

# BC Bee Breeders

This is the continuation of a series which highlights members of the BC Bee Breeder Association.

## Deborah Tin Tun & Liam Brownrigg Six Legs Good Apiaries

We started keeping bees when we both worked for Babe's Honey Farm on the Island. Liam worked there part time for several years while attending Camosun college. This was back when Babe was still alive, and he later got Deb a seasonal job there, after she finished studying music education at UVic. While she was waiting for her teaching certification, Deb ended up working there as a beekeeper full time and was introduced to queen rearing by Bob Mitchell.

We both worked there for a few more years before deciding to leave in order to spend a year working on farms around BC; the honey farm by then had become a difficult work environment due to a change in ownership, and we wanted to learn more about small-scale agriculture.

We spent some time WWOOfing (working on farms in exchange for room and board) in BC, and we kept ending up working for and staying with beekeepers. Those beekeepers became friends (Reg Kienast and Dianne Wells in Armstrong; Liz and Terry Huxter in Grand Forks), and staying with them made us think, hmm, maybe we could do this too. When we moved to Vancouver 6 years ago, we decided to stop fighting it and get our own bees. We bought 6 packages and have been building equipment ever since.

We have built up our business gradually, making increase in good years, and making up our losses in bad, and have gone from 6 to 60 without buying bees beyond our initial purchase. This let us make more of our mistakes when we only had a few hives - much less work to undo! Deb's first job in Vancouver was as an assistant to Heather Higo for a UBC bee research project, and as we were starting our own bees at the same time, this had a big impact on the direction we took with our operation - being able to ask Heather our questions was incredibly helpful. We both work full time at other jobs, so it's a balance to maintain our apiary at a size where we will not be constantly chasing bees out of the trees in the spring, yet we still want enough colonies to breed from.

So we are currently running about 60 colonies, a third of which are in backyards in East Vancouver (in groups of 2, in case by-law enforcement is asking). The bees do very well and are quite productive in our city yards; their overall health is noticeably better than our hives kept outside the city, in agricultural areas. They almost always have abundant pollen in the city, and because city-dwellers water their gardens, they are not as affected by the fairly



Deb and Liam helping with VSH testing at Kettle Valley Queens.

regular summer droughts that we have. It does take more time to have them in backyards in small numbers; the most amount of time is spent getting in the truck and going between yards - the actual beekeeping time is low!

Over time, we've reduced down to yards that are very close together. I'd say that our city yards are all within a 20 city-block radius. We also have 2 sites out in the suburbs of Surrey that are about a kilometer apart for breeding purposes.

Storage is an ongoing problem for us, but we've had a lot of support with large equipment needs such as the use of extracting equipment from John Gibeau (Liam works for the Honeybee Centre as his day job). John has really helped make it possible for us to do what we do, living in Vancouver where we do, especially when it comes to things like a little bit of space to store boxes, a place to build equipment, and even something as simple as giving us an address where a pallet of equipment can be unloaded with a forklift - all things not commonly had by Vancouverites!

We focus mostly on honey and queens. We don't pollinate - our bees stay where they are year-round. We also overwinter nucs and sell them. There can be a big demand here in the Lower Mainland for locally bred stock, especially from hobbyists. We're a pretty small operation so there's a hard limit to the orders we can fill, but for us, we do it because we love the breeding aspect, and because it serves a need in our beekeeping community. All of the stock we sell is sold locally.

The relationships we build are important to us, which is why we don't just sell all that we produce to one buyer.



Liz Huxter and Deb testing for hygienic behaviour in the rain.



Adding a queen cell to a nuc.

Probably the best part of beekeeping for us (aside from the bees) is all the beekeepers we've been lucky enough to meet and learn from along the way. I think when we started, beekeeping was not yet so fashionable the way it is currently, and so established beekeepers were really happy to see people younger than 40 take a serious interest in bees

- we received a lot

of help and support with our bees, and for that we are grateful to the community. We hope that we can pay that forward!

In terms of our breeding operation, we started out using BC stock, which we got from Kettle Valley Queens in Grand Forks, and since then have been lucky enough to get the occasional graft infusion from outside breeding projects, such as the UBC VSH project. We select for hygienic behaviour (using the liquid nitrogen freezing test), how thrifty they are with stores in the spring, and gentleness (our customer base includes those who don't wish to get their faces stung off routinely!)

We score the bees twice in the spring for brood vs. resources. In our first in-depth inspection in March, once it is warm enough to do so, we give each frame a score for how much of the frame is brood and how much is stores. Then

each hive gets a total score, and we compare about a month later using the same process. Hives that have a good brood score and also maintain a pretty good score for stores are earmarked as potential breeders.

Currently we sell overwintered nucs, and queens from the current season which are grafted from our own stock.

For our mating setup, we use 3-way deeps for the most part. They are nice because we rarely have to feed them; they have enough space to maintain a good reserve of food. Sometimes we use the odd 5-frame nuc, but it takes a lot longer to find queens that way. We use queenright starter-finishers, and have been experimenting with using a Cloake board for a better "take" on the graft.

We sell about a couple hundred cells during the season (we don't really pursue cell sales, but we consistently get interest in them, and it's easy enough to set up an extra builder or two). We also produce about 150 queens for sale, and 20 or so nucs - mostly overwintered, but some in June once we have queens. Most people want their nucs early, before local queens are possible, and we only use our own queens. So we mostly sell overwintered nucs, and then make our own increase later. The nucs we sell are 5 frames: 4 frames of brood and 1 frame of stores. The queens are available in June.



Feeding nucs.

## Brad Cook Pure Agriculture Ltd.

I started beekeeping when I was 7 years old in Sherwood Park, AB. I had a fascination with social insects from a young age, and saved up my allowance to order 2 packages from Arataki - much to the surprise of my parents. I remember dreaming about splitting up to thousands of hives and becoming 'bee rich'. I was the youngest registered beekeeper in Alberta at the time.

I kept bees with my Grandfather, and in terms of learning more about bees, I read every book I could find on the subject, and learned through trial and error. I was influenced by Ormond and Harry Aebi and their books *The Art and Adventure of Beekeeping* and *Mastering the Art of Beekeeping*, which I found at the library in the '80s. There was no YouTube at the time. I did take a course at Beemaid, I think there were 4 of us in attendance; it was 1984 as I recall. There was no Varroa and no foulbroods - those were the days.

I've been in BC since 2013, and as a new commercial beekeeper on Vancouver Island, I'm most thankful to Grant Stringer for imparting his local wisdom.

I'm running 150-200 colonies, depending on how you quantify them.



Brad and his son Liam.



I focus mainly on nucs to the Alberta market. I deliver to Calgary, Edmonton and Lethbridge. Victoria sales were brisk last year though.

I select only the best queens and only use VSH breeding stock. I bring in queens from Olivarez in California, and the performance is consistent. I select the top 1-2% of these queens for genetic incorporation. The difference in mite loads compared to non-VSH is absolutely unbelievable. I will not use non-VSH stock. I select for hygiene and winter hardiness, and I am always on the lookout for tight brood patterns with low mite loads. Underperforming queens get culled and requeened in a hurry.

I use the alcohol method when I check breeders for mites and sugar shake the rest, although I am forever scratching drone cappings when I'm in the hives.

I sell a mixture of queens – the first batch of nucs are sent out with overwintered imported queens and the remainder are imports of the same year.

I take some hives indoors for the winter, they are kept at clustering temps until late January/early February when they get stimulated with pollen and syrup. My best other hives are sheltered, but exposed to ambient temperature and humidity. Indoor wintering has its challenges but winter survivability is greatly increased.

I'm working on improving hygienic traits in my own breeding stock, and may make the results available to



The goal.



Alberta yard.

the public when I am satisfied with consistency. The enemy, as always, is spare time. I have a well-paying day job, which is antithetical to serious beekeeping. My wife and I own and operate a firm of consulting engineers. My bees seem to be rather forgiving in spite of me.

When I'm working with my own genetics project, technically I'm using line breeding, and I utilize Instrumental Insemination (II) as well, which I began using in 2014. It is extremely time consuming, but it's more for my 'hobby' genetics project than for any economic purpose. I learned through trial and error, and have improved my methodology by reading the work of others (Cobey). Open mating is too much of a crapshoot unless you have a lot of land, a lot of time, and you can't adequately control the other side of the equation reliably.

For my mating setup, I usually use a deep 5 frame nuc IF I am open mating, and the results are usually culled in the fall and requeened with imports. I attempted 30 last year with dismal results. If and when I am ready



Typical nuc.

to sell my own queens I will utilize quad boxes (quartered shallow boxes) on top of an excluded inner cover, over a queenless single. I start in a nursing nuc and finish in queenless (previously split) singles.

My usual sales market is locally and in Alberta. Last year I sold about 300 nucs and about 400 queens.

I sell 4 frame nucs which have 2 frames of hatching brood, a pollen/honey frame, and a straight honey frame. 5 framers get an extra frame of brood, usually the best 2 or 3 frames in a single plus food. Stock is available for purchase when we get a spring. I expect nucs to be available late March/early April.

## Donna Moseanko Wildwood Queens

I started working with bees in March of 2012 after my dad passed away. He was still living on the family farm near Chilliwack, BC, and had 3 hives, and I volunteered to take over keeping them. Early experiences with my dad's bees were the swarms we would all watch taking off, and then landing on nearby trees. This often happened on his birthday celebrations over the years, during the May long weekend when the whole family would gather.

I moved to Port McNeill in 2013. I searched out a local beekeeper and was able to go out with him to his hives several times in August. Then, I didn't hear from him until the following April. He had been injured in a motor vehicle accident just after August and couldn't contact me. I offered to tend his 75 hives, which were in protected trailers in the cut blocks. I told him that I hadn't much experience, so I met with him and he would give me instructions on what to do for feeding, sorting them out, cleaning out the dead hives, and adding honey supers towards that next summer. I didn't want him worrying about them.

A good friend of his would come out to show me where the bees were. He shared some colourful stories about their adventures; it was a pretty awesome experience. I worked the hives over that spring and into September, when the honey frames were collected. My beekeeper friend continued to have a hard time with his recovery, so his daughter and her husband took over the care of his hives. I didn't know how to split hives, and had little knowledge about the life of the queen. I often saw emerging queens, and queens battling, and more than one queen in a hive. I still wanted to learn more.

In the summer of 2015, I drove across Canada to live with my daughter's family near Guelph, ON. I was supposed to nanny her 1 year old daughter as she was going back to work part-time. I was still keenly interested in bees, and bought 4 nucs in June, then got bored and bought 25 more. Needless to say I was fired from my position of "Granny Nanny", as I was always out with the bees



which were placed on an organic farm nearby.

Over that summer I created 6 more hives, and built, assembled, painted, moved boxes, frames, bees, queens...the learning curve was steep! Those 35 hives built up and overwintered successfully. Once, in a hotel conference room, I was one of several beekeepers waiting for their order, helping with the sorting and watering (a swipe of a dipped finger across the queen cage screen once a day until hived) of hundreds of early queen bees newly arrived from New Zealand.

My mentor in Ontario, Doug McRory, taught me a lot about bees. He still raises queens and nucs and runs over 400 colonies. When visiting my daughter I make time to spend with him working his bees. This past summer we were placing emerged virgin queens into honey production hives to be mated, and checking Nicot cups on bars for viable larvae which would be placed into queenless finishing hives. This was a timely experience for me.

The Nicot system is a non-grafting method for raising local queens. A kit comes with 110 plastic queen cups in a small frame, which you attach with elastics or glue to a regular frame from your hive. The Nicot frame comes with a queen cage. First you

put the Nicot frame into the brood area of your chosen breeder queen and cage her out, so that the workers can 'polish' the cells. After 3 days, you place the queen inside the cage so that she can lay directly into the Nicot cups. After 4 more days, you take the cups with viable larvae and attach them to your cell builder frames.



Doug with Nicot frame in place.

I heard a speaker at an Ontario Beekeepers Conference once talk about Instrumental Insemination of queen bees and the result on the queen's health, her productivity and the overall effect on the hive when some of the factors of mating can be controlled. This really interested me. I later took a workshop with Susan Cobey on queen insemination. I also really enjoyed Liz Huxter's talk at an Ontario conference, on the importance of drones.

I began to wonder, where in Canada with a milder climate could early queens be raised? I had visited Powell River during the past 12 years, and ended up moving there two years ago. I hoped to eventually raise Instrumentally Inseminated queens using local genetics.

I discovered that with the amount of rain on the west coast, mating virgin queens may be delayed and the optimal age for her to mate may pass. With II queens, this problem can be eliminated. Another challenge is



having enough mature drones from which to gather semen. Perhaps the chosen drone mothers can be encouraged to produce them earlier?

Here in a small town, it is good business to have multiple sources of income. I raise extra queens, some starter hives, take care of Coast Berry Farm's honey bee hives, set up beekeeping workshops, speak at the local Garden Club, sell hive equipment, products and honey and make beeswax food wraps to sell in the local market and stores.

The genetics in Powell River that I want to raise stock from have had entirely self-generated queens over 9 years without outside queens being introduced. The beekeeper who has these hives let the bees raise their own queens as needed, over the years. My original 11 hives, separate from his, are Carniolan from Chilliwack and the Interior, and some are from Kettle Valley Queens, via another beekeeper on the south coast.

My selection criteria are that I would like to have gentle bees that are able to overwinter in our wet coastal climate. I wonder, if all other factors were equal, in using the II mating of virgin queens, would this one factor of maximally mating the queen produce a diverse colony of bees? Would the queens be healthier because the attendant bees are drawn to her strong pheromones? Our changing weather patterns are playing a role in the life cycle of our honey bees. Perhaps with the assistance of II, we can raise more of our own local queens.



Queen and retinue.

I haven't used any specific tests to define desirable traits. Handling the hives, you get a visual sense of the health and temperament of each hive. We all want hygienic bees, so that will be on my list this summer.

This spring I will have some overwintered queens, and also I will sell nucs, adding extra queens from local breeders



Instrumental insemination.


where they are needed. My focus will be using the 9-year local population for queens, and collecting drone semen from other queens in that population that have proven high honey production/overwintering ability.

For proving queens, after insemination, I will use a populated 4 frame queenless hive in a plywood box and add another on top as needed. My setup for starters and finishers is to use a queenless, well populated hive, with Nicot cups that my chosen queen has laid eggs in. I will be using a double 10 frame, queenright hive with queen excluder, Cloake board and nurse bees above, with the entrance turned 180 degrees, following Michael Palmer's techniques.

At this time my market is local backyard beekeepers and a couple of blueberry farms. Last year was a starting year and I sold 40 nucs and 15 queens.

My ideal nuc is 5 frames; two frames with capped brood on both sides with nurse bees covering, two with a mix of honey and pollen, with larvae in various stages and bees covering, and the 5<sup>th</sup> frame drawn for the queen to lay in, and to have extra room for the field bees.

This spring I will be selling stock in mid-April/mid-May, until September.☘



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