

## INTEGRATIVE TOP BAR HIVE MANAGEMENT- by Melanie Kirby

In our neck of the woods, there is a growing trend to house bees in top bar hives. For those who are unfamiliar- a top bar hive is a single level, horizontal system which does not have side comb supports as do vertical Langstroth frames. My interpretation of both systems spans over a dozen years whereby I first learned on one, came to appreciate the other and have come to terms with working and keeping bees in both systems. I have also come to develop my own system (with respect to efficiency and conscientious beekeeping management) whereby I utilize the “best” of both systems to incorporate and adapt the diversity of each into a usable, workable and standardized method.

I have wanted to put this method and its reasoning to paper for some time now being that when I first started meeting top bar enthusiasts in plethora these past few years, I found that their interpretation of top bars was more of a contendership battle: top bars vs. Langstroth. With the manifestation of CCD and its correlation to “modern” agricultural and beekeeping management practices as foes, there has been a rise in the misconceived mentality that top bars are “more natural” or “better” and more “respectful” for housing bees than Langstroth colonies. I find this to be an utterly narrow perspective being that most folks who have decided to keep bees in a top bar abode, have never even seen the workings nor themselves had the opportunity to work within a Langstroth system for any amount of time.

Their presumptions that Langstroths are only for greedy commercial producers is, rather unfortunately, ill-conceived. I have had to deal numerous times (more than I can count and recall) with sharing the pros and cons of each system. Neither Langstroth nor top bars are perfect; and humankind’s bond and appreciation with honeybees requires that all who truly want to become true bee stewards- be open to what was, is and will be in regards to preserving honeybees, their habitat and establishing a respectful symbiosis between keeping/caring for bees and managing them in this ever-changing world.

A little history on my part: I was first introduced to beekeeping and to top bar management as a volunteer for the US Peace Corps in Paraguay South America back in 1997. I had no previous beekeeping experience and recall the day I received my assignment. It was the middle of summer and I was working as a science instructor for the Desert Science Center in Idyllwild, California. I had been teaching elementary to high school age kids about meteorites and Mars rovers. I had just graduated from St. John’s College that May with my Baccalaureate and my goals included enlisting in the Peace Corps to better serve my country as a cultural and technical ambassador- wherever they needed me.

I had been working on my Peace Corps application throughout the year and had taken my time in getting the final paperwork in being that I was hoping to enjoy a full summer in the USA before being shipped out like a few other of my fellow graduates had already been (one to Ghana for teaching French and another to Nepal for teaching

Math). We had all graduated with the same degree so it was a real surprise to me to find that I had been assigned as an Agriculture Sector Beekeeping Extensionist! I guess I was one of a few who marked the application form as willing to work with stinging insects- funny how happenstance or divine intervention works! Little did I know that the bees were making sure to find me, and thankfully- I have found myself in them- both professionally and spiritually.

I did what I could at the time to prepare myself. I was up in the mountains between Palm Springs and Los Angeles working all week and there were no beekeepers around. I went to the local library and checked out beekeeping literature- what little they had; and scoured it for details as to how a hive worked and what I would be required to do. Believe it or not, internet availability as we know it did not exist at this time, so I was left to the findings at the local library. Luckily for me, I was scheduled to have a three month training session on beekeeping and cross-cultural teachings in Paraguay before heading on my way out into the “bush”.

Due to the economic and infrastructural set up of Paraguay, top bar beekeeping was the most common since it involved little monetary investment which the campesino farmers I worked with had very little financial means. “Campesino” refers to “one from the campo” also known as peasant farmers. They are subsistence farmers and work alone and together in committees as forms of cooperatives to get their crops in, harvested and to market (what’s left after they feed their own families).

My assignment entailed recruiting those interested in keeping bees for both honey production as medicine for them and their families and also for selling to fellow community members as a diversified income. Being that I am a woman, it was quite interesting attempting to work with the men campesinos whose cultural dealings with women and “Norte Americanos” excluded some interactions. I did begin working with several men who were interested in beekeeping, but by the time my service was done, I was working more with women and women committees. Women in rural Paraguay, are known as “Amas de la casa.” We equate that to housewives. They are responsible for caring for all the children, the home and all small animal husbandry- from chickens to rabbits and pigs and milking cows. Beekeeping fell culturally into their domain.

I must add that at this time, my newness to beekeeping was very evident to me. How was I, a very new beekeeper supposed to help establish and teach beekeeping to those who had more animal husbandry experience than me and in multiple languages? I must admit that I learned more my first year from my in country counterparts than I could have imparted on them. I thank them immensely for the experiences they shared and taught me and know that despite our physical distance- there are bonds that were forged there that will exist as long as we live- learning to keep bees together has definitely been one of these bonds.

My initial training with honeybees in Paraguay mostly consisted of learning to work with Africanized Honeybees. Having no preconceived notions about working with bees- I assumed all bees were awnry and I found a real sense of self-challenging

competition within myself to learn to work with this type of honeybee. While many may think that this was crazy or undesirable- it should be noted that you work with what you have and this is the type of honeybee most prevalent in Paraguay. US Peace Corps promotes appropriate technology so learning to work with what the locals have access to on a regular basis is essential.

Training started with the basics- honeybee physiology, terminology and seasonal cycle assessment. There were 4 other Beekeeping Extensionists in my group. We learned how to make our own top bar hives with machetes, catch wild swarms and manage them in the top bar hives we built. We also learned how to harvest bee products (by hand) and to market them. For those with little to no money to invest in establishing hives, such as in Paraguay, the appropriate technological method was to make all their own beekeeping gear- including veils.

We also learned about Langstroth systems as well but we mainly focused on top bars being that we were stationed out in el campo (the bush) and would not have access to any apiculture stores or money to buy from abroad. Funny thing- many campesinos who have hives, really wanted to look “modern” so they would make their top bar boxes square and paint the boxes white so that from the outside they looked like Langstroths, but on the inside they were top bars (and actually looked more like Warre hives). This diversified concept of top bars in a Langstroth looking box was the first that I would encounter and I can honestly say that it has most likely been this experience that has helped to mold and shape the method I now use for my integrative top bar management.

I myself was convinced that making one’s own box from wood that they personally felled and prepped; and housing bees that one captured from the wild was the only “natural” way to deal with bees. I believed this sincerely for several years. But like many things in life, new experiences, teachings and research has broadened my perspective- and rightly so. Many advances that mankind has manifested have been improvements to man’s livelihood, health, well-being and efficiency.

I returned to the land of “the free and the brave” and went to work for several commercial operations. I knew the mechanics of Langstroth management but never on a large scale. I was so impressed with how efficient, how durable and how idiosyncratic working with honeybees in Langstroths could be. I also noticed though that there was a distinction between working with bees and just plain working them.

This distinction is something that I am continuing to work on in my own beekeeping management and in the development of mine and my partner’s small-scale queen breeding/rearing and honey production enterprises. I am trying my best to learn to work with bees, not just working them over. It is a developmental process that will take time and I believe will also show me and my fellow beekeeping associates- close and far, that we can keep bees in a conscientious fashion while also making a respectable living and providing our communities with essential benefits.

A few years after my initial Peace Corps service, and after having employment with several commercial beekeeping operations in the USA, I returned to Paraguay as the Beekeeping Extensionist Technical Trainer for new volunteers. This trip allowed me the opportunity to learn more. In 2003, I met and visited with a fellow Returned Peace Corps Volunteer by the name of Lester Moore who moved back to Paraguay to live and keep bees. He started Panales de Oro (Honeycombs of Gold) based out of Concepcion, Paraguay. He demonstrated modified Top Bars with standardized Langstroth measurements which worked well for AHB and his South American beekeeping operation. I must credit him for allowing me to see a workable, standardized top bar hive operation that incorporated Langstroth measurements.

I don't really care to turn this story into a pros and cons list of Langstroth and Top Bar hive attributes. What I would really like to do is to share how I have come to fuse the two together and how that has worked for me and my interpretation of being a bee steward and also how to encourage more and more newbees and oldies to be open to the diversity of honeybee management in its myriad of forms. I will mention a few unique qualities of each system to better understand their individual and fused forms and how they work alone and with each other.

First and foremost- the "modern" Langstroth system is over 150 years old. Not much has changed since its inception. There has been recent introductions of "newer" materials, such as plastic frames and motorized extractors. The Langstroth system was and still is a sincere advancement over skeps by allowing beekeepers indepth insight into hive mechanics, review and health.

The uniqueness of the Langstroth system is that it allows for the extraction of honey to be accomplished without destroying the honeycomb; whereby the honeycomb can be returned to the hive for further use by the bees themselves. Honeycomb is the honeybees' biggest asset- without it there is no place to raise progeny, no place to store their food, and essentially- no home.

Since top bars do not have side comb supports- it is virtually impossible to extract honey using an extractor without having it blow apart. Thus, extraction is done by hand (or hand tool) to mash and squeeze the honey out of the comb. The comb can then be used for other purposes but it is not reusable to the honeybees in its mashed form.

Both systems require- by right of sound beekeeping management- rotating out old brood combs and honey combs in a timely fashion. This is healthy management. To do this every time one harvests, some may find overkill as well as hard on the bees since they do not make honeycomb all season long unless warranted (high nectar flow). To never remove old comb is just as disconcerting in that honeycomb is a sponge and can harbor toxins detrimental to hive health. Thus, it is reasserted that comb be rotated out every few years at least for healthy hive mechanics- regardless of which system is being used.

My partner is totally pro-Langstroth. I myself do not choose one single system to swear by but have found awesomeness in both Top Bar and Langstroth systems; so much so, that I found their fusion to be quite fulfilling and enlightening. Having first learned to keep bees with top bars- they do have a very fond place in my heart. But, also having witnessed and worked the benefits of standardized Langstroth management, I have an acknowledgement and respect for this standardization and efficiency that Langstroth allows- not only for me, but also for the honeybees that I keep.

So, my take on these two systems is one of grey- not black or white, but definitely grey. An example of this sort of fusion can be seen in my home state of New Mexico. The Land of Enchantment's official question is "Red or Green?" This is in reference to our cuisine with chiles. Some folks answer one or the other and then there are those of us who ask for both (also known as x-mas and rainbow). This fusion of both chiles in our local cuisine allows the taster the opportunity to taste their enchiladas (or whatever other delectable bite) with both flavors. I see Top Bar/Langstroth fusion to be similar; you have bees that you get to see interact in both Top Bar and Langstroth fashion- without taking away the essential core – honeybees!

One of the biggest beauties of top bar hives is the creativity that is allowed when building the hives. There are the Tanzanian, the Kenyan and the unique bee guru styles out there. All are worthwhile and workable. This is also one of the main obstacles when dealing with top bar hives. There are many plans out there, and many styles. The sizes are all different and measurements are not standard. Bee space is accommodated (as is necessary in any hive style) but the lengths and breadths of the boxes and top bars are all up to the builder.

With Langstroths, there is measurement standardization- a trait that displays its security time and again. While one can use deeps, mediums, shallow supers or any of the above, the frames themselves are all the same length and width and so one can interchange these without much recourse. I find this to be most helpful when revising my colonies. My partner and I have decided to go with a  $\frac{3}{4}$  size. This means we use boxes and frames that are 7 5/8" size- larger than mediums but smaller than deeps. We are still in the process of converting our entire system into this size and moving the deeps out- which we find to be cumbersome as well as unnecessary for "supersizing" of colonies. The bees seem to like this  $\frac{3}{4}$  size for both brood building and honey storage- not to mention that it is much easier on one's spine.

After trial and failure, I have found that it is much easier to start top bars in my Langstroth system whereby they can be pulled out straight, maintain bee space and also give me extra comb on the sides whereby I can cut it off at angles for my top bar boxes and attach these extra pieces on naked bars for further construction by the bees. Because I have decided to start my top bars in my Langstroths, I use top bars that are the same measurements as Langstroth frame top bars- this standardization of measurement allows me to put any of my Langstroth frames into my top bars (after accommodating the side angles) and vice versa- extremely useful and adaptable to whatever conditions I encounter with my top bars.

I have also decided to reuse pieces of recycled Pierco or foundation to start my top bars as well. Since we need 7 5/8" size foundation, we save the sawed off Pierco pieces from our deep frames and I screw these into my top bar wood pieces. This then serves as a beginning guide for the comb to be built. It also allows me to transport my top bars without incidence of the comb falling or breaking off or melting in the heat. I can also unscrew the whole comb and attach it to someone else's bar of a different size without compromising the integrity of the comb and its contents.

I developed this method after having locals ask for top bar starter nuclei. Being that many of them use different styles of top bars, I first started by taking their individual bars and trying to plug them into my top bars or into my Langstroths which was an utter fiasco due to the dimensional differences. I lost many queens and bees this way and sought a better system to get top bars established to accommodate local requests and to preserve and propagate my bees.

Instead of trying to accommodate each unique top bar measurement, I decided to standardize myself and for the better. I can now use my top bars and then each person can accommodate them in their own hive bodies regardless of the dimensions. Occasionally there is the need to cut off long comb or to trim the sides- but all in all; I have received favorable reports from those who have purchased top bar starter nucs from me. If one does not want to use the recycled Pierco strip, they can then imitate "nature" and cut the comb and reattach it with string or floss to their own bar and allow the bees to reattach it.

I also keep my top bar hives with partial screen bottoms so as to be able to implement the Dowda method for bio-mechanical mite control. I can move my top bars and follow Mother Nature's natural nectar flows such that my bees have access to regional, pure food for their well-being. And when deemed necessary, I can put a pail on top for feeding or put a feeding tray inside my top bars to prevent robbing.

While there is not a concise Top Bar Beekeeping manual out on the market as of yet, there is ample information out there on how to manage bees in this sort of system. I recommend Curtis Gentry's Small Scale Beekeeping Manual which was published and is still issued by the United States Peace Corps. You can download it online for free at [http://www.beekeeping.com/articles/us/small\\_beekeeping/index.htm](http://www.beekeeping.com/articles/us/small_beekeeping/index.htm)

Top Bar management is not so removed from Langstroth management. In fact, it is ultimately the same in that you simply manage your hive in a horizontal fashion instead of vertical. For instance, you can still perform "reversals" when necessary- just move your full brood combs to the back of the open comb in a top bar system and repeat when necessary. This corresponds directly to reversals in Langstroths whereby you would simply switch the order vertically of your boxes and put the empty comb on top of the full brood frames so that the bees can work up into the empties and then switch when the bottom becomes empty.

This fusion of Top Bars with Langstroths has allowed both my beekeeping management and my honeybees the ability to be housed in a myriad of designs while still maintaining efficiency-crucial bee space, honeybee integrity and respect and conscientious management. I do truly believe that it is not so much what you keep your bees in, but how you react and respond to them that is natural or unnatural. All managed honeybee hives are in man-made abodes. They have been cut, sawed, glued and nailed. Even though these abodes are man-made, they are still “natural” in that they house natural organisms and allow for the dynamic and natural interchange with Mother Nature.

In today’s world, there is so much modern and post- modern paraphernalia around us. We do not need to use all the new gizmos and gadgets in order to be productive and “wise” but we should be able to discern what can add or diminish a system and wherein lies the wisdom to accommodate that. Whether you decide to keep bees in either Top Bar or Langstroth fashion or both, the key to responsible and appropriate management lies in where you physically are located and regional rules and regulations and what you can afford. It also relies on the beekeepers’ understanding and interpretation of honeybees and their relationship to this world- for good and bad.

The most natural beekeeping that exists is one in which the bee steward can learn to discern their hive status, needs and responsibilities and accommodates them without the routine misuse of harsh chemicals- regardless of the container in which they are housed. Whether you keep one hive or many, the decision to keep bees is one which necessitates initiative, responsibility, leadership and flexibility. Working within one’s own local, regional and national community are beneficial- especially if you and your bees can assist in quality food production and the production of medicinal apicultural products including honey, local pollen, royal jelly, bee brood and beeswax.

You can view my slideshow of Integrative Top Bar Management at [www.ziaqueenbees.com](http://www.ziaqueenbees.com)