



# from the U. C. APIARIES University of California



July/Aug 2009

*Subscriptions*  
*Honey Label Change*  
*WAS 2009 Special Events*  
*Native American Honey Bee?*

*Nosema ceranae Gets Around*  
*Keeping Track of CA Bee Laws*  
*Honey Substitutes, Again*

## Newsletter Subscriptions

A snail mail (US Postal Service) subscription still is available for \$15 a year. Send your payment (preferably a check made payable to the **Regents of UC**) to me at the address at the end of this newsletter. Be sure your name and address are easy to determine.

If you wish to have this newsletter sent directly to your e-mail address, when it is published, please follow the instructions below.

Send an e-mail addressed to **listproc@ucdavis.edu**. Leave the Subject line empty. In the body of your message put in the following: sub ucdavisbeenews <your first name (without these “brackets” around it)> <your last name>. On the next line, insert two hyphens, not underscores (underlines). If I were subscribing, it would be:  
**sub ucdavisbeenews Eric Mussen**

--

The hyphens are there to tell the subscription software on the server not to be confused by any following information that occurs, such as a “signature frame” (or signature block, as I call it).

If you wish to be removed from the list, then you do the same thing, but instead of **sub**, you use **unsub** or **signoff**, then the name of the list and your first and last names followed on the next line by hyphens.

## Honey Label Change

Unless plans change, beginning October 6, 2009, if a honey label bears “any combination of USDA marks or statements” (such as a honey grade) it must also display the name(s) of country(ies) of origin of the honey on the label. That information must be legible, in close proximity to and of comparable size to the USDA marks, and be preceded by the words “Product of ...” or other words of similar meaning.

If you wish to express an opinion about this to the USDA, you should e-mail: [chere.shorter@usda.gov](mailto:chere.shorter@usda.gov) or send a FAX to Chere at 202-690-1527. **The deadline for comments is September 8<sup>th</sup>**. For those of you who are nimble on the Web, you can find the verbiage of the rule and submit comments by going to: [www.regulations.gov](http://www.regulations.gov) and enter the keyword AMS-FV-08-0075.

This probably won't hurt local honey movement, but for larger companies wishing to ship honey around, "A violation of the new requirements may be deemed by the

Secretary of Agriculture to be sufficient cause for debarment from inspection and certification of honey."

### WAS 2009 Special Events

The 2009 WAS Conference began with an interesting honey tasting with honeys supplied by Treasurer Mark Pitcher of Babe's Honey Farm. Mark has enough bees and contacts around British Columbia to get a real variety of honeys. He brought six different, out of the ordinary honeys, and asked us to name them. They included cranberry, blueberry, mint, fireweed, onion, and buckwheat. I tasted them all, and most of them were really different. However, I can remember only one of them, vividly. Mark told me it was buckwheat. I remember eastern buckwheat as being very similar to molasses. This western buckwheat apparently originated from the same plants grown in the west, but it tasted like barnyard!

The next unique experience was the BBQ held on the edge of Dry Creek, on the property of April Lance. What a wonderful experience. April had her staff bring in picnic tables, a portable potty, and lots of wooden Adirondack-like chairs. I'm partial to Adirondack chairs since I spent many summers vacationing in the Adirondacks. The creek is not dry, since they have to keep water in it to maintain a migratory population of steelhead trout. There were fish feeding at the surface, but fishing is off limits. The temperature was well below that of the open fields just above the river – just right.

April had contacted a personal friend and caterer who provided a really terrific lunch of tri-tips, veggie lasagna, green salad,

baked beans, fruit salad, and Häagen Dazs sent us individual serving cups of strawberry ice cream. April asked the Sonoma County Beekeepers to bake some cookies for the BBQ, and they were great. We had the few remaining at beverage break the next day. April's property is available to other responsible groups, for a fee, to be used for group picnics and weddings, etc. April can be contacted at: [AprilLance@aol.com](mailto:AprilLance@aol.com).

April's landscaping is loaded with flowers, and Kathy Garvey jammed her memory stick with photos of honey bees, other pollinators and butterflies on those flowers. To see Kathy's photos, go to [Flickr.com/photos/pho-tog](https://www.flickr.com/photos/pho-tog/). She has so many photos there, that you probably will never see them all. Kathy will send you a high resolution file of any photo there, for free, as long as she and the UCD Department of Entomology are credited with providing the photo if it is used in a publication, etc. Kathy also has an international favorite blog on-line called Bug Squad. A new entomologically-oriented mini-article is posted there every evening.

The next event was the trip to Serge Labesque's apiary at Oak Hill Farms in Glen Ellen, CA. Oak Hill Farms was purchased by a forward-thinking conservationist, Otto Teller, now deceased, who practiced non-chemical gardening and wild land preservation. At the White Barn, Otto's widow, Anne Teller, gave us a brief introduction to the farm, where she grows all organic (although uncertified) fruits and vegetables that are sold at the Red Barn. Then we went to see Serge's bees. Serge is a Frenchman

who came to the U.S. and finally settled in the Glen Ellen area because it has beautiful rolling hills, woods, and a laid back life style. Serge does not leave you with the opinion that he is laid back. His hives are very neatly, partially painted (heavy paint at the corners of the boxes to protect the joints at the ends of the supers). His covers are made of molded fiberglass (his mold), below which is an air chamber. The chamber “breathes” to the outside through an 8-mesh screened slot in a second cover that would remind you of an eastern inner cover. Each of Serge’s supers is beveled along the outside top edge of the box. When moisture runs down a box, it drips off, box by box, all the way to the ground without seeping into the space where the boxes contact each other. The boxes last for a long time.

Above the hive entrance, Serge has an awning, also formed from fiberglass using another of Serge’s molds. Before using the awning and top ventilation, Serge’s bees used to hang out in the heat like everyone else’s. Now the air at the entrance is much cooler (his hives are up on level stands nearly a foot above the ground), fanning by bees at the entrance has been eliminated, and no “beards” are seen on his hives. Inside his hives, Serge uses follower boards that are frame sized, allowing bees to move around them if necessary. The biggest advantage in Serge’s mind is that there is space at the outer edges of the interior of the hive for air to move either up or down, depending on the atmospheric conditions. That allows heat to leave in the summer and cold to drain damp air out in the winter. Although Serge has this system well under control, inexperienced beekeepers may find too much bee activity taking place outside the followers. At the base of Serge’s hives are screened bottoms, below which are slide-out fiberglass catch pans – yes, made from another of Serge’s molds. They were

originally fashioned to monitor *Varroa* mite levels. Now they are a convenient place to trap comb debris and wax moth larvae, as long as you remember to clean them off periodically. The screens also have to be cleaned a couple times a year.

Besides Serge’s hives, other hives had been moved, temporarily to the apiary for our observations. The first discussed was the top bar hive supplied by Doug and Katia Vincent of Beekind, a beekeeping supply and honey store in Sebastopol. Doug’s hive has a usually covered glass window built into the side for monitoring progress inside without opening the hive. This top bar hive had no four-sided frames, so the bees build from the center of the top bar down, in the arc shape called a catenary arc, the most stable form of arches. That shape is the same as that taken by a chain held up by both ends, according to Michael Thiele who demonstrated an egg shaped, suspended (from a tree branch, at this site) woven basket hive from Germany. The top half of the basket lifts off, revealing some very intricately designed, arched top bars. The top bars are overlaid with fabric to prevent the combs from being attached to the basket above. Interestingly, this hive can have a honey super placed above it due to a fist sized, round hole in the top. The overlaying fabric has a hole to match. If you wish to see what is going on in the lower part of the hive, the lower half basket can be lowered off by removing four pins that pass through the basket and the equatorial suspension frame.

There was a second European condominium-like hive demonstrated by Michael Thiele. In this case, the hive is really large. It is reminiscent of the top bar hive, but the wooden frames are fully formed and they are really deep. No need to super to put on a honey crop.

Eric Mussen disassembled the Hungarian, rotating-combs hive. The electric motor mechanism is connected to a solar panel to keep it operating. Only the brood combs rotate, and they do that very slowly. The presence of queen excluders below and above the brood nest suggests that drones are not produced, but I doubt that is the case. It is likely that drone heads will be stuck in both of them during the summer. The partitioned water/syrup top feeder was well crafted and upper ventilation was controlled by two adjustable slots.

Serge built an attractive, strong tower to support the large picnic cooler that Eric used to hold lots of water. The cooler was connected to self-regulating watering devices through Tygon tubing from its drain spout (required a number of hose clamps to prevent leaking). Serge's bees didn't pay much attention to the water, since they already were using the Oak Hill Farm pond for their supply. The really different, self-regulating, hanging poultry watering device that works with a Schrader valve (as in old time bicycle inner tubes) worked fine for

me, but it plugs up very easily, so the water in the cooler had to be really clean. The float valve-regulated baby chick watering device, which sits on the ground, was working fine. Serge put chunks of cork in both devices to give the bees something upon which to stand while drinking. Not only do honey bees prefer to stand on something dry when drinking, but they ought not to drown this way.

Finally, there was a truly exotic dessert at the evening awards banquet. Mea McNeil Draper, from the Marin County Beekeepers, made 80 cupcake-sized minis-kep cakes. The cakes began as cupcakes from an Old World recipe for honey cake. They were trimmed down and layered with jelly, then iced with rings of food-safe honey frosting. And what would hives be without bees? So, Mea fashioned honey bee heads and bodies from colored marzipan and used slivered almonds for wings. A visual and taste sensation! I asked Mea to share the recipe and she sent the following:

### **WAS Skep Cakes**

Components for about two dozen cakes:

- 1 recipe Eastern European Honey Cake
- 1 recipe Honey Meringue Frosting
- 1 swarm marzipan bees

#### *Eastern European Honey Cake (Lekach)*

Preheat oven to 350°

Oil muffin tins: use tins to make about two dozen *each* regular (on the smaller side) and miniature (circles of parchment paper, which can be reused for subsequent batches, ensure that they come out easily).

Combine in Pyrex or pan:

- 1 cup coffee
- 1 ½ cups honey
- ¾ cup canola oil
- 2 tsp vanilla

Heat just to blending (do not cook further) in microwave or on stove. Stir and cool (in refrigerator if you are moving right along).

Combine dry ingredients:

3  $\frac{3}{4}$  cups all-purpose flour  
1 tsp baking powder  
1  $\frac{1}{2}$  tsp baking soda  
2 tsp ginger  
2 tsp cinnamon

(Traditional recipes add raisins and chopped walnuts here, about  $\frac{3}{4}$  cup each, which are not in WAS cakes.)

Beat until thick, four minutes or so:

$\frac{3}{4}$  cup sugar  
3 large eggs; the eggs will incorporate better if added one at a time

When the honey mixture is about room temperature (not warm), beat it into the egg mixture. Add dry ingredients and blend well.

Scoop batter into an *even* number of miniature and larger muffin wells – filling no more than  $\frac{3}{4}$  full.

Bake about 30 minutes, checking to see that a toothpick comes out clean. Bear in mind that the miniature muffin tins will bake faster.

Cool cakes. Prepare to stack them in skep shape in this way:

- 1) Warm gently in *two separate* pans or Pyrexes (on stove or in microwave):
  - 1 cup raspberry preserves (or another favorite)
  - $\frac{3}{4}$  cup honey
- 2) Cut off the rounded tops of the cakes with a serrated knife (making them flat when inverted).
- 3) Use scissors to cut around any remaining rim sticking out around the edges of cakes
- 4) Put the bigger cakes upside down on a big oven tray
- 5) Spread warmed filling on inverted bottom of cakes (just to edge, not oozing over)
- 6) Place inverted mini-size cake on top
- 7) Spoon warmed honey over the two-layer cakes

### *Honey Meringue Frosting*

This frosting uses meringue powder for the food safety of cakes that had to remain unrefrigerated. Otherwise, raw egg whites can be substituted.\*

Ingredients for 8 cups frosting:

5 Tbs + 1 tsp meringue powder  
1 cup warm water  
2 pinches salt  
1 cup or less honey (to taste; much less sweet frosting is nicer with the honey-soaked cake.)

Beat meringue powder, water and salt to soft peaks. Add honey in a fine stream while beating to stiff peaks.

\* If using raw eggs, use 8 egg whites and omit water. Keep frosting and cakes refrigerated.

To frost the skep cakes:

- 1) Plate the cakes individually before frosting
- 2) Spoon some frosting into pastry bag with  $\frac{1}{4}$ " tip (#4) or so

- 3) Starting at the bottom, pipe the frosting around the cake in a spiral strip, allowing the cake to show between the frosting spirals. When you get to the flat top, continue in circles to make a rounded top to the skep.

### *Marzipan Bees*

#### Ingredients:

- 1 package marzipan
- 1 small pkg slivered almonds with skins
- 1 small vial yellow or yellow-orange food coloring (gel is best)
- 1 small vial brown or black food coloring

#### To make the bees:

- 1) Sort out whole almond slivers relatively the same size
- 2) Mix a few drops of yellow food coloring on flat plate with less than a drop of brown or black. Best to leave colors separate and add dark little by little to desired brownish color for stripes
- 3) Knead well two drops of yellow food coloring into less than a ping pong ball sized piece of marzipan. Add more if you like it brighter, but it does not take much. Knead the remainder of the marzipan into colored portion.
- 4) Roll colored marzipan into a log no more than 1" in diameter
- 5) With a dry knife, slice log the long way, cleaning off blade between strokes
- 6) Place the half logs flat side down. With same technique, slice the half logs parallel to the ends to make bee shapes about 1/4" wide
- 7) Roll each bee a little to shape it as you like
- 8) With a toothpick laid close to parallel to the plate, pick up a little brownish color. Lay down stripes across bee, pressing the body just a little to flatten and indent. Pick up color with toothpick tip and poke in eyes. Allow to dry.
- 9) Press the more pointed side of almond wings into the marzipan on either side, angling the wings variously at your whim.
- 10) Lay the bees on the skep cakes before serving.

#### Native American Honey Bee?

According to Michael Engel at the University of Kansas, North America has a native honey bee that lived in Nevada. Or, at least, that is where the fossil remains were found that look just like a honey bee.

According to Susan Milius, in the Web edition of Science News, July 23<sup>rd</sup>, 2009, Engel stated, "This rewrites the history of honey bee evolution" turning over the long-held view of Europe and Asia as the native land of all honey bees. Does it?

The fossil bee is around 14 million years old. I guess that is adequate time for

some to say that an organism is "native." But, honey bees are thought to be around 30-40 million years old. The battle of the bee pits those who think the honey bee originated in Africa against those who wish to support its origin in Europe. Either way, it appears that honey bees have been around a lot longer in the Old World than the New World. So, it is likely that the early North American bee migrated from Eurasia.

The new species is named *Apis nearctica*. There was a similar find of an extinct honey bee in Germany that is named *Apis armbrusteri*.

We have Native Americans who haven't been in North America that long, and we have native horses, woolly mammoths and mastodons that came and went, so I guess we can have a native honey bee.

### Nosema ceranae Gets Around

Nine authors from academic institutions from Argentina and Spain collaborated to study the population decline of six native bumble bee (*Bombus*) species in Argentina. The researchers found genetic (PCR) evidence of the fungal parasite *Nosema ceranae* in three of the species: *B. atratus*, *B. morio*, and *B. bellicosus*. The PCR tests were able to distinguish among *N. ceranae*, *N. apis*, and *N. bombi*. Only *N. ceranae* was found in the infected bees. As is typical of nosema infections, not all specimens demonstrated spores, but the levels were pretty high in some individuals: 8 million in workers and 5.8 million in queens of *B. atratus*; 11 million in a worker of *B. bellicosus*; and 110-166 million in queens of *B. morio*.

To see more information about the distribution of the pathogen throughout Argentina, and the concerns of the authors for the future of pollination in that country, the reference is: Santiago Plischuk *et al.* 2009. South American native bumblebees (Hymenoptera: Apidae) infected by *Nosema ceranae* (Microsporidia), an emerging pathogen of honeybees (*Apis mellifera*). Environmental Microbiology Reports 1(2): 131-135.

### Keeping Track of CA Bee Laws

It used to be that you had to have "contacts" in legislative offices to keep up with changes in verbiage and committee decisions on Assembly and Senate Bills moving through the California legislature.

Then, when computers became more common, you could buy a subscription to Legi-Tech to follow bills. Now that information is available at [www.leginfo.ca.gov](http://www.leginfo.ca.gov). Right now we are watching AB 1216 that will be changing the CA standards for honey sold in CA. Other considered honey bee law changes were sidelined, due to the extreme scrutiny any changes are undergoing from a financial angle. In fact, many are criticizing the legislators for even working on bills dealing with commodities when the state is sinking financially.

### Honey Substitutes, Again

Shirley Tessler, affiliated with the Culinary Arts and Hospitality Management group at Cabrillo College, sent me the following information that is being spread around the food industry. "Bell Flavors and Fragrances has developed a range of honey replacers to respond to uncertainties on the global market as colony collapse disorder (CCD) has diminished bee colonies around the world. Dwindling bee numbers could have major implications for the food chain and the environment, as honey bees play a crucial role in the pollination of crops, but a shortage of honey is the most obvious initial consequence for the food industry. No matter what the reason, the fact is that a shortage of honey results in higher prices."

"The company's new range of honey replacers includes both natural and artificial honey flavors, which have been designed so that manufacturers can use less honey, thereby cutting costs, without compromising on taste. It offers specific flavor profiles, including 'very strong, sweet,' 'light amber type,' and 'clover type' as well as concentrated blends and varieties developed

for meat applications and sauces. Bell realizes there can be an issue of loss of bulk or other problems in a finished formula with the replacement of honey by a flavor” and the company will work with manufacturers to develop finished product solutions.



Mea's WAS Skep Dessert

Eric Mussen, Extension Apiculturist  
Entomology Department  
University of California  
Davis, CA 95616  
Phone: (530) 752-0472  
FAX: (530) 752-1537  
E-mail: [ecmussen@ucdavis.edu](mailto:ecmussen@ucdavis.edu)  
URL: [entomology.ucdavis.edu/faculty/mussen.cfm](http://entomology.ucdavis.edu/faculty/mussen.cfm)



Serge's Modified Langstroth Hives

Entomology Department  
University of California  
Davis, CA 95616