

“One kid's old, used-up equipment is another kid's brand-new, awesome, awesome equipment.”

— Bode Miller

We all know that hobby beekeepers love gadgets. (See [“Gadgets, Gizmos and Got-to-Haves”](#) for more on this topic.) I'm not much different, but I do try to restrain myself. Even so, whenever other beekeepers visit my bee yard, they always ask, “What's that box above your bottom boards?” I try to avoid that question because 1) the full-blown answer, with hand gestures, reenacted honey bee dialog and historical references, takes about 20 minutes for me to tell, and 2) commercial beekeepers make fun of me and scoff at the fact that I waste time and money on an unnecessary piece of equipment. Nevertheless, I'm going to step into the light and declare publicly that not only do I use slatted racks, I like them. I will quickly follow that by stating they are not necessary for successful beekeeping, so don't rush out to purchase one just because someone else has them.

What is a slatted rack?

A traditional slatted rack is simply a box that is placed directly on top of the bottom board, below the first brood box. It is usually two or three inches tall. The distinguishing feature is that there are wooden slats, spaced to allow bee-space between them, that run horizontal to the entrance. A wide strip of wood is in the front; this helps to block light and drafts, particularly when solid bottom boards are being used (with screened bottoms, blocking light is a greater challenge). The slats are very close to the top of the box to ensure that the bee space between the bottom bars of the brood box frames and the top of the slats is not violated (no more than 3/8th inch total gap).

What we know of as slatted racks were invented by C.C. Miller, although much of their more modern features look like the Heddon slat honey-board, which Miller had experimented with for a different purpose. Miller called his



What's that purple box above the bottom board? Is it something important that I don't know about? Where can I get one? Does it have to be purple or can it be a better color?

version “bottom racks” and they were just the slats, used with a separate, unusually deep bottom board.

How do they work?

Bees enter the entrance as usual and travel up through the large open space and between the slats to enter the brood nest. The open space serves two purposes: 1) it moves the entrance up a bit, away from the light, and 2) it provides a place for idle workers to literally hang out without adding heat and congestion to the brood nest.

With respect to (1), queens typically avoid light, so shading the lower sections of the brood frames encourages her to lay farther down on the comb, increasing the efficient use of available real estate. Both the space and the slats themselves work for this purpose.

As to (2), a colony with a strong population faces a dilemma in the hot summertime: when forager bees are idle, such as at night or during a dearth, all of those extra bodies generate heat, but the colony is trying to keep the brood at a just-right 95°F. Plus, all those bees standing around create congestion, which limits the free movement of the queen for egg-laying.

This is why we often see what is called bearding during our Piedmont NC summers. The



Traditional slatted rack, top view (left) and bottom view (right). The wide front slat faces toward the entrance.

hot, idle bees congregate outside the hive, just as Andy, Aunt Bee and Opie used to sit on the front porch on hot summer evenings. With slatted racks, the bees have a great place to hang out with the added benefit of not being exposed to summer rainstorms. Using slatted racks, you'll see little if any bearding on the front of your hives.

Another benefit of properly-constructed slatted racks is that the proper bee space is maintained between the slats and the bottom of the frames above. This deters the bees from building burr comb in that space. Anyone with brood boxes directly on 3/4-inch deep bottom boards has, at one time or another, been plagued with extraneous comb hanging down below the bottom-most frames. The slats act as a comb-building barrier – it is extremely rare for the bees to build through them.

Variants

With such a simple design, there are of course variants. One employs the standard wooden slats with a wide “sun shade” in the front, but instead of the slats running parallel to the entrance (perpendicular to the frames), they run parallel to the frames. This style came about when people began using screened bottom boards as part of their Varroa mite Integrated Pest Management (IPM) strategy. The thinking was that if the point of the screened bottoms is to allow the mites to fall through the screen to the ground below, slats perpendicular to the frames would prevent many of them from doing so. They would land on a slat instead. The obvious solution is to run the slats parallel to the frames, and space them



Screened "slatted rack", top view (left) and bottom view (right).

so that the gap between the slats aligns with the gap between the frames.

However, that design presupposes that screened bottom boards make a difference with respect to Varroa mite control. The passage of time and many academic studies have shown that they do not. So don't worry about the orientation of the slats.

Another variation that I personally prefer in my bee yard (I have different kinds) dispenses with the wooden slats entirely. Instead, I use 1/2 inch wire mesh, readily available at your local DIY store. I don't put a sun screen on mine either – the entire opening is wire mesh. Construction is much simpler than when using slats, plus all of those wires provides more “grab room” for the bees to festoon from. An added bonus is that 1/2 inch wire mesh makes an excellent mouse guard, so the “mesh rack” version kills two birds with one stone.

Hard to argue

While I'm the first to admit that humans have kept honey bees for thousands of years without the use of slatted racks, it isn't accurate to claim that they don't have any advantages as part of a hive's configuration. Don't take my word for it – it was C.C. Miller who said, “I value this bottom-rack highly.”¹ Who am I to argue?

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¹ C.C. Miller, *Fifty Years Among the Bees*, The A.I. Root Company, Medina, Ohio, 1911