BEELINES

Newsletter of The Beekeepers Club Inc. Est 1998

Mission statement: To enhance the learning and better practices of the art of beekeeping within our community.

December 2016

Photo M. Palviainen. 2016 Club photographic competition entry.

Next Meeting: Thursday 15th December 2016

Film night and social

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Meetings: 3rd Thursday of each month
7.00pm for 7.30pm start

Venue: Senior Citizens Building.
895-901 Doncaster Road Doncaster East.
Melway 47k-1. Opposite Dan Murphy's.

* Guests and Visitors Welcome *

Enquiries and information: editor@beekeepers.org.au

Upcoming Events

JUNIORS CLUB.

Next meeting.

Saturday 17th December 2016, 10.00 am
Siteworks, 33 Saxon St, Brunswick.

Practical honey extraction and bottling.
Bring your bee suits as we will also open the hive.

Special invitation to any club member:
Join us at Saxon Street to

- brush up on extraction skills or
- see how a flow hive is assembled

February 1st 2017
BEGINNERS COURSE

Starts 1st February at the Club Rooms, hands on practical at 33 Saxton St East Brunswick
Details on website

February 4th 2017

MICROSCOPY WORKSHOP

1 day course
33 Saxton St East Brunswick

Keep an eye on the website for updates and amendments

Bee theories, poetry & wisdom

"There is one masterpiece, the hexagonal cell, that touches perfection.
No living creature, not even man, has achieved, in the centre of his sphere, what the bee has achieved in her own: and were some one from another world to descend and ask of the earth the most perfect creation of the logic of life, we should needs have to offer the humble comb of honey."

Maurice Maeterlinck,
The Life Of The Bee, 1924

TO BEE OR NOT TO BEE.
The bee population could be saved by "highways" to help them travel to the best places to thrive, say UK scientists.
Bee numbers are declining worldwide.
They have been affected by loss of habitat.
Paths of planted flowers about 4 km long could encourage bees to move to other foraging locations.

I recently came across this comment from an experienced beekeeper which I thought summed up beekeeping perfectly.
"Ask ten beekeepers, get eleven opinions", though I suspect that the latter number is underestimated. I have been keeping bees for thirty-five years. I used to know very little, then I knew a lot, and at one point I knew everything. Finally, I got very smart, and realized that I know very little and have a great deal left to learn. I hope and suspect that I will be able to learn from the bees for the remainder of my time here.

How many Brood Boxes do I need?

A full size standard frame has a sheet of wax containing approximately 3302 cells per side of each foundation sheet. Allowing 500 cells, for error margin, means each frame has a capacity of 2800 cells for the queen to lay on each side. So, 5600 total brood cells per frame.

Let us further allow 50%, or 1400 cells, for honey and pollen storage. That makes a total laying space available of 1400 cells each side. The queen layers eggs in the four frames in the middle or warmest part of the hive. Honey is generally stored in the four outer frames that is the two on each side.

A *Worker bee* hatches at 21 days, a *Drone* at 23 days, a *Queen* at 16 days.

Therefore laying a 1000 eggs a day, a queen can fill a frame in 2.8 days x 4 frames means a super filled in 11.2 days with the majority of bees hatching at 21 days.

Laying at 2000 eggs a day the queen is going to take approximately 5.6 days to fill one (1) super.

So, to my mind, at least 2 brood boxes are required to keep the queen productive, but preferably 3 brood supers to create a strong hive.

REMINDER:

- All members must ensure you have registered as a beekeeper with the Department.
- Under the Livestock Disease Control Act 1994 Section 49 all beekeepers are required to register.

Even if you have not yet secured bees please register anyway.
Registration is free of charge if done on line through the Department website:
www.Agriculture.Vic.gov.au/registration.

Photo: Geoff Bryan

Four seasons in a day: Melbourne's weather and its impact on bees

Andrew Wootton

Farmers can use the Growing Degree Day (GDD) calculation to predict when crops will bloom. Plants (and insects) grow in a cumulative stepwise manner dependent on the temperature. It is possible to calculate heat accumulation from the mean daily temperatures above a threshold. The best estimates of GDD use calculus, but simpler mathematical formulas give a good approximation from the maximum and minimum temperatures each day. These data are available from the Bureau of Meteorology.

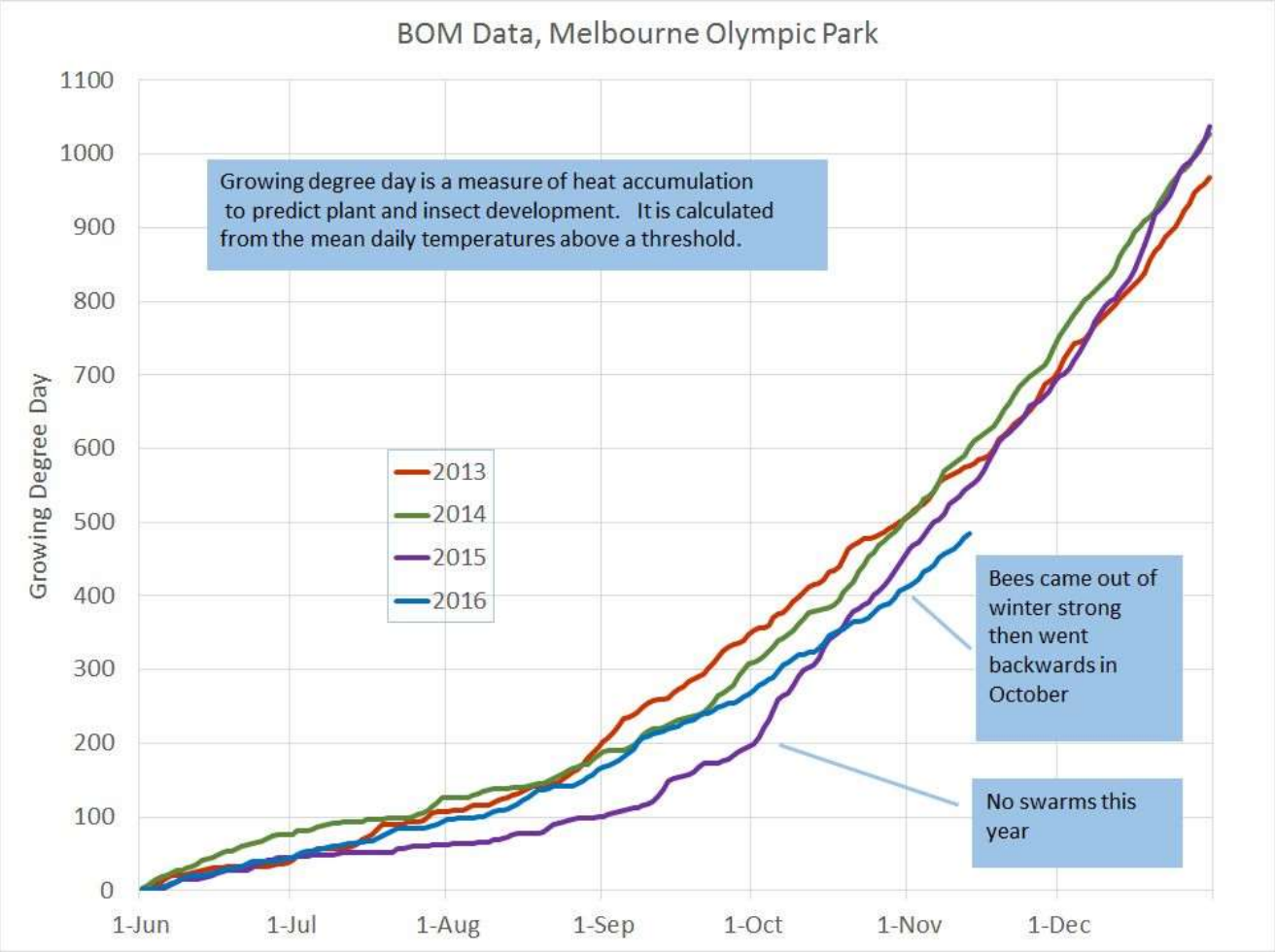
$$GDD = \frac{Tmax+Tmin}{2} - Tbase$$

T*base* is a threshold temperature below which there is no crop growth (it varies from crop to crop but is often defaulted to 10°C).

Phenology is the study of periodic plant and animal life cycle events. We know some years the seasons come early or late. A number of articles have appeared in the beekeeping press discussing the value of phenology to beekeepers. Using GDD allows accurate prediction of blooming and thus nectar flows.

The last two springs in Melbourne have seemed unusual as far as bee activity. 2015 saw almost no swarms. This year my bees (and reports of others) came out of winter strong, but then colony development seemed to stall. I downloaded maximum and minimum temperatures from the BOM for Melbourne's Olympic Park. Daily records going back to 2013 were available. Plotting the GDD for each year (using a starting point of June 1st and a Tbase of 10) produced an interesting graph. I think it confirms the anecdotal observations of 2015 (too cold in July and August for the bees to build up in time to swarm) and 2016 (a good start but a cold October).

What do you think? It seems appropriate to quote the great W. Edwards Deming, father of quality management "in God we trust, all others bring data".



References

Phenology and its value to beekeepers Denise Ellsworth
http://www.beeculture.com/phenology-and-its-value-to-beekeepers/

Phenology for Beekeepers Denise Ellsworth
https://www.youtube.com/watch?v=Zzk3bCkP9QY

Be a budding genius not a blooming idiot James Fischer
http://bee-quick.com/reprints/budding.pdf

Using Degree-Days and Plant Phenology to Predict Pest Activity Daniel Herms
http://cues.cfans.umn.edu/old/Web/049DegreeDays.pdf

Requeening with a division board

New beekeepers and some more experienced are often daunted by the prospect of requeening. Most methods start by "find the old queen and kill her".

A simpler first step is to create a nucleus colony within the same hive by using a division board. A division board consists of a sheet of hardboard or plywood with 10 mm risers same as your bottom board with a gap on a short side to make an entrance.

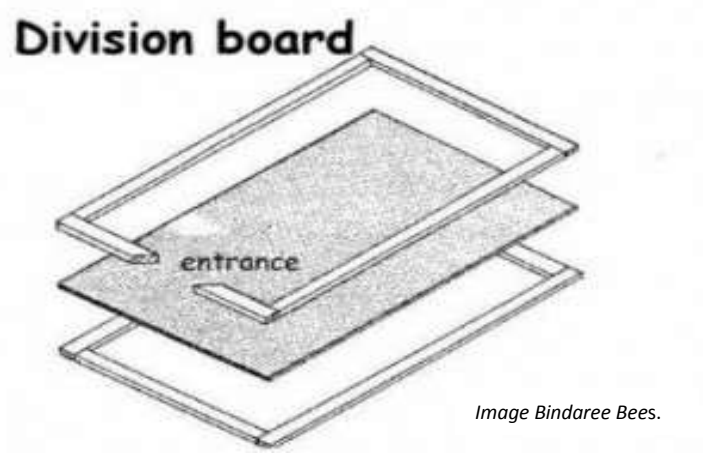


Image Bindaree Bees.

Using a strong two or three super colony, ensure the queen is in the brood chamber – if you are using a queen excluder she will be, but just check above the excluder to ensure no brood or larvae is present. If all clear take two frames of brood with nurse bees attached but not the queen and replace with good brood comb or foundation. Place the division board between the brood chamber and honey super or below the top honey super depending on hive size and strength. The entrance should face the opposite way to the original hive. Lift the two frames of brood and bees without the old queen into the honey super above the division board making sure honey and pollen is available in the box.

Place the new queen still in her cage between the two frames of brood with the candy entrance facing slightly downwards so as not to collect any dead bees or debris. Check the top section 14 days later by which time the new queen should be laying.

Once the new queen has commenced laying there are several options.

Increase your number of hives by transferring the nucleus to the brood box of a new hive placed beside the old hive. Because the entrance of the division board faces the opposite direction to the original hive, bees will soon find their way back into their new hive when it is placed alongside the parent.

Kill the old queen in the hive below and replace the division board with a sheet of newspaper that the bees will chew through. Place the queen excluder under the lid until the hive is checked 10 -16 days later. Find the new queen, put her in the brood box and replace the queen excluder. The requeening is complete.

If you cannot find the old queen or don't want to, simply remove the division board and newspaper without looking for the old queen at all. In most cases if you unite two colonies with the young queen on the top of an older queen, the younger will be left to head the resulting hive. Why this happens is open to argument. One explanation is that the young queen's bees are confined in the top box when you replace the division board with

newspaper. As well, her field bees returning cannot use their normal entrance, the slot on the division board. They then drift down to the main colony entrance. As they are foragers returning with a load, they will be accepted without causing too much fighting at the hive entrance. The old queen is then probably killed by a "scissor" effect. Bees foreign to her will be coming at her from two directions, down as the bees confined above the newspaper chew through and move down in the hive, and up by the foragers from the top unit coming in through the bottom entrance and finding a strange queen in their hive.

Remember, Queen introduction is an art, not a science. Success depends on weather, strains of bees, methods (and plain good luck). One last tip. The recommendation is to not put a hole in the candy end of a queen cage. The reasoning behind this is that the longer the bees take to release the queen the better the chance of acceptance.

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JUNIORS PAGE

Some of the juniors inspecting our Saxon St hive at our November meeting.

After just 3 openings they are confident enough to light smokers, inspect for FEDSS (food, eggs, disease, space and swarming) on their own. They are showing great interest and understanding in the care and maintenance of the bees. It is good to see the enthusiasm and interest in the bees and attitude to learning. We will have some great beekeepers out of this intake.

On Saturday 17th December, the junior's session will be the extraction of honey and they extend an invitation to any club members who wish to brush up their extraction skills to join them at "Siteworks" 33 Saxon St Brunswick at 10.00 am to 12.00 noon.

In addition to extraction we will also be assembling a Flow hive so again any club member who has a flow hive but has not yet assembled it you are welcome to come along and see how it is done.

NOTE: Any club member who wants to come along on Saturday 17th December, <u>parking is unavailable in Saxon St.</u> Park in either Dawson St or the Safeway carpark behind.

Flow Hives –
Frequently asked questions

Q. Cleaning and Flow frame maintenance.

A. We haven't found the Flow™ comb itself needs cleaning if it stays in the hive - the bees do a great job of keeping it clean. If you remove Flow™ Frames from the hive and store them for a while they may need cleaning. You can do this by using hot water (just hot enough to melt wax). A hot water hose is good. Set the Flow™ comb to 'cell open' position, this allows the water to run quite easily through all parts of the frame.

We have designed the honey trough at the bottom of the frame so that any remaining honey can drip back into the hive for the bees to use. If the honey leak-back gap remains clear this works well; however, if the bees block it up some honey may remain in the honey trough after harvest. Clear the leak-back gap prior to harvest and inspect the honey trough. If the honey trough is dirty it can be cleaned from outside the hive using a bottle brush or something similar.

Q. Why aren't my bees filling the flow frames?

A. The two main things we have found that increase the rate *at which bees fill the frames for the first time are:*

- **Lots of bees on the Flow™ Frames.**
  This is the main factor. If there are not many bees when you look in the rear window and the side window, it will probably take some time for the bees to build up and start working *on the Flow™ Frames.*
- **A good nectar flow.**
  Honey won't be stored in your hive, regardless of the number of bees, unless there are enough flowers around with plenty of nectar.

<u>Suggestions for encouraging the bees to get working on the Flow™ Frames sooner</u>:

If you have other honey supers on the hive, removing some or all of them so that the Flow™ Super fills with bees is likely to get much faster results.

Pressing some beeswax into the surface of the Flow™ comb can encourage them to get working on the Flow™ Frames earlier. You can use chunks of burr comb, wax

foundation or wax cappings. The bees will then re-distribute the wax onto the Flow™ Frames and start working them.

Heat up some beeswax and paint it onto the Flow™ Frame surface. If you try this, be careful not to get too much wax in the base of the cells or in the upper movement mechanism, as this may jam the mechanism when it comes time to harvest.

Sprinkle a little sugar water (2 parts water to 1 part sugar) on the Flow™ Frames. To do this you will have to take the frames out of the super so that you don't get the water in the upper parts of the frame where the tool is inserted. Using this method there is a risk that the sugar will crystallise in the Flow™ Frame and cause jamming issues. While some beekeepers have reported using this method, we have not yet proven that it makes any difference.

The feedback we've received so far is that many beekeepers are saying the bees filled all the Flow™ frames quickly - sometimes in a week or two, and some are saying it took quite a while for the bees to start work on the Flow™ Frames for the first time.

Bees don't always do what we would like them to. We received feedback from one customer who had two Flow™ Hives beside each other of similar strength. While one hive filled the Flow™ Frames quickly, the other is taking its time to start on the Flow™ Frames.

If your bees are taking their time to start storing honey in the Flow™ Frames you may like to try one of the solutions suggested above. Please let us know how your hive goes.

<u>What to expect as the bees start to work on the Flow™ Frames:</u>

- Firstly the bees tend to seal the joins in the bottom of each cell. They will use either new wax they produce or recycle wax from elsewhere in the hive;
- Then they start to complete the cell walls;
- Then they start to fill the cells with nectar;
- Then they draw the combs out beyond the Flow™ Frame with their wax;
- Typically, they start toward the centre of each frame and work their way out towards the edge;
- Once the honey is ready and the cell is full, they cap it with wax;
- When you can see mostly capped cells in the end frame view, it's likely that the rest of the frame is mostly capped and ready for harvest.