked
- **Sat 17th Oct** – TOCAL COLLEGE Beekeepers' VIRTUAL Field Day
  Streamed live and FREE via Facebook & Youtube. See program on page 2. Register to attend at www.eventbrite.com.au/e/tocal-virtual-beekeeping-field-day-tickets-117359233627
- **Sun 18th Oct 10am-12pm** – General Meeting at Nerang Country Paradise Parklands. You MUST register to attend via this link: https://www.eventbrite.com.au/e/gcabs-general-meeting-tickets-123980086777 Olive & Jim Cavanaugh will run a wax melting/cleaning demonstration. Plus other content. BRING: Chair. Address: 231 Beaudesert-Nerang Rd, Nerang.
- **Sun 15th Nov. From 9am** - General Meeting. Field trip to NT Bees with Queen Bee breeders Graham Beech & Jo Read 3139 Beaudesert-Nerang Rd Biddaddaba, Qld. 4275. Bring: Chair, protective gear for inspecting bees. As this is the last meeting of 2020, this will be our Christmas celebration also.

From GCABS President

A warm welcome to all new members and salutations to our existing club members. The smell of sweet honey drifts across the sunny Gold Coast breeze, the prospects of a successful season are on the horizon. As beekeepers we hold many responsibilities. In addition to the health and well-being of our hives, we need to ensure that we are meeting all Beekeeping Regulations for keeping bees in the Gold Coast City Council and Queensland. So, with that in mind for the month of October the club is running a HIN number raffle.



To enter the raffle, ensure your membership is up to date with your HIN number, by logging into your membership at beekeepers.asn.au to win a Biosecurity Sign & AG Guide Healthy Bees Book, to add to your Beekeeping Kit (Raffle closes 2/11/2020 – the winner will be contacted via phone to collect their prize at the November General Meeting).

Ross Krumbholz

TOCAL College VIRTUAL FIELD DAY.

A FREE ONLINE EVENT for all of us.

Register NOW at www.eventbrite.com.au/e/tocal-virtual-beekeeping-field-day-tickets-117359233627

There's an impressive range of international & local presenters:

INTERNATIONAL

- Dr Jamie Ellis Uni of Florida, on the topic of "Worker Honey bee Tasks"
- Clare Densley of Buckfast Abbey on "Pheromone Communication"

And...

- Elizabeth Frost, Technical Specialist Honey bees, "Queens" how to select for traits & how to find her"
- Madlen Kratz, Honey bee Industry Development Officer, "Nutrition"
- Kevin Tracy, Beekeeping Traineeship Development Officer, "Setting up Cloake Method for raising Queen Cells"
- Rod Bourke, Honey bee Biosecurity Officer, "Setting up a Barrier System"
- Mark Page, Biosecurity Surveillance, demonstrates "Brood Inspection for The Code"
- Fiona Chambers, CEO Wheen Bee Foundation, "Pollination"
- Adrian Grew, The Bee Farmer, demonstration "Making or Buying a nuc - what to look for"
- Kelly Lees, Education Officer Honey bees, "Different Types of Hives"

In the News

An additional year of financial assistance.

For the 2019/20 financial year, the Qld government offered a specific drought assistance package for members of the Queensland Beekeeping commercial industry who were hit hard by severe drought & bushfires.

The assistance package offered fee waivers on Forestry, National Parks, and HQ Plantation Apiary sites & funding for an emergency sugar allocation for those beekeepers struggling to maintain hives and ultimately keep bees alive during the height of the drought. On Sept. 25th 2020, the QBA secured an additional year of fee waivers across Forestry, National Parks and HQ Plantations for industry for the 2020/21 financial year.

Economies have been heavily impacted by the COVID-19 pandemic but the Palaszczuk Government has moved to ensure important support for the agriculture industry, including specific support for beekeepers. These fee waivers should provide some much-needed relief as we move toward economic recovery.

Bees are critical to our food security

Managing Director of AgriFutures Australia, John Harvey shares his views on the economic importance of the honey bee and pollination industry.

65% of our horticultural and agricultural industries depend on pollination services provided by our honey bees. We know that foods like apples, avocados, blueberries, cucumber, pumpkin and rockmelon, almonds, macadamias, cherries & mangoes depend mostly on honey bee pollination to produce fruit. **A lesser known role of honey bees is for seed production of crops that provide feed to our meat and livestock industries**; for example, lucerne depends on honey bee pollination to produce seed.

With all these food industries dependent on pollination, the annual contribution to the Australian economy of our honey bees is estimated to be a staggering $14.2 billion. This is in addition to the $147 million in farm gate value generated by honey and bees wax and an estimated $77 million in additional hive products such as queen bees, packaged bees, propolis, paid pollination services and honey from small commercial producers. As well, commercial honey bee pollination generates considerable employment in regional areas.

The lesson is, we must never take our bee industry for granted.

AgriFutures Aust. in partnership with AHBIC & other industry experts has developed the Honey Bee & Pollination Program's Strategic Plan (2020-2025), which will focus on research to improve and optimise hive management, increase the capacity of the industry, improve the understanding of native flora resources as assets for the industry, and to optimise agriculture pollination into the future as key priorities for research and development. Full report here: https://www.agrifutures.com.au/wp-content/uploads/2020/07/20-019_Digital.pdf

AgriFutures Australia *(formerly) Rural Industries Research and Development Corporation (RIRDC) are an organisation that focuses on research & development for the future of Australian agriculture.*

SEPTEMBER in Review:

Beginners in Beekeeping Course

Eleven new beekeepers attended the September beginners' course. Welcome to our society! We spent a great two days in the classroom and the apiary under the guidance of the training team: Syd R, Peter Q, Trav G, Kathy K Jane M and volunteer helper Katy. We were blessed with great weather and generous hosts Mos and Gill Shehab at All Saints apiary. Many thanks for the hospitality Mos and Gill! Jane became our photographer, midwife of bees, and all round awesome new addition to the education crew. Our new crop of beeks are connected with mentors through the GCABS mentoring program, and counting the days until their nucs arrive. Volunteers in the training team always welcome - next class, October 10 & 11.

Covid-19 Hardship Recovery Grant

GCABS would like to thank the City of Gold Coast for recently awarding us a $4,980 community grant to assist the club in preparing for the challenges of staying engaged with our members, while we have to socially distance during the pandemic period.

This money will be used to purchase a new audio visual system (laptop, projector, microphones & portable speaker) for our meetings and events. The previous equipment has been all borrowed! It also replaces the majority of the equipment that the club had stolen from the storage shed at Carinity Cedarbrook. Our thanks to council & to GCABS' committee member Travis Green for writing the successful grant submission.

OCTOBER is AFB Awareness Month

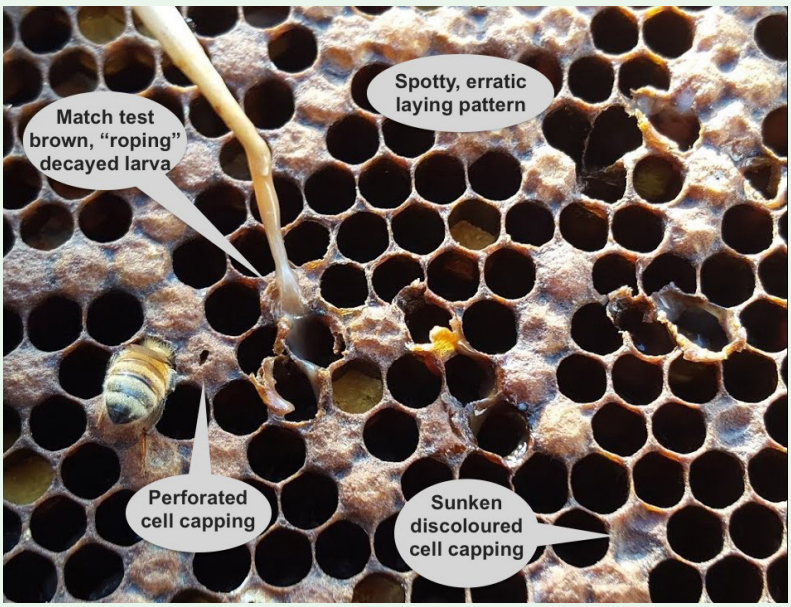
Inspect, Test, Notify, Act.

Extracts from The Buzz, Oct 2019, by GCABS member Paul Fullwood, Greenwood Farm Bees & from the DPI website

Held every October, AFB Awareness Month aims to:

- highlight awareness of American foulbrood, its impacts and best management practices
- encourage beekeepers to inspect their hives for signs of the disease
- promote reporting of the disease to NSW DPI or Qld DAF.

WHAT IS AFB & how does it spread? American foulbrood (AFB) is a fatal and incurable brood disease of European honey bees (Apis mellifera). AFB is present in all states of Australia. Any hive can contract AFB and the disease can decimate an apiary. AFB spores are spread in contaminated honey and apiary products, hive parts and equipment. Try to avoid sharing equipment between hives. A single infected hive can quickly infect nearby hives as healthy bees rob out the contaminated honey. As more and more hives contract the disease, the cycle perpetuates leading to serious outbreaks that can impact entire regions.



INSPECT for Symptoms: Upon doing your hive inspections, you may notice a decline in the number of bees, a reduction in the honey output. However, the unmistakable calling signs of AFB are in the brood box. For starters, a spotty erratic laying pattern can indicate disease. For AFB the following indicators are important:

- Perforated cappings (just one can be enough)
- Sunken cappings
- Larvae become liquified and turn to dirty brown
- Foul odour (hence the name) is detectable in heavily infected hives.

TEST: Larvae will "rope" when a match stick is inserted through the capping. See photo & read how to test at this link.

NOTIFY: Notify the Dept. of Ag & Fisheries (DAF) in QLD or the DPI in NSW within 24 hours of discovering AFB. Prepare & submit a smear slide, infected comb and/or honey sample if you are uncertain & require certain diagnosis.

ACT: In the Biosecurity Manual for Beekeepers, this notifiable disease has only one course of treatment. Euthanise the bees, then burn the hive components (frames, wax, honey, brood). Hive boxes, bases and lids can be irradiated with Gamma radiation to kill the disease.

Why such radical action? AFB's causative agent is the Paenibacillus larvae, which produces bacterium spores that have extremely hard outer casings. Resistant to chemicals, digestive juices, weather conditions and low-level heating, these spores can remain dormant for up to 50 years. They are highly contagious, infecting brood less than 24 hours old, germinating in their gut. As few as 6-10 spores can infect. They multiply up to an over 2 billion in just one cell.

Minimise the risk of spreading AFB:
1. Don't feed bees honey (you don't know if spores are present in honey
2. Replace combs when they become dark or blackened (every 2-3 years is a good guide).
3. Avoid using 2nd hand equipment unless it has bee irradiated
4. Maintain a barrier system. Avoid sharing equipment between hives or apiaries,

Test you knowledge of AFB and learn more at:
https://www.dpi.nsw.gov.au/animals-and-livestock/bees/pests-diseases/afb-awareness-month

October Honey Flora - S.E. Queensland

Thanks to Jim O'Reagan

Black Sheoak, Blue Gum, Broad-leaved Banksia, Caley's Ironbark, Dogwood Flat Weed, Fuzzy Box, Glycine, Golden Candlesticks, Grass-tree, Grey Ironbark, Mexican Poppy, Mugga Narrow-leaved grey Gum, Prickly-leaved Paperbark, Red Bottlebrush, River Mangrove River Sheoak, Scribbly Gum, Swamp Sheoak, Tallowwood, Tumble-down Ironbark, Turnip Weed, White Bottlebrush, White Clover, White Mahogany, Wild May (Baeckea), Wild May (Leptospermum)

Black Sheoak

White bottlebrush

A warm welcome to our newbee members who joined GCABS in September:

Daniel A.P, Amber C, Martin C, Adam D, Sharn G, Farimah G, Kristine H, Jaclyne J, Angela M, Don N, Louise O, Brian R, Stewart R, Steve R, Dannielle S, James S, Stefan T, Elise T.

Honey's Antibacterial Qualities; Sugar & Bee Proteins Are The Fighters

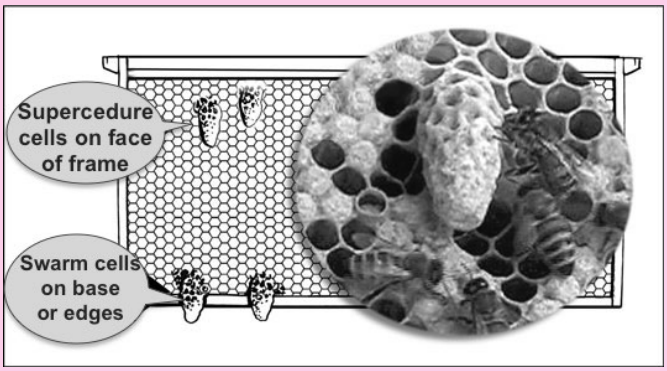
Samantha Olson

Honey is about 17 percent water and the rest is made up of two types of sugar; fructose and glucose, both of which attract water. As a supersaturated substance, honey does not dissolve at room temperature, giving it its viscous, gooey texture. When a bacterium, mould, or fungus enters the body, honey will work to suck the water right out of the foreign substance, rendering the invader useless. Honey also doesn't contain enough water for bacteria or the like to live off, which is why it doesn't spoil. But sugar isn't the only ingredient that makes honey a supercharger antibacterial fighting machine. Bees add glucose oxidase to the mix, which makes honey very acidic (pH approx 3.5), & virtually impossible for bacteria to grow in. Also, when glucose oxidase breaks down, it converts into hydrogen peroxide, which destroys bacteria's cell walls.

Honey also contains a sprinkle of a protein called bee defensin-1, which is a part of the bees' immune systems designed to protect them against bacteria, specifically those that cause disease. In 2010, a study conducted on the bees at a molecular level isolated the defensin-1 protein, which revealed how their honey is able to treat burns and skin infections, making it a potent antibacterial ingredient.

Ref: https://www.medicaldaily.com/benefits-honey-bacterial-infections-fighters-385989

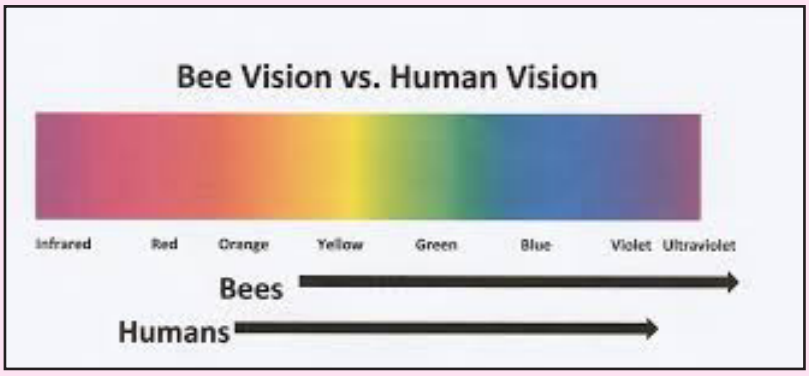
JOBS in Your Bee Yard this month



- Pest & diseases check. Inspect closely for symptoms of AFB – Not sure what to check for? Read above on page 5, do some research, ask for help.
- Watch for signs of swarm preparation and act to stop your bees swarming. Read HERE how to make a swarm control split.
- Cycle out old dark combs and replace with fresh frames & foundation for your bees to draw fresh comb.
- Ensure your queen doesn't run out of laying space. Bring frames of honey & a frame or 2 of capped brood up into the honey super & replace with fresh built comb or stickies.

How Bees See Colour

On the colour scale, humans can see the colours of the rainbow — red, orange, yellow, green, blue and violet. On one end, there is infrared, which humans can't see, and on the other end is ultraviolet, which humans can't see. Bees can't see red, although they can detect orange and yellow, but bees CAN see in the ultraviolet section.



Humans and bees are both trichromatic, meaning that we have three photoreceptors in our eyes that make colour combinations based on these three colours. Humans base colours on red, blue and green. Bees can't see red because they don't have a photoreceptor for it, so they make colour combinations of of blue, green and ultraviolet.

Bees can also easily distinguish between dark and light – making them very good at seeing edges. This helps them identify different shapes, though they can have trouble distinguishing between similar shapes that have smooth lines – such as circles and ovals.

While it is possible that bee vision has evolved to become attuned to flowers, it is more likely that flowers have evolved to attract insect pollinators – including bees, to transmit pollen from one flower to another, allowing them to reproduce. As a result, many flowers have distinctive ultraviolet colour patterns that are invisible to the human eye, but are incredibly eye-catching to bees.

For example, these ultraviolet patterns often outline "landing zones" for bees, pointing them towards the part of the plant containing nectar and pollen. That's good news for the bees, of course & for the flower also making it more likely that some of the flower's pollen will stick to a bee and be inadvertently deposited in another flower.The UV patterns also explain how bees are able to select a particular species of flower from a field of white flowers. Bees aren't just seeing white flowers. They're seeing flowers with distinct UV markers. In fact, bees will head to the UV-absorbing area of a flower first,; it's their "bull's-eye".

How do we know what bees can see? Through behaviour experiments based on training bees to respond to specific colours. Essentially, researchers would put out bee feeders of sugar water along with different coloured targets – such as a yellow one. The bees would learn to associate the yellow target with the food, and would keep coming to the yellow target even after the food source was removed. The bees did this even when multiple other targets were in place that were various shades of grey. If the bees couldn't see yellow, some of them would have explored the grey targets.

Also, researchers have looked at the photoreceptors in the bees' eyes. Specifically, bees were exposed to different wavelengths of light to determine when these photoreceptors fire off signals to the brain. If there's no response to a specific wavelength, it means it didn't register to the photoreceptors, hence that colour is not seen.

Last Buzz issue we met the 2020/21 executive committee. This month, we introduce our other committee members.

Education: Kathy Knox

I think I joined GCABS in 2012, eager to get colonies of stingless and honeybees after meeting Marty Skok at GC permaculture. I began with The Bee Book by Warhurst and Goebel, a great resource which I read cover to cover and still refer to weekly. I served as committee member and then secretary of GCABS for a few years and then president for two years. Now I enjoy coordinating the GCABS education and mentoring programs. Beekeeping evolved from a hobby to a total lifestyle change for me. I work for Bee One Third, where I'm Beekeeper, training and content lead. Those in GCABS who helped me along the way include Kate Miller & Les Tompson, Kev & Deb Tracy, Christine Mac, John Rockley, Tim & Shelley Clark and Bev & Peter Moore.

Biosecurity liaison for the ABA: John Vallance

I started beekeeping just over a year ago with my first nuc after a good 6 months of reading about beekeeping. I now have 6 hives, maybe room will limit further expansion. I like to get into the hives & try as much as possible as that is the best way to learn. I've accomplished splits, queen grafting & swarm catching within my first year & dealt with my fair share of pests & best way to control them. It's looking like a much better year for the bees; I couldn't have picked a harder year to start. I've lived on the Gold Coast since 2017 with my wife, son & now baby daughter. My 3 year old son loves to come out to the hives with me & always asks to see the queen. It's so nice to be able to introduce him to the world of beekeeping at such a young age.

Buzz Editor: Leonie Schwarzel

I grew up around orchards, where a friendly beekeeper brought his hives for the various flowering seasons. Fascinated, I'd watch him working. In our roadside produce stall, I'd line up the honey jars by colour, lightest to darkest. The range of colour, bouquet & taste amazed me. Fast forward 45 years, I heard that beekeeping training was available through GCABS. I trained & worked with mentors including Kathy Knox, Olive & Jim Cavanaugh, Kevin Tracy, Richard Sims. I now have 7 hives & work as apiary manager on a property at Tyalgum with 33 hives. I have been GCABS' The Buzz editor since 2018 & love the friendships & learning it provides.

Assistant Editor / Librarian: Ann Allen

Originally from South Africa, I moved to the Gold Coast 30 years ago and retired from teaching this year. My husband Colin and I did the GCABS Beginners Course two years ago and we have been on the GCABS Committee ever since! Colin as the secretary and myself as the librarian and assistant editor of The Buzz. It's great to be connected to a friendly bunch of people who share a love of bees and a desire to help run the club responsibly. Colin and I have been on a big beekeeping learning curve over the past two years. Our 3 backyard hives at our home in Robina provide us with delicious honey, and in return we try to be the best beekeepers we know how to be. Being part of GCABS is helping us do that.

Committee: Travis Green

My bee journey started in high school, with a teacher who introduced our class to his bee hives. It was the start of an interest in creating my own food and I always knew that bees would be a part of my life when I had a place big enough. I took the plunge nearly 3 years ago after taking a career 'sea-change' to recharge. The idea was that bees would be a new focus and a relaxing pastime, but was I wrong about that. The bees presented many challenges, frustrations; but more importantly life lessons. Both bees and beekeepers are wonderful teachers and my life is richer for the experience.

Library Corner

The latest October issue of The Australasian Beekeeper has some interesting and helpful articles which include:

- A Spring guide for new beekeepers
- A 10 item checklist for things to do in the apiary
- Tips and tricks for saving a hive that is failing
- Information about foraging and the nutrient uptake on bees.
- Why 30 is a special number for bees.
- Research on how honeybee venom kills aggressive honey bee cells.
- Mooching bees
- Bee viruses and the risk to the Queen

Contact Ann Allen if you wish to borrow this or any previous copies.

There are a wealth of useful and informative Bee websites. Here are some links you may like:

A very useful website full of bee facts, especially for newbies:
https://abeilles.techno-science.ca/english/bees/default.php

Bee Swarming:
https://www.perfectbee.com/learn-about-bees/the-life-of-bees/how-and-why-bees-swarm

Managing bees in Spring:
https://oraravalleyhoney.com.au/beehive-spring-management/

A useful calendar guide about common bee activities throughout the year in our southern hemisphere:
https://beekeepers.amazingbees.com.au/beekeeping-calendar.html

COMMITTEE

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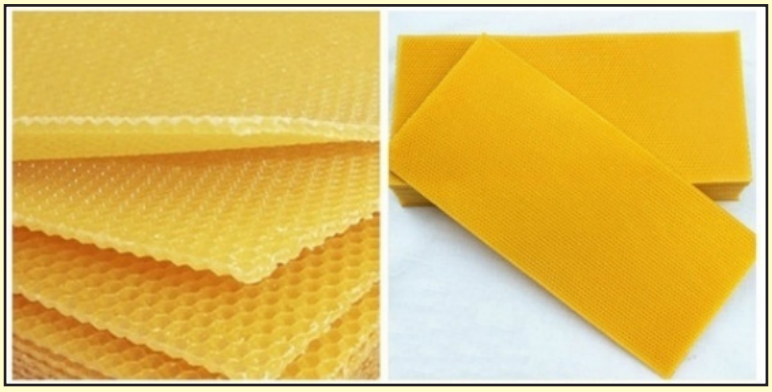
Extractor Hire	Rachael Kubinski	0415 192 662	V's Bees, 3/90 Spencer Rd, Nerang

V's Bee's are seeking to buy your clean beeswax to ensure foundation is avaiable on the Gold Coast for Beekeepers to purchase.



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