

August 2013

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PO Box 1115, Aitkenvale, Q4814

**Special points of interest:**

- **Beating the ants!**
- **Hiving a native bee colony**
- **AGM on Sun 18 Aug**
- **Townsville Pant and Garden Expo, Oct 5 and 6.**
- **Who's responsible for engineering the hexagonal pattern in beeswax?**
- **My first honey harvest!: Peter M**

**Next meeting (AGM):**  
**Sunday 18 August, 2013, 14:00 at Ron and Rose Rapson's, 10 Mango Ave, Mundingburra. Bring a chair!**

**Newsletter of the Townsville and District Beekeepers Association**



[www.beesnorth.org](http://www.beesnorth.org)

*Beating the ants!*

My problem with ants occurred with my first hive. Black Ants are prolific in my area (Charters Towers) and around the hives I prefer not to use insecticides, so I decided to build a bee hive stand. This would:

- raise the hive to a workable height (and save my back).
- hopefully prevent vermin from entering the hive and prevent the cane toads from feasting on the bees.

Into town to the steel suppliers and home with a couple of lengths of 20mm box steel. I realised later that I should have purchased 25mm instead of 20mm for strength. Out came the tape measure, cut-off saw, angle-grinder and welder, then set to work. The base would have to be wider than the top to stop it from toppling over in strong wind etc. The width of the base is 920mm, the height of the base leg is 250mm, this gives a reasonable height to



allow for the oil tin.

Check the measurement inside the base cleats of the bottom board and allow approx. 5 mm for the width of the stand, I made mine 395mm, the inside measurement of the cleats is 400mm. this stops the hive from sliding back and forth when the hive is placed on the stand. 1250mm long is sufficient for three hives all be it tight. I decided to allow a work space of 360mm under the hive to the bottom frame, this will fit a hive and tools.



*Extra wide legs for stability, feet in oil tins and covers over the tin to stop accidental bee drowning.*

My first stand did not have oil tin covers and the bees were getting into the oil and drowning. I decided to make a cover 250mm x 250mm and fit it with a blind rivet 25mm above the oil tin then seal it with Silastic to make it waterproof (stop the rain from diluting the oil etc.) 25 to 50mm of oil in the tins is sufficient to stop the ants.

The hive is secured to the stand with an em-lock strap. I'm not having a problem with ants as long as I keep grass away from the stand.

Vic.

## *Minutes of the last Meeting*

### Townsville and District Beekeepers Association meeting 21-July-2013.

Before the sit down meeting we had a look at the many hives Dave and Virginia have at the Rifle Club. Members added SHB mats

Members enjoyed lunch of sausages and a basic salad without sauce.

**President** Dennis A welcomed members and guests at 1.50.

**Present:** as per signed book, over 25 members

**Apologies:** as per the book.

**Minutes of Previous meeting** read by Grant

Moved Dan D. sec: Ray B.

Carried.

### **Matters arising:**

Denis Anger's phone 0499 893 153 - please note!

The hives Grant, Elle and Mike picked up looks like they are Graham Armstrong's who had a couple of dozen hives stolen over the last 12 months. Elle, Mick and Graham are sorting something out with each other.

For stolen hives the Stock Squad need to be notified. (or suspected to be stolen). Perhaps we can have the Stock Squad speak at a meeting.

Leonie mentioned the beekeeping forum, Ray has downloaded photos onto it already. [www.australianbeeforum.com.au](http://www.australianbeeforum.com.au)

**Correspondence:** Doug sent and received letters and goods from Burnett beekeeping supplies. Mike James ordered and delivered AFB books from the NSW arm of beekeeping. Available to members for \$6 (and it is worth it).

Moved Grant W.. Sec Dennis A..

**Treasurer's report:** Funds as of June \$1861.28.

Today's payments will increase that figure to \$2103.11.

moved Doug Mc. Sec. Grant W.

### **General Business.**

**The roll test. Please report any *Varroa* test particularly negative ones, let Rob Stevens know. He needs to collect data and we can help him here. It is easy so please try, it is our best interest.**

Hives being stolen up and down the coast. Be aware of where hives are and if you feel strange about them being where they are inform someone and make moves to seek further information. Remember only beekeepers steal hives and there appears to be an active beekeeper helping himself to others' hives. Possibly to pollinate small crops. Please make a note if you see hives appear near small crops and discuss it at the meeting. Something can be done.

Grant to follow up on renewing the club membership to the QBA.

Ray B. has copies of the newsletters if needed.

No PK beetle mats left but Doug will order more (or has ordered more)



*The hive opening at Rifle Range resembled a meeting of the KKK! Dave distinguished himself with the lack of regard for the uniform code...*

Ray has been in contact with a supplier from India who has a website and gear is very cheap although freight may dictate what is bought.

New member Tony brought a static display of plastic boxes, lids and frames for all to see. Quite impressive.

Dennis thanked Leonie for her donation of a set of books to do with native beekeeping. It is in the club library now.

Jon Mc. spoke on Ray's invention of "clips" to hold frames on the edge of the box as opposed to standing them on the ground. Members could help themselves to some of the clips and modify them to suit their needs.

Graham Armstrong had Queens with him and spoke at length on how and why Queens are harvested and shipped overseas. He put to rest some practices. He encourages that the plastic queen transport holder remain in the "upside down" (the candy facing down) position and if able keep the Barrel in its "sheath". Queens can last a long time in these conditions. Watering can help the queens perish keep them in the dark until ready, and if able remove the dead nurse bees. The candy should have enough moisture in it to water the queens. He had quite a number of queens that had been housed for around 3 weeks and invited members to take them and see if they can be used by them. A great big thanks to Graham for doing that.

Ray asked about the days the queens are caught. Most of our beekeepers do bees on the weekends and find their hives queenless then - when to ring for a queen? Graham mentioned about not panicking when a hive has no queen. Harvesting is on Mondays, but members can ring the home number on Monday and leave a message on the answering machine.

Doug McBride moved. "That the Townsville and District Beekeepers Association accept Dennis Anger, Grant Whiteford and Graham Armstrong as Life Members to the Association." Sec. by Dave Muspratt.

The Motion was open for discussion. Grant declined the honour saying that he has not been in the club long enough to warrant such an honour. Doug Spoke about the service both Dennis and Graham had given to the Assoc. and telling everyone that this was the second stint at Presidency by Dennis. Graham has been a

## *Minutes of the last meeting (cont)*

long time supporter and member of the club.

The new motion was put: "That the Townsville and District Beekeepers Association accept Dennis Anger and Graham Armstrong as Life Members to the Association."

Moved Doug McBride; Sec Dave Muspratt. Carried with acclamation.

Graham asked if a swarm list could be organized for the Burdekin, Kevin H thought it would be a good idea and maybe he could help out.

Consider the AGM in August. All positions are open, If you are keen to take on more responsibility let people know and have a nominator and a seconder. There are many positions people can fill. Besides the obvious, there is Bulletin ed. Webmaster, Library, other working parties to look into "stuff."

Those keen on the native bee side of it may like to loosely formalize their executive?

The Cairns Seminar is on the same weekend as the AGM. Members can choose which meeting they may like to attend.

Next Meetings:

- August the 18th Ron and Rose's the AGM Mundingburra.
- Sept. 15th meeting at Len, Dougies and Leonie's place 186 Bus Rd, Charters Towers. (overnight camping available with a trip to the Drive-in thrown in)

Meeting closed at 2.50.



Photo: [http://healthybeeguide.com/vita\\_gallery](http://healthybeeguide.com/vita_gallery)

*Bees transferring nectar at the hive entrance.*

Call for Secretary Nominated Grant Whiteford. Moved Kirsty S. Sec. Mannie v.R. Carried.

Call for Treasurer Nominated Doug McBride. Moved Lindsay T. Sec. Ray B. Carried.

Call for Bulletin Editor Nominated Ray Berkelmans. Moved Lindsay T. Sec. Dave M.. Carried.

Call for Committee members: Nominated Mannie v. R, Lindsay T., Jon and Frana McK. Moved Paul P. Sec. Jacinta P. Carried.

Call for Librarian. Nominated Lindsay T. Moved Lennie McC. Sec. Derrick P.. Carried.

(until work commitments get in the way.)

Leonie D. Moved: "The fees for the TDBA remain at \$20 for the 12 month year and \$10 after February of the next year." Sec. Lennie McC. Carried.

AGM closed at 2.50 pm.

## *Minutes of the last AGM*

### **2012 Townsville and District Beekeepers Association.**

**AGM. 2.30pm.**

**Attendance:** as per signed sheet.

**Apologies:** as per attached sheet. plus a number through email to Grant.

**Welcome.** By President Dennis.

He read his report to the meeting. See separate sheet.

Minutes of 2011 AGM read by Grant. Moved Dan D. Sec. Dave M. carried.

#### **Treasurer's report.**

Read by Doug Mc. Yet to be audited, but nearly ready.

Balance \$3097.61. Report moved pending the auditor's report.

Moved Mannie v. R. Sec. Kirsty S.

**The President declared all positions vacant. Leonie D. assumed the chair.**

Call for President. Nominated Dennis Anger. Moved Dan D. Sec. Dave T. Carried.

Call for Vice President. Nominated Ron Rapson. Moved Dan D. Sec. Frana Mc.. Carried.

## *Townsville Plant and Garden Expo*

The Lyons Club of Townsville Central are putting on a Plant and garden Expo at Pioneer Park, Riverway Drive on October 5 and 6. It will feature all things garden with displays, guest speakers (Phil Murray of ABC Radio - Gardening Talkback, Eva Erhardt - Landscaping, Bob Luttrell - or better known as 'Bob the Bee Man') and of course many stalls. More info at [www.tsvgardenexpo.org](http://www.tsvgardenexpo.org)

Our club has been invited to put on a stall and we may be able to sell our honey and other bee products. Two issues to content with: the 3m x 3m basic community site will cost \$50 and we need someone to coordinate the stand and manning it. Grant will be away for the lead-up to the expo. Anyone interest in taking this on?



## *My first harvest!*

My first harvest, began after a few weeks of owning my new hive. The bee girls had all been very busy and 5 frames later, I found myself ready to extract the honey.

Ray had kindly invited me to his “extraction” party - so I headed over to his place frames in hand. It was definitely a fun way to extract honey - in between glasses of wine and an awesome learning experience for the beginner such as me.

A few hours later, we had taken our turns at extracting - using the drill to make lighter work! Great idea that! I was amazed on how much honey came out of the frames. Lots of sweet fun was had all round!!

Peter M



*I don't think anyone could be more proud of their first honey harvest!*

## *Hiving a native bee colony*

Native beekeeping is still at the “nuc” stage in the club. My own experience is “zero” so when came time to have a go at hiving a native bee colony, it was a case of calling in the clan (Lindsay, Heidi and Iris) and learning together. The colony of native bees in question (which Leonie suggested was *Tetragonula hockingsi*) had established themselves in an old chip board speaker box. Someone contacted the club a while ago and asked if it could be taken away. No problem there! Anyway, the box was in pretty bad shape and about to fall apart so the hiving was well overdue.



*The bees were using a split in the corner of the box for an entrance. The whole box was pretty much only held together by wax and propolis*

Not knowing what hive design to put them in, I made two just in case: one a University of Utrecht design which they successfully used in Tobago for small native bees (the UTOB design)

(<http://testweb.science.uu.nl/sommeijer/hive/hive.pdf>), the other Tim Heard's OATH (Original Australian Trigona Hive) design (<http://beehivejournal.blogspot.com.au/2...-hive.html>).



*Two UTOB hives in the foreground and two OATH hives in the distance.*

Once the old speaker box was broken open, it was a case of carefully transferring brood over to the bottom OATH box. Once full, the remaining brood was transferred to the brood end of the UTOB hive. After that, honey pots were transferred in large slabs taking care not to damage too many pots and cause the honey to spill and flood the hive. Native bees are only small and easily drown in their own honey. Some drain holes are a good idea! The top OATH box and the long end of the UTOB hive were filled with as many honey pots as they could fit. We put some propolis from the speaker box around the entrance of the new hive to make the new hive smell a bit familiar. It did seem to help as bees were already checking out the new entrance even before we had started the transfer.



*Inside the speaker box, it looked like a flower garden! Brood up the front, filled honey pots at the back and on the lid, who knows? It looks like a seaweed smorgasbord!*

When all the brood was transferred and the honey sections were as full as we could make them, it was time to shake whatever bees we could into the hives and stack both hives on top of each other in the same position as the old speaker box. Hopefully we managed to get the queen in one of the hives and the other will make a new queen. Not sure how many bees we got in the box as there was a huge cloud of bees swarming within a few metres of the hive. They literally swarmed for over 3 hours before finally settling down on dusk. The next day they swarmed again but in lower numbers for a few hours before finally settling down.

## *Hiving a native bee colony (cont)*

When it was all said and done, there was still a handful of honey pots left over which I squeezed into a jar and managed to get 220g of genuine native bee honey! It was surprisingly runny, very sweet (of course!) and tasted strongly of fruit—citrus and apricots we decided. A very distinctive taste! Maybe it's best used sparingly, a bit like vegemite?



*The final result - two hives stacked on top of each other, UTOB on the bottom and OATH on top, both with their entrances in roughly the same position as the original speaker box.*

The first peek on how the hiving operation went was two weeks afterwards. The bees had long ago settle down and have been busy getting on with the job of making a living. They've cleaned up our considerable mess. No spilt honey left, new wax spiral structures and honey pots have been constructed.

There seems to be brood in both new hive boxes, but only a small amount. It is hard to know if this is old brood which hasn't quite hatched yet, or new brood indicating that there is a queen active in both hives. A few more weeks and then I'll know for sure. Overall, my impression is that both hives are working equally hard in terms of activity in and out of the hives. That's a good sign, but no victory dance just yet, the fingers are still crossed....!

Ray



*Two weeks later, a sneak peek inside the OATH hive revealed a substantial reconstruction effort by the bees. Honey pots were restored, wax spiral and 'leaves' that surround the brood were all in place.*

## *Honeycomb 'builds itself'!*

The perfect hexagonal array of bees' honeycombs, admired for millennia as an example of natural pattern formation, owes more to simple physical forces than to the skill of bees, according to a new study. Engineer Bhushan Karihaloo at the University of Cardiff, UK, and his co-workers say that bees simply make cells that are circular in cross section and are packed together like a layer of bubbles. According to their research, which appears in the *Journal of the Royal Society Interface*, the wax, softened by the heat of the bees' bodies, then gets pulled into hexagonal cells by surface tension at the junctions where three

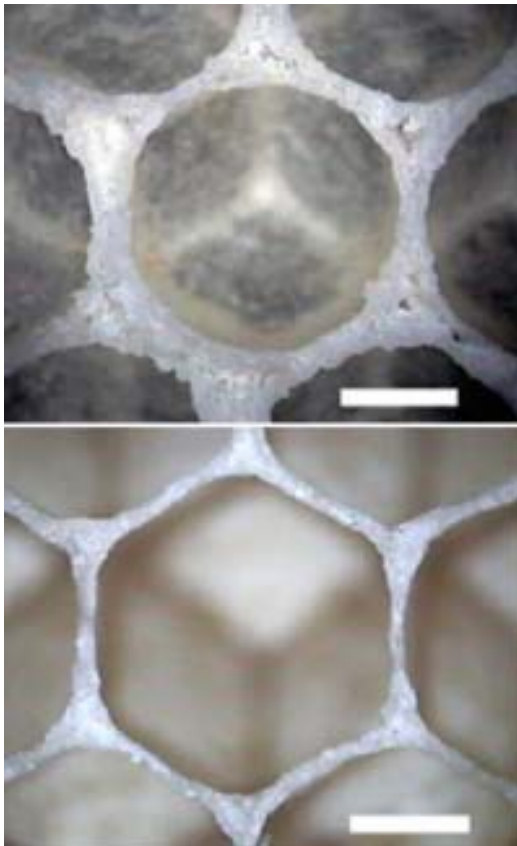


*Physical forces rather than the honey bee's ingenuity is responsible for creating the hexagonal cells.*

## *Honeycomb 'builds itself' (cont)*

walls meet. Therefore, regular hexagons of honeycombs might owe more to the laws of physics than to honeybees' engineering prowess.

This finding feeds into a long-standing debate about whether the honeycomb is an example of exquisite biological engineering or blind physics. A regular geometric array of identical cells with simple polygonal cross sections can take only one of three forms: triangular, square or hexagonal. Of these, hexagons divide up the space using the smallest wall area, and thus, for a honeycomb, the least wax. This economy was noted in the fourth century AD by the mathematician Pappus of Alexandria, who contended that the bees had "a certain geometrical forethought". But in the seventeenth century, the Danish mathematician Erasmus Bartholin suggested that the insects need no such forethought. He said that hexagons would result automatically from the pressure of each bee trying to make its cell as large as possible, much as the pressure of bubbles packed in a single layer creates a hex-



*When first made, the comb cells of the Italian honeybee (*Apis mellifera Ligustica*) are circular (top), but after two days they already look more hexagonal (bottom).*

agonal foam. In 1917, the Scottish zoologist D'Arcy Thompson argued, again by analogy with bubbles, that surface tension in the soft wax will pull the cell walls into hexagonal, threefold junctions. A team led by Christian Pirk, then at the University of Würzburg in Germany, showed in 2004 that molten wax poured into the space between a regular hexagonal array of cylindrical rubber bungs does indeed retract into hexagons as it cools and hardens.

### **Hot wax**

Karihaloo and his colleagues seem to have clinched this argument with their study. The team interrupted honeybees making a comb by smoking them out of the hive, and found that the most recently built cells have a circular shape, whereas those just a little older have developed into hexagons. The authors say that the worker bees that make the comb knead and heat the wax with their bodies until it reaches about 45°C — warm enough to flow like a viscous liquid. The idea that the bees might first make circular cells, which become hexagonal subsequently, was proposed by Charles Darwin. But he was unable to find convincing evidence of it. Karihaloo explains that he and his colleagues got their idea from earlier experiments they conducted on a bundle of circular plastic straws, which developed hexagonal cross-sections when heated and squeezed. It might seem like there is not much left for the bees to do once they've made the circular cells. But they do seem to be expert builders. They can, for example, use their head as a plumb-line to measure the vertical, tilt the axis of the cells very slightly up from the horizontal to prevent the honey from flowing out, and measure cell wall thicknesses with extreme precision. Might they not, then, continue to play an active part in shaping the circular cells into hexagons, rather than letting surface tension do the job?

<http://www.nature.com/news/>

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