FRANKLIN BEEKEEPERS CLUB

AUGUST / SEPTEMBER 2015 NEWSLETTER

President: Graham Dyche
1 Northvale Place, Pukekohe 2120
☎ 09 238 9854
@ president@franklinbees.co.nz

Treasurer: Graham Wheeler
PO Box 1082, Pukekohe 2340
☎ 09 239 1177
@ treasurer@franklinbees.co.nz

Editor: John Burns
@ editor@franklinbees.co.nz

Secretary: Joan Leitch
@ secretary@franklinbees.co.nz

Website: www.franklinbees.co.nz

President's Report

"Keep Calm and Carry On" ***British government poster 1939***

At the July club day Don Macleod updated us on what has been called CCCD or Coromandel Colony Collapse Disorder. Don explained that several beekeepers lost hundreds of hives in the Coromandel during Manuka season last spring. Strong colonies quickly lost almost all their bees leaving just the queen and a few young bees in the hive. Tests showed that pesticides were not to blame and work has been ongoing to try and discover what happened. Suspicion moved to gut parasites. Unusually high levels of *Nosema apis* and the more recently identified *Nosema Ceranae* were found in some samples, but they were found in both sick and healthy hives. It was felt that *Nosema* alone was not sufficient to explain the losses.

Trypanosomatids are another group of single celled parasites which infect many insects. Trypanosomatids are not new, the oldest record we have is preserved in amber in a fossilised sand fly from 100 million years ago. Different insects have different species of trypanosomatids. In honey bees they are not uncommon and until this year the trypanosmatid found in honey bees was called *Crithidia mellificae.* It is also known that bees which are infected with this parasite are rendered more susceptible to *Nosema*. In March this year a paper was published by scientists in Belgium and in the US who studied *Crithidia mellificae*. They looked at the DNA and decided that there were sufficient differences at the DNA level to say that there are not one but two species and named the second one *Lotmaria Passim*. Please note that this is a newly described species, it does not mean it is newly emerged. In fact it seems that globally *Lotmaria Passim* is more common than *Crithidia mellificae* so it has probably been around for a very long time.

Back in NZ it was decided to look to see if the samples from the Coramandel also had the newly described *Lotmaria Passim* in them. A laboratory in Gisborne developed a test and found that *Lotmaria Passim* was present and could possibly be involved in CCCD. At this time there were some

media reports suggesting that a new parasite had just got into NZ and was causing the hive losses. The truth is we don't know when *Lotmaria Passim* arrived in NZ, it may have been here a long time. We are also not sure what role *Lotmaria Passim* may have played in the hive losses, although overseas the combination of *Lotmaria Passim* and *Nosema together* have been implicated in hive losses.

So where does this leave the hobby beekeeper in Franklin? There are two things you can do:
First, look after your bees. Stressed bees are more susceptible to disease. Control your varroa mites. Make sure your hives don't run out of stores and starve. Plant bee friendly plants to provide year round pollen and nectar sources. Last spring was cold and wet. In the Coromandel a lot of bee hives were trucked in from many areas for the Manuka, the weather was poor and stocking rates were high; these factors probably did not help.
Secondly, report any suspicious hive losses you have to the EPA (Environmental Protection Authority) http://www.epa.govt.nz/about-us/monitoring/Pages/Pollinator-Incidents.aspx

Last year there were only 12 reports for the whole year, if losses are not reported we don't know what is happening. It now seems that hives were lost in the lower north island and not just in the Coromandel but the beekeepers were reluctant to report it.
Take a sample of the bees from the affected hive. Ideally fill a 400ml honey jar with bees, at least take more than 50 bees, a sample of less than this is not enough. Put your sample in the freezer. These can be tested at a later date.
As the coming season progresses we may find out if CCCD was a rare event or an ongoing problem. Personally I think it is better to be optimistic. Stressed bees don't help, but neither do stressed beekeepers!

Dr Graham Dyche
President FBC

For more information on the *Lotmaria passim* bee pathogen there is an in depth article by Don Mcleod on page 10 of this newsletter.

Hivemasters' Report

Hive Status:

Hive 1 Small amount of brood in the second box, removed top and bottom boxes wintering down to one box.

Hive 2 Strong colony, queen was seen. There are good stores, and two three quarter frames of brood in the middle box, similar in the bottom box.

Hive 3 Once again good stores, two frames of brood and the queen was seen.

Hive 4 We reduced the hive to one box, no brood was seen, though the colony was calm. Good supply of nectar, honey and pollen present.

Hive 5 Reduced to two boxes, no brood and the bees were agitated. Honey nectar and pollen was also present in this hive.

Hive 6 One frame of brood, good stores, and nice calm bees.

Top bar Hives

White lid top bar hive: Good brood present and good stores.

Green lid top bar hive: Weak colony, deformed wings sighted, three open supersedure cells, little brood, and poor stores.

Hope all your bees are doing well, and you are preparing for the new season.

Secretary's Report

Swarm Collection

Every year we have a contact list of members willing to collect swarms from members of the public. We will cover the 'how to' at a meeting later this year. Swarms can be a good way of increasing your hive numbers, but you will need to have the time to collect them. If you are interested in being on the list, please contact Joan (secretary@franklinbees.co.nz)

AFB Inspections

Do you have your DECA, allowing AFB inspections? Are you willing to inspect hives for other members, for their annual return? We are considering instigating a small fee to cover your costs. Please email Joan (secretary@franklinbees.co.nz), so that we can direct members to a neighbour with a DECA.

New Members

We welcome the following new members to our club.

- Steve Bayliss
- Roger Hardstaff
- Liz Hayes
- Phillip Hunter
- Gil Kerr
- Natalie Morris
- Caroline Pomare
- Anna Ruttley
- Fionna and Hugh Winter
- Kelley Wiringi

We look forward to seeing you at the next club day.

Bee club mead making

Last club day three members of the club demonstrated their mead making methods. Here are the recipes they used, and an update on how the fermentation is going.

Samuel Blackmer

http://www.homebrewersassociation.org/homebrew-recipe/sweetness-of-the-holy-fire/

For 5 Gallons (19 L)

- 18.0 lb (8.16 kg) clover honey
- 5.0 gallons (19 L) water
- 5.25 oz (0.155 L or .65 cups) fresh squeezed lime juice
- 2.5 oz (71 g or 5 Tsp) tartaric acid
- 0.5 oz (14.8 g or 1 Tsp) pectic enzyme
- 3 cc (.6tsp) Boyajian lime oil
- 2.0 tsp nutrient
- 5 crushed Camden tablets
- 220 mL chiles d'Arbol extract
- Sparkalloid to clarify (6 g)
- Beverage People Prise de Mousse wine yeast (10 g)

Original Gravity: 1.105

Directions

1. Mix honey with 1 gallon hot (boiled) water, stir until honey is dissolved.
2. Mix honey water with lime juice, tartaric acid, pectic enzyme, and lime oil, nutrients and crushed Camden tablets, top up with cool water to 19L, stir vigorously to aerate.
3. Measure specific gravity, recommended 1.105, increase for more alcohol and sweetness. Optional measure for acidity, adjust as needed.
4. When mixture reaches room temperature (between 15-20 degrees) add yeast (you can wait 24 hours).
5. Stir gently to degas, do not stir vigorously or you will risk oxidation.
6. After 28 days syphon into secondary fermenter.
7. Rack every 30 days until aged desired amount.
8. Add chile extract to taste after fermentation and fining. Extract was made by immersing eight dried chiles d'Arbol in 4 ounces vodka for 24 hours.
9. Bottle.

The brew is going well, still bubbling but slowed right down now. I'm racking weekend after next.

John Burns

6.8kg honey
9 litres boiling water
1 strong cup of tea
2.5 apples grated
Juice of 3 lemons
Top up to 23 litres with cold water
Nutrient – 1 tablespoon Tronozymol
Yeast SN09

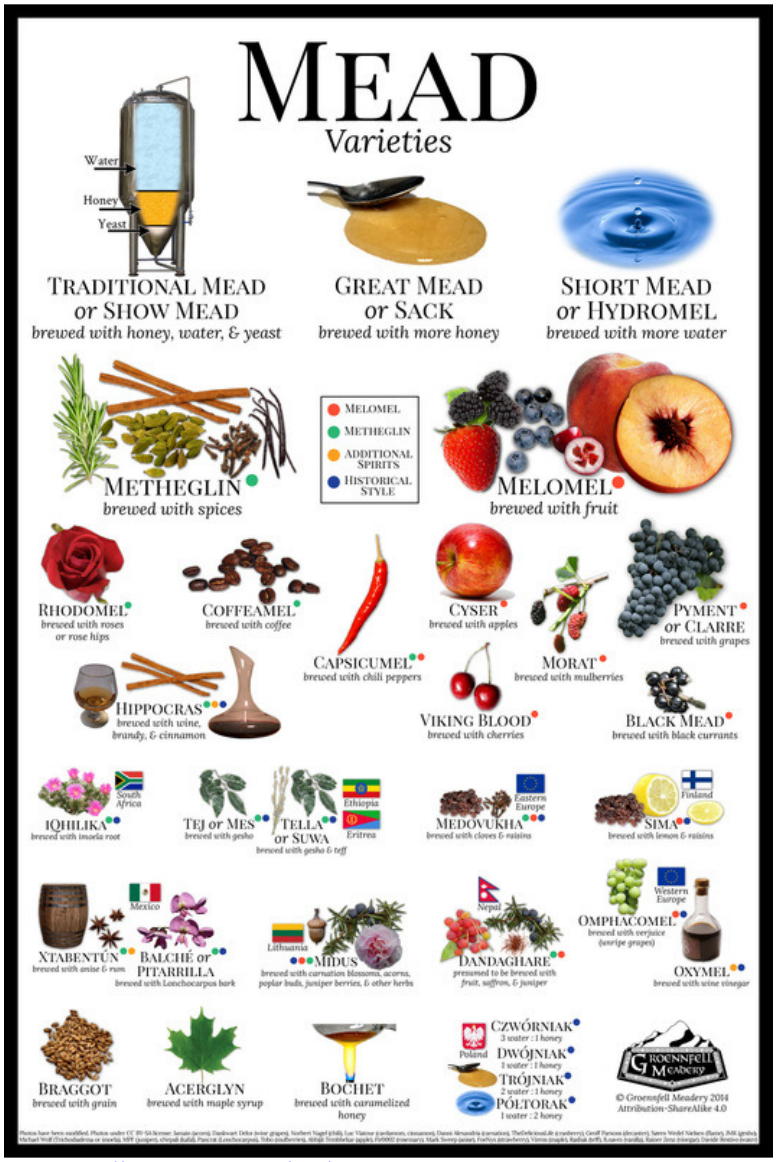
Starting gravity was 1.105. Was too cold (around 14 degrees) left in extraction room, so I brought it home Wednesday 15th July. Vigorous fermentation from Friday 17th July for a whole week. Plan to rack (siphon off mead to separate from the sediment) before next meeting.

Mark Robinson

12/7/15
Mead
15L water
8 kg honey
1kg of fruit cake mix
nutrient
Yeast (1 packet of sn9)

Specific gravity; 1.110
Mixed all above and fermented with a tea towel over a polypail for ten days.

22/7/15
Racked off the mead.
Specific gravity; 1.045
Put polypail lid on and added an air lock.



Source: https://www.groennfell.com/blog/new-mead-varieties-poster

Beehives around the world

I love looking at pictures of bee hives. They are all different, and like people they seem to gain more character as they age! If you see an interesting hive on your travels take a photo and share it with us by sending it to editor@franklinbees.co.nz If you can include a few words about the hive that's even better.

To start things off here is a picture of a hive in a garden I visited in Nouméa, New Caledonia. It has a nicot brand plastic base, wooden langstroff boxes painted with silver primer. One full depth and one medium box for the brood and then above a wire queen excluder were 2 medium honey supers. Inside the frames were wood with wax foundation. The galvanised steel lid is held down with a heavy rock. It is well hidden from the road and wedged between two palm trees which would help when the tropical cyclones blow through, as long as the trees don't sway too much !

Graham Dyche

Trees for Bees

If you are thinking of planting new trees at your property now is the time!

Source: http://www.treesforbeesnz.org/garden

The Trees for Bees website http://www.treesforbeesnz.org is a great resource with information about the best trees and plants for bees, and planting guides tailored to regions such as this one for Northland and Auckland.

Franklin Beekeepers Club evening-class

After missing a Pukekohe High School-run evening-class last year for the first time in many years, the Franklin Beekeepers Club is back presenting a class. This year the tutors are Sue and I, but we will be bringing in others as specialists from time-to-time.

In spite of a relatively small notice in the Franklin County News in the week of the 13th July but with additional help from Graham Wheeler, we had 16 enrolments for the class that started on the 27th. This number stacks up quite well with previous numbers, although they have varied considerably. Among the class attendees are several members from the bee club and students have come from Onehunga, Pokeno, Whitford, Weymouth as well as locally.

Instead of being run as in the past on High School grounds, it was held in premises on Franklin Road. See below for comments from the Counties ACE coordinator (Adult Community Education). The Franklin Road premises are very good, spacious and comfortable with good access and facilities.

The coordinator of the Counties ACE classes Tracey Gaynor, has added the following:-

“We have used many community venues, as well as the high school for one or two classes which are run by teachers at the school. This year, the majority of classes have been at ATC Train Me, we are able to have 2 nights of classes rather than the one evening that was previously offered.

We have been using the ATC Train Me location for nearly a year now. The biggest reason is security online, our classes are varied in their internet usage and we have had to accommodate this. As the move away from dedicated computers for many of our classes to classes with portable devices, it was wonderful that we were able to utilise a community venue that would allow and be able to cater for these in Pukekohe.

We are really grateful for having your course this year after not being able to have it last year. It’s a great community orientated course at a very good price for everyone. If you have any other suggestions for courses, please let us know.”

Peter Biland

Wasps – Common and German

I have struggled this autumn with wasps attacking and killing out my hives. So a recent article in The Beekeeper magazine, which the club receives, was particularly timely.
A mite which is found naturally on the wasps, and which might hold clues for the control of these wasps, has been identified. Further studies on the distribution of these mites is underway.
We can help. Wasps queens are now hibernating in your woodpiles, behind your curtains, in your empty supers and brood boxes, and other dry sheltered places. Collect them up and send them in, LIVE if possible.
Send to: Bob Brown, Landcare Research, PO Box 69040, Lincoln 7640. Put them in a small container with some tissue paper, include information on the location (GPS ref if possible), keep in the fridge until posting, and try to send early in the week, so they don't sit around in a post office box all weekend!

Common wasp ***Vespula vulgaris***

German wasp ***Vespula germanica***

Joan Leitch

If you would like to contribute articles, recipes, photos or any other content for the newsletter or website, please get in touch we would love to hear from you

Email John Burns @ editor@franklinbees.co.nz

AFB

There have been a few changes to the management of AFB recently. The management agency has released some new tools – some videos through their website, www.afb.org.nz, education, training, videos from the box to the left. There is also a smartphone app for field use, 'The AFB App' from the Play Store/App Store. There is a video on the website to show how to use this.

And there are changes to how the DECA (Disease Elimination Conformity Agreement) will run, starting from 1 June 2015. Beekeepers will need to have at least 12 months experience and pass the exam before they can apply for a DECA. This will allow them to inspect their own hives only. After 2 years of practical experience, they can sit a refresher course, which will enable them to inspect other beekeepers' hives for the COI (certificate of inspection).

Our Club often holds DECA courses. If you are interested in attending one, please put your name down with Graham Wheeler (treasurer@franklinbees.co.nz) to be notified when the next course is planned.

Bees in the News

NZ kanuka honey could treat nasty skin disease

A new treatment for rosacea, a nasty skin condition suffered by tens of thousands of Kiwis, could be found in honey produced from New Zealand's very own kanuka trees.
Full Story: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11482793

Tiny mite a buzzkill for NZ's wasps

A Landcare Research scientist says a tiny mite found on the back of wasps could be helping control the spread of the pests, which sting the country's primary industries by about $130 million a year.
Full Story: http://www.radionz.co.nz/news/national/278897/tiny-mite-a-buzzkill-for-nz%27s-wasps

Where is the most painful place to get stung?

A PhD student has allowed bees to sting him 190 times - to find out which part of the body it hurts the most.
Full Story: https://peerj.com/articles/338/ & http://www.bbc.com/news/science-environment-26936731

More News…

The Waikato Domestic Beekeepers Association and the NZ Beekeepers forum maintain an up to date list of bee related news
Link: http://www.waikatobeekeepers.org.nz/bee-news/
Link: http://www.nzbees.net/forum/forums/bees-in-the-media.16/

Did you know that old newsletters are published 'an issue late' on our website at http://www.franklinbees.co.nz/newsletters

The discovery of Lotmaria passim in NZ

By Don MacLeod (pesticide consultant working with the National Beekeepers' Association)

When one views the initial results of any endeavour and feels uncomfortable with the outcome it is normally only the dedication of the very few who pursue the task to a final determination.

Back in September October two Coromandel beekeepers noted that their bees were disappearing. Healthy hives with strong populations just vanished leaving the queen and up to 4000 bees. There was no sign of their bees and no evidence of swarming. They both met and compared observations on 18th October, and reported their findings to MPI Biosecurity and Dr Mark Goodwin at Plant & Food.
Dr Mark Goodwin's team take samples and beehives and examine them. They identify high infestations of *Nosema*, but their techniques do not distinguish between *Nosema apis* and *Nosema ceranae*.
27th October MPI takes samples of bees and analyses them – initially detects no *Nosema*.
29th October – MPI retesting results shows positive PCR results for *Nosema apis and Nosema ceranae.*
The bee disappearances continued and were being reported by other beekeepers so a meeting was called for on December 12th – which resulted in more samples taken for testing. To date only live bees left in the hive have been tested, no one has recovered any samples of the missing bees. Although farmers had reported seeing small clumps of 'dopey lost bees' on their farms.
At this meeting the losses that the beekeepers were significant, a bee keeper had lost the bees of 28 of 35 hives at an apiary site on Great Barrier Island. Others were forecasting significant losses of up to 90% of their expected honey crop.
There were at least four possible causes for the bee disappearance;

1. Karaka honey dew poisoning, if karakin is present in honey dew from scale infestation of karaka.
2. Pesticide poisoning - either caused by spraying or deliberate action.
3. Nosema ceranae related.
4. Nutrition and bee health - caused by a wet, windy cold spring
5. Other unknown bee disease

By mid-January the feeling was that the likely major cause of the losses was due to high levels of *Nosema apis* and *Nosema ceranae* and or possibly a more virulent strain of *Nosema ceranae*.

- Karakin or pesticide poisoning had been eliminated because there were no dead bees anywhere near the hive, a usual symptom of this type of poisoning. (Palmer-Jones, Line, 1962)
- Testing of samples of bees by MPI did not show any signs of fipronil or any other pesticide, so deliberate poisoning can be eliminated.
- The cold wet windy spring had affected bees further afield than just the Coromandel. Beekeepers who also had apiary sites in the South Waikato and on the Hauraki Plains, reported that the weather had been just as harsh there. The hives had been healthy when moved to the Coromandel, then the bees disappeared. Hives left on the Hauraki Plains and in South Waikato had not had any disappearing bees.

But one thing was not clear in Oksana's mind, why the mass disappearance of her bees.
Could there be another pathogen working in a combination with *Nosema apis* and *Nosema ceranae*.
She continued research into the possible causes and by February discussed the possible presence of the *Crithidia mellificae* being present in NZ bees.
There is no record of this trypanosomatid parasite having been detected in New Zealand to date, but then we do not know if anyone has been looking for it. Trypanosomatidae have been known to infect *Apis mellifera* since at least 1912 (Fantham and Porter 1912)

Crithidia bombi is a commonly found parasite of bumble bees overseas (we do not know if it is present in NZ) and *Crithidia mellificae* is the parasite found in honey bees.
We do know that trypanosomatidae are common and some species do infect humans. (Ruckel, DeRisi & Fenniken 2014)

Oksana's next question could her bees have been infected with *Crithidia mellificae*?

John McKay of D'Nature agreed to analyse her samples of dead bees to look for *Crithidia mellificae*, but to do so he had to import special assays from the US. D'Nature based in Gisborne uses DNA based diagnostics and modern techniques can develop assays for identifying the biology of organisms in agriculture, horticulture and aquaculture.
From February through to late April the samples were tested and analysed, and after further testing the bees were shown to be carrying the trypanosomatid *Lotmaria passim*.
The detailed work on discovery of this organism is to be published in a scientific paper by Oksana and John.

Examination of *Crithidia mellificae* using DNA has recently shown that there are now is an additional Trypanosomatid *Lotmaria passim* and that previous diagnosis of *Crithidia mellificae* were in effect *Lotmaria passim*. (Schwarz et al 2015). So what was considered to be *Crithidia mellificae* in the past was most likely to be *Lotmaria passim*.
What we do know is that *Lotmaria passim* is a newly identified organism in New Zealand and it is present in the gut of our bees. To date it has probably been spread right around the North Island since last Coromandel manuka season and is going to be in a hive near you. Similar effects were noted in the Wairapapa and Raglan areas. Reports since the April Beekeeper edition suggest it may have shown up in Christchurch area and around East Cape. Only further testing of bees will confirm these reports.

The mystery is that we have no idea of how *Nosema ceranae* arrived in New Zealand. It was detected in NZ by MAF Biosecurity in September 2010. How it got here we do not know. (MPI Biosecurity 2010). We do know that *Nosema ceranae* has jumped species from *Apis ceranae* to *Apis mellifera*, recorded in Europe since 1998 and the USA since 1995.
Is it likely that there is a synergistic effect when bees are infected by both *Nosema Apis* plus *ceranae* and *Lotmaria passim* that results in the bee leaving the hive or is unable to find their way back to the hive when foraging?

The biology and study of *Lotmaria passim* has only just begun. You will note most of the references about *Lotmaria passim* below are less than 18 months old. There is a lot of future study to be continued about these organisms and the effects on our bees. Oksana a Borowik and John McKay have just commenced the NZ study of this organism.

"Heck, if it hadn't been for you and your science background Oksana then it's highly possible/ likely that these hive losses could have been swept under the ...manuka scrub - and just forgotten about until next season", John McKay (email) 27th May 2015

Beekeepers should monitor their hives closely this spring and report all losses to the EPA Incident Bee reporting webpage.
http://www.epa.govt.nz/Publications/Pollinator_incident_reporting_form_2014.pdf

References

T. Palmer-Jones & L. J. S. Line (1962) Poisoning of honey
bees by nectar from the karaka tree (Corynocarpus laevigata J. R. et G.

Forst.), New Zealand Journal of Agricultural Research, 5:5-6, 433-436, DOI: 10.1080/00288233.1962.10419940

Fantthan, H. B. & Porter, A. 1912. Note on certain protozoa found in bees. Suppl. J. Board Agricul.,19:138.

Ryan S. Schwarza, Gary R. Bauchanb, Charles A. Murphyb, Jorgen Ravoetc, Dirk C. de Graafc and Jay D.Evansa. 2015. New Species Description of Trypanosomatid from A. mellifera.Characterization of Two Species of Trypanosomatidae from the Honey Bee Apis mellifera: Crithidia mellificae Langridge and McGhee, 1967 and Lotmaria passim n. gen., n. sp.
(Original article)

Charles Runckel, Joseph DeRisi, Michelle L. Flenniken 2014 A Draft Genome of the Honey Bee Trypanosomatid Parasite Crithidia mellificae. Plos One April 2014 | Volume 9 | Issue 4 | e95057

MPI Biosecurity - Nosema ceranae. http://www.biosecurity.govt.nz/pests/nosema-ceranae
Gabriel Cisarovsky* and Paul Schmid-Hempel. 2014. Combining laboratory and field approaches to investigate the importance of flower nectar in the horizontal transmission of a bumblebee parasite. Entomologia Experimentalis et Applicata Volume 152, Issue 3, pages 209–215, September 2014

Dates to Remember

AFB Hive Inspections
Date: 1st August – 30th November

Club Day
Date: Sunday 9th August, 2015
Venue: At the club apiary.
Program: 10:00 am Cuppa and discussion
10:30 am Open the hives

Club Day
Date: Sunday 13th September, 2015
Venue: At the club apiary.
Program: 10:00 am Cuppa and discussion
10:30 am Open the hives

"Every beekeeper must [either hold a DECA, or] *ensure that every honey bee colony in every beehive owned by that beekeeper is inspected for American foulbrood cases by an authorised person on or after 1 August and on or before 30 November each year commencing in 1999."*

More Information: http://afb.org.nz/biosecurity-national-american-foulbrood-pest-management-strategy-order-1998#32

View our online calendar at www.franklinbees.co.nz/calendar

Venue Directions

The club address is 733 Paerata Road (State Highway 22), Paerata 2676, New Zealand.

Traveling on SH22 towards Pukekohe, the club house is on the left hand side. Traveling towards Drury, it's on the right. At 733 there is a red letterbox and a driveway that forks – left goes to a house, take the right that travels 100m past old sheds and terminates at a turntable by a disused concrete-block cow-shed. This is the apiary site.

When visiting the site, please ensure you park on the old turntable, taking care that the driveway is kept clear.

When leaving the site, please take great care joining the traffic. Vehicles approaching from the right are not very easy to see.

Quarantine rules
To reduce the risk of spreading disease, the committee decided (20th October 2014) to restrict the bringing of any used bee keeping equipment (including gloves) to club days – the only exception is bee suits.

Where required, gloves and other equipment will be provided by the club.
This rule is not just to protect the club hives, but to also protect you from taking diseases home to your own hives.