

Hive Talk

March 2011

Winter is over and spring is here – and that 's official! The vernal equinox occurred this year on 20th March when the sun is directly over the equator giving equal day length in both hemispheres. This means we are now definitely in spring and can wave goodbye to the winter, at least that's the theory. The reality could be somewhat different and we are likely to experience a number of nights and cold mornings when the mercury dips below the zero mark – not to mention the wind and rain and the occasional helping of sleet or snow that we could get before May. However, to be a beekeeper demands optimism and this is the time of year when beekeeping optimism knows no bounds. Spring is here and new life is bursting out all around us, we should rejoice!

The bees are flying strongly on favourable days foraging for pollen, water and nectar in order to meet the demands of an ever increasing number of larvae as the queen continues to lay more and more eggs day after day. If the bees are flying strongly, this is a good indication that it is safe to open the hive for a quick inspection to make sure all is well and that the colony is all set to bring in the bumper honey crop that has to be a certainty this year. Remember, beekeepers are ever the optimist! Though it is important not to allow any of the brood (eggs, larvae and pupae) to become chilled – bearing in mind that the brood nest is maintained at 34-36 degrees C – so the rule of thumb is that it should be warm enough to wear only a tee-shirt. These kinds of days are not as common as we would like in our corner of the globe and so we must take our chances. So, providing the bees themselves show by their behaviour that they can tolerate the outside temperature it is worth making a quick inspection to see what is going on and whether all appears well. Moving quickly, though carefully, so that frames and the hive are not jarred and that bees are not crushed, it should be possible to examine each frame and check on the amount of brood and remaining stores – *and* to locate the queen – in under two or three minutes. It is still too cold for a more thorough examination to check for disease and so this should be postponed until the genuine tee-shirt weather arrives.

Some beekeepers, even beekeepers of long standing, experience a knot of apprehension if they are required to find the queen. A marked queen is easier to see because she will have a coloured spot on the top of her thorax. This does a number of things, it makes it easier to identify the queen and if the colour coding convention is followed, it means the beekeeper can tell how old she is. This year's colour is white, last year it was blue and 2009 was green. Red and yellow are also used. The mnemonic Will (1&6) You (2&7) Raise (3&8) Good (4&9) Bees (0&5) helps to ascribe the correct colour code to the year. With a marked queen you can easily tell if you have the same queen in the colony in the spring as you did at the end of the season the previous year. More on this later. Spotting the queen is not easy, but this is the time of year when it is easiest of all. There are relatively few bees on the combs and there

are no drones about. This means there are only two kinds of bees in the hive, the queen of which there is only one (there could be an exception to this – to be looked at later) and worker bees. When the queen is seen static alongside her worker daughters the differences appear quite marked, but within a mass of bees where there is constant motion, those differences are not so apparent. Finding a queen takes practice and experience but there are also techniques to be learned. The first, though obvious one is – if glasses are needed for reading, then they are also needed for looking at bees. Allied to this, make sure there is sufficient light, don't leave the examination too late in the day and try to examine each comb with the sun behind you so that the face of the comb is in full sun or has the maximum available light. Angle the comb so that it is perpendicular to the main source of light. After loosening the frame from its neighbour, look over the top of it and as you raise it out of the hive, look at the face of the frame remaining. Queens tend to be shy of the light and so generally move where it is going to be darkest – between the frames. If she has not been sighted on the frame in the hive, look at the frame you are holding. Try not to focus too intently on one spot but relax your gaze and scan whole chunks of the frame as you would when reading a book taking in one or more whole sentences at a time. Start first on the sides and bottom of the frame because if the queen is intent on escaping from the light, you may just catch sight of her as she moves over to the shady side of the frame. If she is not seen at the edges, then move to the main part of the frame. You could try a circular movement ending up in the middle, or you could use left to right, or up and down movements. Whatever you do, try to be systematic; what you don't want to do is allow your gaze to dart here and there over the frame without any pattern to it. You also have to be reasonably quick, a young nervous queen on the move could be over the side of the frame in seconds. Once you have scanned one side of the frame, turn it over and repeat the procedure on the second face. It will do no harm to go over the first side again. If there is no sign of her, then move on the next frame, not forgetting to look at the frame still in the hive... and so on, and so on. All this said you are more likely to find the queen in one place than another. There is little likelihood of her being found on either of the end frames for example, though this is by no means a rule. She is most likely to be found on the brood frames where eggs are present and where she has been actively laying. This means you can cut corners and whilst it is important to be systematic and start by removing and examining the first frame, it is possible to quickly discount frames with stores and to reserve your concentrated effort for those frames that constitute the brood nest. What you are looking for is difference, and often it is an 'out of the eye corner' moment when sub-consciously your brain reacts to something that is out of the ordinary. The queen is larger than the workers in the hive and often her abdomen is a different colour, she stands higher on her longer legs and seems to move more purposively across the comb. All these things contribute to difference and help in her identification.

If you really need to find the queen, then it is important that you make this the sole purpose of your inspection so that you are not distracted by other tasks. Use as little smoke as you can in order not to alarm the bees and spread panic in the hive. Be clear about your objective but be relaxed and let your eyes and brain work for you. It can be a bit like trying to put a name to a face,

no matter how hard you try, it doesn't work. But soon after 'giving up', the answer comes floating up seemingly out of nowhere. Success breeds success. Having found the queen once or twice helps to build confidence and encourages a more relaxed approach to the job in hand. Perseverance is helpful but there is a limit to the number of times it is possible to search through a box of bees – the bees will soon let you know if you are overstaying your welcome. If the queen cannot be found using this method and it is essential that she is, there are other physical techniques that can be applied to isolate and locate her, but these fall into the category of more advanced beekeeping.

Reference was made earlier to the fact that there is generally only one queen in the hive. The exception to this rule is if supersedure has taken place and a daughter queen is also present. Supersedure is a method by which the bees replace the old queen with a new one without swarming. Often this is because the original queen is in her second or third season and her production of queen substance is beginning to decline. Queen substance is a complex pheromone or chemical signal that inhibits workers from laying eggs themselves and provides cohesion to the colony. There is a direct correlation between the loss of queen substance and the queen's fecundity. Once the bees 'decide' the old queen is not up to scratch – she may also have some other infirmity – they will make preparations in the form of one to five new queen cells on the face of the comb with the aim of producing a new queen. The first queen to emerge will set about killing her rivals and the bees may well assist her in this by tearing down the other queen cells. The old queen may be left alone and she will continue with her egg laying. After the new virgin queen is mated, she will also begin to lay her eggs. Thus mother and daughter could be present together and both will be laying eggs. This situation doesn't usually last for long. Either the old queen will die naturally or the bees will dispatch her by 'balling' her. This is when a tight cluster of bees forms round the queen leading to death through suffocation and overheating. This same technique is used to deal with the occasional invading wasp.

Beekeepers must be like fishermen – prone to a little exaggeration now and then. One local beekeeper after his first inspection this year, described the queen he saw as not requiring marking because she was "as big as a mouse"!! Another novice beekeeper undertaking the Preliminary course in beekeeping said she had kept horses, cattle, pigs, sheep, hens and dogs but none of them were half as complicated as bees!