



Sept/Oct 2013

ListProc Newsletter
WAS 2013 Review
MT Master Beekeepers

HB Breeding X3
Les Crowder: Top-Bar Bkpng
CSBA Annual Convention

Hawaiian Breeding Thoughts
Gordy Wardell: BOB

Newsletter Emailed to You

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WAS 2013, Santa Fe, NM

Our annual conference began on an uplifting note with an invocation to Mother Earth by American Indian Rosemary Kirby, mother of 2013 WAS President Melanie Kirby. We were surrounded by an interesting blending of American Indian,

Mexican, and Western American cultures, all combined under one roof. If anyone ever complains about not being able to find enough stores for clothing, jewelry, leatherwork, all sorts of artwork (country to exquisite fine art), and numerous eateries, send them to The Plaza area of Santa Fe.

Our speakers were an interesting mix, as well. Retired Bee Scientist, Jerry Bromenshenk suggested that we ask for "second opinions" for much of what is found, currently, on the Internet. Jerry's current definition of an "expert in beekeeping" is an individual who has managed to keep his or her colony (ies) alive for two years. Information from those "experts" is becoming limitless. Seek someone with years of beekeeping experience to discuss much of that "information" before making some unforgiving mistakes.

Jerry's university connections, although he is officially retired, led to a request from the School of Extended Lifelong Learning to develop a nine-session, on-line honey bee course. I guess you might say it is similar to a Master Beekeeper Course. They created lectures, videos in the

apiary, discussion sessions, and quizzes for participants. The Apprentice (novice) level is up. The Journeyman level is pretty well prepared (how to deal with diseases, parasites and other beekeeping problems). Still to come is the Master level, which will include quite a bit of economics and financing. Theoretically, one could be considered ready to get into the beekeeping business after completing the Master level. I hope they suggest that “newbees” work with a commercial beekeeper for a couple years before jumping in full bore.

Internationally recognized queen breeding expert John Kefuss joined us from France. John has selected, quite severely (“Live or let die”), stocks that can tolerate all the stresses thrown at his colonies in both France and in Chile. In fact, he will pay examiners a penny a mite for all the varroa mites they can find in his colonies. I doubt that he has yet spent a dollar on that challenge. When asked if his would be a workable approach to producing better bees for large commercial operations, John suggested that using his approach on all the colonies at once might result in too great of losses to remain in business. However, he did suggest that a substantial portion of an operation could be handled that way. From the best (most productive) survivors, select a year later for the best of what remains.

Eventually, these significantly better bees can be used as drone mothers and others for queen rearing. It will take a while, but the progeny from those closely selected stocks will require less mite and disease control chemistry. That equates to a substantial financial savings in trips to the bee yards and medication expenses. John’s approach keeps track of pollen collection (production), hygienic behavior, varroa counts, and finally survivors of the “Accelerated Bond Test.” In that approach, you collect a bunch of varroa mites and drop them into the colonies – either the colonies survive or not. His biggest problem, now, is

finding enough mites to conduct that sort of evaluation.

John described his beekeeping methods in Chile. Once he gets his stocks into good shape, he is able to split many colonies early in the season. He has the option of running two separate four-frame nucs, side by side in a modified super, or he can build five-frame nucs. The lesser nucs can be used as mating nucs or for splits. The five-frame nuc can be placed over a modified Cloake Board system and used for queen rearing. These large nucs are excellent sources of bulk bees when the queen is removed for other purposes. Using his selection and management tools, John molded an EFB-polluted, nasty temperament operation in 1994 to a very gentle, productive, mite-free operation. Over a two-year period, he began with 483 hives in the test program. One-hundred fifteen made the first cut (based on pollen collection in pollen traps) and 14 of them passed the 24-hour hygienic challenge (very intensive work: he had to count mites in brood cells). With that basic stock, he increased the size of the operation to beyond the original size.

John was pretty specific about how this system should be operated: 1) all equipment has to be in perfect condition; 2) a plan has to be fully developed before starting, not just what to do with the “good” bees, but what to do with the “bad” ones (you have to be ruthless); 3) use teamwork to get things done (with four-member teams, they can get through a colony in 2.5 minutes); 4) collect only “necessary” data on colony inspections; 5) keep many colonies in one location (better comparisons and less travel); 6) remember the Kefuss golden rule: “To go quickly, you have to go slowly,” meaning the best results will be obtained through methodical, step-wise progression. It cannot happen all at once.

Mark Spitzig, President Melanie’s husband, helps in the Zia Queens operation. His foremost selection criterion, in addition

to gentle temperament, is queen longevity. He prefers to manage his bees as little as possible, but they cannot be ignored. His approach is somewhat similar to John Kefuss. His long-lived queens regularly persist two years, but he has one approaching four years and he plans to keep breeding from her, if possible. Mark gets about 75 percent mating success in his mating nucs. Then, about 10-15 percent of those queens supersede. He stated that he usually gets "60 good queens from 100 nucs." With his "longevibeas," if varroa mites terminate the colony before 18-24 months, so be it. He keeps 20 breeder queens, rotated among apiaries. Colonies generated from offspring of his three-year-old queens averaged 80 pounds of honey this season. We tasted some as honey and as mead. It was excellent both ways. Mark does clip 1/3 of the queens' wings, alternating sides with odd and even years. He finds varroa infestation levels of less than 0.3 percent. He feels that having excellent pollen flows all year (although the colonies are moved to and from some) adds considerably to the good beekeeping in the region.

Another speaker dealing with stock breeding was Liz Huxter, project manager of the Kootenay Queen Testing Project: Testing Queens for Varroa Resistance and Economic Performance in the Southern Interior of British Columbia. This work is sponsored by the British Columbia Bee Breeders' Association and involves input from a dozen individuals. Similar to Mark's bees (6,000 feet elevation), Liz's bees are overwintered at high elevations. Then, the project sells 500-1,000 nucs back to the British Columbia beekeepers each year. The goal is to have colonies that cover five frames with bees in the spring (wintering is not just leaving the nucs in the snow – see below) generated from nucs split from colonies in late September and October. In the spring, things get tough for the stocks: as soon as they reach about 16 frames of bees, they are divided into eight two-frame splits (one bees: one honey, keeping adjacent

frames together). Queen introduction into the splits is 80-85 percent from queen cells. When they run short of queen cells, they just let the split try to rear its own queen. Those minimal nucs need to be nursed through the season. Following the honey harvest from full-sized colonies, they are requeened with queens mated in June. If they require mite treatments, they are removed from the breeding stock. Many of the four- and five-frame nucs are placed in four-way mating nucs and placed in an unheated building for the winter in October. They try to feed the nucs in September, not close to when they are put away for winter. Silver bubble wrap is used beneath and on the covers of the hives, but is too air and moisture repellent to wrap around hives.

Outdoor-wintered hive bodies are placed side by side, with alternating entrances facing in opposite directions (east/west). They are lifted up on 18-24 inch stands, draped with 6-mil plastic under the hive cover (to stop burr comb problems), but with a corner exposed to release moisture. Three weeks before the pollen begins to flow in the spring, the nucs in the hive bodies are fed 2.5-3.0 pounds of pollen substitute patties, which cover all the tops bars. The nucs will get another similar feeding before spring has really sprung.

Interest in non-conventional (other than the Langstroth hive) has been growing all over the country. We were pleased to have a presentation by one of the foremost proponents of top-bar beekeeping, Les Crowder of Albuquerque, NM. Les combined with Heather Harrell to write the book, "Top-Bar Beekeeping: Organic Practices for Honeybee Health." Les currently is serving as president of the New Mexico Beekeepers' Association and is a very interesting speaker. Les first stated that the largest commercial beekeeping operations tend to be phasing out of business. Incoming beekeepers tend to be small scale, and many of them are women. Using the analogy of the bees and beehive as a (cont. pg. 6)

TENTATIVE SCHEDULE
California State Beekeepers' Association
124th Annual Convention
2013 Convention Schedule
Harrah's / Harveys Lake Tahoe
Hwy 50 at Stateline, Stateline, NV 89449
November 18-22, 2013

Convention Sponsors (so far!)

Gold: Mann Lake Ltd., Dadant & Sons, Beekeeping Insurance Services

Silver: A&O Forklift, Nestle (Haagen-Dazs/Dreyers)

Bronze: NW Farm Credit

Monday, November 18

3:00 pm CSBA Board of Directors' Meeting – Glenbrook to Tahoe D
 7:00 pm President's Reception – Sand Harbor II

Tuesday, November 19

8:00 am Registration
 8:30-10:00 Opening Ceremonies (Sand Harbor II)
 National Anthem & Flag Salute Gene & Christine Brandi
 Welcome & Call to Order John Miller, President CSBA
 Invocation Troy Bunch
 President's Message John Miller
 Memorial Service Troy Bunch
 Reading of Rules Eric Mussen
 9:00 Sponsor Recognition John Miller
 9:15 Brief Reports of Standing Committees
 10:00-10:25 Exhibitors' Break & Exhibits Open Tahoe BC to Sand Harobr I
 10:25 Door Prizes
Introductions by Steve Godlin
 10:30 American Honey Producers Assn Report and American Beekeeping Federation Report – Randy Verhoek and George Hansen
 10:50 National Honey Board Report –
 11:10 Impact of EPA's New Pesticide Label Regulations – Gene Brandi
 11:30 World and National Honey Market Update – NHPDA representative / G.H. Foods
 12:00 p.m. Lunch
 1:00 Door Prizes
Introductions by Russell Heitkam **Theme: Forage**
 1:05 Sponsor Presentation
 1:15 Dr. Gordon Wardell / Christi Heintz, Project Apis m.
 1:45 Dr. Marla Spivak
 2:25 Kathy Kellison
 2:50-3:10 Exhibitors' Break
 3:05 Door Prizes
 3:15 Dr. Brian Johnson
 3:45 Peter Berthelsen, Pheasants Forever
 4:20 Randy Oliver
 5:00 Exhibits Close
 7:00 Welcome Reception - Exhibits Open Tahoe BC to Sand Harobr I

Wednesday, November 20

7:00 a.m. Sioux Honey Association Member Breakfast Meeting Tahoe A
 8:00 Registration & Exhibits Open
Introductions by Alan Henninger **Theme: Knowledge**
 8:00 Sponsor Presentation

- 8:05 Door Prizes
- 8:10 CEU Training for Private Applicator Permit Holders - Larry Lima
- 8:45 Writing Bee Law – Judge Dan O’Hanlon, Senior District Judge
- 9:35 ACP - “A Bug for Every Bug”, Steve Godlin and CA Citrus Research Board
- 10:10-10:25 Exhibitors’ Break
- Introductions by TBA*
- 10:35 Dr. A. Gary Shilling
- 11:15 “Sustainability” – Ms. Tess Wilkins, GMM/AVP Corporate Foods, Costco Corp.
Research Lunch Sponsored by Golden Heritage Foods
- 12:00 p.m. *Research Luncheon – “**Honey Bees and Pollination: New Things We Now Know**” – Neal Williams
- 2:00 Auction Benefitting Honey Bee Research - Sand Harbor III
- 6:00 Research Committee Meeting chaired by David Bradshaw - Sand Harbor II
- 8:00 Resolution Committee Meeting chaired by Roger Everett - Sand Harbor II

Thursday, November 21

- 8:00 am Registration & Exhibits Open
- 8:30 **CSBA ANNUAL BUSINESS MEETING**
- 10:00-10:10 Exhibitors’ Break
- Introductions by Mike Tolmachoff* **Theme: Research**
- 10:10 Scientific Update – Dr. Jerry Hayes
- 10:40 Dr. Dennis Van EngelsDorp – Bee Informed Project
- 11:20 “Dimilin” – Dr. Reed Johnson
- 12:00 p.m. Lunch
- 12:00-2:00 **CSBA Ladies Auxiliary Business Meeting & Luncheon** - Summit Room, Harrah’s

Introductions by John Miller

Theme: Almonds

- 1:00 Sponsor Presentation
- 1:10 “The Most Interesting Time in Beekeeping” – Dr. Eric Mussen
- 2:00 Bob Curtis, Almond Board of California
- 2:30 Dan Cummings, CFO Project Apis m., author of The Cummings Report
- 3:00-3:15 Exhibitors’ Break
- 3:20 Dr. Frank Eischen
- 4:00-4:30 Almond Pollination Panel “Five Years Out – Consolidation in the Almond Industry” – Joe Traynor, Denise Qualls, Bob Brandi, Pat Heitkam
- 4:30 Exhibits Close
- 6:00 Social Hour – No-Host Bar & Silent Auction
- 6:45 Silent Auction Ends
- 7:00 p.m. *Annual Banquet, Awards, Raffle Drawing, Auction

Friday, November 22

- 8:00 am CSBA Board of Directors’ Breakfast Meeting chaired by Bill Lewis

* Ticketed Meals

BREAKOUT SESSIONS

Tuesday afternoon from 1:30 to 5:00

Potential speakers: Jerry Hayes, Dennis Van Engelsdorp, Reed Johnson, Eric Mussen, Frank Eischen, Joe Traynor, Gene Brandi, Denise Qualls, Pat Heitkam

Wednesday 8 a.m. to noon

Potential speakers: Dan O’Hanlon, Citrus Research Board & Steve Godlin, Tess Wilkins, Gary Shilling, George Hansen, Brent Barkman, Gordon Wardell/Christi Heintz, Marla Spivak, Kathy Kellison, Peter Bertlesen (Pheasants Forever), Randy Oliver

superorganism, Les compared the beeswax combs to a mammalian liver, with the combs representing the skeletal bones. Les dislikes older combs because they contain toxins from old cocoons, bee feces, and environmental toxins. He prefers his bees to build new brood nest combs each year. The old combs are moved to the honey production locations. The honey is extracted by crushing the combs. So, no old combs exist. Since Les does not use chemicals in the hive, he said that he will not rely on chemicals to control *Tropilaelaps clareae* if it arrives. If he sees bees emerging with deformed wings, he requeens.

Les keeps his bees in trapezoidal top-bar hives (since *Varroa* arrived), with no side or end bars on the frames. Although we know that newly drawn top-bar combs are pretty delicate, Les moves his equipment from New Mexico to California for almond pollination with little comb damage. For that purpose, Les has top-bar hives with a center divider, so that he can take two colonies to almonds in one box. The congestion stimulates the swarming impulse, and Les removes the queen cells when they are “frosted.” Then, Les splits many of his colonies into two. Cross-comb can be a problem, but if you examine the combs every so often, you can nip those problems in the bud. A special design of the top bars, invented by WAS 2013 Thurber Award for Inventiveness recipient TJ Carr, reduces cross comb to practically none.

One of the most favorable aspects of top-bar beekeeping is supposed to be the minimal investment to get started. Hives can be made from metal barrels cut in half longitudinally, from various stones, cement, adobe bricks, mud, cow pies, etc. However, the ones that I have seen available for purchase tend to cost between \$150 and \$500. It costs about the same (\$300) for a bottom board, two deep supers, 20 frames with foundation installed, and a western cover from our national beekeeping supply dealers.

Les prefers to have the entrance on the side of the hive, but well toward one end. That leaves a few frame widths at the end to place honey feeder combs. Then there is the brood nest and the honey is stored toward the other end. Observation of comb cell size is interesting. As a generality, the cells in the center of the brood nest are the smallest in diameter. Cell size increases as the colony expands to more combs. However, on some combs you can see an older patch of small cells, then an easily seen, sudden change to a larger cell size on the rest of the comb when it was drawn out. The edges of most of the brood nest combs have larger cells, often where the drones are reared.

Les has a very good following at the local farmers’ market. He cuts out the comb sections and boxes them. He runs the crushed honey through a sieve then bottles it directly into consumer jars. The honey crystallizes quickly due to all the pollen in it. His customers prefer granulated honey and he sells out of honey every year.

A contingent of three young women from Hawaii shared their opinions on how to best keep bees in their habitat. A bit of recent Hawaiian beekeeping history may explain some of the ideas. Until a couple years ago, Hawaii was free of parasitic mites and the small hive beetle (SHB). But national and international movement of goods and people led to the inevitable – both pests showed up at about the same time. We knew about *Varroa*, so that pest would spread and be problematic about everywhere. It was hoped that SHB would have a difficult time boring into lava for pupation sites, but they adapted to lava dust in cracks very well. The tropical warmth and humidity was very nice for them, and they really have become a problem.

Instead of all-out nuclear (chemical) war on the pests, many people proposed doing two things: 1) let the problems with honey bees play themselves out by just letting them go, and 2) put the efforts into

fostering better husbandry of native bees to replace the honey bees for crop pollination.

I'm sorry, but allowing your problems to spread and negatively impact the neighbors is an anathema to me. There are commercial bee breeders on the islands who are trying to deal with the mites as best as they can. To have mite generators purposely left in the environment is not appropriate to my way of thinking. Developing the non-*Apis* bee population is an excellent idea. However, Hawaiian growers really didn't know how important the feral honey bee colonies were to their crop production. As the feral honey bee colonies crashed, so did the crop yields. But the growers failed to realize the connection. Recently, growers are beginning to rent some of the remaining commercial colonies for pollination and are seeing a return to their previous production levels. The native bees did not immediately pick up the slack.

Christina Yahn of the "Queens Bees Project" explained wintering colonies in top-bar hives in Canada. The trick is insulating the hives, heavily, without suffocating the bees. The hives are filled with foundationless frames, but comb is drawn very quickly because the forage is so good all year. Christina began pest control in the hives using essential oils, but they did not mix in patties well, since they are oily. She turned, instead, to hydrosols of the plants. She uses a steam distillation process, so the resulting solution is water soluble but still contains around two percent of the essential oils. The distillates have a shelf-life of two to three years. Depending upon the use, products involved include bee tea, nettle, thyme, sage, chamomile, and lavender. She has specific products: Bee Calm – combined with honey, it is a smoke alternative; Bee Friends – an herbal blend to enhance combining colonies; Bee Strong – a thyme extract that is

supposed to improve the immune system of bees and negatively impact *Varroa* (thyme extract); and Bee Feed – an enhancement for spring food.

Bee Biologist Gordy Wardell of Paramount Farming shared some of his experiences gained from trying to find good methods of rearing and using the blue orchard bee (BOB) in almond pollination. The idea is not to replace honey bees, but to complement them. We already know that the occasional bumping of native bees into foraging honey bees cause the honey bees to be less apt to stick to just the pollen-producing or just the nectar-producing rows or trees. When the honey bees go off course and cross rows, there is better pollination. Paramount Farming tried 1.5 colonies per acre with BOB this spring. The honey bees did quite well with reduced pressure on the available food. The detailed results are not in, but the crop yield looked pretty good. The ability of Paramount to supplement honey bees could become critical if the almond acreage continues to increase and the number of honey bee pollination units cannot keep up with demand.

To rear large quantities of BOB, Paramount began by netting off two five-acre areas to plant for BOB forage and population build-up. The nets are not for keeping BOB home but for keeping hungry honey bees out. With the project showing promise, Paramount just netted an additional, single ten-acre plot. The best forage plants in the cages appear to be *Phacelia ciliata*, Chinese houses (*Collinsia heterophylla*), California bluebells (*Phacelia campanularia*), and wild mustard (*Brassica* spp.). Most interestingly, examination of the pollen masses of a single BOB mud-lined straw can be quite varied: one mass completely of *Collinsia* pollen; the next in the straw completely mustard; while others

are a blend of available pollens. It appears that BOB reared at Paramount requires 150-160 days of “winter chill” (40 degrees Fahrenheit or lower) in order to immerse when accumulating enough heat units the next spring. Creative thinkers found that BOBs can be incubated on the top bars of honey bee hives. If they mix, they just ignore each other. Also BOB domiciles, placed adjacent to honey bee “drops,” attracted many more nesting BOB than did locations more remote from hive drops. The bees are much more likely to fill many nearby straws if there are not very many straws in a large domicile. Domiciles of any size

packed with straws are pretty much ignored. Apparently, BOB is not as good a neighbor as are leafcutting bees.

Sincerely,



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