

Interest is really building now for a more self-sufficient, healthy and resilient style of non-migratory beekeeping in the northern states. Unstable honey prices, mites, africanized bees, and the misguided efforts to make beekeeping fit into an industrial and business model have all converged to leave our community in a kind of smoldering ruin, and the number of colonies in the U.S. at dangerously low levels. Something “new” and different needs to grow out of this wreckage if our community is to recover and have a positive outlook for the future. A newly configured beekeeping community may be important for having a future at all—we know how important honeybees are for the entire food system.

Over the last two years I have described in this magazine my own ideas about what constitutes health and resilience in northern beekeeping, and how I am trying to move one small apiary in this direction. In practical terms what I’m really describing is how to get honey production, nuc production and queen rearing to function smoothly together, in a place with a very short growing season. Success on these fronts makes an apiary extremely productive and stable; able to withstand shocks and disruptions of many kinds—biological, economic or social. This stability is what enabled me to overcome the shocks caused by both tracheal and varroa mites, and move more or less steadily forward toward better and more productive beekeeping over the last 15 years. Overlaying a queen rearing, stock selection and bee breeding program on top of an existing honey producing apiary also has enormous potential to increase the interest and enjoyment a beekeeper gets from his or her work.

The problem is to get all these different jobs to fit together right and not compete with each other. So, as a contribution for 2007, I’ve sketched out a monthly diary describing the seasonal jobs and how I’ve organized them after many years of trial and error. In a rather disjointed fashion, I’ve also expanded on a few points that I think are especially important, or which caused me a lot of difficulty. All these notes are intended to be published so that they will describe the activities a month or two in advance of the actual growing season underway. This way, you can copy my system and use my dates exactly if you wish to. Don’t worry—there are no copyrights or patents that can be infringed upon! But my real purpose is to just give you a starting point and encourage you to experiment and come up with a system that fits in really well with your own location and personal circumstances. I’m also especially interested in helping younger beekeepers who are building up apiaries from a small beginning. This is the best and the easiest place to incorporate the principles of genuine health and stability, and take full advantage of the resulting productivity.

## A Beekeeping Diary - Introduction

Written by KirkWebster

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My dates should work fairly well in the dairy farming areas of the northern tier of states; where clovers, alfalfa and basswood provide the main honey crop. To make optimum use of all four seasons in the star thistle and goldenrod areas will probably require some adjustments. Further south, you'll have to experiment to find the best time for raising queens and starting nucleus colonies. It should be worth the trouble; with milder winters you could achieve a very high survival rate in the overwintered nucs, and a correspondingly high productivity per box.

I'd like to dedicate this diary to all the working beekeepers who followed their own lights, worked hard in their own apiaries to solve our current problems, and shared their results freely with the beekeeping community. I'd especially like to thank a few of these people that I know personally: Bill Mraz; Erik Osterlund; Hans-Otto Johnsen; and Ed and Dee Lusby. Without their help and encouragement I would very likely not have survived this long as a beekeeper. We'll all need to emulate the independence, determination and generosity of these people if beekeeping is to survive as a great hobby and way of life for future generations.

### DECEMBER, JANUARY, and FEBRUARY

In northern New England, winter usually moves in to stay, crushing all arguments and objections, sometime in December. During the last few days of November, I'm almost always finishing up the last pressing outdoor job of the season: melting the cappings wax. Like many other jobs in the apiary, this one is done, I'm afraid, in a somewhat primitive, old fashioned, and low-cost way. A 55-gallon drum is set up over an outdoor gas ring; the kind you would use for a family reunion-sized pot of clam chowder. A few inches of water is brought to a boil in the bottom of the drum, and the dry cappings are added and melted—little by little—until the drum is nearly full of liquid wax. You must of course stand right there the entire time the flame is lit. If the mixture boils over, you will discover that hot, liquid beeswax burns very much like the gas flare over a Saudi oil well.

The minute the last bits of wax have melted, the flame is shut off and the scum is skimmed off the top. The wax is then dipped out with a bucket, and poured through a screen into pails that have been swabbed with warm soapy water. The pails are covered and left overnight. When no more wax can be skimmed off of the drum, the remaining slum, wax and water are stirred and reheated to boiling. Then the whole mixture is poured through a burlap bag secured to the top of an empty drum. Most of the remaining wax ends up solidifying above the water in the bottom of the drum. You need heat and pressure together to get the wax out of old, dark combs; but for dry cappings my method works pretty well. From each drum of dry cappings I get about 60-70 lbs of beautiful wax, and two gallons of slum—which can be sent, along with your old combs, to a rendering plant where steam and pressure will remove the last few pounds of wax.

So, December arrives, and with it the best time of year for the beekeeper to rest. The labors of the previous season are over, and the next one still seems a long way off. The honey crop has been harvested and probably sold, and the bees are all packed—nothing more can be done for them until late March or early April. This is the time to relax, visit friends and neighbors, and be thankful to have a job like beekeeping during times like this. I especially enjoy reading and

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writing during December, and I might get the winter work started in the shop, or cut brush if there's no snow on the ground and the sun is out. But this is the time of year to stop being in a hurry, retreat inside by the fire, have a complete change of pace and enjoy the winter holidays.

In January begins the process of gradually ramping up for the coming season. Most days I work at my desk in the morning and in the shop during the afternoon. Some bright sunny days are saved for skiing or making excuses to go to a few bee yards—tapping on the colonies and wondering if the future survivors can be identified by the sound of the cluster. My old bees always had some kind of a sound coming from the winter cluster. Since I brought in the Russian stock, I now have many clusters that are completely silent at 20 degrees (F). I have to tap on them to be sure there are bees inside at all.

Winter is of course the time to get your equipment ready for the coming season, and in a place with such a short growing season you want to do as much of this as you possibly can during the cold weather, so that all of your working time can be spent caring for the bees during the spring and summer. If you have an apiary that's expanding rapidly, adding a queen rearing section, or selling a large number of nucs, then the production and readying of new equipment becomes a really major concern, and can keep any full-time workers busy all winter—or longer if you're not careful. The photos show the two special pieces of equipment I have been building and using for many years—feeders and bottom boards for nucleus colonies. The feeders take up the space of two frames, and divide a standard hive body into two completely separate compartments; with a place to feed each colony individually. The bottoms are made like old-fashioned single bottoms, but they are the same length as the hive body, and set up to accommodate the nucs on the 3/8" side, with entrances on opposite ends of the box.

If you want to catch more than 300 queens in one season, I think it's worthwhile to make up special frames and boxes for the mating nucs. Whether you're producing queens just for your own use or for sale, catching and caging them is always the bottleneck, and everything possible should be done to facilitate this process. The smaller the nuc is, the faster you can find the queen. But when the nucs get too small, they need more attention to keep them from starving or absconding. The optimum size for combining fast queen catching and trouble-free maintenance is probably a 6 5/8 box holding two nucs, each consisting of four half-length frames and a small feeder. However, at my latitude, these would have to be recombined into larger colonies for the winter. I consider it an enormous advantage to have as many of the new queens as possible wintering in separate nucs, and surrounded by their own workers. So my compromise is to use standard hive bodies divided into four separate compartments. As you can see from the photos, each box is divided permanently in half with a wood and tin divider. These halves are again divided by the moveable feeders; the same way as with the nucs on standard combs. By moving the feeder, adjacent nucs can be combined together if necessary. Thus, each box can hold two, three or four nucs. The bottom boards provide four entrances, one on each side of the box. Two-way nucs will almost always have a higher percentage of successful matings than 4-way nucs. But I've always found my 4-ways to be a successful compromise, and with many advantages. In the late fall, these boxes are set up for winter just like the nucs on standard combs—either on top of honey producing colonies, or four boxes

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packed together on a pallet.

Any serious amount of time I might have had for goofing off during the winter got snuffed out a few years ago when I started making my own foundations. How many of the troubles experienced by beekeepers over the last 10 years were caused by the build-up of mite control chemicals, and other pollutants, in the wax combs? No one can say for sure, but it seemed to me that this was a really important issue if colony health was to be restored. It's worth repeating: the wax combs are really the "liver" of the colony, and protect the bees by absorbing toxins that find their way into the hive. If the combs become oversaturated with contaminants, then the bees and brood are constantly exposed to the powerful, hormone disrupting chemicals that we have been using to control mites, and/or to other pollutants. Even the plastic foundations are sprayed with wax, which could be of dubious origin.

It took a lot of time and frustration figuring out how to produce 2-3,000 sheets of foundation from my own wax in a reasonable amount of time. In fact, I can remember saying that making foundation is much harder than dealing with mites! But now that I have a good system, it's become very interesting and satisfying. About three weeks in February are devoted to this job. It's quite a thrill to be involved in all the bee's activities—from building the equipment, to raising the bees, producing honey, selecting the next generation, and finally helping them to build new combs from the wax produced right here in the apiary. It still takes more time than most commercial beekeepers would be comfortable with, but the out-of-pocket cost for foundation is now very low; and together with the health and self-sufficiency aspects, I think it's well worth it.