

Bee Talk

Newsletter of The Blackburn and East Lancashire Branch of
The Lancashire & North West Beekeepers Association
March 2010 www.blackburnbeekeepers.com Registered Charity

COMMITTEE MEMBERS CONTACT DETAILS

MEMBER	POST	PHONE	EMAIL ADDRESS
Brian Jackson	Chairman	01535 634503	bmjackson1@tiscali.co.uk
Bill Ainsworth	Vice Chair	01282 614015	billscotroad@o2.co.uk
John Zamorski	Hon. Sec	01200 427661	john@johnzamorski.wanadoo.co.uk
Philip Ainsworth	Hon. Treas.	0771 3161480	philipainsworth@btconnect.com
Caroline Coughlin	Honey Show Sec	07702 824920	caroline.coughlin@hotmail.co.uk
David Rayner	Librarian	01200 426898	davidrayner1@yahoo.co.uk
David Rayner	Education Officer	01200 426898	davidrayner1@yahoo.co.uk
Pauline Roberts	Programme Sec.	01282 438615	paulpaulineroberts@talktalk.net
Robert Bradshaw	Member	01254 261216	bob.bradshaw@sky.com
David Bush	Member	01200 428152	david.bush2@talktalk.net
Ron Dempster	Member	01282 699881	swicks580@btinternet.com
Joe Wrigley	Member	01200 447621	no e-mail address
Annette Hawkins	Member	01282 859745	nettie_hawkins71@yahoo.co.uk
John Wilson	Member	01254 886120	john@wilson6457.freemove.co.uk
Karen Ramsbottom	Member	01254722514	john.rammy@ntlworld.com
Victoria Winstanley	Member	01282701692	vicicoaffee@yahoo.co.uk
Michael Birt	Web Master/Beetalk Editor		birt_192@hotmail.com
DELEGATES TO THE CENTRAL COUNCIL			
John Zamorski	Hon. Sec	01200 427661	john@johnzamorski.wanadoo.co.uk
Philip Ainsworth	Hon. Treas.	0771 3161480	email philipainsworth@btconnect.com

MEMBERS SERVICES

Bayvoral - Apiguard - Oxalic Acid - Thymol -
Fumidi'B'

These Chemicals for treating bees can be obtained from:
Bill Ainsworth. Phone 01282 614015
(Bill will have them available at beekeeper's meetings)

LIBRARY

There is an extensive range of books on all
aspects of beekeeping that can be borrowed
from the Association library.
Please contact
David Rayner on 01200 426898

MEMBERSHIP

REGISTERED MEMBER. Subscription will be £18.00

PARTNER MEMBER. This is for partners of registered members living in the same household wishing to keep bees and includes full insurance cover. However they will not receive their own copy of BBKA News. Subscription will be £11.00

COUNTRY MEMBER. This is for people who do not keep bees, but wish to receive BBKA News and attend branch meetings etc. This class of member does not include any insurance cover. Subscription will be £10.00

ASSOCIATE MEMBER. A member of our branch only, without any benefits from the BBKA or County. Subscription will be £9.00

IMPORTANT INSURANCE NOTICE

Under the new constitution, prompt payment is essential. Basically, payment will be required by the 31 December each year as insurance is now based on the current years membership. New and lapsed members insurance cover will not start until six weeks after paying their subscription.

For insurance purposes subs will need to be promptly, otherwise you will not have third party insurance

SUBS SHOULD BE PAID TO PHILIP AINSWORTH HON. TREAS.9 Duchess Street Darwen Blackburn BB3 0QQ
Phone 07713161480

Association Swarm Catchers.

A small charge is made to collect swarms to cover expenses which is up to the discretion of the individual collector

BLACKBURN, DARWEN, ACCRINGTON, MELLOR, PRESTON, ROSSENDALE AREAS

Bob Fulton

Telephone 01254-772780

E Mail:::: home.brew@talktalk.net

CLITHEROE AND SURROUNDING AREAS

John Zamorski

Telephone 01200-427661

E Mail::::: john@johnzamorski.wanadoo.co.uk

BURNLEY, NELSON AND SURROUNDING AREAS

Bill Ainsworth

Telephone 01282-614015

E Mail::::: billscotroad@o2.co.uk

Please feel free to ring any of the above in your area and they will do their best to sort out the problem.

Please bear in mind that the swarm collectors will only deal with honey bee swarms and will not deal with bumble-bee or wasp problems.

Minutes of Committee Meeting Sunday 17th January 2010
West Bradford village Hall 2.00pm

1. Members present:- P.Ainsworth,W.Ainsworth,R.Bradshaw,D.Bush,C.Coughlin,R.Dempster,A.Hawkins,K.Ramsbottom,D.Rayner,P.Roberts,V.Winstanley,J.Zamorski
Apologies:- B.Jackson
2. The minutes of the meeting held on 4th November were taken as read and there
Were no matters arising
3. The programme for 2010 was discussed and the hiring of speakers decided.
4. Mentors for beginners was discussed. David Rayner would compile a list of everyone who was
willing to help and these people would be allocated a number of beginners. Assistance and advice
would be by telephone but in extreme circumstance then home visits would be arranged.
5. Dates for the rest of this years committee meetings were confirmed as 18th April,20th June and 15th
August.
6. During any other business, David Rayner requested that a number of books be purchased to
assist members who wanted to take the Modules. The sum of £160 was required to cover the cost
of these books. This was passed by the committee. There was also some discussion on the
annual dinner. Up to now no member has been turned down when booking but with the increase in
membership growing it was felt that we may have to look at a different venue next year if we are
unable to accept all bookings this year.
7. There being no further business the meeting closed at 1355hrs.

FUTURE BRANCH MEETINGS

DATE	TIME	VENUE	ORGANISER/CONTACT
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Reminder to all committee members. Meetings marked * are also committee meetings which will start one hour before the main meeting.

17/3/2010	7pm	<i>Hill Crest Tea Rooms BB7 9PQ.</i>	<i>John Zamorski 01200-427661</i>
<i>Annual Dinner Contact John Zamorski to arrange a booking etc</i>			

18/4/2010	2pm	<i>Mr and Mrs Joe Wrigley, Holden Clough. BB7 4EP</i>	<i>Question and Answers Time with Pauline Roberts</i>
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16/5/2010	2pm	<i>Colne Masonic Hall, Colne BB8 0BS</i>	<i>Ian Molyneaux Looking for disease using a microscope</i>
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We will, where possible open hives so bring along your protective clothing just in case.

WHAT'S IN THE HONEY POT?



A few snippets of news and information that might be of interest

Editorial March 2010

Well, what a winter, they say the coldest for 30 years, lots of snow but it was the ice and cold that was far worse than the snow.

A very strange year indeed with reports of members bees flying on New Years day and other members not seeing their bees at all until February. I guess it's like Bill Ainsworth said on his blog at the end of last year, that you have done all you can and its now up to the nature to take its course. Lets hope that you fed your bees in the autumn and also gave them some feed in the winter and early spring in the form of some Fondant, so that with good management and luck by now your bees will be flying, your queen laying and away we go on another season.

At the committee meeting on the 17th of January, (see minutes above) There was some discussion about beginners and mentors being assigned to a number of beginners. If you are a new beekeeper make sure that you get your mentor and whatever he or she tells you take notice as there is nothing worse for a mentor to explain everything only to have a telephone call asking for the information all over again. Remember that they have their own bees to take care of along with maybe 3 or 4 other novices of which can be quite a task.

I have been thinking very seriously about the future of Beetalk and the way it is all going. If you look at other associations magazines they are packed with information on what is going on in their branch along with national matters and international matters relating to our hobby. As far as the national and international material to be included, its just a matter of picking things up from other associations and the internet etc and putting them into our Beetalk. When it comes to our branch matters and things that are relevant to our association it becomes a different matter as its the information from the members that is needed. This is not happening at all which brings in to question as to why carry on with it. Beetalk is the magazine of the association and all I do is gather articles and put them in the best I can, apart from that it really is nothing to do with me, its to do with you, the members, who I am afraid do not seem to be at all interested. An association is run for the members, for the members to participate in and not just to pay their subs so as they can say we are members of this and that with no input whatsoever. I have also noticed its the same with the blog site of Bill Ainsworth which is an excellent site where anyone can comment. Does he get many comments, hardly any. All I am saying is as far as Beetalk is concerned, I will do my bit if you will do yours or as the old saying goes, "if you can't lick them, Join them. SO COME ON ARTICLES PLEASE.

Hope the winter as not been to unkind to you and that the coming season is kinder than the last one.

Michael

March to June

Things that you should be doing with your bees

December, January and February

There is very little to say with regarding what to do over the long winter months. But its not a time to forget things so find below a rough idea of what you should be doing.

By December all your work with the bees should now be finished as only in early December, and that depends on the weather can you treat the bees with the last task of the season which is to apply Oxalic Acid to knock down any Varroa mites that are overwintering with the bees.

All the jobs will have to be sorted out over the winter by which I mean all equipment needs to be cleaned, repaired and made ready for the coming spring. The supers and spare brood boxes should be all stored away in a cold dry place so as to keep out any mould and wax moth.

Now is the time for you beginners to do a bit of reading up on subjects like swarm control, stock increasing and if you are inclined to take the BBKA basic exams and modules a good time to read up is now while its all quiet. I think there are a few beginners courses going on, so maybe joining a course would also be a good idea. If you contact Dave Rayner the education officer I am sure he can put you on the right path.

All in all, winter is the time of preparation.

A good idea also is to make up some Fondant ready for the bees to take should they need it, has the queen will start to lay as soon as any warmth in the weather comes around. Also have some syrup on hand with a bit of Thymol mixed in so that you have a spring feed for the bees when they are flying. Association meeting are now held throughout the winter months and are also well worth attending

The above information is only a rough guide and suggestions of what things should be done. Beginners who are in doubt should contact their mentors who will only be to glad to help.

Meeting Sunday 17th January 2010
West Bradford village Hall 2.00pm

Another very well attended Meeting with an attendance of about 40 people. John Zamorski gave the presentation on candle making with moulds. John showed us all that bee keeping was more than honey production, using all the by products to make the most wonderful usable and decorative candles. All his equipment was rather reminiscent of the Heath Robinson school of thought, and very ingenious it was too. John showed everyone various ways to make very cheap moulds for this method of melted wax candles. You have to have a good imagination to get the results you want to make wax sculptures and when he explained how he went about this process it proved to be an eye opener, blackbird eggs using a plum tomato as a mould - now that takes some beating. Caroline then demonstrated the rolled candle method which is by far the easier option but which most people could make a good stab of and produce a very nice product. All credit to Caroline as she did not know she was going to give the demonstration and did so with skill and aplomb. Everyone present, if they wanted got to try this method and there were 30 takers making some really good efforts. Everyone present seem to have really enjoyed the workshop as we had lots of compliments as they left. Bill gave the expression of thanks and hoped we would have a similar attendance at the next meeting.

Pauline Roberts.



ASK BOB !

All of us get stuck at some time or another and need a bit of information or advice about our bees or beekeeping in General. Bob Fulton who is a very experienced beekeeper is more than willing to help you in any way he can.

Give him ring; go and see him at his apiary .

Bob ordered twelve new Black Queens for 2009 and says he is happy for anyone to take their new virgin queens (In nucs) to his apiary for mating.

*Bob lives at The Mound, Pole Lane,
Darwen, Blackburn BB3 3LD and you can
contact him by phone on 01254 772780*

Meeting Sunday 21st February 2010
West Bradford village Hall 2.00pm

Around 30 members were present.

The Chairman opened the meeting and gave the apologies for J.Zamorski and David Bush hoping that they were enjoying their trip on the Nile (Egypt). There were no other apologies mentioned.

He then read out a notice left by the Secretary, with details of

- a. The Lancashire Convention. b. Healthy Bee Day
- c. The loss of bees through stealing (all these were on the web-site)
- d. Any loss of bees to be reported to him.

The speaker was then introduced. It was one of our own - Bill Ainsworth who was talking about different types of hives. The range covered tree trunks , log trunk hives , cardboard box hives and then through a range of modern variations or adaptations of the present hive in use. Questions were asked throughout the talk to clarify certain points being made or to add to the topic in question. After a good cup of tea the meeting finished and slowly dispersed by 4pm.

Bill raised the question of having a SILENT Auction before or at the end of each meeting. This to be raised at the next Committee meeting

Fred Duckett was not present and no one had seen him. , so it was left so that he could be contacted later. to collect his cup.

Beginners Stuff

Uniting colonies

Swarm controls will have resulted in an increase in numbers. Getting back to the number you thought of first is simple: put two colonies together, but do it carefully. The accepted way to unite two colonies is using a sheet of newspaper. The books will tell you to move the colonies close together, moving one of them a yard at a time each day, but my experience is that this is unnecessary. Simply wait until the bees have stopped flying in the evening, remove the crown board from one hive and lay a sheet of newspaper directly over all the frames of the brood box, (use a broadsheet not a tabloid) then place the second colony over the top of the newspaper. You can make a few small holes in the paper but I never do. Close up and leave for a week before inspecting and reassembling into one unit. If there are supers, ensure that there is a sheet of newspaper wherever adjacent boxes contain different bees. A few precautions: loosen all hive parts and take any brace comb off the bottom of the frames of the top box beforehand, preferably earlier in the day. At the same time remove the queen you do not wish to keep. Put a queen excluder on top of the newspaper so that the queen is confined in one box and also to hold down the newspaper. I find a fine water spray will keep the bees in the bottom box immobilised for the short time they are exposed.

(With thanks to Celia F Davis, Warwickshire BKA)

Winter Tips by Derek Driver, SE Herts Beekeeping Association (with Thanks)

The bees may have settled down for the winter but there are lots of jobs you can do.

All boxes not occupied by bees can now be emptied of frames and all the propolis scraped off. Some people flame gun the insides plus the top and bottom edges, and even give the outsides a coat of sealant.

Frames can be sorted into those which need new foundation and those which are o.k. (Also check for wax moth grubs.) The old comb can be cut out and stored for melting down in the spring. If you haven't got a Solar wax extractor then now's the time to make one. They are easy to make and a wonderful piece of equipment. The clean rendered wax can be exchanged for foundation, and then you can. replace the foundation in the empty frames in early spring, well before you need it.

Most hives will have new queens this summer but which hives contain your best bees? Check your records and breed from these.

In early January start to regularly check the weight of stores and feed if required.

It's not worth losing a colony for the sake of a few pounds of sugar.

This year one of our new members arrived at his apiary to set up his first empty hive, only to find not 20 yards away a prime swarm! So spend time this winter making a swarm box, and make it at least as big as a brood box. There's no point in making one that can only accommodate casts! Use it to carry your gear to your apiary, that way if you find a swarm you will have your box with you.

If your new, seek information and advice from old hands, they will have years of experience. Always have a list of members phone numbers because you never know when you may need assistance, On site! Above all think of how you can improve your beekeeping such as producing some comb honey or making a nuc box, or buying your jars before you extract. etc. There are lots to do so put on your thinking caps.

Varroa mite drops using thymol treatments

With thanks to John Mumford Hertfordshire Beekeepers Association

Making sense of mite drops counts using any Varroa treatment can be most confusing! How many mites are actually in the bee population is a complete unknown, and if you see deformed bees it could be that you have a lot of mites, OR that you have a bad virus problem, OR both. Equally a colony showing little signs of Varroa problems may have a very large Varroa population.

When any varroa treatment is first applied there are 20% or so of the mite population on the bees, and the Apiguard/ Grease Pattie is fresh and the treatment gives off more Thymol, hence there is a large initial mite drop. When the treatment has been in the hive a few days things begin to settle down and the mite drops more nearly reflect the numbers of mites emerging with the bees. The efficacy of Thymol can be very dependent on ambient temperatures and the results can sometimes get a bit distorted.

It should be remembered that If left untreated a Varroa mite population would naturally increase at some 40% over a sealed brood cycle (13 days), so we need to do mite counts on set days during the cycle to be able to make some meaningful comparisons.

Natural Mite Mortality is said by the experts to give some indication of a mite population within a colony of bees depending on the time of year. And so I have adopted the same reasoning that, "All things being equal", the proportion of mites killed by a treatment is dependant on the number of mites present and the efficacy of the treatment.

So, if we make an average daily mite count over days 6, 7, and 8 after the treatment is first applied, and we make another average mite daily count over days 18, 19, and 20 after the treatment was first applied and the treatment is refreshed on day 13, the second average divided by the first average will give the SURVIVAL RATIO.

A Survival Ratio greater than 60% is just keeping the mite population stable. A Survival Ratios of 50% will reduce the mite population to acceptable numbers, but the treatment will need to continue over a longer period, (about 4 sealed brood cycles), 7 or 8 weeks. A typical Survival Ratio with Thymol treatment when applied correctly is between 25% and 30%, and the treatment will have done it's job in just 3 sealed brood cycles, 5 to 6 weeks.

If Apiguard is to reduce mite numbers to safe proportions over 2 sealed brood cycles, 4 weeks, then a Survival Ratio of less than 20% is essential. If there is any doubt about how well your Apiguard treatment has worked then continue with another tray - "Dead bees don't gather honey." I have heard that some Queens are reluctant to lay anywhere near Apiguard but have no personal experience of it.

I like to continue the Thymol treatment until the mite drop is below 2 or 3 mites, per week.

Where bees are kept in large hives with lots of ventilation that can't easily be sealed off, then it is worth considering transferring them into a normal hive for their treatment and then putting them back once the mites have been reduced to safe proportions. Happy counting!

Sugar Syrup. With thanks to Peter Hampson (Shropshire Beekeepers Association)

I revisit the issue of the strength of the sugar solution we should feed to bees in autumn. The ideal concentration will be that which give the bees the most sugar for the least amount of work on their part, while remaining in solution when the temperature falls overnight. If the sugar starts to crystallise out of the solution as the temperature drops, then it is likely to block the channels in the feeder that allow the bees to access it, which rather defeats the object of the exercise. The general advice for winter feeding is that we should feed a 2:1 syrup, which traditionally has meant 2lbs sugar to 1 pint of water. However, in carelessly equating this to a metric alternative of 2 kg sugar to 1 litre water, I have unintentionally created the problem just mentioned. 2 kg to 1 litre is a true 2/1 strength solution by weight, whereas 2lb (32 oz) of sugar in 1 pint (20 oz) water actually only gives a strength of 1.6/1 by weight. This difference is significant as the table below shows.

Table 1 : Solubility of sugar at various temperatures

At 20°C, 2kg of sugar in 1 litre of water will just about remain in solution, but will start to crystallise out as the temperature goes down so that, by the time it has reached current night-time temperatures, sufficient crystallisation will have occurred to block the feeder. By contrast, a solution comprising 2lbs sugar to 1 pint water will remain in solution to well below 5°C.

Table 2 (below), which shows the quantities of sugar and water required (metric & imperial) to reach various concentrations for a feeding syrup, would suggest that a figure between these two would give the best compromise. 5kg of sugar dissolved in 2.75 litres of water would produce a concentration that should remain completely solvent to below the temperature where the bees are still likely to be feeding. (I have chosen 5kg as a reference point because sugar is readily obtainable in packages of that size at supermarkets).

Table 2 Metric & Imperial Comparisons of Strength of solution by weight.

Table 1 : Solubility of sugar at various temperatures

T IN °C	5	10	15	20	25	30	35
RATIO OF SUGAR TO WATER BY WEIGHT	1.85	1.91	1.97	2.04	2.11	2.19	2.28

Concentration by Weight	Kg	Litres	Lbs	Pts
2 to 1	5	2.5	2.5	1
1.92 to 1	5	2.6	2.4	1
1.85 to 1	5	2.7	2.3	1
1.81 to 1	5	2.75	2.26	1
1.78 to 1	5	2.8	2.22	1
1.72 to 1	5	2.9	2.15	1
1.67 to 1	5	3.0	2.0	1

For those who prefer imperial measures, the same concentration would be achieved by dissolving 2¼ lbs sugar in 1 pint of water, i.e. slightly stronger than the usual recipe

[N.B. If, like me, you tend to use whichever measuring system is most easily to hand, you will have noticed that 2¼ lbs of sugar is very close to 1 kilo in weight so I could suggest that a syrup strength of 1 kilo sugar to 1 pint of water will be near enough. How's that for a confusing conclusion!]

WILL THE WORLD END?

If you are a beekeeper you can, if you wish, move on. This blog entry is for those who are thinking about taking up bee keeping and who, whilst browsing the internet for information, have stumbled upon this web site.

Over the last few months you've been seeing programmes on TV and reading articles in the press about honey bees. Mostly it has been doom and disaster - varroa, nosema, colony collapse disorder. Words you don't understand but it sounds bad. We have been told over and over again about Einstein telling us how the world will end if all the bees die off, all the stuff journalist just love.

I'M THE URBAN SPACEMAN

However, in amongst all these horror stories are glimpses of people in something the equivalent of a space suit, surrounded by thousands of bees, examining hives full of honey. You've seen jars of honey in the supermarket selling for anything up to five pounds for a one pound jar. One of the men in a space suit said he could get as much as a hundred pounds from a hive - that's five hundred quid! You have space at the bottom of the garden - you could be a beekeeper.

YOU ARE GOING GREEN!

There's a touch of glamour about it. You too would have a space suit. You could become one of those Bill Oddie or Kate Humble type people you see on programmes like Spring Watch and talk earnestly about nature and at least give the impression of having secret insights into the workings of God (Or Charles Darwin if that's your philosophical leaning). As well as having hundreds of pounds of free honey you would be seen to be 'Green'; doing something for the environment. You might even start walking to the corner shop for your Sunday Newspapers and re-cycling your bottles rather than hiding them among the general rubbish.

So, let's help you get started. We will draw a picture of a typical beekeeper so you can see what sort of a group you are joining.

There are some young and attractive women beekeepers and business executives who wear suits. They are all ages and range through all social levels. Now, having got rid of ageism, sexism and the political correctness bit, let's get on with it.

A BIT LIKE A TREE

He is old(ish), tending towards scruffy, a bit like a gnarled oak tree. Not very articulate and with a tendency to be scratching the place where he was last stung. Oh yes! You are going to get stung in spite of the space suit but don't worry - you will get used to it, well sort of!

He doesn't necessarily like honey and is probably more interested in the life and behaviour of the bees rather than the product of the hive. He will have read books on beekeeping but his knowledge will be an amalgam of experience with his own hives and beekeeping lore collected from old beekeepers.

WRITING A BOOK

If our beekeeper were to write a book it would probably be a mixture of pure science, old wives' tales, chemistry and folk tales. He will be able explain the biology of the varroa mite; the properties of beeswax, his own pet theories on the causes of colony collapse disorder and an interpretation of the bee dance with which foraging bees indicate the location of good crops of nectar to the other bees in the hive. He will also tell you that he talks to the bees. Tells them of bereavements, moving house and all the other things going on in his life.

NEIGHBOURS

He will probably have his bees in an allotment. He tried keeping them in the garden but the petition signed by his neighbours and the graffiti scrawled on the garage door persuaded him this was not a good idea. Especially as Tracy, who lives three door up the road, was threatening to sue because her six year Britney had been stung and it might spoil her chances of being on the X factor.

The move to the allotment wasn't all bad. He has a little shed made out of old tea chests, a primus stove and a kettle so he can make a brew and a stool where he can sit watching the rain drip from the plastic sheet which is the roof of his shed. He needs to sit down quite a bit because moving lumps of beehive about is hard work and in the late Spring and Summer when the honey has to be extracted from the combs he ends up aching and covered in honey and bee stings.

His current pressing problem is how he can find three hundred pounds to buy a new hive for a third stock of bees. You know how

wives are, they are quite happy to indulge us in our hobbies (Or 'Toys' as the call them) providing it doesn't cost too much. He is also worried about the health of one of his two beehives. There aren't as many bees as there should be and he thinks he'll be lucky if he gets any honey at all from them. That's after spending pounds on feeding them during the Winter. The other hive is thriving but he needs to be there every day as he is sure they are about to swarm.

Last year was a good year for our beekeeper, Spring and Summer were mild and the bees were out foraging from morning until night. He managed to extract just about a hundred pounds of honey from his two hives. He bought the jars, a steriliser and the labels. His wife allowed him to use the porch as an extracting room providing he cleaned up. No matter how careful he was, every door knob, window catch and work surface ended sticky with honey. He could hear his shoes squelching as they left the gobs of honey he had dropped on the floor. It took him all morning to extract the honey, another half day to clean up the porch and another day to fill and label the jars.

He ended up with eighty 500g jars of good looking jars of honey. His wife commandeered fifteen jars for her friends and another six went into the kitchen cupboard.

The local farm shop took the remaining fifty-nine and paid him three pounds a jar so into his back pocket went £177. That would help towards the new hive.

SLIGHTLY IN THE RED

We hope all this hasn't put you off the idea. Beekeeping is a wonderful, fascinating hobby but it is going to take a lot of your time and money. You might finish up with a few pounds net profit but more likely you will be very slightly in the red. However, that surely applies to most hobbies. Not many golfers or fishermen see their pastimes as money making projects.

So if your are prepared for it to cost you, take a lot of your time and you can put up with the bee stings - have a go. Join your local association to find out more and acquire for yourself a 'Guru' who will share his knowledge and help you when things go wrong. If, on the other hand you just want to be seen as 'Green', buy yourself a pair of binoculars and take up bird watching.

The above article which I thinks is really great was written by our friend Arthur Bickerstaff and was included in an article which appeared in Bill Ainsworths Pendle Black Bee Blog which is at http://www.arthurbick.co.uk/Black_Bees/Blog/Blog.html

Many thanks to Arthur and Bill

Technical Topics: Recycling Frames & Rendering Wax

Richard Alabone (Mr Beesy)

Beekeepers with only a few hives soon get a collection of old frames with dirty or damaged wax combs which very often end up in the bin as they don't know what else to do with them. Some cut out the combs and boil up the frames in washing soda, some build or even buy a solar extractor which I consider a messy, cumbersome, eye saw that doesn't work very well unless carefully monitored. Another way is to cut out the comb and boil it up which produces a very dark wax from old brood comb, and is not to be recommended. If there is a lot, it can be put in a sack and boiled with stones to weigh down the sack, allowing clean wax to float to the surface. A more satisfactory system I have used for several years involves some old bee equipment and a kettle which saves good wax and sterilizes the frames at the same time. It's very well worth doing as wax can be 'converted' to foundation for only 88p a lb; whereas it costs £6.50 to buy 1lb. of foundation. This makes rendered wax worth £5.60 a pound so it's well worth trying to save the wax. Don't be tempted to swap wax for foundation without working out how much less you would get than with the conversion system. Basically all that is needed is old hive bits and steam. I use old WBC boxes just because I had them; but you use whatever you have. The bottom box is a shallow with a piece of ply nailed on the bottom and some glue to seal it. Make a hole to take a steam pipe, in the side of the box, for a flexible plastic tube to connect to a kettle or a steam generator. I use an old kettle with a copper tube soldered into the spout with the lid held down by a block of wood and with a gasket under the lid. Water and wax collects in the bottom of the super box, sometimes half an inch of wax which can be cut out easily when it has cooled to about blood heat. On this box goes an old queen excluder that keeps the chrysalis shells and rubbish out of the wax. Then on top of this is the brood box with the frames for recycling, and perhaps several other boxes on top of that with a board on the top. A black bag, wheelie bin size, goes over the whole lot to keep the heat in, which blows up like a balloon when it's all hot. It takes about 40 minutes to melt the wax, depending on how many frames are being heated up, which will take several kettles of water. Find out how long it takes to boil away a kettleful, to avoid damaging the element. When finished remove one frame at a time to clean it up especially the foundation groove, using a small screwdriver with a blade 1/8 wide. I set the whole thing up at a slight angle to stop the wax sitting on the top bars of the lower boxes. The problem with this system is the mess! Unfortunately, some water and wax doesn't end up in the lower box, but on the floor. Maybe a large tray would help but I always do it in the garage and have to clear up the mess afterwards; you should be aware that it makes the whole place a bit damp. But you end up with reusable frames, although looking a bit scruffy as the propolis discolours the wood, and you have also saved the valuable wax. The rendering of old combs produces wax which is used for many purposes; but making foundation not being the major one. The USA produces an average of 2,000 tons annually but uses less than 500 tons for foundation, the rest being sold to wax merchants in blocks produced by beekeepers. The production of reasonably clean blocks demands a little care but no special know-how or equipment. Wax from a solar extractor, cappings, or a steam rendering system needs to be melted over water, then poured into a mould and allowed to cool slowly. I use an old plastic container and make blocks weighing about 5 lbs. To prevent the wax sticking to the mould use a smear of detergent as a release agent and only pour the wax when it is starting to solidify on the top. I use three old saucepans on the cooker with about 1.5 centimetres of water and a small sieve to remove things off the top; dead bees etc.. Heat to melt all the wax, then allow to cool so that all three are showing signs of freezing. Decant into the mould, stopping before mucky wax or water are starting to flow. Cover with plywood and a wad of newspaper to let it cool slowly. When cold a clean block of wax will have been made which should come out easily. Always, always stand by the cooker when the gas is on. If the water boils, wax may boil over causing a bad fire. Many books say 'always use rainwater' but give no reason as to why. American literature never mentions rainwater which appears to be a British one-upmanship stupidity. I always use plain water! Some say that the temperature of wax should not exceed 185°, or it will discolour, but then they say boil up the wax. When the water starts to boil, then turn the gas very low to allow time for the blocks to melt which keeps the wax temperature low; and that's about all there is to it. When finished, pour all the water and mess, called slumgum, into one pan and allow it to cool slowly so that the block can be removed. Cut off all the rubbish leaving wax to be rendered down next time.

Many thanks to the Essex Beekeepers Association and e-bees

Pheromones

A very major pheromone is the group of chemicals known collectively as queen substance'. This has thirty or more individual constituents that fulfil many roles- the control of the development of worker bee ovaries, the production of new queens, brood rearing of workers and drones and the control of the collection rate of pollen. It also acts as a drone attractant on mating flights. Some of the chemicals are more volatile than others; the drone attractant is one of the more volatile. A major source of the queen substance is the queen's mandibular glands, but the dorsal part of the abdomen is also a source of some of the constituents. 9-oxo 2 decanoic acid and 9 hydroxy 2 decanoic acids are two well-understood components of queen substance. These together inhibit the construction of queen cells.

However if there is not enough being received by workers either because of over crowding or excessive population, then queen cell construction can commence followed by swarming. In principle these two chemicals should be the basis of a swarm inhibitor, but no practical product has ever been produced. These two acids also attract workers to a queen in a swarm, and result in a stable cluster, which results in a loss of the bee memory of their former location. An unstable cluster does not remove this memory. Bees cannot count eggs, so they cannot use this method of assessing the queen's performance. Instead they judge the queen by her production of queen substance and act accordingly. If they start to produce queen cells they usually construct them over a period of several days. How do they know when they have enough? Easy!-the queen pupae also produce queen substance, so the bees are inhibited from producing more as the level of queen substance starts to rise. When the queens are nearly ready to hatch in a colony that has swarmed, it is believed that the driver to thin the cell tip is that this increases the amount of queen substance being produced into the hive. If there is a sudden drop in queen substance caused by the loss of the queen, then the bee response is to produce emergency queen cells. If the drop off is more gradual as the queen ages, then fewer supercedure cells may be produced. Queen substance may explain a number of other common phenomena.

Why do swarms work so hard? One possible explanation may be that after the reduction in queen substance endured by the bees leading up to the swarm, they are now receiving a full dose, and this is why they work so well. Similarly this may also explain why small nucleus colonies work so well, with the smaller number of bees each receiving a fuller dose of queen substance. There are also queen pheromones produced that affect drone production, because queen substance has an inhibitory effect. Early in the season when colonies are small, this prevents building of drone comb and rearing of drones. As the colony becomes more populous, the inhibitory effect is less because the workers get a smaller dose and drones are produced. When queens are failing they do not produce enough inhibitory pheromone. This explains why a queenless colony or one with a failing queen retains its drones- both as brood and adults- at times when other colonies have thrown them out. Drones themselves also produce pheromones, but virtually nothing is known about them.

This is the second part of a talk by Janet Dowling FRES, to Harrogate & Ripon BKA, given in January 2005: courtesy BEES)

Dead bees in the snow

Why would a honeybee leave a nice (relatively) warm, safe environment to die in the snow? Snow-covered apiaries always bring interesting questions. A white blanket surrounding the apiary makes some aspects of the bee's annual life cycle more apparent to the observer. When apiaries are surrounded by grass, leaves and twigs, dead bees and bee faeces are not easily observed. It is not unusual for a colony to lose two-thirds of its population from late summer to the following spring when brood rearing begins in earnest and populations begin to grow. This means that individual colonies can have 30,000 or more bees perish in winter as part of their normal colony life cycle.

Without snow, the dead bees are scattered among grass and leaves. When snow is present, the deceased are readily apparent, and beekeepers that are unfamiliar with this aspect of colony life assume that a catastrophic event has befallen their colonies. Likewise, as with dead bees, bee faeces are not apparent on grass and leaves, but they are readily observed on snow.

Bees accumulate waste in their hindgut during cold weather. When temperatures rise enough to permit flight, large numbers of bees take to the air to relieve themselves. Nosema and high moisture honey can exacerbate the need to defecate. Both can cause an abnormal amount of faeces to be deposited around the hive entrance and abnormal winter mortality. Why do bees leave their colony to die in the snow? There is not one answer to this question. Bees need occasional flights in winter to void their waste. If they become chilled on their "cleansing flight," some otherwise healthy bees may not return. Bee's thoracic muscle temperature must be greater than 90°F. to sustain flight. On sunny days they can raise their thoracic temperature by basking in the sun. In cool weather bees rely on the collective metabolic heat of their nest mates and shivering to raise their thoracic temperature. Bees stressed by diseases, parasites or dysentery are less likely to complete the round trip.

Like any other organism, bees have a limited life expectancy. In the summer bees live 5-6 weeks. However, autumn bees build up their fat bodies and live longer than their summer-born compatriots (in insects, fat bodies are a good thing!). Diseases and parasites can increase the rate of winter mortality. Nosema, tracheal mites and Varroa mites are frequently implicated in abnormal winter mortality.

Many of the dead bees observed in snow died in the hive and were carried out by their nest mates.

With Thanks Notts BKA, courtesy of EBEES

Bee Health – The Future

For 12 months now I have been detailing the depressing details about all the ills that can befall our bees and now, you will be glad to know, I have completed that task, but one thing remains: looking into the crystal ball of future developments. We should not hide our heads in the sand when it comes to new threats. There currently appear to be two of these and we should all be on the lookout for them.

1. Small hive beetle (SHB) (Aethina tumida) which affects bee colonies in many parts of the world. The beetle, which is 5-7mm long, lays its eggs in crevices in the hive. Each beetle lays an enormous number of eggs so it takes very few beetles to cause a serious infestation. The eggs hatch into typical beetle larvae which eat bee eggs and larvae, as well as honey and pollen, tunnelling through the comb to leave a slimy mess behind. When fully grown they leave the hive to pupate in the soil around it and after a variable length of time the new adults emerge. These are good fliers and can search out hives by scent. There is no doubt that this insect can survive in British conditions although areas with cold clay soils will not favour its pupation. It may arrive with bees on importations, either intentional or accidental, or the pupae can be transported in soil on imported plants or machinery. Finally, it can feed on fruit and may come into Britain with a consignment of, for example, melons. Defra is monitoring with traps around ports, container ports and elsewhere but it is not an easy task. They expect it to arrive at some time.

2. Tropilaelaps spp. These are mites, smaller than Varroa, and, although the life-cycle is very similar to that of Varroa, it is shorter, resulting in a more rapid build-up of mites, with damaging results. The mites are unable to feed on the adult bees and the phoretic stage is therefore very short, making the mites very vulnerable where there is a winter brood break. Unfortunately, in some areas of Britain, brood rearing is now continuous during the Winter and there is no reason why Tropilaelaps could not establish and flourish under those conditions.

*Celia F Davis.
(With thanks to Warwickshire BKA
and eBEES)*

Hygienic Bee Trials

Honey bees are now fighting back aggressively against Varroa mites, thanks to Agricultural Research Service's (ARS) efforts to develop bees with a genetic trait that allows them to more easily find the mites and toss them out of the broodnest.

*The parasitic Varroa mite attacks the honey bee, *Apis mellifera* L. by feeding on its hemolymph, which is the combination of blood and fluid inside a bee. Colonies can be weakened or killed, depending on the severity of the infestation. Most colonies eventually die from varroa infestation if left untreated. Varroa-sensitive hygiene (VSH) is a genetic trait of the honey bee that allows it to remove mite-infested pupae from the capped brood-developing bees that are sealed inside cells of the comb with a protective layer of wax. The mites are sometimes difficult for the bees to locate, since they attack the bee brood while these developing bees are inside the capped cells.*

ARS scientists at the agency's

Honey Bee Breeding, Genetics and Physiology Research Unit in Baton Rouge, La., have developed honey bees with high expression of the VSH trait. Honey bees are naturally hygienic, and they often remove diseased brood from their nests. VSH is a specific form of nest cleaning focused on removing varroa-infested pupae. The VSH honey bees are quite aggressive in their pursuit of the mites. The bees gang up, chew and cut through the cap, lift out the infected brood and their mites, and discard them from the broodnest.

See this activity on video at:

www.ars.usda.gov/is/br/bees/index.htm This hygiene kills the frail mite offspring which greatly reduces the lifetime reproductive output of the mother mite. The mother mite may survive the ordeal and try to reproduce in brood again, only to undergo similar treatment by the bees. To test the varroa resistance of VSH bees, the Baton Rouge team conducted field trials using 40 colonies with varying levels of VSH. Mite population growth was significantly lower in VSH and hybrid colonies than in bee colonies without VSH.

Hybrid colonies had half the VSH genes normally found in pure VSH bees, but they still retained significant varroa resistance.

Simpler ways for bee breeders to measure VSH behaviour in colonies were also developed in this study.

Taken from J. Apicultural Research and Bee World



During World War II the Disney organization contributed to the war effort by creating 1,100 insignia for military units.

*Many of these artistic creations are in the book *Disney Dons Dogtags* by Walton Rawls.*

U.S. Bombers used Disney drawings for “nose art” and newly formed units could request a special logo.

Drawing out combs

A frame with foundation holds great promise. All the bees have to do is to add wax to draw out beautiful comb, perfectly flat with no holes or drone cells and fully drawn all round up to the frame. But this is seldom achieved. Bees sometimes totally ruin a frame of foundation by nibbling wax away from the wires or more often removing the wax against bottom and sidebars leaving unsightly holes; although it doesn't have to be like that.

A swarm will build beautiful brood combs even without foundation using either the honey they've brought with them or collected nectar. When a beekeeper feeds them they seem to lose the ability to make wax after a while and start robbing wax to pull out comb which spoils otherwise good frames because it leaves holes. There are two other ways a perfect frame might be spoiled. Firstly, foundation often has a tendency to sag especially if it has paraffin wax in it, which is added to cheap foundation. This effect is worse in hot weather or when there are very many bees drawing out the frame generating too much heat. It causes bulge of the brood combs, sometimes just between wires where horizontal wiring is used, or bulge at the bottom where the foundation doesn't slip between the split bottom bar.

Secondly, the whole sheet of foundation sometimes bows out from the centre of the frame. This happens if the hive is not level, but also when bees cluster to draw the comb on one side only and their weight causes the sheet to bend. Most beekeepers follow the advice to replace two or three brood frames each year with foundation, but often these will get spoilt for one reason or another; generally by robbing wax to cap brood on another frame.

The best way to obtain new comb is to put on a whole box of foundation and feed, preferably when there is no natural flow, in June or July. If you feed just sugar and water I found that bees soon have difficulty producing wax; all they need is a little salt and acid. Two tsp. of salt in a gallon, with half a cup of fruit squash, seems to make all the difference. This information doesn't seem to be in beekeeping books, but it really does work. At one time I also added vitamin C and multivitamins, but they didn't seem to help. But this method of making a whole box of comb has advantages and largely avoids unsightly combs.

Having a stock of good comb has many advantages. When drawing out a whole box of brood frames it helps to exchange the side frames with the middle before they are full of stores and it's best to remove the box before it's all filled with stores. These frames may be used for a shook swarm, helping a nuc to build up or just replacing old brood frames, with the big advantage that there are no holes in the comb. Super frames with depressions, due to holes, can take twice as long. It's best to recycle the frame, save the wax, and then try to get them pulled out tidily.

Thanks to Essex BKA courtesy of EBEES

Honeybees communicate about danger

*Honeybees warn each other to steer clear of dangerous flowers where they might get killed by lurking predators. Scientists made this discovery by placing dead bees upon flowers and then watching how newly arriving bees reacted to the danger. Not only do the bees avoid the flowers, they then communicate the threat when they return to the hive via their well known waggle dance. The discovery is published in the journal *Animal Behaviour*. The honeybee waggle dance is a surprisingly sophisticated mode of communication. When foraging bees return to the hive, they waggle their bodies in a complex dance first deciphered by biologists more than 40 years ago. The angle and direction of the forager bees' waggle dance conveys how far and in what direction other more naive bees need to fly to reach flowers that will provide plentiful sources of food. Honeybees are also more likely to waggle and dance when returning from food sources containing high concentrations of sucrose. Now scientists Kevin Abbott and Reuven Dukas of McMaster University in Hamilton, Ontario, Canada have found that honeybees also use the waggle dance warn other bees to avoid danger. They trained honeybees to visit two artificial flowers containing the same amount and concentration of food. They left one flower untouched, making it a "safe" food source for the bees. On the other flower, they placed the bodies of two dead bees, so they were visible to arriving insects, but would not interfere with their foraging. They then recorded whether and how the bees performed a waggle dance on their return to other members of the hive colony.*



Crab spider attacking and eating bee on Ceanothus
From Google images

On average, bees returning from safe flowers performed 20 to 30 times more waggle runs than bees returning from dangerous flowers. That shows that the bees recognise that certain flowers carry a higher risk of being killed or eaten by predators, such as crab spiders or other spider species that ambush visiting bees. What's more, they factor this risk into their waggle dances, tempering them to steer their colony mates away from flowers that might be dangerous.

*Story adapted from BBC NEWS:
Published: 2009/07/31 11:00:03 GMT*

Honey and Cinnamon.

It is found that a mixture of Honey and Cinnamon cures most of the diseases. Honey is produced in most of the countries of the world. Ayurvedic as well as Yunani medicine have been using honey as a vital medicine for centuries. Scientists of today also accept honey as a very effective medicine for all kinds of diseases. Honey can be used without any side effects for any kind of diseases. Today's science says that even though honey is sweet, if taken in the right dosage as a medicine, it does not harm diabetic patients.

Weekly World News, a magazine in Canada, on its issue dated 17 January, 1995 has given the following list of diseases that can be cured by Honey and Cinnamon as researched by western scientists.

HEART DISEASES: Make a paste of honey and cinnamon powder, apply on bread, chappati, or other bread, instead of jelly and jam and eat it regularly for breakfast. It reduces the cholesterol in the arteries and saves the patient from heart attack. Also those who already had an attack, if they do this process daily, they are kept miles away from the next attack. Regular use of the above process relieves loss of breath and strengthens the heartbeat. In America and Canada, various nursing homes have treated patients successfully and have found that as age the arteries and veins lose their flexibility and get clogged; honey and cinnamon revitalizes the arteries and veins.

INSECT BITES: Take one part honey to two parts of lukewarm water and add a small teaspoon of cinnamon powder, make a paste and massage it on the itching part of the body slowly. It is noticed that the pain recedes within a minute or two.

ARTHRITIS: Arthritis patients may take daily, morning and night, one cup of hot water with two spoons of honey and one small teaspoon of cinnamon powder. If taken regularly even chronic arthritis can be cured.

In a recent research conducted at the Copenhagen University, it was found that when the doctors treated their patients with a mixture of one tablespoon Honey and half teaspoon Cinnamon powder before breakfast, they found that within a week out of the 200 people so treated practically 73 patients were totally relieved of pain and within a month, mostly all the patients who could not walk or move around because of arthritis started walking without pain.

HAIR LOSS: Those suffering from hair loss or baldness, may apply a paste of hot olive oil, one tablespoon of honey, one teaspoon of cinnamon powder before bath and keep it for approx. 15 min. and then wash the hair. It was found to be effective even if kept on for 5 minutes.

BLADDER INFECTIONS: Take two tablespoons of cinnamon powder and one teaspoon of honey in a glass of lukewarm water and drink it. It destroys the germs in the bladder.

TOOTHACHE: Make a paste of one teaspoon of cinnamon powder and five teaspoons of honey and apply on the aching tooth. This may be applied 3 times a day till the tooth stops aching.

CHOLESTEROL: Two tablespoons of honey and three teaspoons of Cinnamon Powder mixed in 16 ounces of tea water, given to a cholesterol patient, was found to reduce the level of cholesterol in the blood by 10% within 2 hours. As mentioned for arthritic patients, if taken 3 times a day, any Chronic cholesterol is cured. As per information received in the said journal, pure honey taken with food daily relieves complaints of cholesterol.

COLDS: Those suffering from common or severe colds should take one tablespoon lukewarm honey with 1/4 spoon cinnamon powder daily for 3 days. This process will cure most chronic cough, cold and clear the sinuses.

INFERTILITY: Yunani and Ayurvedic Medicine have been using honey for thousands of years to strengthen the semen of men. If impotent men regularly take two tablespoon of honey before going to sleep, their problem will be solved.

In China, Japan and Far-East countries, women, who do not conceive and need to strengthen the uterus, have been taking cinnamon powder for centuries. Women who cannot conceive may take a pinch of cinnamon powder in half teaspoon of honey and apply it on the gums frequently throughout the day, so that it slowly mixes with the saliva and enters the body.

A couple in Maryland, USA, had no children for 14 years and had lost hope of having a child of their own. When told about this process, husband and wife started taking honey and cinnamon as stated above; the wife conceived after a few months and had twins at full term.

UPSET STOMACH: Honey taken with cinnamon powder cures stomachache and also clears stomach ulcers from the root.

GAS: According to the studies done in India & Japan, it is revealed that if honey is taken with cinnamon powder the stomach is relieved of gas.

IMMUNE SYSTEM: Daily use of honey and cinnamon powder strengthens the immune system and protects the body from bacteria and viral attacks. Scientists have found that honey has various vitamins and iron in large amounts. Constant use of honey strengthens the white blood corpuscles to fight bacteria and viral diseases.

INDIGESTION: Cinnamon powder sprinkled on two tablespoons of honey taken before food, relieves acidity and digests the heaviest of meals.

INFLUENZA: A scientist in Spain has proved that honey contains a natural ingredient, which kills the influenza germs and saves the patient from flu.

LONGEVITY: Tea made with honey and cinnamon powder, when taken regularly arrests the ravages of old age. Take 4 spoons of honey, 1 spoon of cinnamon powder and 3 cups of water and boil to make like tea. Drink 1/4 cup, 3 to 4 times a day. It keeps the skin fresh and soft and arrests old age.

Life spans also increases and even a 100 year old, starts performing the chores of a 20-year-old.

PIMPLES: Three tablespoons of Honey and one teaspoon of cinnamon powder paste. Apply this paste on the pimples before sleeping and wash it next morning with warm water. If done daily for two weeks, it removes pimples from the root.

SKIN INFECTIONS: Applying honey and cinnamon powder in equal parts on the affected parts cures eczema, ringworm and all types of skin infections.

CANCER: Recent research in Japan and Australia has revealed that advanced cancer of the stomach and bones have been cured successfully. Patients suffering from these kinds of cancer should daily take one tablespoon of honey with one teaspoon of cinnamon powder for one month 3 times a day.

FATIGUE: Recent studies have shown that the sugar content of honey is more helpful rather than being detrimental to the strength of the body. Senior citizens, who take honey and cinnamon powder in equal parts, are more alert and flexible.

Dr. Milton who has done research says that a half tablespoon honey taken in a glass of water and sprinkled with cinnamon powder, taken daily after brushing and in the afternoon at about 3.00 p.m. when the vitality of the body starts to decrease, increases the vitality of the body within a week.

BAD BREATH: People of South America, first thing in the morning gargle with one teaspoon of honey and cinnamon powder mixed in hot water. So their breath stays fresh throughout the day.

HEARING LOSS: Daily morning and night honey and cinnamon powder taken in equal parts restore hearing.

***NOTE:**The honey used needs to be REAL RAW UNPASTEURIZED HONEY. If it says PURE honey it is most likely pasteurized. It is best to only buy honey that says RAW or UNPASTEURIZED on the label. The difference is that the enzymes are all heated out of the pasteurized honey.

Cinnamon and Honey formula for weight loss:
This should be prepared at night before going to bed.

1. Use 1 part cinnamon to 2 parts raw honey. 1/2 tsp cinnamon to 1 tsp honey is recommended but can use more or less as long as in the ratio of 1 to 2. --- so 1 tsp cinnamon to 2 tsp raw honey is ok too as an example.

2. Boil 1 cup...that is 8 oz of water.

3. Pour water over cinnamon and cover and let it steep for 1/2 hour..(30 minutes)

4. Add honey now that it has cooled. Never add honey when it is hot as the heat will destroy the enzymes and other nutrients in the raw honey.

5. Drink 1/2 of this directly before going to bed. The other 1/2 should be covered and refrigerated.

6. In the morning drink the other half that you refrigerated...but do not re-heat it...drink it cold or at room temp only.

Do not add anything else to this recipe. No lemon, no lime, no vinegar. It is not necessary to drink it more time in a day...it is only effective on an empty stomach and primarily at night.

This works for most people. Inches are lost before any measurement on the scales. This program will cause significant inches lost... but you will reach a plateau and may not lose anymore. This is because the cinnamon and honey cause a cleansing effect in the digestive tract and cleans out parasites and other fungus and bacteria that slow down the digestion...causing a toxic build up. (Lowers pH) Once this is all cleaned out then you will most likely have the weight loss slow down.

Other side effects from a cleansing can occur because of toxins being released...if this occurs, cut back on how much you use or take a break.

Additionally people report increased energy, more sex drive, and feeling happier/mood enhancer.

~~~~~  
It was the accepted practice in Babylon 4,000 years ago that for a month after the wedding, the bride's father would supply his son-in-law with all the mead he could drink. Mead is a honey beer and because their calendar was lunar based, this period was called the honey month ... which we know today as the honeymoon.  
~~~~~

I thought I would include this as over here in the Far East the Chinese Medicine shops swear by it. I was in a shop the other day and the doctor kept me for about 2 hours explaining all the qualities. Not to sure about the infertility bit though.

Michael Ed



How would you like these to drop in in your place. Its a couple of pictures I took of a very large bee farm that is situated just around the corner from where I live in Banglamung Thailand. They have a website if you are interested at www.ilikehoney.com also see my article on the next page

Bee Farm Big Style

I was driving down the road one warm morning, on my way to do a little bird watching, which by the way is a treat over here in Thailand. About 5 minutes into my drive I looked to one side of the road and could not believe my eyes, could it be that I had drunk a Chang beer too many and was seeing things but no, low and behold I saw all these giant bees on the roof of a building that was being constructed(photos are on the above page). At the time I just thought it was another hotel going up with another gimmick, which over here is not to an unusual occurrence. I carried on and did my days bird watching and as I was driving back I passed them again and with being a nosy so and so thought I would call in. To my surprise it was the start of a bee farm come bee research place. I spoke to the owner who luckily was on site and explained that I kept bees in the UK and was very interested in what he was doing. He too was very interested in me as he explained that part of what they were doing was to educate the general public about the benefits of bees and bee products and that all the staff spoke little English and that it would be good to have someone who knew about bees and could explain to non Thais, in English, as they have many visitors from Europe, America and other countries where English is the second language. He said that up in the north of Thailand they had over 1500 hives and that he would be keeping about 90 at this place just for demonstration purposes. He also, like most Thais started to talk about if I wanted paying so I said no its OK but I would if possible like to keep a few hives for myself, upon which he said, "take 20 of the 90 if you like", no, no ,no said I a couple will do so I have enough honey just for myself and my friends and also I would love to research as to what you are doing over here as I am sure it will be different to what we do in the uk. I left it all at that as like I said earlier they were still in the building stages and it was early days.

*A month later I called again, the place was nearly finished and they were now about 50 hives on site, mostly *Apis mellifera* but also about 20 hives of *Apis cerana* and a few stingless bees in the wild and also so boxed up. They have a bee museum. A large sales area where they sell bee products like honey, pollen, propolis, soaps, face creams, royal jelly, balms, ice cream, toothpastes and lots of other bee related products. Also on site is a restaurant serving all kinds of Thai foods all of which all have some bee products incorporated into the menu. Outside are hives where people can come along and join courses on beekeeping which will be held on a weekly basis.*

There are also lecture rooms, meeting rooms, where meetings will be held for AAA (Asian Apicultural Association) and other bee interested people and associations. Also there will be and extensive library on all aspects of bees and beekeeping .

What is also on site, and what I find very interesting is where they are going to study and carry out, Bee Venom Therapy. Its not just a matter of letting the bees sting you as it goes a very lot deeper than this. Its more to do with technics of acupuncture and Chinese medicine. When it is all set up there will be a couple of doctors on site who are being brought over from China.

*As for me, I will be mostly outside supervising the beekeeping courses for any non Thais who may be interested and also helping out with anything that I am needed for. In return I have some hives of both *Apis Mellifera*, *Apis cerana* and also a few stingless bees which I hope will keep me busy over here. Also with being a couple of resident beekeepers on site all the time, I will be able to leave my hives in their capable hands when I come back to visit the uk.*

There is one thing for sure that over here in Asia beekeeping is a very big business and it seems to be done in a very professional way, unlike what seems to be going on in the uk where we always seem to be going cap in hand to our government. Maybe its because, Thailand, like the rest of Asia, know how important bees are, not just as a provider of many important products but also their value to the rest of the environment of which Thailand, with being a provider of many plants and fruits, which they use for the domestic market along with the millions of pounds they make from exporting these produce.

So there you go, and if any of you are ever over this way you will know where to find me and are always welcome to call in and I will show you around what I believe is a bee experience well ahead of the times.

On the following page are a few pictures of the Bee Farm

Best wishes Michael



Front Entrance to the farm



Me with a few of the hives



Apis Cerana. One of 20 hives



Stingless bees on site in a coconut tree



Handling bees Thai Style



Preparations for the Royal Jelly harvest



Combs of Apis Dorsata 7 ft long.



Back in the office

Stingless Bees.

We have over here in Thailand a few species of Stingless bee. Although it is impossible to keep them in the UK, they are a treat to keep as well as study. So if I may I would like to tell you a little of these fascinating insects.

Stingless bees, or simply meliponines, are a large group of bees, comprising the tribe Meliponini (sometimes called stingless honey bees) in the family Apidae, and closely related to the common honey bees, carpenter bees, orchid bees and bumblebees.

The common name is slightly misleading, as a great many bee species, especially in the family Andrenidae, are also incapable of stinging, as are all male bees. Meliponines have stingers, but they are highly reduced and cannot be used for defense. Stingless bees can be found in most tropical or subtropical regions of the world, such as Australia, Africa, Southeast Asia, and parts of Mexico and Brazil. The majority of native eusocial bees of Central and South America are stingless bees, although only a few of them produce honey on a scale such that they are farmed by humans. They are also quite diverse in Africa and are farmed there also; meliponine honey is prized as a medicine in many African communities.

Being tropical, stingless bees are active all year round, although they are less active in cooler weather. Unlike other eusocial bees, they do not sting but will defend by biting if their nest is disturbed. In addition, a few (in the genus Oxytrigona) have mandibular secretions that cause painful blisters. Despite their lack of a sting, stingless bees, being eusocial, may have very large colonies made formidable by way of numerous defenders.

Stingless bees usually nest in hollow trunks, tree branches, underground cavities, or rock crevices but they have also been encountered in wall cavities, old rubbish bins, water meters, and storage drums. Many beekeepers keep the bees in their original log hive or transfer them to a wooden box, as this makes it easier to control the hive.

The bees store pollen and honey in large egg-shaped pots made of beeswax, typically mixed with various types of plant resin (sometimes called "propolis"). These pots are often arranged around a central set of horizontal brood combs, where the larval bees are housed. When the young worker bees emerge from their cells, they tend to remain inside the hive, performing different jobs. As workers age, they become guards or foragers. Unlike the larvae of honey bees, meliponine larvae are not fed directly.

The pollen and nectar are placed in a cell, an egg is laid, and the cell is sealed until the adult bee emerges after pupation ("mass provisioning"). At any one time, hives can contain anywhere from 300-80,000 workers, depending on species. Unlike true honey bees, whose female bees may become workers or queens strictly depending on what kind of food they receive as larvae (queens are fed royal jelly and workers are fed pollen), the caste system in meliponines is variable, and commonly based simply on the amount of pollen consumed; larger amounts of pollen yield queens in the genus Melipona. There is also a genetic component however, and as much as 25% (typically 5-14%) of the female brood may be queens. Queen cells in the former case can be distinguished from others by their larger size, as they are stocked with more pollen, but in the latter case the cells are identical to worker cells, and scattered among the worker brood. When the new queens emerge, they typically leave to mate, and most die. New nests are not established via swarms, but by a procession of workers who gradually construct a new nest at a secondary location. The nest is then joined by a newly-mated queen, at which point many workers take up permanent residence and help the new queen raise her own workers. If a ruling queen is herself weak or dying, then a new queen can replace her, although less than 1% of female worker cells produce dwarf queens, they comprise six out of seven queen bees, and one out of five proceed to head colonies of their own. They are reproductively active but less fecund than large queens.

As stingless bees are harmless to humans, they have become an increasingly attractive addition to the suburban backyard. Most meliponine beekeepers do not keep the bees for honey but rather for the pleasure of conserving a native species whose original habitat is declining due to human development. In return, the bees pollinate crops, garden flowers, and other areas during their search for nectar and pollen.

Like the European honey bee (Apis mellifera) which provides most of Thailand's commercially-produced honey, stingless bees have enlarged areas on their back legs for carrying pollen back to the hive. After a foraging expedition, these pollen baskets or corbiculae can be seen stuffed full of bright orange or yellow pollen. Stingless bees also collect nectar, which they store in an extension of their gut called a crop. Back at the hive, the bees ripen or dehydrate the nectar droplets by spinning them inside their mouthparts until honey is formed. Ripening concentrates the nectar and increases the sugar content, though it is not nearly as concentrated as the honey from true honey bees; it is much thinner in consistency, and more prone to spoiling. Stingless bees store their aromatic honey in clusters of small resin pots near the extremities of the nest. For honey production, the bees need to be kept in a box specially designed to make the honey stores accessible without damaging the rest of the nest structure. Some recent box designs for honey production provide a separate compartment for the honey stores so that honey pots can be removed without spilling honey into other areas of the nest.

Unlike a hive of commercial honeybees, which can produce 75 kilograms of honey a year, a hive of stingless bees produces less than one kilogram. Stingless bee honey has a distinctive taste - a mix of sweet and sour with a hint of fruit. The taste comes from plant resins - which the bees use to build their hives and honey pots - and varies at different times of year depending on the flowers and trees visited.

Michael ED

The benefits of 'Shook Swarm'

Until 2008, I had changed my brood comb annually using the Bailey method, but with the discovery of pyrethroid resistant varroa in Southampton in August 2007, a more robust, proactive stance on varroa control was required. I had used the shook swarm technique before, but only when EFB had been discovered and with the Bee Inspector's assistance and supervision. I was always impressed with the colonies recovery and at how quickly it would get back into honey production. So I thought it would be interesting to see how a healthy, strong colony (apart from varroa) would respond to this procedure that is regarded by some as rather drastic and 'against the grain of traditional beekeeping' with the sacrifice of both drawn brood combs and brood (see the 'How do It' section at www.southamptonbeekeepers.co.uk/index_files/how.htm). In the spring of 2008 I had 20 colonies of bees ranging instrength from very strong (brood & ½, National) to quite weak (3-4 frames of brood). The strongest colonies were shook swarmed at the end of March and fed sugar syrup whilst the very strongest were shook onto a close spaced super of spring honey from that hive, with a brood box of foundation above, i.e. brood and ½ and not fed. The weaker colonies were allowed to build up until the bees filled the brood boxes, they were then also shook swarmed and fed heavily. Of the 20 colonies I shook swarmed I would have expected most, if not all, to have wanted to swarm at some point in the season. What actually happened was that only 5 (mostly the very strongest at the time of shook swarming) showed signs of swarming and so I therefore divided these colonies. The remaining 15 colonies showed no signs of wanting to swarm and grew into huge colonies, requiring between 3-5 supers each to just hold the bees. As a result I was able to harvest a substantial honey crop, while the divided colonies struggled due to the poor weather even on the same sites. Signs of wax moth were very much reduced (almost none were seen all season), varroa levels were reduced, the new frames were clean and easy to move, a shallow frame inserted at the time of the shook swarm provided drone brood for easy culling throughout the season, enabling even more varroa to be removed. These un-swarmed extra large colonies also showed an increased tendency to supersede and some, two queen colonies (mother and daughter), running for a month or two were also noted. The honey harvested was bright and clean and has won me prizes at several shows. The old brood comb and brood was rendered down using the Thorne's Steam Easy giving a yield of 1½ lb per brood box. This recovered wax will be used to exchange for more foundation at minimal cost. The overall results for 2008 (which was a difficult year for our bees at best) using the shook swarm technique was very favourable, the colonies were strong, healthy with reduced pests and diseases (when Hampshire and surrounding counties were awash with EFB, I had none) the honey crop was impressive and probably higher than I would have got, when most beekeepers got very little or no honey. The quality of the crop was high, and the bees had increased vigour and seemed extra content and happy to draw the comb. The only 'extra' was feeding the sugar syrup immediately after doing the shook swarm, but the honey crop more than paid for this. I will certainly be doing shook swarming again as part of my annual IPM management.

With thanks to Andy Willis, Hampshire Bee Talk June 2009, courtesy of BEES

Insects may have consciousness and could even be able to count, claim experts

By Daily Mail Reporter

**Insects with minuscule brains may be as intelligent as much bigger animals and may even have consciousness, it was claimed today.*

Having a brain the size of a pinhead does not necessarily make you less bright, say researchers.

Computer simulations show that consciousness could be generated in neural circuits tiny enough to fit into an insect's brain, according to the scientists at Queen Mary, University of London and Cambridge University.
Bee

A honeybee's brain weighs one mg and contains fewer than a million nerve cells

The models suggest that counting ability could be achieved with just a few hundred nerve cells, it is claimed.

And a few thousand would be sufficient to make an animal a conscious being, rather than an automated 'living robot'.

'Animals with bigger brains are not necessarily more intelligent,' said Professor Lars Chittka, from Queen Mary's Research Centre for Psychology, writing in the journal Current Biology.

'We know that body size is the single best way to predict an animal's brain size.

'However, contrary to popular belief, we can't say that brain size predicts their capacity for intelligent behaviour.

'In bigger brains we often don't find more complexity, just an endless repetition of the same neural circuits over and over.

'This might add detail to remembered images or sounds, but not add any degree of complexity. To use a computer analogy, bigger brains might in many cases be bigger hard drives, not necessarily better processors.'

Differences in brain size between animals can be extreme. A whale's brain can weigh up to nine kilograms and be packed with more than 200 billion nerve cells.

Human brains vary in weight between 1.25 kilograms and 1.45 kilograms, and have an estimated 85 billion neurons.

In contrast, a honeybee's brain weighs one milligram and contains fewer than a million nerve cells.

Many size differences existed only in specific brain regions, the scientists pointed out.

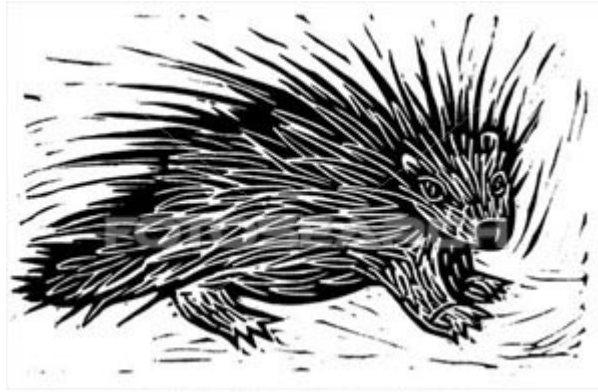
This was often the case in animals with highly developed senses, such as sight or hearing, or which have an ability to make very precise movements.

Increased size allowed the brain to function in more detail, finer resolution, and higher sensitivity or to achieve greater precision.

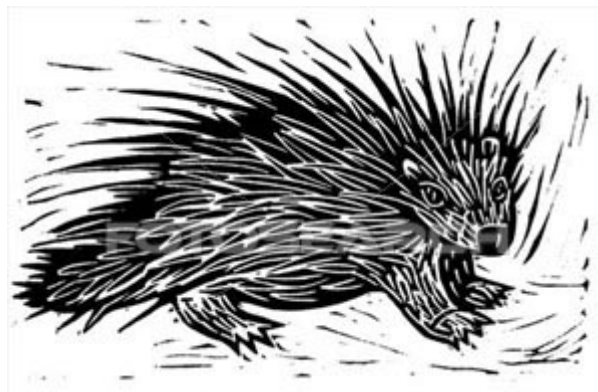
Research suggested that bigger animals may need larger brains simply because there was more to control. More nerves were needed to move bigger muscles, for example.

Much 'advanced' thinking could be done with very limited numbers of neurons, the scientists claimed.

BEES AS PORCUPINES



Whilst searching for some further information on the Winter Bee recently, I checked with a couple of reliable reference books: 'The Illustrated Encyclopaedia of Beekeeping' and 'Guide to Bees and Honey' by Ted Hooper (Ted is also co-author of the Encyclopaedia), I came across a few interesting - and intriguing - facts that had escaped my notice on previous occasions. As we know, when the environmental temperature begins to fall in late autumn and early winter, the bees form themselves into a cluster around the empty comb to conserve heat. When the temperature has reached 13 degree Celsius (55 Fahrenheit) the cluster is said to be complete. The coldest bees are usually the outside bees on the bottom of the cluster where the temperature can fall to 8 degrees Celsius and these bees then become immobilised - they can't fly nor walk! However, even in this perilous condition they can still manage to act as guardians of the colony. If the colony is disturbed these bees can protrude their stings and the surface of the cluster becomes similar to that of porcupine quills and any intruder that touches it is stung! A second point I had also overlooked was the significant role that the bee's body hairs play in forming the insulating blanket of the cluster - thereby conserving very valuable heat! We have come to learn that a colony of bees is a colony of sharers i.e., food, water, labour, etc, are all equally shared by the bees. I don't believe, then, that this characteristic is missing in the Winter Bee and I like the suggestion that the "lucky" bees at the top of the cluster - nearest the food store - consume and metabolise the honey and generate heat. They then move through the cluster relieving or replacing their colder sisters! Thus we have that happy, healthy and warm colony to get us through to spring.



Francis McQuiuan reproduced from 'AN BEACHAIRE', The Irish Beekeeper, courtesy of B.E.E.S. and kindly sent in by Bill Ainsworth.

FUNGUS versus VARROA

A press release on this subject is reproduced below

A common fungus has been turned into a super weapon that kills the varroa mite which has devastated New Zealand bees.

Ruakura Plant and Food Research scientist Dr Mark Goodwin developed a metarhizium fungus-based product which is effective against the bee-killing varroa mite. The Waikato Times reported the new product should be ready for market through the United States company Becker Underwood next year.

The product was not harmful to bees and would replace three synthetic chemical treatments. The mite which feeds on the pupa of bees, arrived in New Zealand nine years ago.

Dr Goodwin, a finalist in the Kudos science awards in Hamilton last week, said the metarhizium fungus came in thousands of varieties and was well known around the world for its insect-killing properties. He had found that the longer it was used, the more mites it killed. His success rate over time was about 90 per cent.

How much the new product would be worth to the economy was difficult to estimate said Dr Goodwin. Biosecurity NZ said the pollination of crops was worth many times the value of honey and other bee products.

With thanks to Harrogate & Rippon BKA via E Bees.

Some members will recall that research of this nature was being undertaken at Rothamstead and was featured at one of our Lecture Days. Despite the headway being made, the research ceased when Government Funding came to an end. Considering the progress that appears to have been made and the rewards to be gained, it must be particularly galling to our researchers involved in the study. The next question will be how long we have to wait before it is accepted by our monitoring bodies and made available to beekeepers in the U.K.? Well after the rest of

THE VALUE OF BEESWAX

A statement issued by Taylors of Welwyn on the front pages of the October 1950 issue of the Devon Journal 'Bee-keeping' and November 1950 issue of the Wiltshire Beekeepers Gazette.

Supplies of crude beeswax from overseas are daily becoming more difficult to obtain; however, the beekeepers at home can help to save a lot of this importation if they become really 'wax conscious' conserving and treasuring every little bit.

Melt down your old combs and odd pieces of wax into block form. Use some strong sacking and make them into a bundle and soak this in rain-water for 24 hours. After this put the bundle into a copper of rain-water with a weight on the top to stop it from floating. Bring the water to the boil, by which time the wax will have melted. Whilst the water cools the dirt in the wax will sink to the bottom. When the block is cold cut away this dirt from the underneath.

Please don't forget it is important to use rainwater. (It is an easier job, of course, if you possess a wax extractor.)

Send the cake of wax to us and we will put it through our special sterilising plant (a safeguard against possible disease) and will mill it into foundation. The charge for this is 3/4d. (17p) Per pound for Unwired Standard Brood (or 4d (2p) extra for wired) and 3/8d (19p) per pound for Super either plain or wired. Section Squares are 3/10p (20p) per pound. We can alternatively offer you 4/6d (22p) credit against goods.

Isn't it odd that at the moment Wax has a value greater than Honey?

Taylors of Welwyn, started in 1900 and were the largest suppliers of bee equipment at this time. They continued trading until 1984 when they were taken over by Thornes. Their metal hexagonal symbol can still be seen on many of their original hives today.

With many thanks to Taunton and District Beekeepers and e-bees for both the above articles

Dealing with Swarm Collections
with thanks to Lydia Geddes (ColchesterBKA and e-bees)

I am often asked by members filling in their membership forms to pay their annual beekeeping subscription whether they should be replying "yes" or "no" to the question of whether or not they will collect swarms. The answer is something only the individual can decide but it will help to know what might happen if you answer "yes" and this is a brief story of what happened in the Colchester area in 2009.

In early April local council offices were supplied with a list of beekeepers willing to collect swarms within their area. We gave only the essential information (name, phone number, and town or village) and we asked them not to leave a message on the phone as the beekeeper might not get the message in time to act.

Although swarm report calls do come through council offices, some referred by pest controllers called out to destroy bees and unwilling to do so, very often now swarms are reported directly by members of the public who search the internet and find my phone number as the contact for Colchester on the Essex Beekeepers website. The first call in 2009 came on 24 April which is around the usual date. After asking a few questions to be sure the caller was reporting a genuine swarm and then asking more about the size and situation it was in, including height off the ground, I gave phone numbers of the two nearest beekeepers and said not to leave messages but call me again if there was no reply from either. I heard nothing more so we were off to a good start. The next swarm was reported in a message left on our phone on 26 April. We were in London for the Marathon. Even watching can be pretty tiring but I returned the call when we arrived home only to learn that the swarm had moved on earlier in the day. Calls came daily from then on, often three in the same day. There were also calls about bumblebee nests which were re-located by beekeepers when the caller would have had them destroyed if we had not rescued them. There were calls where the description was not of a swarm but a feral colony in a roof or chimney situation. I have to explain that we cannot generally help in this situation but only offer advice. Sometimes the caller wants a second opinion and is upset by having to make a decision which means bees being destroyed. Other people are aware that they have resident bees and are happy to co-exist with them, hopeful of sighting a swarm which can be collected. There always seemed to be a message on the phone when I came in from the garden for lunch. There were a few mysteries including a long call with nothing but a dog barking and an occasional word I couldn't make out. Sensible calls where the caller had left no number I returned using BT ringback but I didn't ring the dog because I would have been barking up the wrong tree! One weekend the phone went crazy. Friday, Saturday and Sunday we received around twenty calls each day. No more real swarms than usual but an article had appeared in the local paper about a beekeeper collecting a swarm in Wivenhoe cemetery. The importance of honeybees was mentioned along with my phone number in print! I wasn't rude to anyone but phoning up to report sighting 7 bees in your garden which the caller will spray with fly killer if a beekeeper doesn't come to the rescue may have been a wind up or maybe not! Things were quieter in June but one of our members had received so many calls from Colchester Borough Council that he had his name removed from their list. Two swarms reported in the town centre in Colchester were high off the ground, one at the former Odeon cinema, and one in Eld Lane. I had apologised that we would have to let them go but I have since had a former fireman, now a beekeeper, say he is happy to climb a ladder to collect a swarm. As usual after Tendring Show on 12 July the swarm season appeared to be over but there was further action in early September when a swarm was reported suspended from a hanging basket on the same day we were meeting at Fingringhoe for a guided walk around the Essex Wildlife Trust reserve. The bees were good enough to hang around for Alan Hayden-Case to collect them in the evening. A couple of days later I received another call. One of our new members had gone on holiday leaving a friend looking after the chickens. You wouldn't expect your bees to get up to mischief in September but Steve arrived home from holiday to find an extra nuc box in the garden. I hope they make it through the winter! When filling in your form for 2010 if you want more bees yourself and have an empty hive clean and ready you can note this on your form and swarm coordinators will make sure you are phoned about swarms early in the season. If you have no experience of collecting a swarm ask if you can go along with someone and help before taking on the task alone. If you have all the bees you need and would like to help Derek with the provision of bees to get beginners started collect a swarm in a sturdy cardboard box. Have an old curtain it can be completely wrapped in to transport in the car and make arrangements with Derek to deliver. If the day is warm and sunny don't leave the box in the car but remove it to a shady position until you are ready to go over to Great Horkesley. Members of Colchester Division do not generally charge a fee for collecting a swarm although if you have had to travel a distance it is quite okay to accept a contribution for expenses. Where people offer more than this some of our members are happy to accept a donation to Essex Air Ambulance.

*Richard Vincent, The National Ex-Prisoner of War Association Cornwall BKA
courtesy of eBees*

Beekeeping received a lot of interest during WWII and several excellent beekeeping books were written during this period. The following extraordinary account does rather put misgivings about sitting the Basic into perspective.

"Many associations have small beginnings and 'Captive Drones' was no exception. From a small, but enthusiastic group of students under CSM Savage, MM, the craft and science of agriculture was first studied in Stalag 383, on 14th October 1942. Conditions of study were far from agreeable but the group gradually gathered momentum and in the spring of the following year was over fifty strong. The need for free discussion and the possibility of obtaining a stock of bees brought about the formation of an association, under the Presidency of Captain C F Grant, and on the 3rd May 1943 fifty-three members signified their assent. A week later the name of 'Captive Drones' was approved.

"From the date of inception the association has not looked back and on the 15th May a hive of bees was obtained from Hohenfels." Very shortly an apiary was established under the associations care. For this purpose the economic subscription of ten cigarettes or a bar of soap was duly approved for maintenance purposes. Thus the very generous loan from a true beekeeper, for the duration of the war, enabled the students to have practical and theoretical instruction. Meanwhile the periodical meetings provided opportunities for theoretical discussion and every possible aspect of the craft was considered. The interest was now increasing daily, enhanced no doubt by 'the apiary on the hill' and by the 14th July 1943 membership was well over the hundred mark. A week later the problem of winter-feeding was discussed and the members agreed to give up six ounces of sugar per man so that the bees might winter in comfort.

During the same period many demonstrative manipulations were made by the Chairman and Instructor and not a few were amazed that bees could be handled so easily. The warm weather brought a glut of operations wherein swarms were hived, Queens reared, hives inspected etc. The summer waned and winter approached with the examination of candidates for the B.B.K.A. Craftsman Certificate. These examinees may be termed as the 'pioneers' of such examinations. In the meantime, the executive was strengthened in October by Captain Mackay and Captain Crawford as Vice-Presidents. From this date despite inclement weather, studies carried on in preparation for the winter examination and on 15th January 1944 no fewer than 32 candidates presented themselves for the Craftsman Certificate and two for the Expert Certificate. At the same time the hives in the apiary were packed down for the winter, they gave an outward appearance of still life. "The Christmas vacation temporarily halted the associations activities until 16th February when more than twenty new members were welcomed and official notification of affiliation was received with the significant words 'captive you may be but drones never'.

Spurred on by these heartening words the Chairman commenced upon the prodigious task of individually examining over fifty suitable candidates for the Oral Section of Junior Craftsmanship. On the 28th March the association was gratified to learn that eight candidates were entitled to the designation 'Craftsman'. So concluded a very successful years bee-keeping, due in no small measure to the Chairman's initiative and resourcefulness, the Presidents never failing interest and the invaluable work of the B.R.C.S. and the Y.M.C.A."

Are honeybees warm blooded?

Like many apparently simple questions this one from a non-beekeeper raised several others. Firstly what does the term warm-blooded mean? Secondly what is its importance to bees and, by extension, to our management of bee colonies? First, the term warm blooded doesn't necessarily mean warm. Rather it refers to the ability to maintain and regulate body temperature between specific limits, that is homiothermy. Equally an absence of temperature regulation, termed cold-bloodedness, is poikilothermy. A general conclusion would be that bees, being invertebrates, are poikilotherm, unable to regulate body heat. However, we as beekeepers are well aware that a colony of bees must be homiothermic. The colony forms a cluster at 15°C. This response to cold is mainly by the older bees. All organisms produce heat by chemical reactions within their bodies (metabolism). The cluster is like a hollow ball and contracts with lowering of temperatures. Bees' bodies, being mostly air, are good insulators. If brood is present, heat from metabolism is retained within the cluster to keep the temperature around 35°C. (There is a threat posed by too high a temperature and instant collapse occurs if a bee's internal temperature reaches about 40°C. But what about an individual bee? We have all seen the pathetic sight of bees floating in pond water often in the spring, having tried to drink and fallen in, chilled and inert. So is the individual bee unable to regulate its temperature? Experiments on lowering the temperature of a single bee show progressive stages through wing flickering to chill coma. The onset of chill coma for bees is 11.2°C, bumblebees 7.3°C, bumble bees 7°C, wasps 6.7°C and sphinx moth 0.3°C. Bees will not recover from chill coma by themselves but if warmed in time are apparently none the worse. They have to be first warmed to 15°C for them to initiate their own self heating processes. The self heating comes first from their own basic metabolism and then shivering or muscle contraction. These results provide comfort for all would be rescuers. This raises a further question of how it is that bees can fly on very cold days when the air temperature must be nearing 2 or 3°C. Bees generate a lot of internal heat from flying and are moderately well insulated with hairs, so provided the bee's internal temperature exceeds 15°C, it can make it back to the hive. So the answer to our question would be that bees have some self regulation above an internal body temperature of 15°C but below 40°C. It will be seen from the above that personal insulation from cold is an advantage. Bees have some hair on their bodies which serves to insulate as some air is trapped next to the skin. However for heat conservation it also pays to be bigger. Heat loss depends upon the surface area of the skin exposed to the cold. The greater the surface area the greater the heat loss. So, bigger bees have relatively less surface area of skin through which to lose heat. This may explain, along with the above information on the onset of chill coma, why bumblebees can forage earlier and later in the day when temperatures are low, to the great chagrin of one of my beekeeping friends. Bumblebees are also hairier. What has this to do with practical beekeeping? A good flow of air to ventilate the hive is of utmost importance. This not only provides the oxygen to support metabolism in cold weather but will remove the chilling effect of a damp atmosphere. Also it stops the honey absorbing moisture and fermenting. The mesh floor is an asset to successful overwintering. The overall conclusion must be that individual honeybees are homiothermic within narrow limits. Entire colonies are certainly homiothermic and this enables them to colonise a large range of habitats throughout the world to their and our considerable advantage.

With Thanks to William Fyfe – Edited from the Scottish Beekeeper courtesy of BEES

War and Bees

Military applications of apiculture

It would probably be easier to enumerate the cultures which do not chronicle some kind of use of bees as weapons since this motif is so pervasive. Most of these accounts are historical rather than mythical. One of the earliest of these, from the first century B.C., records the misfortunes of a Roman campaign, led by Pompeii the Great, against the Heptakometes in Asia Minor. Interestingly, it is not the bees themselves that are employed in this instance but, rather, their honey. About one thousand of Pompeii's Roman troops were passing through a narrow mountain pass when they encountered a cache of honey. The soldiers, accustomed to raiding and looting to augment their provisions, halted their advance and eagerly devoured the honey-- and soon became afflicted with delirium and violent seizures of vomiting and purges! In such a condition they were easily defeated by the local Heptakomete defenders who took their cue to attack. It seems that the honey had been left in the soldiers' path not in an act of flight from the advancing forces but as a poisonous bait to stupefy them.

*The locals would have been well aware that honey produced during certain times of the year was naturally poisonous. Honey yielded from the nectar of such plants as *Rhododendron ponticum* and *Azalea pontica* contain alkaloids that are toxic to humans but harmless to bees. After the offending blooms have stopped flowering, beekeepers in areas where these plants are common (such as the area of present-day Turkey where this incident occurred) routinely remove this toxic honey so it doesn't contaminate subsequently produced stores. The poisonous honey is then fed back to the bees during time of dearth-- if it hasn't been used first for national defense.*

*South and Central American Indians used similar honey for ceremonial purges and perhaps for "vision questing"-- see notes following Chapter Two, "The Honeymoon's Over". Deaths have been reported in New Zealand which were attributed to the consumption of honey originating from the "wharangi bush", *Melicope ternata*.*

*Another New Zealand plant, *Coriaria arborea*, produces nectar that is safe for incorporation into honey but furnishes toxic honeydew. Other locales where toxic honey has been reported on occasion include Mexico *Datura* spp., Hungary *Datura* spp., belladonna=*Atropa* spp. and *Hyoscamus niger*, Brazil *Serjania lethalis* and the southwest U.S. *Gelsemium sempervirens*.*

Mead, an intoxicating drink made from a honey base has also been used to gain tactical military advantage. In 946, the Slavic St. Olga, on the occasion of her son's funeral, provided limitless quantities of mead. She invited her enemies only, who, presumably, had somehow been instrumental in the death of her child, and five thousand inebriated 'mourners' were slain in their stupor by Olga's allies. Similarly, in 1489, 10,000 Tatars were dispatched by Russians whom the Turkish invaders had been pursuing. The Russians left mead behind in their flight and returned after sufficient time for the Tatars to drink themselves into a daze.

Of course, there are plenty of instances when bees have been used in the more obvious way, as "meat-seeking missiles". The Romans, for instance, having prudently learned not to exact a tax of honey in Asia Minor also learned, in the great Roman tradition of imitation and innovation, to use bees in the wars they waged. They were less deceptive in this than the Heptakometes, however, and instead of employing the subterfuge of poisoned honey they simply sent beehives catapulting into the ranks or fortifications of their enemies. The unleashed fury of the bees, enraged when their hives were smashed, is credited with being the decisive stroke of more than one battle. Turn-about being fair play the Dacians, of what is today Romania, defeated the armored legions of Rome, at least temporarily, with their own salvo of skeps.

Jumping to the eleventh century, Emperor Henry I's troops, commanded by General Immo, defended their fortifications by launching a barrage of beehives at the siege forces of Duke Geiselbert of Lorraine and sent them scurrying. King Richard is recorded as having used hives of bees as catapult-launched bombs against the Saracens during the Third Crusade in the twelfth century. In 1289 in Gussing, Hungary, an Austrian invasion lead by Duke Albert was repulsed with a fusillade of hot water, fire and bees thrown from the battlements of the city

In 1513 under the reign of Emmanuel the Fortunate, King of Portugal, a General Baruiga was turned from Tauris in Xantiane by the Moors-- who threw hives down on his troops from the citadel's walls . In the 18th century battle of Alba Graexa, the Turks, who had succeeded in breaching a wall of the city, found to their dismay that the inhabitants had piled beehives there as a barricade and were thus prevented from entering the city. Bees have even been used in naval battle: in the Mediterranean Sea the crew of a small corsair vessel, only about fifty men, boarded and captured a much larger galley manned by 500 soldiers-- after the pirates cast beehives from the masts of their ship down onto the crew of the galley, who had intended to apprehend them.

Military application of bees has continued into modern times. In a novel approach practiced by the Tiv of Nigeria, bees were kept in special horns also containing powdered poisons. Thus dusted to increase the efficacy of their own venom the bees would be released in the heat of battle to attack the Tiv's enemies (it is not, however, recorded why the bees do not succumb to the poison themselves or how the bees distinguish between the Tiv and their foes.

During the American Civil War, Union troops were almost routed when southern artillery shattered a row of hives in a yard through which they were passing. Bees pitched at the enemy or booby trapped to topple over with trip wires were used to the advantage of both sides during skirmishes in World War I . There are even some reports that the Viet Cong used sabotaged Apis dorsata nests against Americans during the Vietnam war. And, in a footnote to the war in South-East Asia, what was presumed to be a biological warfare agent turned out, in fact, to be the 'yellow rain' produced by Apis dorsata during massed defecation flights.

Bees have been used for personal protection as well as national defence. The Classical Roman poet Vergil is said to have thwarted soldiers from looting his valuables by storing them in his beehives. The town of Beyenburg (which translates to "Beetown"), in northern Germany, is said to owe its name to an episode in which a marauding band was foiled in its plundering when they attempted to enter the local convent. The nuns turned loose their bees and sought shelter, leaving the bees to drive off the intruders. Similarly, in 1933, again in Germany, an old beekeeper who was being robbed by three thugs managed to upset a hive. All four men were stung, but the beekeeper, accustomed as he was to receiving stings, was little the worse for it. The three thieves, however, took flight-- but were so well marked by the wounds they'd received that they were easily identified and apprehended by police shortly thereafter . Daniel Wildman, a showman of 18th century England, is reported to have fended off the attack of three large mastiffs by casting swarms of bees at the animals as they rushed towards him (in my opinion, a mistreatment, for mere entertainment, of both the dogs and the bees).

Such tales could not be expected to remain within the confines of the strictly credible and have found a place as well in the annals of folklore. A fairly straightforward telling of an incident in the life of the sixth century Saint Gobnat of Ireland has her shaking the bees out of one of her hives to ward off a gang of cattle rustlers. In more colorful accounts the bees are miraculously changed into soldiers and the hive from which these myrmidons issued is transformed into a brass helmet . In another Irish account, bees were at the root of a dispute that ended in war. Congal, the heir to the throne of Ulster, was stung in the eye by a bee while a guest in the house of Domnall, king of Ireland. He was blinded (and was known by the moniker "Caech", meaning "One-eye", thereafter). His kinsmen demanded the forfeiture of the eye of Domnall's son as retribution but Domnall ordered that the colony of bees should be destroyed instead-- to ensure that the guilty bee would perish. (Evidently, Domnall was a better king than he was a beekeeper, as any beekeeper knows that a bee dies after it stings.) The Ulstermen were not satisfied with Domnall's verdict and eventually carried their grievance to the battlefield (where they were soundly defeated). Punitive edicts similar to that issued by Domnall have been recorded elsewhere: in 864 the Council of Worms in western Germany decreed that a swarm of bees should be publicly executed by suffocation in retribution for the death of a man who had been stung.

The New World, too, has its own version of a tale of bees in warfare. The ancient Quiche Maya are said to have repelled a siege by posting mannequins along the parapets of their city. The sham warriors were outfitted with cloaks, spears and shields, even war bonnets for the gourds that served them as heads-- and which were full of wasps, horseflies and bees that the defenders had collected. When the advancing army was close to the battlements the gourds were smashed and the assailants were overcome by the stinging insects.

Bee Venom Therapy

There is much written about Bee venom therapy and many people advocate its use for treating RHEUMATIC DISEASES, ARTHRITIS, MULTIPLE SCLEROSIS and a host of other ailments. The use of this therapy should only be used after careful thought and discussion with an Apitherapist and your doctor. The therapy should be carefully monitored, so PLEASE DO NOT just get a hold of a bee and start stinging!

Bee venom therapy is widely accepted and used in China, Japan, Korea, Russia, Eastern Europe countries: Bulgaria, Czechoslovakia, Hungary, Poland. Romania, and Western European Countries: Austria, Germany, Switzerland and France. In Canada and the USA there is a growing number of people who are interested in this kind of treatment. The use of bee venom continues to spread but its main use is to treat rheumatic diseases, chronic arthritis, MS, joint inflammations and gout.

It is very strongly recommended that you use ALL of the hive products along with Bee Venom Treatment, they ALL work together to strengthen your immune system. You need to take 1000mg Royal Jelly, 500mg Propolis, and 2-4 capsules of Pollen a day along with 2-4 tablespoons of Raw Unprocessed Honey. Also take 500 mg a day of the following: St. John's Wort, Ginkgo, Ginseng and Garlic. It is also recommended to take 400mg of Neem Leaf capsules and 1000 to 1500 mg of good quality vitamin-C daily.

Reaction to Bee Venom

Bee Venom is the product of the bee's sting and some people are allergic to it! There are many reactions that can happen, but normally they cause a localized reaction with redness and swelling surrounding the sting area. A more severe reaction will result when the swelling increases to the whole limb causing problems with movement.

The most severe reactions are when the person stung has intensive skin redness, irritation and difficulty in breathing which can result in loss of consciousness. This is also known as "anaphylactic reaction" and needs urgent medical help (If this is not forthcoming DEATH may result.) .

If this condition is known to exist, the person should carry a self-help device containing "adrenaline or epinephrine," this has to be prescribed by a doctor and is only available for the most severe reactions. It is not meant for use where redness and swelling only are experienced.

I have tried this out at the local bee place and will let you know the results..... Michael

WHAT IS BEE VENOM?

The venom of Honeybees is stored in the poison sac, which empties into the base of the stinger. A newly emerged bee has very little venom, but the amount gradually accumulates with age, to about 0.3 mg in 15 day old bees. After the age of guard bees is reached (18 days), no additional venom is produced. Subsequently, the weight of the venom in the poison sac remains unchanged, and cannot be replenished after the sac is emptied.

Without Pollen, a bee is unable to manufacture venom. Bee venom is a clear liquid with a sharp, bitter taste, an aromatic odour and an acidic reaction. It dries quickly at room temperature.

TOXICITY

Bee Venom is more toxic than wasp venom. On rare occasions, one sting is capable of causing death by anaphylactic shock to persons who are hypersensitive. Unless prompt medical relief is given, such persons may die within 30 minutes.

If you happen to be a person who is allergic to stings, or know someone who is, you can send for a 13 page booklet: "Insect stings," for 50 cents from the Asthma and Allergy Foundation of America, 19 West 44th Street, New York, NY 10036. This excellent booklet describes symptoms of true allergic reactions, treatment, insects and their habits and preventing stings.

Under more normal circumstances, however, it would probably require at least 500 stings over a short period of time to cause death by direct toxicity.

COMPOSITION AND PROPERTIES OF BEE VENOM

The components of Bee Venom have been reviewed and summarized in papers by a least four scientists from 1955 to 1972. Bee Venom is quite complicated chemically. It contains several biochemical or pharmacologically active substances, including at least the following: histamine, dopamine, melittin, apamin (mast cell destroyer - MCD), peptide, minimine, and the enzymes - phospholipase A, and hyaluronidase. There are at least eight protein fractions of Honeybee Venom, of which phospholipase A, melittin, and apamin are the three major ones.

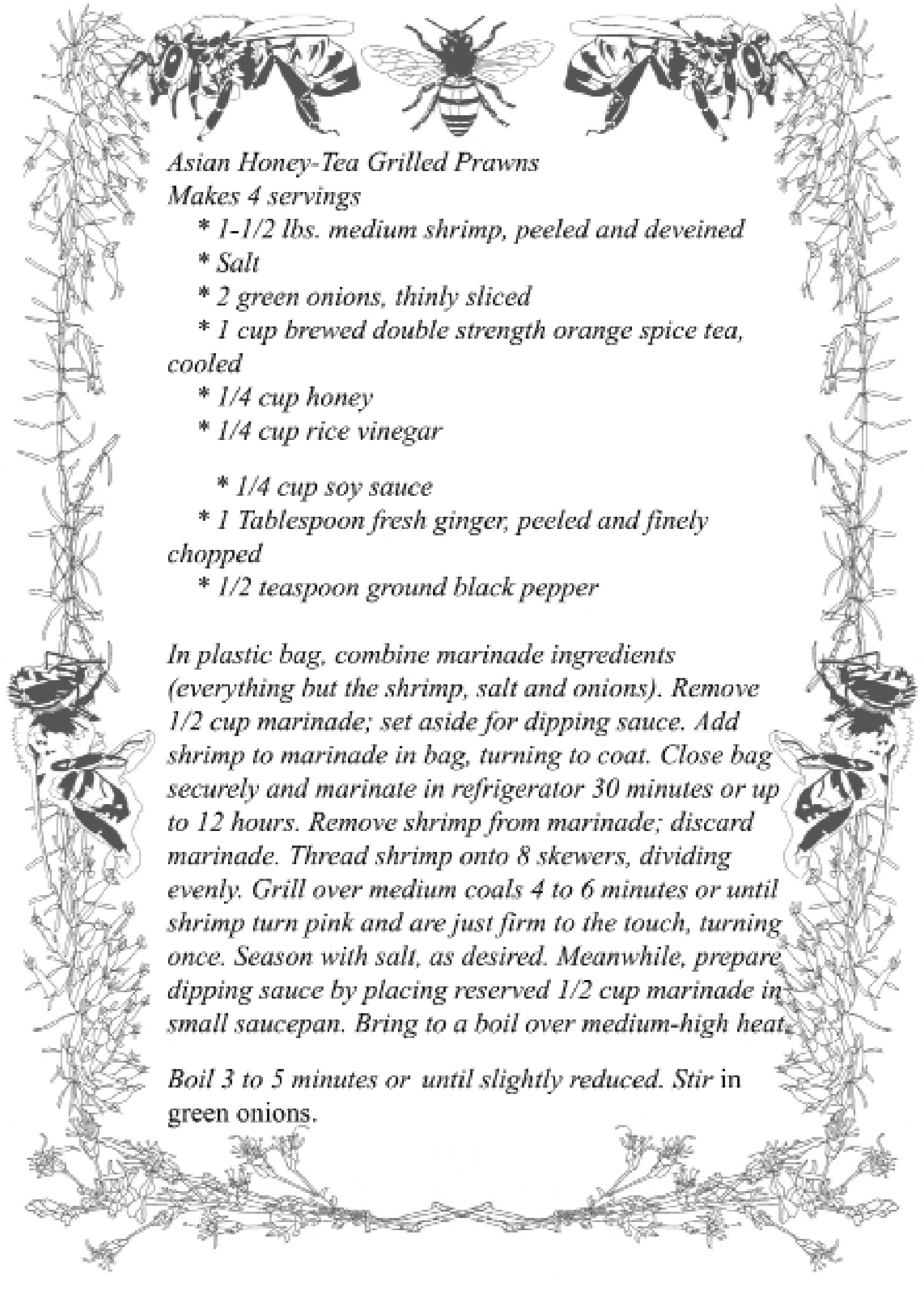
For years Bee Venom was thought to be formic acid. Finally it was discovered that there was no formic acid in it. It is a complex mixture of pesticides phospholipase, mellitin, apamin, etc. (over 35 fractional components). The collected venom is as powerful as live bee stings.

Ants talk to each other

Advances in audio technology have enabled scientists to discover that ants routinely talk to each other in their nests. Most ants have a natural washboard and plectrum built into their abdomens that they can rub together to communicate using sound. Using miniaturised microphones and speakers that can be inserted unobtrusively into nests, researchers established that the queens can issue instructions to their workers. The astonished researchers, who managed to make the first recordings of queen ants “speaking”, also discovered that other insects can mimic the ants to make them slaves. Rebel’s large blue butterfly is one of about 10,000 creatures that have a parasitic relationship with ants and has now been found to have learnt to imitate the sounds as well as using chemical signals. The butterfly’s caterpillars are carried by ants into the nests where they beg for food and are fed by the workers. When a colony is disturbed the ants will rescue the caterpillars before their own broods. Research several decades ago had shown that ants were able to make alarm calls using sounds, but only now has it been shown that their vocabulary may be much bigger and that they can “talk” to each other. Professor Jeremy Thomas, of the University of Oxford, said improvements in technology had made the discoveries possible because it meant the ants could be recorded and subjected to playbacks without becoming alarmed. By placing miniature speakers into the nest and playing back sounds made by a queen, the researchers were able to persuade ants to stand to attention. “When we played the queen sounds they did ‘en garde’ behaviour. They would stand motionless with their antennae held out and their jaws apart for hours - the moment anyone goes near they will attack,” he said. He described how the ants would press their antennae to the speaker just as they would seek to greet another ant in the nest. Professor Thomas said it remained unclear how much the ants relied on sound for language but he suspected that further analysis would reveal a wider vocabulary than had been seen yet. “The most important discovery is that within the ant colony different sounds can provoke different reactions,” he said. “I would be very surprised if we didn’t get different types of sound. “It’s within the power of the ant to play different tunes by changing the rhythm with which they rub. He added that the detection of the role of sounds provided the “final piece of the jigsaw” to explain how Rebel’s large blue caterpillars survive in ants’ nests and should help to guide conservationists in trying to save the endangered European mountain species. Francesca Barbero, of the University of Turin, said: “Our new work shows that the role of sound in information exchange within ant colonies has been greatly underestimated.” Karsten Schönrogge, of the Centre for Ecology & Hydrology in Oxfordshire, said the mimicry by the caterpillars was so convincing that the ants afforded them higher status than their own young. They will even slaughter their own young to feed the interlopers when food is scarce.

Lewis Smith, Environment Reporter
The Times 6 Feb 2009: the findings were
originally reported in the journal Science.
Also with thanks to L&DBKA and e-bees





Asian Honey-Tea Grilled Prawns

Makes 4 servings

- * 1-1/2 lbs. medium shrimp, peeled and deveined*
- * Salt*
- * 2 green onions, thinly sliced*
- * 1 cup brewed double strength orange spice tea, cooled*
- * 1/4 cup honey*
- * 1/4 cup rice vinegar*
- * 1/4 cup soy sauce*
- * 1 Tablespoon fresh ginger, peeled and finely chopped*
- * 1/2 teaspoon ground black pepper*

In plastic bag, combine marinade ingredients (everything but the shrimp, salt and onions). Remove 1/2 cup marinade; set aside for dipping sauce. Add shrimp to marinade in bag, turning to coat. Close bag securely and marinate in refrigerator 30 minutes or up to 12 hours. Remove shrimp from marinade; discard marinade. Thread shrimp onto 8 skewers, dividing evenly. Grill over medium coals 4 to 6 minutes or until shrimp turn pink and are just firm to the touch, turning once. Season with salt, as desired. Meanwhile, prepare dipping sauce by placing reserved 1/2 cup marinade in small saucepan. Bring to a boil over medium-high heat.

Boil 3 to 5 minutes or until slightly reduced. Stir in green onions.

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*I've finished reading a book
written by Ken Pickles, a new member
of Blackburn and District Beekeepers.
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beekeeping but is full of bee lore,
experiences, and anecdotes. There is a lot
of philosophy in there to.*

*I highly recommend it to you. It is
obtainable from Northern Bee Books at a
cost of around £13*

*You can read a review from the Keighley
News at*

www.keighleynews.co.uk/news4733740.

Ken really has a bee in his bonnet.

Reviewed by Bill Ainsworth

Ronald O. Kapp's Pollen and Spores

*"How to Know Pollen and Spores" by Ron Kapp was published in 1969,
by William C. Brown Publishers, DUBUQUE, Iowa. The volume quickly
became a standard reference for the identification of aquatic pollen
and it has remained one of America's favorite palynology texts,
particularly among beginning students. Certainly, a primary
attraction is the clarity and simplicity of its illustrations. drawn
primarily by Rick Hall, then a student at Alma College, where Ron
Kapp spent his academic career. Kapp credited Rick with "all
illustrations except those offungal spores," but Kapp's initials can also
be seen on some illustrations.*

*Kapp planned a revised edition that he began in 1985; however, this
was cut short by his untimely death in March of 1990. With this edition.
King and Davis have endeavored to continue the clarity and simplicity
of Kapp's work while updating and correcting the text. Their goal is
to provide an inexpensive introduction and guide to an area to which
they are devoted, in hopes of continuing Ron's work and advancing the
remarkable field of palynology.*

*Some conventions introduced in the second edition include a consistent
format for each taxon's of Latin binomial, followed by "CN"
common name, SIZE in micrometers (Jm), (geographical) RANGE,
and NOTES. Keys to several groups have been expanded and the
literature has been updated to reflect the many advances in palynology
since the original 1969 edition.*

*Many palynologists have provided suggestions and ideas for this
edition, which have been incorporated wherever practical. Students
over the years have provided invaluable insights through their
questions and comments, we thank them all. And we are particularly
thankful for the efforts of Phil Jenkins, of the University of Arizona
Herbarium, who edited the plant taxonomic nomenclature in this text.
We gratefully acknowledge the technical support of several persons in
preparing this Second Edition, including Philip D. Jenkins, Jo Ann
Overs, and Becky Meyers.*

*Richard C. Hall is a medical illustrator whose office is near Jim King's.
Richard and his students Terence Condrich, and Ross Papalardo, re-
paired many of his original drawings, and produced several new ones.*

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