

# On my way to sustainable beekeeping

## **How I started keeping bees**

On my way to self-sufficiency (I already have a garden and some chickens) I read about keeping bees. And I was hooked by the idea of getting wax for candles and sweets for me.

A couple of years ago I contacted an old beekeeper through my mother and bought 12 hives with bees. My idea of beekeeping was to put some bee homes in the garden and once a year I go there and harvest. Soon reality crashed in. The old beekeeper told me what I have to buy: wired frames, foundations, boxes, gadgets and so on. I had to treat the bees against the varroa-mite. In spring I have to open the beehive and go through the combs and frames to crush the queen cells.

I was confused and I didn't like to go through the brood nest. I hated to pour the acid (even if it is organic) into the hives. All this seemed to be overdone and artificial. This is not what I did expect. I grew up with animals and it simply seemed to be wrong to me.

## **Searching for other ways**

Well, soon I simply stopped treating the mite and up to now I lost some but not all bees. I stopped putting frames into the hives. The bees were building wild comb (looks fantastic) and I got honey by cutting the comb. Through a beekeeper web panel I discussed my point of view with others – not very successful. They couldn't help or share my views. Some do. A few.

I heard of the topbar hives and started thinking about it. TBH are not that expensive and I could spare the frames. Before I tried the TBH I heard of another beekeeper through the internet, who was keeping bees in an old-fashioned way. He was keeping bees after a book that was written by a French pastor in the 1920's and who died in 1951.



The pastor's name is 'Emile Warré'. This French pastor had the same thoughts I have. Beekeeping has to be easy and not that complicated, not that expensive. Beekeeping has to be bee-friendly. In Germany there have been beehives in every backyard of a farmhouse. Today there are just a few left – the beekeepers are generally old and dying out right now. What are the reasons?! Probably the same things I had to experience:

- an empty wallet
- confusion what to do and when to do
- reluctance when disturbing the broodnest and pouring stuff into the hives that doesn't belong there
- trouble getting honey because swarm prevention didn't work well
- bees that are apparently invalidly

Warré helped me to find another way, an easier and more natural way to keep bees. I am still working on that way of beekeeping, doing my first experiences and trying to make it even more sustainable.

### **My goals for a sustainable honeybee and beekeeper future**

- 1.) bee-appropriate beekeeping
- 2.) beekeeper-appropriate beekeeping
- 3.) sustainable beekeeping

## 1. bee-appropriate beekeeping

The evolution of the bees produced a highly complex living creature what we call „Bien“ in Germany. This is singular but still means a whole colony of bees. We start to look at the bees of a colony as one living so called super-organism. Scientific research reveals more and more details about this super-organism.

To keep bees in a species-appropriate way a beekeeper has to look after a the needs of the honeybee. The needs are a comfortable housing, enough forage, no disturbance, social live and natural reproduction. This needs are served by the following:

Keep bees in a bee-friendly hive. Today's hives are build to serve the needs for the beekeeper but fails to be comfortabel for the honeybee. The width of a hive is just too big. In most natural hollows or caves you won't find this big a size. And the bees themself don't expand the broodnest (under usual conditions) over more than eight combs in width. This is what the bees keep warm and tight. Anything else that goes over this size produces cold areas in the hive. This colder areas seem to be the reason for a many diseases. The varroa mite doesn't like the warm parts of a hive. This is why the mites seem to prefer the drone brood, but I think it's the temperature, too. Anyway – these cold areas are not that hygienic. That is caused by the temperature and what I call a „nest's scent“. Air filled up with propolis (the resin, don't know how it is called in English?), used by mankind to heal breathing problems, is all about the hive. I suppose that air is a part of the bees immune system.

The mobile setup of modern hives have another setback: the beekeeper tends to swap the combs of the broodnest around and around. And he likes to open the hive, which puts on energetic costs, that any living creature tries to avoid for evolutionary survival.



(pictures: the red letters mark the side where the hive entry is located. This is fixed comb, drawn by the bees the way they like)

To keep bees in a species-appropriate way also means to let the bees reproduce the natural way. Evolutional selection of haplodiploidal insects is too complex for us up to today. Recently scientific research revealed, that modern ways of breeding queens produces loss of genetic variation. The genetic variation is

the reason for social insects to build up colonies! Losses in genetics puts up costs and the consequences are the bees being prone to diseases. The varroa mite is an indication for a human fault. The beekeeper should stop fighting indications and get to the source of the problem.

Appropriate beekeeping also means no treatment of the varroa mite. There is a co-evolution of two species in progress down there in our hives. There is no and there never will be co-evolution, if the beekeeper keeps on messing around with the varroa mite, there never will be a balance. Our part is to keep hands out of the hive. The bees will handle this – they survived for a couple of million years! No way they could be erased by the mite. But if we don't stop being stupid, we will erase the species of the bees.

Foundation disturbs communication. Fixed comb helps to regulate heat and is just perfect for communication purposes. And makes social life possible.



## **2.) beekeeper-appropriate beekeeping**

What does a beekeeper want?! I know what I want: I want some honey and some wax for candles. From time to time I just want to sit there and watch the bees going in and out. That's it.

I can easily spare extra work put on me. I can easily spare hours of sweating in a beekeeper suite. I can easily spare the waste of money for gadgets and complex hive systems. I can easily spare putting chemicals into my food.

My goals are: 2 visits a year per beehive. One for the harvest and one for the spring hive extension. Running after a bee swarm is fun and wouldn't count as work for me. ;o)

I personally could get along with 25kg of honey and 5kg wax per year. Anything else means work which puts up costs on my personal evolutionary survival ;o)

## **3.) sustainable beekeeping**

What I want is to be sustainable. I practice permaculture after Bill Mollison (good reading: Bill Mollison. Permaculture, a Designers Manual). For a sustainable future. I respect the bee to be a central place forager. This kind of forager gets into indirect competition when being set up with other foragers in one location. This puts up energy costs to forage. The consequence for me: putting just one hive in one location. It helps the bees. So why not? I don't mind to walk, humans are build to walk.

Never touch a reproduction system that worked for million of years. Disturbing a reproduction system means to destroy the species. Artificial reproduction by injection of selected semen into the queen is a no-way. To prevent all hives from swarming, which is part of the reproduction system: no way. Evolution is a sensible thing.

Because I want some yield I have to touch selected hives to harvest them. For these I could use checkerboarding or some similar method, to get a good yield. All other bee colonies I wouldn't touch at all. I quite like swarms. I probably harvest 3-5 hives and let the other 50 hives untouched. So the species reproduction is saved and my yield as well. That should be sustainable.

I want to harvest just a few colonies and leave the others untouched. To minimize the impact on population I have to maximize the production of a few selected colonies. I still want them living in bee-appropriate housing. This is the Warré-hive in my opinion. It has the advantages for the beekeeper being stackable and easy to harvest. The bees won't attach the comb to the sides and bottom because of the size of 30cm x 30cm x 21cm (width depth height of the box). It is the same principle like in TBHs. See the pictures below.

Still the Warré-hives keep the advantages of natural drawn, fixed comb. Being the dance ground for their social life. Being a warm nest in natural hollow

dimensions. At wintertime and at summertime.

Here some pictures:



As you can see the hive is highly extendable. Winter setup is in two hive-boxes. The eight boxes at the left are just a joke – just to show that space is not a problem. Usually there are just four boxes, as it is presented on the right side.



The roof is special: it has slits to prevent the wind blowing the roof off the hive. This setup is also used by army tents and it works for the Warre roof too. The roof just gets some painting – a metal roof would be rotten from the inner side in a couple of years. Caused by condensation water. A painting is re-done in minutes every year. Another reason to not use metal roofs: rain is hammering onto the metal roof like sticks on a drum, causing stress. Causing energy costs.



This is the roof from below. The slits on the side and the channel in the middle axis prevent sweat water to stay inside the hive.



This is the hive box. The wooden panels are no frames – just the topbars fixed to the hive with one nail. I usually don't bait the topbars with wax stripes. I don't mind the bees building wild comb, because I harvest the wax and squeeze my honey out of the comb. I never move combs around like they do in TBH. That's what I think is an advantage.





Onto the top hive-box I put a so called „cushion“. It is a square of boards with cloth nailed on the below side.



Into this cushion I fill in hay. The hay sucks up any condensation water produced by the bees to prevent mold. Without opening the hive (the cloth covers the upper hive, hive temperature remains), I am able to remove the hay and put some fresh into place. Why placing the cushion there? Well, it seems to me, that in nature most hive entries are at the top of the hollows. This prevents mildew and supports ventilation of the hive. Heat goes up, takes all the moisture out, cold fresh air flows into the hive. To get the honey to the top of the hive, where the access is better for us humans, the hive entry is best sited to the bottom. Because the warm air still takes the moisture up the hive, the hay jumps into place.





This is how it looks like when the bees draw comb. Note that is not attached to the sides and bottom panels. Again: this is because of the size of 30x30x21cm!



As you can see the comb is very stable. Even putting the hive onto the wrong side - it wouldn't break. The small but stable size of the comb is the reason.

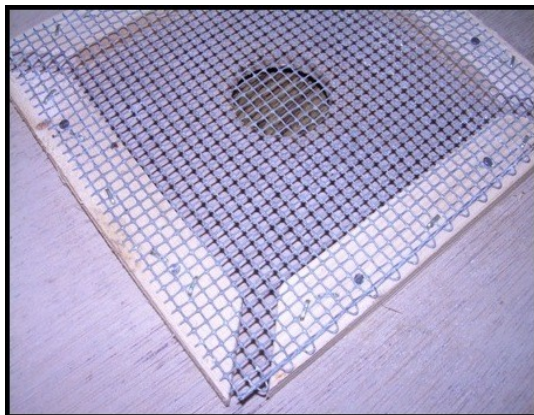
The work throughout the year is: in winter the hive has two bodies. Two boxes. In early spring (around Easter) two additional, empty hive-boxes are put in place BELOW the existing winter setup. This can be done in cold spring weather without loss of heat, because you don't open the hive for this

operation. You simply lift the winter setup, clean the bottom board, put the new boxes into place and put back the overwintering boxes. That's for spring preparations.

Harvest is done once a year in late summer, very late summer. This is the second operation in Warre-year. The yields of honey are 12 kg per box. Usually you harvest one to two boxes per hive.

To ease the harvest a so called „bee escape“ (rough translation to English, in Germany it is called „Bienenflucht“) is used. This is some sort of a separator box, put between top box and the box below. Dividing the upper part of the hive. The bees at the top miss the queens pheromones and leave the box at the top (escaping) through the hole in the center. The top box now is nearly empty, so the box can be lifted without removing frames and sort of stuff.

(pictures from Rudi Maurer, who is beekeeping in a similar hive.)



1st: view from top, notice entry in the center

2nd: from below

3rd: detail view



from: <http://ruche-warre.levillage.org/index.htm>

This is a Warre-hive build from glassware by a French beekeeper, who still keep bees in the old fashioned way. Isn't it wonderful? As you can note, the comb looks like being drawn comb from top to the bottom of the hive. But the comb isn't attached to the sides and bottom. The hive-boxes remain mobile and can be seperated easily. The whole setup of the comb looks very natural to me. And the bees do like it. Happy as a bee!

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