Inside this Issue:

Next ABACC Meeting Wednesday 27th of November at: Erina Trust Community Hall, 27 Karalta Road, Erina. Commencing 7pm Beginning in bees' session commences at 6pm.

Contributions for newsletter: Please send any stories or anything you wish to share to the editor to the below email address.

Email Address:
secretary@centralcoastbees.org

WELCOME TO THE NOVEMBER NEWSLETTER!

Welcome to the November newsletter, full of more interesting information for you!

We are getting closer to Christmas, so hopefully you have some yummy honey containing treats being cooked for the festive season. I have popped in some recipes to help you along.

*Our honeybees can be split during spring, but so can our Australian native stingless bees. You can split native bees by dividing the hive in half the appropriate way or you can do the "**eduction"** method which is explained in the article in this month's newsletter.*

We'll look at what we can plant in our gardens to feed our precious bees and attract other important beneficial insects.

American Foul Brood (AFB) is the disease profile for this month. This is a disease that no beekeeper wants in their hive, but one we must know how to recognise and report.

Don't miss the Bee-related Christmas ideas in the for-sale section of the newsletter.

We have the second edition of the "Who Am I?" profiles, so that members can get to know our committee members a little better and see where they are in their beekeeping journey.

All of this and more!

Don't forget that I would love any input or suggestions for future newsletters. If you have a great story or photo, passionate about a beekeeping related subject you would like covered or just have a great recipe to share, then PLEASE send it to the secretary email and it will be featured in the next newsletter.

So, sit back, relax with a cuppa or a glass of early Christmas cheer and catch up on a great read!

Sherrie Smith (Editor)

Well, hasn't it been an interesting year!

We started our term last August with a renewed membership of 59, caught up in the depths of the varroa mite emergency. How were we going to keep the club alive?

We, the committee, decided that it would be a priority to keep the membership informed of every update on the progress of Varroa through the DPI.

We organised representatives to come out and talk to us about what was happening and probably most importantly, when we were going to be able to have bees again. The future looked dim.

We decided on an educational approach, to keep members informed and educated in the hope that we would keep membership alive. Then, when the government announced that the eradication program was no longer viable, we realised that we had taken the right path.

Education has taken precedence in the last 8-9 months, with a variety of speakers and presentations being conducted to help us learn about managing varroa. And that is still ongoing as of now.

We noticed that our membership slowly started increasing after the AGM last year, to the point where, as of today, we had 2 more new members join, giving us a membership total of 144 people. We must have done something right!

We had minimal success in re starting our club apiary with many lessons learnt. Michael, our club apiary officer has been persistent and determined to restart our apiary and is now up and running. There have been various challenges, with bee numbers in hives exploding exponentially, then queen cells appearing in great numbers, as well as lack of eggs found in the brood box. We kept asking ourselves, what was going on? Are they making up for lost time? Are the chemicals affecting brood cycles?

Mite loads have been contained and were very low, only to increase again and then diminish again. Small hive beetles seem not to have been an issue, but regularly finding capped queen cells, regardless of doing splits or not, then finding hives Queenless again, was very frustrating. We are hoping as swarm season abates, that things will improve.

Our shipping container has finally been put in place up at the Mt Penang Gardens Apiary site and we look forward to centralising all our gear in one place.

Our librarian, Heidi, has been busy with our books. She has researched new titles that will be appropriate to our needs, and I hope the club members will make use of them, utilise them for their education and learning needs. I extend my appreciation and thanks to her for a great job well done. I also believe Heidi has a few extra talents that I hope she is willing to share that will compliment her role as librarian and adviser to our club, in the future.

Sherrie and Neil have done a fantastic job in providing our catering needs at our meeting nights. Sherrie has also taken on her role as secretary and newsletter editor with so much gusto and enthusiasm, I would be lost without her.

Michael has been invaluable in his role as apiary officer. He has gone above and beyond to keep our apiary alive and continually has his fingers in more pies when it comes to doing things for our club.

A big thank you to Bruce for his beginning in Bees commitment. We are looking at a program to expand this learning and will have it in place next year.

Gordon has been great in keeping our financial records correct and keeping the committee on the straight and narrow.

Max, as our biosecurity officer has kept us in the know, on all the issues with what's been happening and with his collective knowledge as a beekeeper and connection with the DPI, I know we are in good hands.

Nickole, our assistant secretary, has been very helpful and focused in the way she has been able to set up tasks and record keeping. Having started a new job, which takes her away from home, has made it impossible to continue with the club and thank her for her valuable contributions.

Jack, our previous vice president was always available to help with whatever task was given to him. Personal health issues forced him to stand down, but he is always keeping in touch with what's happening in the club.

We would like to extend Nickole and Jack our thanks and wish them both well.

I didn't want to single out each of my committee for their contributions, but as President there is no way I could have accomplished and survived this year without their support, dedication and commitment. I give my thanks and gratitude to you all.

Finally, a big thank you to all the members who have stayed with the club over the last year.

I hope my thanks to the committee members inspire you all to think about what you can do for the club in the upcoming year. No task is too large or too small, we are all in this together, so please don't just think about what the club can do for you but also what you might be able to do for this great, wonderful club we have.

Thank you!

Hart Peters
(President)

Hi Members,

Wow, as we all know this season has become an eyeopener for all beekeepers new and old.
The Club Apiary now has 5 eight frame Langstroth Hives.
Swarming has been an issue with all hives swarming this season.
Hive one looked great, when we inspected it during the demonstration for new beekeepers. During the demonstration, we marked the Queen and removed Drone Comb. Eighteen days later there was no marked queen, and a newly emerged Queen was seen.

On frame 1, there were 2 queen cells on the second frame, 3 queen cells on frame three and 8 queen cells on frame five, attached to the drone comb on the bottom of the frame. (as the photo shows)
Hive 2 at that time, appeared to be a little less productive with only 9 queen cells. The old queen was removed and became our Hive number 5.

Sunday the 20th of October we were invited for a demo of the Varroa Controller with Sven Martin, and we found that Hive 1 was active with Queen present, capped brood, pupae and eggs. Hive 2 was full of eggs and uncapped pupae. Hive 3 was found to be Queenless, but full of bees. Hive 4 (the DPI Sentinel Hive) contained 4 freshly opened Queen cells and had just swarmed.
Hive 5 was still active with the old queen from Hive 1, had capped brood, pupae and eggs. This left the apiary with only 2 hives to test the Varroa Controller. Results will become relevant in a few weeks when we test for varroa.

The Working bee was a great help with the apiary now restored to its former glory. The new shade cloth was attached to the fence as a wind break and privacy screen.
The club container (*aka. Big Yella*) has been delivered and placed into position, so all the club's scattered equipment can be stored in the one place. We also now have a secure area, to process the club's honey.

Hoping the swarming session has finished and the bees now concentrate on honey production!

Michael Graham (Apiary Officer)

MICHAEL GRAHAM

Role in the club: ABACC Club Apiarist
Suburb I live: Springfield
Member of the club: December 2017
My beekeeping story: Firstly, I like people, **BUT I LOVE BEES!**
I am a third generation of amateur (hobby / backyard) beekeepers.
There has been no formal training in beekeeping, just many hours and days with head and hands in the hive and books. I started at the age of 9 with my first swarm shaken into a wood box. This swarm became 2 hives, which I kept until the age of 15 ½, when I packed a kit bag and joined the Navy.

My Naval career lasted for 24 years, but during this time I was involved with my grandfather's bees at Rooty Hill in the western suburbs of Sydney, so I was never far from beekeeping.
After discharge from the Navy and moving to the Central Coast, I found plenty of bees in my garden, this was due to two wild hives in nearby trees. But alas, storm damage and development, saw the demise of both in one season. Still working long hours and being time poor, I opted for a couple of Native Bee hives for my vegie garden pollination. But I was soon drawn back into Honeybees and joined the club.

This led me to become the Apiary Dude six years ago. The Club Apiary at that time was situated in the Agricultural Farm, in racecourse road, which had a Top bar, Warre, Flow and 8 frame Langstroth Hives. These all met a sorry demise with a nasty incursion of American Foul Brood in early May 2021, resulting with termination and destruction. The club moved to a new site at Mt Penang Gardens. The Club Apiary established new hives including another Top Bar, Warre and Langstroth, both 8 and 10 frames, giving a grand total of 7 hives. All was good. until Varroa.

I found this time extremely soul destroying as I was mentoring members and had 15 hives in my back block, for a total of 50+ hives in the local area. I was close to walking away from bee keeping!
What stopped that direction was the contractors that had been hired to terminate hives. No “common sense” and “no Idea”, comes to mind.
I have always loved nature, especially the bees, and realised they deserved to have the termination completed quickly and correctly. When we moved to management of bees with Varroa it was mine and the club's intention, to get started with bees again, this spring. With the arrival of swarms last year, the call of the bees was too great to ignore! So, as of now, the club apiary is in full swing. We currently have 5 hives, with varroa numbers being managed with drone comb being removed every 18 or 20 days.

As we move ahead, it's a new learning curve on how to deal with Varroa, but I will not walk away from bee keeping. One of my great joys is cutouts and rescuing hives that would otherwise be destroyed.
I have forgotten many, but swarms total 60+ and cutouts around 40+. Many of these hives went to club members, over the years.

In my dealings with native bees, mainly Tetragonula Carbonaria, there have been many rescues from storm damage, demolition sites and tree loppers. Over the years, about 10 hives have passed through my hands to others and I currently have 10 in agistment to family and friends.
As for solitary native bees in my garden I have Teddy Bear, Blue Banded, Firetail Resin and Masked bees. I recently spent 20 minutes chasing a Harlequin for a photo and only produced entertainment for my neighbours.

Every time I open a hive, catch a swarm or do a cutout, my admiration and fascination with bees will be kick started again!!!

Thank you, Michael, for sharing your beekeeping journey!

What makes a Good Pollinator Plant?

A flower's colour, smell, shape, size, timing of flowering and reward offerings (nectar or pollen) can increase or decrease the number of visits by specific pollinators.

Some of the ways plants entice bees are:

- **ULTRAVIOLET INVITATIONS:** Bees can see ultraviolet light but **NOT RED**, so plants in the ultraviolet range attract more bees and those in red hues discourage them.
- **COLOUR PHASES:** Many flowers signal pollinators by changing colour at different stages of development, attracting them when they need them most.
- **NECTAR GUIDES:** Contrasting patterns of flowers shades, tints and tones further direct pollinators toward the floral rewards like nectar and pollen.
- **FRAGRANCE:** Minty or sweet, musky or ethereal, pungent or putrid, floral odours result from variations in chemical compounds. Fragrance can attract particular pollinators over long distances, varying in concentration and intensity according to species, flower age and site conditions.

Ideal bee-attracting plants are shallow, clustered flowers with landing platforms (E.g. Sunflowers) have easily accessible floral rewards and attract many short -tongued pollinators such as bees, beetles and flies. In contrast, deep tubular flowers without landing platforms often have hidden floral rewards and are not easily accessible by bees.

Rewards bees acquire from plants.

- **POLLEN:** It's the most protein-rich of these rewards and is essential to bee reproduction. Adult bees typically mix pollen with nectar and glandular secretions to form a nutritious "bee bread", which they then feed to bee larvae. Pollen grains vary in size, have distinctive shapes and commonly contain protein, essential amino acids, carbohydrates, lipids, sterols and other micronutrients. European honey bees are generalist pollinators whose diet is not restricted to one particular pollen type.
- **NECTAR:** Mainly composed of carbohydrates and water, with low levels of amino acids, lipids proteins and various vitamins and minerals. Carbohydrates primarily the sugars sucrose, fructose and glucose that fuels adult bees, butterflies and many other flower visitors like bats and birds.
- **OILS and RESINS:** These are secreted by some flowers to attract bees. Specialised floral glands produce calorie-rich, medicinal oils that are regularly collected by a few bees and mixed with pollen and nectar for feeding and medicating larvae. Bees also use resin for constructing antimicrobial and waterproof nests.
- **PROPOLIS:** Known as "**bee glue**", it is a resinous sap mixture collected from plants by bees and harvested by humans. Particular plants like conifers and poplars exude these resins from buds or from injuries as a natural antimicrobial defence. Honey bees collect propolis to construct and defend hives, weatherproof small cracks and holes, smooth surfaces, dampen vibrations and protect themselves from bacteria, fungi, mites and other intruders.

Other than food resources, plants also offer nesting spaces for a wide range of solitary bees and wasps.

How to Make your Garden Bee Friendly

One of the issues facing our bees is the removal of habitat loss. We are constantly exchanging once opened bushland for and replacing it with commercial buildings or with housing that have green lawn and not gardens. This removes the flowering weeds, trees and bushes that were the bee's food and housing sources.

So how can we fix it? Well, it doesn't matter if you are on a residential block or acres you can help by creating a bee friendly garden of any size you can manage. Flowering plants or herbs in pots, a larger flowering garden outside or even utilising rooves for gardens in unit blocks, all play a part in improving green spaces for bees and other beneficial insects. Planting a tree, you know the bees are going to feed from when it flowers, will all have an impact. The key is to have a variety of plants that flower at different times of the year, which may include a mix of native and introduced species of flowering plants, to provide bees with a continual floral sequence (at least 4 different varieties, if you can), and often in sheltered locations. Mix flowers with fruit and vegetable plants which will give the bees more of a variety and you a better crop!

The other hazard to our bees is pesticides in the garden. Make your garden a safe haven for pollinators by avoiding pesticide use if you can. It is difficult to avoid when you are living in residential areas and the bees fly so far, but there are other ways to handle the pests. Encouraging beneficial insects and other free workers, will help to control pest problems. Working out which bugs are good to have in the garden and promoting other animals like lizards, birds, small mammals and frogs will control your pest problem for free! Otherwise think outside the box, for example boiling water will kill weeds just as effectively as chemicals. If you must spray then there are a lot of do it yourself remedies online, but they are not all safe for the environment so be careful. There are also organic based sprays you can buy commercially like neem oil. Try and do it late in the afternoon when our beautiful bees are back in the hive and preferably not on the flowers or foliage that they may forage from tomorrow if at all possible.

Providing a water source in your garden helps to hydrate the bees and gives them a place to have a quick rest, before they continue on their journey. Make sure you put some large pebbles or rocks in, so they have somewhere to land and drink without risk of drowning. Bird baths make a great feature in the garden and may help stop the bees from deciding to visit the neighbors' pool.

Some Bee-Attracting Plant Suggestions

Below I have formulated a list of bee-attracting plants that you like to try in your garden. It is not complete but only a starting point, enjoy!

Herbs and Veggies		
Winter Savoury	Nasturtium	Bergamot
Lavender	Basil	Rosemary
Borage	Lemon balm	Thyme
Sage	Mint	Oregano
Chives	Coriander	Parsley
Marjoram	Fennel	Tomato
Beans	Strawberry	Blueberry
Raspberry	Lemon, Lime, Mandarin & Orange	Almond
Avocado	Apples	Banana
Rocket	Persimmon	Plum
Chamomile	Chicory	Dandelion
Dill	Lemongrass	Cucumbers
Native Plants/ Trees		
Native Daisy *Brachyscome*	Native Sarsaparilla *Hardenbergia violacea*	Native Violet *Viola hederacea*
Fairy Fan-flower *Scaevola*	Native Fuchsia *Correa spp*	Pincushions Trees *Hakea spp*
Christmas Bush	Grevillea	Passionfruit *Passiflora edulis*
Native Hibiscus *Alyogyne huegelii*	Lemon-scented tea-tree Leptospermum petersonii	Broad-leaved paperbark *Melaleuca quinquenervia*
Bottlebrush *Callistemon spp*	Water gum *Tristaniopsis*	Banksia *Banksia spp*
Flax Lilly *Dianella revoluta*	Pigface *Carpobrotus spp*	Macadamia tree *Macadamia integrifolia*
Exotic Plants/ Trees		
Peony *Paeonia*	Sweet Alyssum *Lobularia maritima*	Coneflower *Echinacea spp*
Cornflower *Centaurea cyanus*	COSMOS *Cosmos spp*	Forget-me-not *Myosotis spp*
Foxglove *Digitalis spp*	Poppy *Papaveraceae*	Marigold *Tagetes spp*
Rose *Rosa spp*	Sunflower *Helianthus*	Zinnia *Zinnia spp*
Snapdragon *Antirrhinnum spp*	Salvia *Salvia spp*	Bacopa *Sutera cordata*
Sedum *Sedum spp*	Blue potato shrub *Solanum rantonnetii*	Abelia *Abelia x grandiflora*
Southern Magnolia *Magnolia grandiflora*	Crepe Myrtle *Lagerstroemia indica*	Jacaranda *Jacaranda mimosifolia*
Chestnuts *Castanea sativa*	Dahlias	Poppies

Resources

1. THE XERCES SOCIETY (2016*), 100 Plants to Feed The Bees, Provide a Healthy Habitat to Help Pollinators Thrive,* Massachusetts, Storey Publishing.
2. DOUG PURDIE (2016), *The Bee Friendly Garden, Easy ways to help the bees and make your garden grow*, Australia, Murdoch Books.
3. MARK LEECH (2012), *Bee Friendly*. Australia, RIRDC.
4. JANE DAVENPORT (2011), *The Garden Guardians,* Australia, Imaginality Pty Ltd.

What is American Foul Brood (AFB)?

American foulbrood (AFB) is a fatal bacterial disease of honey bee brood caused by the spore forming bacterium *Paenibacillus larvae*. It is not a stress related disease and can infect the strongest to the weakest colony in an apiary. Infected brood usually dies at the pre-pupal or pupal stage. Heavy infections can affect most of the brood, severely weakening the colony and eventually killing it. **AFB is a notifiable disease under the NSW Biosecurity Act 2015.**

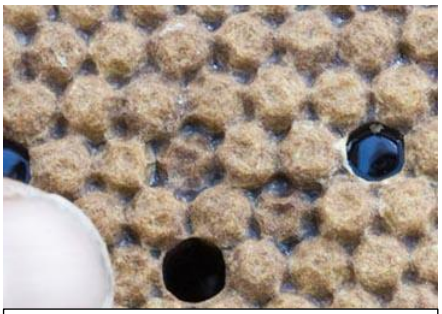
How does our hive get AFB?

Bacterial spores can easily be spread between hives and apiaries through beekeeping practices such as through the exchange of equipment and movement of infected combs. Adult bees are not affected by AFB but can spread spores within and between infected and clean hives through robbing and drifting.
AFB spores can live for 50 years and are very resistant to freezing and high temperatures. Therefore, the only way to manage the disease is to adopt good beekeeping practices, and if an AFB outbreak does occur, quickly deal with it before additional colonies become infected.

How and when to inspect hives for AFB

Brood combs should be thoroughly examined for AFB at least twice a year, preferably in spring and in autumn. Both strong and weak colonies are susceptible to AFB and can be infected at any time of the year so all colonies need to be examined.

Remove each brood comb from the colony and shake or brush most of the bees into the box, or at the entrance, leaving the comb clear for examination. Hold the comb by the top bar, at such an angle that the light reaches the base of the cells being examined. Examine each comb in a systematic way so all areas of comb are checked, as early infection may only occur in one or two cells.



Notice the sunken cells in the brood. Doug Somerville, NSW DPI

Symptoms of AFB?

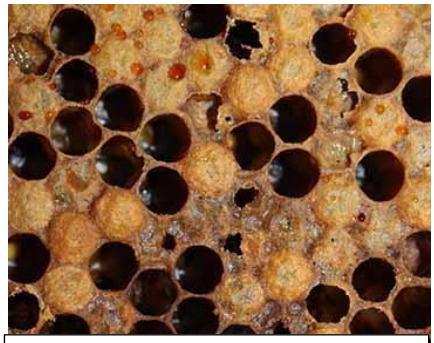
Typical symptoms of AFB include:

- Irregular and patchy brood pattern.
- Cell cappings on infected brood may appear sunken, darker coloured or greasy. This is due to the decomposing larvae inside.
- Cappings may also be perforated by bees trying to remove the dead brood (the remains of which are infective).
- The larvae die after capping and become a light to dark brown semi-liquid mass.

Infected hives may also have a sulphurous smell due to the decomposing brood.

Closer inspection of individual cells in the advanced stages of infection will show that:

- Infected brood changes from a healthy pearly white to a dark brown (a ‘ropiness test’ can be carried out at this stage).
- The dead larval remains become a tough, but brittle scale that is difficult to remove from the cell.
- If older larvae are infected the ‘tongue’ of the pupae may become stuck to the top of the cell wall.



Sunken and chewed cells in the brood

How to conduct the Ropiness Test

Beekeepers should conduct the ropiness test on suspect cells before the scale stage of infection. The test is as follows:

- Identify a suitable cell showing AFB symptoms – discoloured, greasy, perforated or sunken cappings.
- Push a matchstick into the infected cell
- Slowly withdraw the match.
- If the semi-fluid remains are drawn out in a 3–5 cm long dark-brown ropy thread it indicates the hive could be infected with AFB.

How can I tell if its AFB, EFB (European Foul Brood) or SAC Brood?

AFB, EFB and SAC brood all look similar in the hive, so the only accurate means to differentiate between them is through laboratory diagnostics. Any beekeeper who suspects AFB is present in their colonies, must notify NSW DPI within 24hrs of suspecting AFB by:

- calling the Biosecurity Hotline **1800 680 244**
- emailing biosecurity@dpi.nsw.gov.au
- submitting an online form

Submitting a sample for lab analysis meets your reporting obligation. Click HERE to print the Bee Disease Diagnostic Specimen Advice Form to send with your sample. **NOTE 1 AFB sampling Kit per member is available through the club, pick-up at club meetings.**

Below are some simple guidelines to help differentiate between AFB, EFB and SAC Brood, **BUT** all of these diseases are reportable so DPI **MUST** be notified, and a sample sent in.

European foulbrood

Symptoms of EFB include a patchy brood pattern with uncapped brood cells where the dead or dying larvae appear curled upwards and brown or yellow which give the appearance of the larvae looking 'molten' in the cell. This is in contrast to AFB where the majority of infected cells die after capping.

Ropiness: Usually not ropey in its early stages, with some rope capable of being drawn out at around 1.5cm. In the latter stage of infection, and possible secondary infection, the ropiness will increase.

Appearance of rope: Slightly ropey, but more of a light grey semi-liquid mass, with some yellow seen due to tracheal tubes infected.

Odour: Possibly sour odour.

Brood pattern and stage of infection: Patchy brood with EFB cells usually containing dead, or discoloured and twisted larvae in uncapped cells.

Scale: Rubbery, brown to black.

American foulbrood

Ropiness: Can be quite ropey, sometimes forming a fine ropey thread around 3-5cm.

Appearance of rope: The ropey thread is generally dark brown and can be quite elastic.

Odour: Can be quite a sulphurous odour

Brood pattern and stage of infection: Patchy, perforated brood. Infected brood usually die after cell capping.

Scale: Brittle, brown to black.

Sacbrood virus

Sacbrood virus symptoms include an uneven brood pattern with discoloured, sunken or perforated cappings scattered through the brood cells. This is generally caused by adult bees trying to remove infected brood. Although the infected larvae commonly die after capping, some dead larvae can be observed with no capping. The larvae die with its head characteristically raised toward the top of the cell and stretched out on its back in the cell (ie a banana shape). This can sometime appear similar to the patchy brood patterns which can be observed with AFB infections.

Treatment for AFB

If AFB is detected in a colony, there are two options in dealing with the hive. In both situations the hive is killed and the AFB spores destroyed. AFB-infected materials should be either burnt or sterilised using gamma irradiation.

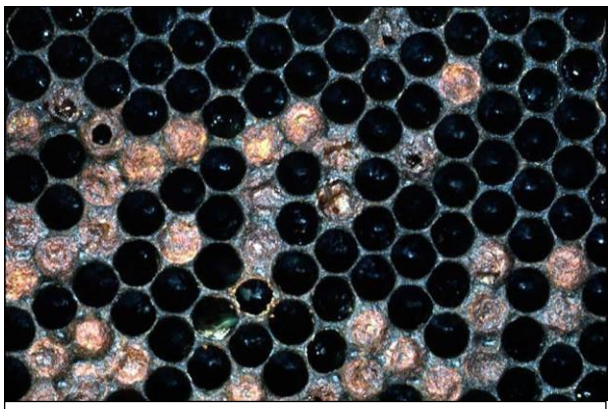
If irradiation is not possible, it is recommended that all hive components are buried in a deep pit and burnt. If the burn and bury option is followed, always ensure that the hive entrance and any other openings are closed so that bees are not able to escape. Once the hives have been burnt, bury the remains in the pit.
Do not dispose of beekeeping equipment in the rubbish bin or at the local tip.

Good Beekeeping Practices

Reducing or preventing the interchange of hive materials that can spread AFB amongst hives, or to different apiaries can be achieved by using a barrier management system.
The barrier management system is used to separate hives or apiaries into different units. This prevents the interchange of honey bees, combs, honey and hive components from one unit (hive, loads of hives or apiary) to another. AFB can be accidentally spread on tools or via normal beekeeping practices, so look at implementing simple measures such as cleaning tools between hives.

As a precautionary measure, brood combs should be replaced every 3-4 years as old brood combs can act as a reservoir of the bacterium.

If you notice that your hive may be infected with AFB, take your slide sample, close up the hive and do not move onto the next hive. Preferably do not use your beekeeping gear on another apiary, but if unavoidable it must be cleaned before inspecting a new apiary.



Later stages of Infection: Greasy cappings, spotty brood pattern, perforated cappings and scales

Useful Links:

NSW AGRICULTURE Identifying AFB video
NSW AGRICULTURE Management strategy for AFB Video
NSW AGRICULTURE Making an American Foul Brood disease slide
NSW AGRICULTURE Destroying bee colonies with petrol
NSW AGRICULTURE Irradiating hives

References: NSW Department of Primary Industries
BeeAware- American Foul Brood

Natural Hive Duplication
An Alternative Method of Propagating Australian Stingless Bees

Natural Hive Duplication is an alternative method of propagating stingless native bees and is also known as the *Eduction Method* or *Budding*.

When honey bees decide it is time to move to a new home, the existing mature queen will leave the original hive with a large swarm of worker bees and move into the suitable location that the scout bees have found. This is often a hollow in a tree, in a building or even the Telecom box! The whole swarm moves in and begins constructing a new nest.

The Australian stingless bees (genera *Trigona* and *Austroplebeia*) produce new nests in a different way. In the stingless native bees, worker bees spend many weeks gradually constructing a new nest inside a nearby hollow tree. Then when the nest is nearly finished a young, newly mated queen called a princess, moves in with some worker bees to complete the new nest.

In honey bees, the beekeeper may start a new hive simply by catching a swarm (including the workers and the old mature queen) and placing it in an empty bee hive. This does not work with *Trigona* stingless bees, so beekeepers have developed other methods of propagating stingless bee hives.

Methods of Propagating Stingless Bees

The quickest and most widely used method is to physically split the hive into two parts. However, there is an alternative. Using an adjoining empty box, the bees can be encouraged to build a new hive. This can be used to coax stingless bees into a box from a natural nest site in a large tree, an inaccessible cavity or a native hive box that you don't want to split in half the traditional way.

How Does Natural Hive Duplication Actually Work?

For a successful duplication, the bees in the original nest need to recognise the new hive box as a separate nest site. They then must stock the new hive box with provisions and begin to build a brood comb.

A mature egg-laying queen bee has a greatly swollen abdomen.

In spring and summer, the original nest's brood comb may have one or more queen cells each containing a developing queen bee. Alternatively, there may be one or more young virgin queens in the original nest. In either case drones will need to mate with the young queen bee before she can take up her duties as an egg-laying mature queen in the new hive. Bee swarms can be seen throughout the process especially prior to the building of the first brood cells in the new hive. This may be when the new virgin queen is mated!

The Natural Hive Duplication Technique

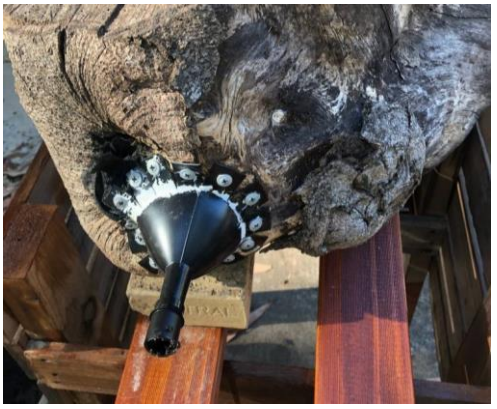
The nest to be duplicated must be strong and active. Begin the technique in spring when there are plenty of flowers available so that the bees can produce a new queen bee and gather stores for the new the new hive.

Using an empty hive box for stingless bees with an entrance hole drilled through the front panel, drill another 20 mm hole in the back of the new hive box. Move the old hive backwards and position the new hive box so that the entrance is in the same location as the old hive box, this will be approximately 35cm. What this does is allow the bees that know the exact position of the logs entrance to now find the new empty hive. If we don't do this, the field bees will fly past the empty hive and not be able to enter the old hive, as we have blocked this up with the irrigation tube. If you are unable to shift backwards, don't worry it will just take the bees a little longer to work out the new entrance. You can try attaching the new box at night so that the bees leave through the new box the next morning, which will help them adjust.

Use a plastic tube to connect the original nest entrance to the hole in the back of the new hive box. Place a tee piece in the tubing between the two hive boxes, ensuring the side of the tee is blocked off. All bees leaving the original nest will be forced to walk into the new hive box and out through its entrance hole. Ensure all gaps between the tube, the original nest and the new hive box are well sealed. If the tube is transparent, cover it with cloth or tape to keep out the light.

If the original hive is a log, you can utilise the "funnel method", when the bees use the knot of the log as their entrance. Using the same steps as above, place a funnel over the entrance to ensure the bees walk through the empty daughter hive.

Placing some propolis from an old native hive, around the edges (or using an old, used box) will encourage the bees to begin constructing the new nest. Provide access to only one section of the brood chamber, so the bees don't get overwhelmed. This can be done by placing a thin clear plastic film between the top and bottom of the brood box or placing a lid over only half a box, adding the second half only once the new colony has established.



Over a few months, the bees should begin building a second nest inside the daughter colony. If this is not happening, you can add some 'catalyst brood', which is a small piece of brood comb about two layers thick and the size of a small saucer. When there is fresh brood built inside the new hive, it is a good time to open the tee piece to allow separate entrances. The original nest will still remain in its original cavity. Once the new hive is well established, separate it from the original nest and move it to a new location. Equally, you can move the parent hive instead if preferred.

Many beekeepers prefer Natural Hive Duplication because it is very gentle on the bees and can be done without damaging the original nest in any way. Natural Hive Duplication is also an excellent method of producing a new hive when the beekeeper does not want to disturb the original nest cavity.

References and links:

Aussiebee

ABecC Hives

Alex Austin- (Environmental Programs Officer, Ku-ring-gai Council

Club Working Bee

A BIG thank you to those people who were able to help at the club apiary at Mount Penang Gardens on Saturday the 12th of October!

Wendy and Bill Cook, Pat O'Sullivan, John Maxwell, David Pearse, Hart Peters, Michael Graham and Neil Smith did a great job. At the apiary lawns were mowed, ground levelled, logs moved, wire fencing and shade cloth erected. The site for the club's shipping container was levelled and prepared for the arrival the following Tuesday. A great effort by all, followed by lunch at the Falls café. All your efforts were greatly appreciated by the club, **so thanks again!**

On Sunday the 13th of October four of the committee members manned the Central Coast Amateur Beekeepers stand at Woytopia held at Woy Woy Public School. This is held every 2 years and even though the club didn't have any honey to sell on the day, we went along to educate people about our beautiful bees. There were lots of questions about how we were going with varroa mite and even met some people keen to become beekeepers themselves! Both children and adults alike enjoyed seeing and hearing about the bees with the live bee display frame. Hopefully we can attend more of these days in the future and spread the word about our extremely important bees!

Varroa Controller Demonstration at Club Apiary

On Sunday the 19th of October, Sven Martin demonstrated the use of the Varroa Controller Heat Box, on the club hives. This is a chemical free management option for Varroa Destructor. Sven was very knowledgeable, and it was great to see the Varroa Controller in action. We were able to treat 7 frames of brood from the club hives, including a frame of brood with lots of drone comb, which the Varroa Mites love!

The demonstration was unfortunately confirmed at short notice and most members were unable to make it. The club is looking at possibly purchasing a varroa controller for the club apiary, so hopefully we will be able to organise another demonstration. We would like to thank Sven for taking time out of his busy schedule to show us!

Brood frame with lots of capped drone brood

Inserting temp prob into brood centre

To view a video clip on the Varroa Controller click **HERE**

For more information on the Varroa Controller click **HERE.**

MORISSET LAKE MACQUARIE AGRICULTURAL SHOW EST. 1954

Honey Competition Results 2024

(ABACC Club Members results only)

Light Honey 1st Neil Smith 2nd Winnie Snoek	**Frame Honey** 1st Neil Smith
Medium Honey 1st Douglas McDonald 2nd Robert Rae	**Candied Honey** 1st Neil Smith
Dark Honey 1st Central Coast Bees	**Wax Moulds** 1st Michael Graham
Creamed Honey 1st Central Coast Bees 2nd Michael Graham	**Wax Candles** 1st Central Coast Bees 2nd Michael Graham 3rd Heidi Andrews

OUR NEW & LESS EXPERIENCED MEMBERS NEED YOU!!!

Do you enjoy sharing your knowledge with people who share an interest? When our new and less experienced club members join, they often need a little help! So, if you are interested in being a resource person and could buddy up with a new member near you, please let us know. We may all be learning the new management strategies with Varroa mite, but there is so much more to beekeeping than just varroa! You may already know the basics and that is what the less experienced need at the beginning of their journey. The committee members already do so much, and they need your help! If you can assist, please email your name, contact number and the areas/postcodes you are willing to cover on the central coast to **secretary@centralcoastbees.org**

A Show of Appreciation from Central Coast Sports College

On behalf of Central Coast Sports College, we would like to extend our sincere thanks to the Central Coast Amateur Beekeepers Association and particularly to club apiarist, Michael Graham, for his invaluable support during our recent educational sessions. Michael generously opened the club's hives next to the school and provided a unique educational viewing case with a live frame of bees, as well as a fresh frame of honeycomb. These resources played a crucial role in engaging our students across both Primary and Secondary levels.

Our senior college students recently completed an integrated unit of study focusing on the biology and ecological importance of bees within biomes, as well as the biosecurity aspects of the beekeeping industry across NSW and Australia. The materials and hands-on experience made available through the club provided an enriching learning experience that all students thoroughly enjoyed and benefited from.

We are immensely grateful to Michael for his time, energy, and dedication to supporting our curriculum, and for helping foster a deeper understanding and appreciation for bees and their role in our local environment.

Thank you once again to the Central Coast Amateur Beekeepers Association for your ongoing contribution to education and awareness.

Mark Holding.

Received on the 29th of September 2024

CLICK on the titles of the recipes to access some great Xmas recipes you can use beautiful honey in!

Latvian Honey cake

This recipe is a recommendation from one of our club members **Winnie Snoek,** who says this is a delightful cake with honey. She has made it several times and is fool proof. Enjoy!

1800's Honey Fruit Cake

A recipe I found on the Beechworth website. They say they, "have reimagined this humble fruit cake recipe into a modern day classic and it keeps the traditional honey flavour we know and love." Definitely one I think I will try!

White Chocolate and Honey Blueberry Cheesecake Slab

Sourced from Better Homes and Garden magazine 2023, this cheesecake looks delightful! Well at least the berries are healthy, it is Christmas after all!!!!

Slow Cooked Lamb Shoulder with Rosemary, Garlic and Honey

This Slow cooked lamb recipe looks so tempting! It is said to result in a succulent, fall-apart meat on the inside, crispy browned on the outside and with the most delicious, caramelised sauce. Who is going to try it first and let me know?

For a healthier christmas ideas

Honey Garlic Salmon

This recipe appears on the Eating Well website. It's a simple marinade which add tons of flavour to salmon with ease. Serve it with your favourite salad or your preferred rice and it makes the perfect quick meal for the busy festive season.

Honey Roasted Vegetables

These honey roasted vegetables would make a great side dish to a Christmas ham, turkey or lamb. They would also make a great meal on their own. They have a touch of sweetness and a herby hum from the rosemary. A simple recipe packed with flavour and a healthy alternative to a season full of sweet treats.

There are so many yummy recipes that could utilise gorgeous honey, so do some googling and find one that tickles your taste buds!!!

Merry Yummy Christmas

❖ New White 10 Frame Hive Doctor Base suits timber or plastic boxes.
More than 20 available for $32 each, including front entry reducer as shown.

❖ New 8 Frame plastic deep box $30.00, only 1 available.

❖ New Stainless steel deep frame excluders, used to trap the queen on a single frame, used for Varroa management. More than 10 available for $50 each.

Hive Doctor Base

Plastic Deep 8 Frame

Stainless Steel Deep Frame Excluder

Deep foundation wax sheets
Wax from my hives on the Central Coast chemical treatment free
Rolled by Col Wilson at Kurri Kurri.
Per Box 14kg $450
Per sheet $3.00

If interested contact Max Rae on 0424168590

Personlised Gifts by Tracey

0429 223 339 Personlised gifts by tracey

For all your home made and personalised gifts.

Kids drink bottles

40oz tumblers

Family circles

20oz tumblers

Message for prices as prices vary depending on size & product. Many more products available

Acrylic cake topper

Personalised Gifts by Tracey

Have you got something bee related for sale?

Then send an email with information about the item/s for sale,

price and your contact details to secretary@centralcoastbees.org

and it will be featured in the next newsletter!

Save the Date!

The Central Coast Beekeepers Christmas Party Is On!!!

As our club meeting falls on christmas day this year, we have decided to have our christmas party on Saturday the 14th of December.

Location: Mount Penang Gardens BBQ Area
Time: 11am- 3pm

The club will supply BBQ meat, salad, bread rolls, tea and coffee.
If attending could you, please bring:

- **a plate of food to share (maybe some fruit, a sweet Christmas treat or desert)**
- **a chair to sit on**
- **cold drinks**

The club apiary will also be open for inspection between 11.30am and 12pm for anyone who wishes to have a look.

An Eventbrite invitation will be sent out to all members closer to the date! Please RSVP, so that we have an estimate of people attending.

If the weather is raining, we will have to postpone the party till early 2025. You will be informed via email and our members Facebook page if this occurs.

We would love to see as many of you there, with your christmas cheer on!!!!

THE CLUB COMMITTEE NEEDS YOU!

The Central Coast Beekeepers Committee was voted on at the October AGM, and we would like to thank those who have agreed to continue in their current role. We would like to welcome Wayne Logan into the Vice President role and Robert Ray to an ordinary member voting position! Well done for stepping up, you will be well supported!

BUT there are Committee Positions that still need to be filled, see the committee members list on page 24 of this newsletter.

If you would like to help out the club and take on a new role, please send an email to president@centralcoastbees.org

We would love to have your support and will be welcomed with open arms!!!

November Education Session at the club meeting is guest speaker Kenya Fernandes on Antimicrobial Properties of Honey.

Saturday December 14th is the Club Christmas Party at Mount Penang Gardens!!!

ABACC 2025 CLUB MEETING DATES

Club Meetings the 4th Wednesday of the Month (except January)

Wednesday 26th of February 2025
Wednesday 26th of March 2025
Wednesday 3rd April 2025
Wednesday 28th May 2025
Wednesday 25th June 2025
Wednesday 23rd July 2025
Wednesday 27th August 2025
Wednesday 24th September 2025
Wednesday 22nd October 2025
Wednesday 26th November 2025
December meeting/ Christmas party date to be confirmed

OFFICE	NAME	EMAIL ADDRESS
Voting Positions		
President	Hart PETERS	president@centralcoastbees.org
Vice President	Wayne LOGAN	vicepresident@centralcoastbees.org
Secretary	Sherrie SMITH	secretary@centralcoastbees.org
Treasurer	Gordon FOSTER	treasurer@centralcoastbees.org
Ordinary Member	Michael GRAHAM	apiaryofficer@centralcoastbees.org
Ordinary Member	Neil Smith	membership@centralcoastbees.org
Ordinary Member	Robert Ray	
Non-Voting Positions		
Public Officer	Hart PETERS	president@centralcoastbees.org
Club Apiary Officer	Michael GRAHAM	apiaryofficer@centralcoastbees.org
Biosecurity Officer	Max Rae	biosecurity@centralcoastbees.org
Assistant Apiary Officer	Neil Smith	membership@centralcoastbees.org
Membership Officer	Neil Smith	membership@centralcoastbees.org
Quartermaster	Bruce MAIN	bhv.main@gmail.com
Newsletter Editor	Sherrie SMITH	secretary@centralcoastbees.org
Publicity Officer		
Librarian	Heidi ANDREWS	rumbalarabeesau@gmail.com
Catering Officer	Neil & Sherrie SMITH	secretary@centralcoastbees.org
Events Co-ordinator	Hart PETERS	president@centralcoastbees.org
Equipment Officer	**Position currently vacant**	
Assistant Secretary	**Position currently vacant**	

The Club Quartermaster, **Bruce Main**, carries a stock of basic beekeeping supplies available to Club members. Items and pricing are as follows:

Price List (as of 23rd August 2024)

HIVES	
Boxes – 8 Frame (unassembled) – Full Depth	$32.00 each
Boxes – 10 Frame (unassembled – Full Depth	$31.50 each
Boxes – 8 Frame (unassembled) – WSP	$26.00 each
Boxes – 8 Frame (unassembled) – Ideal	$24.00 each
Migratory Lids – 8 Frame (unassembled)	$27.00 each
Bottom Boards – 8 Frame (unassembled)	$26.00 each
Metal Queen Excluder – 8 Frame	$25.00 each
Metal Queen Excluder – 10 Frame	$25.50 each
FRAMES	
Frames (unassembled) - Full Depth	$19.00 per bundle of 10
Frames (unassembled) - WSP	$20.00 per bundle of 10
Frames (unassembled) - Ideal	$20.00 per bundle of 10
Frames Plastic Drone Comb	$3.80 each
FOUNDATION WAX	
Foundation Wax – Full Depth	$3.50 per sheet
Foundation Wax – WSP	$2.70 per sheet
Foundation Wax – Ideal	$2.00 per sheet
Foundation Wax- Drone Comb	$2.50 per sheet
TOOLS & ACCESSORIES	
Apithor – (hive beetle trap)	$10.00 each
Bee Brush	$16.00 each
Cover End Vents (metal)	$2.50 per set of 4
Emlocks (Hive Strap)	$11.50 each
Escape Boards – 8 Frame (complete)	$29.00 each
Eyelet Tool	$9.00 each
Eyelets - Brass	$14.00 pack of 500
Frame Lifter	$20.00 each
Framing Wire – Stainless Steel (500g roll)	$26.00 per roll
Hive Tool	$19.00 each
Queen Catcher Clips – Stainless Steel	$9.00 each
Varroa Mite – Alcohol Wash Test Kit	$10.50 each
CONTAINERS & LABELS	
Glass Jars with Lids (500gm)	$23.50 per carton of 24
Honey Squeeze Bottles with Caps (500gm)	$10.50 per pack of 12
Honey Tubs with lid (1kg)	$1.90 each
Labels - Club Honey Container Labels	$0.65 each label
Labels - “Made in Australia” (126 labels on a sheet)	$5.00 per sheet

ATTENTION MEMBERS: For those who run 10 Frame beehive gear, I have one unassembled full depth box and one metal queen excluder remaining in stock and once they are sold, we will no longer be keeping 10 Frame gear in stock.

We have a Wire Framing Jig and a Wax Embedder (electric) available for hire to club members at a small cost of $3.00 per item for 3 days hire. (members are to provide their own framing hardware)

NOTE: Item/s hired must be returned by 5:00pm on day 3 of the hire period (unless prior arrangement for alternate return is made.)
To order items either phone 43 246284 and leave a short, clear message or send through an email to bhv.main@gmail.com and I will either prepare the order for pick up at Narara at a mutually prearranged day and time or I can bring your order along to the next monthly club meeting. (Address available on request.)

ALL ORDERS LODGED will be responded to on the same day providing the request is placed before 4:30pm. Orders placed after this time will be responded to the following day.

All sales are CASH ONLY. There is no Eftpos available for any purchases.
NOTE: Please be aware, prices shown are to be used as a guide only and may vary without notice depending on Supplier cost variations

This equipment is stored and maintained currently by the club president, Hart Peters until we can find a new equipment officer for the club.

The protocol for use of the equipment is to contact Hart in advance of when you are expecting to carry out an extraction and make a booking. It is wise to plan 1-2 weeks ahead. In times of peak honey flow, the equipment can be in high demand.

Hart can be contacted on 0417674687 or email president@centralcoastbees.org and he will advise availability, a pickup and drop off time and location. Please adhere to these times as other members may be in line to use the equipment after you.

Hart will request a deposit of $20.00 (depending on how much equipment you borrow). The deposit will be refunded when the gear is returned, clean and ready for the next user. If the equipment is covered in wax or honey, and therefore not ready for the next user, your deposit may be forfeited. This is at Hart's discretion.

Any damage or breakages are the responsibility of the member borrowing the equipment. You are expected to rectify or replace the item at your cost. Please check the equipment when you collect it. If anything is out of order, please notify Hart immediately.

Equipment available:

- 1 Manual honey extractor in 2 frame size
- 1 Manual honey extractor in 4 frame size
- 1 Electric honey extractor in 3 frame
- 2 Manual honeycomb presses
- 2 Electric uncapping knives
- 1 Cold uncapping knife
- 1 Honey creamer
- 1 strainer with coarse and fine 3 stainless steel bowls 1 spatula
- 2 person hive lifter for moving hives or removing or replacing supers.

The following publications are available for members of the ABACC to borrow. Please see Heidi at our club meeting. The library is available from 6:30pm on club meeting nights. You may hold a book for 1 calendar month and it must be returned at the next meeting. If you are unable to attend, please make arrangements for the item to be returned in your absence.

ABACC CLUB LIBRARYBOOK LIST

Book List		
Title	**Author**	**Copies**
500 Answers to Bee Questions	Al.Root	1
A Honeybee Heart	Hellen Jukes	1
A Sparkle Book Busy Bees	Chn Sparkle Book	1
A Sting in The Tale	Dave Goulson	1
A Thousand Answers To Beekeeping	Dr C.C Miller	1
A World Without Bees	Alison Benjamin & Brian McCallum	1
A Year in The Beeyard	Rodger A Morse	2
ABC & XYZ of Bee Culture	Al.Root	1
Ag Guide Australian Native Bees	Dept of Primary Industries	1
Ag Guide Honey Harvesting	Dept of Primary Industries	2
Ag Guide Pollination	Dept of Primary Industries	1
Ag Guide Queen Bee Breeding	Dept of Primary Industries	2
Anatomy and Dissection of the Honey Bee	H.A. Dade	1
At The Hive Entrance	H.Storch	1
Australian Stingless Bees. A guide to sugarbag beekeeping	John Klumpp	1
Backyard Beekeeping Aus & NZ	C.N.Smithers	1
Bee Friendly	Mark Leech RIRDC	1
Bee Health	Hasnain Walji PHD	2
Bee Keeping The Gentle Craft	John F Adams	1
Beehive Alchemy	Petra Ahnert	1
Beekeeping	Dept of Ag	3
Beekeeping	A. Frank May	1

Beekeeping in Antiquity	H. Malcolm Fraser	1
Beekeeping In Australia	Fred Bailey	1
Beekeeping In New Zealand	Ministry Of Ag In NZ	1
Beekeeping In The Tropics	Francis G. Smith	2
Beekeeping In Victoria	Department of Agriculture Victoria	2
Bees	I.Khalifman	1
Bees and Honey	NSW Dept of Agriculture	2
Bees and Mankind	John B Free	1
Bees Biology and Management	Peter G Kevan	1
Bees of Australia	James Dorey	1
Bees of the World	Christopher O'Toole & Anthony Raw	1
Bees Vision Chemical Senses and Language	Karl von Frisch	1
Better Bee Keeping	Kim Flottum	1
Boxes to Bar Hives	Trevor H Weatherhead	1
Breeding the Honeybee	Brother Adam	1
Contemporary Queen Rearing	Harry H Laidlaw JR	1
Control of Varroa: A Guide for New Zealand Beekeepers	Michelle Taylor and Mark Goodwin	4
Curative Properties Honey & Bee Venom	N Yoirish	1
Eucalypts of the Sydney Region	Gary Leonard	1
Field Guides to Eucalypts	Brooker & Kleinig	1
Following the Wild Bees	Thomas Seeley	1
Guide to Bees and Honey	Ted Hooper	1
Honey. A Comprehensive Survey	Eva Crane	1
Honey and Pollen Flora	Alan Clemson	
Honey and Pollen flora of South-Eastern Australia	Douglas Somerville	1
Honey Natures Golden Healer	Gloria Havenhand	1
Honey Bee Pests and Diseases. A complete guide to prevention and management	Robert Owen, Jean-Pierre Y. Scheerlinck, Mark Stevenson	1
Honey Business	Fred Benecke	1
Honey Cookbook	Peter Russell-Clarke	1
Honey Flora from Queensland	S.T. Blake & Croff	1
Honey from the Earth	Eric Tourneret	1

Honeybee Democracy	Thomas Seeley	1
Honeybee Ecology	Thomas Seeley	2
Honeybee Pests, Predators and Diseases	Rodger A Morse and Kim Flottum	1
How to Keep Bees and Sell Honey	Walter T Kelley	1
Keeping Bees	Peter Beckley	1
Langstroth on the Hive and Honey Bee	L.L.Langstroth	1
Making Mead (Honey wine)	Roger A Morse	1
Mastering the Art of Beekeeping vol 1	Ormond & Harry Aebi	1
Mastering the Art of Beekeeping vol 2	Ormond & Harry Aebi	1
Natures Little Wonders Bees	Candace Savage	1
Pandeme of Bees	Sezzajai Sykes	1
Phosphorescence	Julia Baird	1
Planting Native Trees on Farms	NSW Government	1
Pollination of Fruit Crops	Horticultural Education Association	1
Queen Rearing	L.E.Snelgrove	1
Research Report 1980-1995	Honeybee Research & Development Council	1
Song of Increase	Jacqueline Freeman	1
The Amateur Beekeepers Association NSW	Jim Wright	1
The Australian Beekeeping Manual	Robert Owen	1
The Australian Native Bee Book	Tim Heard	2
The Barefoot Beekeeper	Philip Chandler	2
The Bee Book. Beekeeping in Australia. 3rd Ed.	Peter Warhurst & Roger Goebel	1
The Bee-Friendly Beekeeper, A Sustainable Approach	David Heaf	1
The Bee Friendly Garden	Doug Purdie	1
The Beekeepers Lament	Hannah Nordhaus	1
The Beekeepers of Sinjar	Dunya Mikhail	1
The Behaviour and Social Life of Honeybees	Ronald Ribbands	1
The Biology of the Honey Bee	Mark L Winston	1
The Book of Bees	Piotr Socha	1
The Complete Handbook of Beekeeping	Herbert Mace	1
The Compleat Mead Maker	Ken Schramm	1
The Contented Bee	ABC Books	1

The Dance Language Orientation of Bees	Karl von Frisch	1
The Dancing Bees	Karl von Frisch	1
The History of Bees	Maja Lunde	1
The Hive	Bee Wilson	1
The Hive and the Honey Bee	Dadant and Sons	1
The Honey Bee	James L Gould	1
The Honey Factory	Jurgen Tuatz & Diedrich Steen	1
The Honey Flow	Tennant	1
The Honey of Australian Native Stingless Bees	Dean Haley	1
The Legend of the Hive	Maria Owsianka	1
The Lives of Bees	Thomas Seeley	1
The Mind of a Bee	Lars Chittka	1
The Super-Organism	Bert Holldobler & Heather Harrell	1
The Wisdom of the Hive	Thomas Seeley	1
The World of Bees	Rudolf Steiner	1
Top-Bar Beekeeping	Les Crowder & Heather Harrell	1
Two Million Blossoms	Kristen. S, Traynor	1
Varroa Management. A practical guide on how to manage Varroa mites in honey bee colonies	Kristy Stainton	

DVDs

Title	**Copies**
Queen of the Sun	2
More than Honey	1
Silence of the Bees	1
Honey Bee Blues	1
The Mysterious Bee	4
Artificial Insemination of Queen Bees	1
Frame Building, Wiring and Foundation	1
American Foul Brood & Small Hive Beetle in Bees	2
A Beginners Guide to Beekeeping by Arthur Garske	1
Life Cycle of a Bee	1

CONTACT HEIDI OUR LIBRARIAN via email: rumbalarabeesau@gmail.com