Beelines

Newsletter of The Beekeepers Club Inc. Est 1998.

September 2016.

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

3rd prize 2016 competition. Photo Jorg Kemper

Meeting venue;
Senior Citizens Building. 895-901 Doncaster Road Doncaster East.
Melway 47k-1. Opposite Dan Murphy's.
Meetings held 3rd Thursday of each month 7.00pm for 7.30pm.
Guests and Visitors are Welcome
Enquiries and information: editor@beekeepers,org.au

Registered not for profit organization
No. A0036394L

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Next Meeting.

15th September 2016.

7.30pm Swarm prevention. Helmut Huber.

8.15pm Jessica Hartland. Agriculture Services & Biosecurity, div DEDJTR. Controlling bee disease.

M/s Jessica Hartland is the newly appointed Bee Biosecurity officer for the Department Education Development Jobs Training and Resources.

8.45pm Swarm collecting.

PLEASE NOTE THIS MEETING IS BACK AT THE SENIOR CITIZENS ROOMS
895-901 DONCASTER ROAD. DONCASTER EAST.

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Upcoming Events.

Beginners Course.
Sept 22nd, 29th and Oct 6th. Plus 1 x hands on day
Venue. Senior Citizens Rooms. 895-901 Doncaster Rd Doncaster.

Microscopy workshop.
Bee anatomy and honey testing.
Saturday 1st October 2016.
Venue. Community Rooms 33 Saxon St Brunswick.

Queen breeding.
Workshop and practical training on raising queens.
5-6th November 2016.
Venue. Community Rooms Saxon St Brunswick.

We will also be conducting a Nuc building and swarm collection course after winter.

Keep an eye on the website for a series of beginner and intermediate beekeeping courses to start early spring.

The Beekeepers Club Inc, Junior Section.
"Siteworks" 33 Saxton St Brunswick

17th September. 9.30pm – 12.00 noon

Weather permitting we will be opening the beehive.

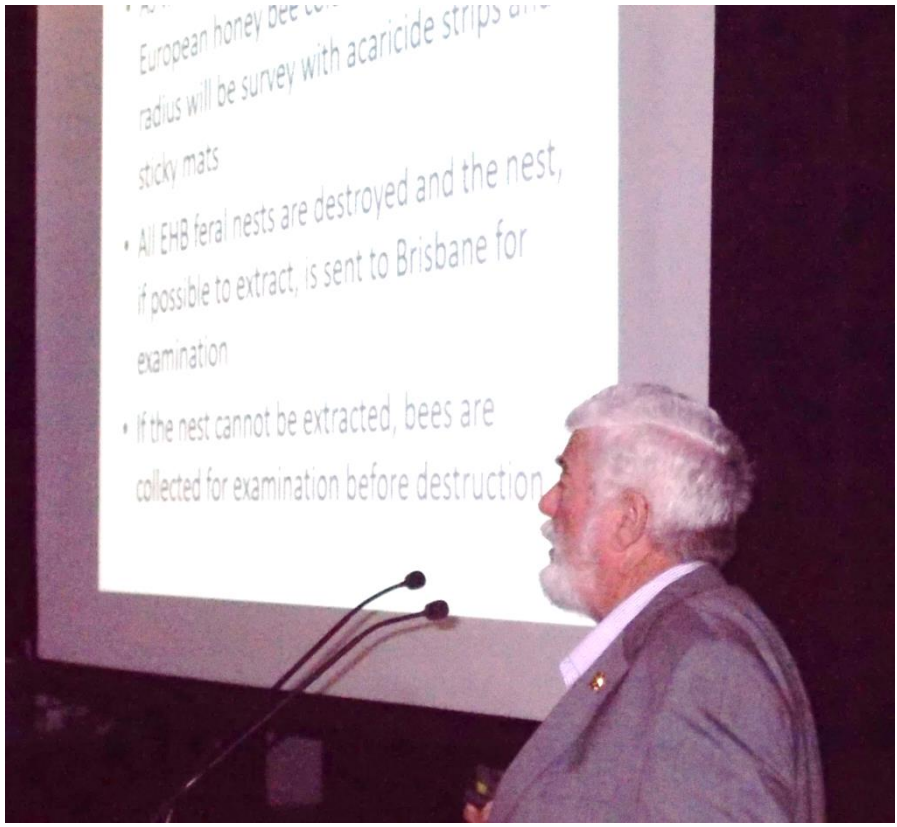
Protective clothing supplied, but wear thick socks and solid shoes or boots.

BEEKEEPING COURSES:

The next fundamentals of beekeeping course for beginners will be commencing on 22nd Sept, and continuing 29th Sept and 6th October 7.00pm – 9.30pm, followed by a practical hands on day.
The classes will be held at the Senior Citizens Rooms 895 Doncaster Rd Doncaster.
Further details can be seen on the website or contact Andrew Wootton Secretary @ beekeepers.org.au

August Meeting.

The August meeting was held at the Templestowe College Performing Arts Centre and due to the important topic and our ability to obtain Mr Trevor Weatherhead Executive Director AHBIC, we invited members of other Melbourne and Victorian clubs and I am pleased to report we attracted an audience in excess of 230 members and guests to hear Trevor update us on the Varroa *jacobsoni* incursion in Townsville.



Trevor explained the tracking reporting and action program in place in Townsville, as well as background information on V *jacobsoni* and the impact on Apis Mellifera.

Sue Zuber took the beginners corner, and it would be fair to say when Sue agreed to do the segment, she (nor did we) have any idea just how big an audience she would have. I think we had nearly 90/100 people crammed into the smaller function room. But being the top presenter she is, Sue had them all engaged and holding onto her every word, a great effort thanks Sue. Unfortunately I could not even get into the room for a photograph.

Further to our last meeting a question was asked what is the visual difference between Asian Bees (A. *cerana*) and A.*mellifera.*

photo by Paul Zborowski/Queensland Government.

The feral Asian honeybee. *Apis cerana*, (right) *Apis mellifera (left)*

The Asian honeybee (*Apis cerana*) (10 mm) is smaller than the European honeybee (*Apis mellifera*) (15 mm) that we use for honey production in Australia. It tends to fly faster and more erratically. It is less hairy and has more prominent banding on the abdomen than the European honeybee.

The area at the base of the wings is not very hairy and looks black and shiny whereas on the European honeybee the area appears golden as the light reflects off the many yellow hairs.

The base of the abdomen of the Asian honeybee comes to a defined point; on the European the base of the abdomen is more blunt and rounded.

The approach to an entrance hole or flower is very erratic; the European is more composed and slower. The Asian bee has a propensity to swarm several times a year.

Opening after winter.

By spring colonies that have survived winter will generally be low on stores and numbers of adult bees. As spring develops the bees will start to fly, bring in pollen and the queen will begin laying in an effort to rapidly build up colony strength. This expansion if unchecked will be the basis of swarming intention.

On your first opening inspection pick a fine sunny day 16°C or above, with little or no wind, and thoroughly check each frame for:-

1. Brood this will indicate the queen is well and laying. Check the brood pattern is it a good uniform pattern, or scattered. A scattered or poor pattern can be an indication the queen is failing, this can also lead to supercedure and swarming.
   Poor or scattered pattern should equal queen replacement.
2. Look at the number of drone cells are they excessive, this can be a sign of swarm preparation.
3. Look for Queen cells, a sure sign of swarm intention.

If these three items are in place and satisfactory, check frames for signs of disease and pests such as, Small Hive Beetle (SHB), American Foulbrood (AFB) European Foulbrood(EFB) and Chalkbrood, more specific details on these diseases follows at the end of this article.

4. Check the bottom board and clean or replace if damaged or in need of further maintenance.
5. Check and clean comb from box walls, and the rebated frame grooves, if supers are damaged, rotting or need further repair, replace with a good box.
6. Clean comb from bottom and top bars of frames and sides.
7. Clean and/or replace the hive mat.
8. Check the lid and ensure it is in good condition, clean and replace.

9. Check around the immediate hive area and remove weeds, ensure good level base to support the increased hive weight over next few months and that any rain water can drain away.

Common Diseases and pests to check for on spring opening.

Small Hive Beetle.
SHB is a small quick moving black beetle with 6 legs and 2 clubbed antennae. It likes to hide in dark corners such as under hive mats, etc. If detected fit a beetle trap between top bars of the top box.

Chalkbrood.
A fungal disease which shows up as white to grey-black chalk like mummies in the brood cells, and on the hive bottom board and can be on the ground outside the entrance.

American Foulbrood.
AFB in advanced cases will show in a scattered brood pattern. Caps over sick or dead brood are generally darker and tend to be sunken, greasy looking and sometimes perforated. A rancid smell will also be detected.

European Foulbrood.
This disease is most severe in the spring. The dead EFB larvae are twisted spirally around the walls of the cell. The gut line of EFB infected larvae is chalky white interspersed with yellow white or bleached bands. The white bands are pockets of the bacterium that causes EFB.

Sacbrood.
Sacbrood is a virus and is not generally a major problem. Larvae about 2 days old are the most susceptible to infection. In advanced cases combs show a suggestion of irregular brood pattern similar to foulbrood. Infected larvae change from white to yellowish colour. Cell caps may be discoloured and sunken.

Nosema.

Spring outbreaks usually begin in late August or September, when temperatures begin to rise. They may last until late spring or early summer. During the normal digestive process of adult bees, healthy cells of the stomach lining are shed into the stomach. They burst open and release digestive enzymes. Infected cells are also shed in this way, but they release nosema spores and not digestive juices. These spores can infect other healthy cells of the stomach lining. Many spores pass through the intestines and are present in the faeces (excreta) of the bee. The most obvious sign of Nosema is the yellow staining around the hive entrance and front of supers. Generally not hive threatening and a strong hive with improved climatic conditions will assist in combatting the outbreak.

If you notice or have suspicion that you may have any of the above in your colony, and would like confirmation or assistance contact a committee member and we can assist you.

Helmut Huber 0419 373 814 is our swarm co coordinator please contact Helmut if you require swarms or if you wish to participate in collecting.

If you want to buy, sell or swap any beekeeping item send me the details along with your name and contact details and apart from announcing it at meetings I will also publish in the next edition of Beelines. president@beekeepers.org.au

The Current Townsville Incursion

In response to a question put to Dr Denis Anderson, by our Vice President Mat Lumalasi about the threat of v *Jacobson*i to the Australian beekeeping industry, Denis sent the following reply from the UAE where he is currently based, and undertaking a program to develop a bee industry in Dubai. Dr Anderson is a world leading research scientists and actually discovered and named *jacobsoni* while undertaking field work in PNG.

Dr Anderson also heads up Bees Downunder foundation, which is involved in Varroa research works, which our club has supported.

Dr Anderson has given our club the authority to publish his reply.

Background:

- I understand that laboratory tests have shown that:
  - **The strain of mite is the "Java type of *Varroa jacobsoni*" and the Asian honey bee (AHB) that introduced it is the "Java type of *Apis cerana*". Previous research has established that the "Java type of *Apis cerana*" is the native host of the "Java type of *Varroa jacobsoni*" in Java Indonesia**. Hence my following comments are based on this understanding.
- The AHB now in Townville is the same type as that associated with the 2007 AHB incursion at Cairns. This bee that is now endemic to the Cairns region but remains free of its native varroa mite (the "Java type of *Varroa jacobsoni*"), presumably because the swarm that founded that population was free of the mite when it first arrived at Cairns some time before May 2007 (swarms of AHB's free of mites is not unusual, as it also happened with a previous swarm of the same bee at Darwin in June 1998).
- It's very likely that the Townsville and Cairns AHB incursions are part of the ongoing spread of the "Java type of *Apis cerana*" in the New Guinea region, following its introduction to Indonesian Province of Papua (Western half of New Guinea) in the 1970's. It's also likely that

more incursions of this bee into Australia will occur from the New Guinea region in the future.

The Townsville Varroa

The reddish-coloured varroa mites that have been found in Townsville are adult female mites. Male varroa mites are very small and creamy in colour and do not survive the reproduction process. Hence they are not involved with the spread of varroa in the Townville region. All comments that follow deal with adult female varroa mites.

The following facts on adult female varroa mites of the Java type of *Varroa jacobsoni* that exist naturally on the Java type of *Apis cerana* are lifted from scientific publications:

- They **cannot** reproduce on *Apis mellifera*. They can only propagate on the Java strain of *Apis cerana*.

- They will enter *Apis mellifera* hives at low levels if given the opportunity (through robbing between sympatric colonies, etc) and, once inside an *Apis mellifera* hive will even enter pre-capped brood cells to attempt to reproduce. They will also make a feeding hole on the newly pupated *Apis mellifera* bee and proceed to feed. **However, they will not go on to lay eggs or produce offspring**. Instead, they sit at the feeding hole and feed on the bee blood for the duration of the bee pupation period, eventually emerging from the cell when the new *Apis mellifera* bee emerges (they do not kill the bee when feeding on it). A young female mite that enters an *Apis mellifera* brood cell after attempting to reproduce, can go through this non-productive cycle for up to 7 times before she eventually dies or finds her way back to an *Apis cerana* hive, where she can enter a brood cell and once more reproduce.

- They can eventually adapt to reproducing and colonizing *Apis mellifera*, given time. This occurred in New Guinea. However, in New Guinea it took about 40 years of co-existence between varroa-infested AHBs and EHBs to occur. Fortunately, after shifting host to *Apis mellifera* in New Guinea the newly adapted mites lost their ability to reproduce on their native *Apis cerana* host (it was a one-way shift). A similar phenomenon occurred when the Korea strain of *Varroa destructor* shifted host from the Korea strain of *Apis cerana* to *Apis mellifera* in north-east Asia during the middle of last century. **The take-home message here is that mites that have shifted host to *Apis mellifera* in New Guinea cannot move back on to *Apis cerana*. Hence they will not be present on swarms of *Apis cerana* that spread from that region**.

Features of the varroa mites at Townville

- Because only low numbers of *Apis cerana* hives have been found at Townsville, there will be low numbers of varroa mites present overall in the environment.

- Miniscule numbers of mites could be present in the local *Apis mellifera* hives, but these will be practically impossible to find. Nonetheless if attempts are made to find them this way, the best way is to use varroa acaricide strips (such as Apistan) and sticky mats in the hives.

- The best likelihood of finding varroa mites in the region is to target finding *Apis cerana* hives, most (but not all) of which are likely to have mites.

- The spread of varroa mites out of the Townsville region will primarily be via spreading *Apis cerana* swarms. Any mites that find their way into local *Apis mellifera* hives that are subsequently moved south (where there are no *Apis cerana)*, will die within a few months and

hence peter-out. Any in hives that are subsequently moved north (say to Cairns) could, in theory, find their way into *Apis cerana* colonies and become endemic. However, the risks of this happening immediately are very, very small.

Threat of the Townsville Varroa to Australian beekeepers

Given the known biology of the varroa mites at Townsville, it can be said that they present no immediate threat to local or Australian beekeepers. However, their continued presence at Townsville poses a serious long-term threat to all Australian beekeepers.

For example, if the mites are not eradicated from Townville it means that there are hives of *Apis cerana* still present in the Townville region. If these exist long enough, they will eventually be encroached on by feral *Apis cerana* spreading from the Cairns region. Should this happened, the varroa mites would then have a very large bee population in which to reproduce, exist and spread. At that stage they would become endemic.

If the mites at Townville were to become endemic, they could (not necessarily would) eventually evolve to reproduce on and colonize *Apis mellifera*, as happened in PNG. The time it would take for this to happen is an unknown. In PNG it was a gradual process that began with a few mites reproducing on *Apis mellifera* drone pupae. These incidences gradually increased until eventually, after about 40 years of trying, the mites evolved to reproduce on *Apis mellifera* worker brood, which allowed them to fully colonize *Apis mellifera* as a host. The relative higher abundance of drone brood in Australian bee hives could quicken this process.

Given the real threat to Australian beekeepers just outlined, current speculation circulated by an industry body that "*Almonds were too important and beekeepers should expect varroa in Victoria by the years end*" is rubbish-talk. There is no doubt that almonds are important, but

we can rest assure that varroa will not be Victoria by years end, unless of course there is an independent incursion of *Varroa destructor*. That is always a possibility and a threat that every beekeeper should be concerned about.

Best regards, Denis Anderson.

Varroa Jacobsoni

Varroa destructor

Image from Wikipedia.

Swarm check.

Swarming is the natural way colonies reproduce. A normal swarm comprises on average about half of the colony adult bees and usually the old queen.

The swarm creates a loud whirring noise on exit from the hive and will generally travel no more than 100 – 150 metres from the hive, settling on a tree, post or other suitable cluster point. The main swarm will remain in this position while scout bees decide on a suitable permanent nesting cavity.

Lose a swarm and about half your colony nectar gathering ability is lost, so prevention is a necessity.

Signs of swarming

The main signs will include :-

- Queen cells under construction (these will generally be on the lower and side edges of comb)
- The construction of queen cell cups (like acorns), swarming will generally occur if the cups contain eggs or larvae.
- The signs as above will usually be accompanied by a lack of comb space for brood rearing and high worker and drone population.

Above all, congestion in the hive is a major cause of swarming. So placing another super and frames on top will not stop a swarm if the above signs have been observed. If you detect a large population and space is becoming short, and the above signs have not materialised then the extra super and frames may assist in the short term, but at some stage you may have to split your hive.

Zika spraying destroys vast numbers of bees.

The effort to prevent Zika-infected mosquitoes from taking root in South Carolina and Florida has dealt a major blow to the local honey bee population. Bees died in massive numbers after officials in Florida and Southern Carolina approved the aerial spraying of “Naled”, a common insecticide that kills mosquitoes on contact. Naled is proven to be deadly to bees and insects, and does not discriminate between blood sucking insects (mosquito and ordinary insects such as bees). Evidently County workers had not followed local government standard procedure of notifying registered beekeepers out the deployment of pesticides.

In one case, a single apiary in Summerville SC lost 46 hives, destroying about 2.5 million bees in the process. Residents described clumps upon clumps of dead bees littering the farms, with one beekeeper saying her apiary **“looks like it’s been nuked.”** Writing on Facebook, another farmer wrote, it “was visiting a cemetery, pure sadness.”

The danger of Naled to local bee populations has been previously documented by Cornell University researchers as early as 23 years ago, who wrote “Naled is highly toxic to bees” in the study. The mass killing of bees can cause potentially irreparable harm to the food supply. As University of Minnesota entomology professor Marla Spivak wrote for CNN, 71 of the 100 crops that make up 90 percent of the global food supply depend on bees to survive.

Source: CNN.com