



Beetalk September 2019

General info and news about bees

Hello and welcome.

Beetalk is a compilation of news from across the bee keeping word.

Its not affiliated to any beekeeping group so you wont get things like the next meeting and what we are doing and such like.

We hope that the articles provided will be useful to anyone interested in the a rewarding hobby and in some way we also hope that you may gain some pleasure in reading some of the article that are included.

Also we intend to include articles that may be helpful to anyone new to the hobby.

Being based in Lancashire it would be great for any contributions from Beekeepers from the county. But as stated above, please nothing about your association or group.

Hope you enjoy.

Editor

If you have any articles that you think may be useful to have included in Beetalk.

Please e-mail them to the editor

at

birt_192@hotmail.co.uk

A Handy Checklist

Over the last month or two, I have had a number of calls from new beekeepers phoning to check about problems which they have encountered with their bees this season. As always, my advice is to get to know what normal healthy bees and brood look like and check if you are unhappy or not sure about what you see in your colony. Inspecting the brood combs of a honeybee colony is the only way to determine the health and general condition of the colony. However, you have to know what you are looking at and what it means in order to make a diagnosis. In general a healthy brood comb simply looks 'looks healthy'. The brood cappings have a 'digestive biscuit' colour; the larvae are white, glistening and 'fat'. The cappings of the brood cells are uniform and the overall pattern is solid, with few holes. A good queen will start laying eggs in the lower centre of the combs and radiate out from there. Once the oldest brood emerges, the queen lays in those cells, and the youngest brood on the comb will now be in the centre. Once the brood-rearing cycle gets underway in the spring or following the introduction of a new queen, all stages of brood should be found at each inspection. I came across this check list recently which would be helpful when inspecting your colonies. Here are some conditions you may observe

during your brood inspections and their possible causes:

No eggs, no brood present

- (a) Not brood-rearing season. (b) No queen. (c) New queen not yet laying. (d) Extended shortage of pollen.

Test for Presence of a Queen.

No eggs, but brood present

- (a) Brood-rearing ceased - end of the season. (b) Queen has died or colony is preparing to swarm. (c) Lack of pollen
(b) curtailed brood-rearing. If there are no eggs and you can't determine if there is a queen present, put in a brood comb with young larvae from another colony. Check back in three days; if the suspect hive starts queen cells, it has no queen.

Eggs present, but no brood

Brood-rearing has just resumed after being halted for some reason.

Wet-looking pollen - in the centre of the broodnest

If there is no queen and during the off-season, pollen may be stored in the centre of the brood nest and can take on an unkempt look - wet or glazed over. When the workers anticipate needing the pollen to feed brood, they move the pollen and freshen it up and it has a dry look.

Clean, empty cells - in the centre of the broodnest

The opposite of the wet-pollen look. When the workers anticipate that brood cells will be needed for eggs, they move nectar and pollen out of the way and give the cells a polish.

Too many eggs per cell

- (a) Young, inexperienced queen, usually settles down quickly to laying one egg per cell.
(b) Something happened to queen and laying workers developed.

Scattered brood

Same-age brood scattered over the comb, not in adjacent cells, means:

- (a) A failing queen running out of sperm. (b) Something is killing the brood. In early spring, cold nights when there are too few adult bees to keep the brood warm can result in chilled brood. Sometimes pesticides or poison pollen can cause scattered patterns.

Clue: Is only one colony showing the symptoms, or are several?

Raised cappings on worker cells

The cappings look like the ends of bullets. Cause: Drone brood is developing in worker cells.

Raised cappings in drone cells Normal drone brood has a 'bullet' look, but not as pronounced as when it is in worker cells. Normally, queens lay unfertilized eggs in the larger (both in circumference and depth) drone cells. These are frequently found around the bottom edges of the brood comb and in areas where the comb has been damaged. The presence of some drone brood indicates a vigorous, well-nourished colony.

Queen cells

Queen cells are constructed along a vertical plane, as contrasted with the horizontal plane of worker and drone brood cells. They somewhat resemble peanuts (in the shells).

- (a) Queen cells near the centre of the comb, growing out of worker brood cells these are replacement cells the workers have developed in emergency loss of queen. (b) Queen cells everywhere, particularly near bottom of comb. This is swarm preparation - the old queen will soon depart with about half the bees (called the 'prime swarm').

Tip: For a quick check of swarm preparation, in a hive with two brood boxes, break the boxes apart and look along the bottom bars and bottoms of the combs in the top box. Most colonies preparing to swarm will show cells along comb bottoms.

Dead larvae (not white)

- (a) Chilled due to cold snap (usually in spring) when there are too few adult bees to keep the brood warm. (b) Died due to lack of care for some reason. (c) Disease: Sacbrood, American foulbrood, European foulbrood. Call the Bee Inspector. (d) Pesticide damage

Mummified larvae

Older stage larvae turn white and hard. This is probably Chalkbrood.

Mouldy pollen

Soft, white stuff in pollen cells, probably due to insufficient hive ventilation.

What about mites?

JULY IN THE APIARY

We are beginning to get towards the end of the beekeeping season, unless you are one of those people who take your bees to the heather moors for a late crop. Assuming that you are not, the main crop of honey will be in the supers by about the middle of July. It may well be a little early this year as it has been such a strange year. Once the flowers stop yielding in quantity, it is time to think about extracting your honey, but not in too much of a rush. We seem to generally extract around the beginning of August – which is why I'm including this information this month.

The honey must be 'ripe', that is the water content must be below 20% and preferably around 18% before you consider removing it. There is an instrument called a refractometer which will measure the water content, but it is not an item of equipment that your average beekeeper with only a very small number of colonies will have, and it is quite expensive. An alternative way to test then: If the bees have capped over all the honey you can be sure that it is ripe, but if some is uncapped, lift the frame up, and holding it horizontally over the hive, give it a good sharp shake. If the honey remains in the cells you can be fairly confident that it is safe to extract, if the honey flies out, leave it a little longer. Once you have ascertained that the honey is ripe there are a number of processes involved:

1. Clear the bees from the supers to be removed. The usual method for the beekeeper with one or two hives, is to use Porter bee escapes. Ensure that they are the right way up and always use two, as one can get blocked. Leave them in place for one or two days and the supers will then be empty of bees. There are other methods but space does not allow me to discuss those. A few words of warning: Ensure that the ends of the sprung metal are the distance of a matchstick apart, no more and no less. The supers must be completely bee proof or bees will find their way in and remove your precious honey crop before you can get back to it. If there are several supers being removed from the hive the bees will need somewhere to go and space to stand, so it may be necessary to give them an empty super, below the clearer board, into which they can clear.
2. Remove the supers from the hive(s). A job best done in the evening. Keep them covered and remove quickly to a bee-proof place. Remember they may be heavy so use a wheelbarrow or something similar and take care when lifting.
3. Uncap each frame. Use a sharp knife, which you may dip in very hot water and then dry, an uncapping fork or there are methods using hot air which melts the wax away. Ideally it is best to have a grid of some sort into which the cappings fall and which will allow the honey to drain through.
4. Put the frames into the honey extractor. If the extractor is the tangential type, extract some honey from one side of the frames, stop, take them out and turn them.

Extract the honey from the other side of the frame completely, turn again and finish the first side. This will prevent the comb from being forced out by the pressure of the honey in one side. If the extractor is the radial type this turning is unnecessary. Run the honey through a double sieve into a settling tank with a honey tap on it. The honey can be filtered through a cloth at this stage or this can be postponed until the end processing takes place.

There are a few general points about extracting which should always be borne in mind:

It tends to be a rather sticky process, so a little planning, before starting, pays dividends.

Honey is a food so must be treated hygienically at all times.

Do not put supers of honey directly onto the ground.

Ensure that the extracting room, whether it be a kitchen, utility room or purpose built facility, is cleaned thoroughly before starting the process.

Banish any pets from the room. (This advice may apply equally to partners.)

All extracting equipment i.e. uncapping set-up, extractor, sieves, settling tank must be stainless steel or food-grade plastic, and must be clean.

Honey is hygroscopic. This means that it will readily absorb moisture from the atmosphere, so at all stages, once uncapped, it must be covered and air excluded from it. When storing, fill the containers.

Having extracted the honey there will remain the cappings and the wet supers. The latter should be put back, preferably onto the same hive that they were taken from, over a crown/clearer board with the holes left open. In a few days the bees will have cleaned out the comb and the dry supers can then be removed and stored. The cappings, too, can be returned to the bees for cleaning. I find a Miller type feeder works well. Take out the strip of wood or Perspex, which normally prevents the bees from getting into the syrup, so that the bees can get into the main section, and give the cappings a stir occasionally.

The main problem which can arise during the honey harvest is robbing, which is difficult to stop once it starts, so be extra careful not to attract bees to a hive, not to leave comb exposed, not to leave anything lying about. Anything which attracts bees to a hive can start robbing

A last word: Varroa. During July the numbers of mites can build up to alarming numbers. Therefore, monitor in July so that you can estimate the need for treatment as soon as the honey is removed. If treatment is necessary do not delay, as the winter bees will be developing and must be protected.

MANUKA HONEY DANGEROUS TO HEALTH?

It is important to make a distinction between honey varietals, their effectiveness as a topical antimicrobial and their potential effects when ingested, particularly with regard to honey varietals that contain a high level of methylglyoxal (MGO). Manuka honey which is noted for its powerful antibiotic activity, may contain up to 1000 times the amount of MGO as other non-Manuka honey.

This is a critical distinction as MGO is highly cytotoxic within the human system.

Because MGO is so toxic to cells, rapid detoxification in the body is necessary. Detoxification of MGO is accomplished by a process known as non-enzymatic glycosylation. This process produces advanced glycation end-products (AGEs), the same metabolites that are produced from intracellular oxidative stress due to hyperglycaemia in patients with diabetes. AGEs, when attached to receptors found on cells from the lung, liver, kidney or blood, contribute to age and diabetes-related chronic inflammatory diseases such as atherosclerosis, asthma, arthritis, myocardial infarction, kidney disease, retinopathy, and other conditions of the nervous system. Findings of research published in 2006, indicate that MGO is also associated with the early phases of

insulin resistance. Even short exposures to MGO can lead to an inhibition of insulin-induced signalling. Thus, "methylglyoxal may not only induce the debilitating complications of diabetes but may also contribute to the pathophysiology of diabetes in general." In other words, MGO not only contributes to increased oxidative stress within the cells by its rapid metabolism into AGEs, but also may be one of the causative factors of the diabetes by its inhibition of insulin.

The lesson learned from this is that while all honey is good, not all honey is good for you, especially when consumed. Many honey varietals may contain some MGO, especially honey that has been heated. In fact, some European countries test honey for MGO and ban honey imports that contain it.

Fortunately, the amount of MGO is small or none in most honey varietals. Honey containing MGO such as Manuka honey that is used specifically as a topical agent for treating superficial skin infections, wounds and burns should not be consumed, especially if one is diabetic or has abnormalities with blood sugar metabolism.

from The Honey Revolution - Restoring the Health of Future Generations by Ron Fessenden, MD, MPH and Mike McInnes, MRPS, WorldClassEmpire, LLC (www.thehoneyrevolution.com).

Legislation.

The Bee Diseases and Pests Control (England) (Amendment) Order 2010 came into force on the 25th October. It is mostly about importing queen bees from abroad. The legislation changes the requirements for sending the containers, attendants and packaging to the National Bee Unit. More information can be found on BeeBase or on the web site <http://www.legislation.gov.uk/>. Look for statutory instrument No 2363.

Royalactin, The Queen Making ingredient

From Wikipedia, the free encyclopaedia

The component of royal jelly that causes a bee (Apis mellifera) to develop into a queen appears to be a protein that has been called royalactin. In the experiment, jelly which had been rendered inactive by prolonged storage had a fresh addition of each of the components subject to decay; only jelly laced with royalactin caused larvae which ate it to become queens.

Royalactin also induces similar phenotypical change in the fruitfly (Drosophila melanogaster), marked by increased body size and ovary development.

I recently had a couple of strong colonies in my garden, much to my neighbour's dislike! On a warm day, one of them decided to swarm. Hearing the commotion I grabbed a water sprayer, that I keep for calming bees, and ran down the garden without any protective gear. It was a fairly powerful sprayer with a variable nozzle so I could direct a squirt of water about two metres at the flying bees, also at the hive entrance. It worked instantly as they all went back home. I have read of people using a hose for this job, but you can't leave the hose out all the time. The modern water sprayer works like a charm.

Then, a few days later, I was talking to children about the bees at our observation hive on the Children's Fun Day, with various activities going on in the park just in front of the observation hive. Suddenly there was much activity outside the entrance, which was inaccessible as it was under an upstairs window, and all the bees in the hive started rushing about excitedly. They were going to swarm; and on to hundreds of children! OH DEAR.

My beekeeping has tended to be an experiment into how and why, and have always tended to ignore things I read in books until I've tried it out for myself. Something I did recently was to remove a strong five-frame nucleus box to a new site, but I did it in the middle of a warm day when the flyers were out, just to see the reaction. I left a nuc box with three empty frames on the site for the flyers to move into. They were not amused! Those lost bees spent the next three days buzzing about, looking for a hive to move into, until I closed them up one evening and moved them all to an apiary. There was a good half frame of bees, which meant that about 10% of the colony was out foraging when I took the queen and brood away.

Another thing that has always interested me is this business of only moving bees 3ft. or three miles.

Once I had to move a hive 12ft. so in spring I made a series of 2ft. moves. It was a disaster! Most bees disappeared; but it might have worked in the summer. Also, having moved bees successfully from one side of an apiary to the other, I was asked one day to move a whole apiary across a field, which was about 200yds. This I did one evening in August with the help of a friend, and a wheelbarrow. I left one old frame on the original site to catch any lost bees. The next day there were only a few bees there, as I had thought. They had all realized that their hives had been moved, and reoriented to the new site. So much for the 3ft. or three mile rule.

Maybe my 2ft movements would have been OK in summer, also the whole apiary move during the day would have lost most of the foragers.

The UK news is full of the popularity of beekeeping and the plight of the bees, which of course is a good thing all round especially the rise in the number of people applying for beekeeping courses and joining the BBKA. Also, the average age of beekeepers is dropping – another welcome sign.

Courtesy of Essex Bee Keepers Association and EBEEs.

Three ministers are having lunch one day and complain about sudden infestations of bees in their churches. "I've had these things in my loft and attic all summer," one says. "I've tried everything -- noise, spray, water. Nothing seems to scare them away." "Yes, me too," the second minister says. "I've got hundreds of bees living in my belfry and in the attic. I've even had the place fumigated and they won't go away."

"I had a problem with them, too," the third minister says. "But I baptized all mine and made them members of the church. Haven't seen one back since."

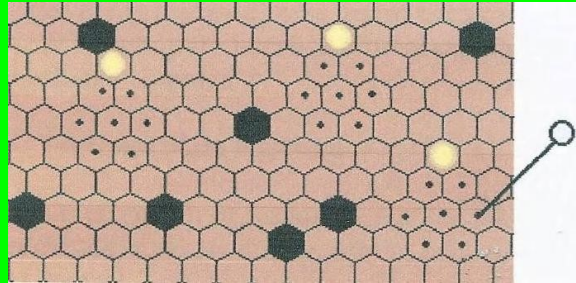
A famed English explorer was invited to a university to tell of his adventures in the African jungle. "Can you imagine," he demanded, "people so primitive that they love to eat the embryo of certain birds, and slices from the belly of certain animals? And grind up grass seed, make it into a paste, burn it over a fire, then smear it with a greasy mess they extract from the mammary fluid of certain other animals and cover it with large amounts of bee spit?"

When the students looked startled by such barbarism, the explorer added softly, "What I've been describing, of course, is a breakfast of bacon and eggs and buttered toast with honey

A Rapid Test for Hygienic Behaviour in Honeybees

There are several methods for testing hygienic behaviour. They are all based on the removal of sealed brood which has been killed behind the capping. The freeze kill is the most accurate and preferred for scientific work. Liquid Nitrogen can be used to freeze kill the brood in a few minutes. Alternatively, a piece of comb can be cut out of the comb and frozen in a freezer. The pin prick method is less accurate but more convenient. It's the easiest method to start checking the hygienic behaviour of bees.

Cappings of newly sealed brood cells are punctured with a fine pin to kill the larva underneath. After 24 hours the number of cells uncapped and cleaned out are counted and recorded. After several replications under different environmental conditions, colonies which have cleaned at least 90% of the cells within 24 hours are considered hygienic. This form of hygienic behaviour has been shown to be a significant factor in resistance to Varroa as well as AFB and especially Chalkbrood.



- 1) Mark a cell directly above three groups of seven newly sealed cells. Use quick drying paint or marker ink. Also mark the top bar.
 - 2) Kill all twenty-one larvae by pricking them with a pin through the cappings. Use the same hole to prick the larva several times at different angles.
 - 3) Twenty four hours later count how many cells are completely uncapped and cleaned out. Colonies which have cleaned 19 cells (90%) are considered hygienic.
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Stop press—new worker-bee role: roof inspector!

How (not) to recycle beeswax foundation—a step-by-step guide.

from Diary of a nervous beekeeper:

1. Leave frames with mouldy old foundation, stores and insect bodies festering in crate on garage floor.
2. Trip over crate at regular intervals.
3. Chop up wax foundation and put into black bin bag. Leave on garage floor.
4. Trip over bag at regular intervals.
5. Look up price of wax melters sold by beekeeping suppliers. Scoff.
6. Ask wife for large old pan in which to melt foundation.
7. Turn up nose at large old pan offered.
8. Look up price of large new pans sold by Argos and Tesco's. Scoff.
9. Place wanted ad for large old pan on Freecycle. Wait.
10. ...And wait.



When it looks like this :You know it is time to throw
It away

11. Accept wife's offer of large old pan.
12. Remove handful of sticky, furry mess that was once foundation from black bin bags.
13. Drip contents over garage floor.
14. Drip contents over utility room floor.
15. Drip contents over kitchen floor.
16. Boil kettle. Pour hot water into pan.
Tip waxy mess into pan. Stir.
17. Close kitchen door. Open back door.
Open windows. Switch on extractor fan. Turn up extractor fan.
18. Tell curious offspring that you're recycling wax.
19. Tell curious offspring not to make a fuss about the smell.
20. Tell curious offspring not to tell Mum.
21. Bribe offspring with chocolate.
22. Add more foundation to pan.
23. Keep stirring.
24. Turn up heat under pan. Turn down heat under pan. Re-examine contents of bin bag in garage.
25. Place bin bag in boot of car to take to tip.
26. Pour contents of pan into large hole in back garden.
Buy brand new foundation

Beekeeping tips—Combining

Having artificially swarmed a colony the time arrives when the beekeeper has to decide whether to retain both colonies or to combine the two. If you do not need to make increase then combining is the option to take. First of all the old queen must be removed, either being killed, given away to another beekeeper or retained for use elsewhere such as a breeding queen.

The combining option requires the placing of a queen excluder, together with a sheet of newspaper under it, on top of the supers that are above the old queen's b.c., and then placing the new queen's b.c. above it. (See Bee Tips no.5; that is to say, place B on top of the supers above A). Make a few slits (not holes) in the newspaper once the queen excluder is in position. This enables the bees in the supers to make contact with those in the top b.c. slowly so that fighting does not occur before the scents of the two boxes have mingled. After a day or two shredded newspaper will appear outside the combined hives; and a week later the two brood chambers can be rationalised into one under the supers. That is to say, up to eleven frames of brood in the remaining brood chamber A. Any surplus brood frames can be added, after shaking off the bees, to other colonies to boost them; making sure there are enough bees in the receiving colony to keep the brood warm.

A Sad end



A sad end to a dedicated worker
But I guess a new beginning for some spiders
Nature can be hard sometimes but that life I guess

Willie Smith

is recognised as one of Scotland's greatest ever beekeepers. He developed the Smith hive which is still sold today and his reputation as a great innovator lives on. I was delighted to discover the following article first published in the SBA magazine in February 1963, to which Willie Robson, William Selby Robson's son, who runs Chain Bridge Honey farm in Northumberland, has added a valuable and very interesting insight.

William Selby Robson asks a few Vital Questions (From the Scottish Beekeeper, February 1963.)

Mr WS Robson of the East of Scotland College of Agriculture was along in Dundee speaking speaking to the East of Scotland Beekeepers' Association on the subject of Heather Honey Production in the Borders" on Monday, January 21. On this occasion he was able to add a novel twist into his talk. He had with him a tape recorder which contained a conversation between Mr Willie Smith of Innerleithen and himself.

To start off, Mr Robson gave a resume of what the talk was all about. The talk would reveal Mr Smith's honey producing methods, and how it was that this Scottish bee farmer depended on his heather crop to make a living.

He had done so for nearly 40 years. So, naturally, from the beginning of the season his aim was to have his stocks right at the peak of their strength to take advantage of the heather in August. Mr Smith, of course, obtained a fair amount of clover, but it was the money made at the heather that made his beekeeping worthwhile. All stocks were wintered on double brood chambers, with the top crate filled with honey. That ensured the bees were never short of stores and would come out strong in the spring. And a wee note in passing. At one time Mr Smith took off his food chamber before going to the heather, but very often these crates were not properly sealed and when these crates were put on for wintering they frequently caused dysentery in the hives during winter. Now Mr Smith keeps the food chambers on at the heather. That is a point beginners might note. I know lost of keepers worry over this same food chamber. Back to spring now. When nectar begins to come in Mr Smith puts on a super without the queen excluder. This is to make sure the bees will go right into the super and not clog the brood chamber. As soon as there is brood in the centre combs, the queen is put below and the queen excluder put on. Three weeks before going to the heather the queen is put in the lower chamber and the queen excluder put on under the second chamber. Two chambers are sent to the heather over the brood chambers. Now let's hear some of the conversation on the tape recorder.

Robson – Mr Smith, what would you consider to be the most important factors in successful beekeeping?

Smith – Firstly, one must have a deep interest in the bees themselves. Secondly, a good strain of bee. Thirdly, a good district for honey production. Fourthly, standard equipment of simple pattern.

Robson – Can you tell us something about your Smith hive?

Smith – I developed this hive from a cottage hive which had 15 and-a-half inch top bars and bottom bee spacing. The original hive had plinths, but after importing Langstroth hives from the USA I saw that there was no need for plinths and I adopted the idea of top bee spacing because one can break the joint and lift off the chamber without dislodging the frames below. The floorboard extends one and-a-half inch in front, and the entrance is three eighths of an inch deep permanently.

Robson – You have also designed a number of appliances?

Smith – Yes, I designed a cutter for cutting comb honey. It was first used to deal with sections that were not fully sealed. When I found there was a demand for this type of honey I began to produce it in shallow frames and used the wire for cutting the combs into chunks of about half-a-pound in weight. The heather scraper was invented during the war when wax foundation was almost unobtainable. When the honey was scraped from the mid-rib, the bees quickly built the comb out during the flow.

Robson – Could you tell us something of your methods?

Smith – Every beekeeper's year commences in the autumn. I tried the double brood chamber system 35 years ago and found it successful. The hives should be protected from the prevailing winds. The site should be open to the south so that the hives get the winter sun. The stocks should have upward ventilation.

Robson – You rear a number of queens each year?

Smith – Most of my queens are reared by the bees under the supersedure impulse.

Robson – How important do you consider your strain of bees to be?

Smith – The strain of bee and method have been developed side by side. My aim is to build up very powerful colonies and keep them together so that they will be able to take advantage of the main honey flows as they come along. The results of bees drifting on the heather were discussed and the theory that strong colonies entice bees to join them was expressed. Three-year-old heather, thought Mr Robson, gave the best results, while heather over five years old was of little use to the bees.

Let-alone beekeeping' Does it work?

I have to admit that a little bit of 'let alone bee keeping' found its way into the management of my apiary during that rather critical month—May - and I must say that it doesn't pay. The 'condition' was forced on me having been somewhat immobilised for a while. One can procrastinate for one reason or another, thinking/hoping that nothing untoward will take place - but one can be caught out. I was, I lost a swarm, by about ten minutes - it hurt! I was unable to adhere to my usual eight day checks, going a day or two over; could blame the weather, so much strong wind, it was no more than myself at fault. To know what's going on between about the last week in April and early July, eight-nine day checks have to be an integral part of management, looking for, in the main, swarming preparations - then responding to such. Then there was the taking of the Spring honey. This honey, for most of us, has a good percentage of OSR in the mix and, as we are all aware, such honey can granulate very quickly. The golden rule for me regarding Spring honey is to have it off the hive and extracted by about the 25th May - there is normally hardly a yellow flower to be seen on the crop at this time and the flow was finished. However, this year, for some reason, some fields roundabout persisted in carrying some flower for a further fortnight or so - this in the Autumn-sown crop. Well, I referred removing the supers at the usual time, letting them remain on the hives for another day, then another day and so on, so that when I did remove them quite a percentage had granulated. It has left me with a lot of perfectly capped, wide spaced combs which I'm unable to extract; also depriving me of very useful drawn comb for the hoped for Summer honey. The above two examples I can only call a double whammy. To prevent such, timeliness matters. Then there were the four nucs made up utilizing queen cells from the aforementioned colony - the one from which I'd lost a swarm (it was a colony that I'd intended to raise queens from). Everything about them seemed to be nicely balanced, pollen going in at about the time the queens would have hatched then, as often happens, pollen didn't seem to be going in so freely but plenty of activity giving the impression that all was well. Fourteen days after the queens had emerged, I looked to note progress - no eggs. Looked after twenty days—still no eggs, thus adding 'what's happening' to my beekeeping thoughts. I had, by this time, more or less given up on them and was about to unite them making two from the four and to buy two queens - which I did. I ordered these from Michael Collier on the 5th June, to be collected in the evening of the 6th June. Fortuitously I looked at these nucs on the afternoon of the 6th - it happened to be relatively calm and warm just then, and to my delight and slight bewilderment there were nice batches of eggs in all four. It must have been a full twentytwo days after they had emerged from their cells - almost double the length of time one usually thinks this stage takes. What caused the delay? Can't truly say, but throughout this twenty or so days the weather was very windy, often wet and not too warm. Regarding the two Michael Collier queens - as there is always an element of risk when introducing both queens I always make up nucs to receive them. When they have settled and have nice patches of their own brood I then introduce them along with the nucleus. It may seem a bit long winded and over cautious but it is almost foolproof that way. It is now the 12th June, late afternoon, cool, windy and been raining from 6.30 am, but I have six current years' mated queens on hand—plenty to 'play' with - to re-queen, deal with any colony that builds queen cells and any other contingencies.

Novice's Note: The Learning Curve.

I have had my first sting, attended a few hive openings. I now have a smock, a hood and a hive tool, so I have begun the journey. I went to my first Apiary Meeting today. Waiting for the business to begin, I got my first shock of the day. Hamish had his supplier's stand there. How much stuff you need! Bee escapes, frame clips, foundation, feeders, medicines. Hive bottoms, tops, dividers, forks and combs. A shopful of bits and pieces. I do know what most of them are for. They are all very simple, reasonable, essential tools and equipment. As soon as I have a single bee, I will need the lot. This is a new cause of deep anxiety. I see that I may well be obliged to part with a good few sheaves of cash to set up my bees in appropriate luxury. And I will have nothing but the best for my team. But even with the best of resourcing, when my first colony arrives, it seems that it will be beset with trouble: starvation seems to be always hovering near. Frightful diseases and predators lurk around every corner and one of the most unattractive parasites in the lexicon is resident in the house. Today I learned more than I would have liked to know about varroa destructor. There is nothing at all about it that I can bring myself to admire. A vampire without pity, nor with Peter Cushing's style, it lurks in drone cells and mates with its sisters, three generations in one cell. It spreads viruses too. It looks like a deformed spider. Who could love such a creature? The world of the bee is full of alien life stories. What about the drone of *apis m* itself? He has no role to play except copulation. With no father, half a set of chromosomes, his sole driving force is sex, always destined to be a crushing disappointment when or if the time comes. And if his partner doesn't tear him to pieces his sisters will destroy him.

Deeply chilling stories.

And worst of all, just as the drones are gone, and his murderous sisters, their blood sucked dry and dropping dead from an overweening work ethic, a naked ape steps up and steals the winter stores. So much for sipping nectar

Discovery of new honey bee sub species in China.

A new *Apis* sub species has been reported from Hunan Province in the south west of China.

Doctor Won Hung Lo from the Chinese Third World Institute of Terrestrial Science and Professor Prapsil Nokobolokov from the Russian Federation of Organic Land Sciences have discovered a sub species of *Apis mellifera*, they have named *A.M. sinensis*.

The dark-bodied bee is about one third larger than *A. M. mellifera* and lives at a higher altitude. Unusually, its honey storage combs lie horizontally rather than vertically and the bee has feet adapted with a small plate behind the hook that terminates most bees' feet. This spreads the weight of the bee when it walks across the tops of the combs and prevents it sinking into the honey filled horizontal combs.

Research is being undertaken to see if it possible to replace the horizontal comb with jars so that the bees can fill them directly, thus avoiding the need for extraction.

Diagnostic Radio-entomology A Presentation at UCS, Ipswich, by Mark Greco.

Mark Greco is Australian born and has spent 25 years as a diagnostic radiographer at The University of Western Sydney-Hawkesbury. He has recently been researching in Bern, and is on his way to Bath University for several months. He has developed an amazing new way of looking inside bees and bees' nests. Using x-ray computerised tomography he produces 3D images which can be viewed at any cross-section. This means he can look at insects non-invasively.

He is a beekeeper at home, of Australian stingless bees (*Trigona carbonaria*), which are used as pollinators in glass houses. These bees are difficult to study as they are kept in small box hives which have to be taken apart to inspect. Splitting the boxes breaks the comb, spreads honey everywhere and inevitably kills bees when put together again. Mark found it was far less invasive to use a CT scanner to scan the whole hive. This was less disruptive and gave a more reliable picture.

When using this technique to study *Apis mellifera* in winter clusters, it became apparent that at low temperatures (-20°C) a cluster is not rugby-ball shaped as many previously thought, but a cone, point down, thus using heat as efficiently as possible. Also, the queen is not central but continually on the move. Also that honey is stored in different locations for different sugar concentrations and may also be affected by agrochemicals.

There is much more to learn from this. It is now possible to measure with great accuracy, the amounts of pollen, honey, wax, larval cells, etc., to determine the population point a colony can recover from and what level of humidity creates ideal conditions for virus infections. The dose of radiation for one scan is minimal and does not affect the bees.

THE LAST WORD.

'If a death occurs in a family the hives must be draped with the insignia of mourning, and at night the bees are woke up by sharply rapping the hives with the knuckles, and each is then informed of the event. The sound caused by the humming of the bees inside the

A little late to mention but

It is not necessary to know a great deal about the ins and outs of the bee to keep bees and produce honey. All too often I find that so many people bother to learn the last things first. One thing is essential and is to learn correctly how to handle bees. Of course, as with so many crafts, handling bees is something which one has to learn rather than be taught. The relaxed confidence of the good beekeeper is something that only comes with experience. Experience is only gained by constantly opening and closing stocked hives and it is not at all easy for the one hive man to do the job sufficiently often to become fully adept in a short while. There are however, a few dos and don'ts which will help a beginner to learn more quickly. The best time - according to some old hands, the only time - to open a stocked hive is when the bees are flying freely and nectar is coming in. Before going to work on the bees take a look at the drinking place. I leave some old wax etc. if the bees are not on it, they are collecting pollen and nectar. If there are more bees there than usual, one already knows a lot. Nectar is scarce and scout bees will quickly find exposed stores and excite the bees in the hive being examined to repel robbers; the consequence will be an inclination to use the stings. Many bees around the watering place denotes that the hive climate is too dry. A careless examination of brood at such a time is detrimental to the healthful state of the larvae. Though nothing at all may ever become apparent to the unwary, the eventful foraging life of the adult bees will be shortened and the sure foundations for swarming are well laid. Having ascertained that climatic conditions are favourable, next take a look at the hive entrance. If the bees are looking outwards be sure that all is not well. While examination of the stock is almost essential be sure that it will not be made in comfort. Ideal external conditions are when bees are freely gathering nectar and those on alighting board, or just inside the entrance face inwards and are fanning and exposing the scent gland. Next get to work! I avoid puffing smoke into the entrance of the hive. First gently remove the roof and top covers then puff just a little smoke under the cover of the crown board. A little smoke through the crown board is enough. There may be no need to look in supers so there is no need to uncover them further. If it is only the brood combs that one wants to see, push the hive tool into one corner below the lowest super and above the queen excluder. When just a small crack has been made give another puff of smoke; loosen the supers all round, giving a little more smoke each time a further crack is made. When the supers are free of the excluder lift them off. This is done with a twist, raising the supers at one side first. So many people raise the supers first at the side nearest the manipulator. That is wrong. Raise the side farthest away so that any flying bees fly away from and not towards the manipulator. After the hive is opened work quickly and gently. Smoke should only be used to keep the bees below the top-bars of the frames. With confidence this is best done with the bare hands. Lay the hands, palms down, on top of the frames and the bees will run away from them without any rise in temperament. Bees carefully handled are less prone to swarm than those handled roughly, and are better tempered. It is a fact that in two lots of ten hives of bees, if one ten are examined every ten days for queen cells eight will prepare them sometime in the season. If the other ten are not examined below the top of the top super, only two of the ten will swarm. This is on the average of seasons and it is generally in the poor seasons when these two do swarm, so it does not matter. A golden rule I work with is simple - before ever opening up any hive, know exactly why it is to be opened up. Know just what is to be done in any eventuality and be prepared to do it. But first choose your time.

Are my bees bad-tempered?

Another aspect of modern beekeeping is dealing with colonies that are bad-tempered. Working with bad-tempered colonies is not enjoyable and we all want our beekeeping to be enjoyable. Dealing with bad-tempered colonies is another aspect of socially responsible beekeeping. Again, if you are unsure how to deal with a bad-tempered colony (and you have read your books and perhaps become even more confused about what to do) then

attend the relevant training provided by your branch and ask for help. I rank colonies by level of aggressiveness:

Level 1: so well-tempered that it is possible to inspect such a colony without smoke. In general the bees are calm.

Level 2: when the hive is opened the bees rise

to look and defend and some fly up and many might run. Some smoking is needed, mainly to remove bees from ends of frames when lifting them to inspect and subsequently to replace the queen excluder etc. Bees fly around one's head but are unlikely to come to the face net.

Level 3: smoking is needed. Bees fly to the face net and will sting if one's chin touches the net. Some bees are likely to follow a short distance

Level 4: bees are clearly aggressive with many settling on the face net and release alarm pheromone, frequent smoking is a necessity. Some bees will follow a good distance.

Level 5: colonies are definitely unpleasant most times and one is always apprehensive of opening such a colony. It follows that Levels 4 and 5 should be dealt with at the earliest opportunity.

One should be aiming to have colonies that are Levels 1 and 2.

Bee-ware of Unknown Swarms!

Recently in mid-May, I attempted to collect a swarm of bees that had draped itself around two of my apiary fence posts within a few feet of my hives. During the process, the swarm took to the air and started to bombard my hives. It was quite a sight with guard bees at all the hive entrances on red alert! At which point, I decided there was nothing I could do until the swarm settled again or took itself off. It was then I realised my bee suit was splattered all over with yellow and brown droppings like diarrhoea. I found all my hives were splattered too. A quick phone call with my beekeeping relative confirmed what I was thinking – this was a swarm with a bad case of Nosema! As my bees had all been checked and pronounced clear of Nosema only a few weeks previously, I certainly did not want to accommodate any sick visitors; even well out of range! I followed the BBKA website's recommendation to spray a soap solution on to unwanted bees; followed by blowtorching for good measure! Then started the job of blowtorching the exterior of all my hives; cleaning equipment, clothing etc! The moral of the tale bears witness to the fact that a swarm should never be accommodated within range of one's own hives until they have had a full health check; also there should be a compulsory requirement for all beekeepers to check regularly for Nosema! The final twist to this tale was that our dog was somewhat 'off colour' a few days later – the cause was the evidence produced; remnants of charred bees! Hopefully Nosema hasn't crossed the species barrier yet!

What do the Bees Do?

"Warm way or Cold Way?" is one of the first questions we have to address when we set up a hive (warm way is with the combs parallel to the entrance, cold way is with them at right angles to it, running front to back). Well, what do the Bees say?

Firstly, you'll find that every wild colony draws its combs "cold way" unless there is some very good reason why not. I don't know why, they just do. Secondly, put your combs in "warm way" and not only will they draw patches in the centres, they are (in my experience) more likely to draw brace-comb between the combs.

So how does a feral colony develop its combs? – They start with a single comb in the centre, top of the space and grow it to about the size of your hand. Then they start 2 small combs one beespace either side of the first. When the centre comb has reached about 8" deep or is limited by the height of the space they are in, the combs will be spaced over a lateral distance of about 8" and their bottom edges all lie on an 8" radius from the central point. The whole colony expands into a hemisphere as deep as it is wide, as it is long.

Trapping wasps in the apiary.

Placing wasp traps such as jars containing a mixture of water, a teaspoon of jam and some wine or beer dregs will help. Cover the jar aperture with a lid or paper cap and punch a hole in it about the diameter of a pencil. Plum jam seems to be best! **(Do not use honey, sugar syrup or Ambrosia)**. Wasps will go to these traps as an easier option than bee hives and drown.

Assisting the bee colony.

Reduce the hive entrance to make it easier for the bees to defend the colony.

With severe problems cut the entrance to a single bee-way. A small tube entrance can be easier for bees to defend. Closing open mesh floors with the floor insert will also help.

Controlling wasp nests in the environment.

Destroying nests in the spring and summer is clearly a good method of reducing the overall wasp population and reducing robbing problems; so ensuring no wasps' nests are close to your apiary helps. However destruction of wasp colonies on a wide scale is disadvantageous to the environment.

Further details:

<https://secure.fera.defra.gov.uk/beebase/downloadNews.cfm?id=112>

NOSEMA AND DYSENTERY

Bailey's article about the association between dysentery and Nosema was originally published in 1967, not 1980 as quoted, ie. it was published nearly 50 years ago and, needless to say, things have moved on a bit since then. When quoting from Prof. Fries' work, it would have been better to have mentioned what he said in his very erudite lecture at the Spring Convention this year rather than what was published 15 years ago, albeit not 50 years.

Dysentery is the manifestation of the over-wintering bees defaecating in the hives on a gross scale. But it is the end of the scale. Defaecation in the hive can occur without causing dysentery; the bees will often clear up the mess and remove the evidence. We all know that dysentery is associated with the inappropriate feeding of the bees, but it is also known that Nosema infection in a colony can exacerbate the conditions resulting in dysentery.

When a honeybee becomes infected with Nosema the organism multiplies in the gut lining of the bee at a remarkable rate and within days millions of the Nosema spores can be found in the gut and the lining cells in which the Nosema multiplies is heavily infected.

Nosema sp. infections cause a reduction in the life expectancy of the worker bee of 30% or more and this results in heavy over-wintering losses and weak colonies emerging in the spring. Surviving colonies are weakened. The worker bees which do survive have a reduced (ie. protracted) rate of behavioural development so that the normal transitions from comb cleaning to larval feeding and then wax production etc. are delayed. This slowing in behavioural development presumably reflects the reduced availability of the necessary products of digestion from the bees' guts, particularly the products of protein digestion.

Nosema has long been known to be associated with Black Queen Cell virus and Kashmiri virus infections. More recently it has become suspected that the infection of the worker bees' gut by Nosema predisposes to the gut lining becoming a portal of entry for other viruses. Therefore it is not surprising that Nosema infection is associated with colonies dying during the winter. The queen, being an over-wintering bee, is also usually infected and the infection causes her to lay fewer

eggs and the eggs which she does lay to have reduced viability. She will also be suffering from reduced availability of royal jelly from the diseased worker bees.

What with one thing and another it is not surprising that Nosema is associated with poor colony build-up in the Spring in addition to winter losses.

The effect of the Nosema infection on the digestive and absorptive functions of the bee's gut predisposes to infected bees having to defaecate in the hive when they are confined there during the winter months.

Whether dysentery occurs is a matter of degree and the result of multiple factors. However, one thing is certain, infected worker bees shed Nosema spores when they defaecate and uninfected workers become infected when they clear up the mess in the hive. That is how Nosema cross-infection occurs!

Prof. Fries' recent DNA studies seem to indicate that Nosema ceranae, although now present in Northern European countries including the UK, is a more important pathogen in the Mediterranean countries. Nosema apis, in his opinion remains the dominant form in the Northern countries.

The points made about the "non-relationship" between Nosema and dysentery in BEEMASTER are not only irrelevant today but irresponsible if they result in inexperienced beekeepers getting the wrong message.

Nosema is a very nasty and complicated bee disease but its presence in a colony is identifiable and beekeepers must make sure that they carefully look for it in their bees and treat it effectively when they find it.

For people buying bees, and this applies particularly to beginners and the relatively inexperienced, please make sure the bees you buy are certificated by the vendor as being healthy and have been examined for Varroa, brood diseases and adult bee diseases which will, of course, include Nosema. Bees are now very expensive. Certification is no more than is now recommended by FERA and the National Bee Unit and this policy is supported by the BBKA. If people buying bees do not do this, I am afraid that they deserve what they get (or rather, lose).

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UK Honey Labelling Regulations

*Below is our simple advice on honey labelling.
For more detailed information - go to the website
of the Food Standards Agency. www.food.gov.uk*

- 1. The Word "HONEY" is required.*
- 2. The weight must be on the label - we will ensure it is the legal size and format.*
- 3. You can specify the area where the honey is produced. For example, Lincolnshire, Forest of Dean, Scottish Borders.*
- 4. You can specify the type of honey. For example, Heather, Borage. The honey must be at least 75% of that particular type.*
- 5. If you are selling the honey, you must have your name and address on the label. It does not need to be complete but you should be able to be found from the information.*
- 6. If you are selling the honey through a third party, you must have a lot number.*
- 7. New for 2003 You must have a best before date on the jar. We suggest 2-5 years from now.*
- 8. New for 2003 You must have a country of origin on the jar. For example - Produce of England, Product of Scotland, Harvested in Wales. Adding the country to the end of your address is not acceptable.*

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