

Biodynamic beekeeping

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Introduction

There are today more and more people who want to keep bees in ways that strengthens the bee's natural health and being. Common conventional beekeeping today, is not as natural as many imagine it to be, we have so far assumed that ordinary beekeeping is largely natural and almost organic! But as in all other forms of production there have also here been a strong focus on optimizing the yield of honey by artificial queen breeding, insertion of artificial combs, feeding with sugar, deprivation of drone brood, and use of Queen grid. Less focus has been on understanding the bees from the bee premises and to understand the **being** of the bee! And why should we also want to do that, it has gone very well so far!

Today it is generally known that the bee's health is not in a good state! In the following text, I will point out some things that weaken them, and then I will give some suggestions to what can be done to improve their situation. Interestingly enough it is the human being who has created all the problems for the bees!

Artificial queen breeding

There are today produced a lot of artificial reared queens, some beekeepers specialize in making a lot of high-performance productive queens, which is then sent by post to beekeepers. Some queens are sent as unfertilized and some are artificially inseminated so you also have control over who is the male offspring. This allows the beekeeper easily and constantly to get high productive queens, by changing the old queen out before her production goes downhill. This has been one of the pillars of modern beekeeping, and it can be difficult to understand what is wrong about that! **But, if we imagine that a bee colony is an organism, as one being**, and looking at it as one being, instead of 50,000 insects that are very skilled in working together, one can imagine that it is better that the propagation takes place within this organism, instead of a foreign queen coming from Jutland or Hawaii, or wherever they come from. The queen bee is the heart of the **bee being**, and it is very obvious that the colony does not like to have a foreign queen. It also happens often that they repel an artificial new queen. The new queen will always be inserted in a protective cage where the workers has to eat a sugar dough before she can get out, in the mean time the queen has received the beehive fragrance and the change for her to be accepted is greater, but very often the new queen is killed.

What can we do: Natural swarming

The first pillar of biodynamic beekeeping is propagating through natural swarming. In 1923, Rudolf Steiner held several talks in Switzerland on beekeeping. In these lectures he warned strongly against artificial queen breeding, which already had begun at the time. He believed that it in the long run, will weaken the bee's vitality and it will cause major problems in the

future. But he was also realistic and said that you will probably do it anyway, but then we can meet in a hundred years and talk about it again!

It is now about 100 years ago that artificial queen breeding began and it is very interesting to hear Steiner's clear word: "*Artificial queen breeding is an exceedingly favorable precaution, and can appear as something good, but the whole beekeeping will cease over a hundred years, if you only want to use artificially bred bees, as in shorter time is something extraordinarily favorable, can in due time leads to the entire case again be destroyed.*" (lecture in Dornach, 10. Nov. 1923)



Here is one of my summer swarms, which sat on the apple tree. It is always impressive the vitality and vigor of a new swarm comes with when they start their new life.

It is a sight to behold to see a swarm of ten - twenty thousand bees which whizzes around in the air, very chaotic and uncontrolled, it seems, but after a while they start all moving in one direction and hopefully find something to settling on not too far away.

Swarming is a kind of flowering and chaos process where they expand to the environment and the cosmos and in this process they receive new energy to their next incarnation and life!

Most beekeepers today do many things to prevent the bees to swarm, therefore they open beehive at least every ten days to check new queens on the way, and if there are, they will be removed. Moreover, there also cut the Queen's wings, if she tries to swarm, she can not fly, and thus falls to the ground in front of the beehive!

Green desert

A new concept called Green desert have come about, it means that when we look out into the Danish countryside it looks green and lush, but for the bees it is a desert where there are no flowers for them. The landscape consists mainly of large fields where the weeds are sprayed away, and where the crop does not have flowers that bees can live on, many of the flowering hedges have been trimmed or cut down so the fields can be larger. The small strips between the field and the road have often been fertilized, which means more leaf growth and fewer flowers. Therefore it is today often better to have bees in cities than in the countryside!

Another green desert is the lawn, we use today much energy and time keeping lawns short, and green, and free of flowering plants, it is again a green desert for bees where no flowers are.

Studies have shown that the more different kinds of pollen the bees feed on, the stronger their immune system, therefore it is not so important with large amounts, but more important to have a wide selection of pollen throughout the growing season.

What can we do - Sow flowers

Most have the ability to sow some flowers somewhere, which is beneficial for the bees. There are several seed companies that sell mixtures of seeds which contains a mixture of flowering plants that bloom over a long period, for example: Buckwheat, California bluebell, Borage, Dill, and Marigold, Early in the year the plants Eranthis hyemalis, Snowdrop and Crocus are very important, later the Dandelion, it is said that the Dandelion is the most important plant for bees in Denmark! In the lawn and the park you can let areas grow up and let them bloom before you cut the grass, and eventually there will be several different flowering plants in the lawn. It is rarely necessary to fertilize the lawn; it will also give more flowers. The farmer can stop spraying in the fields, have wide hedges with flower, sow stripes with flowers in the fields for insects, and having permanent grassland where there are flowering plants.

Feeding of sugar

Most beekeepers remove all the honey from the bees in late summer and then feed them with sugar. Many beekeepers even believe that it is healthier for the bees, sugar is completely clean and therefore it is better for the bees, to avoid nosema(diarrhea) in bees. In Denmark it is even forbidden to feed the bees with honey! Honey is generally regarded as being very healthy when it is sold to people, but for the bees they claim that sugar is better! However, studies have shown the expected, namely that honey is also healthy for the bees, it strengthens their immune systems compared to sugar. A US study shows that honey activates enzymes that are used to break down foreign substances, such as pesticides; sugar does not activate these substances. In addition bees are heavily influenced by what they eat, in an early stage it will influence them to whether they will be a working bee, a drone, ore a queen bee. The bee's nutrition affects them directly into their physical body.

What can we do

The best of bees is that you let them keep enough honey so you are sure that they get through the winter, one option is to let them keep it all and then in the spring when they have come safely through the winter to harvest what is left. You just have to be sure that it is not rape honey that is left, since it can crystallize and so the bees cannot utilize it.

The bees live almost exclusively of nourishment that comes from the plant's flower, as pollen and nectar. The sugar, used for feeding are made from beets = root, or cane, sugar = stem, not from flowers, the bees must therefore use forces to lift the sugar up to the flower level. Steiner suggests in this connection that a chamomile tea, added to the feed mix, can help the bees. A feed formula used by biodynamic beekeepers in Germany consists of: 3 kg of white sugar, 1 liter of water, 0.3kg honey, 1 liter of chamomile tea and a little salt.



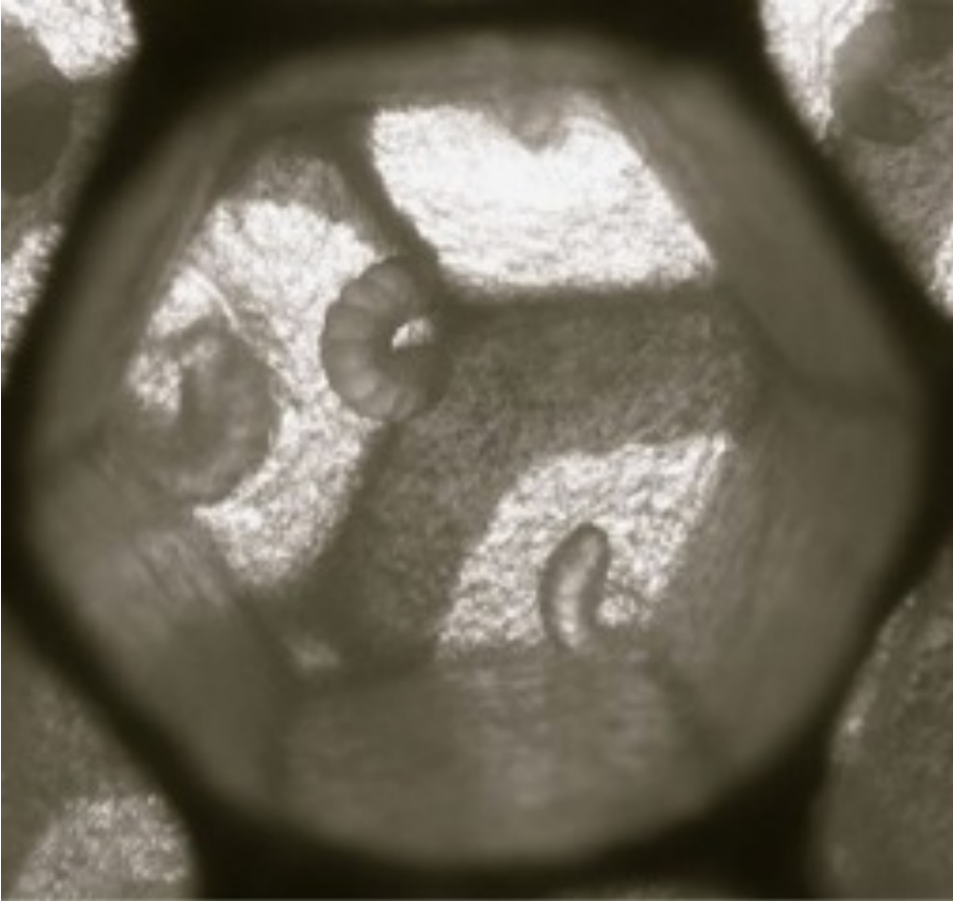
The bee and the flower belong together.

Insertion of beeswax

Today it is most commonly inserting foundation wax in the frames which the bees then build out, so the architecture is given for the bees and they are thereby encouraged to create work cells in exactly the same size, in this way they encourage worker bees and the highest

production. Wax foundations are made from old melted wax that might previously also have been melted down, so it's really recycling! The wax foundation is so thick that the bees can just pull the wax out, and they don't have to make any wax themselves.

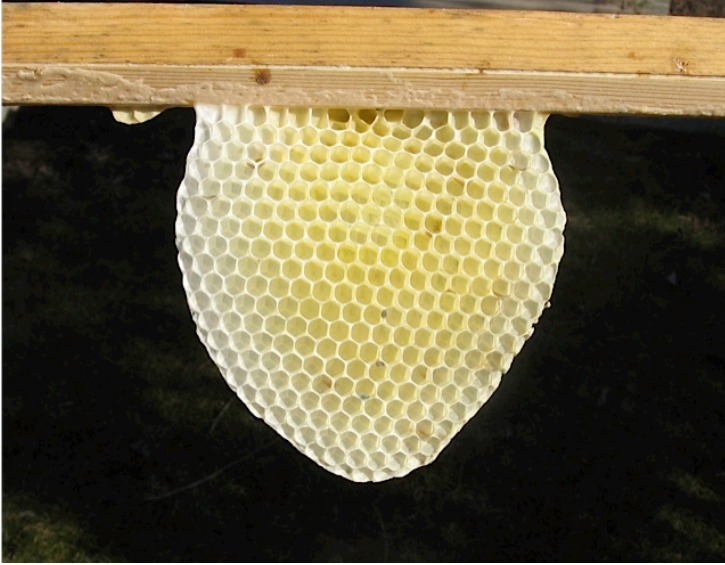
And what's so wrong with that? Wax comb is a part of the Bee organism, **it is part of their body and they are born, live, dance, vibrates, communicate with each other, in and on the wax comb!** A self-built honeycomb is a great miracle! where one may wonder how it is at all possible, without 9 years of school, 3 years of high school and 5 years of architecture study at university!



It is impressive to see such a newly built comb, clear hexagonal shapes, incredibly light and almost transparent, **the honeycombs is a part of their body!**

What can we do - let the bees build themselves.

The bees have a higher temperature when they secrete wax, which is healthy for them and it is a natural part of the bee's life cycle that they secrete wax. The worker bee has a wax gland on the abdomen where it can produce wax from, it is a unique feature of the honey bee that they can produce wax, the wasp may, for example, pick up things from nature, which they chew with saliva and glue it together, but the honey bee produce wax directly from their own body. Beeswax contains light and when we burn it, in the form of beeswax candles, it gives off light again!



Here is a comb that the bees have built, this is the form that they want to build, which is not particularly square.

One possibility is then to let the bees build honeycombs completely even, rested there are certain challenges for beekeepers, since all frames are square and the bees do not want to build them square! Alternative hives as the Golden hive (Einraumsbeute in German), Top bar hives, ore the Warre hive, is specially made for the bees to build themselves. A South American hive developed by Oscar Perone provides the ultimate opportunity for the bees to build themselves as they please, there's no frames in the brood area, only some lists at the top where they can build entirely free from.

Pesticides

A lot of pesticides are still used today! Not just in agriculture but also in private gardens. The pesticides has become more sophisticated, in the past one could see dead bees in front of the hive if they had been exposed to pesticides. Today, there are so-called systemic pesticides, they are absorbed by the plants and transported around in the plant, thereby killing the insects that attack the plant over a long period. The bees do not die directly from it, but it affects their nervous system so they find it more difficult to orient themselves, and maybe the bees can't find their way home. It is therefore believed that the pesticides called Neonicotinoids causes Collony collaps disorder (CCD) in the United States and European countries like France, in Denmark there has not been identified CCD though it is used for treating Granola. There is now a temporary ban on Neonicotinoids in Europe until it gets further investigated.

In a study in Maryland USA showed an average of nine different pesticides and fungicides in one sample of bee pollen, the researchers found 21 different chemicals; a further study showed that when the bees got such pollen, it decreased their ability to fight the dreaded parasite nosema drastically.

Currently they only examined pesticides, whether they are acutely toxic to bees, and not on their cocktail damage effect on bees in the long term. The Danish bee researcher Per Kryger from Aarhus University says: *Pesticides and fungicides effects on bees are far more complicated*

than studies on their acute toxicity reveals. And it gets impossible to detect synergies between the many pesticides.

Furthermore we know that the bees would rather deposit chemicals and heavy metals in their bodies, than to deposit it in the honey, pollen and wax, bees are therefore used to investigate how many heavy metals that are near the airports, where the dead bees are then being analyzed for their content of heavy metals.

What can we do

Stop using chemical sprays in nature, they do not belong there, and grow biodynamic and organic food.

Set up hives on biodynamic and organic farms, or natural areas.

Electromagnetic radiation

The bees are sensitive creatures that orientate themselves using the Earth's natural magnetic field; therefore it seems logical, that they are disturbed, when there are other types of radiation into their "radar"! There has been made experiments where a mobile phone receiving text messages, have been placed inside a beehive, it ended up that the bees left the hive! One could say that the bees do not need to connect to the World Wide Web (www) as they already have contact with nature's web!

What can we do

It is not likely that we will give up mobiles, wireless Internet and the use of GPS! Nor do I think it's a solution to isolate the beehive in a protective capsule, since it belongs to the being of the bee, to be in contact with the environment, the world, and the cosmos!

So for the time being we have to investigate it more to see if it really is a problem.

The varoa mite

The varoa mite is a tiny mite that lives on the bee and sucks blood. Varoa mite is originally from Asia and were it not for man's need to transport bees and especially queens around the world, it would probably still only have been in Asia. Today it is now a pest in the whole world, apart from Australia.

The bees do not die directly of the varoa mite, but they are weakened and will easily get various diseases, which are transmitted through the blood.

What can we do

In most cases, it is still necessary to treat against Varoa mites, so far I have used *Bienenwohl* made in Germany consisting of essential oils and oxalic acid, and can be purchased from www.Swienty.com Bienenwohl does not directly kill the mites in the brood, but it gets the bees to clean themselves more than they usually do, and the mites fall off. It's easy to use and is also relatively efficient, the only drawback is that you have to treat several times since the mites are sealed in the brood cells will not be affected. The most effective time for treatment is early winter when there is no brood, then one treatment is enough.

In the long term, it is about strengthening the bees themselves to combat Varoa mite and there is not some easy quick solutions. One aspect is to let the bees build their own comb and produce and sweat wax. When the bees sweat wax they create a higher temperature, which

varoa mites do not like. Otherwise, I believe that it is important for the bees that they can create their own environment with temperature, smells and humidity, so I think that the beehive principle must be closed at the top and the opening at the bottom so there are no drafts in the hive. In this way they regulate their environment. Looking at a hive where the bees have been in peace, it will be totally closed at the top and everything will be built close together with only small spaces for the bees. Once I found a bee family in an elderly man in Odense, he had previously had four bee families and did not think he had bees anymore. A swarm of bees had, however, found an empty hive standing behind his shed, which consisted of two magazines in Norwegian supers with frames, and a roof. My prejudices told me that there must be lot of varoa mites, since it had never been treated or cared for by anybody. To my great surprise it turned out that there was virtually no varoa mites in it, and the bees were super healthy! A close examination of the beehive showed that the bottom was completely open, the top, however, was completely closed, when I took the roof and the lid off, it was completely built together, but just enough for the bees to move around between the self-built boards. For an experienced beekeeper, it looked completely messy and chaotic, and for most it would tingle in their fingers to clean up the mess! This goes against all textbooks, which says that the bees cannot survive the varoa mite, unless we treat them. This family had not received sugar, not been treated against varoa mites and had not been opened every ten days to remove Drone brood. I am convinced that all our cleanup and interference in the bees' home, damage them far more than it benefits them!

Use of the Star calendar

The bees live protected in the beehive and it is their outer physical protection. When we open the hive we break this closed home and it is opened up, and the bees are affected by the cosmic constellation in the cosmos at that particular time.

Steiner says in the Beekeeping lectures, that the bees are most influenced by the movement of the sun through the zodiac, and the plants are most affected by the moon's motion through the zodiac.

There is a strong kinship between the bee and the plant, and especially the flower.

Mathias Thun provides the following information:

Rot days

The bees slightly are less calm than on flower and fruit days.

Strong comb building activity

Honey yield slightly below average.

Leaf days

Bees more nervous and angry, more bees at home.

Unfit for work with bees, also unsuitable for extracting and pressing of honey.

Honey Yield less than average.

Flowers days

The bees are very quiet and comfortable.
Feeding brood
Emphasis on pollen collecting.
Honey Yield above average.

Fruits days

The bees very quiet and comfortable.
Large nectar flow.
Honey Yield above average.

The importance of bees

There are many people today feel that it would be extremely tragic if the bees are no longer here, we have a deep sense that something very important will be missing, if they are no longer here. It's easy to understand the value the bees as pollinators in nature and it is widely known that their value as pollinators in farming crops is far greater than the value we can harvest as honey. Globally the value of pollinating is 1150 billion dollars!

Steiner also brings another aspect, which he says is far more important than the actual pollination, he describes the poison that bees, wasps and ants have which is formic acid, is a very important substance and help in nature as they live in nature. Steiner says in the beekeeping lectures on page 138 the following: *"Now, if there were no ants, bees and wasps to make this formic acid, what would happen then? That would be quite the same thing that would happen to mankind procreation, if you suddenly beheaded all men and women the only ones left. Then mankind would not be able to propagate, because the men's semen would not be there which are necessary. For was it not for these bees, wasps and ants, which are constantly coming to this world of flowers, so the necessary formic acid would not flow and the necessary "marriage" could not take place, then the plants will after some time extinct"*

So according to Steiner, bees, wasps and ants most important role and task is therefore, to spread formic acid in nature, and that nature will actually die if they did not. So in addition to the important pollination, there is an even more important revitalization of nature through bees, ants and wasps through the formic acid.

The challenge with bees!

Today, there are many challenges to keep bees. It is especially varoa mite which gives the greatest challenges When I was in England I kept 10 bi families from 1988 to 1995, it was just before varoa mite found its way to England. So it was at the time wonderfully easy to keep bees, they did always reasonably well, and new swarms replaced those who died in the winter.

Today, one needs to have a completely different understanding of bees lest they die all together, we are challenged to understand bees on a deeper level, it is no longer enough to repair the problems, and one disease will just be replaced by the next. Unfortunately, the focus was on various treatments and technical solutions to get Varoa mite to life and not so much to strengthen the bee's own vitality and health. There is no doubt that the reason that

the bees get sick is because of the human being, then it must also be our responsibility to bring them back on track!

Most have lived in the belief that bees live a natural and organic life in the way that we keep bees! Only in recent years have we begun to wake up to that fact that bees are not well, and have not been well for many years.

Understanding the bees

Understanding the bees is a huge exciting task, we can start to ask the question what bees can tell us and how they want themselves to live and work, instead of having as first priority to get as much honey out of them as possible in the easiest way, instead we should spend as much time as possible with them!

If we want to understand the being of the bees on a deeper level, there is a great source of inspiration in Rudolf Steiner's lectures on Bees, which I can highly recommend reading.

Keep bees on the farm, garden and in the city

If you have read this far, it is quiet obvious that there should be bees everywhere. To enliven nature and agriculture, and we should also think about creating good conditions for ants and wasps. With a weight of 0.1 grams per bee they may seem small and insignificant in modern agriculture, but if you consider that there can easily be 50,000 bees in a bee family, maybe it gives a different impression! it gives for ex. one bee per square meter on 5 hectares of land, which is equal to 50,000 square meters. Moreover, they are fast, extremely diligent, hard working and never sleeps, and may also provide an extremely strong impression when they sting!

It is fortunately that most biodynamic farms in Denmark have bees. There are some who keeps them themselves, and there are some who invites a beekeeper from the outside to keep bees on the farm. In addition, beekeeping in cities has also become popular, and there are good conditions for bees in the city, in 2013 and 2014 a honey from bees from the roof of Odense Hotel won a price for the best taste. It is good for the city, but bad sign for the countryside, it shows that the conditions for beekeeping in the countryside is bad, we must change that!

Expanded consciousness!

Bees need help and it requires a lot of people helps to understand and help them. In return, they can help us to expand our consciousness, when you have bees your consciousness will suddenly extended two kilometers in all directions, from where they stand; what is flowering now? Where are they going? Is the farmer spraying on the fields? How is the weather? What is the constellation in the sky? And much more.

Beekeeping is a most exciting and vitalizing occupation on many levels!