

# BUZZWORD

Ayr & District Beekeepers Monthly Newsletter



## IN THIS ISSUE:-

- President's Message
- Sticky fingers: The rise of the bee thieves
- Club Apiary May – Jun
- Gardening Scotland
- Ian's Holiday Article
- Wild Colonies Persisting with Varroa Destructor
- Awards



## *President's Message*

The swarming season has arrived quite late this year, no doubt due to the

vagaries of our Scottish climate. We only saw our own first queen cell this week.

The club apiary however has seen a lot more activity and an encouraging number of new members, who have continued to attend the club meetings, have been fortunate enough to see a variety of swam control measures and get valuable hands-on experience.

Our summer programme is well under way and June sees Gardening Scotland and The Highland Show, at both of which the club will be represented.

On another tack, the committee is making progress with plans for our centenary year and hopefully we will have some concrete proposals to put to you all very soon.

Wishing you good beekeeping - and beware the June gap.

Best wishes.

Alan

*Club President*

## *Sticky fingers: The rise of the bee thieves*

The bees crawled up the thief's arms while he dragged their hive over a patch of grass and through a slit in the wire fence he had clipped minutes earlier. In the pitch dark, his face, which was not

## UPCOMING EVENTS:-

Saturday 18<sup>th</sup> June  
Out Apiary – Joyce  
Duncan's.  
1:45pm for 2pm start

Saturday 25<sup>th</sup> June  
Association Apiary  
1:45pm for 2pm start

Thursday 23<sup>rd</sup> – Sunday  
26<sup>th</sup> June – Royal  
Highland Show.  
Royal Highland Centre,  
Ingilston, Edinburgh

Saturday 2<sup>nd</sup> July  
Association Apiary  
1:45pm for 2pm start

covered with a protective veil, hovered inches from the low hum of some 30,000 bees.

The thief squatted low and heaved the 30kg hive, about the size of a large office printer, up and on to the bed of his white GMC truck. He had been planning his crime for days. He knew bees – how to work them, how to move them and, most importantly, how to turn them into cash.

He ducked back through the fence to drag out a second box, “Johnson Apiaries” branded over the white paint. Then he went back for another. And another.

Jerry Phillips, a night manager for the area’s water provider, spends his nights zooming between pump stations in the foothills. He knows every farmer and cowboy on the hill’s eight-mile stretch, including a local beekeeper named Orin Johnson. Johnson, who had been hit by bee thieves before, liked to alert potential witnesses. “If you see anybody in there in the middle of the night,” he had told Phillips, “it ain’t me.”

Sure enough, Phillips saw someone on his way down the parkway that night. He quickly phoned the nearby golf resort, which has its own roving security detail on the hill.

After the thief loaded the ninth hive, he sat behind the wheel, with the driver’s-side door open. The truck was far from full, and there were almost 100 more boxes behind the fence for him to choose from. That meant a lot of money. The exact value of a hive is not standard – it depends what you do with them – but nine hives can bring in about \$5,000 in just one year. And they are worth considerably more in the hands of a capable beekeeper who can maintain them season after season. Suddenly, a wall of white light hit the thief from behind. He froze.

A security guard stood next to his patrol car’s spotlight, keeping his distance. The guard, whose name was Dre Castano, inched forward, wary of being ambushed. He thought there was no way just one guy had got all of those big boxes into the truck on his own.

The thief climbed out of the car and turned into the light. He stood there alone, his eyes glazed over and sullen. Maybe a drunk driver, Castano thought. He asked for the man’s ID.

Pedro Villafan - 5ft 2in tall, and 46 years old. He lived 20 minutes south, in Newman, another little town at the base of the foothills. He looked flushed, half-asleep. But he kept calm and answered Castano’s questions. Yes, those were bees. No, they were not his. No, he did not work for Orin Johnson. Yes, he was stealing them.

“I made a huge mistake,” Villafan started.

“Of course you did,” Johnson interrupted, trying his best to remain composed.

“I shouldn’t have done this,” the thief said. “All my bees died.”

From - <https://www.theguardian.com/environment/2016/may/17/sticky-fingers-rise-of-the-bee-thieves>

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## *The Club Apiary in May and June*

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'May you live in interesting times' is said to be an ancient Chinese curse and times have certainly been interesting in the club apiary. It has been an informative time for all the beginners attending.

Chris has practised topiary on a bush whilst hiving a swarm and there have been two swarms in the hedge. We have been splitting hives left, right and centre. One week, we split bees into a detached house (a brood box), a maisonette (a nuc) and three terraced houses (a triple nuc on top of a hive). Last week Lindsay ended up with 11 queens in her pockets. "Why are you keeping them" we asked. "Just in case", was the answer. As it turned out four were required at the club apiary. She used 3 at her own apiary – and the rest she has put in mini nucs to see what happens.

Two hives were taken to Gardening Scotland and were well behaved – although one hive took an exception to Chris and decided to test

### **QUESTION OF THE MONTH:**

How many wax glands does the worker honeybee have?

### **LAST MONTH WE ASKED**

Give 3 methods by which Black Queen Cell virus can be spread?

The Answer –

- Ingestion of Virus Contaminated food.
- Via mating or an infected egg.
- Nosema Apis

how his reaction to stings was coming along – he was very brave and didn't run screaming from the enclosure!

The other unusual event for the club apiary, given the number of splits, was that we have taken a box of honey off. Some of the nucs already have laying queens, so there should be bees available for any beginners wanting them.

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## *Gardening Scotland 2016*

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Gardening Scotland - the national gardening and outdoor living Show and Scotland's gardening festival – is held at the Royal Highland Centre in Edinburgh. The show has over 400 exhibitors and some truly stunning display gardens including the gold award winning bee inspired "Hive Jive" garden.

Venture outside to the big back garden and you will find Ayr & District Beekeepers promoting the importance of our bees and pollinators, with lots of information, an observation hive, honey for sale and tasting and candle making.

Ayr Beekeepers were invited to Gardening Scotland by the organisers after they saw our display and demonstrations at Ayr Flower Show some years ago, and we have been returning ever since! The organisers were great and gave us all the space we needed and placed us in a prominent position in the big back garden so people could find us.

We had a band of very enthusiastic helpers, who enjoyed chatting to a very interested public, who are increasingly aware of the importance of our pollinators, including bumblebees and solitary bees. We got lots of questions about what kind of bees people had in their gardens, sheds and roof spaces; and almost all are happy to see the bees and leave them to their own devices.

Our open hive demonstration, where we take volunteers through a hive of bees, proved very popular: this involves a significant amount of preparation and work but people always really enjoy it, and it draws quite a crowd! It is also an excellent education and promotional tool: I know of several beekeepers who got started after taking part in or seeing one of our demonstrations.

After volunteers are suited up, they accompany an experienced beekeeper in carrying out an inspection of the hive, while a speaker tells the gathered audience all about bees and what is going on inside the enclosure. We had no trouble filling spaces for this and sadly had to turn people away at the end.

My favourite of the gardens at the show had to be the Hive Jive garden (although I may be biased!), which was designed and created by 2<sup>nd</sup> year students at SRUC's Edinburgh Campus. The garden was designed to promote gardening for bees and other wildlife. They used lots of pollen and nectar rich plants and the whole structure is meant to like a beehive.

Finally, I would like to say a big thank you to all those who helped prepare, put together our display and those who travelled to Edinburgh to help out at the show.

By Chris Urie

(Written for Buzzword and the Scottish Beekeeper)





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## *Ian's Holiday Article*

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Whilst in the Brittany area of France this week I noticed an article about the bee situation in France in the French equivalent of the Financial Times called Les Echos. The main points from the article were that honey harvest in France had been dropping since 1995, but in 2015 there had been an increase from 15,000 Tonnes to 17,000 tonnes. In 2014 it was 10,000 tonnes. This decline has been mainly attributed to a high death rate of bees at 30%. It reported that hives being kept inside cities are in better shape with Paris having around 700 hives being kept on the rooftops of buildings. In France, there are around 2000 professional beekeepers, who work with an average of 300 to 400 hives. Few of them have more than 1000 hives, compared to America where some professional beekeepers have more than 30,000 hives. Honey import into France is around 30,000 tonnes per annum with about 70% of this coming from Eastern Europe. Honey from Argentina is sold at EURO 2.30 per kilo to trade companies. Manufacturers like Icko are reporting very strong sales of hives starter kits and hive equipment to amateur beekeepers and claimed they are receiving 300 calls per day.

Written By - Ian Robertson

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### *Hawaii honey bee die-off points to likely culprits—Not pesticides, but varroa and viruses*

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Hawaii is a place where researchers have made great progress in documenting the actual causes of bee die offs. The problem in Hawaii began to emerge around 2007, and the cause was mysterious to scientists. Anti-pesticide groups blamed the use of agro-chemicals, a charge which gained momentum in 2011, when the campaign to finger neonicotinoids as the culprit began gaining credence.

But a 2012 study by British and American scientists, ignored by activist groups, aligns with the newest research that points to varroa mites as the cause. The varroa mite only arrived in Hawaii in 2007 and at first was confined to Oahu. Starting just about a year later, 274 of 419 managed beehives collapsed. Then government officials and beekeepers noted the decline of more feral bee colonies in cities on the island.

The scientists performing the study in Hawaii noted that: “the global spread of varroa has selected DWV variants that have emerged to allow it to become one of the most widely distributed and contagious insect viruses on the planet.”

Since Hawaii had never had the varroa mite, the British and Hawaiian scientists who conducted the study had a perfect opportunity to gauge the effect of the parasite on bee populations at a time when other variables were relatively stable. Before the arrival of varroa, most honey bee viruses were viewed to be harmless. Afterward, the prevalence of a single DWV viral

species rose from 10 to 100 percent among honey bees.

“It is that strain that is now dominant around the world and seems to be killing bees,” said Stephen Martin of Britain’s University of Sheffield, who led the research effort.

From - <http://www.hawaii.edu/news/2012/06/15/varroa-mite-linked-to-destructive-honeybee-virus/>

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### *Wild Colonies Persisting with Varroa Destructor*

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Many people believe that wild colonies in Varroa mite (*Varroa Destructor*) affected areas are the result of feral swarms that have escaped from managed apiaries. Untreated, they are expected to die out in one or two years as the untreated colony succumbs to the rising mite levels and the diseases they spread.

*Apis Cerana*, the original Asian host of the Varroa mite, has a stable bee-mite relationship. This is achieved through additional grooming to remove mites and a shorter pupation period that reduces the number of mites per reproductive cycle.

Professor Tom Seeley carried out a census of wild colonies in Arnot Forest, a research preserve in New York State, in 1978 and then again over a three year period between 2002 and 2005. The same number of colonies was found on both occasions even though Varroa infestation had occurred in the intervening years.

DNA testing was performed on the Arnot Forest bees and those of the surrounding managed apiaries. This demonstrated conclusively that the Arnot Forest colonies were not supported by a large influx of swarms from surrounding managed apiaries. They were surviving on their own. It appeared that the Arnot Forest colonies had developed resistance to the diseases or developed strategies to allow a stable bee-mite relationship.

Virulence theory suggests that horizontal transmission promotes the evolution of virulent parasites, in our case Varroa mites. If mites reproduce strongly in a colony, they cause great harm and the colony does not survive. The mites then move onto another colony and repeat the cycle. This lateral transfer from one colony to another is horizontal transmission. Mites that cause a colony to collapse will perish themselves if horizontal transmission is prevented.

Vertical transmission, however promotes a balance host-parasite relationship. In the absence of horizontal transmission, colonies that survive mite infestation will reproduce passing on the colony traits to the next generation. This passing of parasite from host to offspring is vertical transmission. Swarms that emit from a surviving colony are more likely to display a stable bee-mite relationship.

Within managed apiaries colonies are kept in close proximity to each other. Drifting becomes inevitable as does transfer of mites when the colony fails or is robbed out. These are the principle forms of horizontal transmission. Unlike in managed apiaries, wild colonies are rarely next to each

other. This eliminates drifting. The probability of bees from a failing colony finding their way to another or being robbed out is very low. This virtually eliminates horizontal transmission of mites leaving vertical transmission as the predominant force in wild colonies. Knowing that horizontal transmission is the norm in a managed apiary and vertical in the wild, it is more likely that a stable bee-mite relationship will develop in the wild rather than an apiary.

To test the hypothesis that the Arnot Forest colonies had developed a stable bee-mite relationship, a test was devised. Colonies were set up, half of Arnot Forest bees, the other half New World Carniolan bees. Both had Arnot Forest mites introduced and the growth rate of the mite infestation closely monitored. Surprisingly no difference in the growth rate was found.

As the test demonstrated no difference in mite population growth rate, the hypothesis that Arnot Forest colonies had developed strategies to create a stable bee-mite relationship were disproved.

Other possible explanations include:

**Tree Cavities** - Arnot Forest bees live in trees that have a smaller cavity than a beekeeper's hive. Therefore, the size of the nest and the numbers of adult bees, worker brood, and drone brood are all much smaller in wild colonies than in managed ones. Because mites reproduce in cells of brood, and do so preferentially in drone brood, the smaller number of cells of brood in wild colonies may limit the mite populations in these colonies by giving the mites fewer reproductive opportunities.

**Swarming** - Another consequence of small nest cavities is the propensity to swarm more regularly. Approximately 50% of adult mites live on adult bees. As a swarm consists of many adult bees 20-35% of a colonies mites will leave with a swarm. As a colony will also caste when possible, further mite reduction ensues. The remaining queen, emerges, kills off other queens, matures and then mates before laying any eggs. This produces a period of 1-4 weeks when there is no sealed brood in the colony. This could impede mite reproduction to manageable levels.

**Mites** - The remaining possibility for a stable bee-mite relationship in Arnot Forest bees is a change in behaviour or reproductive rates of the mite itself.

However the stable bee-mite relationship has come about it needs to be understood. Genetic and ecological factors could reveal novel resistance mechanisms for future bee breeding programs and could provide beneficial changes in beekeeping practice.

Written by – Julian Stanley

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## *Two of the world's top three insecticides harm bumblebees – study*

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Two of the world's most widely used insecticides cause significant harm to bumblebee colonies, a new study has found, but a third had no effect.

The work shows the distinct effects of each type of neonicotinoid pesticide: from cuts in live bees and eggs to changed sex ratios and numbers of queens. Previously, the different types of neonicotinoids have often been treated as interchangeable.

The new study examined the effect of three neonicotinoids from the level of brain cells to colonies in the field. The latter involved 75 colonies across five sites in Scotland and included control colonies that were not given access to the pesticides.

“There is clear evidence that imidacloprid and thiamethoxam are harmful to bees but our evidence raises a question over clothianidin,” said Dr Christopher Connolly, at the University of Dundee and who led the research published in the peer-reviewed journal Science Reports.

Full Article - <https://www.theguardian.com/environment/2016/apr/28/two-worlds-top-three-leading-insecticides-harm-bees-study-shows>

Full Paper - <http://www.nature.com/articles/srep24764>

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## *Awards*

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Our congratulations to the following –

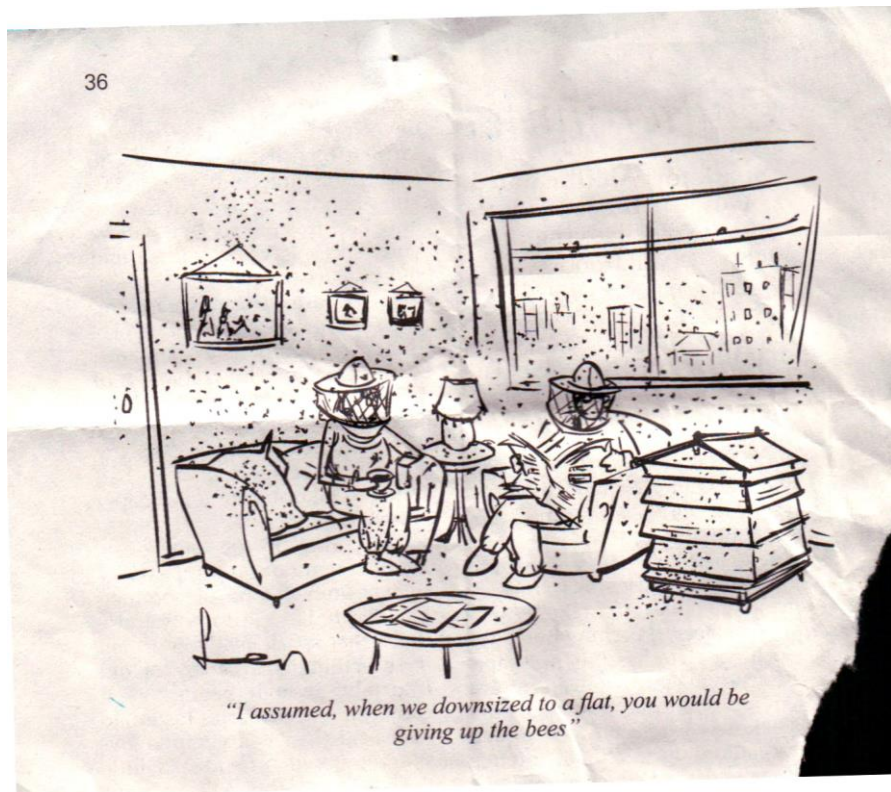
Bill & Suzanne – SBA local Association Award

Anne Beamish – Basic Beemaster Award

Julian Stanley – Module 7 (Selection and Breeding of Honey Bees)







Joke Submitted by Joyce Duncan

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Picture of the Month  
*Bee on a landing board*

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