Housel Positioning

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Just a few weeks before this meeting, in discussion with Michael Housel, of Orlando, Florida, I received information concerning proper positioning of wild feral combs built by honeybees he had been monitoring and observing in his local area hanging on limbs of trees.

Intrigued by, and recognizing the value of the information concerning the positioning of the wild feral combs, my husband and I immediately started incorporating the information into our field management program, by resequencing close to 35,000 frames in our colonies, to match their positioning.

So just what is this proper positioning of feral combs Michael Housel told me about?

It concerns understanding the "Y" formation of the pyramids formed at the base of the wild combs, and in manufactured beeswax foundation at the base of the cell imprints, that beekeepers place into their colonies, to help domesticated honeybees replicate wild feral combs.

Foundation used by beekeepers is basic to field management. It is used to stimulate domesticated honey bees to build both brood and honey combs, using beeswax secreted from glands on the worker bee's body. It was originally copied from wild combs in the 1800s.

The "Y" formation has been there since the beginning in the making of beeswax foundations. It's in understanding it, and it's proper positioning and placement that Michael Housel has recognized, and we just resequenced our colonies to duplicate, that I hope others here today listening and learning about it, will want to duplicate also, in their own beekeeping operations.

If you copy something exactly to use, which is the purpose of our foundations, and then you don't use it as originally designed and placed by the bees themselves, how can beekeepers blame bees for building and doing things wrong within a beehive? For then in actually, it's man's improper alignments and positioning of manufactured foundations, contrary to original natural design, that could then be causing much of today's bee's internal problems relative to working and drawing combs.

How can scientists do research even, with improper positioning of foundations, not relative to actual positions in the wild? Is science, science, if based upon an artificial world of enlargeness, and improperly positioned combs at the same time, that matches nothing in a real world? How do you know if the research you are doing is good or bad for what it is supposed to relate to, if the combs in the domesticated colonies being reviewed do not match the positioning of wild combs?

The "Y" formation

A "Y" is formed where lozenge-shaped rhombic plates come together to form a Y impression at the bottoms of cells on beeswax foundation. The formation of the "Y" is also seen in wild combs at their cell bases.

There is a right and left side to each foundation and comb when viewed, whether in a man-made colony, or hanging down from a limb.

The right and left sides for facing foundation and drawn combs in a beekeepers hive are determined by the top or bottom positioning of the "Y" formation.

This changes by either being right or left of an imaginary center line in domesticated hives. In the wild there is one special center comb hanging down from a limb. In our man-made hives which we call colonies this does not occur, and so an imaginary line must be drawn and used, for positioning right or left of center, and

up or down, of the "Y" formation.

Beekeepers can easily turn a wild comb and see this. Likewise beekeepers can turn a man-made frame or piece of foundation and see this formation also.

When wild combs are cut down, should not they be positioned in alignment like those obtained from the wild colony, to aid the now domesticated bees placed into a man-made hive, to continue to grow and properly expand?

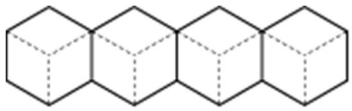
If you have not seen or noticed this before, take a sheet of foundation and put it in front of you on a flat spot to look at.

Then with the rectangle sheet of foundation with long-ways on top and bottom, and short ways on sides, carefully look at it.

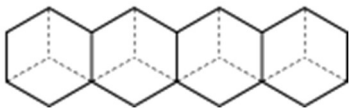
There are two ways to rotate a sheet or comb (in frame) when looking at it to observe the "Y" formed at the bottom of the cells.

Most beekeepers are taught early on to carefully rotate a sheet or frame with bees, from top to bottom (vertically up and down), with a twist of the fingers and wrist, so as to disturb the bees on the comb as little as possible, to observe the broodnest for conditions relative to disease, mites, egg laying, and larva size, applicable for grafting.

When beekeepers rotate a frame this way, no change to the eye takes place, though you rotate to see both inside the top and bottom of the cells. Beekeepers are taught this motion to observe bees for various fouls, and mite fecal for evidence of varroa present.



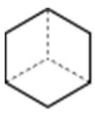
Next, with the sheet of foundation in front of you, turn the sheet NOT VERTICALLY, BUT INSTEAD FROM LEFT TO RIGHT HORIZONTALLY!



Now, when you look at the cell bottoms with the "Y" formation it should change from top to bottom, every time you turn the sheet over.

Explaining "Housel Positioning"

In the wild, there is one center frame that is first drawn when honey bees swarm onto a limb. In spring or following normal swarming the first comb built is worker (exception being more towards fall, following the summer solstice and longest day, when bees swarming can sometimes want to build drone/honey comb first to obtain stores for winter and then once a certain amount is drawn and realized, they then start workercombs).



Now this comb is built with the "Y" inverted and upside down on both sides of the comb. So I now type "^I^" to show the inverted "Y" on both sides of the comb. There is only one of these combs made.

For hives that normally swarm, wanting worker larva for continuation of species, bees need optimum cells

for worker brood immediately, especially in areas of short flows. Hence, this specially drawn first comb.

This starts the wild nest with a center comb expressly designed for maximum production of worker bees, that are needed immediately for continued rearing of new brood and collection of stores, as the field force dies off.

Each comb then, on each side of the center comb follows position, for continued maximum rearing of brood, and then collection of stores of pollen and honey, as comb building progresses and expands the nest.

From here, the "Y" formation stays inverted first, facing center with the "^" down. This continues formation of a slanting ledge the larva rest on, allowing for maximum field bees to be used for gathering stores of nectar needed for comb production, with lesser numbers of nurse bees required.

I now type "^" to show the inverted "Y" for side facing center comb (or center of imaginary line in center of man-made colony) with slanted ledge.

On the other side of the comb the "Y" formation faces up, and helps to form a slanted roof, to help once the bees manage to build enough comb, to protect larva and stores gathered from sun, rain, etc. I now type "Y" to show the "Y" right side up with roof, for side facing away from the center comb.

What beekeepers end up with then, is all foundation or combs in colony with the "^" down formation facing towards center, and all foundation or combs in colony with "Y" up formation, facing towards the sides of the boxes/supers, away from an imaginary center line. I now type ^IY to show this.

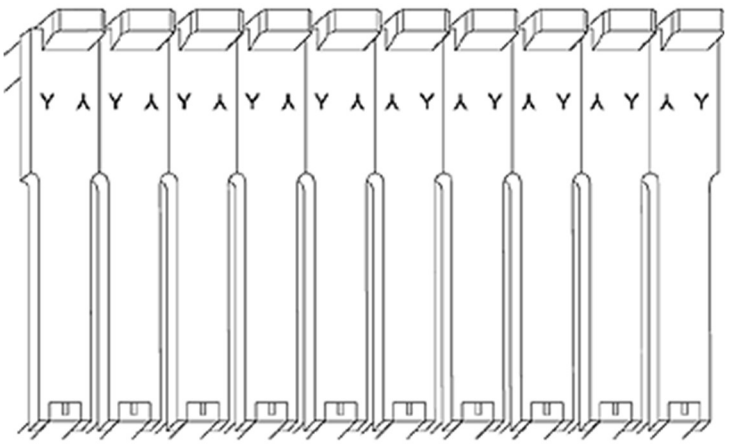
Now, the combs in the center on frames are the smallest and are worker cells, and only at the periphery of the worker cell brood nest change into drone cells.

This can be done two ways.

On either side of a good drawn worker comb you can have periphery drone cells, including the bottoms.

Once an average of four or so worker combs are drawn on each side of the center worker comb, beekeepers will find the next combs built a combination of drone/honey combs. So what you are looking at in brood boxes/supers then is:

YI^,YI^,YI^,YI^,YI^,^IY,^IY,^IY,^IY,^IY



What you are looking at in wild combs hanging is:

YI^,YI^,YI^,YI^,^I^,^IY,^IY,^IY,^IY

This transition to larger starts slow but gets more pronounced the closer to the outside of the broodnest you

go across the first worker cell combs built from the center main comb or imaginary line.

On good flows, beyond this, especially in wild colonies, you can get combs drawn with cells even bigger then drone cells, but rarely seen except in exceptional years.

Now, the placement of these bigger combs/drone combs on the outside periphery, is to protect the worker combs from damage. Animals attacking a feral hanging nest will pull off the outside larger combs for food and many times go on after eating their fill. Wind if strong, along with rain will knock or blow/rip down these outside combs. They are weaker combs with less wax cell walls, and thus more easily tear loose. But, they serve to protect the inside combs, by their side alignment and positioning, from both the elements and animals. This then leaves the smaller worker combs safe, which can and often do, contain honey besides pollen, as the active year progresses and brooding cuts back, and are the strongest combs with maximum wax for strength.

The positioning of the combs in man's domestic hives should follow the above for drone/honey cell positioning relative to worker/pollen/honey cell positioning.

All good drawn-out worker combs should be placed to center, then frames/combs with peripheries of drone cells (not more then 10% kept), then lastly badly drawn-out transition combs. This way, beekeepers end up with 4 good worker combs in the center of brood boxes, and the three on each side for combinations of combs containing worker/drone, pollen/honey storage, and only the immediate outside frame position, for absolute hodge-podged transition cull comb, until the beekeeper can work it up and out during routine field work, for taking back to the honey house for extracting and recycling by melting down.

Importance of "Housel Positioning to Field Beekeeping Management

As I said earlier, intrigued by, and recognizing the value of the "Housel Positioning" relative to wild feral combs, we have resequenced close to 35,000 frames in our colonies and will do more as we continue to work our bees. By resequencing our combs to match wild comb positioning, final internal colony problems relative to our honeybees drawing-out of foundation and how the bees work the combs, appear to be lessening or stopping altogether. Much stress seems to have been eliminated.

My husband and I manage our hives using 4.9mm small cell beeswax foundation, with unlimited brood nest management of 2-3 deep boxes, with 1-2 deep supers for honey production, with an overall average colony size of 4-5 deeps. We see no problems in using 4.9mm foundation in conjunction with "Housel Positioning", as all this does, is copy wild naturally small honeybee comb positioning found hanging from a limb on a tree. This way, we end up with a field management program that is biologically harmonious to wild honeybees, in both comb size and positioning, but under man's control for production.

At the same time, by not having to use various treatments of chemicals, drugs, essential oils, FGMO and acids for parasitic mite control, accompanying secondary diseases and miscellaneous bee pests, we also gain clean products of the hive to sell, and bees harmonious with Nature again that live.

Final internal colony problems lessening or stopped by proper "Housel Positioning" following resequencing of combs have been:

1.Queens not laying in inserted drawn combs placed into the brood nest. Many times beekeepers, as a part of field management throughout the active beekeeping year, insert drawn combs into the brood nest for their queens to lay in, as a means of producing more honeybees for production of products they sell.

These combs can be dry combs or extracted wet combs. But on subsequent hive checks, that can be days and even weeks later, the beekeeper comes back to find the comb not used, but the combs on either side being utilized and laid in. Loss to build up of worker bees, necessary for production, is then the loss of brood that could have been generated, for each 21 day brood cycle of worker bees, not laid by the queen.

2.Excessively bulged/drawn-out honey combs with the next frame either burred or hardly drawn. It is not uncommon for beekeepers to find bulged/drawn-out honey combs with newly drawn-out comb 2-3 inches

thick in supers with new foundations, while the adjoining new frame of foundation next to it is hardly touched or is burred in pattern.

Transporting such honey combs home can be trying as bumps are driven over, that cause the frames to knock and rub together, causing the honey to run out the bottoms of stacks of supers, before reaching the honey house and creating messes that then need to be cleaned up.

Through observation, we now know that the foundation/frame positioning in the super was wrong, and that the frame that was either burred or hardly touched, next to the bulged overdrawn-out honeycomb, was backwards in position to other combs in the honey super relative to positioning of wild combs.

3.Bees refuse to move up into next higher box/super of either drawn frames or new foundation. While this does not happen too often on good honey flows, on average to poor honey flows this can be a problem with bees showing reluctance to expand up into the next higher box/super, to either fill empty combs there, or draw-out foundation. This found happening in a few hives can lessen worker brood raised and honey stores gathered. Once frames are repositioned according to the way the "Y" formation is facing, the bees move up and continue to expand and work.

4.Odd frames of foundation not drawn and/or bees sidewinding. From time to time beekeepers place a new frame of foundation into a brood box or super of drawn combs only to have their bees ignore it. Or they may have 2-3 frames of either new foundation or drawn empty combs or combination of these, the bees seem to ignore in a brood box/super. Through observation, we now know the "Y" positioning of the new frame or frames was probably faced wrong, causing the bees to go around the improper sequencing and positioning relative to wild combs.

5.Burred foundation or overlaid foundation. From time to time beekeepers find frames of new foundation that has been overlaid with sections of either bigger or smaller combs drawn out. We have seen bigger drone/honey combs overlaid on frames positioned with the "Y" formation inserted backwards. We have also seen worker/pollen combs overlaid on frames positioned with the "Y" formation inserted backwards. When looking at the overlaid comb, interesting to note, is the fact that the bees in overlaying the pattern, seem to be reworking the facing of the "Y" formation.

Many places of overlay face the same way as the foundation is placed, yet in other areas on the overlaid face, the bees it seems, are actually trying to reverse it's positioning to that of the foundation which was improperly positioned. Each burr overlaid formation tells it's own little story of the bees working it, trying to adapt the "Y" formation. This leads to much transition comb if these frames are allowed to be continued. Our combs are more evenly smaller now, because our bees are more uniformly maintained and bred, so we mainly see our bees trying to determine which way to face the "Y" formation now. Various sizes of differing transitional burr combs are not so prevalent with cells sizes strikingly different to the eyes.

6.Transitional combs containing various cell sizes are built. Similar to overlaid combs built upon new sheets of foundation, beekeepers can find transitional combs being built by honeybees containing numerous cell sizes. These cells are normally built by colonies upon foundations with "Y" formations positioned wrong and can range up to .2mm to .3mm bigger on average.

7.Queens are suddenly raised at wrong times of the active year causing swarming problems. Beekeepers in adding empty drawn combs or freshly extracted wet combs into the brood nest sometimes go back and find hives requeening at odd times of the active year. Beekeepers can also add odd frames of new foundation into the brood nest to be drawn-out and end up with a few queens being raised along with worker larva. They can also have changed nothing from the previous year in the brood nest, but all of a sudden requeening starts even though they know the queen they have is young and this should not be happening. This can be especially frustrating when a honey flow is coming on or in progress, or they actively follow breeding programs trying to requeen their colonies yearly to avoid this. Why would colonies want to requeen more then once throughout the active beekeeping year?

From what we have seen in our colonies, it is a comb positioning problem with the frames in backwards. With the comb positioned backwards and thus out of alignment with other combs in proper sequence,

beekeepers can trigger spontaneous requeening in colonies by failing to note which way the "Y" formation is facing. Beekeepers must take note and remember one way the formation of the "Y" faces is inverted and down "^", creating a ledge for larva to lay upon that honeybees use for fast build-up following swarming, etc.

On the other side of the comb and/or foundation, the "Y" formation faces up and helps to form a slanted roof, to protect larva and stores gathered from sun, rain, etc. But, the slanted roof of the "Y" formation facing up has another purpose in a colony! For it is only on the side where the "Y" formation faces up, and helps to form this slanted roof, that honeybees raise "queen cells" that face downward for requeening.

Therefore, beekeepers not positioning foundation and drawn combs properly can spontaneously trigger superceding, and thus swarming in their colonies. With hives under stress already from disease, pests (beetles), and predators (mites), besides often on programs of various treatments for same, improper positioning then takes less effort to trigger problems, one of which can be spontaneous requeening.

Whose fault is it then! The bees or the beekeepers, for not following proper "Housel Positioning" for sequencing of managed colony combs, relative to proper positioning of wild combs?

One last note, in going back to colonies that were resequenced with proper "Housel Positioning" of frames, the disposition of the bees was noticed to be gentler than before.