

**Natural Bee-keeping**

**I Did It My Way**

**By Stewart Bell**

## Introduction

It all began some time ago when my wife and I heard about the plight of the bee. We said how about keeping some bees, knowing absolutely nothing about bee keeping we did not appreciate what was involved.

Some time later we decided to get a few chickens from a place called Omlet. They were based quite a distance away so we only bought the Eglu (chicken house) and some fencing and got the chickens locally. When we wanted extras we went to Omlet.

About two years after that we noticed they were selling Beehauses a plastic beehive which uses frames. I printed off their instruction manual for keeping bees. I read it cover to cover several times and that is what got me started down the line of becoming a bee keeper.

The internet being what it is, a mine of information, my research over the next few months changed completely my thoughts on how to keep bees.

## Background History

Bees have been around in one form or another for about 9 million years so they should know by now what's best for them. Human involvement appears to be from about 15,000 years ago when our ancestors gathered wild honey. Management of bees appears to have been started by the ancient Egyptians using hollowed logs, pottery vessels or straw baskets called “skeps”.

It was not until the 18<sup>th</sup> century that Europeans became involved and thanks to the research of the blind Swiss scientist Francois Huber and others that the lives of the bee were understood. He is universally recognised as the “father of modern bee-science”.

Until about 1768 the harvesting of honey involved the death of the bee colony to get the honey as the nest was ripped to pieces. The first top-bar hive was used by Thomas Wildman which basically consisted of seven parallel wooden bars in the top of a skep to which the bees attach their combs. He also used an upper storey now known as a super to collect honey and therefore not require the destruction of the bees. He later developed a system of sliding frames which has been developed into the modern framed hives.

The 19<sup>th</sup> century saw things move quickly and the most influential being Lorenzo Langstroth a Yorkshireman who emigrated to the USA and was the first person to make use of Huber's discovery of the “bee space”. He made use of the bee space when designing his hive “The Langstroth”. His frames were spaced so that the bees would build on the frames without bonding adjacent frames together. His classic book was published in 1853 “The Hive and Honey-bee”.

After this both sides of the Atlantic produced a variety of framed hives, such as Dadant, De-Layens and the British National Hive. All these hives are easy to use and manage by the bee keeper with little regard for the bees only the volume of honey they produce. Coincidentally or not with the introduction of these framed hives so appears more diseases and pests that were not around to the same extent with the non framed bee keeping practices.

Top-bar hives on the other hand are several thousand years old and are in present day use mainly in Africa because of their ease of construction, simple management, bee friendly, and no reuse of comb so less disease.

I found the site [biobees.com](http://biobees.com) and read all about Emile Warre a French priest who was concerned at the decline of bee keeping in 1867. He built 350 hives of different designs to compare them over a number of years. As a result he designed his “Warre hive” or “People's Hive. He wrote his findings in a book called “Bee keeping For All”. His observations and conclusions are still applicable today and in my opinion more so.

It is easy to build, easy to manage, you don't need masses of equipment and above all very bee friendly. The bees are only disturbed once or twice a year not every 10-14 days as with the framed hives. This means the colony retain better the natural nest scent and heat.

The best argument for natural bee keeping I have found so far is a book by a German bee keeper called Johann Thur in 1946 “Bee keeping: natural, simple and successful”.

## How I Did It My Way

The first task was to research what was on offer. I looked at the various types of hive mainly framed ones. The one I had decided upon was by Omlet, the Beehouse because it looked solid had many useful features and was ideal for a complete novice.

At the same time I wanted to know more about the bee itself. So I read about the various body parts, its life cycle, how it bred, its ideal living conditions and its enemies. The latter one proved quite interesting as most of the diseases have only appeared since we started using framed hives.

The single most important article that convinced me to abandon framed hives was the paper by Johann Thur in 1946 “Bee-keeping: natural, simple and successful” which I downloaded from the biobees.com site. The retention of the nest scent and heat to me is absolutely paramount above any commercial consideration, the well being of the bee MUST come first.

I compiled a list of what equipment I needed to manage the various hives. Again for framed hives it was very extensive – too extensive unless you have a spare garage to keep it all in. Then I compared the living requirements of the bee to the various hives available. Yet again the framed hives came off worst.

So I abandoned the idea of the Beehouse – sorry Omlet. So a top-bar hive was the hive of choice. So where was I to get it from? More research required. There are basically two types of top-bar hive horizontal and vertical. The horizontal ones are very popular in Africa where it suits the hot climate, can be made from scrap wood and easy to build.

My choice was a vertical top-bar the Warre hive. As Warre had tested 350 hives over a number of years and come up with this one then who am I to argue. I examined the pros and cons of the Warre hive and how bee friendly it was. Warre had done a remarkable job taking into account the bees ideal living conditions and yet by letting the top bars split the average brood size area into two made it possible to take off and put on more boxes without having to cut through any comb.

So where do I get a Warre hive from or do I make one myself. Now as this was May and I wanted to be up and running by the beginning of June at the latest I had to move fast. I downloaded some plans for a Warre hive and it looked straightforward. I went to my local DIY shop and showed them the plans. He looked at them and said they don't do any wood in the thickness I needed. That took me aback because I had worked out the wood etc. would cost about £100.

Online again to look at ready made hives. Compared to framed National hives they were more expensive. I found two good sites but both down south and not easily within a days travelling. There was “Natural Bee-keeping” and “Major Bee Hives”. I rang them both to find out more details. Two very helpful people.

Not knowing exactly what I needed, I knew I wanted a Varroa floor from the research but

that was about it. “Natural” could make hives in pine or cedar and used stainless steel screws but not a Varroa floor. They supplied one of the boxes with a window and gave the hive two coats of linseed oil.

“Major” only did pine, used normal screws, but could supply a varroa floor ( for extra cost). They could do windows in all boxes but it came untreated. Decisions decisions. Eventually I went for the “Major” hive. The reason being research had suggested the top cover needed to be really weather proof so I wanted to paint it white to reflect heat on any continuous hot sunny days (little chance of that in the north). The screw heads could be covered with putty, and I really wanted a varroa floor.

So on the day of posting I rang to make sure all was well. He graciously apologised and said his van's clutch had gone and it would be a day late. Still next day it arrived as promised. The delivery man huffed and puffed saying the parcels were heavy. He was very surprised when I told him it was a bee hive. I unwrapped it and was slightly surprised at the weight of the empty hive boxes. I had to take the roof apart to enable me to paint it.

So starting with the roof I applied a primer, two coats of undercoat and two coats of external white gloss. I did the same with the varroa floor. The boxes were given three coats of linseed oil allowing at least 24 hours between coats. I sent Elvin at Major Beehives an email jokingly saying I could now understand why he sold the hives untreated as it took me over a week to paint the hive.

My wife had to put up with the loss of the kitchen table and the smell of drying paint and linseed oil. She didn't mind the paint but hated the linseed oil and the draught from the permanently open window.

Again internet research showed that in order to make the hive friendly to the bees to rub the inside of the hive boxes with beeswax. So I sent for some. As it was from an unknown source I decided to blowtorch the inside of every box after waxing them to eliminate any risk from spores in the wax.

I did the same on the rough side of the top-bars. I also found the use of lemon-grass oil rubbed on the inside would help as it smells similar to the bees nasanov pheromone and is a deterrent to the varroa mite.

So the hive was ready – almost. This hive uses a quilt a box about half the height of a brood box. The quilt acts like our quilt on the bed, it keeps the heat and scent in the hive and is filled with an insulating material such as straw or wood shavings. This material absorbs any excess moisture in the air, particularly in winter when condensation and mould can be a problem – bees hate to be damp and can become susceptible to disease and dysentery.

I filled mine with hay from the local pet shop. One more job before putting the hive outside that of putting a mixture of Vaseline and cooking oil on the varroa tray in the varroa floor to check mite drop and Vaseline round the bottom of the varroa floor to deter ants.

The hive was now ready but the place where it is going to go was not. Research revealed that a box full of honey weighs 40 Kilos and the weight of two full brood boxes is 80 Kilos so not being a weight lifter and having intermittent back trouble, I had to find a way of lifting up to 120 Kilos.

There are Warre lifts used by commercial keepers but at over £300 this was not a viable option and my wife was not keen on the possibility of dropping the hive and covering the neighbours in angry bees. We were OK because of our bee-suits but not the neighbours.

So the very old grey matter went to work. I had seen on the Warre lifts that they used pulleys and as I only had one hive to worry about. I built a frame over where the hive was to go and concreted it in. By researching the internet again I found a suitable pulley hoist at a ships chandler in Kent designed for lifting things up to the loft and it was great, it could lift up to 185 Kilos and all for £5 – can't be bad.

I then redesigned the path to avoid the front entrance of the hive and put down paving slabs for a good base. I cut grooves under each handle on the hive boxes so the hoist rope would not slip when lifting. I then installed the hive placing it on concrete bricks to raise the varroa floor off the ground. Now all I needed were some bees.

This proved more troublesome than I thought it was going to be. There are many sites advertising bees but when I contacted them they didn't have any or it would be at the end of the month which would be too late to get them established for winter unless we had an exceptionally warm summer – fat chance in the north west.

I had read about Buckfast bees and they sounded ideal, I found a place that sold them and they said I could have some but then told me they were imported from Slovenia so I said I would think about it. What's wrong with British bees!

I then remembered at the BBKA meeting someone had some bees for sale. So I contacted them and they still had them for sale. I asked several questions Did she have a Varroa problem – no not many. How old was the queen – back-end of last year. Had she marked the queen – no. So we agreed a price and that I would collect them the following week.

The day of collection arrived. I went over with my wife in the early evening and there they were in a Correx nucleus box buzzing merrily. I asked what should I feed them on until established she said Ambrosia and went on to explain that I could get some from where we had the BBKA meeting 20 miles away. It was lucky I had already bought 2 kilos of syrup from Omlet a couple of weeks ago.

We paid and took the bees to the car. She suggested we put them in the foot-well and my wife could hold them steady between her legs. Well you should have seen the look I got from my wife. Anyway we got in and drove off. I can see the funny side with my wife sitting there with 10,000 bees between her legs. We got home without incident.

I took the bees into the garden and placed them on a spare floor next to the Warre hive with its entrance facing the same way as the Warre's. As the nucleus box didn't have an aeration mesh I needed to get the entrance hole un-taped. Gingerly I slowly removed the tape. I half expected a huge exodus of bees but just one or two curious bees came to the entrance and went back in.

The next day started bright and sunny. I knew the bees would have to orient themselves to ensure they could find the hive on their return from the foraging trips. On a very hot day they buzzed back and forth in such numbers that the entrance of the small nucleus got overloaded. In addition because of the heat a large number of bees crowded onto the out side of the box. A sight to behold.

As the evening came it got cooler and the bee covered box got back to normal. This was quickly followed by the flight of the drones with their distinctive low pitched buzz.

During the night we decided they had to be installed in the Warre hive as soon as possible. So I went out into the garden with Stanley knife in hand and slowly cut the tapes that were holding down the lid of the nucleus hive. I lifted the lid slightly and got a loud buzz from the bees so put it down again. At least I knew the lid would come off easily.

As my wife had a late start and the fact that the early morning was very warm we decided to strike while the iron was hot so to speak. So I collected the bucket of tools i.e. hive tool, bee brush, shaker full of icing sugar and a spray bottle of sugared water (no smoker). I also had a large plastic crate covered with some Hessian to put the empty frames in. We got into our bee suits and marched into the garden.

Arriving at the hive I strategically placed the bucket of tools and the plastic crate so they were in easy reach. I then took the roof and quilt off the Warre hive and removed all the top bars on the top box. I made sure the drawer was taken out of the varroa floor so it didn't get messed up with icing sugar.

Next with sugar sprayer in hand I lifted off the lid of the nucleus, one or two bees flew up. I sprayed them with the sugar mixture hoping they would move down the frames, no such luck they must like rain. So I put the sugar sprayer down and gave my wife the icing sugar shaker to put on the bees when I shook them into the Warre hive.

I used the hive tool to ensure the frames were mobile and not propolised, put it back in my pocket and went and very gently picked up the first frame. There were quite a few bees on it and I had a look to see if there was a queen but no joy. I slowly moved across to the Warre hive and placed the frame diagonally into the Warre box as it is only 30cm square. Then holding my breath jerked the frame downwards without hitting the top bars of the lower box.

Most of the bees fell into the box and some flew up in the air. There was still a few on the frame. I took the bee brush and gently brushed them off into the box. Once the frame was empty I put it into the plastic crate and covered it over with the Hessian sacking to stop any bees getting to it. My wife then shook the icing sugar onto the bees in the box. She managed to cover all of a dozen

bees with icing sugar so I took it off her and furiously shook it over the rest of the bees. We now had quite a number of white bees in the box.

Right now for the second frame containing a lot more bees. Same procedure was done, still no queen seen. This time when I shook the frame a cloud of angry buzzing bees took to the air. I think they must have figured out what was going to happen after seeing the first one done. So after brushing off the stragglers and putting the second frame in the plastic crate. I decided speed was of the essence and a dire hope that the queen would be in the Warre box in the end.

All the frames had now been shaken into the box and duly dusted so we had a box of white bees and a cloud of bees round us. So I replaced the top bars, put on the food bag which had been pierced several times with a needle along a black line I had marked on the bag. I had to ensure the black line fell between two bars so the bees could be fed.

I then put the starched cover over the bag and the quilt over that ensuring any bees round the edge were brushed out of the way. It was good that there was plenty of give in the quilt base so the feeding bag pushed up into it. After that the roof went back on over the quilt.

By the time I had put the roof on a swarm of bees had collected on an adjacent post so now it was fingers crossed time that the queen was in the Warre hive. I had blocked the entrance in case they all decided to go for a quick exit. I now removed the block from the entrance.

We decided it was time to step back to the house and watch events unfold from a distance. We took all the tools and the covered frames with us. I noticed there was buzzing coming from the covered crate so I lifted the cover and a few bees flew out so I rechecked the frames to ensure there were no more. We then bee brushed each other to remove any bees on us. Surprisingly only one or two. We then went into the house with the crate and tools and closed the door. My wife was now due to leave so as I was still in my bee suit she left.

The next half an hour would be critical, had I managed to get the queen into the Warre box if not it would be bye bye bees. I kept a close watch through the window the swarm didn't seem to be getting any smaller. There were bees at the entrance but I couldn't decide if they were going in or leaving. So I decided to have a closer look.

They were going in so I must have got the queen inside. I then noticed the bees on the swarm were taking flight a few at a time and going into the hive. So onto the next task of cutting the combs.

I took my measure and pencil, picked up the first frame which seemed to be just drawn comb with the odd bit of nectar. I thought if it goes wrong then no great loss. I measured and marked the centres of the top and bottom bars. From the centre of the top bar I measured and marked just under 16cm left and right to give me a run of just under 32cm the length of the Warre top-bars.

On the bottom bar I measured and marked just under 15cm left and right from the centre mark giving me a comb width of just under 30cm the internal size of the Warre box. I took a hacksaw and first cut the top bar and then the bottom bar on the two new marks on each bar. I was glad I had covered the table in newspaper as nectar was now dripping out and making things very sticky.

Taking a sturdy pair of kitchen scissors I cut straight up from the cuts in the bottom bar, cutting through the wires at the same time. This released a fair amount of sticky nectar. When I got to the top bar I angled the scissors to cut through to the edge of the frame on the side I was cutting. After I had done both sides the bottom bar fell off, but the comb stayed in tact. I carefully carried the frame and rested it across the top of the plastic crate with the comb hanging straight down.

I looked at the other frames and decided that the one that had almost black wax in it was not going into a new hive, so I would lose some nectar and pollen and a few capped workers. Another frame had once been a super frame and had quite a bit of comb below the bottom of the frame. This would be problematic when trying to use a hacksaw so that went as well. It had some drone brood on it so I took the de-capping fork and sliced through the caps of the drone cells and lifted them out.

There were about a dozen drone cells and I carefully examined them for signs of varroa but couldn't see any. They were quite advanced and not grubs so the varroa may not be apparent on them. I was later to establish the varroa content.

The remaining two frames were measured and marked. As it was a very warm day and nature being nature some of the workers on those two frames were hatching on the table. Not being certain what to do with them I placed them outside the hive. The frames were then cut and placed in the crate.

I put my gear on again and carried the crate with the frames to the hive ready for installation. By this time there was no signs of the swarm and bees were flying in and out of the entrance – good so far. I was now about to disturb them again to put the frames in.

I lifted off the roof and the quilt and a loud buzzing came from the hive. I gingerly peeled back the roof cover it had about a hundred bees on it near one corner, so I put it carefully on the quilt. I decided to put the three bars centrally in the hive so I removed the syrup bag and took out three of the central top bars after brushing aside a few bees that were on them.

The cut bars from the nuc fitted a treat although too thick for the rebate at the top. Thank god it was a very loose fitting quilt with plenty of give (thank you Elvin of Major Bee Hives for the foresight). I don't know what I would have done with a very tight bottom of the quilt. I replaced the cover with the bees on it making sure I avoided squashing any. Then I replaced the top quilt again using the bee brush to gently remove bees in the way, followed by the roof. I took away all the clutter round the hive and retired to watch from the house.

I was pleased that only a few bees took to the air on this occasion unlike the earlier clouds of bees – maybe they were tired. I was left with the job inside of getting all the stickiness removed and

the kitchen table back to normal.

Late in the afternoon when things seemed quiet I opened the top rear window cover to see what was happening. They were covering all the three frames and had already built some new wax on one of the frames. They seemed to have settled in.

Next day another warm day there was frenzied flying to and fro, I watched from the patio about four or five yards away- quite a few bumble bees around but they now have competition.

As I had a varroa floor I spotted a dark stain under the hive it was some of the nectar leaking out of the combs. In addition there were a lot of dead varroa, thirty plus adults and twice that number of pale yellow immature ones probably due to the bees cleaning out the drone cells I had decapitated. So the drones did have varroa but they must have stayed in the cells. So much for the lady who sold me the bees saying she didn't have a varroa problem – Oh yes she does!

Day after that although warm there was not the activity of the day before and puzzled over this for a while until the penny dropped. It was early June in the middle of the nectar gap ( the gap between the spring flowers and the summer flowers )- I had taken the syrup away when putting in the frames. So gear on again to put the syrup back in the hive ( so much for the theory that there is less disturbance to the bees using a Warre hive). They seemed more buzzy than last time – probably hungry. Not a great deal of flying that afternoon.

Next day was dull and colder. The day after was warm and sunny in the afternoon and the frenzied activity was back, fifty plus bees round the entrance at any one time. Checks through the window continued and even one of the neighbours came round to look at them through the window, all seemed well.

Since then things are quiet and calm. I look at the hive entrance when I am in the garden and having a copy of “At The Hive Entrance” by H Storch is proving very enlightening. I've set up my wasp trap (fruit juice and vinegar mixed in an old plastic bottle) as bees don't like the smell of vinegar and wasps can't smell it, it targets the wasps.

Well that's about where I'm up to, my only to do job is to top up the syrup when it runs out and it looks as if its going to be needed looking out on our typical June weather its raining again.

If anyone requires help setting up a natural hive in their garden only too happy to help.

## Some Bee Facts

Bees do not sting away from the hive unless attacked. I.e. you try to brush them away with your hand. You only need to blow them away or off of you. If you get one tangled in your hair let it untangle itself or try and blow it off. If you use your hands or try swatting it you may be stung as it thinks it is being attacked.

Bees have been around for 9 million years.

There is a worldwide shortage of bees for pollinating our food.

An individual bee on its own cannot survive its better to look at the colony as a single entity.

In the UK we have recently lost up to 30% of our bee population due to the parasitic mite varroa. It sucks the blood out of the bees and weakens them. It also feeds on the bee larvae.

Swarming of bees I.e. thousands of bees take to the air and may temporarily land in a tree. They are moving house. When a hive becomes too small for them the existing queen bee takes half the bees to find a new home. This will have already been decided upon by a number of scout bees who have already been looking for a new home over the preceding weeks. They are not interested in humans and will not sting unless attacked they have other things on their mind. A new queen will be hatched at the existing hive. This is how they multiply.

To make 1Kg of honey requires 1 bee to make 50,000 trips to get nectar or 50,000 bees to make 1 trip.

Bees you see flying “foragers” are at the end of their lives and most die while out flying. In summer their average life span is 30 days from egg to death. They do not sleep they work 24/7.

The queen can live for several years. She lays up to 2000 eggs a day. She cannot feed herself and is fed by her “court” of bee helpers on royal jelly. She is an egg laying machine and emits a pheromone (bee perfume) which the whole hive and bees smell of – similar to Melissa.

The queen has a stinger but only uses it to kill other rival queens.

The queen mates on the wing with several drones (males) and once her sperm sac is full she will never leave the hive again.

The male bees (drones) do very little in the hive their sole purpose is to mate with a queen. If lucky enough to do so they explode immediately after mating.

Strange bees, wasps, moths and bumble bees attempting to enter the hive will be attacked and killed because they smell different.

Different bees have different jobs depending how old they are. They start life as nursing bees looking after the eggs and grubs. They then have a variety of tasks. Comb building, fanning – cooling the hive and drying out the nectar to make honey, cleaning – keeping the hive spotless and removing wax crumbs. They also clean out the cells that have hatched bees and line them with polished propolis to take the honey. Guard bees to fend off intruders. Undertaker bees to carry away dead bees and moths. Finally they take to the air in their last two weeks of life foraging for nectar, pollen and propolis.

Propolis is bee glue and is the sticky stuff you find on some tree and plant buds. It is used to polish old cells and to seal gaps in the hive where the wind blows in.

Bees require a temperature of 35 centigrade to bring up their young and in winter at least 25 centigrade so heat loss has to be kept to a minimum. Variations in this temp – particularly if cooler results in malformed bees or at the least brain damage.