

C&G Occasional Guidance Note No. 1

Beekeeper Problem of 4th June 2013 - “No trace of the queen or indeed a healthy brood”

It barely needs to be stated, but the last few years have been extremely difficult for honey bees – and for beekeepers. The purpose of this short paper is not to delve into this wider context, but try to provide some answers, or perhaps comfort for beekeepers, especially beginners, who are struggling with issues that are barely 'in the books'. While issues such as virus loads and pesticides may play a part, I do not intend to discuss such things in detail here. Usually, by early June, the bees have enjoyed something of a spring, the active season is well under way, and, traditionally, problems can be compensated for by acquiring a swarm.

This year is different. First, we have to take into account last season; second, we have the very obvious problem of the long, hard, winter. 2013 has been compared with the winter of 1962-63 and I am of an age to remember that clearly; I remember looking at a block of ice perhaps four feet long and a foot high, the remains of snow clearance on the road outside my home. It was a bright sunny day and I pondered on when it would melt. I decided it would still be there in the summer. On the Cotswolds, some of the snowdrifts did not clear until June – i.e. now! The good news is that honeybees did survive that bad weather, although imports would have been used by many beekeepers to make up their losses. That is happening now, but is not necessary, and is part of the commercialization of beekeeping. Major commercial beekeepers will want a standard strain of bee, and they need an early spring build-up to take full advantage of nectar flows and maximize the honey crop, while others will be interested in having queens and bees available for sale. I prefer to rely on locally adapted honeybees and see merit on working with the colonies that have survived.

Normally, a beekeeper will incur winter losses for a variety of reasons but can expect that colonies that have survived through to late March should survive (although feeding might be necessary – and has certainly been a key factor this year). This year, colonies that appeared strong in February have dwindled and died out. Even colonies that have been fed have died, suggesting other factors are at work. Thus there is no easy explanation of why a particular colony has died or has not built up as might be expected. Here are a few:

Cold – it is often reckoned that cold alone does not kill bees. However, with repeated or prolonged cold weather the bees are unable to break from the cluster, either to fly and void waste, or to migrate onto available stores. I photographed one dead stock with the queen less than a bee length from good stores. Curiously 'dysentery' (the hive and frames marked with bee excreta) has not been as common as one would expect.

Varroa/ Parasitic Mite Syndrome (PMS), viruses, or other disease – although the detail is beyond the scope of this article, last year's wet weather and this

spring's cold weather may have made it difficult for the beekeeper to open the hive and check the health of the bees or to carry out treatments. The bees may be carrying a high Varroa load, may have a degree of PMS, and this might be affecting build up; in combination with the cold weather, this could be fatal.

Report from Mike Hunt – this issue was discussed at the apiary last Friday (31st May) it seems that in some weak colonies the Varroa has been doing better than the bees. With the delayed start to build up in brood, and delay in swarm preparations, some colonies have not produced drones and so Varroa have occupied worker cells. The easy sign of PMS is dead worker brood that has failed to emerge and has starved so the tongue is sticking out. (I don't know what the mechanism is here – do the workers recognise the bee is unhealthy and not feed it, or are the other workers too weak to properly nurse the young bees, or is the worker just too weak to emerge so it never obtains any food?) We may cover Varroa treatment in another note.

The carry-over from last year – there are two factors here. Firstly, if the queen was poorly mated during the bad weather last year, she may run out of eggs during the winter. Instead of a steady expansion of the brood, she will decline – and possibly disappear. I have had several colonies where there is an apparently healthy queen, but very little happening. A thorough search might discover a few eggs – or none at all. Secondly, due to the poor weather last year, with reduced foraging opportunities in the late summer, the summer bees may not have been 'worn' out' and fresh brood to produce winter bees may not have been produced. Thus, the bees going through the winter are old summer bees that are not well adapted to survive six months or so, and so the colony dwindles at some point.

We (Will & Eve) have lost about 30% of our stocks. We know of medium to large-scale beekeepers who have lost less, but plenty who have lost 50% or more. Beekeepers are still discovering colonies that have survived the winter, have appeared OK recently, but have now died out. Here are our figures:

	October 2012	April 2013	% Loss
K	1	1	0
FH	9	2	78
LO	1	1	0
BE	3	0	100
CH	2	2	0
ODD	7	7	0
SW	16	12	25
LB	6	3	50
GTop	12	9	25
GBott	12	8	33
GTB	2	2	0
SHB	3	2	33
Hayles	9	6	33
Total	83	55	33

Operating on our scale we can begin to see patterns and compare different apiaries; if each of our apiaries was run by one beekeeper, there might be a range of emotions. Someone with K, LO, ODD or GTB might feel very pleased and conclude they were a very good beekeeper. Someone with FH or BE might feel quite despondent and think they were a bad beekeeper. In fact the two hives at GTB were inaccessible due to the wet conditions, were not visited for more than six months, were given no mouseguards or woodpecker mesh, no Varroa treatments, and missed out on final feeding – they are both now doing well and one has already been swarm controlled. Clearly, the competence or time spent is not the only factor – other things are going on. GTB is a relatively isolated site and it might be that there are no colonies nearby that have collapsed with PMS and sent out workers to drift into the hives and bring a heavy mite load.

It is impossible to explain “no queen or healthy brood” without knowing what, if anything, has been done to the colony. Here are some possibilities:

1. The queen was poorly mated last year and has run out of eggs. She has then been rejected by the bees. She stopped laying more than 21 days ago but laying workers have not started laying drone brood.

This colony might be rescued by inserting (ideally) a frame of brood in all stages with a well-developed open queen cell. The open brood will generate pheromones and should stimulate the workers to nurse them and rear a new queen. However, it will be another two weeks before the queen can fly and mate and another three weeks or more before new workers will emerge. The beekeeper is unlikely to obtain a honey surplus.

A better solution would be to unite this colony to a nuc headed by a mated laying queen. The nuc is stood alongside the queenless stock for a few days. On a warm sunny day, the original colony is moved away (10 metres?) and all the bees shaken from the frames onto the ground. The nuc is transferred to a brood box on the original site and the best of the old frames are used to build the nuc to full size. The workers from the old colony return to their old site and unite happily (but check the old frames for disease!)

2. The colony swarmed more than three weeks ago (unlikely this year!) and the new queen hasn't started laying. She is not marked and the beekeeper hasn't seen her.

This is not ideal, but not a disaster. Be patient, and eggs will soon start appearing.

3. The colony is absolutely OK, but the queen has slipped through the queen excluder. There is now a new brood nest where the honey should be, and all the brood in the brood box has emerged.

Unless there are queen cells, the hive can be resorted back to normal. The queen might have got through the queen excluder because it has a fault, she was slim enough to slip through, she may have reacted to disturbance such as vigorous smoking and forced her way through, or the beekeeper may have made a mistake and trapped her on the wrong side. With young brood in shallow frames, there is a risk that the queen might be attracted back through the queen excluder. Shallow frames with brood can be incorporated in the brood box (opportunity for drone culling here!), or the excluder can be left out entirely and the colony run on brood and a half.

4. The colony swarmed (more than three weeks ago if there is no brood at all), the queen was clipped, she crawled under the mesh floor, and the workers returned to cluster on her. This is one of the situations that can confuse even an experienced beekeeper. If all goes well, the swarm will draw comb under the floor. Due to the proximity of the queen, the bees in the brood box will appear queenright. If the situation is found soon after the swarm has gone out (and sort-of come back), then the colony can be artificially swarm controlled by one of the standard methods.
5. The colony is carrying a very high Nosema load and is collapsing

Destroy the bees and start with a new colony

6. This week, a beekeeper has asked for help and the story fits in here. He thought the bees might have swarmed last Saturday (1st June) and on Tuesday (4th June) he opened the hive and found queen cells. He cut all of these out and the next day asked for guidance – it was too late! Assuming that the old queen left with a swarm on Saturday, if the beekeeper had cut out all the queen cells but one (a well-developed open queen cell in a good position), all would be well. As things stand, in about 20 days this colony will have no queen and no brood. Even if workers have developed their ovaries and start producing drone brood, the colony will appear 'normal'. Only close inspection of the brood reveals the full picture.

The solution is as 1 above. Unfortunately, a beekeeper with only one (now hopelessly queenless) colony has to acquire a new queen or nuc as soon as possible. Introduction of a purchased queen might fail. Insertion of a frame of eggs to induce an emergency queen might work if done quickly.

The real solution is for the individual beekeeper to never do this again!

The situation facing quite a few beekeepers at the moment reminds me of the old joke about the man who asked the way to the railway station, only to be

told “I wouldn’t start from here”. The branch provides winter training, offers practical training in the apiary and encourages members to take the BBKA Basic exam. Throughout this introduction to beekeeping, the emphasis is on the individual beekeeper taking responsibility and making a conscious effort to build up their own skills.

It seems that quite a few members have missed out on the training or have forgotten what they learned, or just need a topical reminder to help them manage their bees. With cries for help coming quite frequently now, the relatively few experienced members in a position to assist cannot be expected to abandon their own beekeeping at the busiest time of the year and deal with the same problems over and over again. Occasional guidance notes sent out by e-mail during the season might be the solution. They can not only guide the beginner in need, but might stimulate discussion and help everyone raise their standards. Maybe others can contribute on other topics?

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