Small Hive Beetle - disgusting AND revolting!: a first-time encounter in Queensland, Australia

John Polley (left) and Kevin Finn

While visiting family in Australia I was very fortunate to spend an afternoon with John Polley (President of Gold Coast Amateur Beekeepers Society - 160 members) and Kevin Finn (commercial beekeeper, Waratah Apiary). I wanted to find out more about small hive beetle – what it looks like 'in person' and how it is managed by Australian amateur beekeepers.

First, some context: the Gold Coast beekeeping season is 10 months of the year. Langstroth Hives are the most widely used hive type and are used with solid floors. Italian bees predominate. At the time of writing (April 2015) varroa has not yet been confirmed in Australia (although there are unconfirmed reports that Apis Cerana has been found in Cairns in north Queensland, having flown across the Torres strait from Papua New Guinea and potentially bringing with it varroa destructor).

Many Australian beekeepers believe that small hive beetle was most likely brought into Australia in the soil on roots of plants imported for agricultural production. It is now widespread.

A small hive beetle on a comb from a 'slimed out' hive

I was keen to see some beetles and I certainly got my wish because the day before my visit, small hive beetle infestation had caused a member's hive to 'slime out'. This term is a very good description of the effects of a serious infestation.

The larvae and beetles defecate on the comb, causing the honey to ferment and drip out of the cells. Everything seemed smelly and slimy. It looks disgusting too, like something out of a horror movie, not something out of a bee hive! The bees seemed to agree as the whole colony had absconded.

There were still beetles scuttling around on the comb that I was shown, and the torn cappings showed that the deserted hive had been robbed, risking transmission of disease. As there were no bees on the comb the beetles stood out clearly.

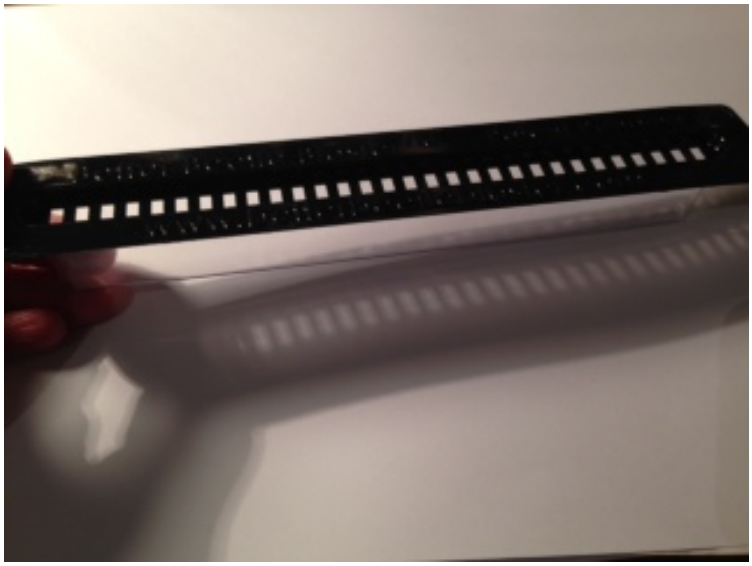
The beetles weren't as big as I thought they'd be (I've obviously spent too long looking at the large photos in the Defra leaflet!) but I was pleased to see that their clubbed antennae and short wing cases were clearly visible. However it did make me realise that they would be a lot harder to spot on a comb of bees, especially against darker brood comb. The larvae look like maggots and have spines along their back and three pairs of tiny legs at the front ('prolegs').

John and Kevin explained that the bees will chase and 'corral' the beetles into enclosures made of propolis to try to contain them. However the beetles can induce the bees to feed them by rubbing the bees' mandibles with their antennae. It seems the bees can't win in this situation.

A version of the Hive Doctor bottom board

One of the key tactics for controlling the beetles is to trap them at the hive entrance or on the combs, exploiting the beetles' natural tendency to crawl into dark cracks and spaces. There are a number of designs available to beekeepers in Australia and I have already seen various kinds of traps for sale here in the UK.

There are corrugated cardboard or ridged plastic traps which sit on the hive floor, including the Hive Doctor and Apithor Hive Beetle Harbourage (a small, flat trap that has an active ingredient that kills the mites – I couldn't find this online so may not be licensed for the UK).



Beetle Blaster – clear plastic under a black top

There are also traps to hang in the hive between frames including the 'Better Beetle Blaster' traps which can hold diatomaceous earth (food grade earth) or vegetable oil to attract the beetles (avoid oil contact with bees on the frames). I have seen these for sale in the UK. AJ 'Beetle Eater' traps are similar.

Solid floors have also been adapted to hold black plastic trays like trenches (below), which are filled with oil and hang below slots in the floor board, trapping beetles that fall through.

Oil traps below adapted solid floor

Another trap I was shown is called the 'beetle jail'. It covers the hive entrance and has narrow slots on the edges to entice beetles into integrated traps. It seemed to have particularly good potential to work with our open mesh floors by forming a very dark space for beetles to run to, without use of chemicals.

Beetle Jail

Part of the beetles' life cycle happens in the soil around the hive. They prefer sandy or loose soils. Apparently chickens love to peck and eat the pupating larvae in the soil however if you aren't lucky enough to have chickens a soil drench will have to do the job instead.

These are just a few examples of equipment for managing small hive beetle. There are constant updates and inventions as the threat spreads.

I would like to thank John and Kevin for their generosity in sharing their time and expertise.

I feel that our experience in the UK of managing varroa through integrated pest management techniques will stand us in good stead when small hive beetle arrives. BUT it is so important to make time for a thorough disease inspection of our bees! It reminded me that the attitude that 'it will never happen to me' runs a huge risk that I, for one, am not willing to gamble with.

The Small Hive Beetle has spread to Europe and is present in Calabria in Italy so now is the time to get informed. Knowledge learned now could make a huge difference in the coming season and could play a part in stopping the progress of this horrible pest! If you need a reminder about what to look for and what to do if you do find something suspect, visit the following page where you can also download a booklet: http://www.nationalbeeunit.com/index.cfm?pageid=125

Tracey Carter

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